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4.15 WATER RESOURCES

This section describes water resources at the Puente Power Project (P3 or project) site and its vicinity, and evaluates potential impacts of the project to these resources. The project area discussed in this section refers to all areas of temporary and permanent disturbance associated with construction and operation of the new plant and ancillary systems, and construction laydown areas. No new offsite linear facilities are required for P3.

The sections below provide an overview of the affected environment; an evaluation of the environmental consequences of the proposed project to water resources; a cumulative impact analysis; identification of mitigation measures that will avoid and reduce project impacts to less-than-significant levels; and applicable laws, ordinances, regulations, and standards (LORS).

4.15.1 Affected Environment

4.15.1.1 Physiographic Setting

As shown on Figure 4.15-1, the project site is adjacent to the Pacific Ocean. The Santa Clara River is approximately 2 miles north of the site. McGrath Lake is approximately 500 feet north of the site. The Edison Canal enters the southern portion of the Mandalay Generating Station (MGS) property. This 2.5-mile-long, manmade canal conveys ocean water from the Channel Islands Harbor for use as once-through cooling water for the existing MGS.

Figure 2.4-2, Site Topography, shows the P3 site's existing topography. Elevation at the project site is approximately 14 feet mean lower low water.

Beach dunes separate the MGS property, including the P3 site, from the Pacific Ocean. The top of the existing beach dunes along the western MGS property line is approximately 20 to 30 feet North American Vertical Datum of 1988 (NAVD88). All elevations unless otherwise noted are relative to the NAVD88 datum. A flood-protection dike was constructed in the 1970s along the northern and eastern boundaries of the MGS site. The top of the dike is at approximately 20 feet.

Established by the 1976 Coastal Act, the boundary of the Oxnard Coastal Zone generally extends 1,000 yards inland from the Pacific Ocean, and includes the Channel Islands Harbor and the Edison Canal. Land uses in the Oxnard Coastal Zone are governed by the Coastal Land Use Plan and its zoning regulations, adopted pursuant to the California Coastal Act and certified by the California Coastal Commission (CCC). The project site is in the Coastal Zone.

4.15.1.2 Climate

The City of Oxnard is in the Oxnard Plain, which has a mild, Mediterranean-style climate, with cool, wet winters, and mild, dry summers. Temperatures rarely fall below freezing in winter. Average rainfall is approximately 15 inches per year. Winter storms associated with the warm Mediterranean climate move inland from the Pacific Ocean and drop precipitation over the region, with greater amounts generally falling in the first quarter of the year (January through March) than the last quarter (October through December) (FCGMA, 2013). Table 4.15-1 summarizes temperature data, and Table 4.15-2 summarizes precipitation for the City of Oxnard.

4.15.1.3 Surface Water

P3 is adjacent to the Pacific Ocean and in the Oxnard Plain hydrologic area of the Santa Clara-Calleguas Hydrologic Unit (LARWQCB, 1994). The project site is in the area regulated by the Los Angeles Regional Water Quality Control Board (LARWQCB). As defined by the LARWQCB, the MGS property

and project site are in the coastal watershed of Ventura County. The Edison Canal is considered by the LARWQCB as a miscellaneous Coastal Stream (LARWQCB, 2009).

There is no direct stormwater runoff from the MGS property to the ocean. Stormwater discharge from MGS to the ocean is controlled by drainage features, sumps, and basins that convey facility stormwater to the existing MGS outfall structure. Discharges into the ocean are made in compliance with MGS' National Pollutant Discharge Elimination System (NPDES) permit for withdrawal and discharge of ocean water (LARWQCB, 2001) (see Appendix N-1).

The Santa Clara River runs east to west approximately 2 miles north of the project (see Figure 4.15-1). The watershed of the Santa Clara River is approximately 1,600 square miles. The project site is not in the Santa Clara River watershed (LARWQCB, 1994).

McGrath Lake is approximately 500 feet north of the project site. The lake is believed to have been part of the historic Santa Clara River Estuary and Delta system (CERES, 2015). Currently, the surface area of the lake is approximately 10 acres. In the 1970s, a dike was constructed along the northern and eastern boundaries of the MGS property, so there is no direct stormwater runoff towards McGrath Lake from the MGS property.

As defined in the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (LARWQCB, 1994) (Basin Plan), beneficial uses of Ventura County coastal waters, including Mandalay Beach and the Edison Canal Estuary, are industrial supply, navigation, water-contact recreation, noncontact water recreation, commercial and sport fishing, marine habitat, wildlife habitat, rare, threatened, or endangered species, and shellfish harvesting.

4.15.1.4 Groundwater

The project site is in the western portion of the Oxnard Plain groundwater basin in the unconfined and perched aquifers hydrologic sub-area in the Santa Clara Hydrological Area of the Ventura Hydrologic Unit (LARWQCB, 2008). The Oxnard Plains groundwater basin extends several miles offshore beneath the marine shelf, where the outer edges are in direct contact with seawater (FCGMA et al., 2007).

Beneficial uses of groundwater include municipal and domestic water supply, agricultural water supply, and industrial supply (LARWQCB, 1994). No public water supply wells are within 1 mile of the MGS property (LARWQCB, 2008; EDR, 2015). A cluster of water wells associated with oil drilling operations lies approximately 0.25 mile to the south of the property (EDR, 2015). One water supply well was identified in the Environmental Data Resources, Inc., report within 0.5 mile north of the property and east of North Harbor Boulevard (EDR, 2015); it is located on land identified as agriculture and oil field operations (see Figure 4.6-2). These wells and other wells identified within 1 mile of the property are shown on Figure 4.15-1. Groundwater extraction from the Oxnard Plains groundwater basin is primarily by agricultural, municipal, and industrial operators, with relatively little domestic extraction. The total amount extracted in 2013 was approximately 63,225 acre-feet (AF); agricultural extraction made up approximately 70.3 percent, municipal and industrial approximately 29.4 percent, and the remaining 0.3 percent was for domestic uses (FCGMA, 2013).

Groundwater underlying the MGS property has been impacted by historical Southern California Edison (SCE) (i.e., the former owner of MGS) operations. Groundwater is monitored as part of ongoing subsurface investigations regarding SCE operations at the site, including operation of the wastewater retention basins. These investigations are overseen by the California Department of Toxic Substances Control.

Three retention basins, originally referred to as the North and South Retention Basins, and the Boiler Chemical Cleaning Basin (BCCB) were installed in 1978 and 1979. The North and South Basins were

originally constructed with a single asphaltic concrete liner. In the 1980s, a single layer of synthetic liner was installed in all three basins. In late 1989, the BCCB was retrofitted with a double liner and leachate collection system. The three basins are now referred to as the North Basin, South Basin, and East Basin (see Figure 2.7-1) (Hamilton, 2014).

The North and South Basins are used to collect and store nonhazardous wastewater from MGS operations. The wastewater contains minor amounts of oil, grease, and suspended solids, and is discharged to the ocean in accordance with MGS' NPDES Permit Number CA0001180. Prior to 1986, the BCCB was used to temporarily hold nonhazardous acidic cleaning solutions from the removal of corrosion and mineral deposits from the MGS boiler (Hamilton, 2014).

SCE, the former owner of MGS, has been implementing a groundwater monitoring program since 1996. Forty-seven wells are used at the MGS facility. Groundwater samples are collected and analyzed from 38 of the wells. The remaining nine wells are only used to monitor groundwater levels. Results from the groundwater monitoring program are as follows (Hamilton, 2014):

- Groundwater underlying the MGS property has been impacted by SCE's past operations of the three basins.
- The groundwater gradient is generally to the south or south-southeast from the retention basins.
- Depth to groundwater ranges from approximately 5 to 9 feet below ground surface (bgs).
- A plume of nickel and vanadium exists downgradient from the basins in a 15-foot-thick saturated zone.
- Metals (arsenic, chromium, nickel, and vanadium) exceeding the groundwater regulatory maximum contaminant level values have been detected in groundwater samples from several wells.

4.15.1.5 Flooding

The Federal Emergency Management Agency (FEMA) has delineated inundation areas for 100- and 500-year floods. Areas designated to be in the flood hazard zones in the project vicinity are shown on Figure 4.15-2.

The Pacific Ocean is west of the project site. The FEMA-designated Flood Hazard Zone VE is at Elevation 13 NAVD88. Zone VE is a coastal flood zone with velocity hazard (wave action) that has a base flood elevation determined (FEMA, 2010).

The 36-acre MGS property is situated in two "Zone Xs," as shown on FEMA's Flood Insurance Rate Map (FIRM) Community Panel Number, No. 06111C0885E (Effective Date of January 20, 2010). The southern portion of the MGS property is in "Zone X – Other Flood Areas" (areas protected by levees from 1 percent annual chance flood, areas of 0.2 percent annual chance flood; areas of 1 percent chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile). The remaining portion of the MGS property, which includes the P3 site, is in "Other Areas Zone X" (areas determined to be outside the 0.2 percent annual chance floodplain) (FEMA, 2010).

No significant flooding has occurred at MGS since 1969, when a 500-year flood for the area occurred at the site. During this event, floodwaters from the Santa Clara River entered the site, which prompted the construction of the dikes on the northern and eastern sides of the facility to prevent any flooding in the future.

Erosion along beaches follows a seasonal cycle: beaches are built during summer and eroded during winter. MGS was constructed above the mean high water line. Based on a review of historical aerial photographs from 1947 to 2014, and on the observations of plant personnel, Mandalay Beach has been growing and not eroding. Since 1947, the beach has grown approximately 300 feet (see Section 4.15.2.5.4 and Figure 4.15-7). No high tides have ever inundated MGS. Particularly severe winter storm seasons, including the El Niño years of 2005, 1998, 1992, 1986, and 1982, eroded the beach on the ocean side of MGS, but did not impact the facility itself.

Seismic hazards, including tsunami and seiche, in the vicinity of MGS are discussed in Section 4.4, Geologic Hazards and Resources.

4.15.1.6 Water Supply History and Future Projections

MGS currently uses sea water pumped from the Edison Canal, and potable water delivered by the City of Oxnard. The existing MGS facility uses ocean water for process water and cooling water needs. The existing units withdraw ocean water from the Edison Canal from an existing intake structure. At maximum capacity, MGS maintains a total pumping capacity rated at 254 million gallons per day (mgd), with a combined condenser flow rating of 241 mgd. On an annual basis, MGS withdraws substantially less than its design capacity, due to its low-generating-capacity use (3.9 percent average for years 2010 to 2014). As summarized in Table 4.15-3, from 2010 through 2014, MGS extracted between approximately 50,000 and 122,000 acre-feet per year (AFY) of water from the canal.

The City of Oxnard provides potable water to MGS. Potable water is used by MGS for service water needs and domestic water needs. MGS' annual potable water consumption during the past 5 years has ranged from approximately 12.6 million gallons per year to approximately 28.7 million gallons per year (i.e., approximately 38 to 88 AFY).

In 2010, the City served 40,802 potable water connections, all of which are metered accounts. In 2010, approximately 85.6 percent of the service connections were residential and commercial, and approximately 6.5 percent were industrial customers (Kennedy Jenks, 2012). The City of Oxnard owns and operates its own municipal water supply system, which relies on local groundwater and imported water supplies. Groundwater is purchased from the United Water Conservation District; imported water is purchased from the Calleguas Municipal Water District, which obtains the water from the State Water Project. Groundwater provides approximately half of the City of Oxnard water supply.

The City's Urban Water Management Plan (UWMP) indicates that there are ample existing and forecasted supplies of water for the City. The UWMP indicates that the City has sufficient supply to meet water demands through 2035. The UWMP states that the City "has a consistent water supply through imported water and groundwater, which is sufficient to meet demands during normal, single-dry, and multiple-dry years" (Kennedy Jenks, 2012). The UWMP also indicates that for the "normal year scenario," the City will have existing and planned supplies that are 9,875 AF in excess of demand with conservation in 2015; 12,442 AF excess in 2020; 12,204 AF excess in 2025; and similar numbers for 2030 and 2035. The UWMP also notes that multiple consecutive dry years "are not anticipated to result in a supply decrease for the City due to future supply and reliability programs" (Kennedy Jenks, 2012).

The City of Oxnard began construction of its Advanced Water Purification Facility (AWPF) in 2009. The plant currently is undergoing its final commissioning process. It is anticipated that the plant will begin operations in the spring of 2015. The Recycled Water Backbone System has been completed; this main pipeline will convey recycled water from the AWPF, north along Perkins, C Street, and Ventura Road to the River Ridge Golf Course, near the Santa Clara River. The first phase of the recycled water production capacity is 6.25 mgd or 7,000 AFY. Approximately, 1,500 AFY to 1,800 AFY of this will be delivered to the River Ridge Golf Club for irrigation. The remaining 5,200 to 5,500 AFY of recycled water will be delivered to an aquifer storage and recovery well that the City plans to construct in 2015, and to agricultural

customers. A pipeline is being designed to carry water to the agricultural customers, and is anticipated to be completed in late 2017 (Rydberg, 2014),

The source of water for the recycled water system is the Oxnard Wastewater Treatment Plant (OWWTP). The OWWTP is a secondary treatment plant at 6001 S. Perkins Road in the City of Oxnard. The OWWTP has an average dry weather flow design capacity of 31.7 mgd (35,500 AFY), with provision for an ultimate average dry weather flow design capacity of 39.7 mgd (44,500 AFY). Flow to the OWWTP in 2010 was 23 mgd (25,800 AFY); the City anticipates sufficient wastewater to support the recycled water program planned for the 2035 condition, which is 14,000 AFY (Kennedy Jenks, 2012).

Recycled water production is expected to increase with anticipated expansion of capacity at the AWPF. The majority of the recycled water produced will be used for groundwater recharge until additional municipal and industrial customers are retrofitted for recycled water use (expected by the year 2025), and the recycled water is delivered to these customers to offset potable demand. Currently, the City of Oxnard's recycled water delivery system does not extend near the project site. The closest point of connection to the Recycled Water Backbone System is near Fifth Street and Ventura Road. Future expansions of the AWPF and the Recycled Water System will be developed when funding becomes available.

4.15.1.7 Wastewater Discharge

The existing MGS Units 1 and 2 use once-through cooling. The condenser cooling water is discharged to the ocean via an existing outfall structure on the western edge of the MGS property. Discharges are made in accordance with NPDES Permit No. CA 0001180 (LARWQCB, 2001). MGS is permitted to discharge up to 255.3 mgd of wastewater consisting of once-through cooling water from MGS Units 1 and 2 and other miscellaneous wastewater discharges. As shown in Table 4.15-3, the total discharge to the ocean from 2010 through 2014 ranged from approximately 50,000 to 122,000 AFY. Process wastewater discharges comprised approximately 28 to 73 AFY of this total discharge during these same years.

MGS does not separate process wastewater from stormwater runoff. MGS implements a Storm Water Pollution Prevention Plan (SWPPP) (MGS, 2014). Stormwater is collected in the onsite retention basins and discharged to the ocean with the process wastewater discharge. During major storm events, stormwater is discharged directly to the ocean without retention if both the North and South Basins are about to exceed maximum capacity. The MGS does not discharge to the City of Oxnard's stormwater system. The MGS is not in Ventura County Flood Control District's jurisdiction.

The site is in the unsewered portion of the City of Oxnard and is not connected to the city's wastewater system. Sanitary wastewater is discharged to the existing septic system in the northern portion of the MGS property. The septic system is operated in accordance with Waste Discharge Requirements (WDRs) Order Number R4-2008-0087.

4.15.2 Environmental Consequences

4.15.2.1 Significance Criteria

The following sections evaluate the potential impacts to water resources associated with construction and operation of the project. Appendix G of the California Environmental Quality Act (CEQA) describes project-related effects that would normally be considered to have a significant effect on the environment. Based on this guidance, project-related water resources impacts are considered significant if the project would do any of the following:

- Groundwater
  - Substantially degrade groundwater quality.
  - Substantially deplete groundwater resources.

- Surface Water
  - Substantially alter surface water chemistry or temperature;
  - Substantially alter the volume of water in a surface water body;
  - Contaminate a public water supply;
  - Substantially reduce the amount of water otherwise available for public water supplies;
  - Change currents or the course of direction of water movements in marine or fresh waters; or
  - Obstruct or alter any navigable water of the U.S.

- Flood Hazard
  - Substantially increase the risk of flooding, erosion, or siltation; or
  - Change absorption rates, drainage patterns, or the rate and amount of surface runoff.

The above criteria related to changing currents or direction of water movements in marine waters, and obstructing or altering navigable waters of the U.S., do not apply to the project because no construction activities would occur in the Edison Canal or the Pacific Ocean; therefore, these criteria are not addressed below. The remaining criteria are evaluated below.

4.15.2.2 Effect on Groundwater

4.15.2.2.1 Groundwater Quality – Construction

Construction of the facility could potentially affect groundwater quality if best management practices (BMPs) are not implemented to avert spills or discharges in areas without secondary containment and/or pavement that could then infiltrate and percolate down to groundwater. Pollutants generated by construction activities could potentially be carried in runoff that could percolate into the underlying groundwater. Stormwater pollutants associated with construction activities could include, but are not limited to, sediments, oil and grease, and organic compounds. However, implementation of BMPs, such as good housekeeping practices, proper handling and storage of hazardous materials, and implementation of spill contingency measures, will reduce potential groundwater quality impacts due to stormwater runoff pollution associated with construction of the project to a less-than-significant level.

The maximum depth of excavation for project construction is expected to be approximately 7 feet for the deep foundation associated with the power block, and approximately 4 feet for pipeline installations (water lines, gas line). Piles for foundations are expected to be as deep as 70 feet. Because the depth to groundwater is generally 5 to 9 feet bgs, some dewatering could be required during trenching for the pipelines; however, this would likely be localized and of short duration. Dewatering would be expected for the deep foundations associated with the power block; however, this also would be expected to be of short duration. Due to previous operations by the former owner of MGS, groundwater beneath the southern portion of the MGS property may have elevated concentrations of arsenic, chromium, nickel, and vanadium. P3 will include pipeline trenching in the southern portion of the MGS property, where potentially impacted groundwater could be present. Because the trenching depth (4 bgs) is expected to be above the groundwater level (5 to 9 feet bgs), trenching activities are unlikely to encounter impacted groundwater. Impacted groundwater is unlikely to be encountered beneath the P3 site, which is in the northern portion of the property, and upgradient from the impacted groundwater.

In the event that groundwater is encountered during construction, and dewatering is required, the groundwater collected from dewatering would be discharged to holding tanks, tested, and then reused (e.g., for landscape irrigation); or discharged to the existing MGS basins, and ultimately released to the ocean in accordance with the provisions of the General NPDES Permit Number R4-2013-0095, WDRs for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties (LARWQCB, 2013).

Therefore, because the likelihood of encountering groundwater during construction is low, and the project will comply with WDRs, impacts associated with groundwater dewatering would be less than significant.

During construction, sanitary wastewater will be handled by portable chemical toilets. Therefore, there would be no impact to groundwater resources.

4.15.2.2.2 Groundwater Quality – Operations

After construction of P3 has been completed, the site will be covered with pavement or crushed rock; thereby minimizing the potential for pollutants to percolate into the groundwater. In addition, BMPs, such as good housekeeping practices, proper handling of wastes, and spill prevention practices, will be implemented. The existing MGS North and South Basins that will be repurposed for retention of process wastewater and stormwater are lined. Underground pipelines (gas, water, and ammonia) will be constructed in accordance with local standards and maintained to minimize potential for leakage. Sanitary wastewater will be discharged to the existing MGS septic system. This system is operated in accordance with WDRs Order No. R4-2008-0087 (LARWQCB, 2008). Project design elements, implementation of BMPs, and compliance with WDRs will reduce potential groundwater quality impacts associated with development of the project operations to a less-than-significant level.

4.15.2.2.3 Groundwater Supplies

Construction, operation, and maintenance of P3 will not pump groundwater from below the site. As discussed in Section 4.15.1.4, there are no public water supply wells within 1 mile of the project site. The closest water wells are associated with oil drilling operations south of the site. There is a single water supply well within approximately 0.5 mile of the project site.

See the discussion in Section 4.15.2.4 regarding impacts to regional water supplies.

4.15.2.3 Effect on Surface Water

4.15.2.3.1 Surface Water Quality – Construction

During construction of P3, approximately 5.7 acres in the MGS property will be used for construction laydown, offices, and parking. Approximately 4.8 acres of currently unpaved areas will be temporarily disturbed during construction of P3. This includes the main power block area and the construction laydown areas, as shown on Figure 2.9-3. The remaining 0.9 acre of the 5.7 acres is currently paved and will be used for construction parking. All construction parking and laydown areas are previously disturbed, and graded, compacted, or paved for existing industrial uses. Surface waters in the vicinity of the project are the Pacific Ocean and the Edison Canal.

An SWPPP will be prepared prior to construction of P3 in accordance with the provisions of the General Construction Permit and the MGS' NPDES Permit Number CA0001180. A preliminary draft construction SWPPP is provided in Appendix A-8 of this Application for Certification (AFC). The project will use a variety of BMPs, which may include the following: stabilized construction entrances, silt fencing, berms, and hay bales to control runoff and prevent discharge of pollutants from construction areas. Hydrostatic testing water will be discharged in accordance with the LARWQCB's WDRs for Discharges of Low Threat Hydrostatic Test Waters, General Permit Number R4-2009-0068 (LARWQCB, 2009b). With development of the SWPPP and implementation of BMPs, compliance with WDRs, and compliance with LORS, impacts to surface waters due to construction of the proposed project are expected to be less than significant.

4.15.2.3.2 Surface Water Quality – Operations

During operations, P3 will discharge process wastewater and stormwater to the ocean, in accordance with the MGS NPDES Permit Number CA0001180.

P3's process wastewater will consist of reject from the first pass reverse-osmosis unit, clear oil-water separator effluent, and evaporative cooler blowdown. This wastewater will be discharged to the existing lined MGS basins, tested, and discharged to the ocean in accordance with the MGS NPDES Permit Number CA0001180. Because the estimated amount of process wastewater discharge (approximately 6.5 AFY) will be less than the amount of process wastewater discharged by MGS (approximately 28 to 73 AFY) during the previous 5 years, and substantially less than the total amount of water discharged to the ocean—including once-through cooling water (approximately 50,000 to 122,000 AFY)—the estimated total load of pollutants will also be substantially less with development of the project.

Stormwater from approximately 12 acres of the 36-acre MGS property is currently managed by the existing MGS stormwater system, and will remain unchanged after the development of the P3 project. With development of P3, a new drainage system will be constructed (see Figure 2.8-1) for the new project area. Stormwater from the approximately 3-acre P3 site, which currently ponds and infiltrates, will be collected and either conveyed to the Service Water Tank for reuse, or to the existing MGS North and South Basins. After construction, there will be an additional 1 acre of impervious surfaces (e.g., pavement and facilities) (see Appendix A-7 for preliminary drainage calculations for pre-construction and post-construction conditions). Stormwater runoff from approximately 3 acres of the P3 site will be managed and potentially reused to offset potable water use. The volume-based water quality design storm is assumed to be the 85th percentile, 24-hour storm event, which is approximately 1.3 inches for the P3 site (Larry Walker Associates and Geosyntec Consultants, 2011).

Stormwater from inside the curbed portion of the P3 process plant area that may be contaminated with oil will be collected and routed to an oil-water separator, and then routed to the existing MGS oily wastewater system via the existing wastewater sump to the lined retention basins (North and South Basins). Recovered waste oil from the separator will be disposed off site in accordance with applicable LORS. Stormwater from outside the process plant area but within the project site should be relatively clean. Stormwater from these areas will be collected and sent to the Service Water Tank for reuse, or discharged to the retention basin (North and South Basins) via the existing MGS stormwater collection system. Stormwater that is not reused will be discharged to the ocean in accordance with the exiting MGS NPDES Permit Number CA0001180. The MGS SWPPP will be also updated prior to P3 operations.

The plant's wastewater streams and treatments are described in Chapter 2, Section 2.7.6.1. Process wastewater (softener regeneration waste; reverse osmosis concentrate; evaporative cooler blowdown) will be collected and discharged in the existing MGS basins. Based on the available data for the City of Oxnard water supply (i.e., potable water), the constituents regulated in the existing MGS NPDES permit are assumed to be nondetectable or not present. Therefore, no compliance issues are anticipated with the discharge of P3 process wastewater to the existing Outfall 001.

With implementation of BMPs during operations, incorporation of project design elements, compliance with WDRs, and compliance with LORS, the impacts to surface water quality will be less than significant.

4.15.2.4 Effect on Water Supplies

The proposed project will use potable water from the City of Oxnard for construction water, process water and domestic water needs.

The Oxnard Municipal Code (Chapter 22, Article III) establishes a general obligation for the City to supply water to all properties in its jurisdiction. MGS and P3 are within the City limits; therefore, the City is the local public water purveyor and is obligated to serve the property. MGS has an existing water service connection from the City for the delivery of potable water. P3 will tie into this existing point of connection.

The City of Oxnard has adequate supplies of potable water available for the life of the project, as summarized in the City's UWMP and discussed in Section 4.15.1.6. MGS is an existing and historical industrial customer. In 2010, MGS used approximately 38 AFY of City-supplied potable water. As noted on Table 2-5 of the UWMP, industrial customers, including MGS, used approximately 8,498 AFY in 2010 (Kennedy Jenks, 2012). Total water use by all customers in 2010 was approximately 26,712 AFY. Therefore, MGS' water usage comprised less than 0.5 percent of the total amount used by industrial customers, and less than 0.2 percent used by all customers. Projected future use by industrial customers, including MGS, was estimated to range from approximately 10,183 AFY in 2015 to approximately 12,370 AFY in 2035. As demonstrated in the UWMP, the City has ample existing and forecasted supplies for all its customers, including industrial customers.

During construction, P3 will use water for dust suppression, compaction, hydrostatic testing, and other construction activities (see Table 2.9-4 in Chapter 2, Project Description). The estimated total amount of potable water to be used during the 21-month construction period is approximately 3.2 AF. For the maximum 12-month period, the estimated amount of water to be used for construction is approximately 2.2 AF.

P3 will be a dry-cooled facility and will use very little water (less than 20 AFY, of which 16 AFY will be for process water needs, and 3 AFY will be for domestic water needs) (see Table 2.7-5 in Chapter 2, Project Description). P3 will not include a steam cycle, and it will not use water for steam condensation purposes or as part of any process that uses water to reject power plant process heat or waste heat to the atmosphere. P3 will only use water for evaporative cooler makeup, service water, and water for combustion turbine washes.

California Energy Commission (CEC) Staff and the Commission have found that a project deploying essentially the same technology as P3 was not using water for cooling purposes within the meaning of the CEC's policy on the use of fresh water for power plant cooling, as set forth in the CEC's 2003 Integrated Energy Policy Report, and the similar policy in State Water Resources Control Board (SWRCB) Resolution 75-58. (See Commission Decision, Marsh Landing Generating Station [MLGS], Docket 08-AFC-3, pp. 83-84, citing Staff Assessment, Exhibit 300, pp. 4.9-23 through 4.9-25 [CEC, 2010].) These policies specify that the use of fresh water for cooling purposes by power plants will be approved only when alternative water supply sources and alternative cooling technologies are shown to be environmentally undesirable or economically unsound. In the case of MLGS, Staff concluded, and the Commission concurred, that the proposed use of 50 AFY of fresh water supplied by the City of Antioch was consistent with these policies (CEC, 2010). In its Decision, the Commission found:

> *"The MLGS will use water in CTG inlet air evaporative coolers and for service water and other industrial purposes. The inlet air evaporative coolers use a relatively small amount of water to reduce the temperature of the ambient air as it enters the combustion turbines to improve power output and efficiency. In this process, water is introduced into the ambient air as it is drawn through the turbine. The MLGS will not use water for wet cooling or as part of a steam cycle or for steam condensation purposes. The MLGS also will not use any water for the purpose of rejecting waste heat produced by power plant processes to the atmosphere. Staff concluded that the MLGS will not use water for cooling purposes because it utilizes a project design that minimizes the use of water . . . We find that the Marsh Landing Project's use of either brackish groundwater or fresh water supplied by the City of Antioch for process uses will comply with Energy Commission water policy and SWRCB Resolution 75-58." (citations omitted)*

The technology to be deployed at P3, and the purposes for which water will be used, are essentially the same as in the case of the MLGS. The only material difference is that P3 will use considerably less water than even MLGS.

In addition, the project will capture and reuse stormwater runoff to the extent practicable to offset potable water use. Preliminary calculations (see Appendix A-7) indicate that the North and South Basins could contain the stormwater runoff from the entire site for a 2-year, 24-hour storm event (approximately 2.5 AF). The amount of stormwater to be collected from the P3 site for reuse on an annual basis will depend on the timing, the amount of rainfall, and the operation of the basins; the preliminary rough-order-of-magnitude estimate, based on annual rainfall, suggests that up to 80,000 gallons could be collected for reuse annually.

During operations, the proposed project would result in a net reduction of approximately 19 to 68 AFY of potable water use when compared to the historical amount of potable water used by MGS over the past 5 years (39 to 88 AFY). P3's use of less than 20 AFY would be less than 0.1 percent of the amount of water supplies projected for 2035 (48,720 AFY) (Kennedy Jenks, 2012).

As part of the retrofit of the existing warehouse and upgrades to the existing administration building, the project will incorporate water-saving measures that may include replacing existing plumbing fixtures with low-flow fixtures, and adjusting irrigation management.

The use of reclaimed municipal wastewater for process water needs at the P3 is infeasible for the reasons provided below.

1. The City of Oxnard began construction of its AWPF in 2009. The plant currently is undergoing its final commissioning process. It is anticipated that the plant will begin operations in spring 2015. The Recycled Water Backbone System has been completed. This main pipeline will convey recycled water from the AWPF, north along Perkins, C Street, and Ventura Road to the River Ridge Golf Course, near the Santa Clara River. The first phase of the recycled water production capacity is 6.25 mgd, or 7,000 AFY. Approximately, 1,500 AFY to 1,800 AFY of this will be delivered to the River Ridge Golf Club for irrigation. The remaining 5,200 to 5,500 AFY of recycled water will be delivered to an aquifer storage and recovery well that the City plans to construct in 2015, and to agricultural customers (Rydberg, 2014). The closest connection point from the P3 site to the City of Oxnard's Recycled Water Backbone System is more than 4 miles away (near Fifth Street and Ventura Road), and construction of a pipeline through already congested utility corridors to interconnect would be economically infeasible, considering the small amount of water used by P3.

2. The City of Ventura owns and operates the Ventura Water Reclamation Facility (VWRF), north of the Santa Clara River. Currently, the VWRF generates approximately 9 mgd of tertiary treated wastewater. This water is used for irrigation of golf courses, parks, and landscaping in the City of Ventura, and is discharged to the Santa Clara River Estuary (just north of the river where the river discharges to the ocean) under an order from the LARWQCB. Recently, in compliance with the renewal of the discharge permit, the City of Ventura has been conducting special studies for the Santa Clara River Estuary to assess continued discharge of the recycled water to the estuary or identify other potential customers, for uses such as urban and agricultural irrigation throughout the City of Ventura, and groundwater recharge and other uses outside the City of Ventura (Carollo and Stillwater Sciences, 2011; Carollo, 2014).

   The VWRF is outside the boundaries of, and does not serve, the City of Oxnard. There is no connectivity between the City of Oxnard's water system and the VWRF distribution system. If the proposed project were to obtain recycled water from the VWRF, it would require installation of an approximately 2.5-mile-long pipeline along North Harbor Boulevard and across a large

river (i.e., the Santa Clara River). Such an installation, assuming this water supply would be available, would be considered economically infeasible given the small quantity of water needed by P3. An interconnection to an outside water purveyor may not even be administratively feasible.

3. The next closest facilities are 10 miles or more away from the site, and extensive infrastructure would be required to deliver reclaimed water, if even available, to the site. These facilities include:

    - The Ojai Valley Wastewater Treatment Plant is approximately 10 miles north of P3; it currently does not produce reclaimed water (Casitas Municipal Water District, 2011).

    - Camrosa Water Reclamation Facility is in the City of Camarillo, approximately 15 miles southeast of P3; it currently produces approximately 1.5 mgd of reclaimed water (Camrosa Water District, 2015)

    - Santa Paula Water Recycling Facility is approximately 12 miles northeast of P3; it currently produces approximately 3.4 mgd of reclaimed water (Santa Paula Water District, 2015).

    - The City of Fillmore Water Recycling Plan produces approximately 1.8 mgd of reclaimed water, and is more than 20 miles away from P3 (American Water, 2015).

    - The Moorpark Wastewater Treatment Plan produces approximately 5 mgd of reclaimed water, and is more than 20 miles away from P3 (PSOMAS, 2014).

There is no connectivity between the City of Oxnard's water system and any of these other water purveyors. Tertiary-treated recycled water is not feasibly available from these facilities due to jurisdictional, supply, and interconnection constraints. Accordingly, based on currently available information, reclaimed water supplies are not available.

The project's annual process demand would be less than 0.1 percent of the total amount of potable water that the City distributes to its customers. In addition, with the retirement of MGS Units 1 and 2, the proposed project would result in a net reduction of potable water used that could be used by others. Therefore, the impact on potable water supply or other users of this source would be considered less than significant.

4.15.2.5 Flood Hazards

As discussed in Section 4.15.2.3, a new stormwater drainage system will be constructed for the P3 site, and will be connected to the existing MGS stormwater drainage system. Under existing conditions, stormwater runoff on the P3 site ponds and infiltrates. The new drainage system will convey stormwater from the approximately 3-acre P3 site to either the Service Water Tank or the existing MGS North and South Basins, and be combined with the stormwater runoff from the 12 acres of the MGS property. The existing North and South Basins have a combined maximum storage volume of approximately 2.5 AF. To the extent practicable, P3 will reuse collected stormwater for service water needs. Stormwater that is not reused will be discharged to the ocean in accordance with the existing MGS NPDES Permit Number CA0001180. Preliminary drainage calculations (see Appendix A-7 of the AFC) indicate that the two basins will be able to handle the stormwater runoff from the combined 15 acres without overflowing the basins for up to a 2-year, 24-hour storm event. For the purposes of assessing the maximum water levels in the basins, the calculations did not account for potential reuse of the collected stormwater. For stormwater events beyond the 2-year design level, the emergency discharge of water to the existing outfall is required to be used by the plant operator to prevent stormwater from overflowing the basins.

The grade elevation of the proposed project will be at 14 feet. Existing beach dunes separate the ocean and the proposed site. The top of the existing beach dunes range from approximately 20 to 30 feet. The FEMA FIRM for Oxnard shows that the coastal zone adjacent to the proposed project is classified as Zone VE with a baseline flood elevation of 13 feet (FEMA, 2010). Storm surge is taken into account when FEMA conducts coastal zone flood analyses, but potential Sea-Level Rise (SLR) is not.

Applicant has evaluated potential impacts of climate-change-influenced SLR on the proposed project. This analysis, included in Appendix N-2, Technical Memorandum, Sea Level Rise Analysis, summarizes the estimated SLR at two planning horizons (i.e., years 2030 and 2050), presents an evaluation of the impacts of SLR, and considers the potential combined effects of SLR and other sources of flooding that may occur simultaneously due to natural phenomena—such as an earthquake, or weather-related events. The sources of the flooding include tidal flooding, wave and storm surge flooding, riverine inundation, and erosion of the dunes.[1] Descriptions of the potential sources of flooding in combination with SLR are:

1. Tidal Flooding – Inundation caused by extreme tides, which are combined with SLR for planning horizons 2030 and 2050. Potential impacts could be overtopping of the protective dunes.

2. Wave and Storm Surge Flooding – Inundation caused by waves in addition to high water levels. It is equal to the sum of the Stillwater Level, the wave setup, and wave run-up. Potential impacts could include overtopping of the protective dunes when combined with SLR.

3. Riverine Inundation – Inundation caused by flooding of the Santa Clara River, which could flood the site from the inland direction, due to SLR and/or other natural phenomena (e.g., earthquake-induced tsunami or weather events).

4. Erosion of the Dunes – The long-term exposure of the dunes to wave action that over time could cause failure of the dunes. The likelihood of this occurring increases with SLR.

Climate change is expected to contribute to SLR, and to the frequency and intensity of weather-related events; however, potential future effects related to SLR are not anticipated to have significant impacts on P3 during the expected 30-year life of the project. As noted in the Technical Memorandum, SLR alone is anticipated to range from 2 to 25 inches from 2030 to 2050, which when added to high water levels, is significantly below the beach dunes along the western boundary of the project site and the levee along the northern edge of the project site. As recommended in the State of California Sea-Level Rise Guidance Document, consideration should be given to scenarios that combine extreme oceanographic conditions on top of the highest water levels projected to result from SLR over the expected life of a project. The combined effects of SLR, potential erosion of the berm, wave events, and storm surge run-up that could occur during the life of the project through planning horizon 2050 are not expected to adversely impact the project. The potential anticipated elevation of SLR, in combination with any of these natural phenomena or weather-induced events, would be below the beach dunes in proximity to the west boundary of the project site.

In summary, the analysis derived from a number of technical resources indicates that SLR in proximity to the proposed P3 may be 2 to 8 inches by 2030, and 7 to 25 inches by 2060 (Table 4.15-4) for low to high SLR predicted scenarios. The predicted SLR elevations would be below the site elevation of 14 feet, and are below the toe (elevation of approximately 14 feet) of the existing sand dunes along the west property boundary of the site that separate the site from the ocean; the elevation of the top of the beach dunes ranges from approximately 20 to 30 feet. All elevations unless otherwise noted are relative to the NAVD88 datum. If any of the sources of flooding occurs in combination with SLR, the estimated wave-run-up elevation is still anticipated to be below the top of the beach dunes at elevations of 20 to 30 feet. Therefore, the existing beach dunes provide adequate protection to the coastline in proximity to P3.

[1] The Technical Memorandum also addresses potential impacts from tsunamis, which are discussed in more detail in Section 4.4, Geologic Hazards and Resources.

4.15.3 Cumulative Impacts Analyses

Cumulative projects considered in the analysis are summarized in Section 4.0. The five projects, all in the City of Oxnard, include three large residential developments, one large commercial development, and a specific plan. The construction and operation activities of the various projects could potentially overlap and result in cumulative impacts to water resources. The closest project is the North Shore Subdivision project (also referred to as the North Shore at Mandalay Bay). The water supply for all of these projects would be provided by the City of Oxnard.

4.15.3.1 Potable Water Supply

The proposed project would create a net benefit for local water supplies, when considered cumulatively with any other project. The proposed project will use less than 20 AFY of potable water, which would result in a net reduction of approximately 18 to 68 AFY of potable water use. When considered cumulatively, this benefit could be reduced by other new users, but would still be considered a net benefit to the local water supply system.

4.15.3.2 Water Quality

When considered cumulatively with other proposed projects, P3 would result in a net cumulative benefit in waste discharges to the Pacific Ocean. Industrial discharge flows would decrease because of decreased plant water use. Permitted maximum discharge flows are 255.3 mgd for MGS (i.e., 255 mgd for once-through cooling water and 0.3 mgd for other miscellaneous wastewater discharges). The estimated maximum daily discharge for P3 is approximately 0.036 mgd. Due to reduced MGS operating hours during the last 5 years, recent discharges (from 2010 through 2014) were approximately 50,000 to 122,000 AFY. Of the total facility discharges, MGS miscellaneous wastewater discharges comprised approximately 28 to 73 AFY. In comparison, P3 discharges would average 6.5 AFY, which would be a substantial reduction in discharge volume, and a similarly proportional decrease in pollutant loading. When considered cumulatively, this benefit could be reduced by other new users, but would still be considered a net benefit by reducing pollutant loads to the Pacific Ocean. The proposed project would also allow for the reduction in existing once-through cooling discharge, permitted as 255 mgd of the 255.3 mgd facility discharge; furthermore, thermal effects of once-through cooling discharge would be eliminated with the retirement of Units 1 and 2. Both of these factors would benefit water quality.

4.15.4 Mitigation Measures

The analysis of P3's effect on water resources indicates that the project will have no significant effect on water resources, and no mitigation measures are required. The Applicant will comply with all applicable LORS, which include preparing and implementing SWPPPs for both construction and operations. However, to address potential future flood risks associated with SLR and coastal flooding, the Applicant proposes the following mitigation measure.

WR-1: NPDES Construction Permit Requirements

The project owner shall manage stormwater pollution from P3 construction activities by fulfilling the requirements contained in SWRCB's NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and all subsequent revisions and amendments. The project owner shall develop and implement a construction SWPPP for the construction of the P3 project.

Verification: Thirty days prior to site mobilization of P3 construction activities, the project owner shall submit the construction SWPPP to the Chief Building Official and Compliance Project Manager (CPM) for review, and to the SWRCB for review and timely comment. A copy of the approved construction

SWPPP shall be kept accessible onsite at all times. Within 10 days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the LARWQCB about the general NPDES permit for discharge of stormwater associated with construction and land-disturbance activities. This information shall include a copy of the notice of intent and the notice of termination submitted by the project owner to the SWRCB.

WR-2: Hydrostatic Water Discharge Permit Requirements

Prior to initiation of hydrostatic testing water discharge to surface waters, the project owner shall obtain a NPDES permit for discharge to the Pacific Ocean. The project owner shall comply with the requirements of the Permit Order No. R4-2009-0068, NPDES No. CAG674001 for hydrostatic testing water discharge. The project owner shall provide a copy of all permit documentation sent to the LARWQCB to the CPM, and notify the CPM in writing of any reported noncompliance.

Verification: Prior to construction mobilization, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the LARWQCB. Thirty days prior to P3 operation, the project owner shall submit to the CPM a copy of the relevant plans and permits received. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the LARWQCB regarding NPDES permits in the annual compliance report.

WR-3: Groundwater Discharge Permit Requirements

Prior to the discharge of groundwater from dewatering activities to surface waters, the project owner shall obtain a NPDES permit for discharge to the Pacific Ocean. The project owner shall comply with the requirements of the Permit Order No. R4-2013-0095, NPDES No. CAG994004 for discharges of groundwater from construction and project dewatering. The project owner shall provide a copy of all permit documentation sent to the LARWQCB to the CPM, and notify the CPM in writing of any reported noncompliance.

Verification: Prior to any dewatering water discharge, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the LARWQCB. Thirty days prior to P3 operation, the project owner shall submit to the CPM a copy of the relevant plans and permits received. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the LARWQCB regarding NPDES permits in the annual compliance report.

WR-4: NPDES Industrial Permit Requirements

Prior to mobilization for construction, the project owner shall obtain a NPDES permit for industrial waste and stormwater discharge to the Pacific Ocean. The project owner shall discharge to the same outfall currently used by the MGS under the requirements of Order No. 01-057, NPDES No. CA0001180. The project owner shall provide a copy of all permit documentation sent to the LARWQCB or SWRCB to the CPM, and notify the CPM in writing of any reported noncompliance.

Verification: Prior to construction mobilization, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the LARWQCB or SWRCB. Thirty days prior to P3 operation, the project owner shall submit to the CPM a copy of the Industrial SWPPP. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the LARWQCB regarding NPDES permits in the annual compliance report.

WR-5: Water Use and Reporting

Water supply for project operation and construction shall be potable water supplied from the city of Oxnard. Water use for operation of P3 shall not exceed 20 AFY; water use for construction shall not exceed 3 AFY. A monthly summary of water use shall be submitted to the CPM.

Verification: The project owner shall record P3 operation water use on a daily basis, and shall notify the CPM within 14 days upon forecast to exceed the maximum annual use as described above. Prior to exceeding the maximum use, the owner shall provide a plan to modify operations. The project owner shall record P3 construction water use on a daily basis, and shall notify the CPM within 14 days upon forecast to exceed the maximum annual use of 3 AFY of potable water. Prior to exceeding the maximum use, the owner shall provide a plan to modify construction practices or offset excess water use.

The project owner shall submit a water use summary report to the CPM monthly during construction, and annually in the annual compliance report during operations for the life of the project. The annual report shall include calculated monthly range, monthly average, daily maximum within each month, and annual use by the project in both gallons per minute and AF. After the first year and for subsequent years, this information shall also include the yearly range and yearly average potable water used by the project.

WR-6: Water Metering

Prior to the use of a water source during commercial operation, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volume(s) of water supplied to the P3 from the water source. Those metering devices shall be operational for the life of the project, and must be able to record the volume from each source separately.

Verification: At least thirty days prior to use of any water source for P3 operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report.

4.15.5 Laws, Ordinances, Regulations, and Standards

P3 will be constructed and operated in accordance with all LORS applicable to water resources. Federal, state, and local LORS applicable to water resources are discussed below and summarized in Table 4.15-5, Applicable Laws, Ordinances, Regulations, and Standards.

4.15.5.1 Federal

4.15.5.1.1 Clean Water Act of 1977 (including 1987 amendments) § 402; 33 United States Code § 1342; 40 Code of Federal Regulations Parts 122 – 136

The Clean Water Act (CWA) requires an NPDES permit for any discharge of pollutants from a point source to waters of the U.S. This law and its regulations apply to stormwater and other discharges into waters of the U.S. The CWA requires compliance with a general construction activities permit for the discharge of stormwater from construction sites disturbing 1 acre or more. This federal permit requirement is administered by the SWRCB and LARWQCB.

Construction activities at the project site will be performed in accordance with an SWPPP and associated monitoring plan, which are required under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the SWRCB. The SWPPP will include control measures, using BMPs, to reduce erosion and sedimentation, as well as other pollutants associated with vehicle maintenance, material storage and handling, and other activities occurring at the project site.

4.15.5.1.2 Clean Water Act § 311; 33 USC § 1342; 40 CFR Parts 122-136

This portion of the CWA requires reporting of any prohibited discharge of oil or hazardous substance. The administering agencies are the LARWQCB and California Department of Toxic Substances Control.

The project will conform by proper management of oils and hazardous materials during construction and operation, as discussed in Section 4.5, Hazardous Materials Handling.

4.15.5.1.3 Executive Order 11998

Federal Executive Order 11998 regarding SLR, "Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input," was issued on January 30, 2015. This Executive Order is not directly applicable to P3, because the proposed project does not require federal funding. However, the Applicant has reviewed this Executive Order, which criticizes the adequacy of using the 100-year flood event as a planning tool. In particular, it gives federal agencies three options for strengthening the existing 100-year flood benchmark:

1. Build 2 feet above the 100-year flood standard (3 feet for "critical actions" like power plants, hospitals, and nursing homes);
2. Build to the 500-year flood level; or
3. Build to a height that is determined by "actionable climate science."

Based on current FEMA mapping (effective date of January 20, 2010), the P3 site is outside of the 500-year flood zone. Furthermore, as discussed in Section 4.15.2.5, the project's vulnerability to potential future flooding due to climate change is expected to be less than significant.

4.15.5.2 State

4.15.5.2.1 Water Code Section 13552.6

This portion of the California Water Code (CWC) relates to the use of potable domestic water for cooling towers. The administering agency is LARWQCB. Use of potable domestic water for cooling towers is unreasonable if suitable recycled water or brackish groundwater is available. The project does not have cooling towers.

4.15.5.2.2 State Water Resources Control Board, Resolution 75-58 (June 18, 1975)

The SWRCB prescribes state water policy on the use and disposal of fresh inland waters that should only be used for power plant cooling if other sources or other methods of cooling will be environmentally undesirable or economically unsound. This policy requires that power plant cooling water should come from, in order of priority: wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland wastewaters of low total dissolved solids, and other inland waters. In addition, the policy prohibits the discharge of blowdown water to land disposal sites, and prohibits discharge of wastewater from once-through power plant cooling facilities to inland waters.

The project does not use water for power plant cooling. The project uses inlet air evaporative coolers and dry low-nitrogen-oxide burners, which minimizes the amount of water used. The estimated average annual water use is less than 20 AFY.

The project will discharge process wastewater to the ocean, in accordance with the MGS NPDES permit. The project does not propose to use zero liquid discharge technologies, because this technology would not be cost effective, considering the very small amount of process wastewater discharge (approximately less than 10 AFY). The project, however, will significantly reduce the amount of water discharged from the project site to the Pacific Ocean. The MGS is permitted to discharge up to 255.3 mgd of once-through cooling water and other wastewater to the Pacific Ocean. During the last 5 years, MGS process wastewater discharge was approximately 28 to 73 AFY. P3 will reduce this discharge to less than approximately 10 AFY.

Therefore, P3 will comply with this water policy because P3 does not use potable water for plant cooling purposes, and the amount of process wastewater discharged to the ocean will be substantially reduced.

4.15.5.2.3 State Water Resources Control Board, Resolution 2009-0011 (May 14, 2009)

The purpose of the Recycled Waters Policy is to increase the use of recycled water from municipal wastewater sources to support the sustainable use of groundwater and surface water. It also encourages the use of recycled water to the fullest extent possible, consistent with state and federal water quality laws. The administering agencies for this resolution are the SWRCB and the LARWQCB.

The project uses a very small amount of water for evaporative cooling and service water needs (less than 20 AFY). Currently, there is no recycled water infrastructure in place to deliver recycled water to the project. Construction of a pipeline to bring recycled water to the project site would not be economically feasible, considering the very small amount of water needed by the project.

4.15.5.2.4 California Porter-Cologne Water Quality Control Act 1998; California Water Code § 13000-14957; Division 7, Water Quality

The Porter-Cologne Water Quality Control Act authorizes the state to develop and implement a statewide program for the control of the quality of all waters of the state. The Porter-Cologne Act establishes the SWRCB and the nine Regional Water Quality Control Boards as the principal state agencies with primary responsibility for the coordination and control of water quality. Under § 13172, siting, operation, and closure of waste disposal sites are regulated. The SWRCB requires classification of the waste and the disposal site. Discharges of waste must comply with the groundwater protection and monitoring requirements of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended (42 United States Code [USC] Section 6901 et seq.), and any federal acts that amend or supplement RCRA, together with any more stringent requirements necessary to implement this revision or Article 9.5 (commencing with Section 25208) of Chapter 6.5 of Division 20 of the Health and Safety Code. The project will comply with the requirements of the Porter-Cologne Act and its implementing regulations, as described in more detail below. The administering agencies for the above authority are the CEC, SWRCB, and LARWQCB.

4.15.5.2.5 California Public Health Code, 17 California Code of Regulations, Chapter 5

This regulation requires prevention measures for backflow and cross-connection of potable and nonpotable water lines. P3 will use potable water; therefore, this regulation is not applicable. The administering agency is the County Department of Health Services.

4.15.5.2.6 Title 22, California Code of Regulations Division 4, Chapter 3

This regulation requires maximum use of recycled water in the satisfaction of requirements for beneficial uses of water. The administering agency is the LARWQCB.

As previously stated, recycled water is currently unavailable near the site.

4.15.5.2.7 California Water Code §§ 13271-13272; 23 California Code of Regulations §§ 2250-2260

These code sections require reporting of releases of specified reportable quantities of hazardous substances or sewage (§ 13272) when the release is into, or where it will likely discharge into, waters of the state. For releases into or threatening surface waters, a "hazardous substance" and its reportable quantities are those specified in 40 Code of Federal Regulations (CFR) § 116.5, pursuant to § 311(b)(2) of the CWA, 33 USC § 1321(b)(2). For releases into or threatening groundwater, a "hazardous substance" and its reportable quantities are those specified in 40 CFR § 116.5, pursuant to § 311(b)(2) of the CWA, 33 USC § 1321(b)(2).

For releases into or threatening groundwater, a "hazardous substance" is any material listed as hazardous pursuant to the California Hazardous Waste Control Act, Health & Safety Code §§ 25100-2520.24, and the reportable quantities are those specified in 40 CFR Part 302. As discussed in Section 4.5, releases of hazardous materials to surface water or groundwater are not anticipated, and the project will comply with the reporting requirements for hazardous substances associated with the project. P3 will use the existing MGS septic system operated in accordance with the provisions of WDR Order No. R4-208-0087. Therefore, P3 will comply with the requirements of this code.

4.15.5.2.8 California Water Code § 13260-13269; 23 California Code of Regulations Chapter 9

The code requires filing a Report of Waste Discharge, and provides for the issuance of WDRs with respect to the discharge of any waste that can affect the quality of the waters of the state, other than into a community sewer system. The WDRs will serve to enforce the relevant water quality protection objectives of the Los Angeles Region Basin Plan and federal technology-based effluent standards applicable to the proposed project. With respect to potential water pollution from construction activities, the WDRs may incorporate requirements based on CWA § 402(p) and implementing regulations in 40 CFR Parts 122 et seq., as administered by the LARWQCB.

P3 will discharge construction wastewater (as appropriate), process wastewater and stormwater to the existing MGS retention basins and discharge to the ocean, in accordance with MGS' existing WDR Order No. 01-057, NPDES No. CA0001180 (LARWQCB, 2001). Sanitary wastewater will be discharged to the existing MGS septic system in accordance with WDR Order No. R4-2008-0087 (LARWQCB, 2008). Therefore, P3 will comply with the requirements of this code.

4.15.5.2.9 California Water Code § 13550 et seq.

This code requires use of recycled water for industrial purposes where available and appropriate. The administering agencies are SWRCB and LARWQCB.

The project will use a dry-cooling system, which will reduce the amount of water used by the plant. Recycled water is not currently available.

4.15.5.2.10 California Executive Order S-3-05

This Order was signed on June 1, 2005, and calls for the California Environmental Protection Agency (Cal/EPA) to prepare periodic science reports on the potential impacts of climate change on the California economy. Cal/EPA entrusted the CEC and its "Climate Change Center" to lead this effort. The 2009 Adaptation Strategy prepared by the California Natural Resources Agency also called for a statewide vulnerability and adaptation study. Our Changing Climate 2012 (CEC, 2012) summarizes the third of these periodic assessments, the product of a multi-institution collaboration among Cal/EPA, Natural Resources Agency, Department of Water Resources, CEC, Air Resources Board, Ocean Protection Council, Department of Public Health, Department of Forestry and Fire Protection, Bay Conservation and Development Commission, Department of Transportation, Office of Environmental Health Hazard Assessment, State Coastal Conservancy, Department of Fish and Game, Department of Food and Agriculture, and State Parks.

Our Changing Climate 2012 variously addresses the impacts of climate change on public health, water resources, energy supply and demand, ecosystems, agriculture, and SLR. Regarding the latter, Our Changing Climate 2012 made the following findings:

- "Wind and waves, in addition to faster rising seas, will worsen coastal flooding."

- "The third assessment refines our understanding of the extent and timing of flooding from projected SLR, showing that wind and waves could make coastal storms more damaging. As early as 2050, given current projections of SLR, today's 100-year storm could occur once every year."

Applicant has evaluated the potential vulnerability of the project to potential impacts of climate change (see Appendix N-2, Technical Memorandum, Sea Level Rise Analysis). Flooding of the project site is unlikely to be a problem in the near term or at the end of P3's expected 30-year project life.

4.15.5.2.11 California Climate Action Team (March 2013)

The State of California Sea-Level Rise Guidance Document provides guidance for incorporating SLR projections into planning and decision-making for projects in California. This document was developed by the Coastal and Ocean Working Group (CO-CAT, 2013) of the California Climate Action Team in response to Executive Order S-13-08, issued on November 14, 2008, which directed state agencies to plan for SLR and coastal impacts. Executive Order S-13-08 also requested the National Research Council (NRC) to issue a report on SLR to advise California on planning efforts.

The final report from the NRC, Sea-Level Rise for the Coasts of California, Oregon, and Washington, was released in June 2012 (NRC, 2012). The State of California Sea-Level Rise Guidance Document has been updated with the scientific findings of the 2012 NRC report. The intent of this guidance document is to inform and assist state agencies as they develop approaches for incorporating SLR into planning decisions with the most recent and best available science, as published in the 2012 NRC report. Specifically, this document provides information and recommendations to enhance consistency across agencies in their development of approaches to SLR.

The recommendations are listed below:

1. Use the ranges of SLR presented in the June 2012 NRC report on Sea-Level Rise for the Coasts of California, Oregon, and Washington as a starting place, and select SLR values based on agency and context-specific considerations of risk tolerance and adaptive capacity.

2. Consider timeframes, adaptive capacity, and risk tolerance when selecting estimates of SLR.

3. Consider storms and other extreme events.

4. Coordinate with other state agencies when selecting values of SLR, and where appropriate and feasible, use the same projections of SLR.

5. Future SLR projections should not be based on linear extrapolation of historic sea level observations.

6. Consider changing shorelines.

7. Consider predictions in tectonic activity.

8. Consider trends in relative local mean sea level.

Applicant has reviewed the SLR guidance, and has concluded that potential future effects related to SLR are not anticipated to have significant impacts to P3 during the expected 30-year life of the project (see Appendix N-2, Technical Memorandum, Sea Level Rise Analysis).

4.15.5.2.12 California Coastal Commission (October 2013)

In October 2013, the CCC released its Draft Sea-Level Rise Policy Guidance (CCC, 2013), containing step-by-step guidance on how to address SLR in new and updated Local Coastal Programs and Coastal Development Permits (CDP) according to the policies of the California Coastal Act. The Guidance also contains principles for addressing SLR in the coastal zone; a description of the best available science for California on SLR; and policy guidance to address coastal hazards while continuing to protect coastal resources.

The Guidance emphasizes the need to use science to guide decisions, and recommends that localities use best available science and recognize scientific uncertainty by using various SLR scenarios in planning. CCC staff state that the projections provided in the NRC's 2012 "Sea Level Rise for the Coasts of California, Washington, and Oregon" report are the "best available science on [SLR] in California." The Guidance states that these projections will be used by the CCC, and that local governments also should take them into consideration in local coastal planning. Note that the Guidance also indicates that the CCC will "re-examine the best available science at least every 5 years, or as needed with the release of new information on [SLR]" (CCC, 2013). According to the NRC report, sea levels are projected to increase along much of the California coast by up to 1.7 meters, or 5.5 feet, by the year 2100. A maximum 2-foot increase is projected by 2050. Although the NRC report recognizes that a range of SLR levels is possible and that the worst-case scenario may not occur, the Guidance suggests that permit applicants and local governments analyze the worst-case scenario, in addition to a scenario with a potentially lesser SLR.

The Guidance also suggests the following specific steps to address SLR in the project design and coastal development permitting process:

1. Obtain a projected SLR range from the best available science (i.e., the NCR report). The projections should be adjusted for local conditions and should cover the expected design or economic life of a proposed project, without the need for shoreline protection.

2. Determine the extent of SLR impacts now and into the future, and determine how to minimize those hazards when siting a project. This analysis should look at how erosion, structural, and geologic stability, flooding and inundation, flood elevation, and other impacts may limit where a project can feasibly be sited under the identified local SLR scenarios.

3. Analyze how projects may impact coastal resources, considering the influence of future SLR on the landscape, including the potential impacts of any SLR adaptation strategies that may be used over the lifetime of a project.

4. Identify alternatives to avoid resource impacts and minimize SLR risks. Avoid SLR hazards if possible, and minimize hazard exposure if avoidance is infeasible. If it is not feasible to site or design a structure to be safe from SLR over the anticipated life of the structure, develop an SLR adaptation strategy, including steps to relocate or modify the development as needed to prevent risks to the development or to coastal resources. (The Guidance emphasizes that "[n]ew development should not in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.")

5. Work with CCC Staff to complete the CDP application once steps 1 through 4 are completed.

The Guidance also provides that CDP approvals may include conditions that require monitoring the physical impacts of SLR on a project site, and responding as necessary. This may include:

- Concentrating new development away from areas that are highly vulnerable to SLR;

- Imposing CDP conditions that require the removal of structures if threatened by SLR;

- Requiring new development in potentially hazardous locations to include a waiver of the property owners' right to shoreline protection in the future; and

- Approving CDPs for a specified duration, and requiring the Applicant to come back at the end of that time period to re-evaluate SLR risks.

Applicant has reviewed the CCC's Guidance, and has concluded that potential future effects related to SLR are not anticipated to have significant impacts to P3 during the expected 30-year life of the project (see Appendix N-2, Technical Memorandum, Sea Level Rise Analysis).

4.15.5.2.13 Natural Resources Agency (July 2014)

Safeguarding California: Reducing Climate Risk – An update to the 2009 California Climate Adaptation Strategy (NRA, 2014) provides policy guidance for state decision-makers to reduce impacts and prepare for climate risks. The Safeguarding California plan was prepared by the California Natural Resources Agency, with numerous other agencies contributing, including—most notably—the CEC and the CCC. The Safeguarding California Plan is an update to California's 2009 Climate Adaptation Strategy, which was one of the nation's first multi-sectoral plans to prepare for the impacts of climate change, and incorporates new information on climate vulnerabilities and management approaches.

The Safeguarding California plan refers to the CEC-commissioned report issued in 2012 regarding the vulnerability of energy infrastructure to climate change impacts. That report was prepared by the Lawrence Berkeley National Laboratory (LBNL), and identified, inter alia, energy infrastructure vulnerable to sea-level encroachment (LBNL, 2012). The LBNL report used a 1.4-meter SLR, which is slightly less than the NRC-predicted range for 2100 under the high SLR assumption (1.7 meters), and a 100-year flood event. The MGS, and therefore P3, which will be constructed wholly within the MGS property, is not among the 25 power plants listed as being vulnerable to this flood inundation risk.

4.15.5.2.14 Water Supply Assessment

California Senate Bill (SB) 610, CWC Sections 10620 through 10645 (CWC, 2010), and CWC Sections 10910 through 10912 (CWC, 2011), was enacted in 2001 to improve the linkage between water and land use planning. All three regulations were intended to ensure greater communication between water providers and local planning agencies. SB 610 aims to ensure that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to serve the project (SB 610, Chapter 643, Section 1) (DWR, 2003a). A water supply assessment (WSA) must be prepared for any project that meets one of the size or demand thresholds triggering SB 610. The WSA documents sources of water supply, quantifies water demands, evaluates drought impacts, and provides a comparison of water supply and demand that is the basis for an assessment of water supply sufficiency. The lead CEQA agency uses the information in the WSA to determine whether total water supplies available during normal, single-dry, and multiple-dry water years within a 20-year projection will meet the anticipated water demand under the project in addition to the demand of existing and other planned future uses, including, but not limited to, agricultural uses. For projects using freshwater groundwater supply, additional information such as the location and status of the groundwater must be included in the WSA.

A WSA is required only for projects subject to CEQA, because a WSA provides the CEQA lead agency with information to make a determination in the CEQA document (e.g., negative declaration or environmental impact report) as to the adequacy of future water supplies for the project in the context of existing and planned-for future uses. SB 610's requirements to prepare a WSA apply to projects based on their size or consumption. Among others, the following categories of projects are required to conduct a WSA:

- A proposed residential development of more than 500 dwelling units.

- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

P3 is not a residential development. P3 is an industrial plant that will have 17 employees and will occupy approximately 3 acres in the 36-acre MGS property. The project will convert approximately 600 square feet of the existing MGS warehouse for a new control room. Upgrades to the existing MGS administration building may include replacement of existing plumbing fixtures with new low-flow plumbing fixtures. The project will use less than 20 AFY of potable water for process water and domestic water needs.

According to the City of Oxnard UWMP (Kennedy Jenks, 2012), residential demand has ranged from approximately 117 to 148 gallons per capita per day (GPCD). The UWMP established a 10-year Baseline Daily Per Capita Water Use of 138.8 GPCD and a 2020 target of 132.4 GPCD. Assuming an average of 2 persons per dwelling unit, the estimated water demand for a 500-unit residential development would be approximately 150 AFY (i.e., 2 persons per dwelling unit × 132.4 GPCD × 500 units = 132,400 gallons per day = 148 AFY). This estimate is considered reasonable, because the Draft Environmental Impact Report for the North Shore at Mandalay Bay had estimated the average annual residential water use to be approximately 136 AFY for the proposed 364 single-family homes (Impact Sciences, 1998). P3 water use is well below this threshold requirement for a WSA.

4.15.5.3 Local

4.15.5.3.1 Water Quality Control Plans for the Los Angeles Basin

The basin plan was prepared by the LARWQCB in accordance with the criteria in the California Porter-Cologne Water Quality Control Act and other pertinent state and federal rules and regulations. The regional plan that sets the standards for compliance is the Los Angeles Basin – Region 4, Water Quality Control Plan.

Construction activities at the project site will be performed in accordance with an SWPPP and associated monitoring plan, which are required under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the SWRCB. Discharges of groundwater from construction dewatering to surface waters will be performed in accordance with the General NPDES Permit No. R4-2013-0095 administered by the LARWQCB. Project operations will be performed in accordance with the NPDES Permit Number CA000180 administered by the LARWQCB. The project's compliance with these permit requirements also achieves compliance with the Basin Plan.

4.15.5.3.2 City of Oxnard General Plan

The City of Oxnard General Plan (City of Oxnard, 2011) provides guidance on the types of development activity and allowable uses within the city limits. Chapter 2, Sustainable Community, addresses climate change and conservation as critical issues related to long-term sustainable development. Chapter 4, Infrastructure and Community Services, sets goals and policies for long-term water supply. Chapter 5, Environmental Resources, addresses the conservation, development, and use of natural resources, including water resources. Chapter 6, Safety and Hazards, addresses flooding, tsunami, hazardous materials and wastes, emergency preparedness, and other hazards.

The project will comply with the policies of this plan by complying with specific City requirements related to project design elements that minimize water use, drainage design, and water quality protection.

4.15.5.3.3 City of Oxnard Floodplain Management Ordinance, Chapter 18

This ordinance was established to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas throughout the City of Oxnard. Pursuant to this ordinance, Special Flood Hazard Areas (SFHAs) in the City are identified as areas having a special flood or flood-related erosion/sedimentation hazard, and shown on a FIRM or a County floodplain map as being in a 100-year floodplain. This ordinance defines methods to accomplish the goals of reducing flood losses, including restricting uses that are dangerous to health, safety, and property because of erosion or water hazards; requiring uses vulnerable to floods to be protected against flood damage at the time of construction; controlling the alteration of natural floodplains; controlling filling, grading, or dredging, which may increase flood damage; and preventing construction of flood barriers that will divert flood waters or increase flood hazards in other areas.

This ordinance also provides for standards of construction and standards for subdivisions in areas of special flood hazards. By complying with the requirements of the Flood Damage Prevention Ordinance, projects are considered to be in compliance with FEMA regulations.

The project is not in and will not impact any SFHA. The project site is designated as Other Flood Zone X, which is an area determined to be outside the 0.2 percent annual-chance floodplain (i.e., outside 500-year floodplain).

4.15.5.3.4 City of Oxnard Sewerage System Wastewater Disposal Ordinance Chapter 19, Article I

This ordinance sets forth uniform requirements for users of the City of Oxnard municipal wastewater system, and enables the city to comply with all applicable state and federal laws, including the CWA (33 USC Sections 1251 et seq.), general pretreatment regulations (40 CFR Part 403), and the requirements of the city's NPDES permit.

The project is in the unsewered potion of the City of Oxnard, and therefore will not discharge sanitary wastewater to the City's municipal wastewater system. Sanitary wastewater will be discharged to the existing MGS septic system.

4.15.5.3.5 City of Oxnard Water Waste Ordinance, Chapter 22, Article III

The Oxnard Municipal Code establishes a general obligation for the City to supply water to all properties in its jurisdiction. As the sole supplier in its jurisdiction, the City assumes a duty to supply water without discrimination to all its inhabitants who apply for water, under reasonable rules and regulations. The Municipal Code mandates that all "premises" (which would include the project) obtain a water service connection from the City.

The MGS has an existing water service connection from the City, which the proposed project will tie into. With the retirement of MGS Units 1 and 2, the amount of City water used will be substantially reduced with development of the project.

4.15.5.3.6 City of Oxnard Water Waste Ordinance, Chapter 22, Article VIII

This City of Oxnard ordinance prohibits waste or unreasonable use, or unreasonable method of use of water, and requires mandatory conservation of water on all persons using city water within and outside the city limits. This ordinance prohibits hose washing of hard surfaces, requires leaks to be repaired within 72 hours, prohibits excessive runoff, and restricts the timing and frequency of landscape irrigation.

The project will comply with this ordinance.

4.15.5.3.7 City of Oxnard Water Conservation Ordinance, Chapter 22, Article IX

The City of Oxnard's water conservation ordinance provides water shortage condition response procedures to minimize the effect of any existing or threatened water shortage conditions on customers and businesses in the city.

In the event that the City of Oxnard declares water shortage conditions, the project will comply with the mandatory water conservation measures, which may include delivery curtailment. The project has been designed to use a very small amount of water, less than 20 AFY. Evaporative coolers are only used occasionally (i.e., when ambient temperatures exceed 82 degrees Fahrenheit) for power augmentation. Although there would be a small loss in generating efficiency, the evaporative coolers can be turned off to further minimize water use. In addition, the project includes backup water storage. Service water will be stored on site in an existing 445,000-gallon service water tank that has sufficient capacity for 102 hours of operation at full-load peak demand. In addition, each of the two demineralized water storage tanks provides sufficient capacity for approximately 96 hours of peak-load operation, with evaporative cooling that would coincide with an outage of the water treatment system.

4.15.5.3.8 City of Oxnard Recycled Water Use Ordinance, Chapter 22, Article X

The intent of this City of Oxnard ordinance is that recycled water shall be used whenever it is available at a reasonable cost and of an adequate quality, because doing so is in the best interests of public health, safety, and welfare, and provides a beneficial use to customers and the community. The city council reserves the right to require customers to use recycled water in lieu of potable water for all approved uses, consistent with state law. This mandate applies to existing and potential new customers.

Recycled water is not available for the proposed project. The closest point of connection is at Ventura Road and Fifth Street in Oxnard. This would require installation of a new recycled water pipeline more than 4 miles along Fifth Street and Harbor Boulevard. Installation of this pipeline would be challenging due to the congested utility corridor along the right-of-way, several bridge crossings, and several large intersection crossings. Considering the very small amount of water needed by the project, installation of this pipeline would be considered economically infeasible.

4.15.5.3.9 City of Oxnard Stormwater Quality Management Ordinance, Chapter 22, Article XII

This City of Oxnard ordinance prohibits the discharge of any pollutant to navigable waters of the U.S. from a point source unless the discharge is authorized by a permit issued pursuant to the NPDES, required by CWA Section 402 (33 USC Section 1342), and by prohibiting nonstormwater discharges into the storm drain system.

The project will discharge process wastewater and stormwater from the site to the ocean via the existing MGS outfall, in accordance with the MGS NPDES permit. Stormwater from the curbed project areas has the highest likelihood of contacting pollutants. This stormwater will be conveyed to an oil/water separator, then to the onsite retention basins, prior to discharge to the ocean. The project does not discharge stormwater or nonstormwater to the City's storm drain system.

4.15.5.3.10 City of Oxnard Landscape Water Conservation Ordinance, Chapter 22, Article XIII

The City of Oxnard's landscape water conservation standards are mandatory for all new or altered landscaping with commercial and industrial construction projects, and residential construction projects that are subject to review by the planning division and or building and engineering services. The landscape area of projects proposing commercial or industrial uses shall be designed without the use of

turf, and with 100 percent water-wise plants. The exception to this is where a turf type is specified for any required bio-swale or bio-filter systems.

P3 will be constructed on approximately 3 acres that are within the MGS property boundary. No new or altered landscaping is proposed.

4.15.5.4 Industry Codes and Standards

With regard to water resources and the related project facilities, all construction will be in compliance with the LORS mentioned in this report section, and state and local building codes.

4.15.6 Involved Agencies and Agency Contacts

See Table 4.15-6, Agency Contacts, for agency contacts.

4.15.7 Permits Required and Permit Schedule

The water-related permits that are required for the project and their timing are identified in Table 4.15-7, Permits Required.

4.15.8 References

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Table 4.15-1
Monthly Temperature Data (°F) for Oxnard, California

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Monthly	55.8	56.4	57.5	58.9	61.2	64.0	66.9	67.1	66.4	64.0	59.7	55.7	61.2
Mean Maximum	65.3	65.3	65.7	68.0	70.2	73.2	73.4	73.6	72.4	72.4	69.1	65.2	69.1
Mean Minimum	46.2	47.5	49.3	50.7	54.3	57.7	60.5	60.8	59.3	55.5	50.4	46.2	53.2
Maximum	92	95	98	104	104	106	113	107	109	106	99	93	113
Minimum	26	28	30	36	43	46	50	50	49	40	29	25	25

Source: Western Regional Climatic Center; Oxnard, California, Station Number 0426569, Period of Record 1981 through 2010.

Note:

°F = degrees Fahrenheit

Table 4.15-2
Average Monthly Precipitation
(Oxnard, California)
(Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
3.52	3.77	2.31	0.91	0.28	0.07	0.20	0.05	0.14	0.63	1.48	2.53	15.89

Source: Western Regional Climatic Center; Oxnard, California, Station Number 0426569, Period of Record 1981 through 2010.

Table 4.15-3
MGS Historical Water Use and Wastewater Discharge

	Potable Water Use		Ocean Water Inflow		Total Discharge to Ocean[1]		Process Wastewater Discharge to Ocean	
Year	Million Gallons	Acre-feet	Million Gallons	Acre-feet	Million Gallons	Acre-feet	Million Gallons	Acre-feet
2010	12.6	38.6	15,601	47,753	15,610	47,781	9	28
2011	15.8	48.4	20,919	64,031	20,931	64,068	12	37
2012	25.0	76.5	28,101	86,015	28,118	86,067	17	52
2013	28.7	87.8	39,973	122,354	39,997	122,427	24	73
2014	19.0	58.2	24,178	74,007	24,193	74,053	15	46
Average	20.2	61.9	25,754	78,832	25,770	78,879	15	47
Minimum	12.6	38.6	15,601	47,753	15,610	47,781	9	28
Maximum	28.7	87.8	39,973	122,354	39,997	122,427	24	73

Source: NRG, 2015

Notes:

[1] Discharge numbers are slightly higher than inflows, and reflect process plant flows that include boiler blowdown, condenser overflow, and the retention basis discharge.

Table 4.15-4
Sea-Level Rise Predictions

Year	Low SLR	Medium SLR	High SLR
2030	2.3 inches	5.2 inches	8.0 inches
2060	7.4 inches	16.1 inches	25.3 inches
2100	17.1 inches	36.5 inches	58.1 inches

Source: ESA-PWA, 2013

Note:

SLR = Sea-Level Rise

Table 4.15-5
Summary of LORS – Water Resources

LORS	Administering Agency	Applicability	AFC Section
Federal			
CWA § 402; 33 USC § 1257 et seq.	SWRCB and LARWQCB	Requires states to set standards to protect water quality, which include regulation of stormwater discharges during construction and operation of power plant facilities.	4.15.1.3, 4.15.2.2 and 4.15.2.3
Resource Conservation and Recovery Act of 1976 (40 CFR Part 260 et seq.)	SWRCB, LARWQCB and DTSC	Seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.	4.6
Executive Order 11998	FEMA	Requires federally funded projects to provide increased flood protection	4.15.2.5
State			
CWC, Section 13170.2	SWRCB and LARWQCB	Requires the SWRCB to formulate and adopt a water quality control plan for ocean waters of the state that shall be known as the California Ocean Plan.	4.15.1.3, 4.15.2.3
CWC, Section 13260	SWRCB and LARWQCB	Requires filing with the SWRCB or appropriate RWQCB a report of waste discharge for any discharge that could affect the water quality of the state.	4.15.1.7, 4.15.2.3
CWC § 13552.6	LARWQCB	Use of potable domestic water for cooling towers is unreasonable use if suitable recycled water is available.	4.15-2.4

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
CWC, Sections 10910-10915 (also Senate Bill 610)		Requires public water systems to prepare WSAs for certain defined development projects subject to CEQA. Not applicable to the proposed project since project does not meet the definition or the intent of the code requiring a WSA.	4.15-5.2
Integrated Energy Policy Report (Pub. Resources Code, Div. 15, § 25300 et seq.)	SWRCB and CEC	In the 2003 Integrated Energy Policy Report, consistent with SWRCB Resolution 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating it will approve the use of fresh water for cooling purposes by power plants only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound."	4.15.2.4
SWRCB, Resolution No. 75-58		Addresses sources and use of cooling water supplies for power plants that depend on inland waters for cooling and in areas subject to general water shortages	4.15.2.4
SWRCB, Resolution No. 2009-0011		Encourages the beneficial use of recycled water to promote sustainable local water supplies.	4.15.2.4
Porter-Cologne Water Quality Act of 1972; CWC § 13000-14957, Division 7, Water Quality	SWRCB and LARWQCB	Requires SWRCB and RWQCBs to adopt water quality initiatives to protect state waters. Those criteria include identification of beneficial uses, narrative, and numerical water quality standards.	4.15.1.7, 4.15.2.3

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
CWC, Section 13550	SWRCB and LARWQCB	Requires the use of recycled water for industrial purposes subject to recycled water being available and upon other criteria such as the quality and quantity of the recycled water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources. Not applicable, because recycled water is not available near the P3 site and cost to install pipeline considering very small amount of water used by P3 would be unreasonable.	4.15.2.4
Title 17, CCR	County Department of Health Services	Requires prevention measures for backflow and cross connection of potable and nonpotable water lines.	4.15.2.4
Title 22, CCR	LARWQCB	Addresses the use of recycled water for cooling equipment. Requires the Department of Public Health to review and approve new or modified recycled water projects to ensure they meet all recycled water criteria for the protection of public health.	4.15.2.4
Title 23, CCR	LARWQCB	Requires the RWQCB to issue waste discharge requirements specifying conditions for protection of water quality.	4.15.1.7, 4.15.2.3
CWC §13260 – 13269; 23 CCR Chapter 9	SWRCB and LARWQCB	Requires the filing of a Report of Waste Discharge and provides for the issuance of Waste Discharge Requirements with respect to the discharge of any waste that can affect the quality of the waters of the state.	4.15.1.7, 4.15.2.3

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
California Executive Order S-3-05 and Executive Order S-13-08		Sets forth guidance on SLR	4.15.2.5
Local			
City of Oxnard General Plan, Sustainability Community, Policy SC-2.2 Sea Level Monitoring System: Consider installation of a sea-level monitoring system that detects small changes to coastal sea level and tidal change.	City of Oxnard	Sets forth guidance on SLR monitoring and implementing Adaptive Management Plans.	4.15.1.5, 4.15.2.5
City of Oxnard General Plan, Sustainability Community, SC-2.3 Sea-Level Rise Consideration in Decision-Making Ensure that all planning, public works, and related decisions take rising sea level into consideration and take steps to reduce risk of damage or loss of life and property.	City of Oxnard	Requires projects to take SLR into consideration.	4.15.1.5, 4.15.2.5
City of Oxnard General Plan, Sustainability Community, SC-2.4 Avoidance of Coastal Armoring or Hardening Wherever feasible, avoid coastal armoring or hardening in new development or in mitigating current and future risk to existing development.	City of Oxnard	The project site is already protected by existing beach dunes; no coastal armoring or hardening is anticipated.	4.15.2.5
City of Oxnard Floodplain Management Ordinance, Chapter 18	City of Oxnard	Provides provisions for standards of construction for projects located in SFHA in the City. Project site is not in SFHA.	4.15.1.5, 4.15.2.5
City of Oxnard Sewerage System Wastewater Disposal Ordinance Chapter 19, Article I.	City of Oxnard	Sets forth requirements for users of the City of Oxnard municipal wastewater system. Not applicable, because project site is located in unsewered portion of City.	4.15.1.7, 4.15.2.3

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
City of Oxnard Water Waste Ordinance, Chapter 22, Article III	City of Oxnard	Establishes a general obligation for the City to supply water to all properties in its jurisdiction.	4.15.2.4
City of Oxnard Water Waste Ordinance, Chapter 22, Article VIII	City of Oxnard	Prohibits waste or unreasonable use of water and requires mandatory conservation using City water.	4.15.5.3
City of Oxnard Water Conservation Ordinance, Chapter 22, Article IX	City of Oxnard	Provides procedures for City to issue water conservation measures in the event that City declares water shortage conditions.	4.15.5.3
City of Oxnard Recycled Water Use Ordinance, Chapter 22, Article X	City of Oxnard	Requires customers to use recycled water in lieu of potable water whenever it is available at a reasonable costs and of adequate quality.	4.15.2.4
City of Oxnard Stormwater Quality Management Ordinance, Chapter 22, Article XII	City of Oxnard	Prohibits discharge of pollutants to navigable waters of the U.S. unless discharge is authorized by NPDES permit and prohibits nonstormwater discharges to the City's storm drain system.	4.15.1.7, 4.15.2.3
City of Oxnard Landscape Water Conservation Ordinance, Chapter 22, Article XIII	City of Oxnard	Sets forth landscape water conservation standards for all new or altered landscaping.	4.15.5.3

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
City of Oxnard General Plan, Infrastructure and Community Services, ICS-11.6 Water Conservation and/or Recycling Connection as Mitigation Require the use of water conservation offset measures (efficient low flow fixtures and irrigation systems, drought tolerant landscaping, leak detection programs, water audits, and public awareness and education programs) and/or proportional contributions to recycled water production and/or conveyance infrastructure related to the GREAT Program as mitigation for water supply shortage as determined by a WSA, CEQA documentation, or similar analysis as part of new or master plan development review.	City of Oxnard	Requires projects to incorporate water conservation offset measures.	4.15.2.4
City of Oxnard General Plan, Infrastructure and Community Services, ICS-11.7 Water Wise Landscapes Promote water conservation in landscaping for public facilities and streetscapes, residential, commercial and industrial facilities and require new developments to incorporate water conserving fixtures (low water usage) and water-efficient plants into new and replacement landscaping.	City of Oxnard	Project does not include new or replacement landscaping since it will be constructed entirely within the MGS property.	4.15.5.3
City of Oxnard General Plan, Infrastructure and Community Services, ICS-11.12 Water for Irrigation Require the use of nonpotable water supplies for irrigation of landscape and agriculture, whenever available.	City of Oxnard	Project does not include new or replacement landscaping since it will be constructed entirely within the MGS property.	4.15.5.3

Table 4.15-5
Summary of LORS – Water Resources (Continued)

LORS	Administering Agency	Applicability	AFC Section
City of Oxnard General Plan, Infrastructure and Community Services, ICS-12.1 Water Recycling and Resource Recovery Require water recycling and resource recovery where possible in industrial operations to minimize sewer flows and sewer treatment demands.	City of Oxnard	Although the proposed project does include water recycling, this LORS is not applicable, since the proposed project does not discharge to the City of Oxnard sewer system.	4.15.1.7, 4.15.2.3
City of Oxnard General Plan, Infrastructure and Community Services, ICS 13.1 100-year Floodplain Discourage development, major infill, and structural improvements (except for flood control purposes) within the 100-year floodplain as regulated by FEMA. Recreational activities that do not conflict with habitat uses may be permitted within the floodplain.	City of Oxnard	The proposed project is not located in a FEMA-designated 100-year floodplain.	4.15.2.5
City of Oxnard General Plan, Infrastructure and Community Services, ICS 13.2 Adequate Storm Drains and NPDES Discharge Treatment Provide storm drainage facilities with sufficient capacity to protect the public and property from the appropriate storm event and strive to meet stormwater quality discharge targets set by NPDES and related regulations.	City of Oxnard	The proposed project does not discharge to the City of Oxnard storm drainage facilities.	4.15.1.7, 4.15.2.3

Notes:

AFC = Application for Certification
CCR = California Code of Regulations
CEC = California Energy Commission
CEQA = California Environmental Quality Act
CFR = Code of Federal Regulations
CWA = Clean Water Act
CWC = California Water Code
DTSC = Department of Toxic Substances Control
FEMA = Federal Emergency Management Agency
LARWQCB = Los Angeles Regional Water Quality Control Board
LORS = laws, ordinances, regulations, and standards
MGS = Mandalay Generating Station
NPDES = National Pollutant Discharge Elimination System
P3 = Puente Power Project
RWQCB = Regional Water Quality Control Board
SFHA = Special Flood Hazard Areas
SLR = Sea-Level Rise
SWRCB = State Water Resources Control Board
USC = United States Code
WSA = water supply assessment

Table 4.15-6
Involved Agencies and Agency Contacts

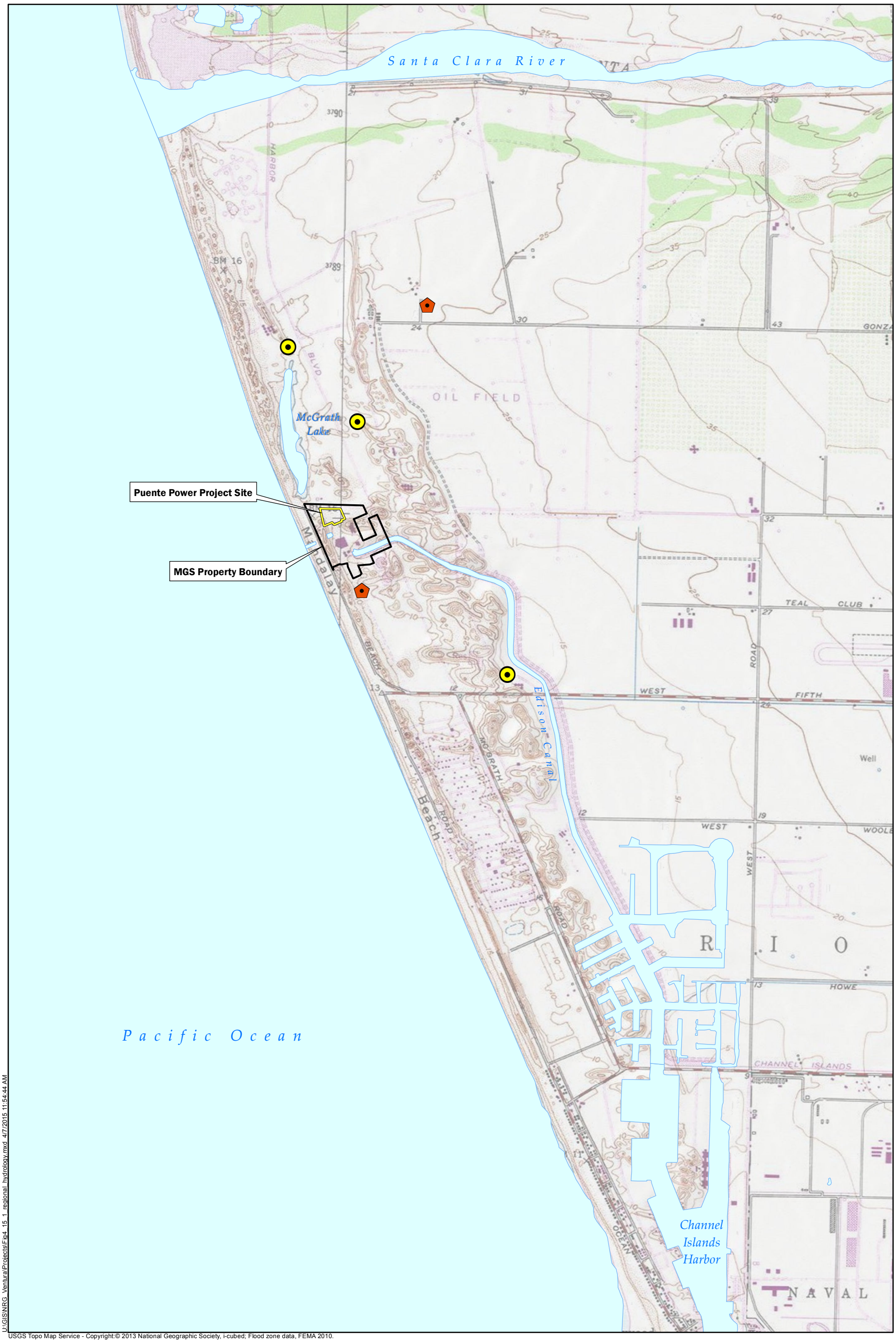
Issue	Agency	Contact/Title	Telephone	E-mail
Update/Renew NPDES Discharge Permit CA0001180	LARWQCB	Rosario Aston Water Resources Control Engineer	(213) 576-6653	Rosario.Aston@waterboards.ca.gov
Water Supply	City of Oxnard	Matthew Winegar, Development Services Director	(805) 385-7896	

Notes:
NPDES = National Pollutant Discharge Elimination System
LARWQCB = Los Angeles Regional Water Quality Control Board

Table 4.15-7
Water Resources Permits Required and Permit Schedule

Responsible Agency	Permit/Approval	Schedule
Los Angeles RWQCB	Construction Activities Stormwater General Permit; California RWQCB Water Quality (Addresses stormwater during construction)	30 days prior to construction
Los Angeles RWQCB	Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties	30 days prior to construction activities that require dewatering
Los Angeles RWQCB	Waste Discharge Requirements for Discharges of Low-Threat Hydrostatic Test Waters to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties	30 days prior to construction activities that require discharge of hydrostatic test waters
Los Angeles RWQCB	Revised NPDES Waste Discharge Permit; California RWQCB Water Quality (Addresses wastewater and stormwater discharges during plant operation).	30 days prior to start of plant operations

Notes:
NPDES = National Pollutant Discharge Elimination System
RWQCB = Regional Water Quality Control Board



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Water well

Cluster of water wells

Note:
1. Well locations from GeoCheck® (EDR, 2015)

0 1,000 2,000 FEET

REGIONAL HYDROLOGIC SETTING

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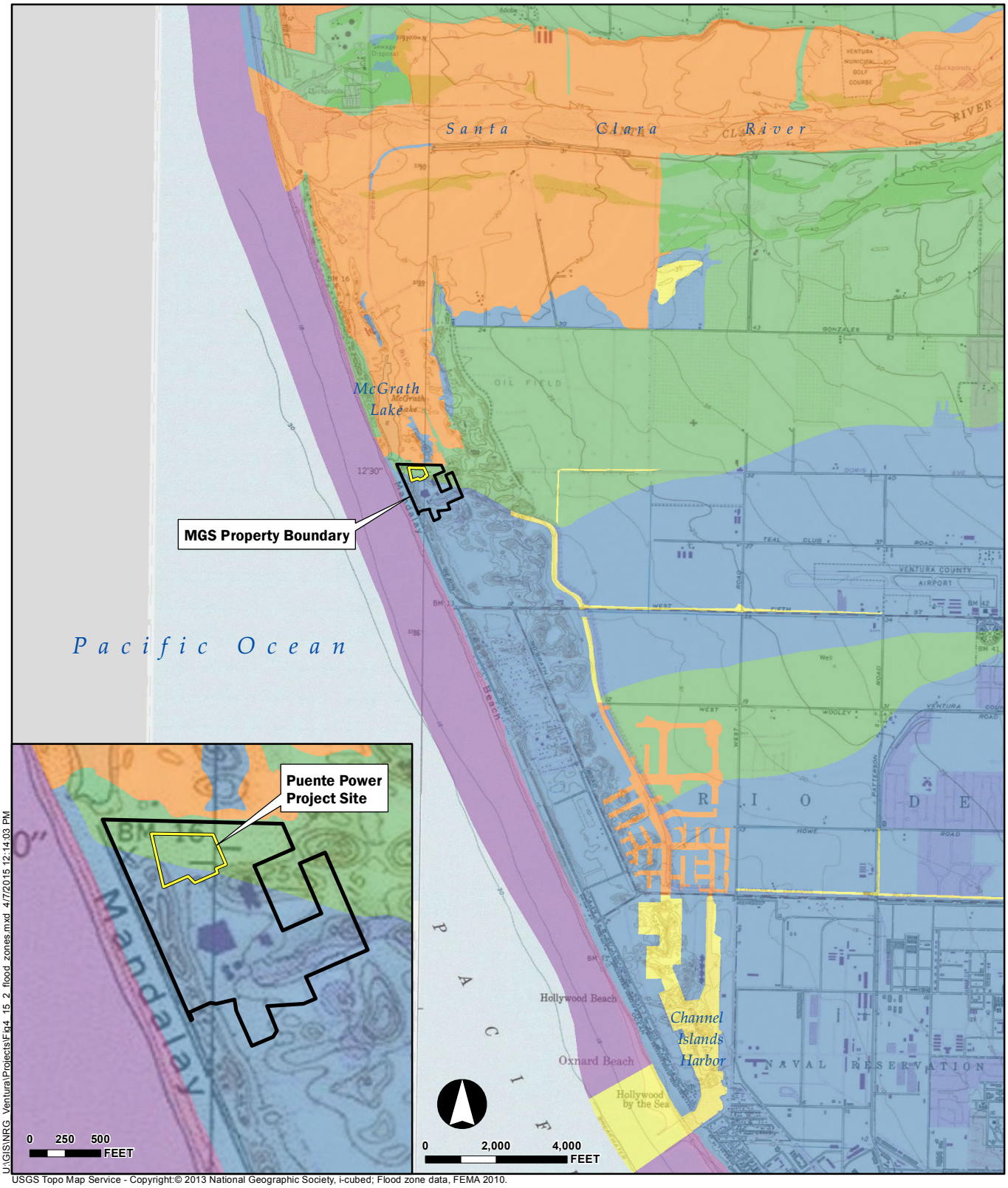
Puente Power Project
April 2015 Oxnard, California

FIGURE 4.15-1



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Special Flood Hazard Areas subject to the 1% Annual Chance Flood:

- Zone A – No Base Flood Elevation determined
- Zone AE – Base Flood Elevation determined
- Zone VE – Coastal Flood Zone

Other areas:

- Other Flood Area X – Areas of 0.2% annual chance flood
- Other Area X – Areas determined to be outside the 0.2 % annual chance floodplain

FLOOD INUNDATION AREAS

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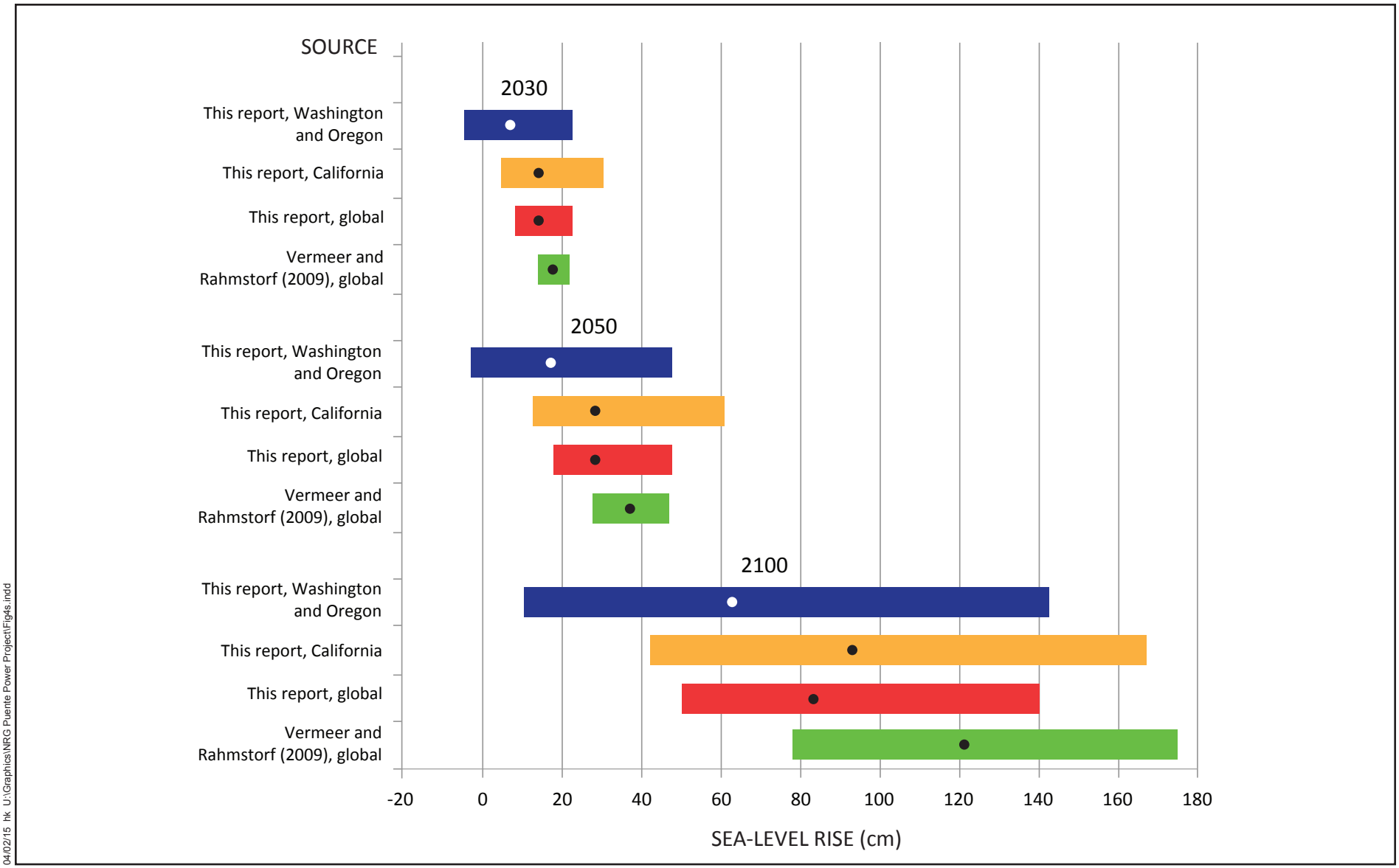
FIGURE 4.15-2



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Source: Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, National Academy of Sciences, 2012.

Note:
1. Committee's projected sea-level rise for California, Oregon, and Washington compared with global projections. The dots are the projected values and the colored bars are the ranges. Washington and Oregon = coastal areas north of Cape Mendocino; California = coastal areas south of Cape Mendocino.

NRC SEA LEVEL RISE PROJECTIONS

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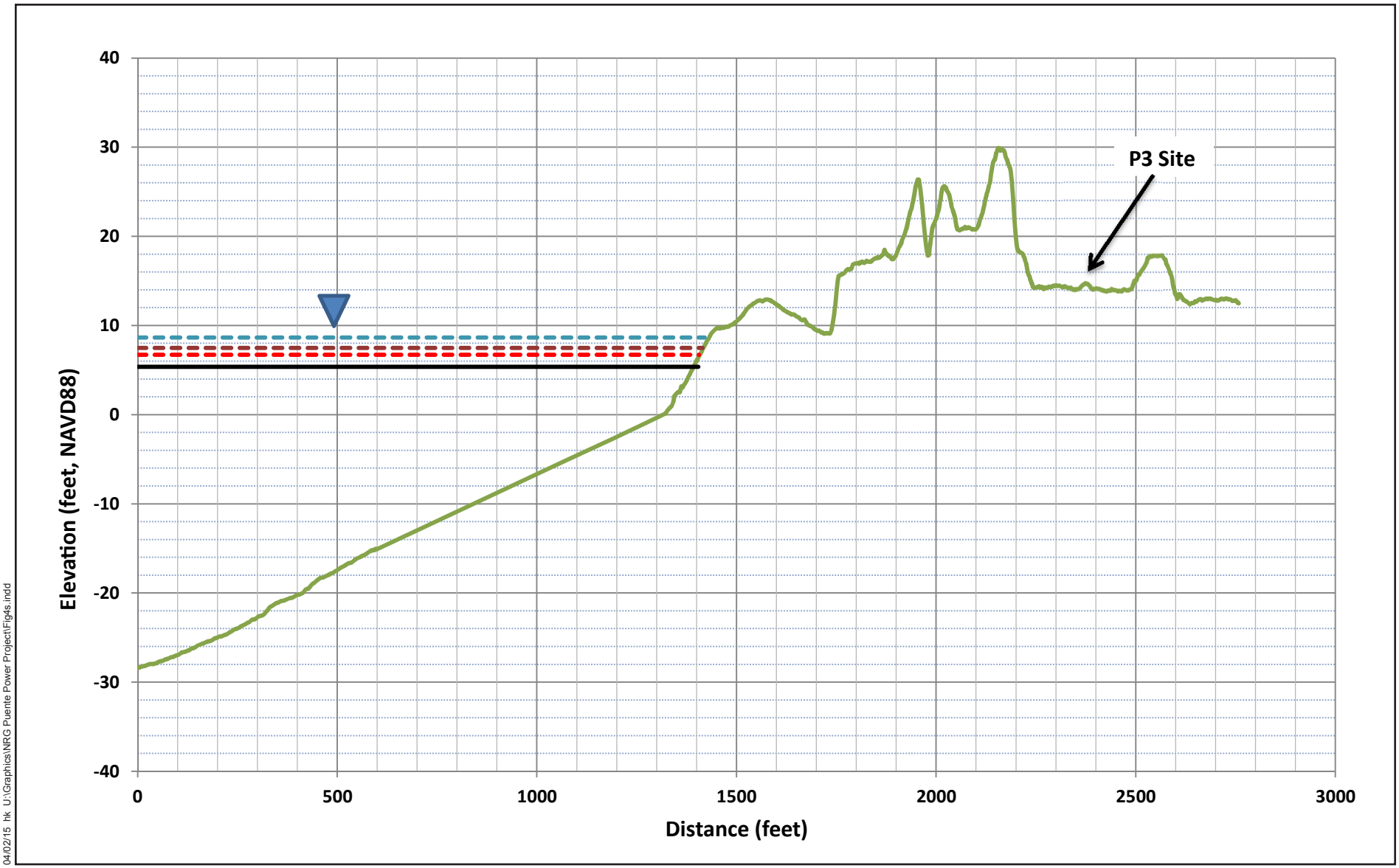
FIGURE 4.15-3



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Beach and Dunes Profile at P3 Site

Existing MHHW

MHHW+Low SLR

MHHW+Medium SLR

MHHW+High SLR

Notes:
1. MHHW=Mean Higher High Water
2. SLR=Sea Level Rise

OCEAN WATER LEVELS AND SEA LEVEL RISE

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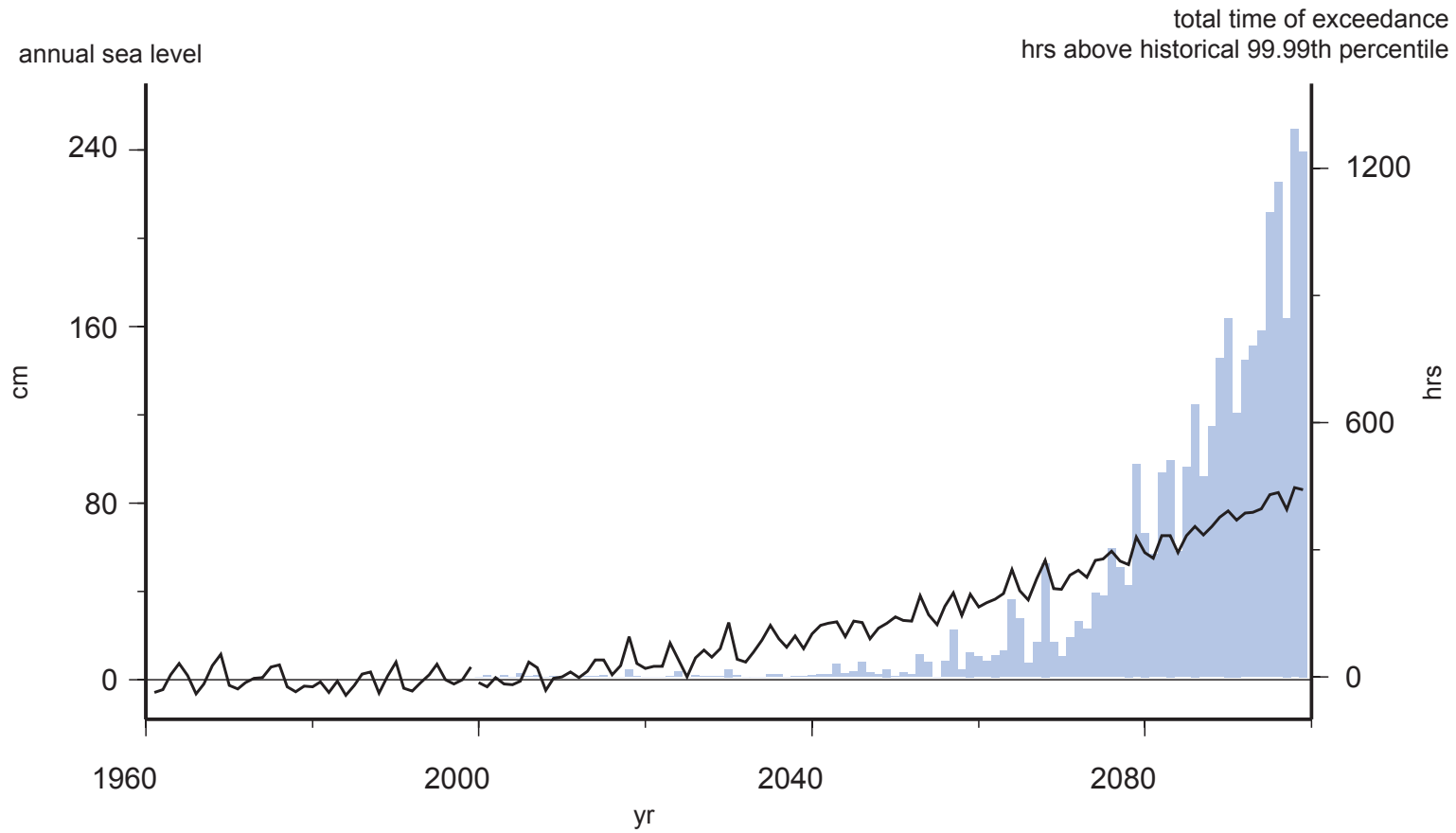
Oxnard, California

April 2015

FIGURE 4.15-4



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Source: Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, National Academy of Sciences, 2012.

Note:
1. Projected number of hours (blue bars) of extremely high sea level off San Francisco under an assumed sea-level rise and climate change scenario. In this exercise, a sea-level event registers as an exceedance when San Francisco's projected sea level exceeds its recent (1970–2000) 99.99th percentile level, 1.4 m above historical mean sea level. In the recent historical period, sea level has exceeded this threshold about one time (1 hour) every 14 months. Sea-level rise (black line) during 1960–1999 was arbitrarily set to zero, then increased to the committee's projected level for the San Francisco area over the 21st century (92 cm). SOURCE: Adapted from Cloern et al. (2011).

PROJECTED NUMBER OF HOURS OF EXTREME HIGH SEA LEVELS

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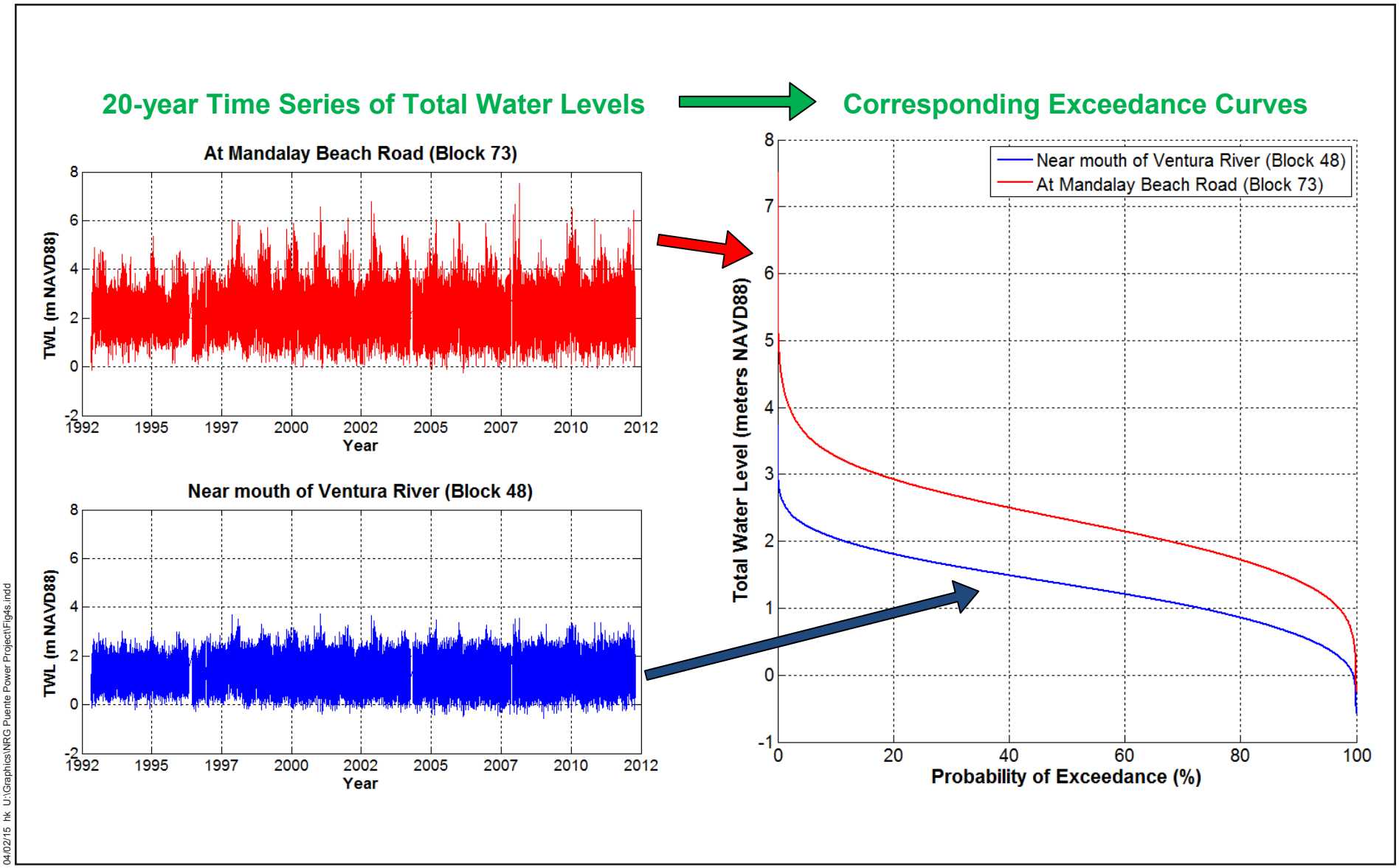
FIGURE 4.15-5



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Source: Final COASTAL RESILIENCE VENTURA Technical Report for Coastal Hazards Mapping, ESA PWA, July 2013.

Note:
1. This example shows the existing total water level exceedance curves for a region with a relatively flat beach (at the mouth of the Ventura River) and a region with a relatively steep beach (near Mandalay Beach Road).

TOTAL WATER LEVEL EXCEEDANCE CURVES

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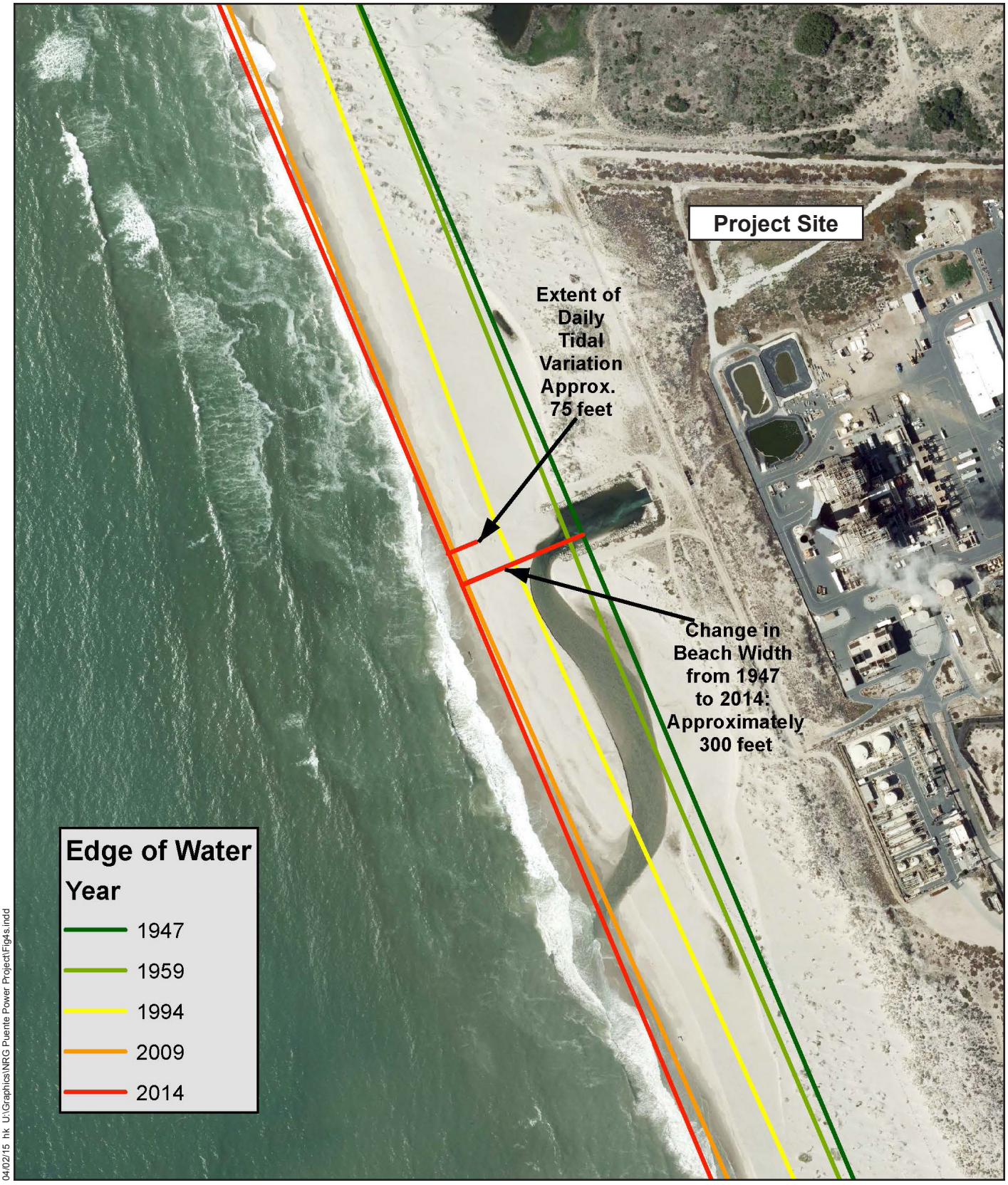
FIGURE 4.15-6



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Note:
1. Beach position as shown on aerial photographs from 1947-2014.

Not to Scale

MANDALAY BEACH 1947 – 2014

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FIGURE 4.15-7