

VENTURA WATER SUPPLY PROJECTS

Draft Environmental Impact Report
SCH No. 2017111004

Prepared for
Ventura Water
501 Poli Street, Room 120
Ventura, CA 93002-0099

March 2019



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EXECUTIVE SUMMARY

Ventura Water Supply Projects DEIR

ES.1 Introduction

To comply with the California Environmental Quality Act (CEQA) of 1970, the City of San Buenaventura (Ventura, or City) has developed the Ventura Water Supply Projects Environmental Impact Report (EIR). The City is proposing to implement the Ventura Water Supply Projects (proposed projects) to protect the ecology of the Santa Clara River Estuary (SCRE), develop additional water supply sources to meet water demands for planned future growth, and enhance supply reliability even in drought years. The proposed projects would achieve the goals of protecting the ecology of the SCRE while augmenting local potable water supplies.

The proposed projects would be implemented in two phases. The first phase (Phase 1) would divert tertiary-treated water, which currently flows into the SCRE, to the VenturaWaterPure Project for additional treatment, protecting the ecology of the SCRE and to providing a new potable water supply. The second phase (Phase 2) would provide additional needed water supply if Phase 1 is insufficient to meet the needs of planned growth. Phase 1 is evaluated at a “project level” since its implementation would occur as the priority water supply project. Phase 2 would only be implemented if the amount of recycled water available is less than future potable demands. If Phase 2 is needed to meet future water demands, then additional project-level CEQA review would be required to evaluate its implementation.

This Draft EIR has been prepared in compliance with the CEQA (as amended), codified at California Public Resources Code Sections 21000 et seq. and the CEQA Guidelines in the California Code of Regulations, Title 14, Division 6, Chapter 3.

ES.2 Background

One objective of the proposed projects is to protect the ecology of the SCRE. Ventura Water is party to a Consent Decree¹ for the protection of the SCRE. The Consent Decree expresses the City’s commitment to pursue “environmentally protective, sustainable, and integrated water supply and wastewater discharge practices. . . [including] infrastructure options for Ventura’s reclamation and diversion of an ecologically appropriate volume”² of tertiary-treated flows

¹ The *Tertiary Treated Flows Consent Decree and Stipulated Dismissal with the Wishtoyo Foundation Ventura Coastkeeper, Heal the Bay* filed with the U.S. Central California District Court February 3, 2012, executed among the City, the Wishtoyo Foundation/Ventura Coastkeeper, and Heal the Bay.

² *Id.* at 5.

produced by the existing VWRF and currently discharged to the SCRE. The Consent Decree requires such diverted flows to be dedicated to “water reclamation uses,” including local water supply augmentation to the maximum extent feasible. The Consent Decree does not replace any federal, state, or local law or permit requirement, and its implementation is subject to the completion of environmental review, including this EIR.

Another objective of the proposed projects is to develop a reliable potable water supply. The City’s water and wastewater department (Ventura Water) provides water and wastewater services to approximately 109,000 residents and businesses within the city limits and provides water service to some limited areas within unincorporated Ventura County. The City provides wastewater collection and treatment services for approximately 98 percent of city residences as well as McGrath State Beach Park and the north coast communities (County Service Area No. 29).

In June 2016, the City Council adopted the City’s 2015 Urban Water Management Plan (UWMP), which identifies water supplies needed to meet existing and future water demands in normal and dry years. The UWMP concludes that the City’s existing water supplies may be insufficient to meet future dry year demands. As discussed in greater detail in Chapter 1, a total of 5,398 acre-feet per year (AFY) of additional supplies (potable reuse and desalination) are needed between 2030 and 2035 to meet projected dry-year demands. In the 2016 water year, the Ventura Wastewater Reclamation Facility (VWRF) discharged approximately 4.7 MGD during the dry season to the SCRE. The VenturaWaterPure Project would maximize the diversion of this discharge to augment the City’s potable water supplies.

Therefore, the City is proposing to divert discharge of tertiary treated wastewater from the SCRE in order to protect the ecology of the SCRE in accordance with the Consent Decree, and to develop reliable potable water supplies for the Ventura Water service area. In addition, to improve potable water quality, a portion of the City’s existing groundwater supplies may be treated to meet secondary MCLs. If sufficient water is not available from the diversion of discharge, the City may also need to develop desalination facilities to meet 2035 water needs.

ES.3 Proposed Diversion Volume and Continued Discharge Level

The City has conducted extensive analysis of the SCRE, including estimated ecological effects of reduced discharges on the SCRE. This analysis is compiled in several reports and reviews mandated by the Consent Decree, including the Phase 1, 2, and 3 Studies, the Technical Review Team (TRT) Report, and the Scientific Review Panel (SRP) Final Report and the TRT review supporting the conclusions and recommendations in the SRP Final Report. The findings of the reports and reviews are discussed in Section 1.6 and the analysis is used to support a proposed diversion volume and continued discharge level.

The SRP Final Report (supported by the TRT Review) recommends a Continued Discharge Level (CDL) range of 0 – 0.5 MGD (on an average annual basis) during closed berm conditions. This conclusion was founded on the beneficial effects of discharge reduction to ecological conditions

in the SCRE. Based on the SRP's recommendation, Phase I of the proposed project would reduce discharges to the SCRE to an average annual rate of 0 to 0.5 MGD during closed berm conditions.

During winter months, reflecting the steelhead migratory period, when the berm is open due to high Santa Clara River flows, higher discharges of tertiary flow to the SCE would be permitted, subject to diverting 6 MGD to the Advanced Water Purification Facility (AWPF) (after completion of Phase 1) first to provide a steady, constant influent flow for purification. Higher discharges of tertiary treated flow in excess of the CDL would occur in limited circumstances when necessary to create or maintain maximum storage capacity within the system for purposes such as: protecting system operations during exceptional or multiple rain events; or drawing down stored flows to assure sufficient storage capacity during closed berm conditions.

The anticipated discharge regime for the project is subject to emergency discharges at any time when capacity of the VWRf is exceeded, as necessary to prevent inundation, flooding, and/or spills at the treatment plant, to effect repairs and maintenance required to assure consistent compliance with other water quality limitations in the permit, or to protect public health and safety. Anticipated, scheduled repairs, maintenance and public health and safety activities shall be conducted during open berm conditions to the maximum extent feasible. Short-term emergency discharges of tertiary treated flow to the SCRE in such situations would not be expected to adversely affect beneficial uses."

Since the publication of the SRP Final Report, the City has met with and received feedback on the proposed projects from state and federal wildlife agencies, as discussed further in Section 2.4. Based on the scientific record and feedback from the agencies, the City is proposing additional phasing to the implementation approach that would commit to a CDL of 1.9 MGD by the end of year 2025, with a planned reduction to a CDL of 0 to 0.5 MGD during closed berm conditions by the end of year 2030. This phased implementation approach, as summarized in **Table ES-1**, is the basis of the proposed project's designed flow rate and minimum treatment capacity. As VWRf flows increase in the future, the CDLs will be maintained and more flow will be diverted to other uses.

TABLE ES-1
PHASES 1A AND 1B DISCHARGE AND DIVERSION SCENARIOS

	VWRf continued discharge level (CDL) to SCRE	Minimum VWRf flow diverted to other uses ⁽¹⁾
	MGD	MGD
Phase 1a: Implemented by 2025	1.9	2.8
Phase 1b: Implemented by 2030	0 – 0.5	4.2 – 4.7

1. Based on discharge data from 2016 during low flow, dry weather conditions. As VWRf flows increase there will be additional flows diverted, while CDL will be maintained.

SOURCE: Stillwater Sciences 2018

During closed-berm conditions, for Phase 1A, an average annual continued discharge level (CDL) of 1.9 MGD to the SCRE would be maintained pursuant to recommendations of USFWS, NMFS, and CDFW, based upon their review and analysis of the Phase 3 Estuary Study, the SRP Report,

and the TRT recommendations. It is anticipated that the compliance schedule in the VWRF NPDES permit renewal (scheduled for issuance this year) will establish an interim discharge limitation for flows to the SCRE of 1.9 MGD on an average annual basis, to be attained as soon as practicable, but not later than the end of 2025, based on the recommendations of USFWS, NMFS, and CDFW. For Phase 1B, a reduction in the CDL to 0 to 0.5 MGD on an average annual basis would be attained, based on the combined recommendations of the SRP, TRT, USFWS, NMFS, and CDFW, and subject to oversight by USFWS, NMFS and CDFW. It is anticipated that the compliance schedule in the VWRF NPDES permit renewal (scheduled for issuance this year) will establish a final discharge limitation for flows to the SCRE not to exceed 0.5 MGD on an average annual basis, to be attained as soon as practicable, but not later than the end of 2030, based on these recommendations and subject to such oversight.

ES.4 Project Objectives

The key objectives of the proposed Ventura Water Supply Projects are:

- Augment local water supply in an environmentally responsible and cost-efficient manner.
- Provide a drought- and disaster-resilient water supply.
- Protect, maintain, and improve ecological resources and related beneficial uses of the SCRE and its watershed.
- Improve municipal supply groundwater quality within the service area.
- Maintain compliance with the City of Ventura's VWRF NPDES permit.

ES.5 Project Description

The Ventura Water Supply Projects – Design Capacity

The Ventura Water Supply Projects would divert tertiary-treated water discharge before it enters the SCRE, and develop new water supplies to augment the City's water supply portfolio and meet future water demands described in the 2015 UWMP and 2018 CWRR. Consistent with the City's 2015 UWMP, approximately 5,400 AFY of new water supply is needed by 2035 to meet the projected water demand.

VWRF effluent flows have varied historically based on hydrologic condition, season, and level of conservation. The new treated water supply is based conservatively on the 2016 (drought condition) flow condition used for the Phase 3 studies, and the required CDLs for Phase 1a, 1b and 2. However, to meet the CDL requirements the capacity of the AWPf must be greater to accommodate the variation in wastewater flows that have been observed in the historical record. The estimated total capacity for diversion and discharge to the SCRE (CDL) needs to be approximately 6.5 mgd. Therefore, at a CDL of 0.5 mgd, the required AWPf capacity is 6 mgd. A 6 mgd AWPf would have the capacity to produce up to 5400 AFY even though the available flows to divert may not always reliably provide that much supply.

Table ES-2 shows the AWPf production objectives by phase, including new water supply resulting from diversion and treatment of SCRE discharge for potable reuse, groundwater water quality improvements, and (if consistent diversion of 100 percent of discharge is not permitted during Phase 2) ocean desalination, for all phases of the Ventura Water Supply Projects. Also shown in Table ES-2 is the expected reliable water supply generated from each source.

TABLE ES-2
POTABLE WATER SUPPLIES AND AWPf PRODUCTION OBJECTIVES

Phase/Component	Treated Groundwater (Annual Average)		Minimum New Treated Water Supply (Annual Average)	
	AFY	MGD	AFY	MGD
Phase 1				
Phase 1a by 2025 (CDL of 1.9 MGD)	1,400	1.2	2,800	2.5
Phase 1b by 2030 (CDL of 0 – 0.5 MGD)			1,200	1.1
Phase 1 Total New Water Supply	1,400	1.2	4,000*	3.6*
Phase 2: One Option Would Be Implemented				
Option A: 100 Percent Diversion (CDL of 0 MGD)	600	0.5	1,400*	1.2*
Option B: Desalination	600	0.5	1,400	1.2
Phase 1+2 Total New Water Supply	2,000	1.7	5,400	4.8

* Phase 1 total reliable water supplies would be a minimum of 4,000 AFY when discharge to the SCRE is at or near 0.5 MGD CDL (at 90 percent diversion of 2016 dry flows). When diversion approaches 100 percent, and the discharge to the SCRE is at or near 0 MGD CDL, Phase 1 water supplies would be higher because more water would be diverted from the SCRE to the AWPf. For purposes of reliability, the new water supply listed here from Phase 1b represents a conservative reliable supply volume. These numbers are based on 2016 dry flow conditions in a drought year. As VWRf flows increase there will be additional flows diverted for water supply, while the CDL will be maintained. Phase 2 Option A would implement a consistent 0 MGD CDL during closed berm conditions, resulting in a reliable future water supply of 5,400 AFY and 4.8 MGD.

SOURCE: Carollo 2018

The reliable new supplies summarized in Table ES-2 are calculated using the 2016 dry flow conditions as worst case flow conditions while limiting discharges through the existing wildlife ponds to the SCRE to meet the phased CDL requirements. The Phase 1 project would be designed to deliver a minimum reliable supply of 4,000 AFY, and the Phase 1 facility would also be designed to accommodate higher influent flows (up to 4 mgd for Phase 1a and 6 mgd for Phase 1b) to account for daily and monthly flow variability while still meeting the annual average CDL requirements during closed berm condition. As VWRf flows increase in the future, the CDL would be maintained and more flow would be diverted to the AWPf, dictating that the initial capacity be sized for greater than the minimum supply volume.

The diverted water to the AWPf would receive advanced treatment, producing a reliable minimum of approximately 3.6 MGD, or 4,000 AFY, of new potable water to be added to the water supply in Phase 1. Phase 1 would produce a range of 1.2 – 1.7 MGD concentrate discharge during the advanced water treatment process.

The AWPf would be also designed to include additional treatment capacity to desalt and treat an additional 1.2 MGD (1,400 AFY) of groundwater from the Oxnard Plain Basin for Phase 1. The City's potable water supply that originates from their groundwater wells does not currently meet

secondary MCLs. The California Division of Drinking Water (DDW) (formerly the California Department of Public Health) has required the City to improve mineral water quality in the groundwater supply (CDPH 2011). The City has calculated that the addition of approximately 1.2 MGD (1,400 AFY) of purified groundwater, in conjunction with the new potable reuse supply, would provide sufficient blending of existing groundwater supplies to improve delivered potable water supply with the objective of meeting the secondary MCLs. The amount of desalted groundwater needed to meet objectives for Phase 2 would expand to 2,000 AFY.

Combining the 4,000 AFY of reliable recycled water with the 1,400 AFY of treated groundwater, the Phase 1 AWPf treatment would reliably produce a minimum of 4.8 MGD (5,400 AFY) of purified water for potable distribution and use. The groundwater supplies would be from existing groundwater allocation that the City has rights to and would not constitute a new water supply. As a result, the Phase 1 reliable new supply of 4,000 AFY remains approximately 1,400 AFY below the future 2035–2040 dry-weather demand deficit of 5,400 AFY identified in the UWMP.

To meet its projected water needs, the City would need to implement Phase 2 of the project, which would include either increasing the diversion of tertiary treated wastewater to a consistent CDL of 0 (100 percent diversion), or constructing an ocean desalination facility. Phase 2 Option A would increase the minimum production of a new reliable water supply to 5,400 AFY of from the VWRf. This would be the preferred option subject to regulatory approvals.

If Option A is not approved and or does not meet the City's water supply needs, a new ocean desalination facility would be constructed (Option B). This addition of 1,400 AFY of new reliable water supply, when added to the 4,000 AFY of new water supply from Phase 1, would result in a total of approximately 5,400 AFY of reliable new water supply compared with current supplies. In Phase 2, an additional 600 AFY of groundwater desalting would be needed to meet secondary MCLs.

The combined Phase 1 and Phase 2 AWPf would be designed to produce 6.7 MGD (7,400 AFY), including 5,400 AFY of new water supply, and 2,000 AFY of treated groundwater as summarized in Table ES-2.

The Ventura Water Supply Projects – Phase 1 Components

VenturaWaterPure Project Overview

VenturaWaterPure would include diversion of the VWRf tertiary-treated flows and low-quality groundwater to a new AWPf to produce highly purified water. The groundwater would be pumped from the Oxnard Plain Basins. Once treated at the AWPf, the water would be used for groundwater augmentation and/or direct potable reuse.

The diverted VWRf tertiary-treated discharge would be conveyed to the AWPf for purification, and then conveyed via pipelines and pumping stations to groundwater injection wells to supplement the City's water supply for indirect potable reuse (IPR), or conveyed directly to the Bailey WCF and/or the Saticoy WCF for disinfection and distribution for direct potable reuse (DPR).

IPR would be implemented through the construction of groundwater wells, pipelines, and pump stations (needed for injection, extraction, and /or conveyance). Extracted groundwater would be conveyed to the Bailey WCF for disinfection and/or to an existing reservoir for distribution. Alternatively, the extracted groundwater would be disinfected at the point of extraction and conveyed to a nearby water distribution system pipeline.

The system would also be constructed so that DPR may be employed as an option if approved by the State Water Resources Control Board (SWRCB) consistent with regulations currently under development by the SWRCB.

Advanced Water Purification Facility

The proposed AWPf would be located within the City of Ventura or in nearby unincorporated Ventura County within a 5- to 20-acre site. Three alternative AWPf locations have been identified, referred to as the Harbor Boulevard site, Transport Street site, and Portola Road site. Water would be stored in equalization basins at the VWRf site and pumped to the AWPf site for treatment. Tertiary treated water would be diverted prior to the existing wildlife ponds, however, flows would remain to the ponds to maintain their use and character. Flows out of the existing wildlife ponds would be managed to meet the CDL requirements into the estuary.

The proposed AWPf would treat water to exceed Title 22 compliance criteria and would include equalization/storage, ozone (O₃), biologically active carbon (BAC) filters, ultrafiltration (UF), reverse osmosis (RO), and ultraviolet/advanced oxidation process (UV/AOP). For DPR, product water would enter an engineered storage buffer (ESB) followed by an additional UF and final disinfection.

An electrical substation would be constructed on the AWPf to connect to the surrounding grid and support the energy demands of the treatment process. Chemicals used in the treatment process would be stored in a secure chemical storage area on the AWPf site. An administration building and workers' parking area would be constructed on-site to accommodate operation workers. Delivery truck access, truck parking, and unloading areas would be accommodated on the AWPf site. In addition, the AWPf would include a wet weather storage facility with a capacity of 4.5 MG that would provide storage during periods of high flows when the SCRE mouth (berm) is closed and not yet breached.

A concentrate waste stream would be produced during the RO treatment process. A concentrate pump station would be constructed on the AWPf site to convey concentrate back to the VWRf where it will be pumped either to the new ocean outfall or to the Calleguas Salinity Management Pipeline (SMP). The RO process for Phase 1 would generate approximately 1.2 MGD (1,400 AFY) of concentrated effluent.

Water Conveyance System

The project would require installation of several pipelines to convey source water and product water throughout the new system. The following pipelines would be constructed as part of the project:

- A Polyvinyl chloride (PVC) pipeline conveying tertiary-treated water from VWRF to the AWPf. A pump station would be constructed at the VWRF.
- A PVC pipeline conveying raw groundwater from existing extraction wells at the City Buenaventura Golf Course to the AWPf. While the existing well pumps may be sufficient to convey the water to the AWPf, an additional pump stations may be needed.
- A PVC pipeline conveying purified water from the AWPf to groundwater wells in the Oxnard Plain groundwater basins for the IPR project and/or to the Bailey WCF and/or Saticoy WCF for the DPR project.
- A PVC pipeline conveying extracted groundwater from the groundwater wells to the Bailey WCF for the IPR project.
- A PVC pipeline to return backwash waste or emergency shutdown water will be constructed between the AWPf and VWRF and returned to the influent of the VWRF for retreatment.

The pipelines would be constructed within public rights-of-way where feasible. A new pump station would be constructed at the AWPf to pump the water to the groundwater wells (i.e., IPR). Additional pumping would be required at the well site as discussed below to deliver water either extracted water or DPR water to the Bailey WCF and/or Saticoy WCF. These alignments may change during final design, but would remain in the public rights-of-way.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). Each well would have capacity to inject/extract between 1,250 – 2,750 gallons per minute (depending on the site) of purified water in the Oxnard Plain Basin. The wells in the Oxnard Plain would be constructed in the Oxnard Aquifer within the Upper Aquifer System to a depth of approximately up to 250 feet. Each wellhead would require approximately 1,500 square feet, including room for construction drill rigs and maintenance truck parking. A pump station would also be located at the well sites to deliver the extracted groundwater and/or the DPR water to Bailey WCF.

Wildlife/Treatment Wetlands

As part of the proposed project up to 35 acres of wildlife/treatment wetlands may be constructed east of the VWRF to provide additional treatment to the effluent prior to being discharged to the SCRE. In addition, one or more of the existing ponds may be filled to create a depth less than 3 feet, and vegetation may be established. If new wildlife/treatment wetlands are constructed, a new pipeline and pump station would be constructed on the VWRF site to convey the non-diverted, tertiary-treated water to the new wildlife/treatment wetlands. A new point of discharge may be constructed from the new wetlands as an outlet to the SCRE or alternatively, discharge from the wetlands may be returned to the existing outfall channel. The City will review opportunities to provide public access to the treatment wetlands that may include nature trails and informational amenities.

VWRF Treatment Upgrades

VWRF treatment upgrades would be implemented in combination with the modified and/or new wildlife/treatment wetlands to further reduce nitrogen in VWRF effluent discharged from the wildlife/treatment wetlands to the SCRE. The treatment upgrades would be constructed on the existing VWRF property and may include the addition of aeration blowers, primary treatment improvements, filter replacements and other system upgrades. Equalization storage basins and pump stations would be located at the VWRF for delivering flows to the VWRF. A new outfall pump station would also be constructed at the VWRF for delivering concentrate and tertiary treated flows if needed during wet weather events to the outfall.

Concentrate Discharge Facility

The AWPf treatment process would produce a concentrated effluent that would contain several times the concentration of salts as the influent water. The concentrate would need to be discharged to the ocean in compliance with California Ocean Plan water quality standards for ocean discharge. In addition to handling concentrate, the new outfall options would be designed to accommodate some tertiary treated flows that exceed the AWPf capacity during wet weather events or during times of emergency shut down. This EIR evaluates two potential concentrate discharge facility options: either a new outfall or a discharge pipeline to the Calleguas Municipal Water District's (Calleguas) existing SMP ocean outfall.

If a new ocean outfall is constructed it would be located just north of the Ventura Harbor, installed with directional drilling techniques from Marina Park, and would emerge on the ocean floor 2,000 to 4,000 feet offshore. Once emerged, an extension of the outfall would be attached and placed along the ocean floor until the sea depth to outfall reaches approximately 50-foot depths. A diffuser would be installed at the end of the outfall with discharge portals designed to maximize efficient dilution and to protect wildlife. A pipeline would be constructed from the AWPf to the VWRF and then to the ocean outfall within public rights-of-way where feasible. An alternative to a new outfall would be to construct a new 8- to 16-inch-diameter concentrate pipeline and pump stations to convey concentrate from the proposed AWPf to the existing Calleguas SMP ocean outfall. The pipeline would be constructed within public rights-of-way where feasible.

Similar to the new outfall, the exact alignment route of the conveyance pipelines would be contingent on the chosen AWPf site. The concentrate would be discharged to the ocean through the existing SMP ocean outfall, subject to SMP capacity availability and approval from Calleguas.

The Ventura Water Supply Projects – Phase 2 Components

Phase 2 of the proposed projects would augment water supplies to meet future water needs, including the accommodation of planned growth, either through increasing the consistent and reliable amount of recycled water produced or construction of an ocean desalination facility. This would be accomplished through either the expansion of treatment capacity AWPf as a first option pending regulatory approvals, or, if this option is not approved or does not meet the City's water

supply needs, through construction of an ocean desalination facility. Phase 2 would also increase the amount of treated groundwater.

OPTION A: AWPf Expansion

In Phase 2, the City would pursue Option A to divert the remaining wastewater flows from the VWRf to the AWPf to reach a CDL of 0 during closed berm, dry weather conditions. The wildlife ponds would still be utilized, but would operate as terminal wetlands during dry weather months. During winter open berm conditions, reflecting the steelhead migratory period, flows in excess of the AWPf facility's capacity would be discharged to the SCRE. This option would require an AWPf expansion to reliably produce up to an additional 1.2 MGD (1,400 AFY) of product water, and an additional 600 AFY of treated groundwater. The combined Phase 1 and Phase 2 project total would result in 6.7 MGD (7,400 AFY) of reliable new water supply. To expand treatment capabilities at the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. The full footprint and impacts of the expansion of the AWPf for additional tertiary flows is included in the Phase 1 project level impacts analysis. Additional flow routing modifications and/or storage would be required at the VWRf site to accommodate a CDL of 0.

OPTION B: Ocean Water Desalination

If the necessary regulatory approvals do not allow for a consistent, reliable water supply based on the tertiary-treated water, or if the supply is insufficient to meet the City's reliable water supply and water quality demands, an ocean desalination treatment facility would be needed. The new ocean desalination treatment facility would be located at the AWPf site, and could produce approximately an additional 1.2 MGD (1,400 AFY) of desalinated water. The total amount of water produced would be dependent on the remaining demand not met by recycled water. The treatment facility would include similar treatment processes as the AWPf, but would be dedicated to the ocean water source.

A new ocean water intake system would be constructed to convey ocean water to the new treatment facility. Ocean water would be collected in conformance with the California Ocean Plan requirements. A subsurface intake system would be constructed unless proven to be infeasible. A subsurface intake system would be sized to intake approximately 3.5 to 6.9 MGD (3,900 to 7,730 AFY) of ocean water through slant wells, beach wells, or infiltration galleries. The design of the intake system would comply with the California Ocean Plan Amendment specifically regulating ocean desalination facilities.

The additional concentrate produced by the treatment process would be discharged to the ocean via the concentrate discharge facility described as a component of Phase 1. This facility would consist of either new ocean outfall or discharge through the existing Calleguas SMP ocean outfall. A new NPDES discharge permit or amendment would be required. The desalination option is currently being analyzed at a programmatic level in this EIR, and would require additional CEQA review as a project prior to any approval.

ES.6 Project Alternatives

As set forth in the CEQA Guidelines (Section 15126.6), an EIR must describe and compare a range of reasonable alternatives to a project, or alternative locations for a project, that could feasibly attain most of the basic project objectives but avoid or substantially lessen any significant environmental impacts associated with the project. An EIR must consider a reasonable range of feasible alternatives to facilitate informed decision making and public participation. An EIR need not consider every conceivable alternative to a project and is not required to consider alternatives which are infeasible. The lead agency shall select a range of project alternatives and disclose its reasoning for selecting those alternatives.

Project Alternatives

Five alternatives were selected for detailed analysis. The goal for selecting these alternatives is to identify alternatives that would avoid or lessen the significant environmental effects of the project, while attaining most of the project objectives. A general description of each alternative to the proposed project is provided below.

Alternative 1: No Project

Under this alternative, the tertiary-treated discharge from the VWRP would not be diverted for potable reuse and would continue to flow into a 20-acre system of freshwater wildlife/treatment ponds prior to discharge to the SCRE. This alternative would not result in the benefits to the ecology of the SCRE that the proposed project would provide. The City would be in violation of the Consent Decree, would risk violating the CWA (depending on the Regional Board's orders in the new NPDES permit) and would have no recycled water diverted for water supply. With no new water supply projects, the City would be unable to eliminate the supply deficits and could not adequately supply water to its residents and customers during dry years and drought conditions. Under this alternative, the City would be required to ration future water supplies. In addition, the City would continue to fail to meet the secondary MCLs for drinking water quality with respect to its groundwater supplies.

Alternative 2: Zero Percent Diversion

Under this alternative, the tertiary-treated discharge from the VWRP would not be diverted for potable reuse and would continue to flow into a 20-acre system of freshwater wildlife/treatment ponds prior to discharge to the SCRE. Under this alternative, the City would need to seek to construct the ocean desalination facility project to produce 4.8 MGD (5,400 AFY) of new water supply and 1.8 MGD (2,000 AFY) of groundwater desalting to eliminate the supply deficits and to improve water quality of its potable supply. This alternative would not result in the benefits to the ecology of the SCRE that the proposed projects would provide. Because zero percent diversion is not the MEPDV, the City would be in violation of the Consent Decree, and likely the CWA depending on the Regional Board's orders in the new NPDES permit.

Alternative 3: 60 Percent Diversion

This alternative would divert 60 percent of the current flow of VWRP tertiary-treated discharge during dry-weather, closed-berm conditions (currently an average monthly flow of 2.8 MGD) as recommended by the Phase 3 Study. Since this volume of water is insufficient to meet water supply demands, this alternative requires construction of ocean water desalination in Phase 1 to meet water supply demands. Up to 2,000 AFY of groundwater desalting would be implemented similar to the proposed project. This alternative would not result in the benefits to the ecology of the SCRE that the proposed projects would provide and would not divert the MEPDV as defined by the SRP.

Alternative 4: 100 Percent Diversion in Phase 1

This alternative would consistently divert the entire current flow of VWRP tertiary-treated discharge during dry-weather, closed-berm conditions (currently an average monthly flow of 4.7 MGD) to the new AWP for potable reuse. The VWRP would have zero discharge during dry weather, normal operating conditions. This alternative would not require the construction or reconfiguration of wildlife/treatment wetlands because 100 percent of the tertiary-treated effluent would be diverted for beneficial reuse. However, the existing wildlife ponds would be maintained to some extent as a terminal wetlands during dry-weather flow. This alternative also does not require construction of an ocean water desalination facility. Up to 2,000 AFY of groundwater desalting would be implemented similar to the proposed project. This alternative would not provide for a staged implementation approach to 100 percent diversion. Therefore, unlike the proposed projects, this alternative would not incorporate data collection following the reduction to a 1.9 MGD discharge to inform the final flow reduction and ensure that the decreased discharge to the SCRE would not reduce habitat values.

Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant

Under Alternative 5, tertiary-treated discharge from the VWRP above the amount of the approved CDL (up to 100 percent of VWRP direct discharges), would be conveyed 10 miles to the Oxnard Wastewater Treatment Plant. The effluent would be available to the City of Oxnard to reuse for non-local supply offset or to supplement the City of Oxnard's supply. The project would not augment water supplies for the City. Under this alternative, the City would need to develop an ocean desalination facility to produce 4.8 MGD (5,400 AFY) and 1.8 MGD (2,000 AFY) of groundwater desalting to eliminate the City's supply deficits and meet future water supply and potable water quality needs.

Alternative 6: Rehabilitation of Existing Fairgrounds Outfall

Under Alternative 6, all of the components of the proposed projects would remain the same, except for the Concentrate Discharge Facility component. There are two potential existing outfalls that are no longer in operation in the proximity of the AWP sites that could potentially be re-purposed for the concentrate discharge. These outfalls served the former Seaside Sewage Treatment Plant, which was owned by the City of Ventura. Both pipelines emanate from a single point on the fairgrounds property.

Environmentally Superior Alternative

CEQA requires that an EIR identify an environmentally superior alternative, other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). The proposed projects are the environmentally superior alternative because it comports with the SRP/TRT Report conclusions of a range of 0 – 0.5 MGD CDL. Among the alternatives to the proposed projects, Alternative 4: 100 Percent Diversion in Phase 1 is the environmentally superior alternative. Some of the alternatives would be consistent with the Consent Decree, providing ecological benefits to the SCRE similar to the proposed projects, but would also result in greater construction and operational impacts. Alternative 4 would avoid these additional impacts and would provide ecological benefits to the SCRE. As a result, Alternative 4 is the environmentally superior alternative.

ES.7 Areas of Known Controversy

Pursuant to Section 15123(b)(2) of the CEQA Guidelines, a lead agency is required to include areas of controversies raised by agencies and the public during the public scoping process in the EIR. Commenting parties have identified issues of concern. These issues include air quality/GHG, agricultural resources, biological resources, cultural resources, energy and hydrology and water quality impacts.

ES.8 Summary of Impacts

Table ES-3 presents a summary of the impacts and mitigation measures identified by the EIR, as discussed in greater detail in Chapter 3. The level of significance for each impact was determined using significance criteria (thresholds) developed for each category of impacts; these criteria are described in the appropriate sections of Chapter 3. Significant impacts are those adverse environmental impacts that meet or exceed the significance thresholds; less than significant impacts do not exceed the thresholds. Table ES-3 indicates the measures that will avoid, minimize, or otherwise reduce significant impacts to a less than significant level.

TABLE ES-3
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VENTURA WATER SUPPLY PROJECTS

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
Aesthetics			
AES 3.1-1: The proposed projects could result in a significant impact if they would have a substantial adverse effect on a scenic vista.	None Required.	Advanced Water Purification Facility	Less than Significant
		Water Conveyance System	No Impact
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrades	No Impact
		Concentrate Discharge Facility	Less than Significant
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant
AES 3.1-2: The proposed projects could result in a significant impact if they would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	None Required.	Advanced Water Purification Facility	Less than Significant
		Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrades	No Impact
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	No Impact
AES 3.1-3: The proposed projects could result in a significant impact if they would substantially degrade the existing visual character or quality of the sites and their surroundings.	AES-1: Prior to the start of construction, the city of Ventura shall prepare a Construction Management Plan. The Construction Management Plan shall, at a minimum, indicate the equipment and vehicle staging areas, areas for stockpiling of materials, temporary opaque fencing material, and haul route(s). Staging areas shall be sited and/or screened to minimize public views to the maximum extent practicable. AES-2: Aboveground buildings/structures shall be designed to have color palettes and vegetation screening as necessary to blend with the surrounding character of the site and to minimize contrasting features in the visual landscape.	Advanced Water Purification Facility	Less than Significant with Mitigation AES-1, AES-2
		Water Conveyance System	Less than Significant with Mitigation AES-1
		Groundwater Wells	Less than Significant with Mitigation AES-1, AES-2
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation AES-1

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
		VWRF Treatment Upgrades	No Impact
		Concentrate Discharge Facility	Less than Significant with Mitigation AES-1
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation AES-1
AES 3.1-4: The proposed projects could result in a significant impact if they would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	AES-3: Lighting used during temporary nighttime construction or for permanent security purposes shall be shielded and directed downward or pointed away from surrounding light-sensitive land uses.	Advanced Water Purification Facility	Less than Significant with Mitigation AES-3
		Water Conveyance System	No Impact
		Groundwater Wells	Less than Significant with Mitigation AES-3
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrades	No Impact
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	No Impact
Agricultural Resources			
AG 3.2-1: The proposed projects could result in a significant impact if they would convert Prime Farmland, Unique Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	AG-1: Mitigation shall be provided for the loss of state-designated Prime Farmland or Farmland of Local Importance and/or open space in existence at the time property in the project area containing such state-designated farmland or open space is developed. Prior to developing such state-designated farmland, agricultural lands of equivalent acreage (a 1:1 ratio), and with soil and farming conditions equivalent or superior to the state-designated farmland that would be converted, shall be set aside in perpetuity. One or more permanent, irreversible agricultural easements may be purchased for the benefit of the City or other qualifying entity acceptable to the City, or funds may be provided to a local, regional, or statewide organization or agency whose	Advanced Water Purification Facility	Less than Significant with Mitigation AG-1
		Water Conveyance System	Less than Significant with Mitigation AG-1
		Groundwater Wells	Less than Significant with Mitigation AG-1
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade Project	No Impact
		Concentrate Discharge Facility	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	purpose includes the acquisition and stewardship of agricultural easements, to be earmarked for the purchase of permanent, irreversible agricultural easements. The protected acreage shall be set aside prior to the commencement of any development activity.	Phase 2 Components	No Impact
AG 3.2-2: The proposed projects could have a significant impact if they would conflict with existing zoning for agricultural use, or a Williamson Act contract.	Implement Mitigation Measure AG-1.	Advanced Water Purification Facility	Less than Significant with Mitigation AG-1
		Water Conveyance System	Less than Significant with Mitigation AG-1
		Groundwater Wells	No Impact
		Wildlife/ Treatment Wetlands	No Impact
		VWRF Treatment Upgrade Project	No Impact
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	No Impact
AG 3.2-3: The proposed projects could result in a significant impact if they would conflict with existing zoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 45260, or timberland zoned Timberland Production (as defined by Government Code section 51104[g])).	None Required.	All Components	No Impact
AG 3.2-4: The proposed projects could result in a significant impact if they would result in the loss of forest land or conversion of forest land to non-forest use	None Required.	All Components	No Impact
AG 3.2-5: The proposed projects could result in a significant impact if they would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use	Implement Mitigation Measure AG-1.	Advanced Water Purification Facility	Less than Significant with Mitigation AG-1
		Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade Project	No Impact
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
Air Quality			
AQ 3.3-1: The proposed projects could have a significant impact if they would conflict with or obstruct implementation of the applicable air quality plan	None Required.	All Components	Less than Significant
AQ 3.3-2: The proposed projects could have a significant impact if they would violate any air quality standard or contribute substantially to an existing or projected air quality violation	AQ-1: The following control measures provided in the VCAPCD Ventura County Air Quality Assessment Guidelines to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NOX during construction activities shall be implemented during construction: <ul style="list-style-type: none"> The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust. Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities. Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities: <ol style="list-style-type: none"> All trucks shall be required to cover their loads as required by California Vehicles Code Section 23114. All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible. Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil 	Phase 1 Components	Less than Significant with Mitigation AQ-1, AQ-2
		AWPF Expansion	Less than Significant
		Ocean Desalination	Less than Significant with Mitigation

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.</p> <ul style="list-style-type: none"> • Signs limiting traffic to 15 miles per hour or less shall be posted onsite. • During periods of winds 25 miles per hour or greater (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties) or at the direction of the City, all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or onsite. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive. • Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads. • Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations. <p>AQ-2: During construction contractors shall comply with the following measures, as feasible, to reduce NOX and ROC from heavy equipment as recommended by the VCAPCD in its Ventura County Air Quality Assessment Guidelines:</p> <ul style="list-style-type: none"> • Minimize equipment idling time. • Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications. 		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<ul style="list-style-type: none"> Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time. Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible. 		
AQ 3.3-3: The proposed projects could have a significant impact if they would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	None Required.	All Components	Less than Significant
AQ 3.3-4: The proposed projects could have a significant impact if they would expose sensitive receptors to substantial pollutant concentrations	None Required.	All Components	Less than Significant
AQ 3.3-5: The proposed projects could have a significant impact if they would create objectionable odors affecting a substantial number of people	None Required.	All Components	Less than Significant
Biological Resources			
BIO 3.4-1: The project could have a significant impact if they would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS.	<p>BIO-1: Prior to the start of construction in areas that could encounter sensitive species, a qualified biologist shall provide Worker Environmental Awareness Program (WEAP) training to all construction workers onsite. The training shall include materials to aid workers in identifying sensitive habitats, plants, and wildlife that should be avoided; applicable laws and regulations protecting such resources; and proper avoidance and communication procedures to protect sensitive biological resources, as well as common wildlife whenever possible.</p> <p>BIO-2: Prior to construction activities within 50 feet of sensitive habitat, a qualified biologist shall survey a 500-foot radius for the presence of sensitive species that could be affected by construction noise and disruption. If construction activities could generate noise in excess of 65 dBA for prolonged periods (averaged over an 8-hour day) in areas where the ambient noise level is less than 65 dBA and sensitive species are present, the construction contractor shall install</p>	Advanced Water Purification Facility	Less than Significant
		Water Conveyance System	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		Groundwater Wells	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		VWRF Treatment Upgrade	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		Concentrate Discharge Facility	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4, BIO-6

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>noise barriers between the construction activity and the sensitive resource to reduce noise impacts on biological resources.</p> <p>BIO-3: If nighttime construction is required, lighting shall be kept to the minimum necessary to safely conduct the work. All lighting shall be focused on the construction area and avoid spilling onto habitat areas.</p> <p>BIO-4: If the nesting season cannot be avoided and construction or vegetation removal occurs between March 1 to September 15 (January 1 to July 31 for raptors), the project shall do the following to avoid and minimize impacts to nesting birds and raptors:</p> <ul style="list-style-type: none"> During the avian breeding season, a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to vegetation disturbance or site clearing. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 7 days or more in cleanup activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again. The preconstruction survey shall cover all reasonably potential nesting locations on and within 300 feet of the proposed removal areas, and areas that would be occupied by ground-nesting species such as killdeer. A 500-foot radius shall be surveyed in areas containing suitable habitat for nesting raptors, such as trees, utility poles, rock crevices, and cliffs. If an active nest is found during the preconstruction avian nesting survey, a qualified biologist shall implement a 300-foot minimum avoidance buffer for all passerine birds and 500-foot minimum avoidance buffer for all raptor species. The nest site area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and 	AWPF Expansion	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		Ocean Desalination	Less than Significant with Mitigation BIO-1, BIO-2, BIO-3, BIO-4
		Advanced Water Purification Facility	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>the young will no longer be impacted by the project. Buffer areas may be increased if any endangered, threatened, CDFW fully protected, or CDFW species of special concern are identified during protocol or preconstruction surveys, based on consultation with USFWS or CDFW.</p> <ul style="list-style-type: none"> • If a nest is found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or by relocating the project component(s) to avoid the area. <p>BIO-5: The City shall prepare and implement a Pre-Construction Santa Clara River Estuary (SCRE) Monitoring Program that will confirm and update the existing baseline hydrological, chemical and biological conditions of the SCRE for a period of 3 years. The City shall coordinate preparation of the monitoring program with the RWQCB, USFWS, NMFS, and CDFW. The purpose of the program shall be to collect specific ecological monitoring data. This data will be used to inform the development of the Post-Construction Monitoring, Assessment, and Adaptive Management Plan, which shall identify action criteria and management measures that will guide and confirm that the implementation of Phase 1b reductions in discharges (to an average annual of 0 to 0.5 MGD in closed berm conditions) avoids and minimizes significant adverse environmental impacts.</p> <p>BIO-6: The City shall prepare and implement a Post Construction Santa Clara River Estuary (SCRE) Monitoring, Assessment, and Adaptive Management Program (MAAMP) that will continue data collection in the SCRE and will evaluate and confirm post-discharge diversion SCRE habitat values and conditions for SCRE listed species. The SCRE MAAMP will consist of the following core elements at a minimum:</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>Water depth measurements:</p> <ul style="list-style-type: none"> • Aquatic species surveys within the SCRE to document occurrence and abundance of tidewater goby and juvenile steelhead. • Bird and nesting surveys to document the occurrence and abundance of snowy plover and California least tern using or occupying, or foraging of nesting within the SCRE and its vicinity. • Acreage and qualitative evaluation of vegetation associations (habitat types) within the SCRE and its vicinity. • SCRE receiving water quality monitoring including regular measurements for temperature, salinity, dissolved oxygen, and nutrients collected vertically and horizontally to inform stratification and spatial patterns understanding. • Documentation of eutrophication episodes within the SCRE. • SCRE berm condition monitoring including berm heights and breaching events; and • Continuous VWRP discharge flow data, and instantaneous VWRP discharge water quality data. <p>The monitoring effort will be initiated following implementation of Phase 1a when discharges have been reduced to a CDL of 1.9 MGD.</p> <p>The City shall submit annual monitoring reports to the CDFW, USFWS, and NMFS that compile the data collected for a period of five years. The City shall consult with CDFW, USFWS, and NMFS to evaluate the data and trends shown in the monitoring data. In the event that based on the information and analysis provided by the MAAP, NMFS, USFWS, and or CDFW notifies the RWQCB and the City in writing that reducing the average annual discharge flows below 1.9 MGD in closed berm conditions would result in an unauthorized “take” (as defined in the state or federal Endangered Species Act, as applicable) of one or more listed species contrary to the permits or authorizations those agencies have issued, then the actions specified in the MAAP shall be</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>implemented to further avoid and minimize adverse impacts to, and take of listed species within the SCRE resulting from Phase 1b reductions, until and unless and until the Regional Board and the wildlife agency with jurisdiction authorize lower discharge.</p> <p>BIO-7: Prior to initiating any directional drilling activities, the City shall prepare a Drilling Fluid Mitigation and Response Plan that identifies measures to reduce risks to water quality from accidental release of drilling fluids into surface water. Measures include best practices to employ to minimize the risk of releases. The plan will identify spill containment equipment, monitoring and reporting roles and responsibilities, and implementation procedures sufficient to contain any release of drilling fluids.</p>		
BIO 3.4-2: The project could have a significant impact if they would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or USFWS.	Implement Mitigation Measure BIO-7.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant with Mitigation BIO-7
		Phase 2 Components	Less than Significant
		Advanced Water Purification Facility	Less than Significant with Mitigation BIO-5 and BIO-6
BIO 3.4-3: The project could have a significant impact if they would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Implement Mitigation Measures BIO-5 and BIO-6.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	Less than Significant with Mitigation BIO-5
		Phase 2 Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
		Advanced Water Purification Facility	Less than Significant
BIO 3.4-4: The project could have a significant impact if they would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	None Required.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	Less than Significant
		Advanced Water Purification Facility	Less than Significant
BIO 3.4-5: The project could have a significant impact if they would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	None Required.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	Less than Significant
		All Components	Less than Significant
BIO 3.4-6: The project could have a significant impact if they would conflict with provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan	None required.		
Cultural Resources		Advanced Water Purification Facility	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5
CUL 3.5-1: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.	CUL-1: Prior to the start of any ground disturbing activity, a Qualified Archaeologist, defined as an archaeologist meeting the Secretary of the Interior’s Standards for professional archaeology (U.S. Department of the Interior, 2008) shall be retained by the City to carry out all mitigation measures related to archaeological resources. CUL-2: Cultural resources survey shall be conducted prior to any ground disturbing activities associated with unsurveyed portions of the project area. The portions of the area of the proposed projects not surveyed include the Harbor	Water Conveyance System	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5
		Groundwater Wells	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>Boulevard, Transport Street and Portola Road AWPf sites, the parcels within which groundwater Well Sites 2 and 3 would be located, and the portions of the proposed water conveyance pipeline located on private lands. Any resources identified during the survey that would be impacted as a result of the proposed projects should be evaluated for listing in the NRHP and CRHR. Avoidance and preservation in place shall be the preferred manner of mitigating impacts to historical resources under CEQA.</p> <p>CUL-3: Prior to any ground disturbing activities associated with the project, the Qualified Archaeologist should conduct cultural resources sensitivity training for all construction personnel. Construction personnel should be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The City should ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.</p> <p>CUL-4: Prior to the start of ground disturbing activities associated with the proposed projects, an archaeological monitor working under the supervision of the Qualified Archaeologist and a Native American monitor associated with the Barbareño/Ventureño Band of Mission Indians, or other locally affiliated tribe, shall monitor all project-related ground-disturbing activities within previously undeveloped project parcels, all jack-and-bore receiving pits, and all pot-holing activities within existing road rights-of-way. Previously undeveloped parcels requiring monitoring include the Harbor Boulevard, Transport Street, and Portola Road AWPf sites, as well as the new treatment wetlands parcel, and groundwater Well Sites 1, 2, and 3. For the pipeline alignments to be installed within existing road rights-of-way, a monitoring plan shall be prepared by the Qualified Archaeologist outlining the locations and timing of monitoring based on level of disturbance identified during pot-hole monitoring, as well as any geotechnical report to</p>		CUL1, CUL-2, CUL-3, CUL-4, CUL-5
		VWRF Treatment Upgrade	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5
		Concentrate Discharge Facility	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation CUL1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6
		Advanced Water Purification Facility	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>be prepared as part of project implementation. Based on observations of subsurface soil stratigraphy or other factors during initial ground disturbing activities across the project area, and in consultation with the City and Native American monitor, the Qualified Archaeologist may reduce or discontinue monitoring as warranted if the Qualified Archaeologist determines that the possibility of encountering archaeological deposits is low in a given area or during a given activity. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the Qualified Archaeologist at the completion of construction and shall be provided to the City and filed with the SCCIC within 6 months of construction completion.</p> <p>CUL-5: In the event of the unanticipated discovery of archaeological materials during project implementation, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with the City on the significance of the resource.</p> <p>If it is determined that the discovered archaeological resource constitutes a significant resource, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with City and Barbareño/Ventureño Band of Mission Indians, or other locally affiliated tribe, that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource.</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>CUL-6: Prior to development of the new outfall and the Phase 2 Ocean Desalination ocean intake system, the City should retain a qualified archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (U.S. Department of the Interior, 2008), to conduct a cultural resources assessment of the ocean intake system that includes: a records search at the South Central Coastal Information Center; a Sacred Lands File search at the California Native American Heritage Commission; a desktop geoarchaeological review of onshore and offshore components; a shipwrecks database review for offshore components; a paleontological resources records check conducted by the Los Angeles County Natural History Museum, a pedestrian field survey for onshore components; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study. All identified cultural resources should be assessed for the ocean intake system's potential to result in direct and/or indirect effects to those resources. Cultural resources that will be directly and/or indirectly affected and cannot be avoided should be evaluated for their potential significance prior to the City's approval of the ocean intake system plans and publication of subsequent CEQA documents. The qualified archaeologist should provide recommendations regarding archaeological and Native American monitoring, protection of avoided resources, and/or recommendations for additional work or treatment of significant resources (i.e., resources that qualify as historical resources or unique archaeological resources under CEQA or resources that qualify as historic properties pursuant to Section 106 of the NHPA) that will be affected by construction of the ocean intake system.</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
CUL 3.5-2: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5.	Implement Mitigations Measure CUL-1 through CUL-6.	Water Conveyance System	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5
		Groundwater Wells	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5
		VWRF Treatment Upgrade	Less than Significant with Mitigation CUL-1, CUL-3, CUL-5
		Concentrate Discharge Facility	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6
		Advanced Water Purification Facility	Less than Significant with Mitigation CUL-7, CUL-8, CUL-9, CUL-10
CUL 3.5-3: The proposed project could result in a significant impact if they would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	CUL-7: Prior to the start of project-related ground-disturbing activities, the City shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology's professional standards (2010) to carry out all mitigation measures related to paleontological resources. CUL-8: Prior to the start of project-related ground-disturbing activities, the qualified paleontologist	Water Conveyance System	Less than Significant with Mitigation CUL-7, CUL-8, CUL-9, CUL-10
		Groundwater Wells	Less than Significant with Mitigation CUL-7, CUL-8, CUL-10

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>shall conduct a paleontological resources sensitivity training for all construction personnel working on the project. This may be conducted in conjunction with the archaeological resources training required by Mitigation Measure CUL-2. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. The City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.</p> <p>CUL-9: The qualified paleontologist, or a paleontological monitor working under the direct supervision of the qualified professional paleontologist, shall spot check open and visible excavations and/or spoil piles originating from construction activities exceeding depths of 20 feet. The qualified paleontologist shall review engineering plans to determine where ground disturbing activities will exceed 20 feet deep, and will coordinate with construction staff to determine the scheduling of spot checks. In the event that sensitive Quaternary older alluvial deposits are observed during spot check monitoring, the qualified paleontologist may make recommendations to modify the spot check protocols. Likewise, if monitoring observations suggest no potential for paleontological materials, the paleontologist may recommend to reduce or to discontinue the spot checks. The paleontological monitor shall prepare daily logs. After construction has been completed, a report that details the results of the spot check monitoring will be prepared and submitted to the City.</p> <p>CUL-10: In the event of the unanticipated discovery of paleontological resources during project implementation, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a</p>	Wildlife/Treatment Wetlands	Less than Significant with Mitigation CUL-7, CUL-8, CUL-9, CUL-10
		VWRF Treatment Upgrade	Less than Significant with Mitigation CUL-7, CUL-8, CUL-9, CUL-10
		Concentrate Discharge Facility	Less than Significant with Mitigation CUL-7, CUL-8, CUL-9, CUL-10
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation CUL-6, CUL-7, CUL-8, CUL-9, CUL-10
		Advanced Water Purification Facility	Less than Significant with Mitigation CUL-11

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>qualified paleontologist. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. Construction shall not resume until the qualified paleontologist has conferred with the City on the significance of the resource.</p> <p>Implement Mitigation Measure CUL-6.</p>		
<p>CUL 3.5-4: The proposed projects could result in a significant impact if they would disturb any human remains, including those interred outside of formal cemeteries.</p>	<p>CUL-11: If human skeletal remains are uncovered during project construction, all work within 100 feet of the find shall be immediately halted, and the Ventura County coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC shall then identify a Most Likely Descendant (MLD) of the deceased Native American, who shall then help determine what course of action should be taken in the disposition of the remains.</p> <p>Per PRC 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.</p>	Water Conveyance System	Less than Significant with Mitigation CUL-11
		Groundwater Wells	Less than Significant with Mitigation CUL-11
		Wildlife/ Treatment Wetlands	Less than Significant with Mitigation CUL-11
		WWRP Treatment Upgrade	Less than Significant with Mitigation CUL-11
		Concentrate Discharge Facility	Less than Significant with Mitigation CUL-11
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation CUL-6, CUL-7, CUL-8, CUL-9, CUL-10, CUL-11
		All Components	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	Implement Mitigation Measures CUL-6 through CUL-10.		
<p>CUL 3.5-5: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a tribal cultural resource, defined in § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <ul style="list-style-type: none"> a) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in § 5020.1(k), or b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. 	None Required.		
Geology, Soils, and Seismicity		Advanced Water Purification Facility	Less than Significant
<p>GEO 3.6-1: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.</p>	None Required.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	Less than Significant
		All Components	Less than Significant
<p>GEO 3.6-2: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving strong seismic ground shaking.</p>	None Required.	Phase 1 Components	Less than Significant with Mitigation GEO-1
<p>GEO 3.6-3: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.</p>	<p>GEO-1: A soils report and geotechnical investigation report shall be prepared by a California licensed geotechnical engineer for all facilities with potential to encounter shallow groundwater or expansive soils. These reports shall evaluate various geotechnical characteristics including existing liquefaction risk, expansive soils, and soil stability, and whether the operation of the proposed projects would exacerbate an existing risk of liquefaction or soil instability or</p>	All Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	create a new risk. The reports shall provide recommendations for facility design per these findings; these recommendations shall be incorporated into facility design.		
GEO 3.6-4: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving landslides.	None Required.	Advanced Water Purification Facility	Less than Significant
GEO 3.6-5: The proposed projects could result in a significant impact if they would result in substantial soil erosion or the loss of topsoil.	GEO-2: For construction sites less than 1 acre, the following types of BMPs shall be implemented during construction: (1) preservation of existing vegetation to the maximum extent practicable, (2) implementation of erosion control and sediment control best management practices, (3) implementation of waste management best management practices, and (4) good housekeeping. The California Stormwater Quality Association Best Management Practices Handbook shall be consulted for implementation instructions for the aforementioned BMPs. The contractor shall identify a construction monitor prior to construction. The construction monitor shall inspect the installation and ongoing maintenance of the BMPs for the duration of the construction activities. GEO-3: During operation, all inactive (unmoved for 14 days) stockpiles shall be covered and contained within temporary perimeter sediment barriers, such as berms, dikes, fiber rolls, or sandbag barriers.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant with Mitigation GEO-2
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation GEO-3
		VWRF Treatment Upgrade	Less than Significant with Mitigation GEO-2
		Concentrate Discharge Facility	Less than Significant with Mitigation GEO-2
		AWPF Expansion	Less than Significant
		Ocean Desalination	Less than Significant with Mitigation GEO-1, GEO-2
		All Components	Less than Significant
GEO 3.6-6: The proposed projects could result in a significant impact if they would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the projects, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	None Required.	All Components	Less than Significant with Mitigation GEO-1
GEO 3.6-7: The proposed projects could result in a significant impact if they would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Implement Mitigation Measure GEO-1.	All Components	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
GEO 3.6-8: The proposed projects could result in a significant impact if they would have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water	None Required.		
Greenhouse Gas Emissions		All Components	Less than Significant
GHG 3.7-1: The proposed projects could have a significant impact if they would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	None Required.	All Components	Less than Significant
GHG 3.7-2: The proposed projects could have a significant impact if they would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases	None Required.		
Hazards and Hazardous Materials		All Components	Less than Significant
HAZ 3.8-1: The proposed projects could result in a significant impact if they would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	None Required.	Advanced Water Purification Facility	Less than Significant
HAZ 3.8-2: The proposed projects could result in a significant impact if they would create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.	HAZ-1: The City of Ventura shall prepare an Anchoring Plan that applies to all ships, barges, and other ocean-going vessels and describes procedures for deploying, using, and recovering anchorages. The City shall submit this plan to the California Coastal Commission Executive Director for review and approval prior to initiation of offshore activities. The Anchoring Plan shall include, but not be limited to, the following elements: <ul style="list-style-type: none"> • Training for the project manager for marine activities, vessel operators, field supervisors, and environmental monitors to ensure familiarity with the Anchoring Plan. • A brief overview of the project objectives. • Description of anchor set and anchor leg (wires, winches, and other support equipment). • Description of vessels to be anchored and support tugs to be used. • Description and delineation of safety zone and anchor zone, including identification and mapping all areas of kelp, seagrasses, and hard substrate found within the work area. 	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant with Mitigation HAZ-1, HAZ-2
		Phase 2 Components	Less than Significant
		All Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<ul style="list-style-type: none"> • Identification of Contractor Vessels and Buoys, including daylight and nighttime marking schemes. • Anchoring procedures in compliance with Coast Guard Navigation Standards Manual. • Local notice to U.S. Coast Guard and mariners. <p>All elements of the Anchoring Plan shall be in compliance with U.S. Coast Guard regulations.</p> <p>HAZ-2: Prior to any offshore construction, the contractor shall prepare a Marine Safety Plan. The Marine Safety Plan would apply to all marine construction activities that would take place for the construction of the concentrate discharge pipes. The purpose would be to provide a precise set of procedures and protocols that shall be used by the marine contractors during the marine portions of the construction work, with a focus on personal, environmental, and vessel safety. The Marine Safety Plan shall include, but not be limited to, the following elements:</p> <ul style="list-style-type: none"> • A brief overview of the project objectives. • Distribution of Marine Safety Plan, which shall include the U.S. Coast Guard, each vessel involved in the marine activities, all environmental monitors, and all support radio operators. • Training for the project manager for marine activities, vessel operators, field supervisors, and environmental monitors to ensure familiarity with the Marine Safety Plan. • Description and maps depicting the marine project location. • Description of marine operations protocols. • Description of critical operations and curtailment plan, including offshore fueling procedures and storm procedures. • Marine communications plan. • Marine transportation plan for barges, tugboats, crew boats, and other vessels. • Navigational marking and lighting plan. 		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
HAZ 3.8-3: The proposed projects could result in a significant impact if they would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.	None Required.	Phase 1 Components	Less than Significant
HAZ 3.8-4: The proposed projects could result in a significant impact if they would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would create a significant hazard to the public or the environment.	None Required.	Phase 2 Components	No Impact
		Phase 1 Components	Less than Significant
HAZ 3.8-5: The proposed projects could result in a significant impact if they are located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project and would result in a safety hazard for people residing or working in the project area. For a project within the vicinity of a private airstrip, the proposed projects could result in a significant impact if they would result in a safety hazard for people residing or working in the project area.	None Required.	Phase 2 Components	No Impact
		Phase 1 Components	Less than Significant with Mitigation TRAF-1
HAZ 3.8-6: The proposed projects could result in a significant impact if they would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Implement Mitigation Measure TRAF-1.	AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant with Mitigation TRAF-1
		All Components	No Impact
HAZ 3.8-7: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	None Required.		
Hydrology and Water Quality		Advanced Water Purification Facility	Less than Significant
HYDRO 3.9-1: The proposed projects could have a significant impact if they would violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	HYDRO-1: Prior to construction of the proposed projects, the City shall conduct groundwater modeling within the potentially affected portions of the Oxnard Plain Basin to estimate the radius of influence for injected water within the minimum retention time required to comply with Title 22. The City shall conduct a well survey within the radius of influence indicated by the results of the groundwater modeling to identify nearby active water supply wells that could be affected by the proposed ASR wells.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant with Mitigation HYDRO-1
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>Based on the groundwater modeling or tracer test results, in compliance with Title 22, the City shall demonstrate that no existing drinking water well or agricultural well would be adversely affected by injection and extraction of highly treated water. The City shall notify all well owners that could be affected by the operation of the ASR program as determined by the groundwater modeling. As required by Title 22, the City shall conduct groundwater monitoring to ensure injected water remains underground for a minimum of 2 months before being extracted.</p> <p>If existing potable wells are found to be potentially adversely affected by the ASR operations through a reduction in water quality or through impeding access to groundwater, the City shall conduct one, or a combination, of the following actions:</p> <ul style="list-style-type: none"> • Coordinate with the well owner to arrange for an interim or long term replacement water supply. • Repair or deepen the existing adversely affected well. • Improve well efficiency of existing extraction wells. • Construct a new well. 	Advanced Water Purification Facility	No Impact
HYDRO 3.9-2: The proposed projects could have a significant impact if they would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	Implement Mitigation Measure HYDRO-1.	Water Conveyance System	No Impact
		Groundwater Wells	Less than Significant with Mitigation HYDRO-1
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	Less than Significant
		Advanced Water Purification Facility	Less than Significant
HYDRO 3.9-3: The proposed projects could have a significant impact if they would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or	None Required.	Water Conveyance System	No Impact
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
off-site, or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Also, the proposed projects could have a significant impact if they would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	No Impact
		AWPF Expansion	Less than Significant
		Ocean Desalination	No Impact
		Advanced Water Purification Facility	Less than Significant
HYDRO 3.9-4: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	None Required.	Water Conveyance System	No Impact
		Groundwater Wells	No Impact
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	Less than Significant
		Advanced Water Purification Facility	Less than Significant
HYDRO 3.9-5: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury or death inundation by seiche, tsunami, or mudflow.	None Required.	Water Conveyance System	No Impact
		Groundwater Wells	No Impact
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant
		Phase 2 Components	No Impact
Land Use and Planning		Treatment Wetland	Less than Significant with Mitigation LU-1
LU 3.10-1: The proposed projects could result in a significant impact if they would physically divide an established community.	LU-1: Prior to the grading the new treatment wetlands property, the City shall coordinate with Turning Point Foundation to identify an appropriate area for the relocation or reconfiguration of the RiverHaven community. The new area shall provide enough area to accommodate a maximum of 25 individuals accommodated with temporary campground, bathrooms, showers, laundry facilities and a community building which can accommodate recreational vehicles and tents. The new area shall also be in a location where it would be	Advanced Water Purification Facility	Less than Significant with Mitigation AES-1 throughAES-3, AG-1 (Harbor Boulevard and Portola Road AWPf), and CUL-1 through CUL-5

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	feasible to obtain any necessary permits and entitlements.		
LU 3.10-2: The proposed projects could result in a significant impact if they would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	Implement Mitigation Measures AES-1 through AES-3, AG-1, CUL-1 through CUL-6, and LU-1.	Water Conveyance System	Less than Significant with Mitigation CUL-1 through CUL-5
		Groundwater Wells	Less than Significant with Mitigation CUL-1 through CUL-5
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation CUL-1 through CUL-5 and LU-1
		VWRF Treatment Upgrades	No Impact
		Concentrate Discharge Facility	Less than Significant with Mitigation CUL-1 through CUL-6
		Phase 2 Components	Less than Significant with Mitigation CUL-6
		All Components	No Impact
LU 3.10-3: The proposed projects could result in a significant impact if they would conflict with any applicable HCP or NCCP.	None Required.		
Marine Biology		Phase 1 Components	Less than Significant with Mitigation HAZ-1, MARINE-1, MARINE-2
MARINE 3.11-1: The projects could have a significant impact, either directly or through habitat modifications, if they would cause direct disturbance, removal, filling, hydrological interruption, or discharge, on any species, natural community, or habitat, including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans (including protected wetlands or waters, critical habitat, EFH) or as identified by the CDFW, USFWS, or NMFS.	MARINE-1: The City of Ventura shall prepare a Marine Oil Spill Response Plan that would apply to all powered vessels used in support of the concentrate discharge construction activities. The purpose would be to provide a precise set of procedures and protocols that would be utilized in the event of an offshore fuel, oil, or hazardous materials spill resulting from construction activities (e.g., marine fuel and oil). The Marine Oil Spill Response Plan shall include but not be limited to the following elements:	Phase 2 Components	Less than Significant with Mitigation HAZ-1, MARINE-1, MARINE-2, MARINE-3
		Phase 1 Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<ul style="list-style-type: none"> • A brief overview of the project objectives. • Definition of major and minor spills. • Description of spill sources. • Description of spill response team and equipment. • Agreements with Spill Response Organizations. • Notification requirements, including names and phone numbers of agencies to be notified, along with an information checklist of the incident. • Description of marine spill scenarios and response procedures. <p>All elements of the Oil Spill Response Plan shall be in compliance with U.S. Coast Guard regulations, and the City shall implement the Oil Spill Response Plan through the required NPDES General Permit for Vessel Incidental Discharges discussed in Section 3.9.2.</p> <p>MARINE-2: Prior to the initiation of any offshore pile driving activities for the project, the City of Ventura shall prepare a Construction Plan that outlines the details of the piling installation approach. The information provided in this plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • The type of piling and piling size to be used. • The method of pile installation to be used. • Noise levels for the type of piling to be used and the method of pile driving (vibratory or impact). • Calculation of potential underwater noise levels that could be generated during pile driving using methodologies outlined in Caltrans 2015 and NOAA 2016b. • A schedule of when pile-driving would occur. <p>If the results of the calculations provided in the detailed Construction Plan for pile-driving indicate that underwater noise levels are < 183 dB for fish at a distance of ≤ 10 meters and 120 dB for marine mammals for a distance ≤ 500 meters, then no further measures are required to mitigate</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>underwater noise. If calculated noise levels are > 183 dB at ≤ 10 meters or 120 dB at a distance of ≤ 500 meters, then City of Ventura shall develop a NMFS-approved sound attenuation reduction and monitoring plan. This plan shall detail the sound attenuation system, detail methods used to monitor and verify sound levels during pile-placement activities, and describe all BMPs undertaken to reduce impact hammer pile-driving sound in the marine environment to an intensity level of less than 183 and 120 dB. The sound-monitoring results shall be made available to NMFS.</p> <p>The plan shall incorporate, but not be limited to the following BMPs, which have been shown to reduce underwater noise levels and possible impacts to fish and marine mammals:</p> <ul style="list-style-type: none"> • Pile -driving shall be conducted only between June and November to avoid gray whale migration, unless NMFS in their Section 7 consultation with the USACE determines that the potential effect to marine mammals is less than significant. • A 1,600-foot (500-meter) safety zone shall be established and maintained around the sound source for the protection of marine mammals and sea turtles in the event that sound levels are unknown or cannot be adequately predicted. • Work activities shall be halted when a marine mammal or sea turtle enters the 1,600-foot (500-meter) safety zone and shall cease until the mammal has been gone from the area for a minimum of 15 minutes. • A “soft start” technique shall be used in all impact hammer sourced pile driving, giving marine mammals an opportunity to vacate the area. • A NMFS-approved biological monitor will conduct daily surveys before and during impact hammer pile driving to inspect the work zone and adjacent Santa Monica Bay waters for marine mammals. The monitor will be present as specified by NMFS Fisheries 		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>during the pile-driving phases of construction.</p> <p>Other BMPs will be implemented as necessary, such as bubble curtains or an air barrier, to reduce underwater noise levels to NMFS established acute and chronic levels within a distance of 500 meters (1,600 feet), if feasible.</p> <p>Alternatively, to meet these noise criteria, the City of Ventura may consult with NMFS directly and submit evidence to the satisfaction of the Environmental Review Officer. In such case, the City of Ventura shall comply with NMFS recommendations and/or requirements to meet the noise criteria. The BMPs listed above provide examples of measures that are normally used to reduce noise impacts to below the noise criteria.</p> <p>MARINE-3: Entrainment of fish and invertebrate larvae resulting from outfall discharge turbulence, regardless of magnitude, will result in some loss of marine ecosystem productivity, species diversity, and trophic level energy transfer. As part of, and in support of, the Water Code Section 13142.5(b) determination process with the RWQCB, the City will work with the RWQCB to calculate APF estimates for the Phase 2 project discharge if it includes ocean desalination. This loss will be compensated for by either direct or indirect habitat restoration consistent with California Ocean Plan Chapter III.M.2.e.(3) or by providing monetary payments to an appropriate State-approved fee-based mitigation program consistent with California Ocean Plan Chapter III.M.2.e.(4), or a combination of the two. If elected by the project, habitat restoration will occur at a location of sufficient marine acreage or alternative coastal lagoon/estuary acreage, and in a manner acceptable to the RWQCB as part of the Project's permitting process. Final determination of the appropriate mitigation shall be determined by the RWQCB with consideration for: (1) existing level of wetland function at the site prior to mitigation; (2) resulting level of wetland function expected at the mitigation site after the project is fully successful; (3) length of time before the mitigation is expected to be fully successful; (4) risk that the mitigation project may not</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	succeed; and (5) differences in the location of the lost wetland and the mitigation wetland that affect the services and values they have the capacity and opportunity to generate, consistent with the OPA. If the RWQCB determines that an appropriate fee-based mitigation program has been established by a public agency, however, and if that payment of a fee to the mitigation program will result in the creation and ongoing implementation of a mitigation project that meets the requirements of California Ocean Plan Chapter III.M.2.e.(3), the City shall pay a fee to the mitigation program in lieu of completing a mitigation project as an alternative. Implement Mitigation Measure HAZ-1.		
MARINE 3.11-2: The projects could have a significant impact if they would threaten to eliminate a marine plant or animal wildlife community or cause a fish or marine wildlife population to drop below self-sustaining levels.	None Required.	Phase 2 Components	Less than Significant
		All Components	Less than Significant
MARINE 3.11-3: The projects could have a significant impact if they would interfere substantially with the movement of any native resident or migratory fish or marine wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native marine wildlife nursery sites.	None Required.	Phase 1 Components	Less than Significant with Mitigation MARINE-4
MARINE 3.11-4: The projects could have a significant impact if they would introduce or spread an invasive non-native species	MARINE-4: All project barges shall have underwater surfaces cleaned before entering Southern California waters and immediately prior to transiting to the project offshore construction area. Additionally, and regardless of vessel size, ballast water for all project vessels must be managed consistent with California State Lands Commission (CSLC) ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff.	Phase 2 Components	Less than Significant with Mitigation MARINE-4
Mineral Resources		All Components	Less than Significant
MIN 3.12-1: The proposed projects could have a significant impact if they would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state,	None Required.	Advanced Water Purification Facility	Less than Significant
MIN 3.12-2: The proposed projects could have a significant impact if they would result in the loss of availability of a locally important mineral	None Required.	Water Conveyance System	Less than Significant
		Groundwater Wells	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	Less than Significant
Noise		Advanced Water Purification Facility	Less than Significant with Mitigation NOISE-1, NOISE-2
NOISE 3.13-1: The proposed projects could result in a significant impact if they would expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	NOISE-1: Prior to construction, the City of Ventura shall ensure that the contractor specifications stipulate that: <ul style="list-style-type: none">All construction equipment, fixed or mobile, is equipped with properly operating and maintained mufflers and other state-required noise attenuation devices.When feasible, construction haul routes shall avoid noise-sensitive uses (e.g., residences, convalescent homes).During construction, stationary construction equipment shall be placed such that emitted noise is directed away from the nearest noise-sensitive receptors.The project shall provide noise blanket/temporary noise barriers between the active areas and residential buildings NOISE-2: Throughout project construction and operation, the City of Ventura shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints as soon as possible. <ul style="list-style-type: none">The City shall establish and disseminate a 24/7 hotline telephone number for use by the public to report any undesirable project noise conditions. If the telephone number is not staffed 24 hours per day, the City shall include an automatic answering feature with date and time stamp recording to answer calls when the phone is unattended.The City shall designate a Noise Disturbance Coordinator during construction and permanently once the facility is operational.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	Less than Significant
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Significant and Unavoidable NOISE-1, NOISE-2, NOISE-3, NOISE-4
		Phase 2 Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>The Noise Disturbance Coordinator shall assist in resolving noise complaints to minimize impacts while maintaining the objectives of the construction and operation of the facility. The Noise Disturbance Coordinator shall report all noise complaints to the City program manager.</p> <ul style="list-style-type: none"> For construction noise complaints received outside of the construction hours and days allowed (Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m.), the Noise Disturbance Coordinator shall take immediate steps to determine whether project construction is causing the noise and, if so, to reduce the noise level of that activity or take other appropriate action to remedy the complaint as quickly as possible. For construction activities near local residences, the Noise Disturbance Coordinator shall have the authority to require the installation of a temporary noise barrier to reduce noise impacts to the closest sensitive receptors. The noise barriers shall be tall enough to effectively block sight-lines of the construction to the closest residences. The contractor shall install noise barriers as directed by the Noise Disturbance Coordinator to minimize construction noise and resolve noise complaints. Deliveries to the site normally shall not occur before 7:00 a.m. or after 10:00 p.m. on weekdays or between 9:00 a.m. and 6:00 p.m. on Saturdays, and are not allowed on Sundays. Oversized loads and other heavy-duty vehicles would primarily get to and from the site using main traffic conduits. If for reasons of critical operational needs these hours must be violated, the City shall notify adjacent residences of the unusual circumstance at least 2 days in advance. <p>NOISE-3: Residents of properties shall be offered noise mitigation measures (e.g., hearing protection, sound proofing, white noise machines, etc.) acceptable to the residents or relocation for the duration of nearby HDD drilling for new outfall</p>		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>construction, which would generate construction noise levels at their property in excess of 45 dBA, L_{eq} during nighttime hours, for the duration of time that 24-hour activity occurs. Based on the analyses presented in this EIR, this shall apply to residences located within the first two rows of homes to the north and/or south and within approximately ,200 feet of the outfall drilling activity (i.e. homes along Greenock Lane and Nathan Lane for Option A and homes along Norwich Lane, New Bedford Court, Martha's Vineyard Court, and Sagamore Lane for Option B near the staging area).</p> <p>NOISE-4: The project shall provide noise attenuation housings rated for up to a 10 dBA reduction for generator sets operating near sensitive receptors during new outfall HDD drilling operations.</p>		
NOISE 3.13-2: The proposed projects could result in a significant impact if they would expose persons to or generate excessive groundborne vibration or groundborne noise levels.	NOISE-5: The operation of construction equipment that generates high levels of vibration, such as large bulldozers and loaded trucks, shall be prohibited within 45 feet of existing residential structures. Instead, small construction equipment such as small rubber-tired bulldozers, small rubber-tired excavator, etc., not exceeding 150 horsepower shall be used within this area during demolition, grading, and excavation operations.	Advanced Water Purification Facility	Less than Significant with Mitigation NOISE-5
		Water Conveyance System	Less than Significant with Mitigation NOISE-5
		Groundwater Wells	Less than Significant with Mitigation NOISE-5
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation NOISE-5
		VWRF Treatment Upgrade	Less than Significant with Mitigation NOISE-5
		Concentrate Discharge Facility	Less than Significant with Mitigation NOISE-5
		AWPF Expansion	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
		Ocean Desalination	Less than Significant with Mitigation NOISE-5
		All Components	Less than Significant
NOISE 3.13-3: The proposed projects could result in a significant impact if they would create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	None Required.	All Components	Less than Significant
NOISE 3.13-4: The proposed projects could result in a significant impact if they would create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	None Required.	All Components	No Impact
NOISE 3.13-5: The proposed project could result in a significant impact if it would be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would expose people residing or working in the project area to excessive noise levels. The proposed project could result in a significant impact if it would be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.	None Required.		
Population, Housing, and Environmental Justice			
POP 3.14-1: The proposed projects could result in a significant impact if they would induce substantial population growth in an area, either directly or indirectly.	None Required.	All Components	Less than Significant
POP 3.14-2: The proposed projects could result in a significant impact if they would displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.	Implement Mitigation Measure LU-1.	Treatment Wetland	Less than Significant with Mitigation LU-1
POP 3.14-3: The proposed projects could result in a significant impact if they would displace substantial numbers of people, necessitating the construction of replacement housing elsewhere	None Required.	All Components	Less than Significant
EJ 3.14-4: The proposed projects could result in a significant impact if they would affect the health or environment of minority or low income populations disproportionately.	None Required.		
Public Services		All Components	Less than Significant
PS 3.15-1: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of	None Required.	All Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire or police protection.			
PS 3.15-2: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools.	None Required.	All Components	Less than Significant
PS 3.15-3: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks or other public facilities.	None Required.		
Recreation		All Components	Less than Significant
REC 3.16-1: The proposed projects could have a significant impact if they would have a substantial adverse effect on or increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	None Required.	All Components	Less than Significant
REC 3.16-2: The proposed projects could have a significant impact if they would have a substantial adverse effect on recreational facilities, which could require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	None Required.		
Transportation and Traffic		Advanced Water Purification Facility	Less than Significant with Mitigation TRAF-1
TRAF 3.17-1: The proposed projects could result in a significant impact if they would conflict with an applicable plan, ordinances or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit	TRAF-1: Prior to the start of construction facilities that would occur within a roadway right-of-way, the City of Ventura shall require the construction contractor to prepare a Traffic Control Plan. The Traffic Control Plan will show all signage, striping, delineated detours, flagging operations, and any other devices that will be used during construction to guide motorists, bicyclists, and pedestrians safely through the construction area and allow for adequate access and circulation to the	Water Conveyance System	Less than Significant with Mitigation TRAF-1
		Groundwater Wells	Less than Significant with Mitigation TRAF-1
		Wildlife/Treatment Wetlands	Less than Significant with Mitigation

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	<p>satisfaction of the City's Public Works Director and Fire and Police Chiefs. When construction activities disrupt travel on major collectors or arterials, electronic signs shall be used to provide the public, on all transportation modes, with current construction information and the availability of alternative travel routes.</p> <p>The Traffic Control Plan shall be prepared in accordance with the City of Ventura's traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties and that emergency access will not be restricted. Additionally, the Traffic Control Plan shall also include a scheduling plan showing the hours of operation to minimize congestion during the peak hours and special events. The scheduling plan will ensure that congestion and traffic delay are not substantially increased as a result of the construction activities. Further, the Traffic Control Plan will include detours or alternative routes for bicyclists using on-street bicycle lanes as well as for pedestrians using adjacent sidewalks.</p> <p>In addition, the City shall provide written notice at least 2 weeks prior to the start of construction to owners/occupants along streets to be affected during construction. During construction, the City will maintain continuous vehicular and pedestrian access to any affected residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, the City shall notify the owner or occupant of the closure of the driveway at least 5 working days prior to the closure. The Traffic Control Plan shall include provisions to ensure that the construction of the proposed projects do not interfere unnecessarily with the work of other agencies such as mail delivery, school buses, and municipal waste services.</p> <p>The City shall also notify local emergency responders of any planned partial or full lane closures or blocked access to roadways or</p>		TRAF-1
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	Less than Significant with Mitigation TRAF-1
		AWPF Expansion	Less than Significant
		Ocean Desalination	Less than Significant with Mitigation TRAF-1
		All Components	Less than Significant

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
	driveways required for construction of the proposed project facilities. Emergency responders include fire departments, police departments, and ambulances that have jurisdiction within the proposed project area. Written notification and disclosure of lane closure location must be provided at least 30 days prior to the planned closure to allow for emergency response providers adequate time to prepare for lane closures.		
TRAF 3.17-2: The proposed projects could result in a significant impact if they would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	None Required.	All Components	Less than Significant
TRAF 3.17-3: The proposed projects could result in a significant impact if they would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	None Required.	Phase 1 Components	No Impact
TRAF 3.17-4: The proposed projects could result in a significant impact if they would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	None Required.	Phase 2 Components	Less than Significant
		All Components	Less than Significant with Mitigation TRAF-1
TRAF 3.17-5: The proposed projects could have a significant impact if they would result in inadequate emergency access.	Implement Mitigation Measure TRAF-1.	All Components	Less than Significant with Mitigation TRAF-1
TRAF 3.17-6: The proposed projects could result in a significant impact if they would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities	Implement Mitigation Measure TRAF-1.		
Tribal Cultural Resources		All Components	No Impact
CUL 3.18-1: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a tribal cultural resource, defined in § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in § 5020.1(k), or	None Required.		

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe			
Utilities, Service Systems, and Energy		Advanced Water Purification Facility	Less than Significant
UTIL 3.19-1: The proposed projects could result in a significant impact if they would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	None Required.	Water Conveyance System	No Impact
		Groundwater Wells	No Impact
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade	Less than Significant
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	No Impact
		Phase 1 Components	Less than Significant
UTIL 3.19-2: The proposed projects could result in a significant impact if they would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	None Required.	Phase 2 Components	No Impact
		Advanced Water Purification Facility	Less than Significant
UTIL 3.19-3: The proposed projects could result in a significant impact if they would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	None Required.	Water Conveyance System	Less than Significant
		Groundwater Wells	Less than Significant
		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	No Impact
		AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant
		All Components	Less than Significant
UTIL 3.19-4: The proposed projects could result in a significant impact if they would not have sufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements were needed.	None Required.	Advanced Water Purification Facility	Less than Significant
UTIL 3.19-5: The proposed projects could have a significant impact if they would result in a determination by the wastewater treatment provider that serves the projects that they do not have adequate	None Required.	Water Conveyance System	No Impact
		Groundwater Wells	No Impact

Environmental Impact	Mitigation Measures	Project Component	Significance Determination
capacity to serve the projects' projected demand in addition to the provider's existing commitments		Wildlife/Treatment Wetlands	No Impact
		VWRF Treatment Upgrade	No Impact
		Concentrate Discharge Facility	No Impact
		Phase 2 Components	No Impact
		Phase 1 Components	Less than Significant
UTIL 3.19-6: The proposed projects could result in a significant impact if they would not be serviced by a landfill with sufficient permitted capacity to accommodate the projects' solid waste disposal needs.	None Required.	AWPF Expansion	No Impact
		Ocean Desalination	Less than Significant
		All Components	No Impact
UTIL 3.19-7: The proposed projects could result in a significant impact if they would not comply with federal, state, and local statutes and regulations related to solid waste.	None Required.	All Components	Less than Significant
UTIL 3.19-8: The proposed projects could result in a significant impact if they would conflict with adopted energy conservation plans.	None Required.		

CHAPTER 1

Introduction and Background

1.1 Introduction

The City of San Buenaventura (Ventura or City), as the lead agency pursuant to the California Environmental Quality Act (CEQA) and State CEQA Guidelines, has prepared this Draft Environmental Impact Report (EIR) to provide the public and pertinent agencies with information about the potential effects on the local and regional environment associated with the proposed Ventura Water Supply Projects (proposed projects). The proposed projects would protect the ecology of the Santa Clara River Estuary (SCRE) while augmenting local potable water supplies and providing a drought- and disaster-resilient water supply.

The proposed projects would be implemented in two phases. The first phase, evaluated at the project level in this EIR, would treat water for potable reuse through implementation of the VenturaWaterPure Project.¹ The second phase, evaluated at the program level, would address the water needs resulting from planned future growth by providing for the increased water supply that will be needed by 2030. This increased water could be provided either by consistent diversion of 100 percent of the water currently discharged to the Santa Clara River Estuary (SCRE) for potable reuse or by ocean desalination. The second phase would only be implemented following project-level CEQA review.

1.2 Intended Use of the EIR

As described in Section 15121(a) of the CEQA Guidelines, this EIR is intended to serve as an informational document for the public and for government decision makers. Accordingly, this EIR has been prepared to identify the potential significant environmental effects of the proposed projects, identify mitigation measures to minimize potential significant effects, and consider reasonable project alternatives. The environmental impact analyses in this EIR are based on a variety of sources, including agency consultation, technical studies, and field surveys.

The City, as the CEQA lead agency, and other responsible agencies are required to consider a certified Final EIR prior to acting upon or approving the proposed projects (CEQA Guidelines Section 15050[b]). The CEQA process is further described below in Section 1.3.

¹ The purpose and components of the VenturaWaterPure Project are described more fully in Section 2.1

1.3 CEQA Environmental Review Process

1.3.1 CEQA Process Overview

The basic purposes of CEQA are to: (1) inform the public and governmental decision makers regarding potential significant environmental effects of proposed activities, (2) identify ways in which potential environmental damage can be avoided or significantly reduced, (3) prevent significant, avoidable environmental damage by requiring changes in projects through the use of alternatives or mitigation measures, and (4) disclose to the public the reasons why a governmental agency approved the project if significant environmental effects are involved.

An EIR should use a multidisciplinary approach applying social and natural sciences to provide a qualitative and quantitative analysis of all the foreseeable environmental impacts that a proposed project would exert on the surrounding area. As stated in CEQA Guidelines Section 15151:

An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.

The City and other decision makers will consider the information presented in this EIR, along with other factors, prior to determining whether to approve the proposed projects.

1.3.2 Notice of Preparation

On November 1, 2017, in accordance with Sections 15063 and 15082 of the CEQA Guidelines, the City published a Notice of Preparation (NOP) of a Draft EIR, and circulated it to governmental agencies, organizations, and persons who may be interested in this project. The NOP requested comments on the scope of the Draft EIR and asked that those agencies with regulatory authority over any aspect of the project describe that authority. The comment period extended through December 15, 2017. The NOP provided a general description of the proposed project, a description of the proposed project areas, and an overview of environmental topics that will be evaluated within the EIR. A copy of the NOP and comment letters are included in this EIR in Appendix A. Twenty-four comment letters were received in response to the NOP.

1.3.3 Scoping Meetings

On November 15, 2017, in accordance with CEQA Section 21083.9,² the City held a public scoping meeting to describe the project, identify the environmental topics that would be addressed in the EIR, and describe the CEQA process for the EIR. The City provided an opportunity for attendees to submit written comments on the scope of the environmental evaluation; however, there were no written comments provided at the scoping meeting. There was a request that written comments be provided no later than December 1, 2017, which was extended to December 15, 2017. Various verbal comments were raised during the scoping meeting, which

² CEQA Section 21083.9 requires that a lead agency call at least one scoping meeting for a project of statewide, regional, or area-wide significance.

included concerns about impacts on the Mound Basin as result of water extraction, concerns regarding saltwater intrusion to the Oxnard Plain groundwater basin, issues regarding lack of information on the Advanced Water Purification Facility (AWPF) sites, and concerns over agricultural land converted to non-agricultural. These verbal comments were transcribed and are included in the scoping comments set forth in Appendix A.

1.3.4 Draft EIR

This EIR addresses the Phase 1 VenturaWaterPure Project at the project level, as described in CEQA Guidelines Section 15161. This project-level analysis describes the changes in the environment that will occur from the development of this project.

The EIR also addresses potential future actions at the program level, as described in CEQA Guidelines Section 15168(a). The program-level analysis addresses actions that are related geographically and that are logical parts in a chain of connected actions. CEQA recognizes that programmatic analysis allows the City to consider broad policy alternatives and program-wide mitigation measures at an early time, when it has greater flexibility to address alternatives and mitigation measures; to ensure consideration of cumulative impacts that might otherwise be slighted; and to avoid duplicative reconsideration of basic policy considerations (CEQA Guidelines Section 15168[b]). Feasible mitigation measures and alternatives developed in this EIR shall be incorporated into subsequent actions in the program (CEQA Guidelines Section 15168[c][3]). Each subsequent activity in the program must also be evaluated to determine if additional environmental documentation is required (CEQA Guidelines Section 15168[c]). If no new effects could occur and no new mitigation measures are required, then the action is within the scope of this EIR, and no additional environmental documentation is necessary (CEQA Guidelines Section 15168[c][2]). If an action would result in significant or more severe significant environmental effects or new mitigation measures not included in the EIR, then additional environmental documentation, such as a Mitigated Negative Declaration or EIR, would be required (CEQA Guidelines Section 15168[c][1]).

This Draft EIR describes the proposed projects and the existing environmental setting; identifies short-term, long-term, and cumulative environmental impacts; identifies mitigation measures for impacts found to be significant; and provides an analysis of project alternatives. Significance criteria have been developed for each environmental resource analyzed in this EIR.

1.3.5 Known Areas of Controversy and Issues of Concern

Pursuant to Section 15123(b)(2) of the CEQA Guidelines, an EIR must identify areas of controversy raised by agencies and the public. Commenting parties have identified issues of concern. These issues include air quality/GHG, agricultural resources, biological resources, cultural resources, energy and hydrology and water quality impacts.

1.3.6 Public Review

In accordance with Section 15105 of the CEQA Guidelines, the Draft EIR is available for public review and comment for a 45-day review period from March 6, 2019 to April 22, 2019. The Draft EIR has been circulated to federal, state, and local agencies and interested parties who may wish to review and provide comments on its contents.

Please send all comments to:

Gina Dorrington
Ventura Water
501 Poli Street, Room 120
Ventura, CA 93002-0099
Email: gdorrington@cityofventura.ca.gov

One public meeting will be held to receive public comments on the environmental analysis in the Draft EIR. The meeting will include a brief presentation providing an overview of the proposed project and findings of the Draft EIR. After the presentation, oral comments will be accepted. Written comment forms will be supplied for those who wish to submit comments in writing at the public meeting. Written comments also may be submitted anytime during the 45-day review period. The public meeting will be held as follows:

Date: March 26, 2019
Time: 5:30 P.M.
Location: City Hall- Community Meeting Room (Room 200)
501 Poli Street
Ventura, CA 93001

1.3.7 Final EIR Publication and Certification

Written and oral comments received on the Draft EIR will be addressed in a Response to Comments document that, together with changes and corrections to the Draft EIR, will constitute the Final EIR. Following review of the Final EIR, the City will decide whether to certify the Final EIR. If the EIR identifies environmental impacts that are considered significant and unavoidable, and the City decides to approve the project, the City must state, in writing, the reasons for approving the project despite its significant environmental effects in a Statement of Overriding Considerations, which will be included in the record of the project approval and cited in the Notice of Determination (CEQA Guidelines Section 15093[c]).

1.3.8 Mitigation Monitoring and Reporting Program

Public Resources Code Section 21081.6(a) requires lead agencies to “adopt a reporting or monitoring project for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment.” Throughout the EIR, mitigation measures are clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program. All mitigation measures adopted by the City will be included in a Mitigation Monitoring and Reporting Program (MMRP) to verify compliance. The MMRP will be included within the Final EIR.

1.4 Approach to This EIR

CEQA requires an EIR to describe feasible mitigation measures and alternatives that could minimize potentially significant environmental effects. Public agencies must adopt such mitigation measures and alternatives, unless specific social, economic, or other conditions make the measures or alternatives infeasible (Pub. Res. Code Section 21002). Public agencies may approve projects with significant effects that cannot feasibly be mitigated if specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, outweigh the unavoidable adverse environmental effects (CEQA Guidelines Section 15093[a]). The determination to approve a project with unavoidable adverse environmental impacts must be explained in a “statement of overriding considerations” and supported by substantial evidence in the record (CEQA Guidelines Section 15093[b]r).

1.5 EIR Organization

This Draft EIR has been organized into the following chapters:

ES. Executive Summary. This chapter summarizes the contents of the Draft EIR.

1. **Introduction.** This section discusses the CEQA process, explains the purpose of the Draft EIR, and summarizes the background studies and processes that influenced the development of the proposed projects.
2. **Project Description.** This section provides an overview of the proposed projects, describes the need for and objectives of the proposed projects, explains planning for, construction, operation, and management of the proposed projects, provides a summary of a reasonable range of alternatives to the proposed projects (discussed further in Chapter 6), and presents a preliminary list of the agencies and entities, in addition to the City, that would use this EIR in their consideration of specific permits and other discretionary approvals.
3. **Environmental Setting, Impacts, and Mitigation Measures.** This chapter describes the environmental setting and identifies impacts of the proposed projects for each of the following environmental resource areas: Aesthetics; Agriculture and Forestry Resources; Air Quality; Biological Resources; Cultural Resources; Geology, Soils, and Seismicity; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Marine Biology; Mineral Resources; Noise; Population, Housing, and Environmental Justice; Public Services; Recreation; Traffic and Transportation; Tribal Cultural Resources and Utilities, Service Systems, and Energy. Measures to mitigate the impacts of the proposed project are presented for each resource area.
4. **Cumulative Impacts.** This chapter describes the cumulative impacts of the proposed projects together with past, current, and probable future projects within the region.
5. **Growth Inducement.** This chapter describes the potential for the proposed projects to induce growth.
6. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process, describes the alternatives to the proposed projects that were considered, and describes potential impacts of feasible alternatives relative to those of the proposed projects.
7. **List of Preparers.** This chapter identifies authors involved in preparing this Draft EIR, including persons and organizations consulted.

1.6 Background

The City owns and operates the Ventura Water Reclamation Facility (VWRF), which began operation in 1958 and has a design capacity of 14.0 million gallons per day (MGD). The VWRF currently treats an annual average influent flow of approximately 7.4 MGD of municipal wastewater. Wastewater is treated to tertiary standards (i.e., filtration and disinfection) under waste discharge requirements contained in Order No. R4-2013-0174 National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053651. This tertiary wastewater treatment consists of screenings and grit removal, primary sedimentation, flow equalization, activated sludge nitrification and denitrification, tertiary filters, ammonia addition, and chlorination. The solids processing consists of a primary sludge thickener, dissolved air flotation secondary sludge thickener, anaerobic digestion, and dewatering.

Treated wastewater is conveyed to a 20-acre system of wildlife/treatment ponds prior to final discharge to the SCRE (see Figure 2-2). Before entering the ponds, a portion of the treated wastewater is diverted as recycled water for landscape irrigation by several users (annual average of 0.6 MGD). The remaining treated wastewater is conveyed via the effluent transfer station to the wildlife/treatment ponds. The treated water is discharged through the outfall junction structure to the SCRE via an effluent channel. The VWRF monthly historical flows of tertiary-treated water from the VWRF to the wildlife/treatment ponds since 2011 are shown in **Table 1-1**.

TABLE 1-1
HISTORICAL MONTHLY TRANSFER STATION FLOW VALUES

	2011 (MGD)	2012 (MGD)	2013 (MGD)	2014 (MGD)	2015 (MGD)	2016 (MGD)	2017 (MGD)	Max(average)
January	8.17	7.78	7.84	7.37	7.30	-	7.55	8.17
February	8.14	7.69	7.69	7.59	7.13	-	8.06	8.14
March	8.57	7.77	7.60	7.54	6.97	-	7.11	8.57
April	7.83	7.93	7.29	7.05	6.31	-	6.44	7.93
May	7.35	7.45	7.06	6.66	6.30	-	6.39	7.45
June	7.21	7.35	7.14	6.77	6.44	7.30	6.44	7.35
July	7.28	7.14	7.25	6.78	6.30	7.13	6.53	7.28
August	7.41	7.32	7.31	6.71	6.30	6.97	6.63	7.41
September	7.41	7.44	7.20	6.67	6.29	6.31	6.52	7.44
October	7.54	7.30	7.25	6.64	6.35	6.30	6.41	7.54
November	7.80	7.74	7.50	7.04	6.54	6.44	-	7.80
December	7.65	8.06	7.59	7.49	6.60	6.30	-	8.06
Average Annual Flow	7.70	7.58	7.39	7.03	6.67	6.68	6.80	7.76
Max Month Flow	8.57	8.06	7.84	7.59	7.30	7.30	8.06	8.57

Notes:

- Operational issue – no data was collected for the month.
Calculated maximum value for each month's historical flows.

The 1974 Water Quality Control Policy for the Enclosed Bays and Estuaries of California prohibits discharges of municipal wastewater to enclosed bays and estuaries except “when the relevant Water Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge.” In 1976, the City submitted a plan to the Los Angeles Regional Water Quality Control Board (LARWQCB, or Regional Board) for effluent utilization that included a “demonstration of enhancement” due to the VWRf discharge of fresh water to the wildlife/treatment ponds and SCRE. This plan indicated that some of the uses of the SCRE, such as fish and wildlife habitat and non-contact water recreation, were more fully realized by the presence of the discharge. Consequently, Clean Water Act NPDES Permit and Water Quality Order No. 77-100, adopted by the Regional Board in May 1977, granted the City an exception to the discharge prohibition and set forth conditions for discharge of the VWRf tertiary-treated water into the SCRE. Subsequently, an additional enhancement demonstration was made in the late 1990s during the NPDES permit renewal.

1.6.1 Phase 1 and 2 Estuary Studies

Prior to the adoption of the renewed VWRf NPDES permit in 2008 (Order R4-2008-0011), a number of questions arose regarding the definition of enhancement, the benefits that the discharge provides to the SCRE and adjacent sub-watershed, and whether discharge practices should be modified over time to better protect habitat and water quality of the portion of the SCRE directly affected by the VWRf discharge. To address these issues, the Regional Board required the City to complete a series of three “special studies” as a condition of the City’s 2008 NPDES discharge permit, which are summarized below:

- **Estuary Sub-Watershed Studies** (September 2011) (Phase 1 Estuary Studies) – This report, published in 2011, provided a synthesis of information derived from a series of studies required by the 2008 NPDES permit regarding the SCRE ecosystem functioning under existing conditions and evaluated potential effects of various diversion/discharge alternatives and management measures on realization of beneficial uses and ecological resources of the SCRE.
- **Treatment Wetlands Feasibility Study** (March 2010) – This study evaluated potential benefits of constructed treatment wetlands to achieve additional reductions in nutrients, copper, and other metals, and evaluated the comparative water quality, beneficial use, and environmental benefits of alternative wetland designs and treatment process upgrade projects. This study evaluated VWRf plant and treatment process upgrade and natural treatment wetland projects to provide a basis for determining project alternatives to carry forward to conceptual design and evaluation pursuant to this Draft EIR.
- **Recycled Water Market Study** (March 2010) – This study evaluated the feasibility of expanding, and the constraints impeding expansion of, the City’s existing reclaimed water system. This study informed the City of the many constraints, and particularly the substantial distribution and seasonal constraints, associated with expanding the use of reclaimed water to offset other potable water demand by, for example, using reclaimed water for urban and agricultural irrigation.

Following completion of these three Phase 1 Studies and receipt of stakeholder feedback, a number of additional data collection and analysis needs were identified by the City and other stakeholders in the Phase 1 Estuary Studies process, including the need to collect more hydrologic and water quality data to improve the understanding of SCRE functioning in relationship to VWRF tertiary-treated discharges to help ensure protection of the sensitive wildlife and aquatic resources and habitats. In response to stakeholder and regulatory agency input on the Phase 1 Estuary Studies, the City recognized the need to integrate the conclusions of all three of the Phase 1 Estuary Studies into a single report. Such a report could guide a future process for identifying alternative projects that could meet two City objectives: to provide an additional, reliable local water supply and to divert VWRF discharges from the SCRE to water reclamation uses.

To begin the analysis of a potential response to these identified needs, the City prepared the *Estuary Special Studies Phase 2: Facilities Planning Study for Expanding Recycled Water Delivery* (March 2013) (Phase 2 Studies) as required by the 2008 NPDES discharge permit. The Phase 2 Studies evaluated recycled water alternatives in greater detail; integrated the conclusions of all three of the Phase 1 Studies; identified a process for selection, planning, design, and the current environmental review of alternative diversion infrastructure projects, including the City's proposed VenturaWaterPure Project and other local water supply augmentation and reliability projects addressed in this EIR, and proposed alternatives for nutrient removal through natural treatment wetlands. The amended final Phase 2 Studies report was submitted to the Regional Board in 2014.

At the conclusion of the Phase 2 Studies, several stakeholders expressed concerns about additional data gaps and the Phase 2 Studies report's findings. In response to these concerns, the City's next NPDES permit renewal (which is currently in effect), Regional Board Order R4-2013-0174 for VWRF discharges, required the City to conduct the following additional special studies:

- **Phase 3 Estuary Studies (Phase 3 Study)** – “The Discharger shall perform additional estuary studies to provide sufficient information to allow the Regional Water Board to determine whether or not the continued discharge of effluent enhances the Estuary. The study will clarify the water budget analysis for the Santa Clara River Estuary, to determine whether any effluent discharge is needed to sustain the SCRE native species, and if so how much.” Order R4-20013-00174, Section VI.c.2.b.i.
- **Nutrient, Dissolved Oxygen, and Toxicity Special Study** – “The Discharger must perform a special study to identify the cause of nutrient, dissolved oxygen and toxicity impairments in the Estuary. The Dissolved Oxygen Study will include sufficient monitoring, including diurnal monitoring, to determine the suitability of dissolved oxygen (DO) levels for the Estuary's aquatic life. If it is determined that the effluent from the Facility is causing the impairments, the Facility must propose a plan for reducing nutrient loading, including ammonia, nitrogen and phosphorus loading and toxicity impairments.” Order R4-20013-00174, Section VI.c.2.b.ii.
- **Groundwater Special Study** – “The Discharger must perform a special study to document the interaction between the estuary, discharge and groundwater and determine if the beneficial use of MUN [*any water designated as municipal or domestic supply, MUN, in a Regional Water Board Basin Plan*] applies to the water impacted by the discharge.” Order R4-20013-00174, Section VI.c.2.b.iii.

The City settled litigation initiated by Wishtoyo Chumash Foundation/Ventura Coastkeeper (a program of Wishtoyo Foundation) and Heal the Bay (HTB) through the execution of a final Consent Decree in February 2017. Prior to the issuance of Regional Board Order R4-2013-0174, the Regional Board recognized the relevance of the information required by the Consent Decree to the VWRf NPDES permit requirements. Specifically, the Regional Board recognized that the Consent Decree requires a determination, through scientific analysis, of the maximum ecologically protective discharge volume (MEPDV). The MEPDV is defined as the maximum average annual volume or flow of VWRf tertiary-treated discharge appropriate to divert from the SCRE while still protecting the ecological resources of the SCRE and the surrounding sub-watershed, including the SCRE's sensitive native species and habitats, and particularly those listed for protection under the state and federal Endangered Species Acts. The Regional Board specified in the current NPDES Permit Fact Sheet:

The special studies described in this Order may provide the scientific analysis used to define the MEPDV, but the special studies must provide sufficient and meaningful information to determine if discharge enhances the Estuary. The MEPDV analysis may be used by the Regional Water board staff in its evaluation of Estuary enhancement during the next revision of this Order, projected to take place in November of 2018.

Order R4-2013-0174, Attachment F-Fact Sheet, Section III.C.10.d (p. F-19).

1.6.2 Phase 3 Estuary Study

To comply with Consent Decree and the 2013 NPDES permit, the City embarked on preparation of the Phase 3 Estuary Study. The work plan for the Phase 3 Estuary Study, which was prepared by the City with review, input, and approval of Wishtoyo Chumash Foundation/Ventura Coastkeeper (Wishtoyo) and HTB, was approved by the Regional Board in December 12, 2014 to set a framework for the Phase 3 Study determinations, including “a finding on estuary enhancement and a recommendation of the [continued] effluent discharge flow rate needed to sustain the estuary's native species.” The completed Phase 3 Study was submitted to the Regional Board on February 20, 2018.

The City conducted a robust public participation process to obtain review and input on all phases of the Estuary Studies. Since 2009, the City has held over 18 stakeholder workshops on the evaluation of the SCRE. Some meetings and workshops included the general public along with interested resources agencies, regulators, and City officials, while other workshops obtained technical information from resource agency and other regulatory experts. Workshop agendas and presentations were made available to the public on the City's website and public input was always encouraged. As the conclusion of Phase 3 approached, City staff and consultants increased the frequency of communications with Wishtoyo and HTB representatives and scientific experts convened by those groups to review the Phase 3 Study (Technical Review Team) to address their technical questions and comments.

The Phase 3 Estuary Study evaluated multiple VWRf diversion/continued discharge scenarios over a range from 0 percent diversion (i.e., continuation of current average discharge flow rate) up to 100 percent diversion of the current discharges (i.e., zero continued discharge) to the SCRE.

For the purposes of the MEPDV analysis within the Phase 3 Study, VWRf discharges during the critical current dry-weather, closed-mouth condition were determined to average 4.7 MGD annually (5,263 acre-feet per year [AFY]) based on 2015/16 flows. The study evaluated impacts of 11 different discharge scenarios, each varying from the other by a 0.5 MGD (558 AFY) flow increment, as shown in **Table 1-2**.

TABLE 1-2
PHASE 3 VWRf DISCHARGE SCENARIOS

Discharge Scenario	Percent of current discharge (4.7 MGD) diverted	VWRf discharge to SCRE		VWRf flow diverted to other uses	
		MGD	AFY	MGD	AFY
1	0%	4.7	5,263	0	0
2	10%	4.2	4,705	0.5	558
3	20%	3.7	4,143	0.9	1,007
4	30%	3.3	3,697	1.4	1,569
5	40%	2.8	3,135	1.9	1,128
6	50%	2.3	2,577	2.3	2,577
7	60%	1.9	1,128	2.8	3,135
8	70%	1.4	1,569	3.3	3,697
9	80%	0.9	1,007	3.7	4,143
10	90%	0.5	558	4.2	4,705
11	100%	0	0	4.7	5,263

SOURCE: Stillwater Sciences 2018

The Phase 3 Estuary Study evaluates the relative potential impacts of the 11 different discharge scenarios on:

- The realization of designated beneficial uses of the SCRE, or “enhancement.”
- The existing and potential ecological resources of the SCRE, focusing on the assessment of impacts to four native species listed for protection under the state and federal Endangered Species Acts occupying the SCRE, and their designated critical habitats within the SCRE.

A data and literature review conducted as part of the Phase 3 Estuary Study resulted in the selection of the following focal species for purposes of analyzing impacts to beneficial uses and ecological resources of the SCRE:

- For purposes of evaluating impacts of the alternative discharge scenarios on SCRE aquatic resources and related beneficial uses, two federally endangered fish species occupying and using the SCRE were selected as focal species: Southern California steelhead (*Oncorhynchus mykiss*) and tidewater goby (*Eucyclogobius newberryi*).

California has designated the tidewater goby as a species of special concern.³ The U.S. Fish and Wildlife Service (USFWS) has listed the goby as an endangered species and has designated the SCRE as critical habitat for the tidewater goby under the Endangered Species

³ California Dept. of Fish and Game, *Species of Special Concern in California* 79, 235 (2d ed. 1995). Species of Special Concern are those with low, scattered, or highly localized populations and require active management to prevent them from becoming threatened or endangered. (*Id.* at p. 3.)

Act (73 Fed. Reg. 5920; January 31, 2008). USFWS also has published a Recovery Plan for the endangered fish,⁴ As required by Section 4(f) of the Endangered Species Act, the recovery plan delineates reasonable actions that are believed to be required to recover and/or provide future protections for the tidewater goby.

The National Marine Fisheries Service has listed the Southern California steelhead (*Oncorhynchus mykiss*) Distinct Population Segment as endangered under the federal Endangered Species Act and designated the SCRE as critical habitat for the steelhead under the federal Endangered Species Act (70 Fed. Reg. 52,488; September 2, 2005 [designating, among other areas, the SCRE as critical habitat for Southern California steelhead]).

- For purposes of evaluating impacts of the alternative discharge scenarios on SCRE wildlife resources and related beneficial uses, two federally listed avian species occupying and using the SCRE were selected as focal species: western snowy plover (*Charadrius alexandrinus nivosus*) and California least tern (*Sternula antillarum browni*).

The western snowy plover is federally listed as threatened (58 Fed. Reg. 12864; March 5, 1993) [listing the Pacific Coast population as threatened throughout its range]). Further, USFWS has designated the SCRE as critical habitat for western snowy plover under the federal Endangered Species Act (64 Fed. Reg. 68,508; December 7, 1999 and 77 Fed. Reg. 36,727; June 19, 2012). In addition, the western snowy plover is designated as a California Species of Concern (2008).

The California least tern is a bird species that is federally listed (35 Fed. Reg. 8,491; June 2, 1970) and state listed (June 27, 1971) as endangered throughout its range. The California least tern is also designated for protection as a California Fully Protected Species.

The Phase 3 Estuary Study assessment relied on three primary lines of evidence to evaluate relative potential impacts of the 11 different alternative discharge scenarios on these focal species, their critical habitats, water quality, and the ecological resources and beneficial uses of the SCRE generally: water balance/water quality, habitat succession, and weighted consideration of factors specific to each SCRE beneficial use.

First, a water balance model was developed to estimate average monthly flows from various surface and groundwater tributary sources, including VWRP discharges, to the SCRE. Historical water quality data and water quality data identified in the approved Phase 3 Estuary Study work plan were collected and analyzed for the SCRE and all discharge-related surface and groundwater sources tributary to the SCRE. The water balance and water quality data information were integrated into an estuary mixing model to evaluate and advance the scientific understanding of the relationship between the quality of VWRP discharges associated with each of the alternative discharge scenarios and water quality within the SCRE, in the context of the water quality of other sources of water to the SCRE. The estuary mixing model results were then used to evaluate the impact of each discharge scenario on the SCRE water-quality conditions and related focal species habitat attributes for the SCRE.

Second, the water balance model information, SCRE geomorphological information, SCRE bathymetric information, and information from GIS-based habitat succession rules developed by

⁴ U.S. Fish and Wildlife Service, Pacific Region, *Recovery Plan for the Tidewater Goby (Eucyclogobius Newberry)* (Recovery Plan) (issued Jan. 7, 2005) (available at <http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/TidewaterGobyFinalRecoveryPlan.pdf>).

Stillwater Associates, were all integrated to evaluate the relationship between SCRE water elevation at the “equilibrium” or “full” stage for each of the alternative discharge scenarios, in order to predict the aerial extent of SCRE sensitive habitat types within the SCRE associated with each discharge scenario, including the designated critical habitats for the focal species associated with each scenario

Third, the Phase 3 Study used a multiple-criteria decision support tool called the Analytic Hierarchy Process (AHP) (Saaty 1980, 2008) as a framework to consider and engage in prioritized balancing of discharge scenario effects on each SCRE beneficial use. The AHP assigned priorities and weights to SCRE beneficial uses and assessed the likely effects of each alternative discharge scenario on key water quality criteria, biological criteria, critical habitat primary biological features, and other factors related to protection of each of the SCRE beneficial uses, prioritizing consideration of focal species, critical habitats, other ecological resources. The AHP tool was intended to transparently explain the predicted effects of each alternative discharge scenario on the realization of designated SCRE beneficial uses in comparison with one another and in comparison with the absence of discharge.

The Phase 3 Study concluded:

- The **Enhancement Discharge Levels** should range from a monthly average of 1.9 to 2.8 MGD (1,128 to 3,135 AFY) during critical closed-mouth, dry-weather conditions. This discharge level reflects the study’s finding that continued discharge during critical dry-weather conditions would provide greater benefits to the SCRE than the complete elimination of all discharge. The Phase 3 Study found that Enhancement Discharge Levels would protect the ecological functions of the SCRE, including SCRE water quality, the focal species and their critical habitats, and other ecological resources and beneficial uses of the SCRE. The Enhancement Discharge Levels were recommended to provide enhancement of SCRE beneficial uses as defined in the Enclosed Bays and Estuaries Policy and for purposes of the issuance of the next VWRP NPDES permit renewal.
- The Phase 3 study found that a **Continued Discharge Level** of 1.9 MGD (1,128 AFY) should be maintained to the SCRE during critical closed-mouth, dry-weather conditions to protect the focal species, their habitats, and the other ecological resources and beneficial uses of the SCRE. This Continued Discharge Level represents the lowest monthly average of the Enhancement Discharge Level. The study stated that the Continued Discharge Level was not needed to protect SCRE ecological resources during wet-weather or open-berm conditions, when other sources of tributary water and tidal exchanges are prevalent.
- The **Maximum Ecologically Protective Diversion Volume**, or **MEPDV**, is calculated by the Phase 3 Study as 40 percent to 60 percent diversion from the SCRE to water reclamation uses, in order to provide enough continued discharge to meet the Enhancement Discharge Level. Under this scenario, the monthly average of 1.9 to 2.8 MGD (1,128-3,135 AFY) would be diverted under dry-weather, closed-mouth SCRE conditions at current VWRP discharge flow levels. In the future, the amount of VWRP discharge that may be diverted to the AWP would be expected to increase to a level greater than 4.7 MGD (5,263 AFY) as additional tertiary-treated wastewater became available from the VWRP as a result of population growth. When the amount of discharge increased, the analysis stated that diversions to the AWP could also increase, so long as the average monthly Continued Discharge level of 1.9 MGD (1,128 AFY) was maintained during critical dry-weather, closed-mouth conditions.

As part of the public participation process, the technical review team (TRT) was assembled by HTB and Wishtoyo. The TRT consisted of scientific experts in hydrology, fisheries, estuarine systems, and wetlands. Not only did the TRT review, comment on, and provide input regarding the Phase 3 Estuary Study work plan, the TRT also reviewed data, information and materials developed during the Phase 1, Phase 2, and Phase 3 Estuary Studies and other information, reports, and data available to them, as well as in-progress and administrative drafts of the Phase 3 Estuary Study Report. Study progress meetings were held with participation of the TRT, HTB, and Wishtoyo on February 15, 2017; August 31, 2017; and October 12, 2017. The purpose of these meetings was to provide input on study approaches, critical review of data quality, and review of study assumptions and findings.

In addition, one in-progress and one administrative draft of the Phase 3 Study were distributed to HTB, Wishtoyo and the TRT. The first in-progress draft study was distributed on May 16, 2017, and the second administrative draft of the study was distributed to those parties in two parts on August 29, 2017 and September 15, 2017. The City solicited and received written comments on these drafts TRT, as well as from HTB and Wishtoyo on both the in-progress and the administrative review drafts of the Report. The information and opinions provided by the non-governmental organizations and the TRT helped shape the evaluations in the report. In addition, the TRT provided input to and comments on the AHP developed in the Phase 3 Study to assess the potential benefits and impacts of differing VWRf discharge scenarios for inclusion in both the November 2017 Stakeholder Draft of the Report, and the Final February 2018 Phase 3 Estuary Study Report.

The TRT did not concur with the findings and conclusions of the Phase 3 Study. (See TRT Phase 2 Study comments [March 9, 2018]; TRT Phase 3 Study comments [December 8, 2017]) As stated in the TRT's December 2018 report, the TRT concluded:

In our view, based on the level of uncertainty likely to exist in the AHP ranking, either Scenario 8 (70% reduction) or 9 (80% reduction) is 'significantly different' and would represent the most likely amount of discharge that should be allowed into the estuary that would promote natural processes to occur and would be supportive of native fishes, both listed and non-listed species. It is our view that this recommendation will result in the most likely average monthly discharge into the estuary that could be characterized as "beneficial" without causing adverse harm to SCRE. Assuming the landscape models are correct, it will result in sufficient area for steelhead and goby rearing and foraging habitat by providing sufficient open water area (61-70 acres not including the proposed California State Parks Restoration Area) and will support sufficient snowy plover and least tern foraging habitat without potential damaging flooding to nesting areas. We also believe that these scenarios substantially reduce the risk of unseasonable breaches to the ocean in the summer months.

We recognize that there is a desire to have a steady state discharge authorization for practical and economic reasons. However, if flexibility existed in discharge scenarios, we will favor one in which discharge during winter and spring months is higher and during summer and fall months is lower. This would be more equivalent to natural conditions in the estuary. We would also be in favor of

allowing higher winter and spring discharge rates than under our recommended MEPDV.

Further, as stated in the TRT's March 19, 2018 Report, the TRT concluded:

Our earlier review stated that we believe either Scenario 8 (1.4 MGD/70% reduction) or Scenario 9 (0.9 MGD/80% reduction) would represent the most likely amount of discharge under the MEPDV. These are ranked by the current AHP as achieving the percent of the normalized score as either 94% or 86% respectively. We believe that Scenario 8 is well within the range of acceptable scores using this method and in consideration of the uncertainties and variance discussed above....

The final report also presents an Enhancement Discharge Level (EDL) which is stated to represent the flows that in comparison to no discharge provide "fuller realization of the balance of beneficial uses important to the protection of the SCRE". The report recommends EDL levels at 1.9 to 2.8 MGD. We are not in agreement with this assessment as it seems to imply that dry season discharge is necessary for the estuary to function when, in fact, the report does not present an analysis of natural flow patterns that can be compared to the highly artificial patterns that now occur. We do know that, historically, the estuary did support robust populations of listed species, migratory birds, and healthy riparian and wetland communities. Today, due to a variety of issues within the region including the watershed and nearby ocean, but also within SCRE, these populations have declined or are threatened. We believe it is not appropriate to set an EDL without fully considering how best to return the system to a more natural flow pattern including resolution of issues within the watershed that have altered flow patterns. The EDL suggests that sustaining unnatural flow patterns somehow better supports the ecology of the lagoon with which we strongly disagree. While we recognize through our recommendation of an MEPDV that some discharge can be tolerated, and may have some benefits to the lagoon, we are not in agreement that a higher level EDL should be allowed or recommended.

Our comments and conclusions in our December 8th letter provide more detail on the basis for our recommendation on the MEPDV. We recognize the effort by the City and Stillwater Sciences to address those comments; however, our fundamental concerns with the data, model, and AHP remain.

1.6.3 Scientific Review Panel (SRP)

The Phase 3 Study, the TRT reports, the Phase 1 and Phase 2 studies and all underlying data for those reports, and additional data information were independently reviewed by three highly qualified, independent experts comprising the "Scientific Review Panel" (SRP). The SRP was originally conceived under the Consent Decree as a dispute resolution mechanism in the event that Wishtoyo and HTB (or the TRT) disagreed with the MEPDV determination of the Phase 3 Study, in which case the SRP would develop and support, based on the best available scientific information, a recommended MEPDV. Under the Consent Decree, the City, Wishtoyo, and HTB must use the SRP's MEPDV determination to move forward with environmental review, permitting and construction of the proposed Diversion Infrastructure Projects because the SRP's

opinion represents the best expert professional judgment available based on the best scientific information.

Subsequent to the Consent Decree, as a condition of the Phase 3 Study work plan approval (December 12, 2014), the LARWQCB also required the City to convene the SRP to review the information and findings of the Phase 3 Study, and, if necessary, to develop and support (based on the best scientifically available information) recommendations for the Enhancement Levels, the MEPDV, and the Continued Discharge Level, in the event the SRP disagreed with the conclusions of the Phase 3 Report.

The SRP was asked to review the Phase 3 Report and related data and information—both in draft and final form—and also reviewed stakeholder comments on the draft and final Phase 3 Report, in particular the TRT’s comments to the report’s findings and alternative conclusions and recommendations. The SRP developed the following conceptual approach to meet its charge:

- Step 1. Develop the underlying premise and assumptions, and key questions for how to establish discharge targets
- Step 2. Review the existing technical work and best available science to address the underlying premise and assumptions, and key questions, developed in Step 1
- Step 3. Consider additional information, data, or knowledge not included in the previous technical work
- Step 4. Develop recommendations for discharge patterns to the SCRE

The SRP presented this conceptual approach to the study’s TRT and to the City consultant team in a “context and approach” memorandum that was circulated to the City and TRT on February 12, 2018, followed by a call with the TRT and City consultants on February 22, 2018. The discussion during the call was documented in a memorandum to the City, Wishtoyo, and HTB on February 23, 2018, which was also shared with the resource agencies and other stakeholders.

The SRP has completed its evaluation of the Phase 3 Report related data and information, and the Phase 3 Report and TRT conclusions. The SRP summarized its evaluation in a Technical Memorandum (June 25, 2018) (SRP Final Report). The SRP Final Report concurred that the critical condition for the SCRE is the dry-weather closed-berm condition. The SRP also determined that diversion of VWRf discharge away from the SCRE would be beneficial; however, due to disagreement with certain assumptions and methodologies used in the Phase 3 Report, and based on elevated prioritization of the listed focal species and their habitats, the SRP reached the conclusion that substantially more VWRf flow should be diverted from the SCRE discharge. In particular, the SRP did not adopt the AHP scoring tool, which the Phase 3 Study employed to evaluate and rank a wide range of criteria. The SRP focused instead on prioritized consideration of listed species, and their life stages and habitat needs. The SRP determined that these beneficial uses were more critical to support than others identified in the AHP, and that the other beneficial uses would not be impaired by providing conditions supporting the aquatic

beneficial uses. Moreover, the SRP believes that the aquatic life beneficial uses are the most sensitive to potential changes in discharge from the VWRF, and that protecting these uses will translate to overall protection of all of the SCRE beneficial uses. As summarized by the SRP Final Report:

[T]he SRP deliberately focused on a subset of all of the beneficial uses that were identified in the Final Phase 3 Report, and did not use the AHP's beneficial use optimization approach. The SRP focused on the following four prioritized beneficial uses:

1. *Rare, Threatened, or Endangered Species (RARE)*
2. *Spawning, Reproduction, and/or Early Development (SPAWN)*
3. *Migration of Aquatic Organisms (MIGR)*
4. *Estuarine, Wildlife, and Wetland Habitats (HAB)*

In its review and analysis, the SRP focused on aquatic life beneficial uses, prioritizing the capacity of the SCRE to provide quality habitat for all four listed focus species, the highest priority granted to the tidewater goby, which the SRP determined was the species as most reliant on the SCRE for all aspects of its life history. Although the other sensitive species (i.e., the birds and steelhead) rely on the estuary for critical periods of their life history, they also spend part of their lives outside the estuary. Thus, the SRP focused first on the life history of the tidewater goby in the SCRE and examined how discharges from the VWRF may affect the various life history stages and completion of its life cycle. The SRP also evaluated effects of VWRF discharge on steelhead, western snowy plover, and California least tern for the life stages supported by the SCRE. The SRP Final Report states:

The SRP determined that these species-related beneficial uses were more critical to support than others identified in the AHP, and that the other beneficial uses would not be impaired by providing conditions supporting the aquatic beneficial uses. Moreover, the SRP believes that the aquatic life beneficial uses are the most sensitive to potential changes in discharge from the VWRF, and that protecting these uses will translate to overall protection of all of the SCRE beneficial uses.

The SRP analysis begins with the premise that the MEPDV should be 100 percent (i.e., zero discharge) unless there is compelling evidence to the contrary. The SRP reasoned that, under “natural” hydrologic conditions, the Santa Clara River would be a seasonally flashy system, with most discharge events occurring in the winter and early spring, and low or no surface water discharge in summer (SRP Final Report at 4, citing Stillwater Sciences 2018). Consequently, it determined that the any discharge above zero would have to be shown to improve the ability of the estuary to mimic “natural physical processes and habitat conditions” to best support the listed focal species and their habitats, as well as the beneficial use related to them, the SRP also prioritized mimicking more natural “flashy” hydrological conditions because those conditions best support sensitive native species over invasive species, with an emphasis on species listed for protection under the state and federal Endangered Species Acts – namely the tidewater goby, southern California steelhead, western snowy plover, and the California least tern. (SRP Final Report at 25.)

The SRP Final Report observes that “more habitat is not always the best prescription, rather the SRP supports improved habitat quality over quantity. Higher VWRP discharges may result in more total area of open water and shallow subtidal habitat. However, habitat quality is preferred to quantity for the species of concern in the SCRE.” (SRP Final Report, 2018)

Based on its review of the technical analysis and assumptions in the Phase 3 Study, the SRP concluded that there is a compelling scientific rationale for a more substantial reduction in VWRP discharges to the SCRE than the Phase 3 Study proposes. The SRP recommends a lower discharge range during closed-berm conditions (0 to 0.5 MGD) on an average annual basis. This discharge level in critical closed-berm conditions represent enhancement for the SCRE because it best mimics “natural” hydrology, provides the best water quality within the SCRE, and provides the best quality habitat for the listed species within the SCRE. This discharge volume corresponds to a MEPDV reduction of approximately 90 percent to 100 percent from current VWRP discharge volumes, or a diversion of approximately 4.2 MGD, or 4,705 AFY (based on 2016 flows, consistent with Phase 3 Report). The SRP states that “[a]llowing 0.5 MGD (558 AFY) of discharge or less from the VWRP will stabilize estuary water levels during the dry season, thus reducing the frequency of unseasonal breaches; the recommended MEPDV also is likely to reduce nutrient loading to the SCRE compared to existing discharge levels.” (SRP Final Report, 2018) During winter months, when the Santa Clara River is openly flowing through the estuary into the ocean, higher VWRP discharges could be allowed. Short-term discharge greater than 0.5 MGD would not be expected to adversely affect beneficial uses.

The TRT reviewed and prepared comments on the SRP Final Report on June 26, 2018 (TRT Comments). While the TRT noted that the amount of diversion that the TRT recommended was less than the amount that the SRP recommended, the TRT concluded “there are substantial areas of agreement and consistency between the SRP and TRT analyses and determinations. The TRT further concluded in its June 28, 2018, report that:

- The TRT agrees with the SRP that the quality of the various habitats is more important than the quantity.
- It is likely that under reduced discharge, the wetland and riparian habitats will re-establish themselves at lower elevations and that problems that have been associated with higher discharge, such as algal growth, hypoxia or low dissolved oxygen, and more favorable conditions for invasive species invasion may decrease.
- The TRT believes the SRP’s recommended MEPDV and Continued Discharge Level would afford sufficient habitat area for the four endangered species and is expected to improve the quality of available habitat.

As a result of this scientific study process, both the SRP and the TRT recommended a higher level of diversion, resulting in less discharge, than the Phase 3 Study. The SRP Report and TRT Comments ascribe this variation to the differences in emphasis placed on the importance of protecting endangered and threatened species habitat, compared to other beneficial uses of the SCRE. As the TRT Comments explain:

The SRP focused their analysis on effects of the discharge on federal listed species under the Endangered Species Act: tidewater goby, steelhead, western

snowy plover, and California least tern (also listed as an endangered by the state and a California Fully Protected Species). While the AHP [a methodology used by the Phase 3 Study, but not used by the SRP] also considered RARE species as the most significant factor, it only comprised 35% of the final score, whereas the SRP's approach would have given these species 100%. Other beneficial uses such as wetlands and estuarine habitat had opposite trends to that of rare species, with increasing water discharge being more beneficial. This tended to drive the habitat acreage benefits more to the middle score range. Such results are expected when evaluating effects on a wide range of beneficial uses that, in some cases, have conflicting requirements.

The TRT believes there are more commonalities than differences for the MEPDV level and the SRP's and TRT's assessment of what would be appropriate. While the SRP focused on a subset of the beneficial uses, the SRP makes a strong and compelling argument to focus on listed species. In that context, and recognizing that the RARE beneficial use is, by definition, the most important to preserve and enhance, the TRT supports the SRP recommendation to provide the best protection for these species. The TRT notes that other beneficial uses, such as wetlands, riparian vegetation, and open water habitat, that have evolved in response to the City's discharges may not be met to the full extent they are today. The TRT agrees with the SRP that the quality of the various habitats is more important than the quantity. It is likely that under reduced discharge, the wetland and riparian habitats will re-establish themselves at lower elevations.

In reliance on the preponderance of the scientific evidence, including the SRP's Final Report and the TRT's June 28, 2018, report, the City concurs with the SRP's recommendations regarding the critical SCRE condition, enhancement levels, continued discharges, and the MEPDV.

1.7 Water Supplies and Demands

As the efforts to comply with the RWQCB's permit and Consent Decree requirements progressed, the City recognized that the tertiary-treated water diverted from the SCRE could assist in meeting the City's future water supply needs. This section provides a summary of the City's water supply planning efforts that could be facilitated through the implementation of a potable reuse project.

To meet water demands for planned future growth, and to enhance supply reliability even in drought years, the City is proposing the Ventura Water Supply Projects to protect the ecological values of the SCRE as well as to develop additional water supply sources. The City's 2018 Comprehensive Water Resources Report (CWRR) and the 2015 Urban Water Management Plan (UWMP) identify several potential future water supply projects to develop additional and more reliable potable water sources, including recycled water, ocean desalination, and imported water via the State Water Interconnection Project.

1.7.1 State Water Interconnection Project

The City is currently conducting CEQA review to analyze the State Water Interconnection Project that would include construction of a pipeline to connect with the Calleguas system near the Springville Reservoir, in the southwestern end of the Camarillo Hills, and trend northwesterly to the east end of the City to connect to the City's water system at Henderson Road, northeast of Saticoy Avenue. The interconnection pipeline would be approximately 8 miles in length and, except for the portions within the cities of Ventura and Camarillo, would primarily be located within unincorporated Ventura County. The preferred alignment would be located primarily within farm roads on private agricultural parcels and within County of Ventura Watershed Protection District Channel roads. The project would also include a Santa Clara River crossing.

The State Water Project (SWP) water supplied through the Calleguas system would be subject to the SWP water allocation, updated each year depending on the hydrology in the state. Some years the full entitlement may be available, while other years less water would be available. The California Department of Water Resources (DWR) indicates that, over the long term, an average of approximately 60 percent of water entitlements may be available to the State Water Contractors. However, during times of drought, deliveries have dropped to as low as 5 percent. In addition, water may be available during certain parts of the year but not others, making it an unreliable source. The City of Ventura does not have storage opportunities to store water in aboveground or underground reservoirs when it is available. As a result, the SWP interconnection is being pursued in parallel with the Ventura Water Supply Projects to augment water supplies when available, but the interconnection is not considered a reliable, consistent water supply.

1.7.2 Existing Supplies

While the City has a fairly diverse water supply portfolio, it is entirely dependent on local supplies that are vulnerable to significant reduction during drought conditions. **Table 1-3** summarizes the City's existing normal- and dry-year supplies. As shown in Table 1-3, water supplies are reduced during a prolonged drought.

**TABLE 1-3
SUMMARY OF VENTURA WATER SUPPLIES**

Water Supply Source	Normal Year (AFY)⁽⁸⁾	Dry Year (AFY)⁽⁹⁾	Estimated 2030 Supplies⁽⁹⁾
Casitas Municipal Water District	5,340 ⁽¹⁾	3,204 ⁽⁴⁾	5,841
Ventura River/Foster Park	4,200	2,384 ⁽⁵⁾	3,647–6,700
Mound Groundwater Basin	4,000	2,130 ⁽⁶⁾	4,000
Oxnard Plain Groundwater Basin	4,100	3,862	3,862
Santa Paula Groundwater Basin	3,000 ⁽²⁾	3,000	1,141–3,000 ⁽⁷⁾
City-Acquired Water Rights in 2016 (Santa Paula Basin)	40.9 ⁽³⁾	40.9	40.9
Recycled Water	700	700	865
TOTAL	21,381	15,321	21,778–28,207

(1) The estimated 5-year average normal water supply from Casitas is 5,062 AFY. Adding in development under construction (estimated to be 278 AFY) brings the total normal year supply to 5,340 AFY.

(2) Includes 3,000 AF of original City allocation

(3) 5.8 AF of water rights acquired for the past development of Tract 4632. 12.0 AF of water rights acquired for the development of Phase 1 of Tract 5632 in 2016 and 23.1 AF of water rights acquired for the development of Tract 5774 in 2016.

(4) 40 percent drought impact based on 2017 agreement with Casitas.

(5) 5-year production average from 2013-2017.

(6) Three-year average production (2015-2017).

(7) The Santa Paula Basin Judgment allows the City to utilize on average 3,000 AF annually. Assumes the worst-case scenario that the basin is determined to be in a Stage 2 overdraft per the Court's Stipulated Judgment and the City is reduced to an allocation of 1,141 AFY during drought conditions.

(8) Table 4-1 of the 2018 Comprehensive Water Resources Report, City of Ventura

(9) Table 4-3 of the 2018 Comprehensive Water Resources Report, City of Ventura

SOURCES: 2018 Comprehensive Water Resources Report, City of Ventura; UWMP 2016

Table 1-4 and **Table 1-5** summarize projected water supplies and demand through 2040 as projected by the UWMP. As shown in Table 1-4, if multiple dry years are experienced (defined as four consecutive dry years), the City could face a water deficit of 2,645 acre-feet (AF) during 2020. By 2035, the UWMP concludes that a total of approximately 5,400 AFY of additional supplies from potable reuse and desalination will be needed to meet projected demand. The projected requirement for additional supplies includes a contingency buffer of approximately 20 percent, as required by the Ventura Water Commission in order to avoid underestimating capital costs. The buffer reflects uncertainty about future water needs and the possibility that existing water supplies may not be fully available in the future. Therefore, where Table 1-4 appears to show surpluses in 2035 and 2040, the surplus amounts represent the buffer required for responsible water supply planning.

TABLE 1-4
COMPARISON OF SUPPLIES AND DEMANDS IN AVERAGE/NORMAL YEAR (AF)

Water Supply Source	2020	2025	2030	2035	2040
Supplies					
Casitas Municipal Water District	5,741	5,901	6,065	6,233	6,407
Ventura River/Foster Park	4,200	4,200	4,200	4,200	4,200
Groundwater	11,106	11,106	11,106	11,106	11,106
Recycled Water	700	700	700	700	700
Planned Additional Recycled Water	0	142	135	189	214
Planned Potable Reuse	0	2,381	2,670	3,898*	3,989
Planned Desalination	0	0	0	1,500*	1,500
Total Supplies	21,747	24,430	24,906	27,826	28,025
Estimated Demands	20,245	20,930	21,512	22,111	22,724
<i>Difference (Supply – Demand)</i>	<i>1,502</i>	<i>3,500</i>	<i>3,394</i>	<i>5,715</i>	<i>5,301</i>
<i>Difference as % of Demand</i>	<i>7%</i>	<i>17%</i>	<i>16%</i>	<i>26%</i>	<i>23%</i>

*5,398 rounded up to 5,400 AFY of additional supplies (Potable Reuse and Desalination)

SOURCE: UWMP 2016, Table 6-1

TABLE 1-5
COMPARISON OF SUPPLIES AND DEMANDS IN MULTIPLE DRY YEARS (AF)

Water Supply Source	2020	2025	2030	2035	2040
Supplies					
Casitas Municipal Water District	4,593	4,720	4,852	4,987	5,125
Ventura River/Foster Park	1,298	1,298	1,298	1,298	1,298
Groundwater	11,009	11,009	11,009	11,009	11,009
Recycled Water	700	700	700	700	700
Planned Additional Recycled Water	0	142	165	189	214
Planned Potable Reuse	0	2,381	2,670	3,898*	3,898*
Planned Desalination	0	0	0	1,500*	1,500*
Total Supplies	17,600	20,250	20,694	23,581	23,744
Estimated Demands	20,245	20,930	21,512	22,111	22,724
<i>Difference (Supply – Demand)</i>	<i>(2,645)</i>	<i>(680)</i>	<i>(818)</i>	<i>1,470**</i>	<i>1,020</i>
<i>Difference as % of Demand</i>	<i>-13%</i>	<i>-3%</i>	<i>-4%</i>	<i>7%**</i>	<i>4%</i>

*5,398 AFY rounded up to 5,400 AFY of additional supplies (assumes both an increase in potable reuse and the construction of a desalination facility on Phase 2))

** Apparent surplus comprises the water supply contingency buffer of 20%

SOURCE: UWMP 2016, Table 6-3

In the 2016 water year, the VWRF produced an annual average of 6.7 MGD (7,400 AFY) of tertiary-treated wastewater, meeting Title 22 requirements for unrestricted non-potable uses. The City is currently permitted to use this Title 22 water only for irrigation and dust control uses and to supply water for urban irrigation. The City currently supplies approximately 0.6 MGD (700 AFY) (average annual) of this recycled water to a City park, two golf courses, and landscape areas within the vicinity of the City's existing recycled water distribution system. The remaining tertiary-treated wastewater is conveyed through the existing wildlife/treatment ponds, which provide some water quality treatment. Apart from some losses to percolation and evaporation, the water is then discharged to the SCRE. In the 2016/17 water year, an annual average of approximately 5.0 MGD (5,600 AFY) was discharged from the ponds into the SCRE. During the dry-weather conditions for 2015/16, which is a water year selected to best characterize existing conditions in the SCRE, and to represent the most critical condition for assessing impacts of VWRF discharges on the SCRE, approximately 4.7 MGD (5,400 AFY) was discharged through the wildlife/treatment ponds to the SCRE during the low flow dry season.

In 2015, the City initiated a pilot project to test the feasibility of constructing an AWPf to maximize the quantity and reliability of potable supplies by purifying tertiary-treated discharge produced by the VWRF and optimizing its potable reuse, rather than discharging into the SCRE. The pilot facility operated for 9 months and produced favorable results that indicated the highly reliable purification technology could be applied at a larger scale in a cost-efficient and environmentally protective manner. As a result, the City is proposing to construct a full-scale AWPf as a component of VenturaWaterPure (Phase 1 of the proposed projects) to augment the City's water supplies and increase local water supply reliability to meet projected future demands, to protect the ecology of the SCRE by diverting discharges from the SCRE to water reclamation uses consistent with the Consent Decree, and to improve system water quality.

CHAPTER 2

Project Description

2.1 Project Summary and Objectives

The City of San Buenaventura (Ventura, or City) is proposing a project that will improve ecological conditions in the Santa Clara River Estuary (SCRE) by reducing tertiary treated wastewater discharges to the SCRE and diverting flow to purification facilities for augmentation of local water supply.

The key objectives of the proposed Ventura Water Supply Projects are:

- Protect, maintain, and improve ecological resources and related beneficial uses of the SCRE and its watershed.
- Augment local water supply in an environmentally responsible and cost-efficient manner.
- Provide a drought- and disaster-resilient water supply.
- Improve municipal supply groundwater quality within the service area.
- Maintain compliance with the City of Ventura's VWRP NPDES permit.

2.2 Introduction

The City water and wastewater department (Ventura Water) provides water and wastewater services to approximately 109,000 residents and businesses within the city limits, and provides water service to some limited areas within unincorporated Ventura County. The City provides wastewater collection and treatment services for approximately 98 percent of city residences as well as McGrath State Beach Park and the north coast communities (County Service Area No. 29). **Figure 2-1** shows the Ventura Water service area boundary.

The City has delivered a long-term (10-year) average of 16,515 acre feet per year (AFY) of local water supplies. Surface supplies from the Ventura River and Lake Casitas contribute 35 to 65 percent of this supply, with the remaining supplies coming from the Mound, Oxnard Plain, and Santa Paula groundwater basins, depending on supply conditions.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 2-1
Regional Location

In June 2016, the City Council adopted the City’s 2015 Urban Water Management Plan (UWMP), which identifies water supplies needed to meet existing and future water demands in normal and dry years. The UWMP concludes that the City’s existing water supplies may be insufficient to meet future dry year demands and identifies the need for approximately 5,400 AFY (4.7 million gallons a day [MDG]) of new water supply by 2035. The UWMP identifies a combination of potable reuse with purified water as well as ocean desalination as water supply projects needed to meet the 5,400 AFY of new water supply by 2035.

The City’s Comprehensive Water Resources Report (CWRR), most recently updated and adopted in June 2018, confirms the conclusion that the City needs to implement a variety of capital projects to increase water supplies available for potable use and to improve water quality and reliability of supply in order to avoid potential shortages in future dry years.

The City also is planning for the need to meet drinking water standards called maximum contaminant limits (MCLs). Primary MCLs address health issues, while secondary MCLs address aesthetic issues, such as taste and odor. The City’s existing potable water supply that originates from groundwater wells does not currently meet secondary MCLs for total dissolved solids (TDS) and sulfate concentrations. The California Division of Drinking Water (DDW) (formerly the California Department of Public Health) has required the City to improve mineral water quality in the groundwater supply (CDPH 2011). The addition of desalted or purified new water supplies and/or desalting of existing supplies is needed to yield a “blended” supply that would meet secondary MCLs. The City has calculated that in addition to the 5,400 AFY of desalted/purified new supplies, approximately 2,000 AFY of the existing groundwater supplies would also need to be desalted to provide sufficient blending to meet the secondary MCLs in the future. The desalting of existing groundwater supplies would not provide a new, additional water source. Rather, it would improve the quality of existing groundwater that is currently part of the City’s water supply. The City would still need approximately 5,400 AFY of new water supply that is low in salts by 2035, according to the UWMP.

In addition to these water supply planning efforts, Ventura Water is party to a Consent Decree¹ for the protection of the SCRE. The Consent Decree expresses the City’s commitment to pursue “environmentally protective, sustainable, and integrated water supply and wastewater discharge practices. . . [including] infrastructure options for Ventura’s reclamation and diversion of an ecologically appropriate volume”² of tertiary-treated flows produced by the existing Ventura Water Reclamation Facility (VWRF) and currently discharged to the SCRE. The Consent Decree requires such diverted flows to be dedicated to “water reclamation uses,” including local water supply augmentation to the maximum extent feasible. The Consent Decree does not replace any federal, state, or local law or permit requirement, and its implementation is subject to the completion of environmental review, including this EIR.

¹ The *Tertiary Treated Flows Consent Decree and Stipulated Dismissal with the Wishtoyo Foundation Ventura Coastkeeper, Heal the Bay* filed with the U.S. Central California District Court February 3, 2012, executed among the City, the Wishtoyo Foundation/Ventura Coastkeeper, and Heal the Bay.

² *Id.* at 5.

Therefore, taking into account both the City's obligation to protect the ecology of the SCRE and to meet water supply planning needs, the City is proposing to divert discharge of tertiary treated wastewater from the SCRE. In addition, to improve potable water quality, a portion of the City's existing groundwater supplies may be treated to meet secondary MCLs. If sufficient water is not available from the diversion of discharge, the City may also need to develop desalination facilities to meet 2035 water needs.

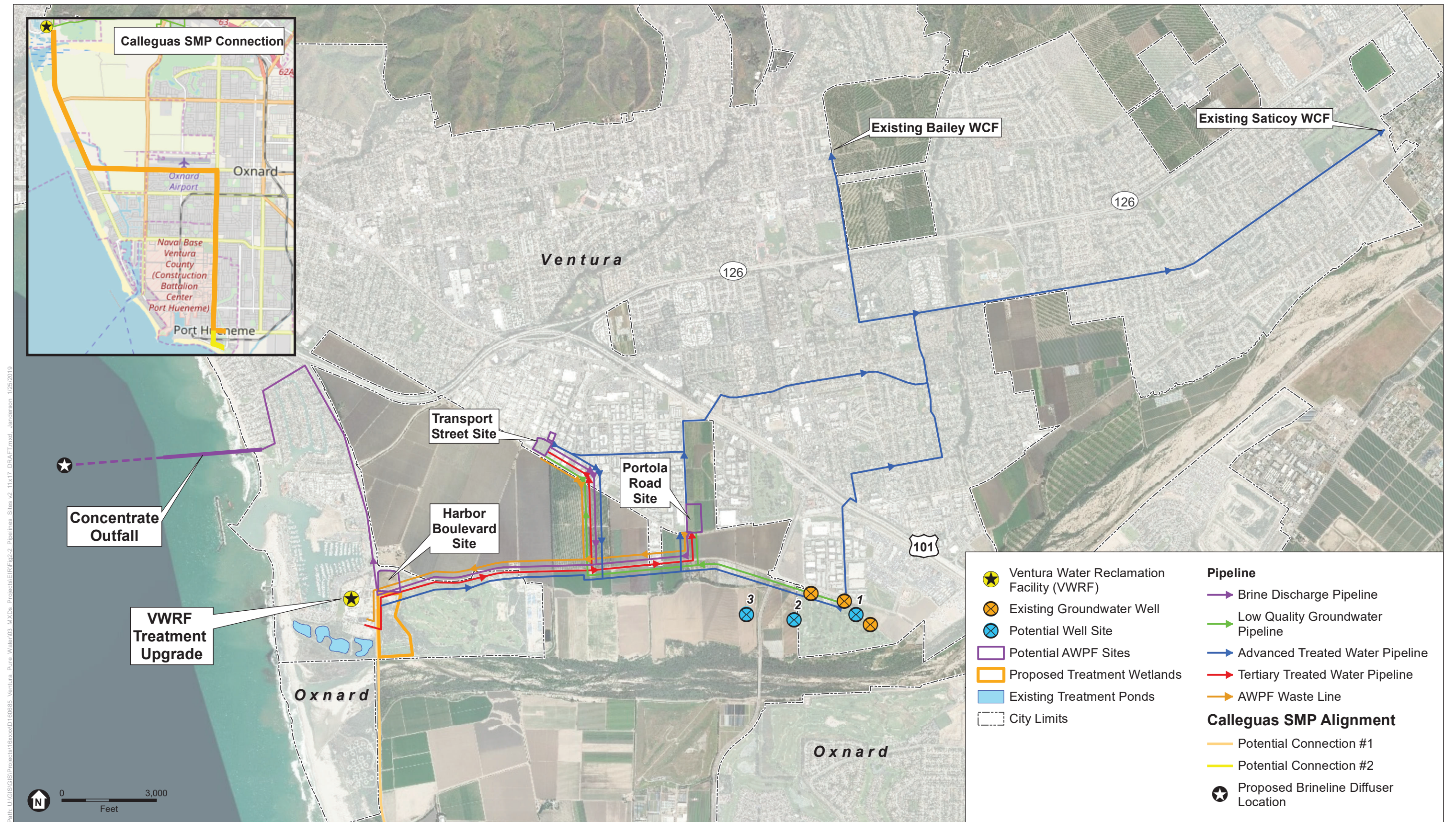
The Ventura Water Supply Projects (proposed projects) would achieve the goals of protecting the ecology of the SCRE while augmenting local potable water supplies. The proposed projects would be implemented in two phases (Phases 1 and 2). See **Figure 2-2** for the project components. The first phase would implement the "VenturaWaterPure Project," a recycled water project that would divert tertiary-treated discharge from the VWRf (enhancing the ecological conditions of the SCRE in compliance with the Consent Decree) for treatment at a new Advanced Water Purification Facility (AWPF) for potable reuse (in furtherance of the UWMP). The highly treated water produced by the AWPF would be distributed directly, through the water distribution system (direct potable reuse or DPR), and/or injected into local groundwater basins before distribution to the water system (indirect potable reuse, or IPR). The purification facilities would also be used to treat existing groundwater supplies to meet secondary MCLs in the blended supplies.

Phase 2 would provide additional water supply to meet the needs of planned growth. The AWPF would be expanded for additional treated water diversions and additional groundwater treatment, or if AWPF expansion is not permitted or would not provide enough water, an ocean water desalination facility would be constructed at the AWPF site.

2.3 Summary of Project Components

To meet the conditions of the Consent Decree, the project needs to divert and beneficially reuse the maximum average annual volume or flow of VWRf tertiary-treated discharge that could be diverted from the SCRE while still protecting the ecological resources of the SCRE. The diverted water would be purified and used for potable reuse, which requires storage and treatment facilities, pipelines, wells, an ocean outfall and improvements to the VWRf (including new wetlands).

As discussed in Section 1.6, the amount of VWRf tertiary-treated flows that should remain in the SCRE (the Continued Discharge Level or CDL) has been analyzed through a scientific analysis and review process and determined to be a range of 0 – 0.5 MGD on an annual average basis during closed-berm conditions. During winter months, reflecting the steelhead migratory period when the berm is open due to high Santa Clara River flows, higher discharges of tertiary flow to the SCRE would be permitted, subject to diverting 6 MGD to the AWPF (after completion of Phase 1) first to provide a steady, constant influent flow for purification. These higher discharges of tertiary treated flow in excess of the CDL would occur in limited circumstances when necessary to create or maintain maximum storage capacity within the system for purposes such as protecting system operations during exceptional or multiple rain events or drawing down stored flows to assure sufficient storage capacity during closed berm conditions.



SOURCE: ESRI, 2018; County of Ventura, 2018.

Ventura Water Supply Projects

Figure 2-2
Phase I Project Components

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The anticipated discharge regime for the project is subject to emergency discharges at any time when capacity of the VWRf is exceeded, as necessary to prevent inundation, flooding, and/or spills at the treatment plant, to effect repairs and maintenance required to assure consistent compliance with other water quality limitations in the permit, or to protect public health and safety. Anticipated, scheduled repairs, maintenance and public health and safety activities shall be conducted during open berm conditions to the maximum extent feasible. Short-term emergency discharges of tertiary treated flow to the SCRE in such situations would not be expected to adversely affect beneficial uses."

The components of these Ventura Water Supply Projects are summarized and shown below.

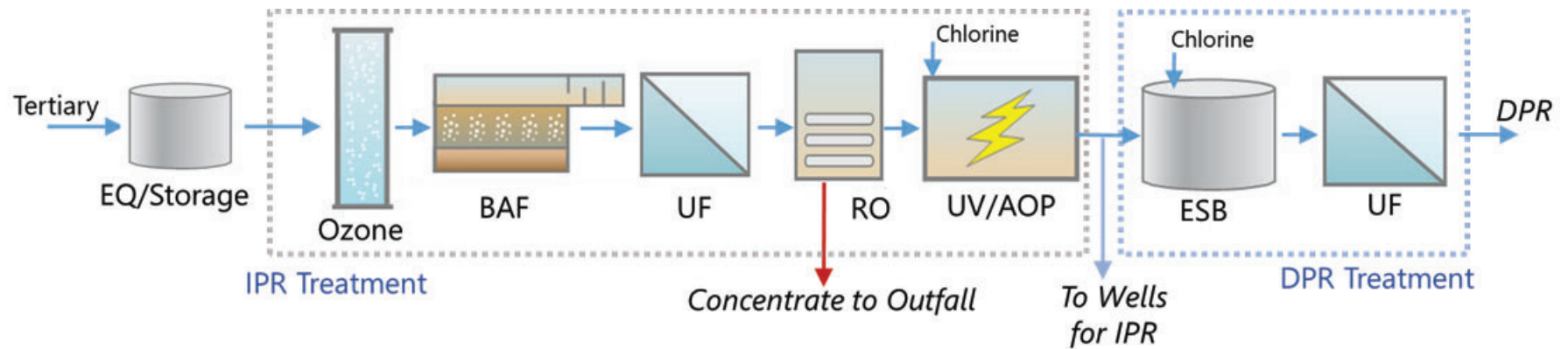
Phase 1 Components (VenturaWaterPure)

Advanced Water Purification Facility

The proposed AWPf would be located within the City of Ventura or in nearby unincorporated Ventura County within one of three identified 5- to 20-acre sites. Water would be stored in equalization basins at the VWRf site and pumped to the AWPf site for treatment. Tertiary treated water would be diverted to the VWRf rather than the existing wildlife/treatment ponds. During Phase 1, however, sufficient flows would be directed to the ponds to maintain their use and character. Flows out of the existing wildlife/treatment ponds would be managed to meet the CDL requirements into the estuary.

The proposed AWPf would be designed to treat water to quality criteria that exceed compliance with the Groundwater Recharge Reuse Regulations (Title 22 of the California Code of Regulations). As shown conceptually in **Figure 2-3** and **Figure 2-4**, proposed treatment processes include an equalization/storage basin, ozone/biofiltration, biologically active carbon (BAC) filters, ultrafiltration (UF), reverse osmosis (RO), ultraviolet (UV), and advanced oxidation process (AOP) for IPR. For DPR these treatment processes would be followed by treatment at a new potable water treatment plant (WTP), which would incorporate additional disinfection and UF processes.

An engineered storage buffer (ESB) with diversion capabilities between the AWPf and WTP would hold AWPf product water for a predetermined period prior to final treatment at the WTP and distribution as drinking water. In addition, the AWPf would include a wet weather storage facility with a capacity of 4.5 million gallons (MG) that would provide storage during periods of high flows when the SCRE berm was not yet breached.

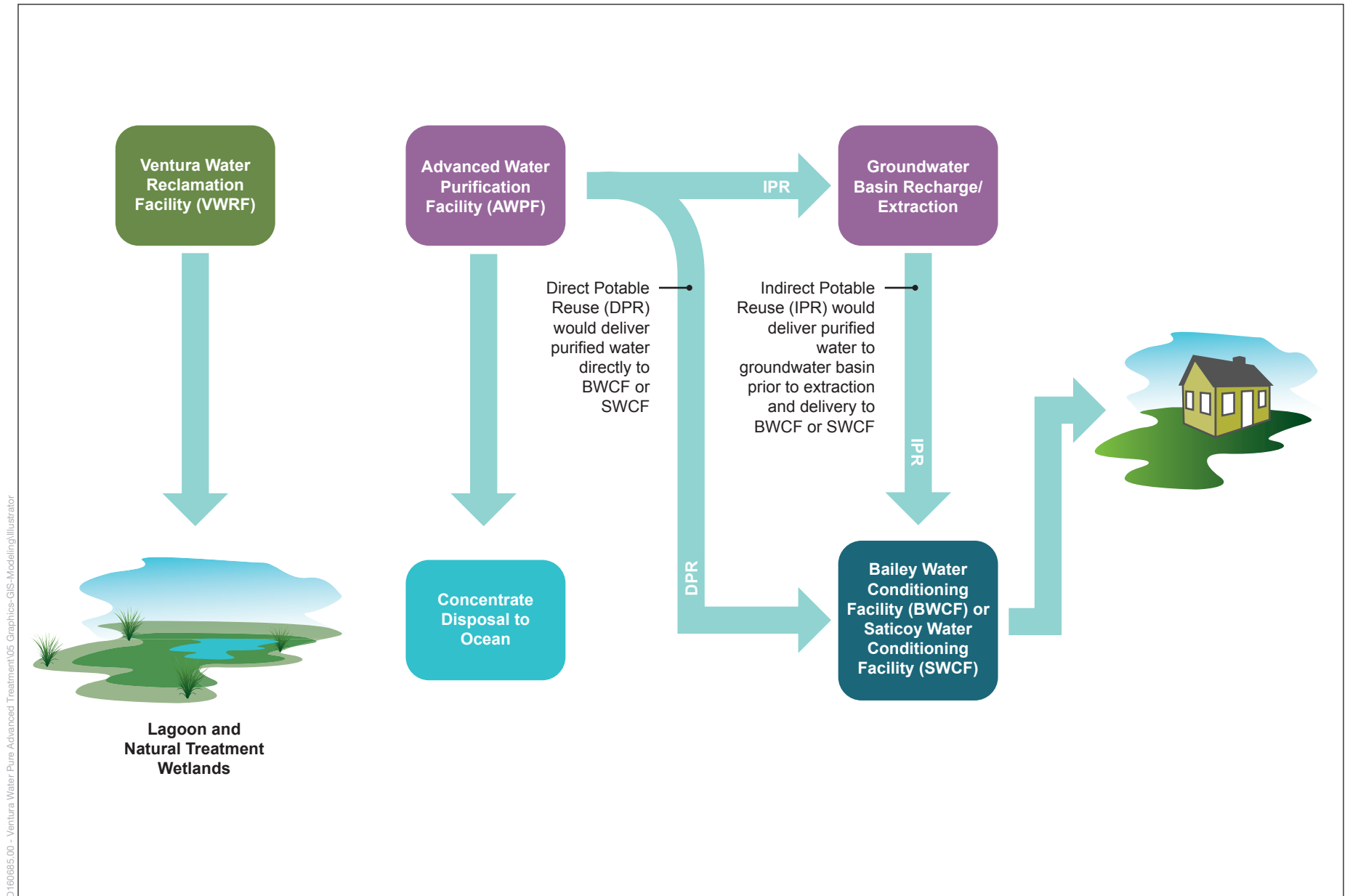


Biologically Active Carbon (BAC) Filters/Ultrafiltration (UF)
 Reverse Osmosis (RO)
 Ultraviolet (UV)
 Advanced Oxidation Process (AOP)
 Engineered Storage Buffer (ESB)
 Ultrafiltration (UF)
 Indirect Potable Reuse (IPR)
 Direct Potable Reuse(DPR)
 Water Treatment Plant (WTP)

SOURCE: Carollo, 2017

Ventura Water Supply Projects

Figure 2-3
Proposed AWPf Treatment Process



SOURCE: ESA, 2017

Ventura Water Supply Projects

Figure 2-4
Proposed Project Schematic

VWRF effluent flows have varied historically based on hydrologic condition, season, and level of conservation. The new treated water supply is based conservatively on the 2016 (drought condition) flow condition used for the Phase 3 studies, and the required CDLs for Phase 1a, 1b and 2. However, to meet the CDL requirements the capacity of the AWPf must be greater to accommodate the variation in wastewater flows that have been observed in the historical record. The estimated total capacity for diversion and discharge to the SCRE (CDL) needs to be approximately 6.5 mgd. At a CDL of 0.5 mgd, the required AWPf capacity is 6 mgd. Therefore, the Phase 1 AWPf capacity would be designed to accept diverted VWRF tertiary discharges up to 6.0 million gallons a day (MGD), which produces 5,400 AFY (4.7 MGD) of purified water, after the concentrate wastes are removed. It is anticipated that approximately 4,000 AFY of the 5,400 AFY produced water will reliably come from diverted VWRF flows. Capacity for up to 1,400 AFY of desalting of existing groundwater supplies would also be provided in the Phase 1 project.

Phase 1 flow targets may change somewhat if the Los Angeles Regional Water Quality Control Board (RWQCB) and other responsible agencies approve a different diversion volume than the current recommendation made by the Scientific Review Panel (SRP). (See Section 1.6 for a detailed description of the SRP and Technical Review Team [TRT] review process established through the Consent Decree.) The SRP concluded that discharges of treated wastewater from the VWRF to the SCRE should be limited to an annual average range of 0 – 0.5 MGD during closed berm conditions, which translates to diverting 90- 100 percent of the 2016 dry-weather flows. Higher discharges would be allowed to the SCRE during winter berm open conditions, reflecting the steelhead migratory period. The anticipated discharge regime for the project is subject to emergency discharges at any time. Short-term emergency discharges of tertiary treated flow to the SCRE in such situations would not be expected to adversely affect beneficial uses.

The ultimate diversion and discharge volumes would be determined through the current, ongoing National Pollutant Discharge Elimination System (NPDES) permit renewal processes (new permit expected mid-2019), with review by resource agencies. Since the publication of the SRP Final Report, the City has met with and received feedback on the proposed projects from state and federal wildlife agencies, as discussed further in Section 2.4. Based on the scientific record and feedback from the agencies, the City is proposing additional phasing in the implementation approach that would commit to a CDL of 1.9 MGD by the end of year 2025 (approximately 60 percent of 2016 discharges), with a planned reduction to 0 – 0.5 MGD by the end of year 2030 (approximately 90-100 percent of 2016 discharges). This phased implementation approach summarized in **Table 2-1** is the basis of the proposed project's designed flow rate and minimum treatment capacity. As VWRF flows increase in the future, the CDLs will be maintained and more flow will be diverted to the AWPf.

**TABLE 2-1
PHASE 1 PHASED IMPLEMENTATION APPROACH DISCHARGE**

	VWRF continued discharge level (CDL) to SCRE	Minimum VWRF flow diverted to other uses ⁽¹⁾
	MGD	MGD
Phase 1a: Implemented by 2025	1.9	2.8
Phase 1b: Implemented by 2030	0 – 0.5	4.2 – 4.7

1. Based on discharge data from 2016 during low flow, dry weather conditions. As VWRF flows increase there will be additional flows diverted, while CDL will be maintained.

SOURCE: Stillwater Sciences 2018

Water Conveyance System

As shown in Figure 2-2, a water conveyance system is needed to convey and/or pump:

- Tertiary-treated discharges from the VWRF to the AWPf
- Tertiary-treated discharges from VWRF to ponds to new treatment wetlands
- Tertiary-treated discharges from Treatment Wetlands to discharge point in or near SCRE
- Tertiary-treated discharges from VWRF to storage and from storage to AWPf
- Groundwater extracted from wells in the Oxnard Plain groundwater basin to the AWPf for desalting
- Purified water from the AWPf to the groundwater recharge wells for injection into that groundwater basin (i.e., IPR)
- Purified water from the AWPf and/or the groundwater wells to the existing Bailey Water Conditioning Facility (WCF) and/or Saticoy WCF for distribution to users
- Purified water extracted from the groundwater wells to the local water distribution system
- Waste return line from AWPf to VWRF for backwash water or emergency discharges
- AWPf concentrate effluent to the VWRF and then to the outfall

Groundwater Wells

As shown in Figure 2-2, the proposed projects include construction of up to six groundwater wells in the Oxnard Plain Basin (final configuration to be determined by detailed groundwater modeling). One configuration under consideration is aquifer storage and recovery (ASR), where the wells would use the same borings and underground well components both to inject and to extract water, after an appropriate retention time. Another configuration is to inject in one location and extract in another, after an appropriate retention time. Both configurations are allowed by the State of California for IPR. As part of this system, monitoring wells would be installed to comply with potable reuse permitting requirements and to monitor water quality in the groundwater basin(s). A pump station would also be located at the well site to be able to pump water from the well sites to the Bailey WCP.

Wildlife/Treatment Wetlands

The Consent Decree includes the goal of reducing levels of nitrate in discharges of tertiary treated flows to the SCRE to 4 milligrams per liter (mg/l), which is well below applicable Basin Plan water quality objectives for the SCRE. This can be achieved through construction of wildlife/treatment wetlands, as contemplated by the Consent Decree, through VWRf treatment upgrades to reduce nitrates (discussed in the paragraph below), or through a combination of wildlife/treatment wetlands and VWRf treatment process improvements.

- Treatment wetlands may be newly constructed, or created by reconfiguring and repurposing some or all of the existing wildlife/treatment ponds.
- If the nitrate reduction goal cannot be met without constructing new wildlife/treatment wetlands, the new wetlands would be constructed east of the VWRf, as shown in Figure 2-2. A pump station at the VWRf and a conveyance pipeline from the VWRf and/or wildlife ponds to the new wetlands would be constructed. A discharge structure from the new wetlands would be constructed to convey flow back to the existing outfall to the SCRE or to a new discharge structure.

VWRf Treatment Upgrades

To meet discharge water quality objectives outlined in the Consent Decree, additional nitrogen treatment processes may be constructed at the VWRf, in addition to or in lieu of nitrate treatment through constructed/reconfigured wetlands. The treatment upgrades would include the following components:

- Aeration Blowers: Replacing the existing aeration blower system with a new building or potentially reuse the existing aeration building, and the installation of new energy efficient blowers and instrumentation to fully automate the system.
- Primary Treatment Enhancement: Replacing the existing gravity thickener at the VWRf with a new primary sludge-thickening facility near the anaerobic digesters and constructing a new thickened-sludge pump station to pump to the digesters.
- Increase of Anoxic Tank Capacity: Designing and constructing two new anoxic tanks adjacent to the existing tanks.

Other Improvements Required at the VWRf

Additional construction activities would be required at the VWRf site to implement the AWPf, conveyance, and wetlands project elements. A new pump station and wet well with equalization capacity, and a new storage tank would be constructed onsite, as well as new piping at the VWRf to convey flows to the AWPf, storage, or the wetlands. The wet well and storage tank would be sized to mitigate peak flow periods and capture water for reuse. Modifications to the existing effluent discharge structures and chlorine contact basin may also be required to accommodate diversion to the wetlands prior to discharge to the SCRE and to limit discharge to the SCRE in closed-berm conditions as recommended by the SRP. Other needed improvements would include:

- Filter replacement/improvement of existing filters – may include upgrading to ozone/biologically active filtration;

- Disinfection improvements – to reduce or eliminate use of chlorine gas onsite (replace with hypochlorite);
- Equalization basin and pump station for delivery of water to AWPf; and,
- Modifications to infrastructure and hydraulics for moving water at the VWRf and to the AWPf.
- Pump station for sending concentrate as well as tertiary flows (during wet weather or emergency events) to outfall.

Concentrate Discharge Facility

A facility to safely dispose of the concentrate produced by the AWPf and potentially tertiary effluent under wet weather conditions or during critical down times for the AWPf would be constructed in one of two ways:

New Outfall

The City would construct a new ocean outfall that would discharge concentrate (and occasional tertiary-treated water) to the ocean north of the Ventura Harbor. The ocean outfall would be installed by horizontal directional drilling (HDD) techniques from an on-shore location, emerging on the ocean floor 2,000 to 4,000 feet offshore (see Figure 2-2). Once emerged, an extension of the outfall would be attached and placed along the ocean floor until the sea depth to outfall reaches approximately a 50-foot depth. A diffuser would be installed at the end of the outfall with discharge portals designed to maximize efficient dilution. A pipeline would be constructed from the AWPf to the ocean outfall within public rights-of-way where feasible. The ocean outfall would be installed pursuant to State Water Resources Control Board's (SWRCB) California Ocean Plan requirements.

Discharge Pipeline to the Calleguas Municipal Water District Salinity Management Pipeline

Alternatively, the City would construct a new pipeline from the proposed AWPf (via the VWRf) to the existing Calleguas Municipal Water District (Calleguas) SMP ocean outfall, as shown in Figure 2-2. The concentrate (and occasional tertiary effluent) would be discharged to the ocean through the existing SMP ocean outfall, subject to SMP capacity availability and approval from Calleguas Municipal Water District (Calleguas).

Phase 2 Components

Phase 2 would consist of either AWPf Expansion or Ocean Desalination.

Option A: AWPf Expansion

In Phase 2, the City would pursue Option A to divert the remaining wastewater flows from the VWRf to the AWPf to reach a CDL of 0 during closed berm, dry weather conditions. This option would require an AWPf expansion to reliably produce up to an additional 1.2 MGD (1,400 AFY) of product water, and an additional 600 AFY of treated groundwater. The combined Phase 1 and Phase 2 project total would result in 6.7 MGD (7,400 AFY) of reliable new water supply. To expand the AWPf, the individual advanced treatment processes facilities within the

plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. The full footprint and impacts of the expansion of the AWPf for additional tertiary flows is included in the project level impacts analysis. Additional flow routing modifications and/or storage would be required at the VWRf site to accommodate a CDL of 0. Discharge to the wildlife/treatment ponds would be reduced, and they likely would operate as terminal wetlands rather than ponds during dry weather months. During winter open berm conditions, reflecting the steelhead migratory period, flows in excess of the capacity of the AWPf facility would be discharged to the SCRE.

Option B: Ocean Desalination

If the necessary regulatory approvals do not allow for a consistent, reliable water supply based on diversion of discharge from the SCRE, or if the supply is insufficient to meet the City's reliable water supply and water quality demands, an ocean desalination treatment facility would be needed to meet the City's demands. The new ocean desalination treatment facility would be located at the AWPf site, and could produce approximately an additional 1.2 MGD (1,400 AFY) of desalinated water or more if needed to meet supplies. The total amount of water produced would be dependent on the remaining demand not met by recycled water.

The desalination option is currently being analyzed at a programmatic level in this EIR and would require additional California Environmental Quality Act (CEQA) project-level review if desalination is required to meet future water supply demands. Phase 2 development of ocean water desalination capacity would require construction of additional treatment facilities needed to desalinate ocean water within the Phase 1 AWPf site resulting in a parallel ocean desalination treatment train producing potable water. The treatment facility would include similar treatment processes as the AWPf, but would be dedicated to the ocean water source. A new ocean water intake system would be constructed to convey ocean water to the AWPf. Ocean water would be collected in conformance with the California Ocean Plan requirements. A subsurface intake system would be constructed unless proven to be infeasible. A subsurface intake system would be sized to intake approximately 3.5 to 6.9 MGD (3,900 to 7,730 AFY) of ocean water through slant wells, beach wells, or infiltration galleries. The design of the intake system would comply with the California Ocean Plan Amendment specifically regulating ocean desalination facilities.

The ocean outfall discharge facility would be sized with sufficient capacity for discharge from the AWPf and ocean desalination facility. Should the ocean desalination facility not be needed, the outfall could accommodate future salt management needs for the region should they occur.

The components of the Ventura Water Supply Projects are illustrated in **Figure 2-5**.

Options for Phase 1 and 2 Project Components

PHASE 1

AWPF

Harbor
Boulevard

or

Transport
Street

or

Portola
Road

WELLS

Oxnard
Plain Basin

PIPELINES AND PUMP STATIONS

To
ASR

To
AWPF

To
WCF

To
VWRF

To
Wildlife/
Treatment
Wetlands
then SCRE

To
Storage

CONCENTRATE DISCHARGE

New Ocean
Outfall

or

Pipeline to
Calleguas SMP

TREATMENT WETLANDS

Reconfigure
Wildlife Ponds

and/or

New Treatment
Wetlands

PHASE 2

AWPF EXPANSION AND/OR OCEAN DESALINATION

ASR Aquifer storage and recover
AWPF Advance Water Purification Facility
WCF Water Conditioning Facility
VWRF Ventura Water Reclamation Facility

D160685.00 - Ventura Water Pure Advanced Treatment05 Graphics-GIS-Modeling/illustrator

SOURCE: ESA, 2018

Ventura Water Supply Projects

Figure 2-5
Conceptual Project Components

2.4 Proposed Diversion Volume and Continued Discharge Level

As described in Section 1.6, the City has conducted extensive ecological analysis of the SCRE, culminating in the Phase 3 Study, Technical Review Team (TRT) Report, and SRP Final Report that estimated ecological effects of reduced discharges. The SRP Final Report recommended a Continued Discharge Level (CDL) of 0 – 0.5 MGD (on an average annual basis) during closed-berm conditions. This conclusion was founded on the beneficial effects of discharge reduction to listed species. Phase I would continue some freshwater discharge during critical-closed berm conditions, while meeting the CDL level identified by the SRP. During open-berm conditions, and emergency health and safety and similar conditions, higher discharges to the SCRE would be permitted.

Based on the best available scientific information set forth in the Phase 3 Study, the TRT Reports, and the SRP Final Report, and considering the preponderance of scientific opinion, the City accepted the SRP recommendation that to achieve the most ecologically protective condition in the SCRE, discharges of treated wastewater from the VWRP to the SCRE be limited to no more than 0.5 MGD when the berm is closed.

During winter months, reflecting the steelhead migratory period, when the berm is open due to high Santa Clara River flows, higher discharges of tertiary flow to the SCE would be permitted, subject to diverting 6 MGD to the AWP (after completion of Phase 1) first to provide a steady, constant influent flow for purification. Higher discharges of tertiary treated flow in excess of the CDL would occur in limited circumstances when necessary to create or maintain maximum storage capacity within the system for purposes such as: protecting system operations during exceptional or multiple rain events; or drawing down stored flows to assure sufficient storage capacity during closed berm conditions..

The anticipated discharge regime for the project is subject to emergency discharges at any time when capacity of the VWRP is exceeded, as necessary to prevent inundation, flooding, and/or spills at the treatment plant, to effect repairs and maintenance required to assure consistent compliance with other water quality limitations in the permit, or to protect public health and safety. Anticipated, scheduled repairs, maintenance and public health and safety activities would be conducted during open berm conditions to the maximum extent feasible. Short-term emergency discharges of tertiary treated flow to the SCRE in such situations would not be expected to adversely affect beneficial uses.

Since the publication of the SRP Final Report, the City has met with the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), and RWQCB on several occasions to evaluate and discuss the scientific conclusions and overall project objectives to be included in the VWRP's pending NPDES permit renewal. Based on the scientific record and feedback from the agencies, the City is proposing a staged implementation approach that would commit to a CDL of 1.9 MGD by the end of year 2025, with a planned reduction to 0 – 0.5 MGD during closed berm conditions by the end of year 2030. This staged implementation approach summarized in **Table 2-1** is the basis of the proposed

project's designed flow rate and minimum treatment capacity. As VWRf flows increase in the future, the CDLs will be maintained.

During Phase 1A, an average annual continued discharge level (CDL) of 1.9 MGD to the SCRE will be maintained during closed berm conditions pursuant to recommendations of USFWS, NMFS, and CDFW, based upon their review and analysis of the Phase 3 Estuary Study, the SRP Report, and the TRT recommendations. It is anticipated that the compliance schedule in the VWRf NPDES permit renewal (scheduled for issuance this year) will establish an interim discharge limitation for flows to the SCRE of 1.9 MGD on an average annual basis, to be attained as soon as practicable, but not later than the end of 2025, based on the recommendations of USFWS, NMFS, and CDFW. During Phase 1B, a reduction in the CDL to 0 to 0.5 MGD on an average annual basis would be attained, based on the combined recommendations of the SRP, TRT, USFWS, NMFS, and CDFW, and subject to oversight by USFWS, NMFS and CDFW. It is anticipated that the compliance schedule in the VWRf NPDES permit renewal (scheduled for issuance this year) will establish a final discharge limitation for flows to the SCRE not to exceed 0.5 MGD on an average annual basis, to be attained as soon as practicable, but not later than the end of 2030, based on these recommendations and subject to such oversight.

2.5 Project Description

2.5.1 Design Capacity

The proposed projects would divert discharges from the VWRf to protect ecological values within the SCRE and to develop new water supplies to meet the City's water needs. Consistent with the City's 2015 UWMP and 2018 CWRR, approximately 5,400 AFY of new water supply is needed by 2035 to meet the projected water demand.

VWRf effluent flows have varied historically based on hydrologic condition, season, and level of conservation. The new treated water supply is based conservatively on the 2016 (drought condition) flow used for the Phase 3 studies, and the required CDLs for Phase 1a, 1b and 2. However, to meet the CDL requirements the capacity of the AWPf must be greater to accommodate the variation in wastewater flows that have been observed in the historical record. The estimated total capacity for diversion and discharge to the SCRE (CDL) needs to be approximately 6.5 mgd. Therefore, at a CDL of 0.5 mgd, and the required AWPf capacity is 6 mgd. A 6 mgd AWPf would have the capacity to produce up to 5400 AFY even though the available flows to divert may not always reliably provide that much supply.

Table 2-2 identifies reliable average annual water supplies provided by the proposed projects (based on 2016 flows). These Ventura Water Supply Projects Phase 1 targets may change if the LARWQCB and other responsible agencies approve a different diversion than the one currently recommended by the SRP Final Report. The diversion will be subject to approval by the LARWQCB and then set forth in the next term VWRf NPDES permit.

TABLE 2-2
POTABLE WATER: ANNUAL AVERAGE OBJECTIVES

Phase/Component	Treated Groundwater (Annual Average)		Minimum New Treated Water Supply (Annual Average)	
	AFY	MGD	AFY	MGD
Phase 1				
Phase 1a by 2025 (CDL of 1.9 MGD)	1,400	1.2	2,800	2.5
Phase 1b by 2030 (CDL of 0 – 0.5 MGD)			1,200	1.1
Phase 1 Total New Water Supply	1,400	1.2	4,000*	3.6*
Phase 2: Either Option A or Option B				
Option A: 100 Percent Diversion (CDL of 0 MGD)	600	0.5	1,400	1.2
Option B: Desalination	600	0.5	1,400	1.2
Phase 1+2 Total New Water Supply			5,400	4.8

* Phase 1 total reliable water supplies would be a minimum of 4,000 AFY when discharge to the SCRE is at or near 0.5 MGD CDL (at 90 percent diversion of 2016 dry flows). When diversion approaches 100 percent, and the discharge to the SCRE is at or near 0 MGD CDL, Phase 1 water supplies would be higher because more water would be diverted from the SCRE to the AWPf. For purposes of reliability, the new water supply listed here from Phase 1b represents a conservative reliable supply volume. These numbers are based on 2016 dry flow conditions in a drought year. As VWRf flows increase there will be additional flows diverted for water supply, while the CDL will be maintained. Phase 2 Option A would implement a consistent 0 MGD CDL during closed berm conditions, resulting in a reliable future water supply of 5,400 AFY and 4.8 MGD.

SOURCE: Carollo 2018

The reliable new supplies summarized in Table 2-2 are calculated using the 2016 dry flow conditions as worst case flow conditions while limiting discharges through the existing wildlife ponds to the SCRE to meet the phased CDL requirements. The Phase 1 project would be designed to deliver a minimum reliable supply of 4,000 AFY, and would also be designed to accommodate higher influent flows (up to 4 mgd for Phase 1a and 6 mgd for Phase 1b) to account for daily and monthly flow variability while still meeting the annual average CDL requirements during closed berm condition. As VWRf flows increase in the future, the CDL will be maintained and more flow will be diverted to the AWPf, dictating that the initial capacity be sized for greater than the minimum supply volume.

The diverted water to the AWPf would receive advanced treatment, producing a reliable minimum of approximately 3.6 MGD, or 4,000 AFY, of new potable water to be added to the water supply in Phase 1. Phase 1 would produce a range of 1.2 – 1.7 MGD concentrate discharge during the advanced water treatment process.

The AWPf would also be designed to include additional treatment capacity to desalt and treat an additional 1.2 MGD (1,400 AFY) of groundwater from the Oxnard Plain Basin for Phase 1. The City's potable water supply that originates from their groundwater wells does not currently meet secondary MCLs. The California Division of Drinking Water (DDW) (formerly the California Department of Public Health) has required the City to improve mineral water quality in the groundwater supply (CDPH, 2011). The City has calculated that the addition of approximately 1.2 MGD (1,400 AFY) of purified groundwater, in conjunction with the new potable reuse supply, would provide sufficient blending of existing groundwater supplies to improve delivered

potable water supply with the objective of meeting the secondary MCLs. The amount of desalted groundwater needed to meet objectives for Phase 2 will expand to 2,000 AFY.

Combining the 4,000 AFY of reliable recycled water with the 1,400 AFY of treated groundwater, the Phase 1 AWPf treatment would reliably produce a minimum of 4.8 MGD (5,400 AFY) of purified water for potable distribution and use. The groundwater supplies would be from existing groundwater allocation that the City has rights to and would not constitute a new water supply. Since 4,000 AFY of new reliable water supplies is approximately 1,400 AFY below the future 2035 – 2040 dry-weather demand deficit of 5,400 AFY identified in the UWMP, the City would need to implement Phase 2 of the project. increased diversion is not permitted or does not provide enough water. As shown in Table 2-2, Phase 2 would provide additional production capacity to purify approximately 1.2 MGD (1,400 AFY) of tertiary-treated flow from the VWRf or, if additional diversion is not permitted or does not provide enough water, from a new ocean desalination facility, resulting in a total of approximately 5,400 AFY of reliable new water supply compared with current supplies. In Phase 2, an additional 600 AFY of groundwater desalting may be needed to meet secondary MCLs.

The combined Phase 1 and Phase 2 AWPf would be designed to produce 6.7 MGD (7,400 AFY), including 5,400 AFY of new water supply, and 2,000 AFY of treated groundwater as summarized in Table 2-2.

2.5.2 The Ventura Water Supply Projects – Phase 1 Components

VenturaWaterPure Project Overview

Phase 1 of the proposed projects would include diversion of 90 – 100 percent of current VWRf tertiary-treated dry weather flows to a new AWPf to produce highly purified water. It would also include the treatment of groundwater pumped from the Oxnard Plain Basins. Once treated at the AWPf, the water would be used for groundwater augmentation and/or direct potable reuse. This would meet the key project objectives as set forth in Section 2.4, including protecting the ecology of the SCRE by diverting VWRf treated water that is currently discharged to the SCRE, providing a drought-resilient water supply source to the City, and improving water quality.

Phase 1 components include the new equalization tank AWPf, a water conveyance system, injection wells, groundwater recharge/extraction wells, and an AWPf concentrate discharge facility. In addition, in accordance with the Consent Decree, Phase 1 includes water treatment to reduce nitrate levels prior to discharge into the SCRE. Treatment may occur through reconfigured wildlife/treatment ponds, a new freshwater wildlife/treatment wetland, or treatment upgrades within the VWRf.

The diverted VWRf tertiary-treated discharge would be conveyed to the AWPf for purification, and then conveyed via pipelines and pumping stations to locations for injection to supplement the City's water supply through indirect potable reuse (IPR), or conveyed directly to the Bailey WCF or the Saticoy WCF for disinfection and distribution for direct potable reuse (DPR).

DPR may be employed as an option if approved by the SWRCB (DDW) consistent with regulations currently under development by the SWRCB. DPR is the incorporation of highly purified water directly into the water supply, blending with other City water supplies, bypassing the groundwater basin environmental buffer component of IPR. More specifically, diverted VWRf tertiary-treated discharge would be conveyed to the AWPf for purification, and then conveyed via pipelines and pumping stations to the Bailey WCF and/or the Saticoy WCF for blending with other supplies and direct distribution for potable reuse. DPR would provide the City additional flexibility in managing its water supplies to best meet quality and supply needs in different seasons and under different hydrologic conditions (dry versus wet years).

Currently, regulations have not been finalized to achieve DPR permit approvals, but the SWRCB is actively in the process of developing regulations that may be in place concurrently with the development of the proposed project. The City is actively working with DDW to get DPR permitted for VenturaWaterPure.

If DPR is not permitted, Phase 1 would implement IPR, which is a method of injecting purified municipal wastewater into a groundwater basin and extracting it later to distribute as domestic water supply. IPR for the proposed project would occur in the local Oxnard Plain Basin. Purified water would be conveyed to wells and injected into the groundwater basins pursuant to Title 22 regulations. The injected water would remain underground for a sufficient period of time to meet regulatory requirements before being available for extraction via either the same wells or downstream wells.

IPR would be implemented through the construction of wells, pipelines, and pump stations (needed for injection, extraction, and /or conveyance). Extracted groundwater would be conveyed to the Bailey WCF for disinfection and/or to an existing reservoir for distribution. Alternatively, the extracted groundwater would be disinfected at the point of extraction and conveyed to a nearby water distribution system pipeline. Operation of this system would require approvals and permits from the SWRCB DDW, in addition to approvals from the LARWQCB, NMFS, USFWS, CDFW, and potentially other responsible agencies to divert VWRf tertiary-treated discharge from discharge to the SCRE to treatment at the AWPf.

Advanced Water Purification Facility

The proposed AWPf would be located within the City of Ventura or in nearby unincorporated Ventura County within a 5- to 20-acre site. Three alternative AWPf locations have been identified, referred to as the Harbor Boulevard site, Transport Street site, and Portola Road site, as shown in Figure 2-2.

The proposed AWPf would treat water to exceed Title 22 compliance criteria and would include equalization/storage, ozone (O₃), biologically active carbon (BAC) filters, UF, RO, and UV AOP. For DPR, product water would enter an engineered storage buffer (ESB) followed by an additional UF and final disinfection. **Table 2-3** briefly describes each of these processes.

TABLE 2-3
ADVANCED TREATMENT PROCESSES

Treatment Process	Summary	Purpose
Ozone	<i>Ozone</i> is widely used for water treatment due to its disinfection and oxidation qualities. Ozone can be added at several points throughout the treatment system, such as during pre-oxidation, intermediate oxidation or final disinfection. Usually, it is recommended to use ozone for pre-oxidation, before a sand filter or an active carbon filter.	<ul style="list-style-type: none"> Facilitates biological treatment by breaking down organic carbon for removal by the downstream biological activated carbon (BAC) filters. Provides disinfection for pathogen removal. Reduces some constituents of emerging concern (CECs) and metals, such as iron and manganese, through chemical oxidation thereby: <ul style="list-style-type: none"> Decreasing toxicity of product water and RO concentrate Providing effective pretreatment of groundwater upstream of membranes by reducing fouling potential Matches standard of care for potable reuse.
BAC Filters	<i>Biologically active carbon filters</i> are submerged fixed-media reactors for water treatment. The granular activated carbon in the BAC filter facilitates both solids separation and contaminant reduction.	<ul style="list-style-type: none"> Removes organic carbon, made more bioavailable by the upstream ozone process. Decreases level of some CECs, including N-Nitrosodimethylamine (NDMA). Reduces turbidity in tertiary effluent. Matches standard of care for potable reuse set by City of San Diego's NCPWF.
UF	<i>Ultrafiltration</i> is a type of physical filtration process that uses special pore-sized membrane to separate microorganisms and suspended particles from process liquid.	<ul style="list-style-type: none"> Reduces turbidity in BAC filtrate to the California Code of Regulations (CCR) Title 22 Section 60301.320 required level of less than: <ul style="list-style-type: none"> 0.2 NTU more than 5 percent of the time within a 24-hour period 0.5 NTU at any time Removes pathogens via size exclusion and disinfection with the chloramines added upstream of UF. Provides necessary pretreatment upstream of full advanced treatment (FAT) similar to all existing California potable reuse plants.
RO	<i>Reverse osmosis</i> is a process in a potable reuse treatment train that provides for removal of salt (measured as electrical conductivity (EC)), organics (measured as total organic carbon (TOC)), and pathogens. RO removes ~95 percent of incoming salt. Alongside with salt and TOC removal, RO effectively removes high molecular weight, charged compounds.	<ul style="list-style-type: none"> Removes TOC per CCR Title 22 Section 60320.201 startup requirement to achieve 0.25 mg/L during the first 20 weeks of operation and §60320.218 long-term requirement not to exceed 0.5 mg/L based on: <ul style="list-style-type: none"> 20-week running average of all TOC results Average of the last four TOC results Reduces salinity per CCR Title 22 Section 60320.201 minimum rejection of sodium chloride of no less than 99.0 percent and an average rejection of sodium chloride of no less than 99.2 percent. Decreases level of high molecular weight, uncharged CECs. Removes pathogens via size exclusion. Provides FAT similar to all existing California potable reuse plants.

Treatment Process	Summary	Purpose
UV AOP	<i>Ultraviolet light/Advanced oxidation process</i> provides for a high level of disinfection. Adding an oxidant before a high dose of UV results in the generation of hydroxyl radicals during treatment, providing an AOP. The UV AOP provides destruction of a range of pollutants (low molecular weight, uncharged) that may pass through RO.	<ul style="list-style-type: none"> Provides disinfection for pathogen removal. Achieves oxidation requirement for FAT per CCR Title 22 Section 60320.201 by providing no less than 0.5-log (69 percent) reduction of 1,4-dioxane. Provides final chemical abatement of remaining CECs, including 1,4-dioxane and NDMA. Provides FAT similar to all existing California potable reuse plants.
ESB and Final Disinfection	<i>Engineered storage buffer</i> holds product water for a predetermined time period to allow time for monitoring and reacting to any potential issues in the upstream processes.	<ul style="list-style-type: none"> The ESB not only replaces the environmental buffer with a more sterile environment but also provides additional contact time for disinfection with chlorine.
Water Treatment Plant (UF)	<i>Water Treatment Plant with Ultrafiltration</i> is physical filtration process that uses special pore-sized membrane to separate microorganisms and suspended particles from process liquid.	<ul style="list-style-type: none"> Provides final treatment step in a conventional membrane water treatment facility. Removes any remaining pathogens and particles through size exclusion.

The conceptual AWPf treatment processes are presented in Figure 2-3. Figure 2-4 displays the project's schematic of the treated water traveling from the existing VWRf to the AWPf, then being conveyed to the water supply system via conveyance pipelines.

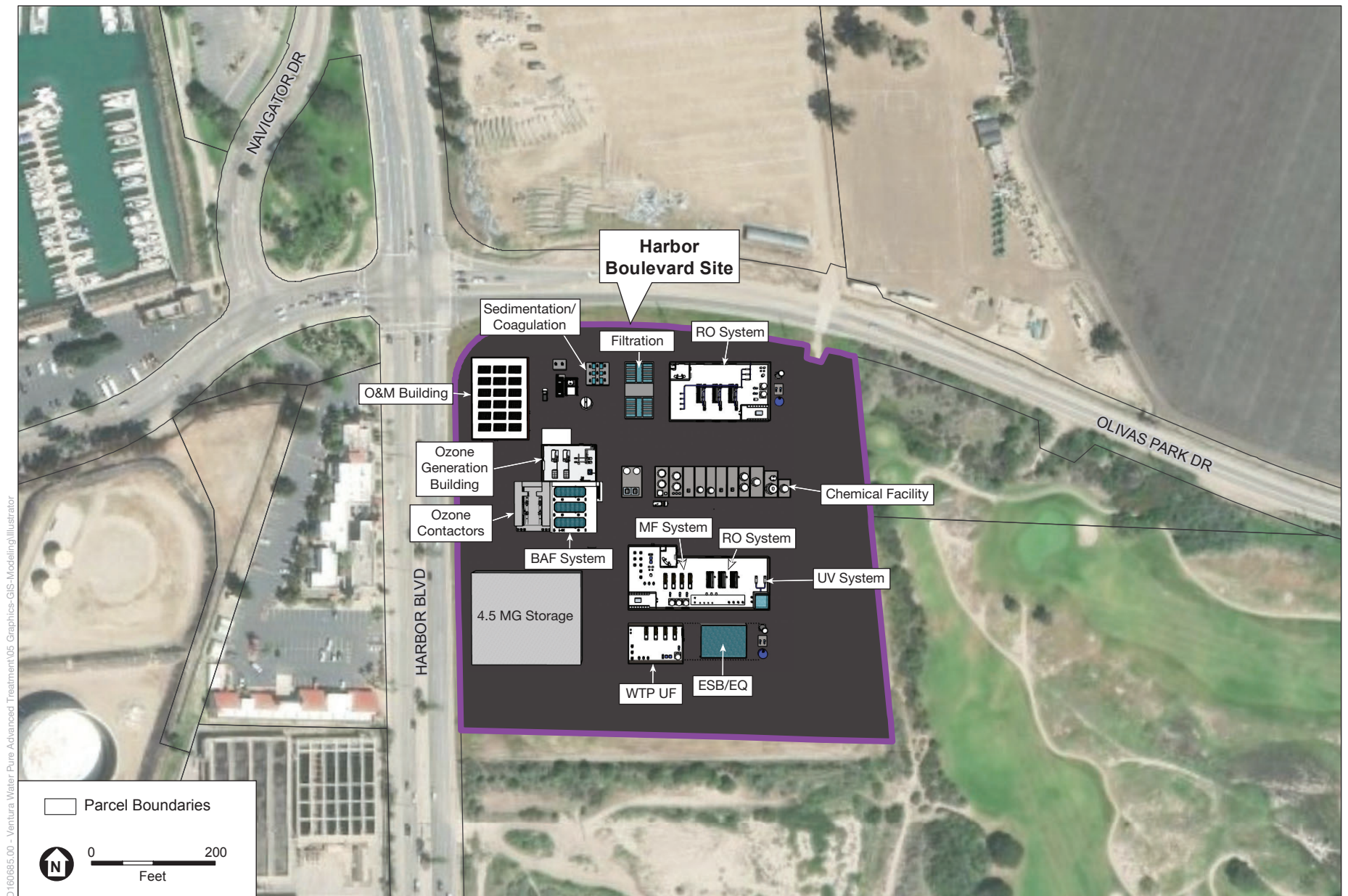
An electrical substation would be constructed on the AWPf to connect to the surrounding grid and support the energy demands of the treatment process. Chemicals used in the treatment process would be stored in a secure chemical storage area on the AWPf site. An administration building and parking area would be constructed on-site to accommodate workers. Delivery truck access, truck parking, and unloading areas would be accommodated on the AWPf site. In addition, the AWPf would include a wet weather storage facility with a capacity of 4.5 MG that would provide storage during periods of high flows when the ocean berm is not yet breached.

A concentrate waste stream would be produced during the RO treatment process. A concentrate pump station would be constructed on the AWPf site to convey concentrate either to a new ocean outfall or to the Calleguas SMP. The RO process for Phase 1 would generate approximately 1.2-1.7 MGD of concentrated effluent.

Potential AWPf Site Locations

A site alternative selection process identified three potential sites to construct the AWPf, each of which is considered a potential project site and is assessed at an equal level of detail in this EIR.

The Harbor Boulevard AWPf site is approximately 10 acres and is located on the southeast corner of the intersection of Harbor Boulevard and Olivas Park Drive (**Figure 2-6**). The Harbor Boulevard site is bounded by agricultural fields to the north, Olivas Links Golf Course to the east, open space to the south, the Ventura Harbor to northwest, and the VWRf to the west. The site is located in the County of Ventura and would need to be annexed into the city. The site is located within the coastal zone.



Ventura Water Supply Projects

Figure 2-6
Harbor Boulevard Alternative Location

The Transport Street AWPf site would be located on two parcels totaling approximately 5.6 acres, located northwest and southwest of the intersection of Donlon Street and Transport Street, as conceptually shown in **Figure 2-7**. The Transport Street site is bounded by agricultural lands to the south and commercial uses north, east, and west. The site is located within the city of Ventura and is outside of the coastal zone.

The Portola Road AWPf site is approximately 9 acres and is located north of Ortega Street, east of Portola Road, and west of Colt Street, as conceptually shown in **Figure 2-8**. The Portola Road site is bounded by agricultural fields to the north, east, and south and commercial uses to the west. The Portola Road AWPf site is located in the county of Ventura and would need to be annexed into the city. The site is located outside of the coastal zone.

Water Conveyance System

The project would require installation of several pipelines to convey source water and product water throughout the new system (**Figure 2-9**). The following pipelines would be constructed as part of the project:

- A 24-inch-diameter polyvinyl chloride (PVC) pipeline conveying tertiary-treated water from VWRf to the AWPf. A pump station would be constructed at the VWRf.
- A 14-inch-diameter PVC pipeline conveying raw groundwater from existing extraction wells at the city Buenaventura Golf Course to the AWPf. While the existing well pumps may be sufficient to convey the water to the AWPf, an additional pump station may be needed.
- A 20-inch-diameter PVC pipeline conveying purified water from the AWPf to ASR wells in the Oxnard Plain groundwater basins for the IPR project and/or to the Bailey WCF and/or Saticoy WCF for the DPR project.
- A 20-inch-diameter PVC pipeline conveying extracted groundwater from the ASR wells to the Bailey WCF for the IPR project.
- A 14-inch waste PVC pipeline conveying backwash and any waste water from the AWPf to the VWRf for retreatment.
- A 20-inch- diameter PVC pipeline conveying RO concentrate to the outfall.

The pipelines would be constructed within public rights-of-way where feasible, as shown in Figure 2-9. These alignments may change during final design, but would remain in the public rights-of-way. A new pump station would be constructed at the AWPf to pump the water to the injection wells (i.e., IPR). Additional pumping will be required at the well site to deliver water either extracted water or DPR water to the Bailey WCF and/or Saticoy WCF. These alignments may change during final design, but would remain in the public rights-of-way.



SOURCE: ESRI

Ventura Water Supply Projects

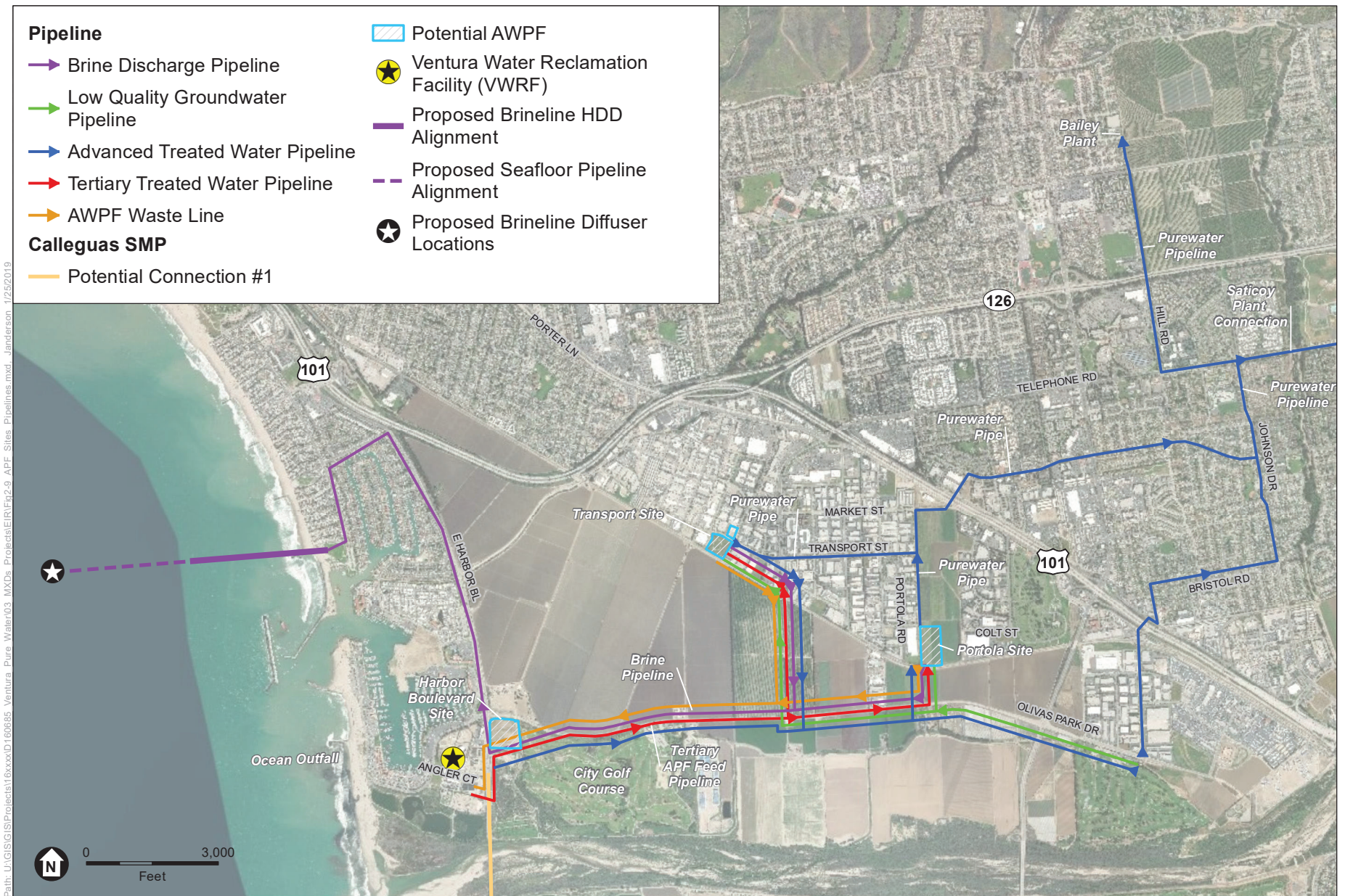
Figure 2-7
Transport Street AWP Alternative Location



SOURCE: ESRI

Ventura Water Supply Projects

Figure 2-8
Portola Road AWP Alternative Location



SOURCE: ESRI

Ventura Water Supply Projects

Figure 2-9
Phase 1 Water Conveyance Pipeline

Groundwater Treatment

The City currently owns and operates groundwater wells that produce water from the Mound Basin and the Oxnard Plain Basin. Water extracted from the Mound Basin is currently treated at the Bailey WCF for iron and manganese, and then blended with water extracted from the City's wells located in the Oxnard Plain Basin (Carollo 2014). Average historical extraction from the Mound Basin by the City is approximately 3.6 MGD (4,000 AFY). The project would allow the City to extract existing groundwater supplies from the Oxnard Plain Basin for treatment at the AWPf where the RO process would significantly reduce total dissolved solids (TDS) and sulfate concentrations. This would not increase extraction volumes, but would improve drinking water quality for the City. Product water would then be available for:

- Conveyance to either the Bailey WCF and/or the Saticoy WCF for blending and distribution
- Re-injection in the Oxnard Plain groundwater basins via the injection wells described above

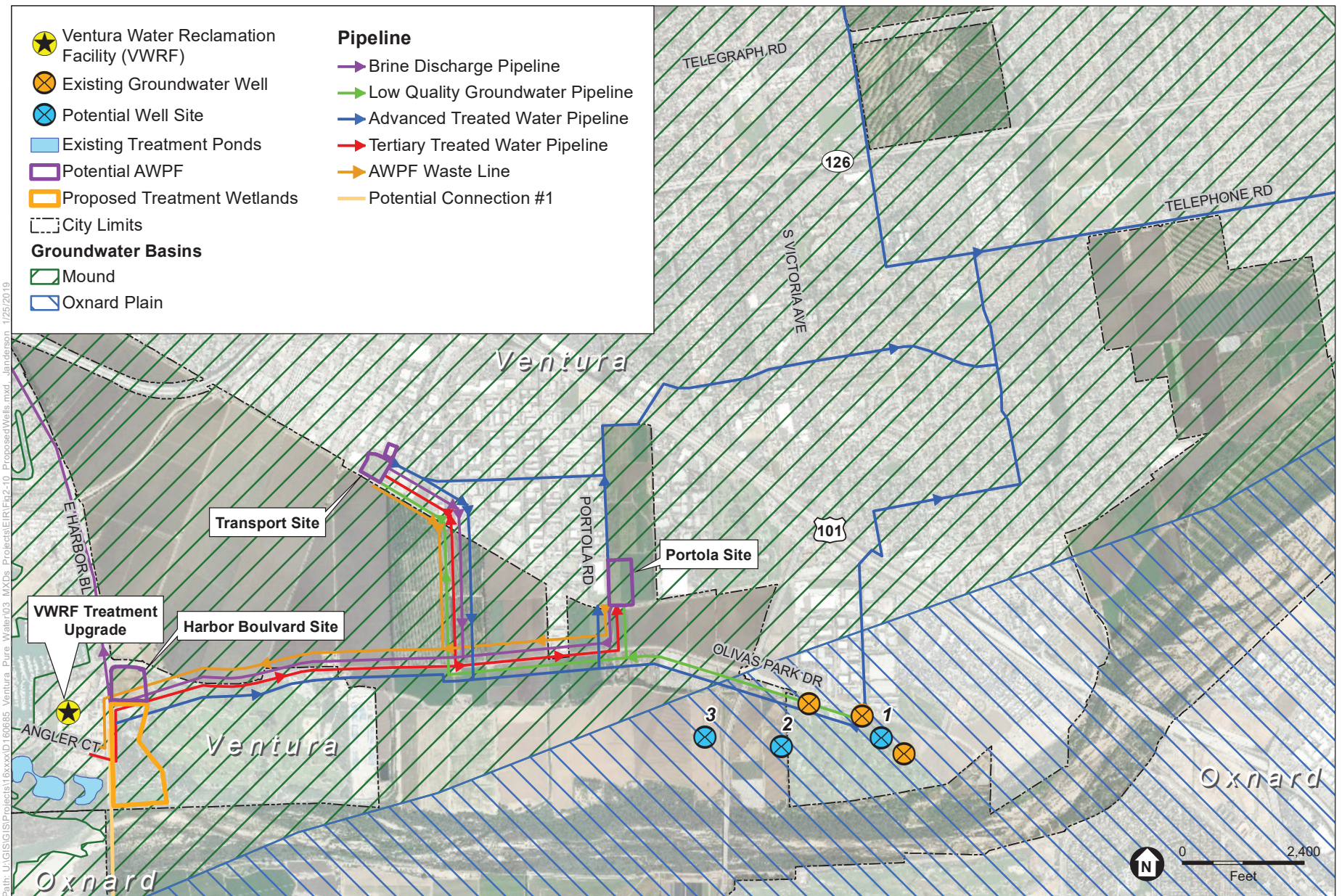
Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling), as shown in **Figure 2-10**. Each well would have capacity to inject/extract 1,250 – 2,750 gallons per minute (depending on the site) of purified water in the Oxnard Plain Basin.

The wells in the Oxnard Plain would be constructed in the Oxnard Aquifer within the Upper Aquifer System to a depth of approximately up to 250 feet. This approach would take advantage of depth separation between the groundwater wells in the Oxnard Aquifer and the City's golf course wells that are primarily in the Hueneme Aquifer. Between the Oxnard Aquifer and Mugu Aquifer, there is a confining layer. The Hueneme Aquifer sits below the Mugu Aquifer.

Figure 2-11 shows a conceptual well completion profile. Each wellhead would require approximately 1,500 square feet, including room for construction drill rigs and maintenance truck parking. In addition, each well site would potentially include on-site treatment processes, such as housed chemical storage areas. Chemicals would include aqueous ammonia and hypochlorite. Each well would be connected to the conveyance system with source water coming from the AWPf and extracted groundwater going to the Bailey WCF or to the local distribution system. Pumps would be installed within each well with sufficient capacity to convey extracted water to the Bailey WCF. The pumps would be powered by electricity supplied by the existing grid system.

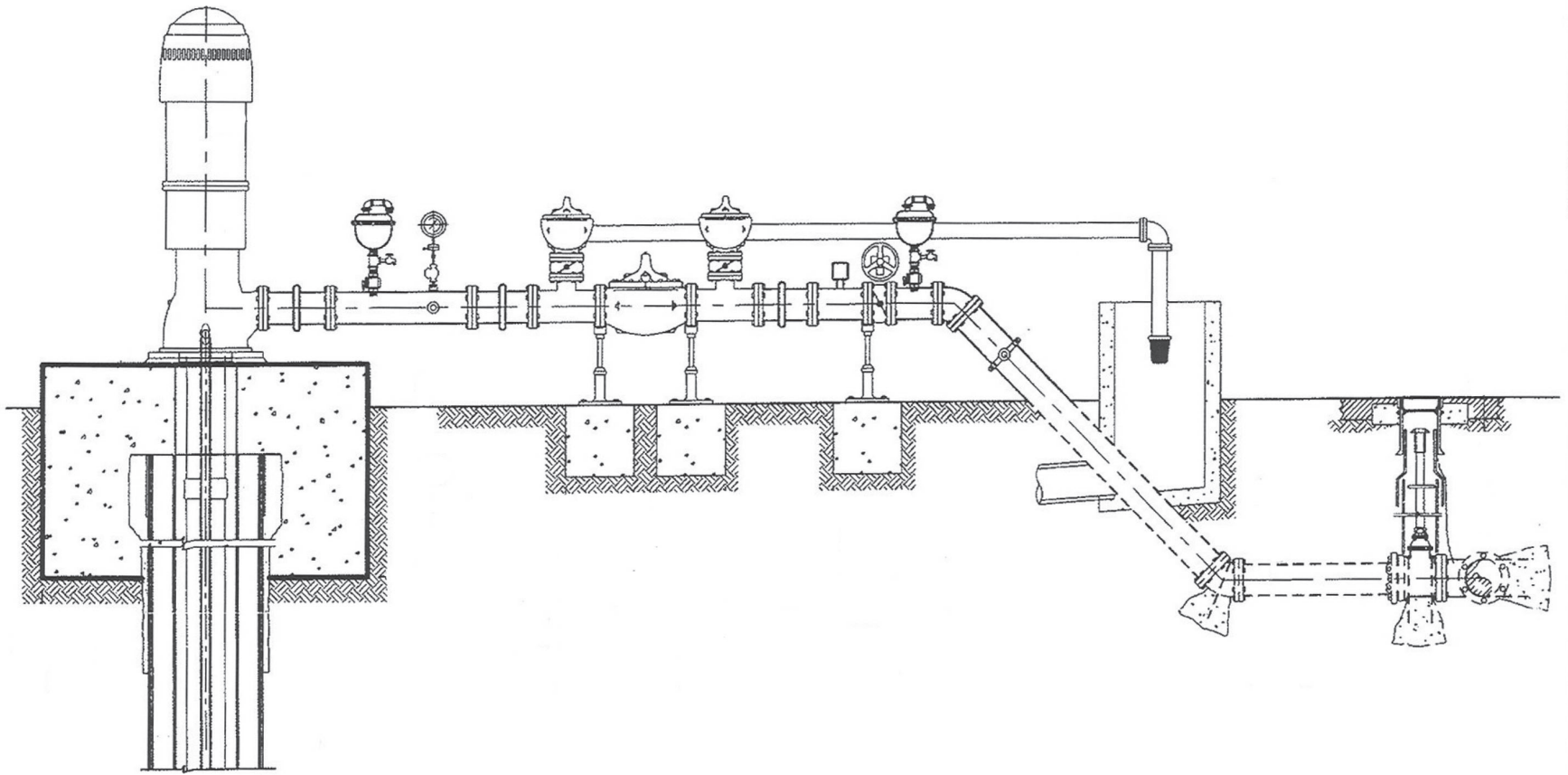
If an ASR configuration is used, the wells would use the same borings and underground well components to inject and to extract groundwater after a permit-mandated underground retention time (**Figure 2-12**). Alternatively, an injection/extraction configuration may be implemented, where purified water is injected in one well and extracted in a different well after a permit-mandated underground retention time. As part of either system, monitoring wells would be installed to comply with potable reuse permitting requirements and to monitor water quality in the groundwater basin. For the wells in the Oxnard Plain Basin, monitoring wells in the Mugu Aquifer would be used to ensure that there is not connectivity between the IPR operations and the municipal water supply wells.



SOURCE: ESRI

Ventura Water Supply Projects

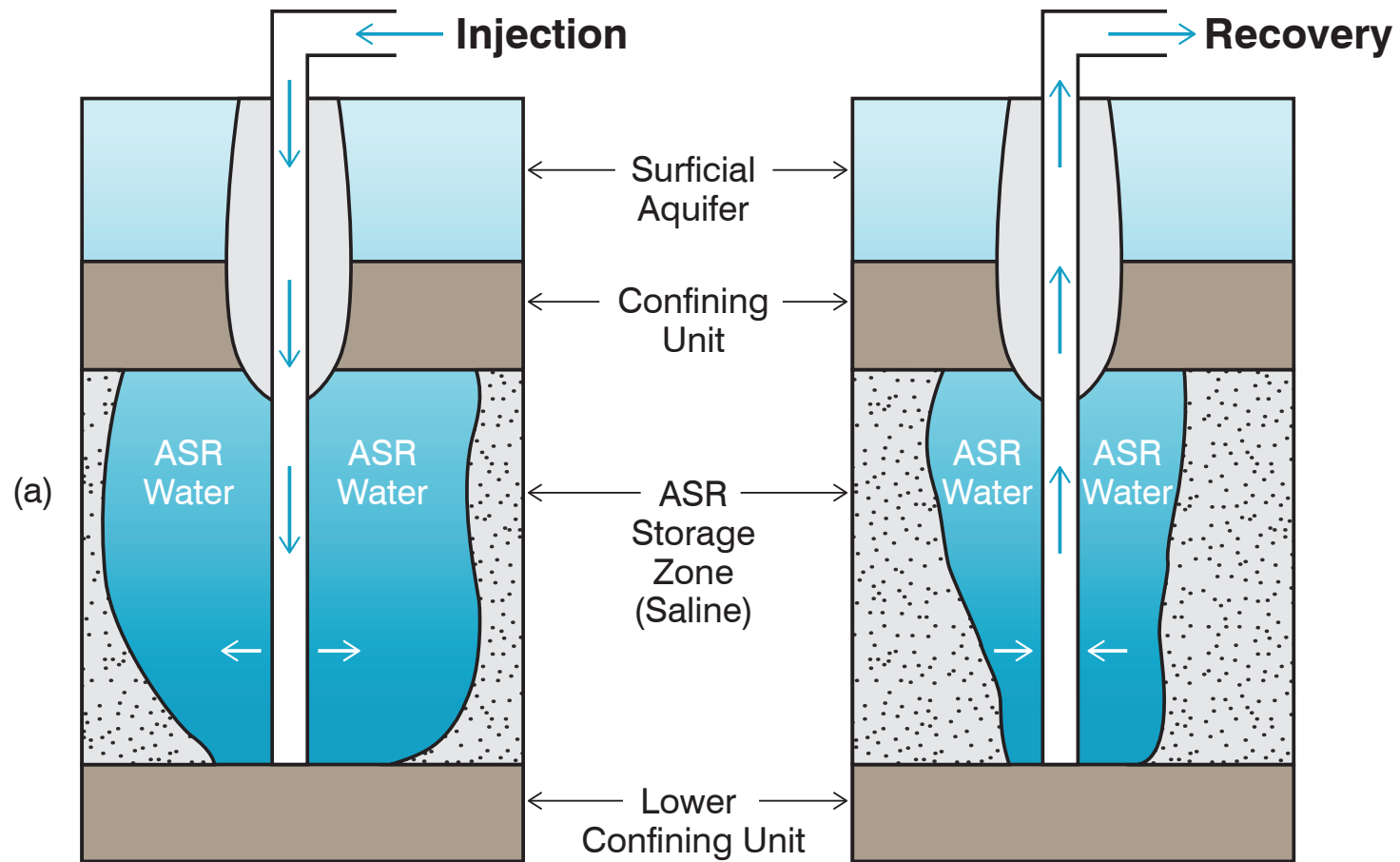
Figure 2-10
Proposed Well Sites



SOURCE: ESA, 2018.

Ventura Water Supply Projects

Figure 2-11
Typical Well Cross-Section



D:\60685.00 - Ventura Water Pure Advanced Treatment\05 Graphics-GIS-Modeling\Illustrator

SOURCE: NAP

Ventura Water Supply Projects

Figure 2-12
Aquifer Storage and Recovery (ASR) System

A pump station would also be located at the well sites to deliver the extracted groundwater and/or the DPR water to Bailey WCF.

Wildlife/Treatment Wetlands

Currently, treated wastewater from the VWRF is conveyed to a 20-acre system of freshwater wildlife/ treatment ponds prior to discharge to the SCRE for purposes of water quality polishing and further compliance of VWRF discharges with the Clean Water Act. The tertiary-treated water is then discharged through the existing outfall junction system from the wildlife/treatment ponds to the SCRE via an effluent channel. The existing wildlife/treatment ponds have a capacity to hold approximately 34 MG of water. The freshwater wildlife/treatment ponds were constructed in 1972.

To achieve additional nitrogen reduction goals identified in the Consent Decree, additional treatment wetlands may be constructed as part of Phase 1b on property neighboring the VWRF as shown in **Figure 2-13**. The existing wildlife/treatment ponds may be reconfigured to provide 20 acres of enhanced treatment wetlands and/or up to 35 acres of new wildlife/treatment wetlands may be constructed east of the VWRF. If the existing wildlife/treatment ponds are reconfigured, one or more of the existing ponds may be filled to create a depth less than 3 feet, and vegetation may be established. The existing connections between the ponds would be preserved, as would the existing discharge channel that conveys flow into the SCRE. If the existing wildlife/treatment ponds are not reconfigured, the existing wildlife/treatment ponds would remain in place and the new treatment wetlands east of the VWRF would provide the additional treatment. Native wetland vegetation would be established within the enhanced/new wetland system, and periodic trimming and clearing of the vegetation would be conducted as needed to maintain the water quality treatment benefits of the system. The City will review opportunities to provide public access to the treatment wetlands that may include nature trails and informational amenities.

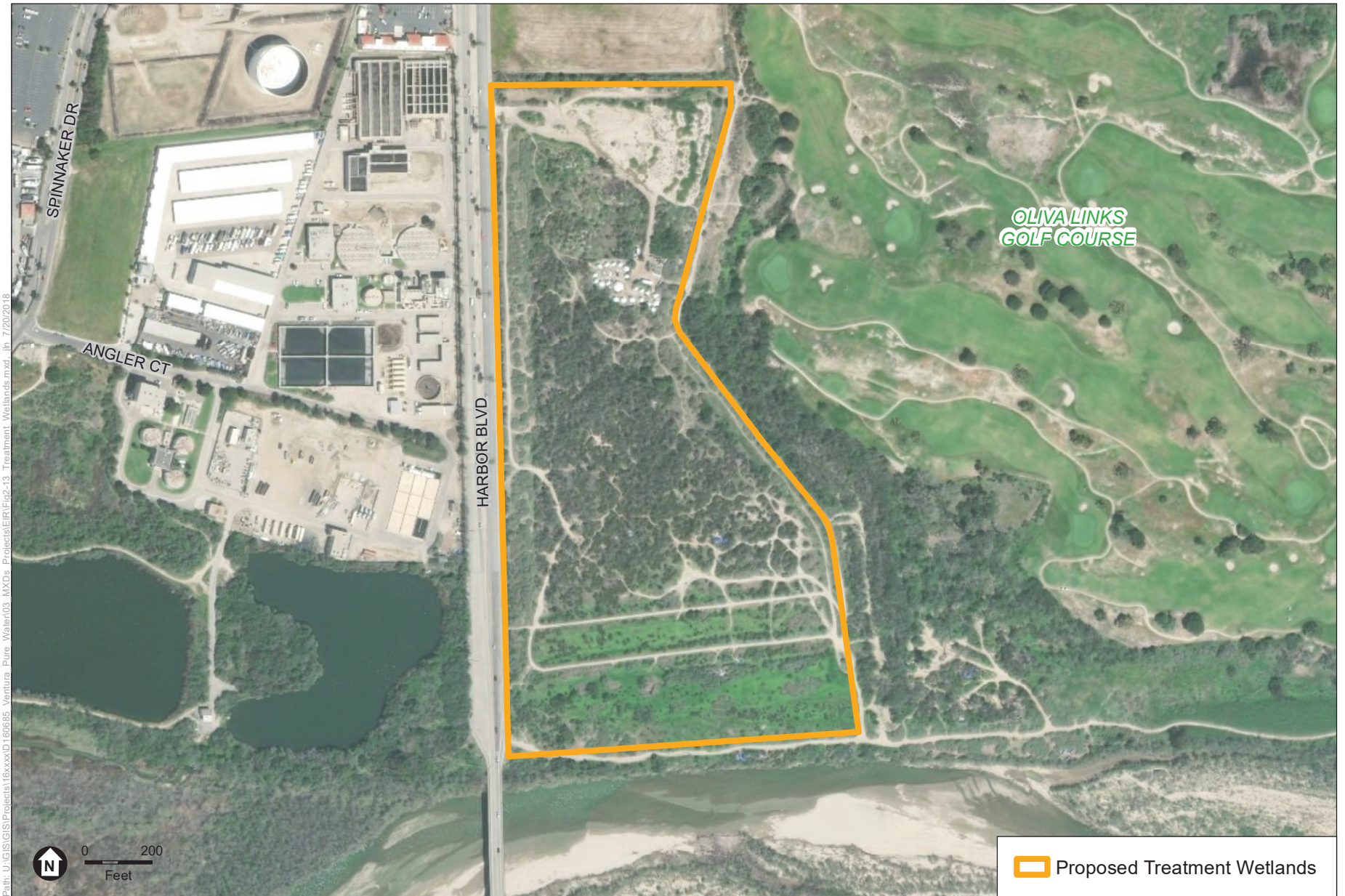
Both the existing and new wildlife/treatment wetlands would be designed to accommodate wet weather storage during wet weather events when the SCRE sand berm was not breached (is closed). A new pipeline and pump station would be constructed on the VWRF site to convey the tertiary-treated water to the new wildlife/treatment wetlands. A new point of discharge may be constructed from the new wetlands as an outlet to the SCRE near the Victoria Avenue Bridge or alternatively the wetlands discharge may be returned to the existing outfall channel.

Should Phase 2 100 percent diversion (CDL = 0 mgd) be implemented, there would be no need for new wildlife/treatment wetlands. Discharge to the existing wildlife/treatment ponds likely would cease during the dry weather, closed berm months, and they would function as terminal wetlands during that period.

VWRF Treatment Upgrades

As part of the proposed projects, several upgrades would occur on the VWRF. The following components would be installed at the VWRF to reduce nitrogen concentrations in the effluent:

- **Aeration Blowers:** Replacement of the existing aeration blower system with a new building or potentially reuse of the existing aeration building, and the installation of new energy-efficient blowers and instrumentation to be fully automated.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 2-13
Proposed Natural Treatment Wetlands Site

- **Primary Treatment Enhancement:** Replacement of the existing gravity thickener at the VWRF with a new primary sludge-thickening facility near the anaerobic digesters and construction of a new thickened-sludge pump station to pump to the digesters.
- **Increase of Anoxic Tank Capacity:** Design and construction of two new anoxic tanks adjacent to the existing tanks.

Other improvements at the VWRF include the following facility upgrades:

- Filter replacement/improvement of existing filters – may include upgrading to ozone/biologically active filtration.
- Disinfection improvements – to reduce or eliminate use of chlorine gas onsite (replace with hypochlorite).
- Equalization basin and pump station for delivery of water to AWPf.
- Modifications to infrastructure and hydraulics for moving water at the VWRF and to the AWPf.
- Pump station for delivering concentrate and occasional tertiary treated flows to the outfall.

Additional facilities would be constructed at the VWRF site to implement the AWPf, conveyance, and wetlands project elements. A new pump station and wet well with equalization capacity and a new storage tank would be constructed onsite, as well as new piping at the VWRF to convey flows to the AWPf, storage, concentrate outfall, or the wetlands. The wet well and storage tank would be sized to mitigate peak flow periods and capture water for reuse. Modifications to the existing effluent discharge structures and chlorine contact basin may also be required to accommodate diversion to the wetlands prior to discharge to the SCRE and to limit discharge to the SCRE in closed-berm conditions as recommended by the SRP. A new outfall pump station would also be constructed at the VWRF for delivering concentrate and tertiary treated flows if needed during wet weather events to the outfall.

Concentrate Discharge Facility

The AWPf treatment process would produce a concentrated effluent that would contain several times the concentration of salts as the influent water (**Table 2-4**). The concentrate would need to be discharged to the ocean in compliance with the California Ocean Plan water quality standards for ocean discharge (see Section 3.9 Hydrology and Water Quality). In addition to handling concentrate, the new outfall options would be designed to accommodate some tertiary treated flows that exceed the AWPf capacity during wet weather events or during times of emergency shut down. This EIR evaluates two potential concentrate discharge facility options, described below.

**TABLE 2-4
CONCENTRATE WASTE STREAM PRODUCTION**

Phase/Component	Total Concentrate Waste Stream (Annual Average)
	MGD
Phase 1a and 1b: 4.2 – 4.7 MGD Diversion and 1.2 MGD groundwater	1.2 – 1.7
Phase 2 Option A: AWPf Treatment Expansion to 4.7 MGD Diversion (Consistent 100 Percent Diversion) and 0.5 MGD groundwater*	1.7
Phase 2 Option B: Desalination Option	2.7

*Does not require ocean desalination

These numbers are based on 2016 dry flow conditions in a drought year. As VWRf flows increase there will be additional flows diverted for water supply, while CDL will be maintained. Concentrate volumes are estimates based on % recovery from purification facilities.

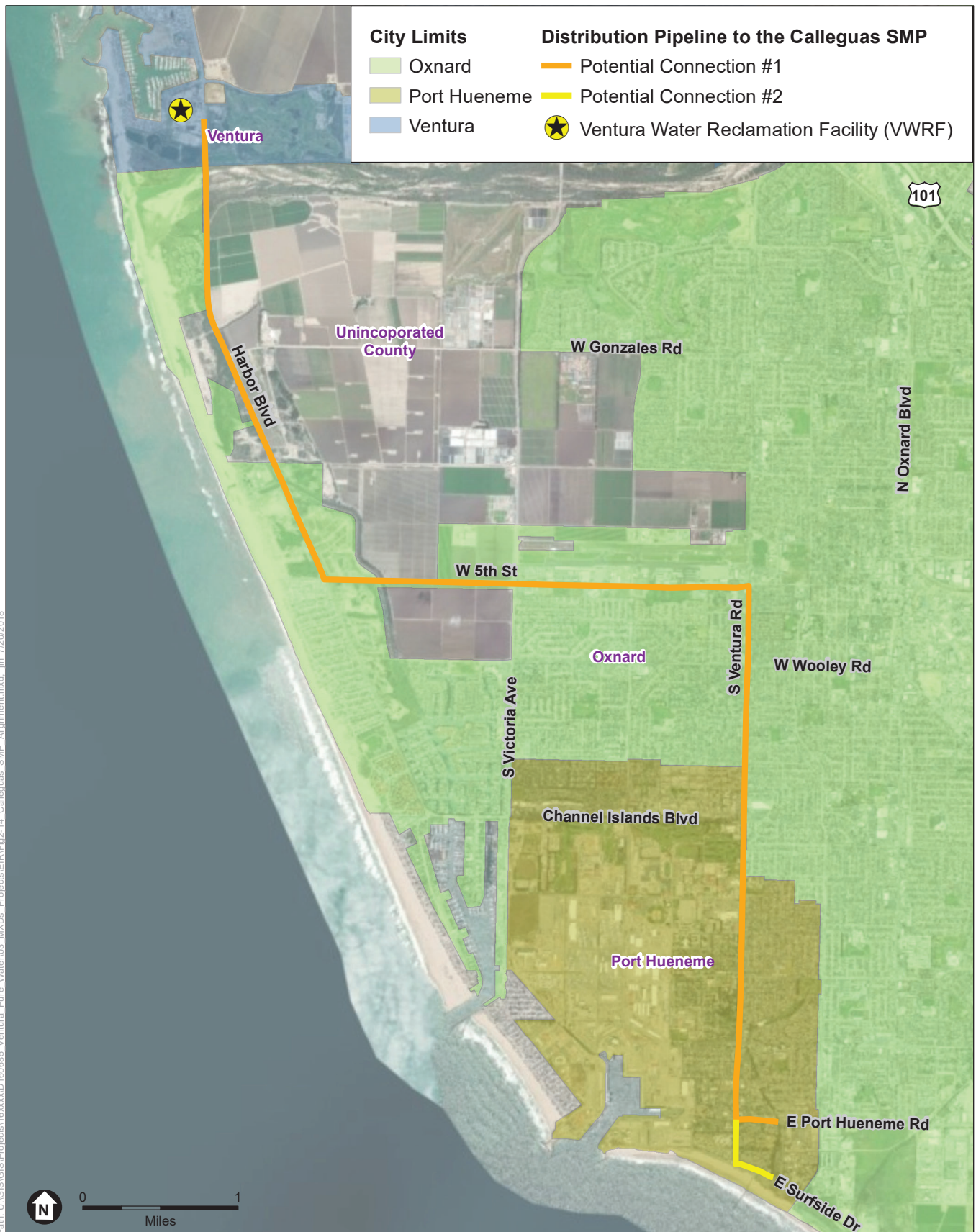
SOURCE: Carollo 2018

New Outfall

As part of Phase 1 of the proposed projects, the City would construct a new 12 to 30-inch-diameter ocean outfall that would discharge to the ocean north of Ventura Harbor (see Figure 2-2). The ocean outfall would be installed with directional drilling techniques from Marina Park, emerging on the ocean floor 2,000 to 4,000 feet offshore. Once emerged, an extension of the outfall would be attached and placed along the ocean floor until the sea depth to outfall reaches approximately a 50-foot depth. A diffuser would be installed at the end of the outfall with discharge portals designed to maximize efficient dilution and to protect wildlife. A pipeline would be constructed from the AWPf to the ocean outfall within public rights-of-way where feasible, as shown in Figure 2-2 and Figure 2-9. The new outfall would be designed to convey up to 6.9 MGD to the ocean, providing a range of capacity for discharge from the Phase 1 AWPf, from AWPf treatment expansion if that occurs as part of Phase 2, or from a potential Phase 2 ocean desalination facility. Should the ocean desalination facility not be needed, the outfall could accommodate future salt management needs for the region should they occur or tertiary discharges if necessary during wet-weather, closed-berm events when additional discharges are not allowed to the SCRE.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

During Phase 1 of the proposed projects, the City would construct a new 8- to 14-inch-diameter concentrate pipeline and pump station to convey concentrate (and occasional tertiary treated flows) from the proposed AWPf/VWRf to the existing Calleguas SMP ocean outfall (Figure 2-14). The pipeline would be constructed within public rights-of-way where feasible. Similar to the new outfall, the exact alignment route of the conveyance pipelines would be contingent on the chosen AWPf site. The concentrate would be discharged to the ocean through the existing SMP ocean outfall, subject to SMP capacity availability and approval from Calleguas MWD.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 2-14
Discharge Pipeline to the Calleguas Salinity Management Pipeline

2.5.3 Phase 2 Ventura Water Supply Projects

Phase 2 of the proposed projects would augment water supplies to meet future water needs, including the accommodation of planned growth, either through increasing the amount of recycled water produced, or construction of an ocean desalination facility. This would be accomplished through either the expansion of the AWPf as a first option pending regulatory approvals, or, if this option is not approved or does not meet the City's water supply needs, through construction of an ocean desalination facility. Phase 2 would also increase the amount of treated groundwater.

Option A: AWPf Expansion

In Phase 2, the City would pursue Option A to consistently divert the remaining wastewater flows from the VWRf to the AWPf to reach a CDL of 0 during closed berm, dry weather conditions. The wildlife ponds would still be utilized, but would operate as terminal wetlands during dry weather months. During winter open berm conditions, reflecting the steelhead migratory period, flows in excess of the AWPf facility's capacity would be discharged to the SCRE subject to diverting 6 MGD (at the completion of Phase 1b) to the AWPf first to provide a steady, constant influent flow for purification. These higher discharges of tertiary treated flow in excess of the CDL would occur in limited circumstances when necessary to create or maintain maximum storage capacity within the system for purposes such as: protecting system operations during exceptional or multiple rain events, or drawing down stored flows to assure sufficient storage capacity during closed berm conditions. This option would require an AWPf expansion to reliably produce up to an additional 1.2 MGD (1,400 AFY) of product water. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. The full footprint and impacts of the expansion of the AWPf for additional tertiary flows is included in the project level impacts analysis. Additional flow routing modifications and/or storage would be required at the VWRf site to accommodate a CDL of 0.

As shown in Table 2-2, Phase 1 and Phase 2 combined would provide a new water supply increase of approximately 5,400 AFY per year. This increase in water supply would eliminate the total water supply deficit of approximately 5,400 AFY per year by 2035, based on the UWMP as described in Section 2.2.

The expanded AWPf facility would also be used to treat extracted groundwater to consistently achieve secondary MCLs. The AWPf treatment processes would be expanded to accommodate production of up to approximately 600 AFY (0.5 MGD) desalted groundwater, in addition to the 1,400 AFY of desalted groundwater provided by Phase 1. The combined Phase 1 and Phase 2 project total would be 6.7 MGD (7,400 AFY) of purified product water (see Table 2-2).

Ocean Desalination Facility

The AWPf Expansion can only be constructed if permits are issued to allow diversion of 100 percent of tertiary-treated water can be diverted from the SCRE on a consistent basis. If the tertiary-treated water that is permitted to be diverted from the SCRE is insufficient to meet the City's future reliable water supply demands, an ocean desalination facility would be constructed.

There is sufficient space for the ocean desalination treatment facilities at the AWPf sites. Co-location of these two facilities increases efficiencies in operations and maintenance. Consequently, an ocean desalination treatment facility would be constructed at the same location as the AWPf with a product water target of 1.2 MGD (1,400 AFY) of desalinated water (Table 2-2). The total amount of water produced would be dependent on the remaining demand not met by recycled water.

The treatment facility would include similar treatment processes as the AWPf, but would be dedicated to the ocean water source. More specifically, components would include an intake pump station, a pretreatment system to remove large particles and suspended solids, an RO desalination treatment to remove dissolved salt from the seawater, post-treatment water conditioning facilities, final product water storage, desalinated water pump station, and brine discharge pump station within the AWPf site. Residuals handling and disposal facilities would be needed to accommodate backwash water and solids from the treatment and membrane cleaning processes.

A new ocean water intake system would be constructed to convey ocean water to the new treatment facility. Ocean water would be collected in conformance with the California Ocean Plan requirements (see Section 3.9 *Hydrology and Water Quality*). A subsurface intake system would be constructed unless proven to be infeasible under the terms of the Ocean Plan, which establishes performance standards for any alternative to a screened intake system (see Section 3.11.6, *Regulatory Framework – California Ocean Plan*). A subsurface intake system would be sized to intake approximately 3.5 to 6.9 MGD (3,900 to 7,730 AFY) of ocean water through slant wells, beach wells, or infiltration galleries. The design of the intake system would comply with the California Ocean Plan Amendment specifically regulating ocean desalination facilities.

The newly produced desalinated product water would be conveyed to the potable water distribution system through the existing pipelines located within existing rights-of-way of city and county roads.

The Ocean Desalination Facility component is expected to produce 1.9 – 3.8 MGD of additional concentrate. This additional concentrate would be discharged to the ocean via the discharge pipeline and outfall described as a component of the Phase 1 Ventura WaterPure Project or through the existing Calleguas SMP ocean outfall. The desalination option is analyzed at a programmatic level in this EIR and would require additional CEQA project-specific review prior to approval.

2.6 Project Alternatives

Project Alternatives Under Consideration

This EIR evaluates a reasonable range of alternatives as required by the CEQA, including the No Project Alternative, Zero Percent Diversion, 60 Percent Diversion, 100 Percent Diversion, and the Conveyance to Oxnard Wastewater Treatment Plant Alternative. Each of these alternatives is described below.

In addition, alternatives that were considered but rejected for further analysis because they would not meet project objectives, would not substantially reduce environmental effects, or were determined to be infeasible are described in Section 6.2.1, Alternatives Rejected from Further Consideration.

Alternative 1: No Project

Under this alternative, tertiary treated discharge from the VWRP would not be diverted for potable reuse and would continue to flow into the existing 20-acre system of freshwater wildlife/treatment ponds prior to discharge to the SCRE. This alternative would not result in the benefits to the ecology of the SCRE that the proposed project would provide. The City would be in violation of the Consent Decree and could also be in violation of the CWA, depending on the Regional Board's orders in the new NPDES Permit. The City would have no recycled water diverted for water supply. With no new water supply projects, the City would be unable to eliminate the supply deficits identified in Table 1-4 and Table 1-5 and could not adequately supply water to its residents and customers during dry years and drought conditions. Under this alternative, the City would be required to ration future water supplies. In addition, the City would continue to fail to meet the secondary MCLs for drinking water quality on its groundwater supplies.

Alternative 2: Zero Percent Diversion

Under this alternative, the tertiary treated discharge from the VWRP would not be diverted for potable reuse and would continue to flow into the existing 20-acre system of freshwater wildlife/treatment ponds prior to discharge to the SCRE. Under this alternative, the City would need to seek to implement the ocean desalination facility project to produce 4.8 MGD (5,400 AFY) and 1.8 MGD (2,000 AFY) of groundwater desalting to eliminate the supply deficits identified in Table 1-4 and Table 1-5 to meet the future water supply, and to improve water quality of its potable supply. This alternative would not result in the benefits to the ecology of the SCRE that the proposed projects would provide. Because zero percent diversion is not the MEPDV, the City would be in violation of the Consent Decree. It could also violate the CWA depending on the This Alternative may be inconsistent with the new NPDES permit.

Alternative 3: 60 Percent Diversion

This alternative would divert 60 percent of the current flow of VWRP tertiary-treated discharge during dry-weather, closed-berm conditions (currently an average monthly flow of 2.8 MGD) as recommended by the Phase 3 Study. Since this volume of water is insufficient to meet water supply demands, this alternative requires construction of ocean water desalination in Phase 1 to meet water supply demands. Up to 2,000 AFY of groundwater desalting would be implemented similar to the proposed project. This alternative would not result in the benefits to the ecology of the SCRE that the proposed projects would provide and would not divert the MEPDV as defined by the SRP.

Alternative 4: 100 Percent Diversion in Phase 1

This alternative would consistently divert the entire current flow of VWRf tertiary-treated discharge during dry-weather, closed-berm conditions (currently an average monthly flow of 4.7 MGD) to the new AWPf for potable reuse. The VWRf would have zero discharge during dry weather, normal operating conditions. This alternative would not require the construction or reconfiguration of wildlife/treatment wetlands because 100 percent of the tertiary-treated water would be diverted for beneficial reuse. This alternative also does not require construction of ocean water desalination. Up to 2,000 AFY of groundwater desalting would be implemented similar to the proposed project. This alternative would not provide for a staged implementation approach to 100 percent diversion. Therefore, unlike the proposed projects, this alternative would not incorporate data collection following the reduction to a 1.9 MGD discharge to inform the final flow reduction and ensure that the decreased discharge to the SCRE would not reduce habitat values, and may be inconsistent with the Regional Board's new NPDES Permit.

Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant

Under Alternative 5, tertiary-treated discharge from the VWRf above the amount of the approved CDL (up to 100 percent of VWRf direct discharges), would be conveyed 10 miles to the Oxnard Wastewater Treatment Plant. The effluent would be available to the City of Oxnard to reuse for non-local supply offset or to supplement the City of Oxnard's supply. The project would not augment water supplies for the City. Under this alternative, the City would still need to implement ocean desalination to produce 4.8 MGD (5,400 AFY) and 1.8 MGD (2,000 AFY) of groundwater desalting to eliminate the supply deficits and meet the future water supply and potable water quality needs.

Alternative 6: Rehabilitation of Existing Fairgrounds Outfall

Under Alternative 6, all of the components of the proposed projects would remain the same, except for the Concentrate Discharge Facility component. There are two existing outfalls that are no longer in operation near the AWPf sites that may be re-purposed for the concentrate discharge. These outfalls served the former Seaside Sewage Treatment Plant, which was owned by the City of Ventura. Both pipelines emanate from a single point on the fairgrounds property.

2.7 Phasing Schedule

The construction of Phase 1 of the Ventura Water Supply Projects would take approximately 3 to 5 years, with a tentative start date in mid-June 2020. The Phase 2 construction would take approximately 3 to 5 years, starting in 2030. **Table 2-5** contains a tentative work schedule by component. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m., in accordance with City construction requirements. In addition, there may be a need for nighttime and weekend work during the horizontal directional drilling (HDD) operations for the outfall options. The City would obtain a noise variance for any work occurring outside the hours of 7:00 a.m. and 8:00 p.m., and for any holiday or weekend work, in compliance with local regulations.

**TABLE 2-5
VENTURA WATER SUPPLY CONSTRUCTION SCHEDULE**

Project Component	Proposed Construction Timeframe
Ventura Water Supply Projects Phase 1	
Advanced Water Purification Facility	June 2020 – December 2023
Water Conveyance System	June 2020 – March 2023
Groundwater Wells	January 2021 – December 2023
Wildlife Treatment Pond Reconfiguration/Treatment Wetland	June 2021 – February 2025
VWRF Treatment Upgrades	June 2021 – April 2022
Concentrate Discharge Facility	January 2021 – March 2023
Ventura Water Supply Projects Phase 2	
AWPF Expansion Project	May 2030 – December 2035
Ocean Desalination Facility	May 2030 – December 2035

2.7.1 Construction Equipment

Construction of the new facilities would involve the use of a variety of heavy construction equipment within the sites identified for construction of the terrestrial Ventura Water Supply Projects components. The majority of the equipment and vehicles would be associated with the intensive earthwork and the structural and paving phases of construction. Large construction equipment, including backhoes, bulldozers, compactors, cranes, excavators, haul trucks, pavers, and rollers, would be used during the construction phase of the proposed projects. Construction of the ocean outfall would require a drill rig, barges, cranes, and tugboats. A summary of proposed construction areas, earthwork, construction equipment types, vehicle and truck trips, and construction duration for each primary project component is presented in **Table 2-6**.

**TABLE 2-6
CONSTRUCTION ASSUMPTIONS FOR THE PROPOSED PROJECT**

Project Site/Component	Estimated Construction Equipment (Quantity)	Construction Vehicle Trips, Truck Trips	Estimated Construction Duration
VenturaWaterPure			
Advanced Water Purification Facility	<i>Site Prep:</i> <ul style="list-style-type: none"> • Rubber Tired Dozers (3) • Tractors / Loaders / Backhoes (4) 	<i>Site Prep:</i> <ul style="list-style-type: none"> • Worker (18) 	Up to 36 months
	<i>Grading:</i> <ul style="list-style-type: none"> • Excavators (4) • Grader (1) • Rubber Tired Dozer (1) • Scrapers (2) • Tractors / Loaders / Backhoes (2) 	<i>Grading:</i> <ul style="list-style-type: none"> • Worker (20) • Truck Trips (6,410) 	

Project Site/Component	Estimated Construction Equipment (Quantity)	Construction Vehicle Trips, Truck Trips	Estimated Construction Duration		
	<i>Trenching:</i> <ul style="list-style-type: none">Excavator (3)Rubber Tired Dozers (2)	<i>Trenching:</i> <ul style="list-style-type: none">Worker (13)Haul (2)			
	<i>Construction:</i> <ul style="list-style-type: none">Crane (1)Forklifts (3)Generator (1)Tractors/Loaders / Backhoes (3)Welder (1)	<i>Construction:</i> <ul style="list-style-type: none">Worker (667)Vendors (260)Truck Trips (481)			
	<i>Paving</i> <ul style="list-style-type: none">Pavers (2)Paving Equipment (2)Rollers (2)	<i>Paving</i> <ul style="list-style-type: none">Worker (15)			
	<i>Architectural Coating</i> <ul style="list-style-type: none">Air Compressor (1)Scissor LiftConcrete Delivery TruckWiring Pulling Machine	<i>Architectural Coating</i> <ul style="list-style-type: none">Worker (152)			
	Total Truck Trips - 8,040 (includes 219 truck trips for equipment deliveries)				
	Water Conveyance System	<i>Demolition</i> <ul style="list-style-type: none">Concrete/Industrial Saw (1)Excavators (3)Rubber Tired Dozers (2)		<i>Demolition</i> <ul style="list-style-type: none">Worker (15)Truck trips (3,175)	Up to 39 Months
		<i>Excavating/Trenching</i> <ul style="list-style-type: none">Concrete / Industrial Saw (1)Excavators (3)Rubber Tired Dozers (2)		<i>Excavating / Trenching</i> <ul style="list-style-type: none">Worker (15)	
		<i>Paving</i> <ul style="list-style-type: none">Pavers (2)Paving Equipment (2)Rollers (2)		<i>Paving</i> <ul style="list-style-type: none">Worker (15)	
		<i>Extraction Well Construction</i> <ul style="list-style-type: none">Drill Rigs (4)Welders (4)Back Hoe / Track HoeDump Truck		<i>Extraction Well Construction</i> <ul style="list-style-type: none">Worker (20)	
		Total Truck Trips - 3,175			
Groundwater Wells		<i>Well Construction</i> <ul style="list-style-type: none">Drill Rigs (4)Back Hoe/Track HoeDump TruckWelders (4)	<i>Well Construction</i> <ul style="list-style-type: none">Worker (20)Vendors (0)Truck Trips (9)	Up to 36 Months	
	Total Truck Trips - 9				

Project Site/Component	Estimated Construction Equipment (Quantity)	Construction Vehicle Trips, Truck Trips	Estimated Construction Duration
Wildlife/Treatment Wetlands	<i>Demolition</i>	<i>Demolition</i>	Up to 50 Months
	<ul style="list-style-type: none"> Concrete / Industrial Saw (1) Excavator (1) Rubber Tired Dozers (2) 	<ul style="list-style-type: none"> Worker (10) 	
	<i>Site Prep</i>	<i>Site Prep</i>	
	<ul style="list-style-type: none"> Rubber Tired Dozers (2) Tractor/Loader/Backhoes (4) 	<ul style="list-style-type: none"> Worker (15) Haul (100) 	
	<i>Excavation / Grading</i>	<i>Excavation/Grading</i>	
	<ul style="list-style-type: none"> Excavators (2) Grader (1) Rubber Tired Dozer (1) Scrappers (2) Tractors/Loaders/Backhoes (2) 	<ul style="list-style-type: none"> Worker (20) 	
	<i>Planting</i>	<i>Planting</i>	
	<ul style="list-style-type: none"> Forklifts (2) Skip Loader (2) 	<ul style="list-style-type: none"> Worker (10) 	
Total Truck Trips - 100			
VWRF Treatment Upgrades	<i>Excavation/Grading</i>	<i>Excavation/Grading</i>	Up to 8 Months
	<ul style="list-style-type: none"> Excavator (2) Grader (1) 	<ul style="list-style-type: none"> Worker (10) Haul (50) 	
	<i>Construction:</i>		
	<ul style="list-style-type: none"> Crane (1) Forklifts (3) Generator (1) Tractors/Loaders/Backhoes (3) Welders (1) 		
Total Truck Trips – 50			
Concentrate Discharge Facility (New Outfall)	<i>Excavating/Trenching</i>	<i>Excavation/Trenching</i>	Up to 26 Months
	<ul style="list-style-type: none"> Concrete/Industrial Saw (1) Excavators (3) Grader (1) Rubber Tired Dozers (2) 	<ul style="list-style-type: none"> Worker (15) Haul (500) 	
	<i>HDD/Outfall Installation</i>	<i>HDD/Outfall Installation</i>	
	<ul style="list-style-type: none"> Drill Rig (1) Barges (2) Cranes (2) Tugboats (2) 	<ul style="list-style-type: none"> Worker (35) Haul (1,900) 	
Total Truck Trips -2,104			
Concentrate Discharge Facility (Discharge Pipeline to the Calleguas SMP)	<i>Demolition</i>	<i>Demolition</i>	Up to 26 Months
	<ul style="list-style-type: none"> Concrete/Industrial Saw (1) Excavators (3) Rubber Tired Dozers (2) 	<ul style="list-style-type: none"> Worker (15) Vendors (0) Haul (754) 	

Project Site/Component	Estimated Construction Equipment (Quantity)	Construction Vehicle Trips, Truck Trips	Estimated Construction Duration
	<i>Excavating/Trenching</i> <ul style="list-style-type: none"> Concrete/Industrial Saw (1) Excavators (3) Rubber Tired Dozers (2) 	<i>Excavating/Trenching</i> <ul style="list-style-type: none"> Worker (15) Haul (1,250) 	
	<i>Paving</i> <ul style="list-style-type: none"> Pavers (2) Paving Equipment (2) Rollers (2) 	<i>Paving</i> <ul style="list-style-type: none"> Worker (15) 	
	<i>HDD</i> <ul style="list-style-type: none"> Drill Rig (1) 	<i>HDD</i> <ul style="list-style-type: none"> Worker (10) Haul (500) 	
		Total Truck Trips -3,815	

2.7.2 Construction Activities

The following describes construction activities required for the proposed projects.

Phase 1 VenturaWaterPure Project

Advanced Water Purification Facility

Construction of the AWPf would consist of site clearing and grading, excavation, construction of treatment buildings and installation of equipment, and site completion. Construction equipment could include the following: excavators, graders, backhoes, bulldozers, loader, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck.

It is estimated that approximately 53,560 cubic yards (CY) of soil would need to be hauled off-site. Assuming 14 CY per truck load on average, approximately 3,830 truck trips would be needed to remove the excavated material. Approximately 35,700 CY of soil would be imported to the site, requiring approximately 2,550 truck trips. It is anticipated that the AWPf would require approximately 14,110 CY of concrete. Assuming 10 CY per concrete truck, approximately 1,410 trucks trips would be required for concrete delivery.

Traffic entering and leaving the site would include workers' daily arrival and departure, equipment deliveries, hauling of excavation spoil, concrete deliveries, and other construction-related traffic.

In addition to soil removal, structural fill delivery, and concrete delivery, there would also be other materials and equipment delivered to the site, including piping, building materials, concrete forms, roofing materials, HVAC equipment, and pumps. These additional deliveries are estimated to occur with a frequency of every three days and would account for an additional 75 flatbed truck trips.

Water Conveyance System

The projects would include a system of conveyance pipelines to transfer treated water through the service area. The system would include pipelines from the extraction wells to the AWPf, from the VWRf to the AWPf, from the AWPf to the injection wells for IPR, and from the AWPf to the Bailey WCF and Saticoy WCF for DPR.

On average, 100–200 feet of pipeline would be installed per day. Construction would involve trenching using a conventional cut-and-cover technique. **Figure 2-15** shows typical open-trenching methods. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and resurfacing to the original condition. Open trenches would be approximately 4 to 6 feet wide and 6 to 8 feet deep. Excavation depths would vary depending on location of existing utilities. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Where pipelines run parallel to each other, installation would occur within the same trench at the same time. Off-site construction staging areas would be identified by contractors for pipe lay-down, soil stockpiling, and equipment storage.

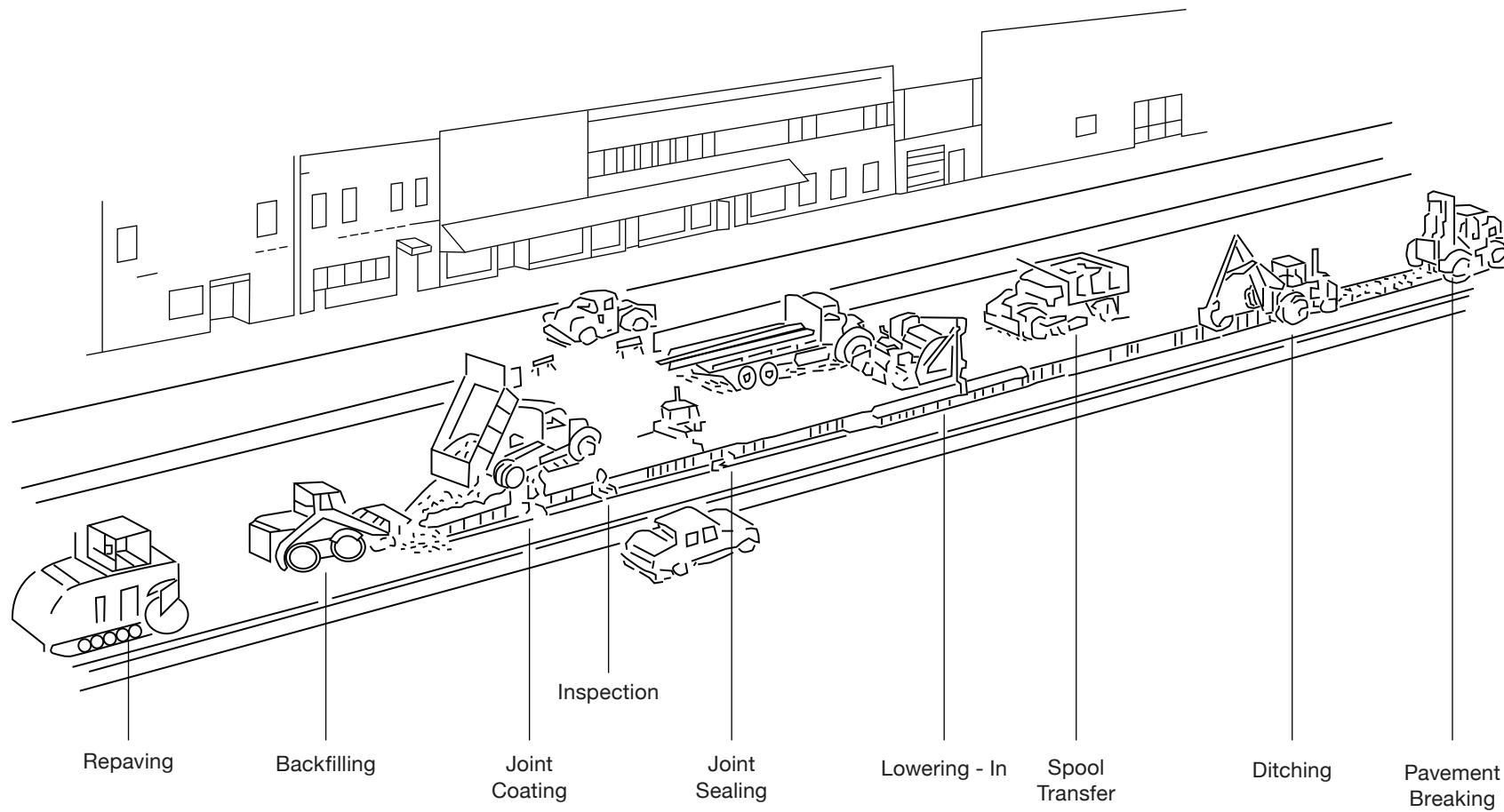
Trenches would be backfilled at the end of each work day or temporarily closed by covering with steel trench plates. The construction equipment needed for pipeline installations generally includes: backhoes, excavators, dump trucks, shoring equipment, steam rollers, and plate compactors. Typically, 10 to 15 workers would be required for pipeline installations. Excavated suitable soils would be reused as backfill and other soils would be disposed of off-site. Approximately 3,175 truck trips would be required for all the pipeline alignments combined to haul off excavated soil not needed for backfill, and to import clean backfill material.

Trenchless construction methods would be employed to install pipelines under sensitive drainages, highways, and large intersections. Trenchless installation could include either directional drilling or jack-and-bore methods. All trenchless installations would require an approximately 50-by 100-foot temporary construction area on each side of the crossing for installation shafts (pits), materials, and equipment. Complete road closures are not anticipated for installation of the conveyance pipeline. **Figure 2-16** shows a typical trenchless construction method.

Groundwater Wells

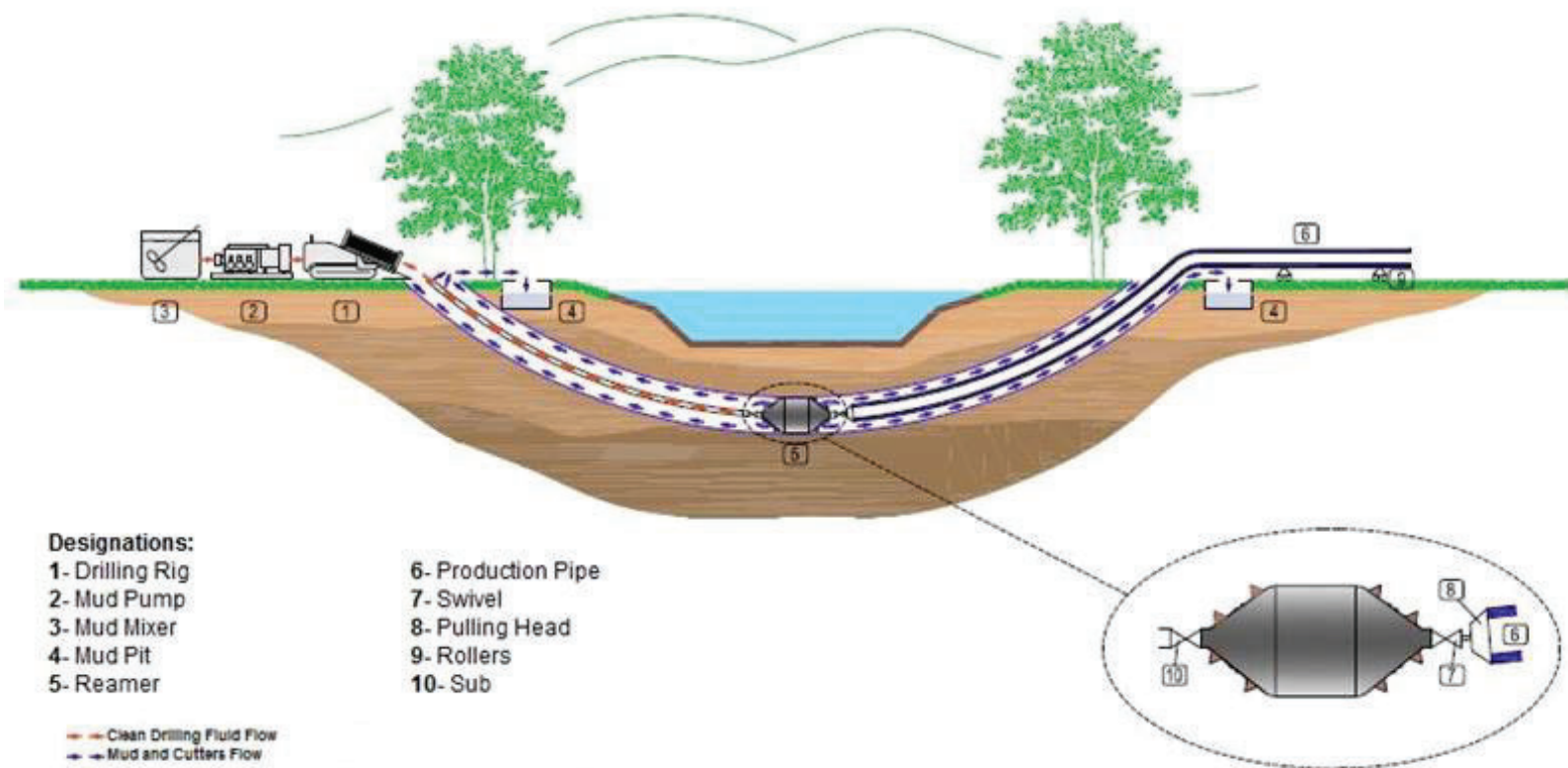
Depending on the chosen well site, the construction of the proposed wells would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, well drilling, installation of well casing, gravel packing, and finishing with a cement seal. Construction equipment would likely include an auger rig, drill rig, small crane, welder, pipe trailer, forklift, generator, circulation pits, Baker tanks, and backhoe.

The proposed wells would be constructed of high-strength low-alloy steel. Drilling depth to the aquifer would be approximately 1,500 feet below ground surface. Construction of a well would require approximately 4 weeks. Total construction would be approximately 4 months.



SOURCE: CH2MHILL.

Ventura Water Supply Projects



SOURCE: NAWITEL, 2018

Ventura Water Supply Projects

Figure 2-16
Typical Trenchless Technology

Wildlife/Treatment Wetlands

Construction of the freshwater wildlife/treatment wetlands would consist of site clearing, grading, excavation, building access roads, constructing basins, berm construction, fine grading, hydric-soils placement, and wetlands plantings. Grading to a depth of 3 to 5 feet would be conducted along with creation of side berms to impound water. The configuration of treatment cells would be designed to maximize biological nutrient removal. A conceptual layout is shown in **Figure 2-17**. A vegetation palette and planting plan would be prepared and implemented as part of the project. The plants would become established as the treatment cells are filled. No additional irrigation system would be needed.

Construction of the pipeline from the VWRF to the wetlands would involve trenching using a conventional cut-and-cover technique or directional drilling techniques where necessary to avoid impacts to heavily traveled roadways or sensitive biological areas. Open trenches would be approximately 4 to 6 feet wide and 6 to 8 feet deep. Excavation depths would vary depending on location of existing utilities. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Construction equipment could include the following: bulldozer, wheeled scrapers, backhoe, excavator, loader, dump trucks, crew trucks, personal vehicles, compactor, delivery trucks, and water trucks.

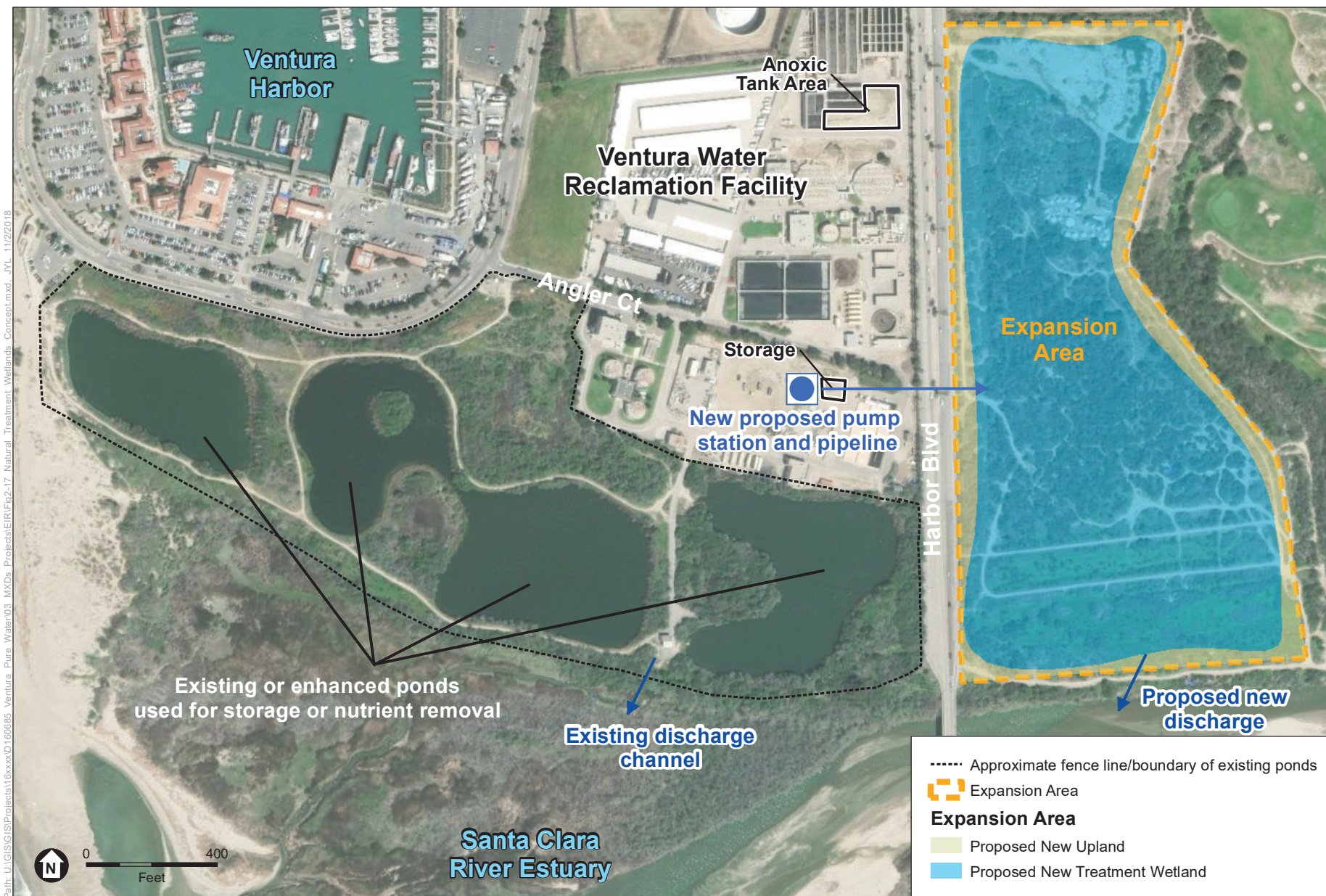
VWRF Treatment Upgrades

The VWRF treatment upgrades would include the replacement of existing blowers, construction of a new anoxic tank, filter upgrades, construction of a new 1.5 MG equalization basin and pump station/piping. The new anoxic tank would be located in a disturbed unpaved area of the VWRF that is currently compacted dirt. Approximately 1,000 cubic yards of construction debris would be hauled off-site. This debris would primarily be composed of dirt. Construction would include site grading and excavation to a depth of 6 feet. A total of approximately 1,350 truck trips would be required to haul off and import materials and for worker-related travel. This component would take approximately 8 months to construct. A total of approximately 10 workers would be required daily during construction activities.

Concentrate Discharge Facility

New Outfall

Construction of a new ocean outfall includes a pipeline from the AWP to the ocean, where the concentrate would be discharged through an outfall. The pipeline would be constructed using open trench and HDD techniques to avoid impacts to sensitive biological areas. Excavated soils would be replaced into the trench to cover the pipeline. Extra soil would be transported off-site for disposal.



SOURCE: ESRI; ESA, 2018.

Ventura Water Supply Projects

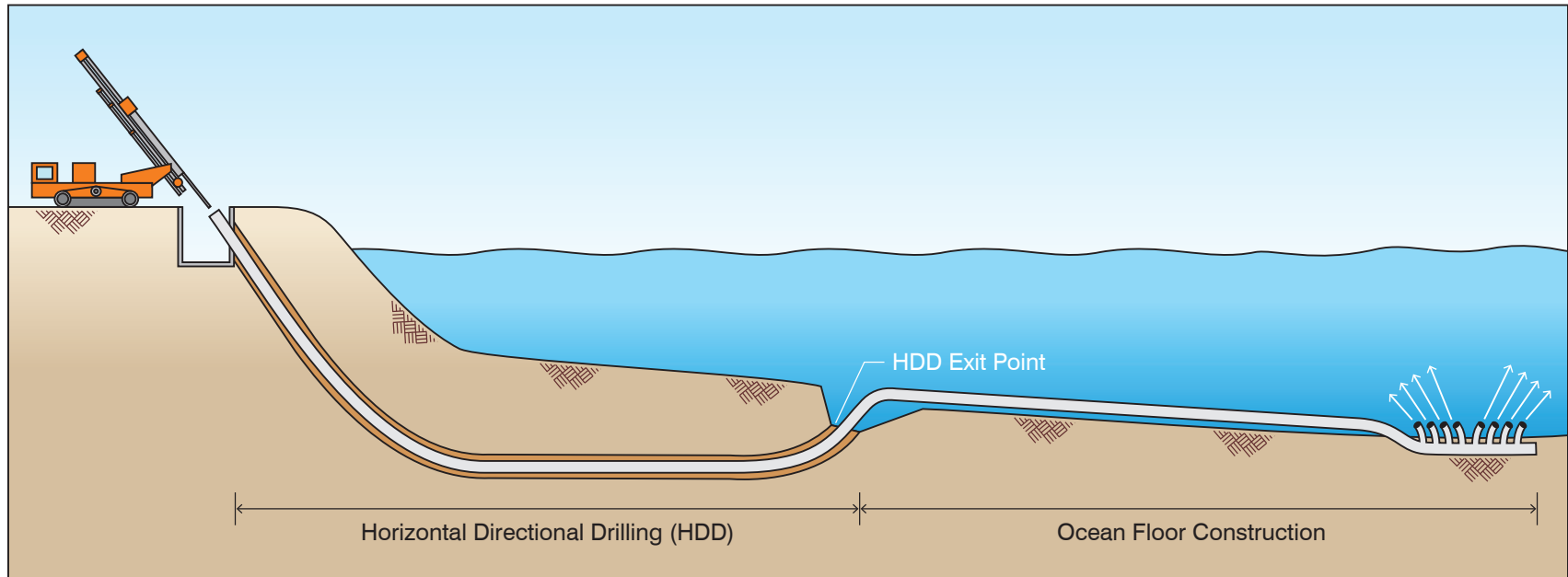
Figure 2-17
Natural Treatment Wetlands Project Concept

The ocean outfall also would be installed using HDD techniques. A drilling rig would be staged on the shoreline east of the beach on developed property, most likely near the parking area south of the marina. The pilot bore will be installed from the drill rig on shore to a point in the alignment approximately 10 feet below the ocean floor. To avoid discharging drilling fluids into the ocean, the pilot bore would not penetrate the ocean floor. After the initial pilot bore, forward-reaming techniques will be used to open the hole to a suitable diameter to accept the new pipeline. Once the hole has been enlarged and drilling fluid removed the drill will be advanced to a point where the ocean floor is penetrated. A barge will be used near the exit location to facilitate the installation of the new pipeline, dredge a small area where the bore will exit, as well as support the drill pipe during the final swab passes. It is anticipated that the pipe string will be assembled on land, towed out into the ocean, and installed into the borehole from the ocean. Once the pipeline is pulled into the borehole, the new ocean pipeline and diffuser components would be conjoined and installed on the ocean floor. The new outfall would require piles to secure to the ocean floor. Vibratory pile installation would be utilized to minimize noise effects on marine life. Approximately 150,000 cubic yards of ocean floor material may be dredged and either temporarily cast aside and reused to cover the pipeline or disposed of at the LA-2 disposal site near the Port of Los Angeles, as directed by the U.S. Army Corps of Engineers. Daily operation of tug boats and barges would be subject to U.S. Coast Guard Local Notice to Mariners regulations. Installation of the outfall diffuser would require installing approximately 2,000 tons of riprap around the outfall.

An area approximately 50,000 square feet would be needed to install and operate the drill rig during construction on shore. Approximately 25 workers on shore and 20 workers off shore on a barge would be required. Approximately 1,900 truck trips would be required to dispose of pavement and excavated soil produced by the HDD process. Approximately 20 equipment deliveries would occur daily to the drill rig site. **Figure 2-18 and Figure 2-19** illustrate a conceptual installation of the outfall.

Construction of the ocean intake and concentrate discharge facility would require approximately 2 years, and is anticipated to occur in parallel with AWPf construction. Installation of the outfall diffusers requires that barges, support vessels, equipment, and crew be mobilized offshore of the VWRf. Construction operations include vessel anchoring, dredging, riprap reconfiguration, and pile driving.

The primary piece of heavy equipment needed for site preparation, installing the outfall diffusers, and stockpiled riprap placement is a large derrick barge with a deck crane (**Figure 2-20**). This derrick barge would be approximately 150 feet wide and 300 feet long and the crane on the deck of the derrick barge would be between 120- and 300-ton class. Smaller crew and supply vessels from the Ventura Harbor or Port of Hueneme would shuttle workers to the offshore work site two times daily (additional trips may be needed to deliver equipment and supplies) and perform environmental monitoring.



SOURCE: Carollo, 2018

Ventura Water Supply Projects

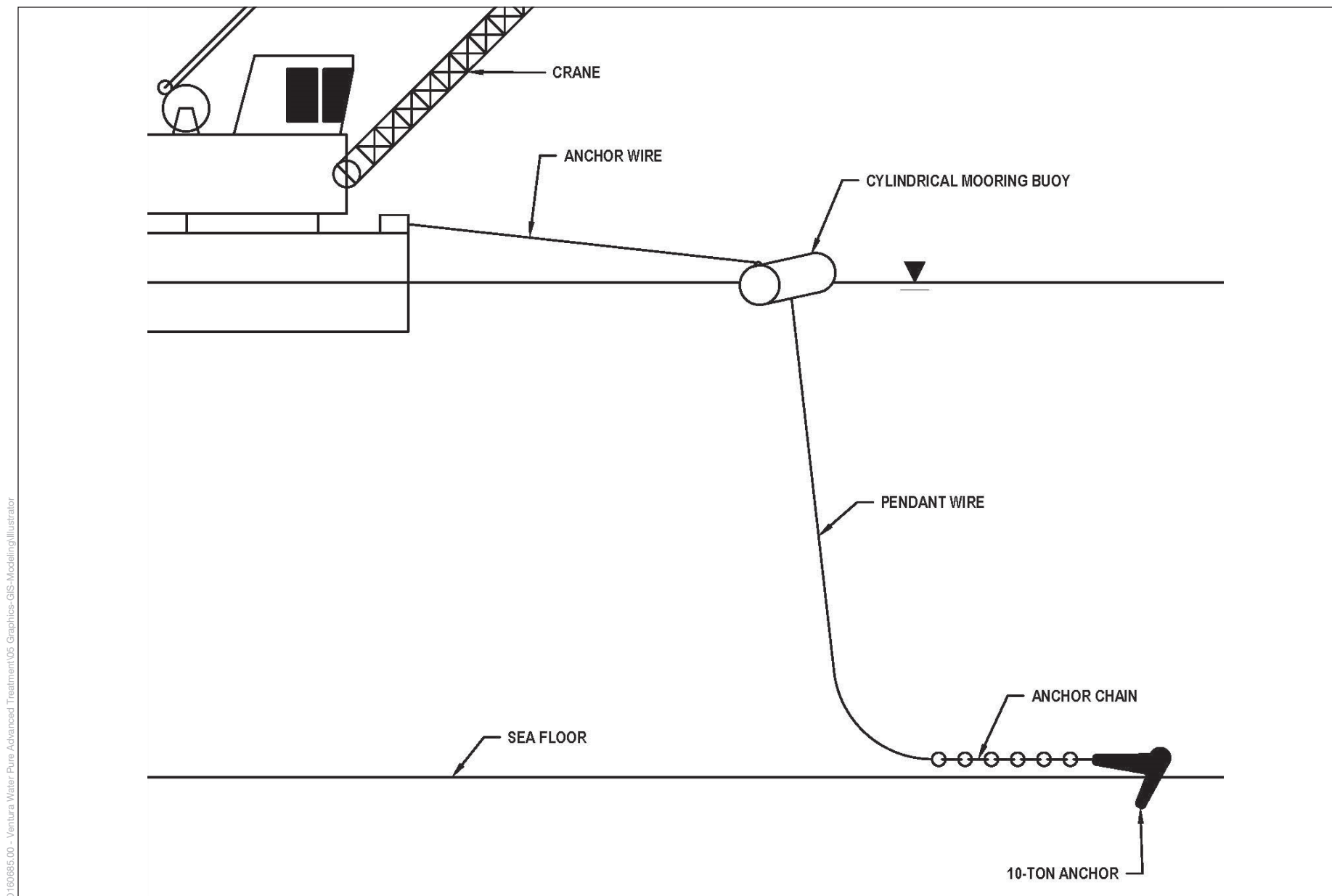
Figure 2-18
Typical HDD Process



SOURCE: ESA, 2018; Base Google Earth

Ventura Water Supply Projects

Figure 2-19
Conceptual Outfall Construction



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SOURCE: GHD 2017

Ventura Water Supply Projects

Figure 2-20
Typical Derrick Barge Temporary Mooring Buoy

The outlet diffuser would be transported out to the derrick barge via a separate tug and transport (deck) barge from the either Ventura Harbor or Port of Hueneme, and would likely require multiple trips. Additional tug boats and deck barges would also be needed to temporarily hold the stockpiles of riprap until the stone is replaced around the outlet structures. The deck barges holding the riprap may be towed back to the either Ventura Harbor or Port of Hueneme if deemed necessary due to weather or other conditions, which would require another three to five round-trips to the site depending on the size of barges available. The deck barges range in length from approximately 200 to 300 feet long by up to 50 feet wide, and the support tugs are up to 90 feet long.

Anchoring is required during construction to ensure that the derrick barge and other offshore equipment remain stationary. The contractor would identify and map all areas of kelp, seagrasses, and hard substrate found within the work area, to avoid or minimize construction and operational impacts by anchors, buoys, cables, riprap, and dredging spoils during the project construction and maintenance.

Temporary mooring buoys for the derrick barge, as shown in Figure 2-20, would be used and located to prevent anchor wires from dragging on the bottom and wearing against existing pipelines. Anchors and associated gear would be retrieved upon completion of construction.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

Construction of the discharge pipeline to the Calleguas SMP would involve installing an 8- to 14-inch-diameter pipeline within public rights of way for approximately 11 miles as shown in Figure 2-14. On average, 100–200 feet of pipeline would be installed per day. Pipeline construction would use a conventional cut and cover technique or trenchless technology where necessary to avoid impacts to heavily traveled roadways or sensitive biological areas. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. Open trenches would be approximately 4 to 6 feet wide and 6 to 10 feet deep. Excavation depths would vary depending on location of existing utilities. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Trenches would be backfilled at the end of each work day or temporarily closed by covering with steel trench plates. Off-site construction staging areas would be identified by contractors for pipe lay-down, soil stockpiling, and equipment storage.

Trenchless construction methods would be employed to install pipelines under the Santa Clara River, sensitive drainages, and large intersections. Trenchless installation could include directional drilling jack-and-bore, pipe ram, and microtunnel methods. All trenchless installations would require an approximately 50- by 100-foot temporary construction area on each side of the crossing for installation shafts (pits), materials, and equipment. Complete road closures are not anticipated for installation of the conveyance pipeline.

Connecting to the SMP ocean outfall would require approximately 11 miles of 8- to 14-inch-diameter pipe, which would be constructed in public rights-of-way to the maximum extent practicable (see Figure 2-14). Conveyance of the concentrate over approximately 11 miles would

require up to two pump stations: one at the VWRP, and potentially a booster pump station located off-site.

The connection with the existing SMP would occur in one of two locations as shown in Figure 2-14. To access the SMP, an excavation approximately 20-by 15-feet to a depth of approximately 14 feet would be required. Approximately 160 CY of soils would be excavated and either disposed of off-site, or stored on site and used for backfill. The connection design would be provided by Calleguas MWD to conform with the SMP design requirements (**Figure 2-21**).

Phase 2 Ventura Water Supply Project

OPTION A: AWPFF Expansion

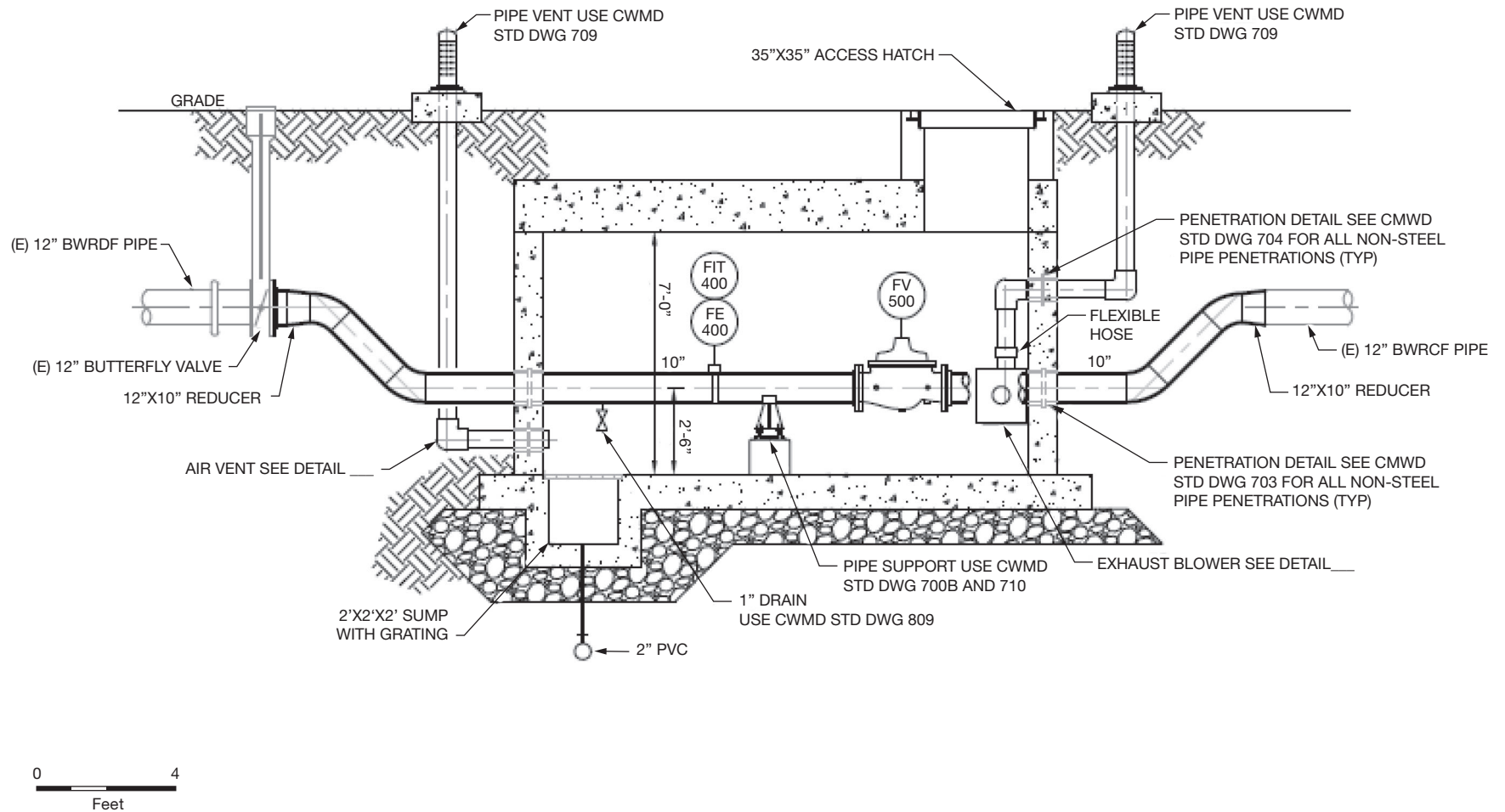
In the future, if permits are obtained for the consistent diversion and treatment of 100 percent of the VWRP tertiary-treated effluent, the AWPFF treatment would be expanded to produce up to an additional 1.2 MGD (1,400 AFY) of consistent, reliable product water, providing a Phase 1 and Phase 2 project total of 6.7 MGD (7,400 AFY) of combined purified wastewater and groundwater (Tables 2-2). Since the AWPFF would be designed in Phase 1 to accommodate the the CDL of 0 to 0.5 mgd, major construction is not anticipated in Phase 2. However, some advanced treatment processes facilities capacity within the plant may require modification or expansion through addition of equipment, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. Additional flow routing modifications and/or storage would be required at the VWRP site to accommodate a CDL of 0.

OPTION B: Ocean Desalination Facility

The treatment processes required for ocean desalination would be co-located with the treatment facilities of the Phase 1 AWPFF, and would be similar to those installed in the AWPFF facility. The desalination treatment components would be within the same footprint as the AWPFF site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPFF facility. Co-location of these two facilities increases efficiencies in operations and maintenance.

Planning, permitting, design, and construction of the ocean intake system may require approximately 10 to 15 years. It is anticipated that subsurface intakes would be constructed consisting of slant wells or infiltration galleries. A slant well would be constructed near the beach at a location with access to roadways, but close enough to the ocean to ensure no interference with fresh groundwater. The slant well would require a drilling rig to be operating for a period of months to install the well screening. A pipeline connecting the new well with the AWPFF would be constructed to convey seawater to the treatment facility.

If infiltration galleries or beach wells are used, they would be installed within the beach, most likely south of the marina. A series of perforated pipes would be buried beneath the sand within the surf zone or slightly further off-shore. A pump sump would be built to a depth of 20 to 35 feet to house a pump that would pull water from the infiltration gallery to a conveyance pipeline connecting with the AWPFF.



SOURCE: ESA, 2018

Ventura Water Supply Projects

Figure 2-21
Typical Discharge Station Section

The ocean desalination facility would require an ocean outfall. Construction of the outfall is described above. If an outfall is constructed for Phase 1, only minor improvements may be needed to accommodate discharge from the ocean desalination facility, including installation of diffusers appropriate for a negatively buoyant discharge plume. Both the intake and the outfall would be constructed in accordance with Ocean Plan requirements.

2.7.3 Project Staging Areas

Staging areas would be located along the pipeline alignment and adjacent to the proposed pipeline alignment or well sites, as listed in **Table 2-7**. Pipeline construction would occur mostly within existing roadway rights-of-way of city and county streets. Construction parking would vary with progress along the linear pipeline corridor and near the well sites. Traffic control devices would be incorporated into the design plans to ensure smooth traffic flow during construction. A detailed staging plan would be prepared during project design. Equipment and vehicle staging would be accommodated at each construction site.

**TABLE 2-7
CONSTRUCTION STAGING AREAS**

Project Components	Location
Advanced Water Purification Facility	Adjacent to AWPf on the same site. Each of the proposed sites should be able to accommodate both the construction area as well as a staging area.
Water Conveyance System	Adjacent to trench; for entire open cut pipeline alignment length. Staging area for trenchless and bridge installations is included within this space.
Groundwater Wells	Adjacent to the well sites.
Wildlife/Treatment Wetlands	Adjacent to wetlands.
VWRF Treatment Upgrades	Within the VWRF
Concentrate Discharge Facility: New Outfall	Adjacent to drilling location within Marina Park.
Concentrate Discharge Facility: Discharge Pipeline to the Calleguas Salinity Management Pipeline	Adjacent to trench; for entire open cut pipeline alignment length. Staging area for trenchless and bridge installations is included within this space.

2.8 Operation and Maintenance Characteristics

2.8.1 Phase 1 VenturaWaterPure Project

Advanced Water Purification Facility

The proposed AWPf would operate 24 hours a day, 365 days a year, and would be staffed around the clock. It is anticipated that the AWPf would require approximately 20 new full-time employees to operate the facility. After construction is completed and the facility is commissioned and operating, there would be operational traffic associated with worker commutes and supply/chemical deliveries. Routine deliveries of chemicals to the site, and hauling of residual materials from the site, would be conducted during normal day-shift working hours, during the traditional work week.

Facility operators would use various chemicals to treat the water as it passes through the treatment processes to ensure the water meets water quality requirements. The chemicals used during the treatment process would be stored on-site at the purification facility in accordance with applicable regulatory requirements. Chemical storage facilities would include secondary concrete containment, alarm notification systems, and fire sprinklers. **Table 2-8** summarizes the chemicals that the water purification process would use and the projected annual usage amounts. The main treatment process chemicals would be housed in various bulk storage tanks of up to 8,300 gallons, located outside of the process building. Cleaning chemicals would be stored in smaller containers. Sumps and sump pumps within the chemical containment area and loading areas would collect and contain any chemicals accidentally released during operations.

TABLE 2-8
TREATMENT PROCESS AND CLEANING CHEMICALS AND ANNUAL USAGE

Chemical	Application	Annual Usage (pounds)
Sulfuric Acid	RO Feed, UV AOP Feed, UF and RO Cleaning	1,811,000
Antiscalant	RO Feed and SWRO Feed	106,000
Calcium Chloride	Product Water Stabilization	738,000
Carbon Dioxide	Product Water Stabilization	1,107,000
Aqueous Ammonia	UF Feed	29,000
Sodium Hypochlorite	UF Feed, UV AOP Feed, Product Water, and UF Cleaning	270,000
Liquid Oxygen	Ozone Dose	658,000
Sodium Bisulfite	Ozone Effluent and UF Cleaning	55,000
Sodium Hydroxide	UF and RO Cleaning and Product Water Stabilization	1,329,000
Citric Acid	UF and RO Cleaning	700
Ferric Chloride	SWRO Feed	49,000
Polymer	SWRO Feed	98,000

SOURCE: Carollo 2019

Water Conveyance System

The majority of the pipeline would be located underground with valves and minor piping being located aboveground for maintenance purposes. Pipeline inspection, maintenance, and/ repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and maintenance of valves.

Groundwater Wells

Well sites would be accessed by maintenance personnel occasionally, approximately two times per week. The maintenance activities would typically include equipment inspections and minor repairs.

Wildlife/Treatment Wetlands

The wildlife/treatment wetlands would require regular monitoring and maintenance for the first 2- to 3-years as the wetland vegetation becomes established. The wetlands would require monitoring for growth of species not in the planting plan (invasive species) and would require eliminating invasive plants species as the wetlands establish. In addition, vegetation maintenance/removal projects would be required at regular intervals (3- to 5-years) to ensure that water flows through the system as designed and does not get hydraulically constricted, causing elevated water levels or limited capacity. Regular water quality testing would occur to ensure that the wetland is operating properly for reducing nutrients in the VWRP-treated discharge. It is anticipated that 3 to 5 new employees would be required to monitor and maintain the wetlands.

VWRP Treatment Upgrades

The operational characteristics would require periodic maintenance similar to the current VWRP operations. The upgrades would not require additional employees at the VWRP.

Concentrate Discharge Facility

Pipeline inspection, maintenance, and repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and/or maintenance of valves and corrosion control. Cleaning of the diffuser would be conducted by divers using hand-held tools.

2.8.2 Phase 2 Ventura Water Supply Projects

Option A: AWP Expansion

The operational characteristics would be the same as described above for the AWP. The AWP expansion would not include any new facilities or infrastructure.

Option B: Ocean Desalination Facility

The operation of the ocean desalination project would be similar to the AWP. The desalination equipment would be located within the same footprint as the AWP site and would require approximately two new employees that specialize in desalination plant operations and maintenance beyond what is already needed for the AWP. Typical maintenance would entail the inspection and/or maintenance of valves and corrosion inspections.

2.9 Discretionary Approvals Required for the Project

Table 2-9 presents a preliminary list of the agencies and entities, in addition to the City, that have authority to issue specific permits and other discretionary approvals that may apply to the project.

**TABLE 2-9
PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS***

Regulatory Agency	Permit	Reason for Permit or Approval
Bureau of Reclamation	Grant Approval	<ul style="list-style-type: none"> Grant funding/NEPA compliance
U.S. Army Corps of Engineers	CWA Section 404	<ul style="list-style-type: none"> Impacts to Waters of the United States from project components
U.S. Army Corps of Engineers	Rivers and Harbors Act Section 10	<ul style="list-style-type: none"> Impacts from concentrate discharge and ocean intake infrastructure offshore
U.S. Fish and Wildlife Service	Endangered Species Act Section 7 Consultation	<ul style="list-style-type: none"> Impacts to listed species and critical habitats (diversion of VWRF discharges from SCRE; construction and operation of project components)
National Marine Fisheries Service	Endangered Species Act Section 7 Consultation	<ul style="list-style-type: none"> Impacts to listed species and critical habitats (diversion of VWRF discharges from SCRE; construction and operation of project components)
California Department of Fish and Wildlife	California Water Code 1602 – Streambed or Lake Alteration Agreement	<ul style="list-style-type: none"> Impacts to jurisdictional features such as bed and bank of streams, rivers, lakes and features subject to Fish and Game Code Section 1602 from project components (pipelines, storage tanks, constructed wetlands etc.)
	California Endangered Species Act 2081 or 2080.1 consistency determination	<ul style="list-style-type: none"> Impacts to listed and fully protected species, as well as species of special concern from VWRF discharge diversions and construction and operation of project components
State Water Resources Control Board	Groundwater Recharge with Recycled Water Project Approval	<ul style="list-style-type: none"> For IPR recycled water injection into groundwater (with RWQCB)
	Direct Potable Reuse Project Approval	<ul style="list-style-type: none"> For DPR connection to potable drinking water system (with RWQCB)
	Water Code 1211 Petition	<ul style="list-style-type: none"> For a change in use. Assessment to beneficial uses from VWRF discharge diversion
California Coastal Commission	Coastal Development Permit	<ul style="list-style-type: none"> Development within coastal zone, including Harbor Boulevard AWPf site, outfall, intake, treatment wetland, VWRF improvements and pipelines within the Coastal Zone (County of Ventura, cities of Ventura, Oxnard and Port Hueneme) LCP Amendment for Harbor Boulevard Site
State Lands Commission	State Tideland Lease Agreement	<ul style="list-style-type: none"> Development on state land, including concentrate outfall and ocean water intake
California Department of Transportation	Encroachment Permit	<ul style="list-style-type: none"> Installing pipelines in Caltrans roadways
Los Angeles Regional Water Quality Control Board	CWA 401 Water Quality Certification	<ul style="list-style-type: none"> Consistency determination with US Army Corps of Engineers (USACE) 404 Permit for impacts to waters of the US that are also waters of the State
	Waste Discharge Requirements	<ul style="list-style-type: none"> For discharge of fill into waters of the State that are not also waters of the US

Regulatory Agency	Permit	Reason for Permit or Approval
	Groundwater Recharge with Recycled Water Project Approval	<ul style="list-style-type: none"> For IPR recycled water injection into groundwater (with SWRCB)
	Direct Potable Reuse Project Approval	<ul style="list-style-type: none"> For DPR connection to potable drinking water system (with SWRCB)
	VWRF Effluent Discharge NPDES	<ul style="list-style-type: none"> For change in discharge to SCRE
	Ocean NPDES Discharge Permit	<ul style="list-style-type: none"> For discharge of concentrate to ocean
	NPDES Low Threat Discharge Permit	<ul style="list-style-type: none"> Backwash from flushing wells
	State-wide Stormwater NPDES for construction and industrial facilities	<ul style="list-style-type: none"> For runoff from construction activities For runoff from industrial facilities, such as AWWP
County of Ventura Department of Public Works	Well Permit	<ul style="list-style-type: none"> For construction of new wells in the Oxnard Basin
Ventura County Air Pollution Control District	Title V	<ul style="list-style-type: none"> Treatment plant emissions Diesel backup generators
Local Jurisdictions	Encroachment Permits	<ul style="list-style-type: none"> Public rights-of-way and private property access and use
Fox Canyon Groundwater Management Agency	Well Permit	<ul style="list-style-type: none"> Construction of new wells in the Oxnard Plain Basin
Ventura Local Agency Formation Commission	Site annexation	<ul style="list-style-type: none"> Harbor Boulevard site annexation from the unincorporated County to the City

CHAPTER 3

Environmental Setting, Impacts, and Mitigation Measures

Chapter 3 of this Draft Environmental Impact Report (EIR) describes the setting, or baseline, for analysis of environmental impacts; evaluates potential environmental impacts, based on the thresholds of significance provided for each potential impact; and describes measures that would substantially reduce or avoid (“mitigate”) potential significant adverse impacts. The regional and local baseline environmental conditions for the analysis included within this Draft EIR are generally from November 1, 2017, when the Notice of Preparation (NOP) was published.

The following environmental issue areas are assessed in this chapter:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Marine Biology
- Mineral Resources
- Population, Housing, and Environmental Justice
- Public Services
- Recreation
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems and Energy

Format of the Environmental Analysis

The environmental analysis in Chapter 3 includes discussion of potential construction and operational impacts associated with implementation of the proposed projects. Each environmental resource section includes the following subsections: Existing Environmental Setting; Regulatory Setting; Significance Thresholds and Criteria, Impacts and Mitigation Measures; and References. The EIR analyzes the impacts of Phase 1, the VenturaWaterPure Project, at the project level, and assesses the impacts of Phase 2, additional water supply to meet the needs of planned growth, at the program level. The Phase 2 components are currently being analyzed at a programmatic level in this EIR and would require additional CEQA if these components are required to meet future water supply demands.

3.1 Aesthetics

This section addresses the aesthetic and visual impacts associated with implementation of the Ventura Water Supply Projects. This section includes a description of existing visual resources and aesthetic conditions in the project areas, specifically the physical environment in the vicinity of proposed projects' facilities. This section also evaluates potential effects to scenic vistas, scenic resources, the visual character of the project areas where aboveground facilities are proposed, and potential effects associated with light and glare.

3.1.1 Existing Environmental Setting

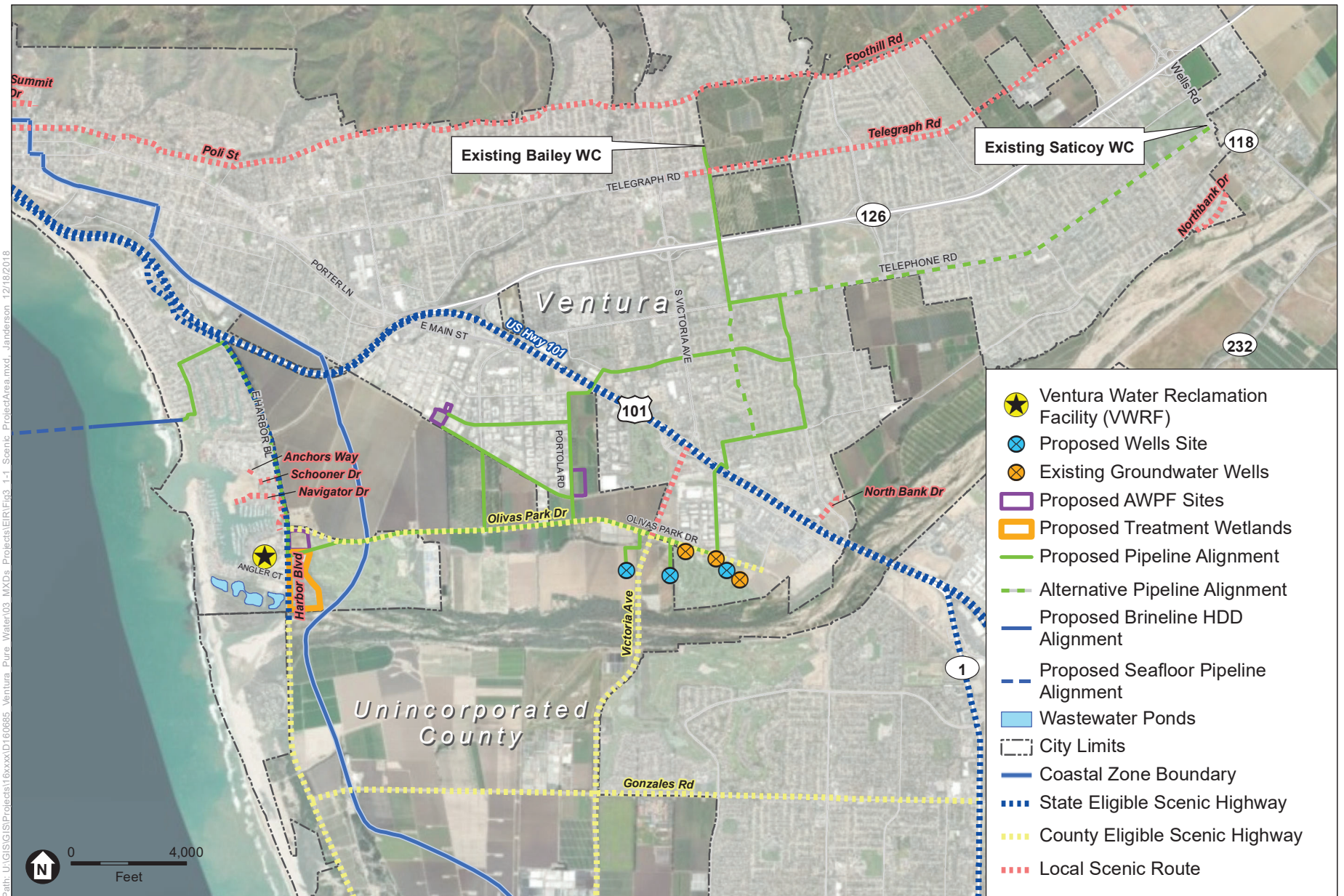
Regional Setting

County of Ventura

Visual resources within Ventura County consist of natural landscapes and scenic views, including landforms, vegetation, and water features, as well as unique elements of the built environment. The proposed projects would be located in the county, which is situated along the Pacific Ocean south of Santa Barbara County and north of Los Angeles County. The county contains varied topography, exposed geological formations, vegetation, built communities, beaches, and waterways. Scenic resources within the county include lakes, beaches, dunes, rivers, creeks, bluffs, mountains, ridgelines, hillsides, native habitat (e.g., wetlands, oak woodlands, and coastal sage chaparral habitat), and rock outcroppings. Further, scenic resources along designated and Eligible State and County Scenic Highways and the coastline are highly valued within the county. **Figure 3.1-1** shows the Eligible State and County Scenic Highways near the proposed project impact areas.

Local Setting

The majority of the proposed projects' facilities would be constructed within the city of Ventura, with portions spanning into unincorporated areas of the county and through the city of Oxnard. The city of Ventura is located in western Ventura County, approximately 60 miles north of Los Angeles and 25 miles south of Santa Barbara. The city is generally bounded by the Ventura River to the west, the Pacific Ocean to the southwest, the Santa Clara River to the south, and the Transverse Ranges to the north (City of San Buenaventura 2005a). The city has a wide variety of landscapes and seascapes, including natural, agricultural, and urban components. The major visual components within the city are hillsides, the Pacific Ocean shoreline, rivers and creeks, and agricultural lands and windrows. Windrows are rows of trees planted adjacent to agricultural lands that serve as windbreaks (City of San Buenaventura 2005b). The local hills rise 1,200 feet above the city of Ventura and provide an important visual backdrop that frames the city (City of San Buenaventura 2005a). Ventura's beaches and shoreline begin at the mouth of the Santa Clara River and continue in a northwesterly direction. The city's beaches become rocky and provide a variation in the visual character of the coastline (City of San Buenaventura 2005a).



SOURCE: ESRI; City of Ventura, 2018; County of Ventura, 2018; Ca Coastal Commission

Ventura Water Supply Projects

Figure 3.1-1
Local-Designated Scenic Routes within the Project Area

The Santa Clara River forms the southeastern boundary of the city. The river and adjacent floodplain serve as important visual elements in the city. The river is nearly dry most of the year, but exposes rock and sand streambed, and supports riparian vegetation (City of San Buenaventura 2005a). As described in Section 3.9.1, Surface Water Hydrology, flows into and out of the Santa Clara River Estuary (SCRE) vary seasonally, inter-annually, and over longer timescales, due to both natural and anthropogenic influences. This complex and dynamic system is heavily impacted by land uses and water diversions within the larger Santa Clara River watershed, direct discharges to the estuary, and alterations of the berm (SRP 2018). In recent years, the SCRE has been responding to morphological changes induced both by two high-magnitude storm events in 2005 and by the more recent drought period (Stillwater Sciences 2018). General vegetation/habitat types currently comprising the SCRE in order of dominance include riparian, open water, mudflats, foredune, ocean, developed/disturbed, open beach, and wetland (including freshwater wetland and a small amount of salt marsh).

The city of Oxnard is located just south of the city of Ventura in western Ventura County, about 40 miles northwest of Los Angeles along the Pacific Ocean coastline. The western and southern edges of the city are framed by the Pacific Ocean, the northern edge is bounded by the Santa Clara River, and the northeastern and eastern sides by agricultural lands that comprise the Oxnard-Camarillo Greenbelt. Oxnard is the largest city within Ventura County and is the center of a regional agricultural industry with variety of neighborhoods and commercial development. The city is defined by several natural and human-made aesthetic resources, including open spaces, beaches and coastline, agricultural areas, and low-rise commercial and residential development as well as tall buildings which are visible in the city's skyline.

Project Setting

The existing visual character of each project component and the surrounding areas are described below.

Advanced Water Purification Facility

- **Harbor Boulevard Site:** The Harbor Boulevard Advanced Water Purification Facility (AWPF) site would be located within a vacant area of land designated as coastal open space within the coastal zone. The site is located on the southeast corner of the intersection of Harbor Boulevard and Olivas Park Drive. Harbor Boulevard site is bounded by agricultural fields to the north, Olivas Links Golf Course to the east, open space to the south, the Ventura Harbor to northwest, and the Ventura Wastewater Reclamation Facility (VWRF) to the west (see Figure 2-5).
- **Transport Street Site:** The Transport Street AWPf site would be located within a vacant area of land designated as Parks and Open Space, with agricultural uses to the south and commercial and industrial uses to the east, west, and north. Just north of the site is Transport Street (see Figure 2-6).
- **Portola Road Site:** The Portola Road AWPf site would be located within Ventura County's jurisdiction and would be located within a land use designation of Agriculture. The Portola Road site is surrounded by open land used for agriculture to the north and south and commercial uses to the west and east (see Figure 2-7).

Water Conveyance System

- **Pipelines:** Proposed pipelines would be located within public rights-of-way throughout the city of Ventura and unincorporated Ventura County. Pipelines would be located entirely underground. Surrounding land uses would differ depending on the final alignment (see Figure 2-9).

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). Wells at Well Site 1 would be constructed within the Buenaventura Golf Course on land designated as Public and Institutional. Olivas Park Drive borders the golf course to the north, beyond which are commercial facilities. Vacant land surrounds the golf course to the east and west, and the Santa Clara River to the south. Wells at sites 2 and 3 would be located on land designated as Agriculture. These sites are within active agricultural fields north of the Santa Clara River.

Wildlife/Treatment Wetlands

The proposed freshwater treatment wetlands would be located in an undeveloped area of land designated as Park and Open Space, just north of the Santa Clara River. The treatment wetland site contains riparian habitat and is located just east of Harbor Boulevard. The Olivas Link Golf Course is located east of this area. Further, across Harbor Boulevard to the west is the VWRF and the existing freshwater wildlife/treatment ponds (Figure 2-13).

VWRF Treatment Upgrades

The proposed upgrades to the VWRF would occur entirely within the footprint of the existing facility. The facility is surrounded by the Santa Clara River to the east, the wildlife/treatment ponds to the south, the Ventura Harbor and Pacific Ocean to the west, and the Ventura Harbor to the north.

Concentrate Discharge Facility

- **New Concentrate Outfall:** The new ocean outfall would discharge to the ocean south of Ventura Harbor. The ocean outfall would be installed from the VWRF, emerging on the ocean floor 2,000 to 4,000 feet offshore. A pipeline would be constructed from the AWP to the ocean outfall within public rights-of-way where feasible. Currently, no specific route has been determined for the concentrate outfall pipeline. Ventura Harbor, commercial development, and the wildlife/treatment ponds surround the VWRF area.
- **Discharge Pipeline to the Calleguas SMP:** The northern portion of the discharge pipeline to the Calleguas Salinity Management Pipeline (SMP) would be located within the public rights-of-way along Harbor Boulevard within the city of Ventura and along portions of unincorporated Ventura County. The pipeline would pass through the VWRF, open areas of riparian vegetation, under the Santa Clara River, and past campgrounds along the Pacific Coast and agricultural land to the east. The pipeline would continue west along West 5th Street and down South Ventura Road within public rights-of-way in the cities of Oxnard and Port Hueneme. The pipeline area traverses primarily through residential uses, some open space areas, and commercial uses.

Ocean Desalination

This component includes an ocean desalination facility and ocean intake. The ocean desalination facility would be constructed within the boundary of the AWP (see proposed sites above). Currently, no specific route has been determined for the ocean intake.

Light and Glare

There are two primary anthropogenic sources of light: light emanating from building interiors through windows, and light originating from exterior sources (e.g., street lighting, building illumination, security lighting, parking lot lighting, landscape lighting, and signage).

Anthropogenic sources of light can be a nuisance to adjacent residential areas, can diminish the view of the night sky, and if uncontrolled can cause disturbances for motorists traveling in the area. Land uses such as residences and hotels are considered light sensitive since occupants have expectations of privacy during evening hours and may be subject to disturbances by bright light sources. "Light spill" is typically defined as the presence of unwanted light on properties adjacent to the property being illuminated.

Glare is caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces or vehicle headlights. Perceived glare is the unwanted and potentially objectionable sensation as observed by a person as they look directly into the light source of a luminaire. Daytime glare generation in urban areas is typically associated with buildings with exterior facades largely or entirely composed of highly reflective glass. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources, such as automobile headlights. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses include residences and transportation corridors. Potentially affected viewers in the local viewshed include motorists, residents, and recreational visitors.

3.1.2 Regulatory Framework

Federal

National Scenic Byways Program

The National Scenic Byways Program is part of the U.S. Department of Transportation, Federal Highway Administration. The program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and was reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on their archaeological, cultural, historic, natural, recreational, and scenic qualities. The closest National Scenic Byway located within California is the Arroyo Seco Historic Parkway-Route 110 in Los Angeles County (Federal Highway Administration 2018). The project area is not located near a National Scenic Byway.

State

State Scenic Highway Program

In 1963, the California legislature created the Scenic Highway Program to protect scenic highway corridors from changes that could diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway is designated under this program when a local jurisdiction adopts a scenic corridor protection program, applies to the California Department of Transportation (Caltrans) for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which typically includes land adjacent to and visible to a motorist on the highway.

The closest officially Designated State Scenic Highway is a portion of State Route 33 north of State Route 150, located in northern Ventura County approximately 17 miles north of the project area (Caltrans 2018). Near the proposed project area, Highway 1, Highway 101, and portions of Harbor Boulevard (north of the Santa Clara River) are considered to be Eligible State Scenic Highways.

California Coastal Act

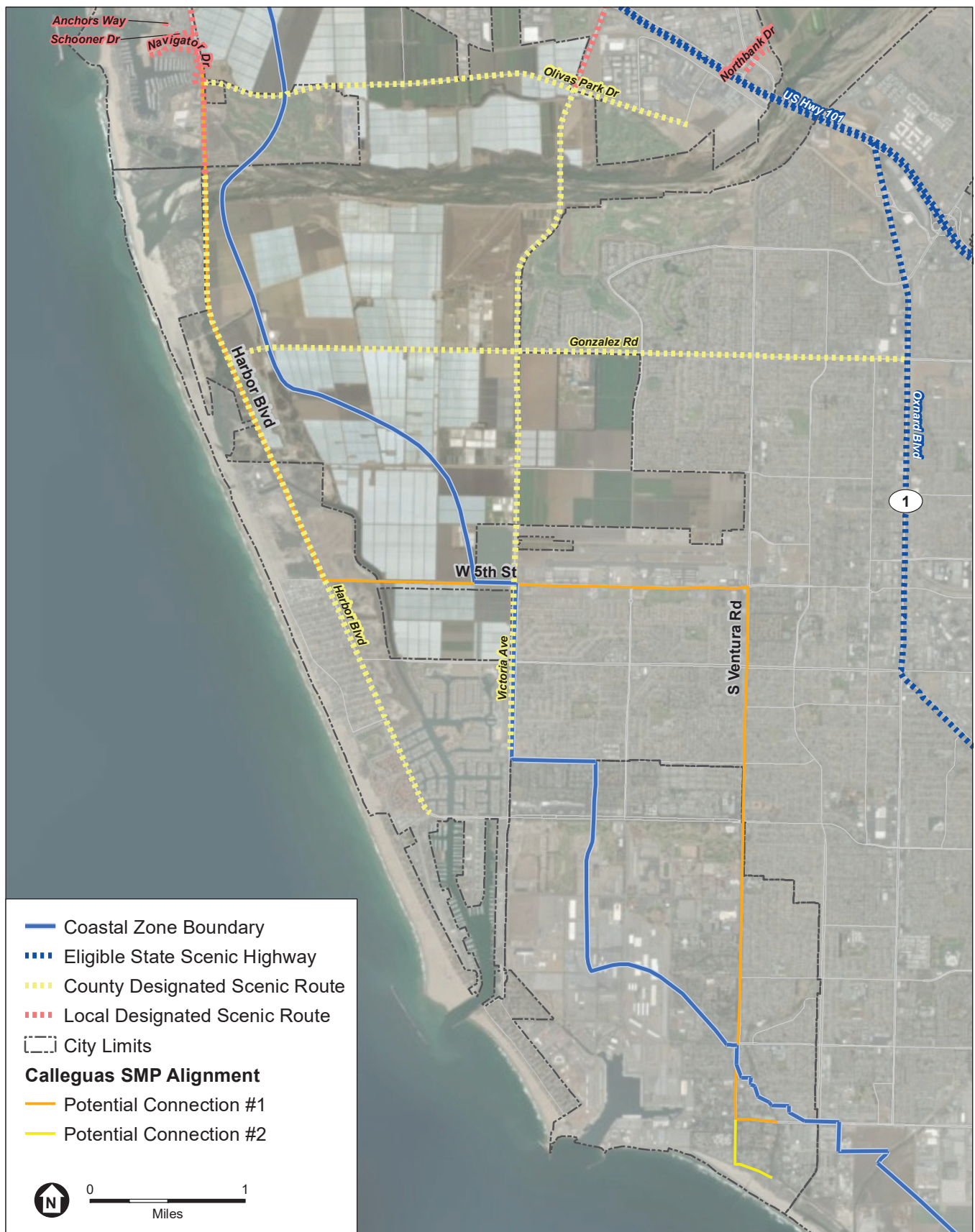
The California Coastal Act defines the coastal zone and establishes land use control for the coastal zone. The California Coastal Act (1) sets specific uses, including restoration, for wetlands located in the coastal zone, (2) requires additional review and approvals for proposed actions located within designated sensitive coastal areas, and (3) requires cities or counties located within the coastal zone to prepare a Local Coastal Program (LCP). The California Coastal Act also identifies and requires the protection of important scenic and visual qualities of the coastal areas (California Coastal Act 2018). Some of the proposed project facilities are located within the Coastal Zone (see Figure 3.1-1 and **Figure 3.1-2**).

Regional

County of Ventura General Plan

Chapter 1, Resources

The Resources Chapter (Chapter 1) of the County of Ventura General Plan identifies goals, policies, and programs relating to the preservation, conservation, production, and utilization of resources in Ventura County. The goals, policies, and programs that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2016).



SOURCE: ESRI; City of Ventura, 2018; Ca Coastal Commission

Ventura Water Supply Projects

Figure 3.1-2
Local-Designated Scenic Routes within the Calleguas SMP Area

1.7 Scenic Resources

1.7.1 Goals

1. Preserve and protect the significant open views and visual resources of the County.
2. Protect the visual resources within the viewshed of lakes and State and County designated scenic highways, and other scenic areas as may be identified by an area plan (See County of Ventura Coastal Area Plan discussion below).
3. Enhance and maintain the visual appearance of buildings and developments.

1.7.2 Policies

1. Notwithstanding Policy 1.7.2-2, discretionary development which would significantly degrade visual resources or significantly alter or obscure public views of visual resources shall be prohibited unless no feasible mitigation measures are available and the decision-making body determines there are overriding considerations.

County of Ventura Local Coastal Program

In 1976, the California Legislature enacted the California Coastal Act (described above), which created a mandate for coastal counties to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program called the “Local Coastal Program” (County of Ventura 2018a).

Ventura County’s Coastal Area Plan and the Coastal Zoning Ordinance together constitute the LCP for the unincorporated portions of Ventura County’s coastal zone. The primary goal of the LCP is to ensure that the local government's land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of, and implement the provisions and policies of the California Coastal Act at the local level (County of Ventura 2018a).

County of Ventura Coastal Area Plan

In addition to being an element of Ventura County’s LCP, the Coastal Area Plan is also an Area Plan for the unincorporated coastal portions of Ventura County and, as such, is part of the County’s General Plan. The Coastal Area Plan addresses topics such as shoreline access and public trails; development in scenic areas, coastal hazards, and coastal bluffs; environmentally sensitive habitat areas; cultural resources; transportation; public services; and more. The LCP specifically applies to development undertaken in the unincorporated portions of the Coastal Zone of Ventura County (County of Ventura 2018a). The goals and policies that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2017a).

Chapter 2, Summary of Coastal Act Policies

2.1 Locating and Planning New Development

§ 30001.5 Legislative Findings and Declarations; Goals

The Legislature further finds and declares that the basic goals of the state for the coastal zone are to:

Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.

§ 30250 Location; Existing Developed Area

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

§ 30251 Scenic and Visual Qualities

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

§ 30255 Priority of Coastal-Dependent Developments

Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal dependent uses they support.

4.1.4 Visual Resources

The Ventura County coastal zone contains scenic resources of regional and national importance.

Visual Resource Goal 1: Maintain and enhance the county's scenic and visual resources for the current and future enjoyment of its residents and visitors.

County of Ventura Coastal Zoning Ordinance

The Coastal Zoning Ordinance contains the comprehensive zoning regulations for the unincorporated coastal zone of the county of Ventura. The Coastal Zoning Ordinance is a planning document that identifies the location, type, densities, and other ground rules for development in the coastal zone (County of Ventura 2018a).

These regulations are adopted to protect and promote public health, safety, and general welfare and to provide the environmental, economic, and social advantages that result from an orderly, planned use of resources and to protect public and private property, wildlife, marine fisheries, and other ocean resources and the natural environment protecting the ecological balance of the coastal zone and preventing its destruction and deterioration (County of Ventura 2018a). The regulations that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2017b).

Sec. 8174-6.3.3 – Utility Connections

- a. Pursuant to Section 30610(f) of the Public Resources Code, as it may be amended, the installation, testing, and placement in service or the replacement of any necessary utility connection between an existing service facility and any development approved pursuant to this Chapter is exempt from coastal development permit requirements; provided, however, that the County may, where necessary, require reasonable conditions to mitigate any adverse impacts on coastal resources, including scenic resources.

Sec. 8175-5.7.6 - Development Plan

A development plan shall accompany the application for a permit, and shall include all aspects outlined under this section.

Sec. 8175-5.9 - Public Works Facilities

Public Works facilities are subject to the provisions of this Section and all other provisions of this Chapter and the LCP land use plan. The types of facilities include, but are not limited to, the following: Roads, reservoirs, drainage channels, watercourses, flood control projects, pump stations, utility lines, septic systems, water wells and water storage tanks.

- a. New or expanded public works facilities (including roads, flood control measures, water and sanitation) shall be designed to serve only the potential population of the unincorporated and incorporated areas within LCP boundaries, and to eliminate impacts on agriculture, open space lands, and environmentally sensitive habitats.
- b. New service extensions required beyond the stable urban boundary (as shown on the LCP Land Use Plan maps) must be designed to mitigate any effects on agricultural viability.

County of Ventura Municipal Code

Chapter 1, Article 9 of the County of Ventura Municipal Code includes various general and specific lighting standards for the County (County of Ventura, 2018b). Applicable lighting standards include:

8107-29.6 - Construction and operating standards.

All facilities and structures shall be constructed and operated as follows:

- d. On-site lighting shall be for security purposes only. Such lighting shall be shielded to eliminate or minimize glare to off-site areas.

8109-4.1.5 - Development standards.

- a. All discretionary development shall be sited and designed to:
 - (1) Prevent significant degradation of a scenic view or vista;
 - (2) Minimize alteration of the natural topography, physical features and vegetation;
 - (3) Utilize native plants indigenous to the area for re-vegetation of graded slopes, where appropriate considering the surrounding vegetative conditions;
 - (4) Avoid silhouetting of structures on ridge tops that are within public view;
 - (5) Use materials and colors that blend in with the natural surroundings and avoid materials and colors that are highly reflective or that contrast with the surrounding vegetation and terrain, such as large un-shaded windows, light colored roofs, galvanized metal, and white or brightly colored exteriors.

- (6) Minimize lighting that causes glare, illuminates adjacent properties, or is directed skyward in rural areas.

Local

City of San Buenaventura General Plan

The “Our Accessible Community” section of the City of San Buenaventura General Plan identifies policies and actions for the protection of scenic resources in the City. The policy applicable to the proposed projects is listed below (City of San Buenaventura, 2005a).

Policy 4D: Protect views along scenic routes.

Action 4.36: Require development along the following roadways – including noise mitigation, landscaping, and advertising – to respect and preserve views of the community and its natural context.

- State Route 33
- U.S. HWY 101
- Anchors Way
- Brakey Road
- Fairgrounds Loop
- Ferro Drive
- Figueroa Street
- Harbor Boulevard
- Main Street
- Navigator Drive
- North Bank Drive
- Poli Street/Foothill Road
- Olivas Park Drive
- Schooner Drive
- Spinnaker Drive
- Summit Drive
- Telegraph Road – east of Victoria Avenue
- Victoria Avenue – south of U.S. 101
- Wells Road

City of Oxnard General Plan

The City of Oxnard’s General Plan contains two operative documents: (1) a Background Report with detailed descriptions of the conditions and trends that existed within the city during the development of the 2030 General Plan and (2) a Goals and Policies Document, which contains goals and policies that guide future decisions within the city and the land use and circulation diagrams. Many goals and policies are continued from the 2020 General Plan (City of Oxnard 2011). Goals and policies that may be applicable to the proposed projects are listed below.

Community Development Element

CD-9.4 View Corridor Preservation

Ensure all public and private investments positively contribute to the overall character of the City by minimizing impacts on important view corridors by creating edge treatments along greenbelt areas and a landscaped buffer corridor of at least 30 feet along designated scenic corridors and other major transportation corridors.

Circulation Element

ICS-2.11 Scenic Highway Preservation

Preserve and enhance the character of scenic highways, and publicly owned and utility rights-of-way.

Environmental Resources Element

ER-1.1 Protect Oxnard's Natural and Cultural Resources

Protect the City's natural resource areas, fish and wildlife habitat, scenic areas, open space areas, parks, and cultural and historic resources from unnecessary encroachment or harm and if encroachment or harm is necessary, fully mitigate the impacts to the maximum extent feasible

Goal ER-6: Protects and enhances natural setting and scenic resources.

ER-6.1 Incorporate Views in New Development

Preserve important public views and viewsheds by ensuring that the scale, bulk and setback of new development does not significantly impede or disrupt them and ensure that important vistas and view corridors are enhanced. Require development to provide physical breaks to allow views into these vistas and view corridors.

ER-6.2 Protect and Enhance Major Scenic Resources

Protect and enhance the scenic resources of the beaches, Channel Island Harbor, windrows, farmland, the Channel Islands, and surrounding mountains.

ER-6.3 Preserve Views of Small Aesthetic Resources

Preserve views of significant small-scale plant communities including wetlands, riparian vegetation, man-made water features, and the like wherever possible.

ER-6.5 Control of Lighting and Glare

Require that all outdoor light fixtures including street lighting, externally illuminated signs, advertising displays, and billboards use low-energy, shielded light fixtures which direct light downward and, where public safety would not be compromised, encourage the use of low-pressure sodium lighting for all outdoor light fixtures.

ER-8.1 Protect Shoreline

Protect the shoreline and views to and along the Pacific Ocean, recognizing their value as natural and recreational resources.

City of Port Hueneme General Plan

The City of Port Hueneme General Plan serves as an overall guide in making day-to-day development decisions and sets forth policy for the future (City of Port Hueneme 2015). The General Plan includes a Conservation/Open Space/Environmental Resources Element, with the purpose to protect, conserve and manage the City of Port Hueneme's natural and man-made open space resources. Goals and policies that may be applicable to the proposed projects are listed below.

Conservation/Open Space/Environmental Resources Element

Goal 2: Preserve remaining open space areas and maintain recreational facilities.

Policy 2-1: Protect prominent public view corridors in Port Hueneme.

3.1.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to aesthetic resources. The issues presented in the environmental checklist have been used as thresholds of significance in this section. Accordingly, the projects would have a significant adverse environmental impact if they would:

- Have a substantial adverse effect on a scenic vista (refer to Impact AES 3.1-1).
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (refer to Impact AES 3.1-2).
- Substantially degrade the existing visual character or quality of the site and its surroundings (refer to Impact AES 3.1-3).
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area (refer to Impact AES 3.1-4).

A summary of the findings for each impact is presented in **Table 3.1-1**. The analyses below support these findings.

TABLE 3.1-1
SUMMARY OF AESTHETIC IMPACT DETERMINATIONS

Impacts	3.1-1 Scenic Views and Vistas	3.1-2 State Scenic Highway	3.1-3 Visual Character	3.1-4 Light and Glare
Phase 1				
Advanced Water Purification Facility	LTS	LTS	LTSM	LTSM
Water Conveyance System	NI	LTS	LTSM	NI
Groundwater Wells	LTS	LTS	LTSM	LTSM
Wildlife/Treatment Wetlands	LTS	LTS	LTSM	NI
VWRF Treatment Upgrades	NI	NI	NI	NI
Concentrate Discharge Facility	LTS	LTS	LTSM	LTSM
Phase 2				
AWPF Expansion	NI	NI	NI	NI
Ocean Desalination	LTS	NI	LTSM	NI

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.1.4 Impacts and Mitigation Measures

Scenic Views and Vistas

Impact AES 3.1-1: The proposed projects could result in a significant impact if they would have a substantial adverse effect on a scenic vista.

Phase 1

Advanced Water Purification Facility

The construction of the AWPf would require temporary ground disturbance within the proposed project areas. The presence of construction equipment and materials could be visible from public viewing areas, but would not permanently affect designated scenic views or vistas. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas would be less than significant.

The proposed project would include the construction of the AWPf within one of three potential locations: the Harbor Boulevard site, Transport Street site, or Portola Road site. The proposed AWPf facility layout for a conceptual sites are depicted in Figures 2-6 through 2-8, the sites are of varying sizes (from 6 to 20 acres total) but would house similar structures in different configurations. The tallest structure to be housed within the AWPf would be no greater than a two-story facility (storage tank). The AWPf property would be surrounded by a 5- to 6-foot-tall chain-link or metal fence to maintain site security.

The Harbor Boulevard site currently includes disturbed open space with sparse vegetation and is adjacent to a golf course to the east, Harbor Boulevard, a strip mall, the VWRf and the harbor to the west, and disturbed open space to the north and south. The general plan designates Harbor Boulevard in the vicinity of the site as a view corridor due to the views of the harbor and ocean. Further, the Harbor Boulevard AWPf site is located within the coastal zone. The construction of the AWPf would change the site from undeveloped open space to a new industrial facility. Open space with vegetation could be considered scenic resources in some areas throughout the county. As a result, the visual change of constructing the AWPf on the disturbed open space could have a potential significant impact on the surrounding views of the area. However, the Harbor Boulevard AWPf sites would be across Harbor Boulevard from a commercial strip mall and would be similar in height as the buildings in the mall (two-story building). The largest building on the AWPf site would be the storage tank, which would be approximately 20 feet above ground. The site would not disrupt views from Harbor Boulevard to the harbor and ocean as the AWPf site would be located on the eastern side of Harbor Boulevard. Further, views from the golf course would be partially screened by existing vegetation that separate the properties. Once constructed, the AWPf would include landscaping to partially screen the facility from the surrounding roadways. As a result, the visual change of constructing the AWPf would not have a substantial adverse effect on a scenic vista. Impacts would be considered less than significant.

The Transport Street site is currently unmaintained vacant parcels of land. The site has no native or natural vegetation and is surrounded by commercial properties to the north, east and west and the Union Pacific Railroad and agricultural land to the south. The new AWPf would be similar in height as the commercial buildings to the north, east, and west. There are no scenic vistas located

within the vicinity of the Transport Street site. As a result, the visual change of constructing the AWPf would not have a substantial adverse effect on a scenic vista. Impacts would be considered less than significant.

The Portola Road site is currently used for agricultural purposes but is located adjacent to a two-story commercial building to the west, agricultural land to the north and east beyond which lie commercial properties, and the Union Pacific Railroad and agricultural land to the south. The construction of the AWPf would change the site from agricultural to a new industrial facility. Undeveloped agricultural lands could be considered scenic resources in some areas throughout the county. As a result, the visual change of constructing the AWPf on agricultural land could have a potential significant impact on the surrounding views of the area. However, the AWPf sites would be in the vicinity of like commercial uses with buildings that would be similar in height. As a result, the visual change of constructing the AWPf would not have a substantial adverse effect on a scenic vista. Impacts would be considered less than significant.

Currently, the VWRf treated discharge flows into the wildlife ponds and ultimately into the SCRE. The wildlife ponds consist of open water with mature vegetation around the edges. The SCRE is a dynamic system that fluctuates depending on the flows into and out of the SCRE and varies seasonally. When the berm is closed, the SCRE fills up, the open water footprint expands, and habitat slowly establishes around the edges. When the berm is open the SCRE drains out to the ocean, reducing the open water footprint. Once the AWPf is in operation, 90 percent of those flows would be diverted and treated for reuse. With 90 percent diversion, open water acreage would decrease during closed-berm condition. The reduction of water to the wildlife pond and the SCRE would result in temporary habitat loss; however, the reduction of flows would not have a substantial long-term adverse effect on a scenic vista. The system is dynamic and relies on storm events and flows from the Upper Santa Clara River and not solely on the VWRf flows, and the riparian habitat will over time reestablish at the edges of the SCRE shoreline (see Section 3.4, Biological Resources). Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The presence of construction equipment and materials could be visible from public viewing areas, but would not permanently affect scenic views or vistas. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas would be less than significant.

The proposed wells would be housed within single-story buildings, approximately 10 to 15 feet in height, and 64 by 30 feet wide, surrounded by a 5- to 6-foot-tall chain-link or metal fence for security. A typical well building is depicted in **Figure 3.1-3**.



D:\60685.00 - Ventura Water Pure Advanced Treatment\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Carollo, 2018

Ventura Water Supply Projects

Figure 3.1-3
Typical ASR Well Building

None of the proposed well sites are located within the coastal zone and thus they would not impact any coastal visual resources, nor would the proposed well sites impact other inland scenic resources. However, undeveloped agricultural lands and open space with natural vegetation could be considered scenic resources in some areas throughout the county. The proposed well sites would be located within an existing golf course and agricultural fields in the city of Ventura (see Figure 3.1-1).

Implementation of the proposed well facilities would look similar to other farming structure. As a result, the wells would not have a substantial effect on a scenic vista. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed project would include construction of a series of pipelines throughout the city of Ventura and portions of unincorporated Ventura County traveling mainly along public rights-of-way, where feasible. These pipelines would form interconnections between the existing VWRF, Bailey Water Conditioning Facility (WCF), Saticoy WCF, and the proposed AWPf and groundwater wells as shown on Figure 3.1-1. Once constructed, pipeline impact areas would be returned to pre-project conditions and would not have a substantial adverse effect on a scenic vista. No impact would occur.

Pump stations would be constructed entirely within the footprint of the VWRF and AWPf and would not have any impacts on a scenic vista. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

The reconfiguration of the existing wildlife/treatment ponds and construction of the new wetlands would require temporary ground disturbance within the proposed project areas. The presence of construction equipment and materials could be visible from public viewing areas. Potential impacts to ocean views could occur, but would not permanently or adversely affect scenic views or vistas within the project area. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas during construction would be considered less than significant.

The proposed projects would include reconfiguration of existing wildlife/treatment ponds by adding fill and adding vegetation throughout the ponds. As shown in Figure 3.1-1, the wildlife/treatment ponds are located just south of the VWRF within the coastal zone. Reconfiguration of the ponds would include the addition of soil and vegetation throughout the existing ponds. While some existing vegetation would be removed, new riparian and wetland habitats would emerge. These changes would not result in a substantial adverse effect on a scenic vista. No impact would occur.

A new 35-acre wildlife/treatment wetland may be constructed on City-owned property containing native vegetation, adjacent to the VWRP. This property is located east of the existing wildlife/treatment ponds and north of the Santa Clara River within the coastal zone. Construction of the new treatment wetlands would remove native upland vegetation; however, the wetland would add new wetland vegetation similar to what is in the SCRE just south of the site. The wetland would not differ greatly from the surrounding environment due to its proximity to the existing wildlife/treatment ponds and the Santa Clara River. No aboveground structures would be constructed and no impacts to ocean views would occur. Impacts related to adverse effects on a scenic vista would be considered less than significant. In addition, creation of the treatment wetlands could enhance the local scenic vista by attracting wildlife.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRP Treatment Upgrades

The proposed project includes upgrades to the existing VWRP facility. Upgrades would be contained within the existing facility. Proposed facilities would be similar in height and character to other structures within the plant. The proposed upgrades would not create impacts to local ocean views and no adverse effects to scenic vistas would occur. No impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

Construction of the new outfall would require temporary ground disturbance within the proposed project areas. The presence of construction equipment and materials could be visible from public viewing areas. Potential impacts to ocean views within the coastal zone could occur, but would not permanently or adversely affect scenic views or vistas within the project area. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas during construction would be considered less than significant.

The proposed new outfall would be constructed just north of the Ventura Harbor via directional drilling methods 1 to 2 miles offshore. No permanent structures would be placed aboveground or above the water level. In addition, a pipeline would be constructed from the new AWP facility connecting to the new outfall structure. Once constructed, all components would be contained underground and impacted areas would be returned to pre-project conditions. Therefore, there would be no substantial adverse effect on a scenic vista. No impact would occur.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The discharge pipeline to the Calleguas SMP would run along Harbor Boulevard, West 5th Street, and South Victoria Road terminating at an existing Calleguas Municipal Water District (Calleguas MWD) facility. Portions of the pipeline would travel along the coastal zone. Construction of the pipeline would require temporary ground disturbance within the pipeline. The

presence of construction equipment and materials could be visible from public viewing areas. Potential impacts to ocean views could occur, but would not permanently or adversely affect scenic views or vistas within the project area. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas during construction would be considered less than significant.

Once constructed, the pipeline would be contained entirely underground and impact areas would be returned to pre-project conditions. Therefore, no substantial adverse effect on a scenic vista would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion to the AWPf would not include any new impacts outside of the original construction footprint for the AWPf as described above. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facility would be constructed within the same AWPf footprint. The facility would be of similar size and character to those proposed under the AWPf. Impacts would be less than significant.

Ocean Intake

The proposed ocean intake system location has not been finalized. The ocean intake would likely be constructed through directional drilling methods offshore similar to the proposed new outfall. Construction of the ocean intake would require temporary ground disturbance within the proposed project areas. The presence of construction equipment and materials could be visible from public viewing areas. Potential impacts to ocean views could occur, but would not permanently or adversely affect scenic views or vistas within the project area. Given the short-term and temporary presence of construction equipment and materials, impacts to scenic vistas during construction would be considered less than significant.

Once constructed the ocean intake system would also be entirely contained underground and below the water surface. No impacts related to substantial adverse effect on a scenic vista would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

State Scenic Highway

Impact AES 3.1-2: The proposed projects could result in a significant impact if they would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

The California Scenic Highway Mapping System shows that there are no officially Designated State Scenic Highways within the project area. Highway 1, Highway 101, and the northern portion of Harbor Boulevard within the project area are considered Eligible State Scenic Highways. Also, portions of Harbor Boulevard, Olivas Park Drive, Victoria Avenue, and Gonzalez Road are considered Eligible County Scenic Highways. Further, the City of San Buenaventura General Plan lists the following scenic routes near proposed project components: portions of Victoria Avenue, Navigator Drive, and Telegraph Road. See Figure 3.1-1 for a depiction of all Eligible State and County Scenic Highways and local scenic routes within the proposed project impact areas.

There are currently no designated Scenic Resource Areas within the proposed project area according to the Ventura County General Plan, Resource Protection Map. The closest scenic resource area to the proposed project would be associated with land surrounding Lake Casitas (11 miles to the north).

Phase 1

Advanced Water Purification Facility

The construction of the AWPf would require the presence of construction equipment and materials that could be visible from Eligible State and County Scenic Highways and local scenic routes, but would not permanently affect scenic views along these areas. Based on the short-term and temporary presence of construction equipment and materials, impacts to scenic resources within a State and County Scenic Highway or local scenic route would be less than significant.

After construction, the proposed AWPf would include permanent aboveground facilities within one of three potential sites. The proposed Transport Street and Portola Road sites would not be located adjacent to one of the Eligible State or County Highways or local scenic routes within the project area. These sites would not impact any views from eligible highways or local scenic routes and would be located adjacent to existing commercial like-uses.

The proposed Harbor Boulevard site would be located adjacent to an Eligible State Scenic Highway and a County Eligible Scenic Highway, Harbor Boulevard and Olivas Park Drive, respectively. No scenic resources would be damaged by implementation of the proposed project. The Harbor Boulevard AWPf site would be constructed on a disturbed lot. The construction of the AWPf sites would be set back from the road and would include screening landscape to soften the visual change of construction a new facility on an open lot. The conversion of the site to a

AWPF would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The construction of the water conveyance system would require the presence of construction equipment and materials that could be visible from Eligible State and County Scenic Highways and local scenic routes, but would not permanently affect scenic views along these areas. Based on the short-term and temporary presence of construction equipment and materials, impacts to scenic views within a State and County Scenic Highway or local scenic route would be less than significant.

The proposed project pipeline routes would travel along or cross through Eligible State Scenic Highways, Highway 101 and Harbor Boulevard, Eligible County Highway Olivas Park Drive, and local scenic route Telegraph Road (see Figure 3.1-1). The proposed pipelines would be constructed primarily within public rights-of-way where feasible and would not damage scenic resources. Further, once constructed, pipelines would be located entirely underground and impact areas would be returned to pre-project conditions. Proposed pump stations would be constructed entirely within the footprint of the VWRP and AWP facilities and would not impact any scenic resources. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The construction of the groundwater wells would require the presence of construction equipment and materials that could be visible from Eligible State and County Scenic Highways and local scenic routes, but would not permanently affect scenic views along these areas. Based on the short-term and temporary presence of construction equipment and materials, impacts to scenic views within a State and County Scenic Highway or local scenic route would be less than significant.

Well Site 1 would be within the Buenaventura Golf Course and would be located adjacent to the south end of a County Eligible Scenic Highway, Olivas Park Drive. Currently, the views from Olivas Park Drive toward the golf course are partial screened by mature trees that line the roadway. No scenic resources would be damaged by implementation of the proposed well. The well would be constructed within the golf course facility and would be similar to the existing City wells. The construction of the wells within the golf course would not alter the scenic characteristics of Olivas Park Drive.

Well Sites 2 and 3 would be located in an active agricultural field just south of Olivas Park Drive and west of Victoria Avenue, also a County Eligible Scenic Highway. The wells would potentially be housed in an approximately 10- to 15-foot-high and 64-by-30-foot-wide structure. The construction of the well building would potentially impact the scenic character of the area. However, there are currently other structures, storage units, farm buildings, and pumps used for agricultural operation in the vicinity of the well site. As a result, the addition of wells would not substantially alter the scenic character of the area. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The existing wildlife/treatment ponds are located near the Eligible State Scenic Highway Harbor Boulevard. Currently, views of the ponds are screened by mature vegetation along Harbor Boulevard. Reconfiguration of the ponds would not adversely affect the existing view from the highway, because the reconfigured ponds would still be screened by vegetation and would not look very different from the existing ponds. The reconfiguration would not introduce any new permanent structures or facilities that would contrast with the existing area. Therefore, no impact would occur.

New Treatment Wetland

The treatment wetland site would be located just east of the Eligible State Scenic Highway Harbor Boulevard. Construction of the new treatment wetlands would remove native upland vegetation; however, the proposed project would add new wetland vegetation similar to what is in the SCRE just south of the site. The wetland would not differ greatly from the surrounding environment due to its proximity to the existing wildlife/treatment ponds and the Santa Clara River. Impacts to scenic resources within a scenic highway would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrades

The VWRF is located just west of the Eligible State Scenic Highway Harbor Boulevard. However, the proposed VWRF upgrades would occur entirely within the footprint of the existing VWRF. No scenic resources with the potential to be impacted by the proposed project exist within the VWRF. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed new outfall would be constructed just north of the Ventura Harbor via directional drilling methods 2,000 to 4,000 feet offshore. No permanent structures would be placed aboveground or above the water level. In addition, a pipeline would be constructed from the new AWPf facility connecting to the new outfall structure. This pipeline would travel along the Eligible State Scenic Highway Harbor Boulevard and the Eligible County Scenic Highway Olivas Park Drive (see Figure 3.1-1). The pipeline would be contained within public rights-of-way where feasible. A portion of the outfall pipeline would also travel through the beach and out into the ocean. Once constructed, all components would be contained underground and impacted areas would be returned to pre-project conditions. Therefore, impacts to scenic resources within a scenic highway would be considered less than significant.

Discharge Pipeline to Calleguas Salinity Management Pipeline

The discharge pipeline to the Calleguas SMP would be constructed mainly along public rights-of-way, a portion of which would travel along Harbor Boulevard, an Eligible County Scenic Highway (see Figure 3.1-2). No scenic resources would be impacted by the proposed project. Once constructed, the discharge pipeline would be located entirely underground and impact areas would be returned to pre-project conditions. No impact to scenic resources within a scenic highway would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed expansion facilities would be constructed entirely within the footprint of the proposed AWPf. No impacts to scenic resources would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facility would be constructed entirely within the footprint of the proposed AWPf. No impacts to scenic resources would occur.

Ocean Intake

The location of the ocean intake system is currently undetermined; however, after construction, the ocean intake facility would be located entirely underground and below the water surface. Proposed impact areas would be returned to pre-project conditions and would not be visible from any Eligible State or County Scenic Highway or local scenic routes. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Visual Character

Impact AES 3.1-3: The proposed projects could result in a significant impact if they would substantially degrade the existing visual character or quality of the sites and their surroundings.

Phase 1

Advanced Water Purification Facility

Construction activities associated with the AWPf would result in short-term impacts to the visual character of the project area. Construction activities would require the use of construction equipment and storage of materials within the project sites. Excavated areas, stockpiled soils, and other materials generated during construction could impact the visual character of the surrounding environment. However, construction would be temporary and would not permanently affect the existing visual character of the surrounding area. Nevertheless, **Mitigation Measure AES-1** would require preparation of a Construction Management Plan that would identify staging areas and screening to minimize public views to the maximum extent practicable. With implementation of Mitigation Measure AES-1, all impacts from construction-related activities would be considered less than significant.

The proposed AWPf facility conceptual layouts are depicted in Figures 2-5 through 2-8. The tallest structure within the AWPf site would be no higher than a two-story facility. The AWPf property would be surrounded by a 5- to 6-foot-tall chain-link or metal fence to maintain site security.

The Harbor Boulevard site would be located within the coastal zone on a disturbed lot with sparse vegetation. To the west is the VWRf, a two-story commercial strip mall and the harbor, to the north and south is open space and to the east is a golf course. The proposed project would comply with the requirements of the Ventura County Coastal Zoning Ordinance, including Mitigation Measure AES-1 and **Mitigation Measure AES-2**. The Transport Street site would be located in an unmaintained vacant parcel of land near existing one- to two-story commercial properties to the north, east, and west, and railroad tracks to the south. The Portola Road site would be located on agricultural land adjacent to one-story commercial facilities to the west, vacant land followed by more commercial properties to the east, and railroad tracks to the south.

The proposed project facilities would look different from the vacant land and agricultural fields that currently exist within each proposed parcel. However, there are no sensitive views that would be impacted by the construction of the AWPf. Nevertheless, implementation of Mitigation Measure AES-2 would require that the structures associated with the AWPf be constructed of similar material or painted to match the character of the particular existing surrounding environment. The addition of landscaping would be used as needed to further enhance the character of the site, if appropriate. Based on the location of the proposed AWPf, existing

surrounding land uses, and with implementation of Mitigation Measure AES-2, impacts to the visual character of the surrounding environment would be considered less than significant.

Currently, the VWRP treated discharge flows into the wildlife ponds and ultimately into the SCRE. Once the AWP is in operation, 90 percent of those flows would be diverted and treated for reuse. The reduction of water to the wildlife pond and the SCRE would result in habitats adapting to the available water supply; however, the reduction of flows would not substantially change the visual characteristics of the area. The system is dynamic and relies on storm events and flows from the Upper Santa Clara River and not solely on the VWRP flows (see Section 3.4, Biological Resources). Impacts would be less than significant.

Mitigation Measures:

AES-1: Prior to the start of construction, the city of Ventura shall prepare a Construction Management Plan. The Construction Management Plan shall, at a minimum, indicate the equipment and vehicle staging areas, areas for stockpiling of materials, temporary opaque fencing material, and haul route(s). Staging areas shall be sited and/or screened to minimize public views to the maximum extent practicable.

AES-2: Aboveground buildings/structures shall be designed to have color palettes and vegetation screening as necessary to blend with the surrounding character of the site and to minimize contrasting features in the visual landscape.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed project would include construction of a series of pipelines throughout the city of Ventura and portions of unincorporated Ventura County, traveling mainly along public rights-of-way where feasible. Once constructed, pipelines would be entirely underground and impact areas would be returned to pre-project conditions. Nevertheless, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas and screening to minimize public views to the maximum extent practicable. With implementation of Mitigation Measure AES-1, all impacts from construction-related activities would be considered less than significant.

Pump stations would be constructed entirely within the footprint of the VWRP and AWP and would be similar to existing structures within these facilities. No impact to the visual character of the area would occur.

Mitigation Measures: Implement Mitigation Measure AES-1.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

Construction activities would result in short-term impacts to the visual character of the project area. Construction activities would require the use of construction equipment and storage of materials within the project sites. Excavated areas, stockpiled soils and other materials generated

during construction could impact in visual character of the surrounding environment. However, construction would be temporary and would not permanently affect the existing visual character of the surrounding area. Nevertheless, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas and screening to minimize public views to the maximum extent practicable. With implementation of Mitigation Measure AES-1, all impacts from construction-related activities would be considered less than significant.

Well Site 1 would be located within an existing golf course and Well Site 2 and 3 would be within active agricultural fields. The well facilities would be approximately 10–15 feet tall and would encompass an area of approximately 64 by 30 feet, surrounded by a security chain-link or metal fence with screening vegetation as needed. The well facility could potential impact the visual character of the area. However, implementation of Mitigation Measure AES-2 would require all aboveground structures to ensure the visual character of the surrounding areas is maintained, creating facilities with similar characteristics to existing structures at each well site location.

With implementation of Mitigation Measure AES-2, the fencing and structures associated with the well sites would be constructed of similar material or painted to match the character of the particular existing surrounding environment. Vegetation would be used as needed to further enhance the character of the site. Impacts to the visual character of the surrounding environment would be considered less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measures AES-1 and AES-2.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The wildlife/treatment pond reconfiguration would include modifying the shapes of the existing ponds and would not include any new structures nor change the existing visual character of the environment. No impact would occur.

New Treatment Wetland

New treatment wetlands would be constructed on City-owned property containing native vegetation, adjacent to the VWRP. This property is located east of the existing wildlife/treatment ponds and north of the Santa Clara River within the coastal zone. Construction of the new treatment wetlands would remove native upland vegetation; however, the proposed wetland would add new wetland vegetation similar to what currently exists within the SCRE just southwest of the site. The wetland would not differ greatly from the surrounding environment due to its proximity to the existing wildlife/treatment ponds and the Santa Clara River. The proposed project would comply with the requirements of the Ventura County Coastal Zoning Ordinance. In addition, creation of the treatment wetlands could enhance the local visual character of the area by attracting local bird species and other wildlife. Nevertheless, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas and stockpile locations to the maximum extent practicable. With implementation of Mitigation

Measure AES-1, all impacts from construction-related activities would be considered less than significant.

Mitigation Measures: Implement Mitigation Measure AES-1.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrades

The VWRF is located within the local coastal zone. Construction of any new facilities would comply with requirements of the Ventura County Coastal Zoning Ordinance. Further, the proposed upgrades would occur entirely within the footprint of the VWRF. Therefore, no impacts to the visual character of the area would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed north of the harbor within the coastal zone. The proposed project would comply with the requirements of the Ventura County Coastal Zoning Ordinance. In addition, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas and screening to minimize public views to the maximum extent practicable. Impacts during construction would be considered less than significant with mitigation.

Once constructed, the new outfall facility would be located entirely underground and below the water surface level, and impact areas would be returned to pre-project conditions. No operational impacts related to the visual character of the area would occur.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The discharge pipeline to the Calleguas SMP would run south from the existing VWRF and terminate at an existing Calleguas MWD facility. Portions of the discharge pipeline would travel along the coastal zone. The proposed project would comply with the requirements of the Ventura County Coastal Zoning Ordinance. In addition, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas and screening to minimize public views to the maximum extent practicable. Impacts during construction would be considered less than significant with mitigation.

Once constructed, the pipeline would be contained entirely underground and impact areas would be returned to pre-project conditions. No operational impacts related to the visual character of the area would occur.

Mitigation Measures: Implement Mitigation Measure AES-1.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The proposed expansion would be completed entirely within the proposed AWPf. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. Any construction or new facilities would be located entirely within the AWPf facility. The expansion would not change the existing visual character of the site and no impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facility would be constructed within the proposed AWPf. The new facility would be similar to the existing facilities within the AWPf and surrounding areas. The addition of the desalination component would not change the existing visual character of the site. Impacts would be considered less than significant.

Ocean Intake

The location of the ocean intake system is currently undetermined. However, construction of the ocean intake would occur within the coastal zone. The proposed project would comply with the requirements of the Ventura County Coastal Zoning Ordinance. In addition, Mitigation Measure AES-1 would require preparation of a Construction Management Plan that would identify staging areas, construction pits, and screening to minimize public views to the maximum extent practicable. Impacts during construction would be considered less than significant with mitigation.

Once constructed, the ocean intake facility would be located entirely underground and below the water surface level and impact areas would be returned to pre-project conditions. No operational impacts to the visual character of the area would occur,

Mitigation Measures: Implement Mitigation Measure AES-1.

Significance Determination: Less than Significant with Mitigation.

Light and Glare

Impact AES 3.1-4: The proposed projects could result in a significant impact if they would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Phase 1

Advanced Water Purification Facility

Construction of the proposed AWPf would not require nighttime work or lighting. Thus, the presence of construction equipment would not introduce new lighting or glare to the project area. Therefore, construction impacts would be less than significant.

The proposed AWPf would be located within unincorporated Ventura County and the city of Ventura. The AWPf would require exterior lighting for security and operational purposes. The Harbor Boulevard site would be located across the street from a strip mall and adjacent to a golf course separated by mature vegetation. The Transport Street site and Portola Road site would be located on a parcel adjacent to existing commercial facilities. The Harbor Boulevard site would be adjacent Harbor Boulevard, which is lined with street lights. However, Olivas Park Drive does not have street lights along the portion of the road where the AWPf would be located. The introduction of the AWPf would create a new light source that could have a potential impact to the surrounding properties. However, Harbor Boulevard AWPf sites would be required to comply with the County of Ventura and City of Ventura Municipal Codes, which both contain exterior nighttime lighting ordinances to manage and preserve the natural darkness of night skies for residents within the project area. In addition, the implementation of **Mitigation Measure AES-3** would require any permanent lighting on buildings/structures to be shielded and directed downward to avoid light intrusion onto other surrounding land uses. Therefore, lighting impacts from operation or for security purposes would be reduced to a less than significant level.

The Transport Street site and Portola Road site would be located along roadways where light from traffic and existing commercial facilities with external lighting exist near the proposed project impact area. The addition of lighting for operational and security purposes would not differ from the surrounding environment.

The proposed AWPf would not require the use of materials that could cause glare within the proposed impact areas. No impact would occur.

Mitigation Measures:

AES-3: Lighting used during temporary nighttime construction or for permanent security purposes shall be shielded and directed downward or pointed away from surrounding light-sensitive land uses.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The projects would include construction of a series of pipelines throughout the city of Ventura and portions of unincorporated Ventura County, travelling mainly along public rights-of-way

where feasible. Lighting would not be required during construction. Once constructed, pipelines would be entirely underground and impact areas would be returned to pre-project conditions. No lighting would be required during operation and no impact would occur.

Pump stations would be constructed entirely within the footprint of the VWRP and AWP and would be similar to existing structures within these facilities. No additional lighting would be required beyond what is currently at the existing facilities. No nighttime construction would be required. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

The proposed well facilities would be located on an existing golf course or within agricultural fields. The structures which would house the wells would require exterior lighting for security and operational purposes. The implementation of the wells would result in a new light source. However, the projects would be required to comply with the County of Ventura and City of Ventura Municipal Codes, which both contain exterior nighttime lighting ordinances to manage and preserve the natural darkness of night skies for residents within the project area. In addition, implementation of Mitigation Measure AES-3 would require any permanent lighting on buildings/structures to be shielded and directed downward to avoid light intrusion onto other surrounding land uses. Therefore, lighting impacts from operation or for security purposes would be reduced to a less than significant level.

The proposed facilities would not require the use of materials that could cause glare within the proposed impact areas. No impact would occur.

Mitigation Measures: Implementation of Mitigation Measures AES-3.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds, New Treatment Wetlands

The proposed reconfiguration of existing wildlife/treatment ponds and creation of new treatment wetlands would not introduce any structures or operations that would require lighting. In addition, no nighttime construction would be required. Neither activity would introduce building materials that could contribute to glare in the area. No impacts related to light and glare would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRP Treatment Plant Upgrades

The proposed upgrades to the VWRP would occur entirely within the existing plant footprint. No additional lighting would be required beyond what is currently at the existing facility.

The proposed upgrades would not require the use of materials that could cause glare within the proposed impact area. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impacts.

Concentrate Discharge Facility

Construction associated with the proposed new outfall may require 24-hour drilling in order to safely complete the drilling process. Temporary overhead nighttime lighting would be installed during the drilling period. The overnight lighting could spill over into neighboring residential, recreational development, or public roadways. However, implementation of Mitigation Measure AES-3 would require nighttime construction lighting be shielded and pointed away from surrounding light-sensitive land uses. Based on the temporary nature of construction activities and with implementation of Mitigation Measure AES-3, impacts associated with light and glare during construction activities would be reduced to a less than significant level.

The proposed concentrate discharge facility would include pipelines and an outfall structure that once constructed would be contained entirely underground, and impact areas would be returned to pre-project conditions. No lighting or building materials that could contribute to glare would be required for operation of these facilities. No impacts related to light and glare would occur.

Mitigation Measures: Implement Mitigation Measure AES-3.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The proposed expansion would be constructed at the same location as the proposed AWPf. No nighttime construction would be required. Permanent lighting at the new facility would be required for safety and operational purposes. The facility would be contained entirely within the AWPf and would be located adjacent to other structures with similar nighttime lighting. The addition of lights for the expansion project would not create a substantial amount of light beyond the current lighting conditions at the AWPf. No impact to surrounding land uses would occur.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facility would be constructed at the same location as the proposed AWPf. No nighttime construction would be required. Permanent lighting at the new facility would be required for safety and operational purposes. The facility would be contained entirely within the AWPf and would be adjacent to other structures with nighttime lighting. The proposed project would be required to comply with the County of Ventura and City of Ventura Municipal Codes, which both contain exterior nighttime lighting ordinances to manage and preserve the natural darkness of night skies for residents within the project area. No building

materials that could contribute to glare would be required for operation of this facilities. No impacts related to light and glare would occur.

Ocean Intake

The location of the ocean intake system is currently undetermined; however, once constructed, the ocean intake facility would be located underground and below the water surface; therefore, this component would not result in operational lighting or glare impacts.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.2 Agriculture and Forestry Resources

This section addresses the potential impacts of the Ventura Water Supply Projects on agriculture and forestry resources. The section includes a description of the environmental setting to establish baseline conditions for agriculture and forestry resources; a summary of the regulations related to agriculture and forestry resources; and an evaluation of the projects' potential effects on agriculture and forestry resources.

3.2.1 Environmental Setting

Regional Setting

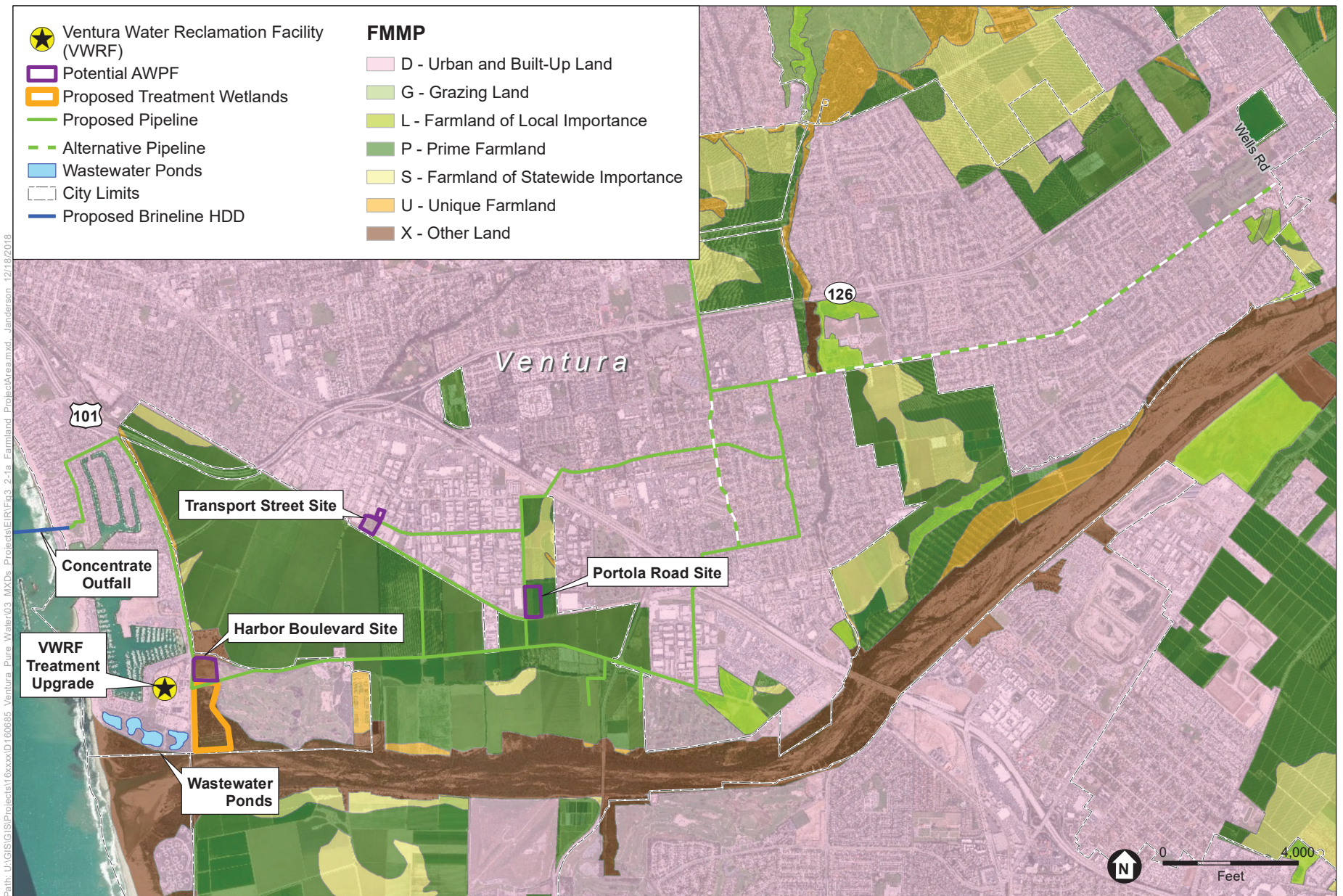
Ventura County has a long history of agricultural production and is a major contributor to the nation's food supply. Agriculture is a vital component of the character and rural lifestyle of much of the county. Due to the climate and quality of soils, Ventura County is recognized as one of the state's primary agricultural counties and ranks 10th out of the 58 agricultural counties in the state of California. The overall mix of agricultural crops within the County has evolved over the years, but the top three crops have been lemons, strawberries, and celery.

According to the California Department of Conservation's (DOC's) *2015 California Farmland Conversion Report*, Southern California had approximately 2,973,000 acres of important farmlands in 2012 but has continued to see a decline in farmlands over the years. Specifically, for Ventura County, a total of 451 acres were urbanized from 2010 to 2012 with 73 acres switching from important farmland to urban land (DOC 2015). In 2012, Ventura County had 105,461 acres of Urban and built up land and 316,666 acres of agricultural land. Of the 316,666 acres of agricultural land in Ventura County in 2012, 118,800 acres were classified within an Important Farmland category such as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (DOC 2015).

Project Setting

The state Farmland Mapping and Monitoring Program (FMMP) maps and ranks important farmland in California. Agricultural resources in the proposed project area and adjacent lands, as determined by the DOC, are shown in **Figure 3.2-1a–d**. According to Figure 3.2-1a, the majority of the proposed project area is composed of Urban and Built-up Land, Prime Farmland, Grazing Land, and Farmland of Statewide Importance.

There is farmland surrounding and adjacent to the proposed conveyance pipelines as shown on Figure 3.2-1a. The proposed conveyance pipeline along Olivas Park Drive would underlie lands designated as Prime Farmland, and the conveyances along South Hill Road from Frontage Road to Foothill Boulevard, along Portola Road, along Telephone Road from Olivas Park Drive to Transport Street, and from Ramelli Avenue east to the nearest residential area are adjacent to Farmland of Statewide Importance and Prime Farmland.



SOURCE: ESRI; FMMP 2016

Ventura Water Supply Projects

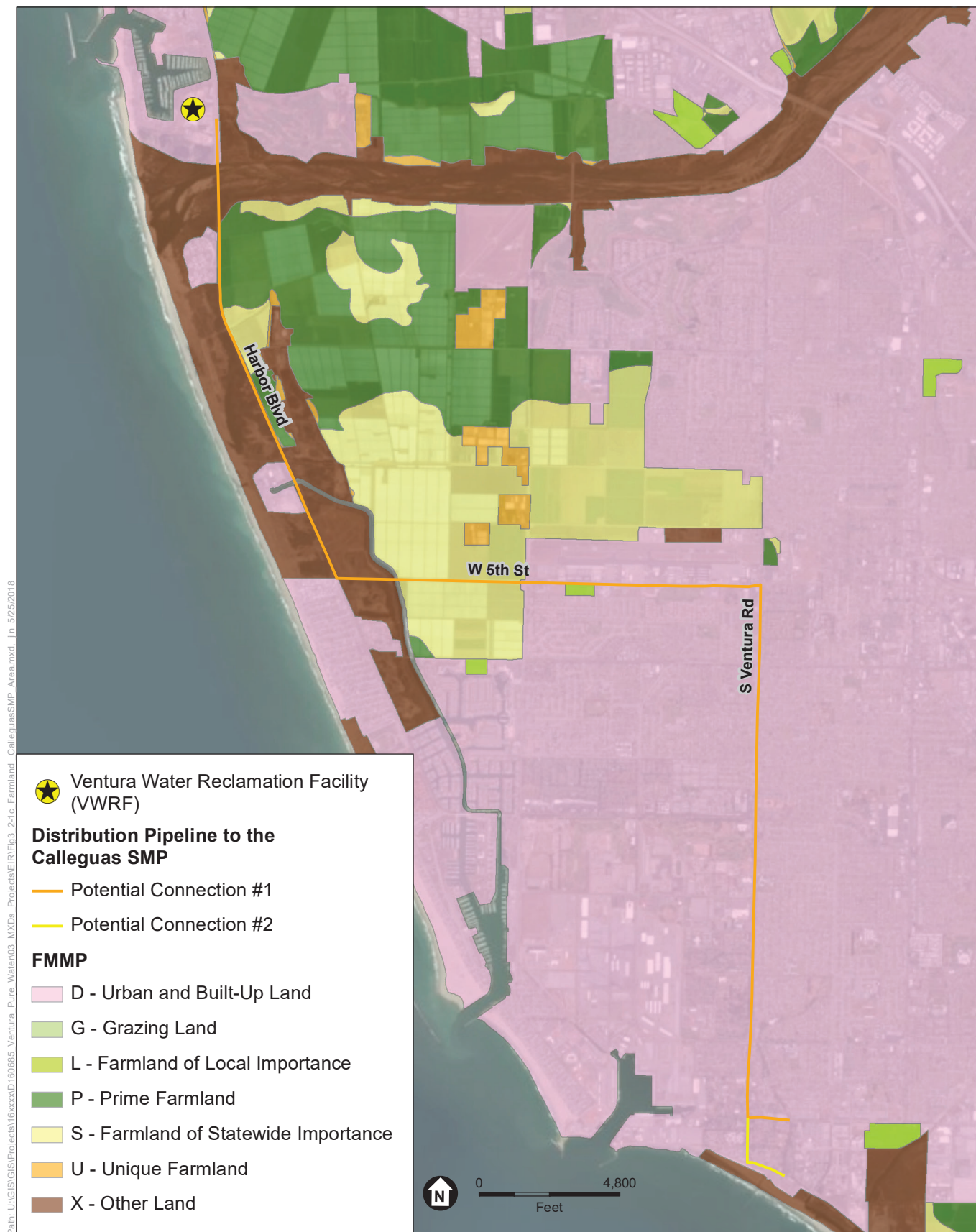
Figure 3.2-1a
Farmland in Project Area



SOURCE: ESRI; FMMP 2016

Ventura Water Supply Projects

Figure 3.2-1b
Farmland in Proposed Treatment Wetlands



SOURCE: ESRI; FMMP 2016

Ventura Water Supply Projects

Figure 3.2-1c
Farmland in Calleguas SMP area

The Portola Road site is located within Prime Farmland and Grazing Land. The Transport Street site is located within Urban and Built-up Land and the Harbor Boulevard Site is within Other Lands.

Figure 3.2-1a also shows that the existing ponds at the Ventura Water Reclamation Facility (VWRF) are located within Urban and Built-up Land. In addition, the proposed concentrate discharge facility would include a new concentrate outfall located adjacent to the existing VWRF and a pipeline that conveys the concentrate to the ocean, which would all be located within Urban and Built-up Land. Figure 3.2-1b shows that the proposed treatment wetlands would be located in Other Land. The Calleguas salinity management pipeline (SMP) alignment and proposed pipeline connections traverse Urban and Built-up Land and Other Land. However, as shown in Figure 3.2-1c, there is a small portion which runs adjacent to the Prime Farmland and Farmland of Local Importance along Harbor Boulevard and West 5th Street. Two of the three potential groundwater well sites are located in farmland and one is located within Urban and Built-up Land. Specifically, Well Sites 2 and 3 are located in Prime Farmland and Site 1 is located on Urban and Built-up Land (see Figure 3.2-1d).

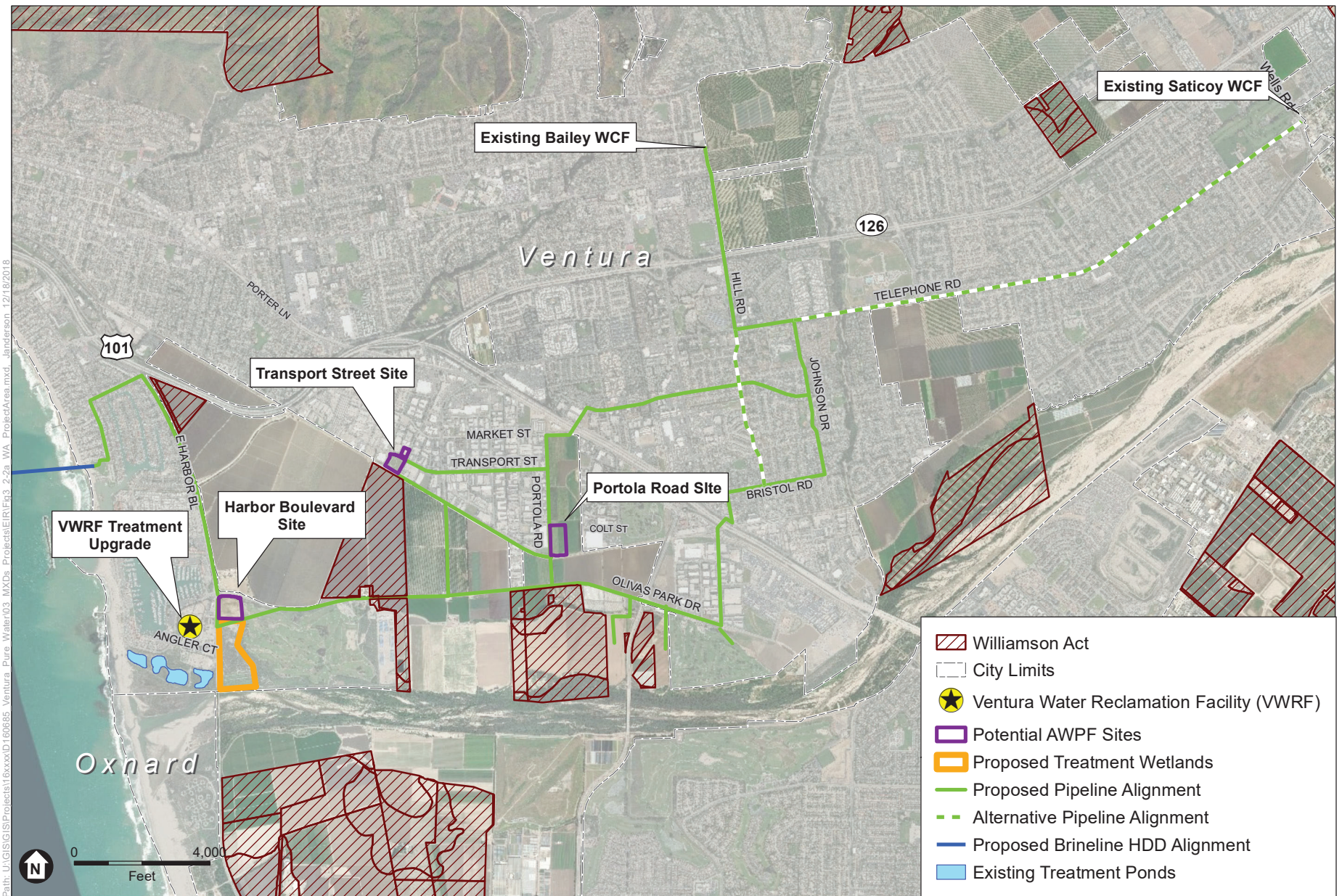
The Williamson Act is the state's primary program for the conservation of private land in agricultural and open space use. According to **Figure 3.2-2a**, the project area does have overlapping Williamson Act contracts. The proposed conveyance pipeline underlies Williamson Act contracted land east of the proposed treatment wetland, and the Transport Street site is adjacent to Williamson Act land. The Calleguas SMP is adjacent to Williamson Act contract land along Harbor Boulevard and West 5th Street (**Figure 3.2-2b**). The groundwater well sites are not located in Williamson Act contract lands (**Figure 3.2-2c**).

There is no forest land or timberland located within the proposed project area (Ventura County 2018).

Farmland and Soil Classification

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) has identified, mapped, and classified the various soil types in Ventura County. The existing soil types, water availability, and quality are some of the predominant factors that determine where agricultural cultivation will occur and what types of crops will be grown.

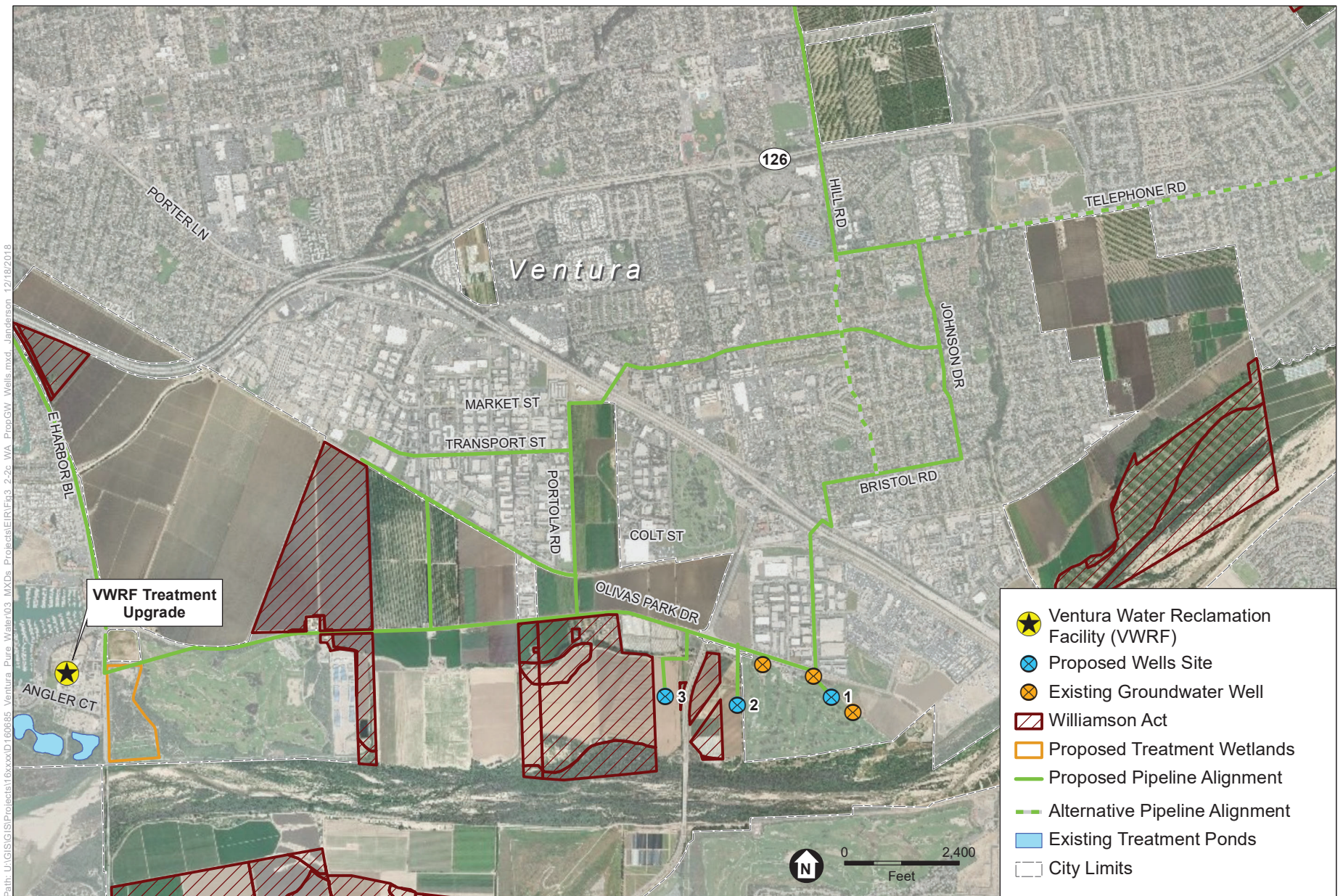
Soil units are classified according to their characteristics, with an emphasis on those features that influence their suitability for the growing of crop plants, grasses, and trees. In many places throughout the county, soil units form a mixed pattern that are grouped based on similar characteristics and are represented as an association. An association is made up of two or more soil units that are represented as one unit on the map. Within these soil types, minor soil differences, such as the variations in effective rooting depth, slope, erosion, drainage, and salt content or alkali content may be an important factor for agricultural production.



SOURCE: ESRI; Williamson Act 2009

Ventura Water Supply Projects

Figure 3.2-2a
Williamson Act in Project Area



SOURCE: ESRI; Williamson Act 2009

Ventura Water Supply Projects

Figure 3.2-2c
Williamson Act Lands Near Proposed Project Conveyance System and ASR Wells

One method the NRCS uses to rate the suitability of soils for agriculture is the Storie Index. This index expresses numerically the relative degree of suitability of a soil for general intensive agriculture as it exists at the time of evaluation. The Storie Index assesses the productivity of a soil by the following four characteristics: factor A, degree of soil profile development; factor B, texture of the surface layer; factor C, slope; and factor X, manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating.

For simplification, Storie Index ratings have been combined into six grade classes as follows: grade 1 (excellent), 100 to 80; grade 2 (good), 79 to 60; grade 3 (fair), 59 to 40; grade 4 (poor), 39 to 20; grade 5 (very poor), 19 to 10; and grade 6 (nonagricultural), less than 10 percent. A rating of 100 percent expresses the most favorable or ideal soil, while a lower rating indicates that the soil is less favorable for crop production.

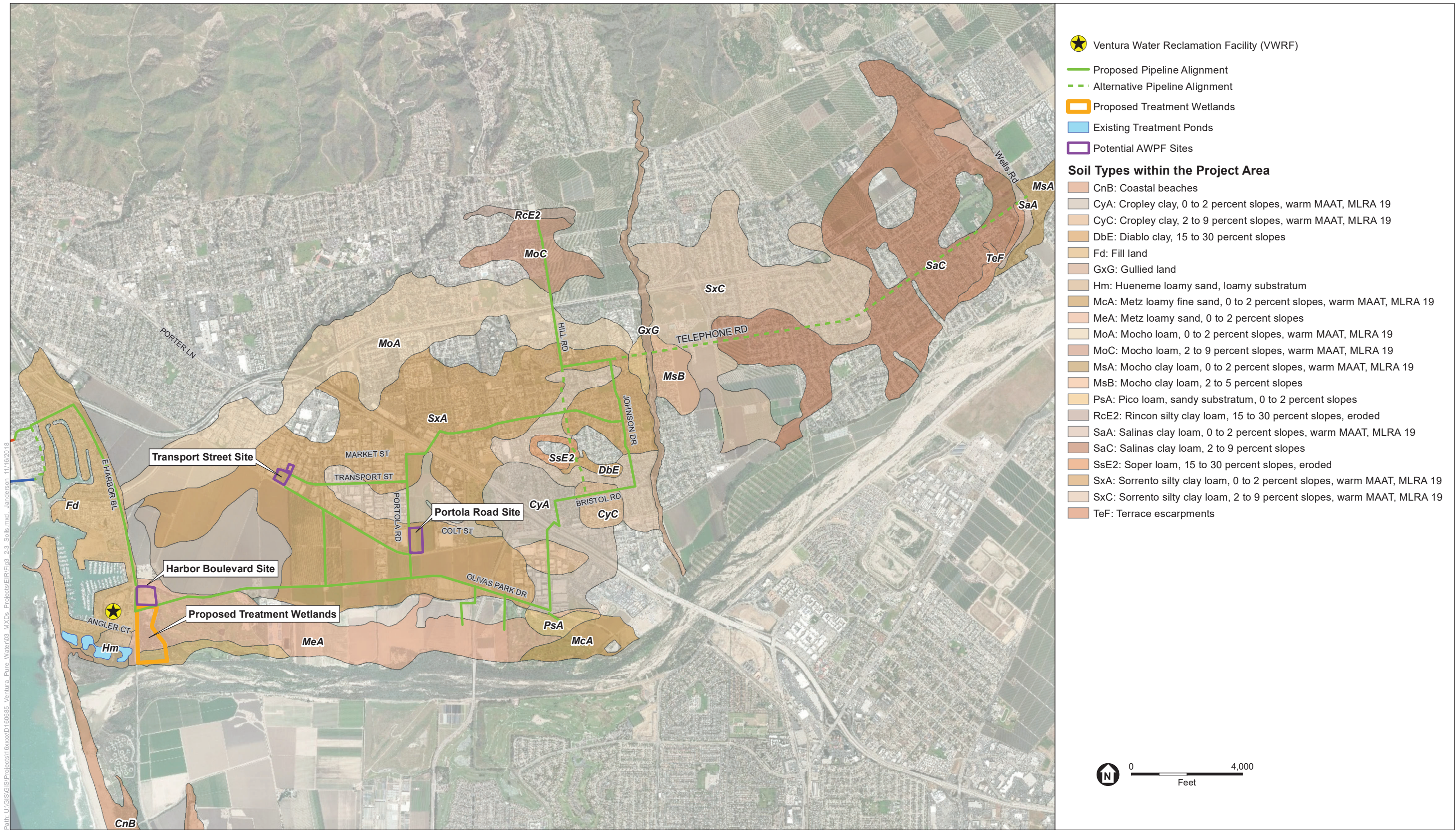
Soils

The predomination association in the project area, specifically the proposed advance water purification facility (AWPF) sites and the proposed wildlife/treatment wetlands, include the Metz loam, Pico loam, Sorrento silty clay loam, and fill land (see **Figure 3.2-3**).

The Metz series consists of very deep, somewhat excessively drained soils that formed in alluvial material from mixed, but dominantly sedimentary rocks. Metz soils are on floodplains and alluvial fans and have slopes of 0 to 15 percent. The mean annual precipitation is about 15 inches and the mean annual air temperature is about 59 degrees F (NRCS 2018a).

The Pico series consists of deep, well drained soils that formed in alluvium from mostly sedimentary rocks. Pico soils are on floodplains and alluvial fans and have slopes of 0 to 9 percent. The mean annual precipitation is about 14 inches and the mean annual air temperature is about 60 degrees F (NRCS 2018b).

The Sorrento series consists of very deep, well drained soils that formed in alluvium mostly from sedimentary rocks. Sorrento soils are on alluvial fans and stabilized floodplains and have slopes 0 to 15 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 61 degrees F (NRCS 2018c).



SOURCE: ESRI; SSURGO

Ventura Water Supply Projects

Figure 3.2-3
Soils within the Project Area

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3.2.2 Regulatory Framework

Federal

Farmland Protection Policy Act (7 U.S.C. Section 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs federal programs to be compatible with state and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the FPPA—Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

Federal agencies are required to develop and review their policies and procedures to implement the FPPA every 2 years. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or Urban and Built-up Land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency (NRCS 2018d).

State

California Department of Conservation, Division of Land Resource Protection

The DOC applies the NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications, and updates its maps every 2 years. The list below provides a comprehensive description of all the categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as Farmland (DOC 2018a).

Farmland Mapping and Monitoring Program

The DOC's Farmland Mapping and Monitoring Program (FMMP) identifies lands that have agricultural value and maintains a statewide map of agricultural lands in its Important Farmlands Inventory (IFI). IFI classifies land based upon its productive capabilities, which is based on many characteristics, including fertility, slope, texture, drainage, depth, salt content, and availability of water for irrigation. The state employs a variety of classification systems to determine the suitability of soils for agricultural use. The two most widely used systems are the Capability Classification System and the Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the

highest quality soil. The Storie Index considers other factors such as slope and texture to arrive at a rating.

The DOC maintains the FMMP and monitors the conversion of farmland to and from agricultural use through its Important Farmland Inventory System. Farmlands are divided into the following categories based on their suitability for agriculture:

Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Unique Farmland. Farmland of lesser-quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been used for crops at some time during the 4 years prior to the mapping date.

Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. For Ventura County, this designation includes soils that are listed as Prime Farmland or Farmland of Statewide Importance that are not irrigated and soils growing dryland crops such as beans, grains, dryland walnuts, or dryland apricots.

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

Urban and Built-up Land. Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Other Land. Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Sections 51200–51297.4 and is applicable to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments (DOC 2018b). Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts.

The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as “super Williamson Act contracts.” Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses. (DOC 2018c)

Public Resources Code Section 21060.1

Public Resources Code (PRC) Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides guidance for the analysis of agricultural and land use changes throughout California.

Local

Ventura County General Plan

Goal 1. Preserve and protect agricultural lands as a nonrenewable resource to assure the continued availability of such lands for the production of food, fiber, and ornamentals.

Policy 1. Discretionary development located on land designated as Agricultural and identified as Prime Farmland or Farmland of Statewide Importance on the State's Important Farmland Inventory, shall be planned and designed to remove as little land as possible from potential agricultural production and to minimize impacts on topsoil.

Policy 6. Discretionary development adjacent to Agricultural-designated lands shall not conflict with agricultural use of those lands.

Goal 4.1. Recognize the farmlands within the County that are critical to the maintenance of the local agricultural economy and which are important to the State and Nation for the production of food, fiber, and ornamentals.

Ventura County General Plan: Coastal Area Plan

The Ventura County Coastal Area Plan and Coastal Zoning Ordinance constitute the Local Coastal Program (LCP) for the unincorporated portions of Ventura County's coastal zone. The main goal of the Coastal Area Plan is to ensure that the local government's land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of and implement the provisions and policies of the Coastal Act. The LCP specifically applies to development in the unincorporated portions of the Coastal Zone of Ventura County. The existing wildlife treatment ponds and the proposed Harbor Boulevard AWP site, the wildlife/treatment wetlands, and concentrate outfall are located in the Coastal Zone boundary (Ventura County 2018)

4.2.3 Agriculture, Agriculture Goal 1:

To preserve agricultural lands on the Central Coast to the maximum extent feasible

Policies 4:

New or expanded public works facilities will be sited or designed to mitigate environmental impacts on agricultural viability and open space lands.

City of San Buenaventura General Plan

Policy 3D. Continue to preserve agricultural and other open space lands within the City's Planning Area.

Action 3.20. Pursuant to SOAR, adopt development code provisions to "preserve agricultural and open space lands as a desirable means of shaping the City's internal and external form and size, and of serving the needs of the residents.

Action 3.21. Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all appropriate buffers as determined by the Agriculture Commissioner's Office.

Save Open Space and Agricultural Resources Initiative

In 1995, the first Save Open Space and Agricultural Resources (SOAR) Initiative was approved by voters in the City of Ventura. SOAR is a series of initiatives which requires a vote of the public before agricultural land or open space areas can be rezoned for development. SOAR prevents the Ventura County Board of Supervisors from rezoning unincorporated open space, agricultural, or rural lands for development without a vote of the people. Eight city SOAR initiatives require the city councils to obtain the approval of their citizens before urban development can occur beyond a City Urban Restriction Boundary (CURB) or before rezoning agricultural land within the city's sphere of influence (SOAR 2018).

Greenbelt Agreements

Greenbelts are voluntary agreements between the Ventura County Board of Supervisors and one or more City Councils regarding development of agricultural and open space areas beyond City limits. These agreements protect open space and agricultural lands and supports property owners that their lands within these Greenbelts will not be prematurely converted to agriculturally incompatible uses. Currently, there are seven greenbelt agreements within the County, with one being between the City of Ventura and City of Oxnard.

Ventura and Oxnard adopted a greenbelt agreement in 1994 and updated the agreement in 2015 (Ordinance No. 4474). It comprises 5,062 acres of unincorporated County land. As of 2015, it is not currently served with sewers, waters, or other municipal services from the cities of San Buenaventura and Oxnard. The proposed project, specifically the proposed AWPf sites, the conveyance pipelines, and the proposed Calleguas SMP would be located within the Ventura-Oxnard Greenbelt.

Right-to-Farm Ordinances

In 1997, the City of Ventura adopted a Right-to-Farm Ordinance to provide protection to farmers against nuisance claims and frivolous lawsuits involving legal and accepted farming practices. The measure requires realtors to disclose potential conflicts with agriculture (e.g., pesticide odors, noise from machinery, pesticides use) when properties adjacent to agricultural parcels are for sale. The ordinance also provides a statement that agriculture is not subject to nuisance claims if it is being properly conducted. Ventura County also has a Right-to-Farm Ordinance that mediates similar disputes between neighboring cities.

City of Oxnard 2030 General Plan

Goal CD-6. Continued agriculture use within the Planning Area, compatible with the community's vision.

CD-6.1 Agricultural Buffers: Require that agricultural land uses designated for long-term protection and production be buffered from urban land uses through the use of techniques including, but not limited to, greenbelts, open space setbacks, fencing, berming, and windrows.

CD-6.2 Agriculture Preservation: Preserve agricultural land and uses within the Oxnard Planning Area unless other uses are allowed through a future CURB amendment and/or applicable exemptions.

ER-1.2 Protect Surrounding Agriculture and Open Space: Protect open space and agricultural uses around Oxnard through continued adherence to the Guidelines for Orderly Development, Ventura County Greenbelt programs, the Save Open-Space and Agricultural Resources Ordinance, and other programs or policies that may subsequently be adopted such as the SB 375 Sustainable Communities Strategy.

Goal ER-12: A viable agriculture industry, maintained and enhanced soil resources, reduced erosion, and improved agricultural productivity.

City of Port Hueneme General Plan

There are no timber or agricultural resources in the city of Port Hueneme. Most of the trees in the City are imported non-native species planted for shade and landscaping purposes. The City does not contain available land for large-scale agriculture production or livestock grazing. Long before urbanization, portions of the Port Hueneme area were used for agricultural purposes; however, all of the land has since been developed (City of Port Hueneme General Plan and Local Coastal Program 2015).

3.2.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to agriculture and forestry resources. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use (refer to Impact AG 3.2-1).
- Conflict with existing zoning for agricultural use, or a Williamson Act contract (refer to Impact AG 3.2-2).
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)) (refer to Impact AG 3.2-3).
- Result in the loss of forest land use or conversion of forest land use to non-forest use (refer to Impact AG 3.2-4).
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use (refer to Impact AG 3.2-5).

A summary of the findings for each impact is presented in **Table 3.2-1**. The analyses below support these findings.

**TABLE 3.2-1
SUMMARY OF AGRICULTURE AND FORESTRY IMPACT DETERMINATIONS**

Impacts	3.2-1 Prime Farmland	3.2-2 Agricultural Zoning and Williamson Act	3.2-3 Forest Zoning	3.2.4 Potential Loss of Forest Land	3.2-5 Conversion to Non- agricultural Use
Phase 1					
Advanced Water Purification Facility	LTSM	LTSM	NI	NI	LTSM
Water Conveyance System	LTSM	LTSM	NI	NI	LTS
Groundwater Wells	LTSM	NI	NI	NI	LTS
Natural Treatment Wetlands	NI	NI	NI	NI	NI
VWRF Treatment Upgrade Project	NI	NI	NI	NI	NI
Concentrate Discharge Facility	NI	LTS	NI	NI	NI
Phase 2					
AWPF Expansion	NI	NI	NI	NI	NI
Ocean Desalination	NI	NI	NI	NI	NI

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.2.4 Impacts and Mitigation Measures

Prime Farmland

Impact AG 3.2-1: The proposed projects could result in a significant impact if they would convert Prime Farmland, Unique Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Phase 1

Advanced Water Purification Facility

The proposed project would include the construction of the AWPf within one of the three potential locations (see Figure 3.2-1a). The Transport Street site is located in Urban and Built-up Land and the Harbor Boulevard site is located in the County of Ventura located on Other Land. These potential AWPf sites would not have any impacts related to converting Prime Farmland, Unique Farmland, or Farmland of Statewide importance to non-agricultural use.

The proposed Portola Road site is located within the unincorporated County of Ventura on Prime Farmland, as shown in Figure 3.2-1a. As a result, The Ventura County Initial Study Assessment Guidelines will be used to determine the impacts to converting Prime Farmland to a non-agricultural use (**Table 3.2-2**).

**TABLE 3.2-2
TOTAL ACRES OF LOST FARMLAND**

General Plan Land Uses Designation	Important Farmland Inventory Classification	Acreage Conversion Viewed as Significant
Agricultural	Prime/Statewide:	5 acres
	Unique:	10 acres
	Local:	15 acres
Open Space/Rural	Prime/Statewide:	10 acres
	Unique:	15 acres
	Local:	20 acres
All Others	Prime/Statewide:	20 acres
	Unique:	30 acres
	Local:	40 acres

SOURCE: Ventura County Initial Study Assessment Guidelines, 2011

The soils designation for the Portola Road site is Prime Farmland. In accordance with the County's guidelines, the project would have a significant impact if it would remove more than 5 acres of Prime Farmland soils out of production. As shown in Figure 3.2-1a, use of the Portola Road site would remove approximately 9 acres of farmland soils. The loss of 9 acres of Prime Farmland would exceed the 5-acre threshold; therefore, the impacts would be considered significant. However, with the implementation of **Mitigation Measure AG-1** requiring an agricultural conservation easement to mitigate for the loss of Prime Farmland, impacts of constructing and operating the proposed AWPf at this location would be reduced to less than significant.

Mitigation Measures:

AG-1: Mitigation shall be provided for the loss of state-designated Prime Farmland or Farmland of Local Importance in existence at the time property in the project area containing such state-designated farmland is developed. Prior to developing such state-designated farmland, agricultural lands of equivalent acreage (a 1:1 ratio), and with soil and farming conditions equivalent or superior to the state-designated farmland that would be converted, shall be set aside in perpetuity. One or more permanent, irreversible agricultural easements may be purchased for the benefit of the City or other qualifying entity acceptable to the City, or funds may be provided to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural easements, to be earmarked for the purchase of permanent, irreversible agricultural easements. The protected acreage shall be set aside prior to the commencement of any development activity.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

These proposed pipelines would generally underlie Urban and Built-up Land. The pipeline alignments from the existing VWRF along Olivas Park Drive, Telephone Road, and Palma Drive

to the potential Harbor Boulevard, Transport Street, and Portola Road AWPf sites would underlie Prime Farmland. The conveyance pipelines would be located within existing roads where feasible. Pipelines located within road shoulders bordering agricultural fields would be approximately 6 to 8 feet under the ground surface, which would be deep enough to avoid impacting farming activities and would not take farmland out of production. Once constructed, the soil would be replaced and therefore construction would not permanently disrupt the topsoil or the agricultural capacity of the overlaying land.

Once in operation, the proposed conveyance pipelines would be entirely underground and would not impact any overlying land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Impacts would be less than significant.

The proposed pump station associated with the product water conveyance system would be constructed within the VWRf and within the proposed AWPf site. As mentioned above, the Harbor Boulevard and Portola Road AWPf sites would be located within the County-designated SOAR property. However, implementation of Mitigation Measure AG-1 would ensure that development of the AWPf on the proposed Harbor Boulevard or Portola Road sites would comply with the SOAR program. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). Figure 3.2-1d shows the designated farmland within the proposed groundwater well sites. Of the proposed well sites, two are located within Prime Farmland (wells 2 and 3) and one is located in Urban and Built-up Land (well 1). In accordance with the County's guidelines, the project would have a significant impact if it would remove more than 5 acres of Prime Farmland soils out of production. The proposed wells would be housed within single-story buildings, approximately 10 to 15 feet in height, and 64 by 30 feet wide (approximately 1,920 square feet), surrounded by a 5- to 6-foot-tall chain-link or metal fence for security. If both well sites are chosen, the wells would remove approximately 0.08 acre of farmland soils. The loss of 0.08 acre of Prime Farmland would not exceed the 5-acre threshold; however, if Portola Road AWPf is chosen, the combined impacts would be considered significant. Nevertheless, with the implementation of Mitigation Measure AG-1 requiring an agricultural conservation easement to mitigate for the loss of Prime Farmland, impacts of constructing and operating the wells and Portola Road AWPf would be reduced to less than significant.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The proposed projects would include reconfiguration of the existing wildlife/treatment ponds by adding fill to raise the ponds' floor to approximately 3 feet from the surface and adding new vegetation throughout the ponds. The existing ponds adjacent to the VWRF are located within Urban and Built-up Land (Figure 3.2-1a). Thus, the reconfiguration of existing ponds would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur.

New Treatment Wetland

The proposed treatment wetland would be constructed just east of the VWRF across Harbor Boulevard on a City-owned site. The new treatment wetland would be located within the FMMP designation of Other Land (Figure 3.2-1b). As a result, the proposed natural treatment wetland would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRF Treatment Upgrade

The VWRF treatment upgrades would take place entirely within the existing VWRF. The VWRF is located within the FMMP designation of Urban and Built-up Land. Therefore, the upgrades would not impact any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

A new ocean outfall would be installed with directional drilling techniques from Marina Park, emerging on the ocean floor 2,000 to 4,000 feet offshore. The proposed pipeline to the outfall would be located within Urban and Built-up Land. The outfall and diffuser would be located offshore. Therefore, the proposed pipeline would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impacts would occur.

Discharge Pipeline to Calleguas Salinity Management Pipeline

The proposed Discharge Pipeline to Calleguas SMP alignment would traverse through FMMP-designated Urban and Built-up Land and Other Land. A portion of the alignment runs adjacent to Prime Farmland and Farmland of Local Importance along Harbor Boulevard and West 5th Street. However, the pipeline alignment that borders agricultural fields would be sufficiently deep, approximately 6 to 8 feet under the ground surface, that farming activities would not be interrupted and farmland would not be removed from production. Therefore, there would be no impact related to converting Prime Farmland to non-agricultural use.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion project would occur several years after the original construction of the AWPf, if needed. The Portola Road AWPf site would convert Prime Farmland to non-agricultural use. Nevertheless, the impacts associated with the conversion of agricultural lands would be mitigated as part of the original construction of the AWPf. The expansion project would occur entirely within the footprint of the AWPf and would not further impact agricultural lands beyond what was previously analyzed for the AWPf construction. As a result, there would be no impact related to converting Prime Farmland to non-agricultural uses.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. The expansion to the AWPf to accommodate the desalination treatment trains would not include any new impacts outside of the original construction footprint for the AWPf as described above. The site impacts and mitigation to the loss of farmland would be associated with the earlier phase of implementation of the AWPf. As a result, there would be no impact related to converting Prime Farmland to non-agricultural use as a result of the desalination component.

Ocean Intake

The proposed ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. Although the location of the ocean intake system is undetermined, the construction impacts would temporarily occur near or within the ocean floor. Once in operation, the proposed system would be subsurface and return to pre-project conditions. As a result, there is no potential to impact Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Agricultural Zoning and Williamson Act

Impact AG 3.2-2: The proposed projects could have a significant impact if they would conflict with existing zoning for agricultural use, or a Williamson Act contract.

Phase 1

Advanced Water Purification Facility

None of the proposed AWPf sites are located within Williamson Act contracted lands (see Figure 3.2-2a). Consequently, there would be no impact resulting from conflicts with existing Williamson Act contracts. The Harbor Boulevard site is zoned under the County Local Coastal Plan (LCP) as Coastal Open Space-10 acre minimum (COS-10). The other two sites are not located in the coastal zone and the zoning designations are Manufacturing Planned Development (MPD) for the Transport Street site, Agricultural Exclusive-40 acre minimum (AE-40), and Residential-Agriculture-1 acre minimum (R-A-1) for the Portola Road site. There is no conflict with zoning for agricultural use on the Transport Street AWPf sites.

The Harbor Boulevard AWPf would not be consistent with the zoning of COS-10. A categorical use permit and LCP amendment would be required for the construction of the Harbor Boulevard AWPf. The conversion of agricultural land to a non-agricultural for the Portola Road site would conflict with the existing zoning and would require a categorical use permit. In addition, the Harbor Boulevard and Portola Road sites are subject to additional protection under the County's SOAR initiative. However, the implementation of Mitigation Measure AG-1 would ensure that development of the AWPf on the proposed Portola Road site would comply with the SOAR program. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed pipeline travelling along Olivas Park Drive would be adjacent to Williamson Act contracted land. As shown in Figure 3.2-2a, the proposed pipeline alignments would not travel within Williamson Act contracted land. The proposed pipelines that would travel from each of the proposed AWPf sites to the groundwater extraction well, aquifer storage and recovery wells and to either the existing Bailey WCF or Saticoy WCF would be located within areas zoned for SOAR. However, the conveyance pipelines would be located within existing roads where feasible. Pipelines located within road shoulders bordering agricultural fields would be sufficiently deep, approximately 6 to 8 feet under the ground surface, that farming activities would not be interrupted and would not take farmland out of production. Therefore, there would be no impacts related to an adverse effect on Williamson Act contracted land or existing zoning for agricultural use.

The proposed pump station associated with the product water conveyance system would be constructed within VWRF and within the proposed AWPf site. As mentioned above, the Portola Road AWPf would be located within the County-designated SOAR property. However, the implementation of Mitigation Measure AG-1 would ensure that development of the AWPf on the proposed Portola Road site would comply with the SOAR program. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin (final configuration to be determined by detailed groundwater modeling). The proposed wells would not be located on land under a Williamson Act contract (see Figure 3.2-2c). Well Sites 2 and 3 would be located in land zoned for SOAR. Implementation of Mitigation Measure AG-1 would ensure that development of the wells would comply with the SOAR program. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetland

The existing wildlife/treatment ponds and the proposed wildlife/treatment wetlands would not be located within Williamson Act contracted lands or land designated as SOAR (see Figure 3.2-2a). The existing ponds and proposed natural treatment wetland would be located in lands zoned for Parks (City of San Buenaventura Department of Community Development 2018). Therefore, there would be no impacts related to Williamson Act contracted lands or existing zoning for agriculture.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRf Treatment Upgrade

The VWRf Treatment Upgrade would be constructed within the existing VWRf. Currently, there are no lands west of the VWRf that are under Williamson Act contract or lands zoned for agricultural use (see Figure 3.2-2a). No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The City would construct a new ocean outfall that would discharge to the ocean north of Ventura Harbor. Currently, there are no lands west of the VWRP that are under Williamson Act contract or lands zoned for agricultural use (see Figure 3.2-2a).

Discharge Pipeline to Calleguas Salinity Management Pipeline

The proposed Discharge Pipeline to Calleguas SMP would travel adjacent to but not through Williamson Act contracted lands along Harbor Boulevard (see Figure 3.2-3b). However, the conveyance pipelines would be located within existing roads where feasible. Pipelines located within road shoulders bordering agricultural fields would be sufficiently deep, approximately 6 to 8 feet under the ground surface, that farming activities would not be interrupted and would not take farmland out of production. Therefore, impacts related to adversely affecting Williamson Act contracted lands or existing zoning for agriculture would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

To expand the AWP, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion project would occur several years after the original construction of the AWP, if needed. The proposed AWP sites are not located within Williamson Act contracted lands; however, the Portola Road AWP site would be located within the County SOAR designated land. Nevertheless, the impacts associated with the conversion of agricultural lands would be mitigated as part of the original construction of the AWP. The expansion project would occur entirely within the footprint of the AWP and would not further impact land zoned for agricultural beyond what was previously analyzed for the AWP construction. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWP. The desalination facility construction would occur several years after the original construction of the AWP, if needed. The impacts associated with the conversion of agricultural lands would be mitigated as part of the original construction of the AWP. As a result, the desalination facility would occur entirely within the footprint of the AWP and would not further impact land zoned for agricultural beyond what was previously analyzed for the AWP construction. No impact would occur.

Ocean Intake

The proposed subsurface ocean intake would be constructed on the shore west of the VWRF. There are no Williamson Act contract lands or existing zoning for agriculture located along the coast within the proposed ocean intake alignment (see Figure 3.2-3a). Therefore, impacts related to impacting existing zoning for agriculture and Williamson Act lands would not occur. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Forest Zoning

Impact AG 3.2-3: The proposed projects could result in a significant impact if they would conflict with existing zoning of, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 45260, or timberland zoned Timberland Production (as defined by Government Code section 51104[g]).

The proposed Ventura Water Supply Projects components are not located within any designated forest land, timberland, or land zoned Timberland or Production. Further, no designated forest land or timberland is located near any project components. Therefore, because there is no forest land or timberland within the project area, construction and operation of all of the project facilities would not have any adverse effect on existing zoning for forest land or timberland. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Potential Loss of Forest Land

Impact AG 3.2-4: The proposed projects could result in a significant impact if they would result in the loss of forest land or conversion of forest land to non-forest use.

As discussed in Impact AG 3.2-3 above, the proposed Ventura Water Supply Projects components are not located within forest land. Therefore, construction and operation of the proposed projects would not impact any forest land. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Conversion to Non-Agricultural Use

Impact AG 3.2-5: The proposed projects could result in a significant impact if they would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

Phase 1

Advanced Water Purification Facility

Implementation of the AWPf would not result in direct changes in the existing agricultural or forestry environment other than those described above under Impact 3.2-1 and 3.2-3. The proposed Portola Road AWPf site is located within Prime Farmland and Farmland of Local Importance. The Portola Road site would remove approximately 9 acres of Farmland soils. The loss of 9 acres of Prime Farmland would exceed the 5-acre County threshold; therefore, the impacts would be considered significant. However, with the implementation of Mitigation Measure AG-1 requiring an agricultural conservation easement to mitigate for the loss of Prime Farmland, impacts of constructing and operating the proposed AWPf at this location would be reduced to less than significant.

The Harbor Boulevard and Transport Street AWPf sites would not be located within Prime Farmland or Farmland of Local Importance and no impact would occur.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The conveyance pipelines would be located within existing roads rights-of-way where feasible. Pipelines located within road shoulders bordering agricultural fields would be sufficiently deep, approximately 6 to 8 feet under the ground surface, that farming activities would not be interrupted and would not take farmland out of production. The proposed pump stations would be located within VRWF and future AWPf and would not cause the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. Therefore, impacts associated with construction and operations would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

In addition to the direct changes to the existing agricultural and forestry environment discussed above under Impact 3.2-1 and 3.2-3, two of the proposed groundwater wells would be located in designated farmland. Well 1 would be located within an existing golf course. The proposed Well Sites 2 and 3 would be located in Prime Farmland. For Ventura County, Farmland of Local Importance includes soils that are listed as Prime Farmland or Statewide Farmland that are not irrigated and soils growing dryland crops. Well Sites 2 and 3 are within active agricultural fields. If either of these sites is chosen, construction activities would cause temporary impacts to the

agricultural capacity of the land. Once in operation, the groundwater wells would take up a small percentage of land as compared to the remainder of the site available for irrigation or agriculture. Further, the wells would be similar to the existing agricultural wells currently being used on the agricultural fields. As a result, the impacts related to converting farmland to non-agricultural use would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Wildlife/Treatment Wetland

There is no farmland or forest land located within the existing ponds or the proposed new wildlife/treatment wetland (see Figure 3.2-1b). Therefore, the proposed project would not cause the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Therefore, impacts associated with construction and operations would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRF Treatment Upgrade

The upgrade would be within the existing VWRF. There are no designated agricultural or forest environments within the VWRF (see Figure 3.2-1a). As a result, no impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

There are no designated agricultural or forest environments along the proposed alignment of the outfall (see Figure 3.2-1a). Therefore, no impacts related to converting farmland to non-agricultural use or existing forest land to non-forest use would occur.

Discharge Pipeline to Calleguas Salinity Management Pipeline

Implementation of the proposed Discharge Pipeline to Calleguas SMP would run adjacent to lands under a Williamson Act contract; however, the pipeline would be constructed within the existing road rights-of-way (see Figure 3.2-2b). Pipelines located within road shoulders bordering agricultural fields would be sufficiently deep, approximately 6 to 8 feet under the ground surface, that farming activities would not be interrupted and would not take farmland out of production. There would be no impacts related to converting farmland to non-agricultural use or existing forest land to non-forest use for the proposed pipeline.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The proposed Portola Road AWPf site is located within Prime Farmland. However, the impacts associated with the conversion of agricultural lands would be mitigated as part of the original construction of the AWPf. The expansion project would occur entirely within the footprint of the AWPf and would not convert farmland to non-agricultural use beyond what was previously analyzed for the AWPf construction. No impact would occur.

Mitigation Measures: None required

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. The AWPf sites are sized to accommodate the future desalination treatment components if the desalination project is needed to supplement the City's water supply. The expansion to the AWPf to accommodate the desalination treatment trains would not include any new impacts outside of the original construction footprint for the AWPf as described above. There would be no impacts related to converting farmland to non-agricultural use or existing forest land to non-forest use. No impact would occur.

Ocean Intake

Implementation of the proposed ocean intake would not result in direct changes in the existing agricultural or forestry environment. There are no designated agricultural or forest environments along the coastline where the proposed alignment of the intake would be sited. There would be no impacts related to converting farmland to non-agricultural use or existing forest land to non-forest use for the proposed outfall. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.3 Air Quality

This section addresses the potential impacts of the proposed project to air quality. The section includes a description of the environmental setting to establish baseline conditions for air quality; a summary of the regulations related to air quality; and an evaluation of the proposed project's potential effects on air quality.

3.3.1 Existing Environmental Setting

Criteria Pollutants

The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (USEPA) currently focus on the following air pollutants as indicators of ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable or breathable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}), and lead. The pollutants are referred to as “criteria air pollutants” since they are the most prevalent air pollutants known to be harmful to human health, and extensive health-effects criteria documents are available about their effects on human health and welfare. Standards have been established for each criteria pollutant to meet specific public health and welfare criteria set forth in the federal Clean Air Act (CAA). California has generally adopted more stringent ambient air quality standards for the criteria air pollutants and has adopted air quality standards for some pollutants for which there is no corresponding national standard. The National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for each of the monitored pollutants and their effects on health are summarized in **Table 3.3-1**. The NAAQS and CAAQS have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. A brief description of the health effects of regulated criteria air pollutants are provided below.

Ozone

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air, but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include reactive organic gases (ROGs) or volatile organic compounds (VOCs), and oxides of nitrogen (NO_x). While both ROGs and VOCs refer to compounds of carbon, ROG is a term used by CARB and is based on a list of exempted carbon compounds determined by CARB. VOC is a term used by the USEPA and is based on USEPA's own exempt list. The time period required for ozone formation allows the reacting compounds to spread over a large area, producing regional pollution problems. Ozone concentrations are the cumulative result of regional development patterns rather than the result of a few significant emission sources.

Once ozone is formed, it remains in the atmosphere for 1 or 2 days. Ozone is then eliminated through reaction with chemicals on the leaves of plants, attachment to water droplets as they fall to earth (rainout), or absorption by water molecules in clouds that later fall to earth with rain (washout). Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. In addition to causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Volatile Organic Compounds

VOCs are typically formed from combustion of fuels or released through evaporation of organic liquids. Some VOCs are also classified by the state as toxic air contaminants. These are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons, as are architectural coatings. Emissions of VOCs themselves are not “criteria” pollutants; however, they contribute with NO_x to formation of O₃ and are regulated as O₃ precursor emissions.

Nitrogen Dioxide

NO₂ is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO₂. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂. The combined emissions of NO and NO₂ are referred to as NO_x, which are reported as equivalent NO₂. Aside from its contribution to ozone formation, NO₂ can increase the risk of acute and chronic respiratory disease and reduce visibility. NO₂ may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Carbon Monoxide

CO, a colorless and odorless gas, is a relatively nonreactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicles. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia. CO measurements and modeling were important in the early 1980s, when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts because of the retirement of polluting older vehicles, lower emissions from new vehicles, and improvements in fuels.

Sulfur Dioxide

SO₂ is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant, mainly as a result of burning high-sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries. When SO₂ oxidizes in the atmosphere, it forms sulfur trioxide (SO₃). Collectively, these pollutants are referred to as sulfur oxides (SO_x).

TABLE 3.3-1
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard (Primary)	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm	---	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/industrial mobile equipment.
	8 hours	0.070 ppm	0.070 ppm		
Nitrogen Dioxide	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	Annual Avg.	0.030 ppm	0.053 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Sulfur Dioxide	1 hour	0.25 ppm	0.75 ppb	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	3 hours	---	0.5 ppm		
	24 hours	0.04 ppm	0.14 ppm		
	Annual Avg.	---	0.03 ppm		
Respirable Particulate Matter (PM₁₀)	24 hours	50 µg/m ³	150 µg/m ³	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Avg.	20 µg/m ³	---		
Fine Particulate Matter (PM_{2.5})	24 hours	---	35 µg/m ³	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.
	Annual Avg.	12 µg/m ³	12.0 µg/m ³		
Lead	Monthly Avg.	1.5 µg/m ³	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 µg/m ³		
	Rolling 3-month Average	---	0.15 µg/m ³		
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)	Geothermal Power Plants, Petroleum Production and refining
Sulfates	24 hour	25 µg/m ³	No National Standard	Breathing difficulties, aggravates asthma, reduced visibility	Produced by the reaction in the air of SO ₂ .
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, discourages tourism.	See PM _{2.5} .

ppm = parts per million; µg/m³ = micrograms per cubic meter.

SOURCES: CARB 2016a

Major sources of SO₂ include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of SO₂ aggravate lung diseases, especially bronchitis. SO₂ also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise. It potentially causes wheezing, shortness of breath, and coughing. Long-term SO₂ exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease.

Particulate Matter

PM₁₀ and PM_{2.5} consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one millionth of a meter). PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Particulate matter can also damage materials and reduce visibility. One common source of PM_{2.5} is diesel exhaust emissions.

PM₁₀ consists of particulate matter emitted directly into the air (e.g., fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust) and particulate matter formed in the atmosphere by condensation and transformation of SO₂ and ROG. Traffic generates particulate matter emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. PM₁₀ and PM_{2.5} are also emitted by wood burning in residential wood stoves and fireplaces and open agricultural burning. PM_{2.5} can also be formed through secondary processes such as airborne reactions with certain pollutant precursors, including ROG, ammonia (NH₃), NO_x, and SO_x.

Lead

Lead is a metal found naturally in the environment and present in some manufactured products. There are a variety of activities that can contribute to lead emissions, which are grouped into two general categories, stationary and mobile sources. On-road mobile sources include light-duty automobiles; light-, medium-, and heavy-duty trucks; and motorcycles.

Emissions of lead have dropped substantially over the past 40 years. The reduction before 1990 was largely due to the phase-out of lead as an anti-knock agent in gasoline for on-road automobiles. Substantial emission reductions have also been achieved through enhanced controls in the metals-processing industry.

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

The California Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance) updated the methods for estimating cancer risks (OEHHA 2015). The updated method utilizes higher estimates of cancer potency during early life exposures and uses different assumptions for breathing rates and length of residential exposures.

Odorous Emissions

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Offensive odors are unpleasant and can lead to public distress, generating citizen complaints to local governments. Although unpleasant, offensive odors rarely cause physical harm. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source, wind speed, direction, and the sensitivity of receptors.

Climate and Meteorology

The proposed project is located in Ventura County, which is within the South Central Coast Air Basin (SCCAB). The SCCAB is comprised of three air pollution control districts (APCDs): the San Luis Obispo County APCD, which consists of San Luis Obispo County; the Santa Barbara County APCD, which consists of Santa Barbara County; and the Ventura County APCD, which consists of Ventura County.

This segment of the SCCAB is under the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD) for air quality planning purposes. Ventura County is an approximately 2,208-square-mile coastal plain bounded by the Pacific Ocean to the west, Santa Barbara County to the west, Kern County to the north, Los Angeles County to the east. Parts of the county are on the Oxnard Plain, which includes the cities of Oxnard, Camarillo, Port Hueneme and much of Ventura. Other cities and communities lie in the intermountain valleys of the Transverse Range. Other parts of the county are on small coastal mountains, such as the Santa Ynez Mountains, Simi Hills, Santa Monica Mountains and the Piru Mountains.

The ambient concentrations of air pollutants are determined by the amount of emissions released by sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the program area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources.

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The climate of the region is strongly influenced by its proximity to the Pacific Ocean. Airflow around the County plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

Ventura County has a Mediterranean climate, typical of most coastal California cities, with the sea breeze off the Pacific Ocean moderating temperatures. It is not uncommon for the city to be affected by Santa Ana winds off the Transverse Ranges on occasion, which increase temperatures dramatically.

Existing Criteria Pollutants Levels at Nearby Monitoring Stations

The VCAPCD maintains a network of air quality monitoring stations located throughout Ventura County to measure ambient pollutant concentrations. These stations are located in El Rio, Ojai, Piru, San Nicolas Island, Simi Valley, Thousand Oaks, and Ventura. The monitoring stations located closest to the Project site are in Ojai, approximately 25 miles north, and in Simi Valley, approximately 26 miles northeast. Both stations monitor O₃ and PM_{2.5} and only the Simi Valley monitoring station monitors NO₂ and PM₁₀. CO monitoring was eliminated in Ventura County in 2004 as a response to the proposed National Monitoring Strategy set forth by the USEPA, and Ventura County has consistently met the CO standard. In addition, SO₂ monitoring in Ventura County was eliminated in 2004 because ambient concentrations were low and SO₂ monitors are not required for State Implementation Plan (SIP) or maintenance planning. In addition, lead monitoring is not conducted in the County, and the USEPA established that the VCAPCD is not subject to lead monitoring requirements.¹ The most recent data reported to the USEPA and CARB for these monitoring stations are from calendar years 2014 to 2016. The pollutant concentration data for these years are summarized in **Table 3.3-2**.

Sensitive Receptors

Land uses such as residences, schools, hospitals, and convalescent homes are considered to be sensitive to poor air quality conditions because infants, children, the elderly, and people with health afflictions (especially respiratory ailments) are more susceptible to respiratory infections and other air-quality-related health problems than the general public. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short.

The project area is located in the western portion of Ventura County along the Santa Clara River. The nearest sensitive receptors to the project area include the single-family residences located approximately 25 feet from the water conveyance system pipelines and the groundwater storage and recovery well construction sites and the single-family residences located approximately 300 feet of from the natural treatment wetlands construction. Friends Elementary School is located in excess of 3,000 feet north of the Transport Street Site. Pierpont Elementary School would potentially be located within 100 feet of the new ocean outfall that would discharge to the ocean south of Ventura Harbor.

¹ Ambient Air Monitoring Network Plan, 2014; Ventura County Air Pollution Control District Monitoring Division; <http://www.vcapcd.org/pubs/Monitoring/2014FinalMonitoringNetworkPlan.pdf>, page C-

**TABLE 3.3-2
AMBIENT AIR QUALITY DATA SUMMARY (2014–2016)**

Pollutant	Monitoring Data by Year			
	Standard ^a	2014	2015	2016
Ozone				
Highest 1-Hour Average (ppm) ^b		0.087	0.086	0.087
Days over State Standard	0.09	0	0	0
Highest 8-Hour Average (ppm) ^b		0.082	0.076	0.79
Days over National Standard	0.075	4	1	3
Days over State Standard	0.070	9	7	5
Particulate Matter (PM₁₀)				
Highest 24-Hour Average (µg/m ³) ^b – State Measurement		57.2	62.8	56.3
Est. Days over State Standard ^c	50	1	3	4
Highest 24-Hour Average (µg/m ³) ^b – National Measurement		49.6	63.5	66.1
Est. Days over National Standard ^c	150	--	0	1
State Annual Average (µg/m ³) ^b	20	24.1	20.8	22.9
Particulate Matter (PM_{2.5})				
Highest 24-Hour Average (µg/m ³) ^b		17.4	17.4	28.9
Est. Days over National Standard ^c	35	0	0	0
State Annual Average (µg/m ³) ^b	12	6.6	6.4	--
Nitrogen Dioxide (NO₂)				
Highest 1-Hour Average (ppb) ^b – State Measurement		50	40	40
Days over State Standard	180	0	0	0
Highest 1-rHour Average (ppb) ^b – National Measurement		41	36	35
Days over National Standard	100	0	0	0
State Annual Average (ppb) ^b	30	9	8	8

^a Generally, state standards and national standards are not to be exceeded more than once per year.

^b ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter.

^c PM₁₀ and PM_{2.5} are not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

-- There was insufficient (or no) data available to determine the value.

Values in **bold** are in excess of at least one applicable standard. NA = Not Available.

SOURCE: CARB 2018b

3.3.2 Regulatory Framework

Federal

Clean Air Act

The federal CAA of 1963 was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, the USEPA is responsible for implementation of certain portions of the Clean Air Act, including mobile source requirements. Other portions of the CAA, such as stationary source requirements, are implemented by state and local agencies.

The CAA establishes federal air quality standards, known as NAAQS and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a SIP for areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA which are most applicable to the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions). Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: O₃, NO₂, CO, SO₂, PM_{10,rr} and lead. The NAAQS were amended in July 1997 to include an 8-hour standard for O₃ and to adopt a NAAQS for PM_{2.5}. **Table 3.3-3** shows the NAAQS currently in effect for each criteria pollutant. The proposed project is located within the South Central Coast Air Basin (SCCAB, or Basin), which is an area designated as non-attainment for O₃ and PM₁₀ because it does not currently meet NAAQS for certain pollutants regulated under the CAA. Table 3.3-3 provides a summary of the attainment status of the Ventura County portion of the Basin with respect to the federal and state standards.

Title II of the federal Clean Air Act pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NO_x emissions have been lowered substantially, and the specification requirements for cleaner-burning gasoline are more stringent.

**TABLE 3.3-3
SOUTH CENTRAL COAST AIR BASIN ATTAINMENT STATUS (VENTURA COUNTY)**

Pollutant	National Standards	California Standards
O ₃ (1-hour standard)	N/A ^a	Non-attainment – Extreme
O ₃ (8-hour standard)	Non-attainment – Serious	Non-attainment
CO	Attainment	Attainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
PM ₁₀	Attainment	Non-attainment
PM _{2.5}	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	N/A	Unclassified
Sulfates	N/A	Attainment
Hydrogen Sulfide	N/A	Unclassified
Vinyl Chloride	N/A	N/A ^b

N/A = not applicable

^a The NAAQS for 1-hour ozone was revoked on June 15, 2005, for all areas except Early Action Compact areas.

^b In 1990 the California Air Resources Board identified vinyl chloride as a toxic air contaminant and determined that it does not have an identifiable threshold. Therefore, the California Air Resources Board does not monitor or make status designations for this pollutant.

SOURCE: USEPA 2018

State

Mulford-Carrell Act

The state began to set California Ambient Air Quality Standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Originally, there were no attainment deadlines for CAAQS; however, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the state to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all. The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The USEPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

California Clean Air Act

The California Clean Air Act (CCAA) was passed into law in 1988. The CCAA provides the basis for air quality planning and regulation independent of federal regulations. A major element of the CCAA is the requirement that local air districts in violation of the CAAQS must prepare

attainment plans that identify air quality problems, causes, trends and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date. The CCAA provides air districts with the authority to manage transportation activities at indirect sources that individually are minor but collectively emit a substantial amount of pollution such as motor vehicles at intersections, malls, and on highways. The South Coast Air Quality Management District also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by CARB.

CARB Airborne Toxic Control Measure/Asbestos

Asbestos is listed as a toxic air contaminant by CARB and as a hazardous air pollutant by the USEPA. Asbestos occurs naturally in surface deposits of several types of rock formations. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Crushing or breaking these rocks, through construction or other means, can release asbestos form fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. In July 2001, CARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than 1 acre in size. These projects require the submittal of a dust mitigation plan and approval by the air district prior to the start of a project. There is no asbestos in surface deposits in the project area (U.S. Geological Survey 2011).

Regional

Ventura County Air Pollution Control District

VCAPCD is the air pollution control agency for Ventura County and, along with CARB, is charged by state law to protect the people and the environment of Ventura County from the harmful effects of air pollution. To that end, VCAPCD works directly with SCAG, county transportation commissions and local governments, and cooperates actively with all state and federal government agencies. VCAPCD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and provides regulatory enforcement through such measures as educational programs or fines, when necessary.

Although VCAPCD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with plans and new development projects within the county. Instead, VCAPCD has prepared the Ventura County Air Quality

Assessment Guidelines (October 2003) as an advisory document that provides lead agencies, consultants, and project applicants with a framework and uniform methods for preparing air quality evaluations for environmental documents under CEQA. The guidelines recommend specific criteria and threshold levels for determining whether a proposed project may have a significant adverse air quality impact. The guidelines also provide mitigation measures that may be useful for mitigating the air quality impacts of proposed projects. It should be noted, however, that these are guidelines only, and their use is not required or mandated by VCAPCD. The final decision of whether to use these guidelines rests with the lead agency responsible for approving the project.

Air Quality Management Plan

The primary objective of the Ventura County Air Quality Management Plan (VCAQMP) is to provide continuous air pollutant emission reductions over time, with the goal of attaining the federal and state standards. VCAPCD's most recent 2016 Ventura County Air Quality Management Plan was adopted February 14, 2017 and establishes a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the Basin, which is in non-attainment for ozone (O₃) and particulate matter (PM₁₀). The VCAQMP also addresses the requirements set forth in the state and federal Clean Air Acts.

Ventura County General Plan

1.2.1. Goals

1. Ensure that any adverse air quality impacts, both long-term and short-term, resulting from *discretionary development* are mitigated the maximum extent feasible.

1.2.2. Policies

1. Discretionary development that is inconsistent with the Air Quality Management Plan (AQMP) shall be prohibited, unless overriding considerations are cited by the decision-making body.
2. The air quality impacts of discretionary development shall be evaluated by use of the Guidelines for the Preparation of Air Quality Impact Analysis.
3. Discretionary development that would have a significant adverse air quality impact shall only be approved if it is conditioned with all reasonable mitigation measures to avoid, minimize or compensate (offset) for the air quality impact. Developers shall be encouraged to employ innovative methods and technologies to minimize air pollution impacts.
4. Where deemed necessary by the APCD, discretionary development shall be conditioned to develop, implement, and maintain over time, Transportation Demand Management (TDM) programs consistent with APCD's trip reduction rule 210. TDM programs shall include a requirement for annual performance reporting to and approval by the APCD.
5. Development subject to APCD permit authority shall comply with all applicable APCD rules and permit requirements, including the use of best available control technology (BACT) as determined by the APCD.

Local

City of San Buenaventura General Plan

Policy 7D. Minimize exposure to air pollution and hazardous substances.

Action 7.20. Require air pollution point sources to be located at safe distances from sensitive sites such as homes and schools.

Action 7.21. Require analysis of individual development projects in accordance with the most current version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines and, when significant impacts are identified, require implementation of air pollutant mitigation measures determined to be feasible at the time of project approval.

Action 7.22. In accordance with Ordinance 93-37, require payment of fees to fund regional transportation demand management (TDM) programs for all projects generating emissions in excess of Ventura County Air Pollution Control District adopted levels.

Action 7.23: Require individual contractors to implement the construction mitigation measures included in the most recent version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines.

Action 7.24: Only approve projects involving sensitive land uses (such as residences, schools, daycare centers, playgrounds, medical facilities) within or adjacent to industrially designated areas if an analysis provided by the proponent demonstrates that the health risk will not be significant.

City of Oxnard 2030 General Plan

Goal ER-14: Improved air quality and minimized adverse effects of air pollution on human health and the economy.

ER-14.1 Incorporate VCAQMP Mitigations: Incorporate construction and operation mitigation measures recommended or required by the current VCAQMP when preparing CEQA reviews, as appropriate.

ER-14.2 Transportation Demand Management Plan (TDM): Employ best traffic management practices such as bus turnouts and traffic signal synchronization in order to reduce traffic-related air emissions impacts; require commercial developers to improve public transit service between residential and employment uses or shopping centers, bike lanes and protected bicycle parking areas, and other project features that would reduce the need for automobile trips related to the development; and require Transportation Management Associations (TMA) for projects that may have adverse air quality impacts related to mobile sources and contributions to off-site TDM funds to reduce residual impacts that cannot be mitigated on a project-specific basis.

ER-14.3 Reducing Carbon Monoxide Exposure at Congested Intersections: Require mitigation measures that consider prohibiting the construction of residences or buildings lacking ventilation systems at congested intersections with the potential for excessive Carbon Monoxide “hot spot” exposure to sensitive receptors.

ER-14.4 Emission Control Devices: Require all construction equipment to be maintained and tuned to meet appropriate EPA, CARB, and VCAPCD emissions requirements and when new emission control devices or operational modifications are found to be effective, such devices or operational modifications are required on construction equipment.

ER-14.5 Reducing Construction Impacts during Smog Season: Require that the construction period be lengthened to minimize the number of vehicles and equipment operating at the same time during smog season (May through October).

ER-14.6 Minimizing Dust and Air Emissions through Permitting Requirements: Continue to require mitigation measures as a condition of obtaining building or use permits to minimize dust and air emissions impacts from construction.

ER-14.7 Mitigation Monitoring: Ensure that projects with identified air quality impacts in their respective EIRs are subject to effective mitigation monitoring as required by AB 3180.

ER-14.8 Regional Cooperation and SB 375: Cooperate with other local, county, regional, and agencies in implementing air quality plans to achieve State and Federal Ambient Air Quality Standards and in preparing, adopting, and implementing the SCAG Sustainable Communities Strategy (SB 375).

ER-14.9 Participate in Regional Partnerships: Participate with cities, surrounding counties, and regional agencies such as VCOG and VCTC and SCAG to address cross-jurisdictional and regional transportation and air quality issues.

ER-14.10 Consultation with Ventura County Air Pollution Control District: Consult with the Ventura County Air Pollution Control District (VCAPCD) during CEQA review for projects that require air quality impact analysis and ensure that the VCAPCD is on the distribution list for all CEQA documents.

ER-14.11 Support Regional Attainment Plans: Support recommendations to reduce air pollutants found in the VCAPCD local attainment plans and use its regulatory authority to mitigate “point” sources of air pollution (e.g., factories, power plants, etc.).

ER-14.12 Use VCAPCD Air Quality Assessment Guidelines: Use the VCAPCD Air Quality Assessment Guidelines and recommended analytical tools for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The City shall continue to cooperate with the VCAPCD in the review of development proposals.

ER-14.13 Co-locate Ancillary Services: Strongly encourage the location of ancillary employee services (including, but not limited to, child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.

City of Port Hueneme

Goal -1: Prevent degradation of regional air quality.

Policy1-1: Cooperate with the Ventura County Air Quality Pollution Control District in their efforts to improvement provisions of the Air Quality Management Plan.

Goal-3: Reduce emissions from stationary sources to the greatest extent feasible.

Policy-3-1: Support measures adopted by the VCAPCD to reduce pollutants from solvents, including architectural coatings, synthetic solvent dry cleaning, etc.

3.3.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to air quality. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact AQ 3.3-1).
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impact AQ 3.3-2).
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) (refer to Impact AQ 3.3-3).
- Expose sensitive receptors to substantial pollutant concentrations (refer to Impact AQ 3.3-4).
- Create objectionable odors affecting a substantial number of people (refer to Impact AQ 3.3-5).

A summary of the findings for each impact is presented in **Table 3.3-4**. The analyses below support these findings.

**TABLE 3.3-4
SUMMARY OF AIR QUALITY IMPACT DETERMINATIONS**

Impacts	3.3-1 Air Quality Plan	3.3-2 Air Quality Standard Violation	3.3-3 Cumulatively Considerable	3.3-4 Sensitive Receptors	3.3-5 Odors
Phase 1					
Advanced Water Purification Facility	LTS	LTSM	LTS	LTS	LTS
Water Conveyance System	LTS	LTSM	LTS	LTS	LTS
Groundwater Wells	LTS	LTSM	LTS	LTS	LTS
Wildlife/Treatment Wetlands	LTS	LTSM	LTS	LTS	LTS
VWRF Treatment Upgrade	LTS	LTSM	LTS	LTS	LTS
Concentrate Discharge Facility	LTS	LTSM	LTS	LTS	LTS
Phase 2					
AWPF Expansion	LTS	LTS	LTS	LTS	LTS
Ocean Desalination	LTS	LTSM	LTS	LTS	LTS

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU – Significant and Unavoidable impact, even after implementation of mitigation

3.3.4 Impacts and Mitigation Measures

Air Quality Plan

Impact AQ 3.3-1: The proposed projects could have a significant impact if they would conflict with or obstruct implementation of the applicable air quality plan.

Phase 1

A significant air quality impact may occur if a project is not consistent with the applicable AQMP adopted by VCAPCD or would in some way represent a substantial hindrance to employing the policies or obtaining the goals of that plan. The primary objective of the AQMP is to provide continuous air pollutant emission reductions over time, with the goal of attaining the federal and state standards. VCAPCD's most recent AQMP was adopted in 2016 and establishes a comprehensive air pollution control program leading to the attainment of state and federal air quality standards in the Basin, which is in non-attainment for ozone (O₃) and particulate matter (PM₁₀). The AQMP also addresses the requirements set forth in the state and federal Clean Air Acts.

As stated in the Ventura County Air Quality Assessment Guidelines, project consistency with the AQMP can be determined by utilizing the following methods:

1. Comparing the actual population growth in the county with the projected growth rates used in the AQMP. The projected growth rate in population is used as an indicator of future emissions from population-related emission categories in the AQMP. These emission estimates are used, in part, to project the date by which Ventura County will

attain the federal ozone standard. Therefore, a demonstration of consistency with the population forecasts used in the most recently adopted AQMP should be used for assessing project consistency with the AQMP.

2. A project with estimated emissions 2 pounds per day or greater of reactive organic compounds (ROC), or 2 pounds per day or greater of nitrogen oxides (NOx) that is inconsistent with the AQMP will have a significant cumulative adverse air quality impact.

The proposed projects would provide water supplies to meet the Urban Water Management Plan (UWMP) water demand projections. The proposed projects would be consistent with the UWMP, which is consistent with SCAG growth projections for the region. The proposed projects do not directly add new residences or population growth. As discussed in greater detail in Chapter 5.0, the proposed projects would accommodate the growth provided for by the City's General Plan, which was the basis of the 2015 UWMP. Thus, they would not indirectly support population increases over those that have been planned for the area, and would not jeopardize attainment of state and federal ambient air quality standards. Therefore, for these reasons, the project would not conflict with or obstruct implementation of the applicable AQMP, and this impact would be less than significant. Cumulative impacts based on ROC or NOx emissions are discussed below in Impact 3.3-3.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion Project

The AWPf Expansion Project would occur within the footprint of the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion would not create additional criterion pollutant emissions above what would be generated for the construction of Phase 1, and operation of the Phase 2 components would be similar in nature to the operation of Phase 1. Therefore, for these reasons, the project would not conflict with or obstruct implementation of the applicable AQMP and this impact would be less than significant. Impacts would be less than significant.

Ocean Desalination

The desalination treatment components would occur within the footprint of the AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPf facility. Co-location of these two facilities increases efficiencies in operations and maintenance. The construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements for the AWPf facility.

The objective of the project is to provide water supplies to meet the UWMP water demand projections. The project would be consistent with the UWMP, which is consistent with SCAG growth projections for the region. As such, the project would not indirectly support population increases over those that have been planned for the area, and would not jeopardize attainment of state and federal ambient air quality standards. Therefore, for these reasons, the project would not conflict with or obstruct implementation of the applicable AQMP and this impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Air Quality Standard Violation

Impact AQ 3.3-2: The proposed projects could have a significant impact if they would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Phase 1

Construction-Related Impacts

Advanced Water Purification Facility

Construction of the AWPf is estimated to occur from June 2020 to December 2023. The proposed AWPf sites are currently vacant and would not require any demolition activities. Construction of the project would consist of site clearing and grading, excavation, building construction, equipment installation, and site completion activities. Construction equipment could include the following: excavators, graders, backhoe, bulldozer, loader, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck.

Project construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants. Construction activities involving grading and site preparation would primarily generate PM_{2.5} and PM₁₀ emissions. Mobile sources (such as diesel fueled equipment on-site and traveling to and from the project site) would primarily generate NO_x emissions. Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites and by trucks hauling materials and equipment to and from the AWPf site. In addition, approximately 53,560 cubic yards of soil would need to be hauled off-site. Assuming 14 cubic yards (CY) per truck load on average, approximately 3,830 truck trips would be needed to remove the excavated material. Approximately 35,700 CY of soil would be imported to the site, requiring approximately 2,550 truck trips. It is anticipated that the AWPf would require approximately 14,110 CY of concrete. Assuming 10 CY per concrete truck, approximately 1,410 trucks trips would be required for concrete delivery.

While construction of the proposed AWPf would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, traffic levels would not substantially increase and would be temporary in nature, as traffic levels would return to

pre-construction conditions once construction is complete, with the exception of the 23 daily employee commuter trips generated by the proposed project. The application of architectural coatings would primarily result in the release of ROC emissions. The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD.

Table 3.3-5 identifies projected emissions resulting from grading and construction activities for the proposed AWPf site and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

Implementation of **Mitigation Measures AQ-1** and **AQ-2** would reduce construction emissions of criteria pollutants. Mitigation Measure AQ-1 requires that all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, be treated to prevent fugitive dust and closely monitored and that disturbed areas be minimized as much as possible. Mitigation Measure AQ-2 requires that idling time be minimized and the engines of the construction equipment properly maintained.

TABLE 3.3-5
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE ADVANCED WATER
PURIFICATION FACILITY – WITHOUT MITIGATION

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2020	5	58	34	0	9	6
2021	4	53	33	0	6	4
2022	5	41	39	0	8	3
2023	16	36	42	0	9	3

Water Conveyance System

Construction of the water conveyance system is estimated to occur from January 2020 to March 2023. Construction would involve trenching, which would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. Approximately 1,597 truck trips would be required to haul off excavated soil not needed for backfill, and to import clean backfill material. The construction equipment needed for pipeline installations generally includes backhoes, excavators, dump trucks, shoring equipment, a steam roller, and a plate compactor. Typically, 10 to 15 workers would be required for pipeline installations. Suitable excavated soils would be reused as backfill and the remainder disposed of off-site. Complete road closures are not anticipated for installation of the conveyance pipeline. The amount of emissions generated on a daily basis would vary depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared using the CalEEMod computer model recommended by the VCAPCD.

Table 3.3-6 identifies projected emissions resulting from grading and construction activities for the proposed project and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

**TABLE 3.3-6
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE WATER
CONVEYANCE SYSTEM – WITHOUT MITIGATION**

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2020	11	101	75	0	6	5
2021	10	94	75	0	5	4
2022	9	78	72	0	4	4
2023	8	67	70	0	4	3

Groundwater Wells

Depending on the chosen well site, construction of the proposed wells would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, well drilling, installation of well casing, gravel packing, and finishing with a cement seal. Construction of the groundwater aquifer storage and recovery (ASR) wells is estimated to occur from January 2021 to December 2023. Construction equipment would likely include an auger rig, drill rig, small crane, welder, pipe trailer, forklift, generator, circulation pits, Baker tanks, and backhoe. The nearest sensitive receptors would be located approximately 25 feet from the well construction sites. The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD.

Table 3.3-7 identifies projected emissions resulting from grading and construction activities for the proposed project and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

**TABLE 3.3-7
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE GROUNDWATER AQUIFER
AND STORAGE WELLS – WITHOUT MITIGATION**

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2021	2	13	13	0	1	1
2022	2	11	13	0	1	0
2023	2	11	12	0	1	0

Wildlife/Treatment Wetlands

Wildlife/treatment wetlands may be constructed to provide additional treatment to the remaining tertiary effluent prior to its discharge to the Santa Clara River Estuary (SCRE). Reconfiguration and repurposing of some or all of the existing wildlife/treatment ponds may also occur, instead of or along with the construction of new wetlands. The nearest sensitive receptors would be located approximately 300 feet from the Natural Treatment Wetlands construction.

Construction and/or reconfiguration of the wildlife/treatment wetlands is estimated to occur from January 2021 to February 2025. Construction would consist of site clearing, grading, excavation, building access roads, constructing basins, berm construction, fine grading, hydric soils placement and wetlands plantings. Construction equipment could include the following: bulldozer, wheeled scrapers, backhoe, excavator, loader, dump trucks, crew trucks, personal vehicles, compactor, delivery trucks, and water trucks.

The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD.

Table 3.3-8 identifies projected emissions resulting from grading and construction activities for the proposed project and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

**TABLE 3.3-8
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE NATURAL
TREATMENT WETLANDS – WITHOUT MITIGATION**

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2021	6	59	33	0	8	5
2022	4	42	30	0	5	3
2023	3	37	29	0	5	3
2024	4	39	36	0	5	3
2025	3	34	34	0	11	4

VWRF Treatment Upgrade

The upgrade to the VWRF to improve water quality of the remaining VWRF discharges from the freshwater natural treatment wetlands to the SCRE. The VWRF Treatment Upgrades would include the replacement of existing blowers and the construction of a new anoxic tank. The new anoxic tank would be located in a disturbed unpaved area of the VWRF that is currently compacted dirt. Approximately 1,000 cubic yards of construction debris would be hauled off-site. This debris would primarily be composed of dirt. Construction would include site grading and

excavation to a depth of 6 feet. A total of approximately 1,350 truck trips would be required to haul off and import materials and for worker-related travel. This component would take approximately 8 months to construct, from approximately June 2021 to April 2022. A total of approximately 10 workers would be required daily during construction activities.

The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD.

Table 3.3-9 identifies projected emissions resulting from grading and construction activities for the proposed project and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

**TABLE 3.3-9
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE VWRF
TREATMENT UPGRADES – WITHOUT MITIGATION**

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2021	3	30	26	0	4	2
2022	2	16	17	0	1	1

Concentrate Discharge Facility

New Outfall

Construction of a new ocean outfall includes a pipeline from the AWPf to the ocean where the concentrate would be discharged through an outfall. The pipeline would be constructed using directional drilling techniques to avoid impacts to sensitive biological areas. The outfall into the ocean would be installed pursuant to Ocean Plan requirements to maximize dilution rates.

Marine vessels would be used to transport workers and materials for the offshore construction activities. Annual operating hours for the use of these marine vessels is assumed to be 8 hours per day for 6 months (100 days in year 1 and 100 days in year 2). The basic equation for estimating emissions from a commercial harbor craft engine is:

$$E = EF \times F \times (1 + D \times (A/UL)) \times HP \times LF \times Hr$$

Where:

EF = Emission factor

F = Correction Factor

D = Deterioration Factor

A = Age of Engine when emissions are estimated

UL = Useful Life

HP = Horsepower

LF = Load Factor

HR = Annual operating hours of the engine (CARB 2012)

The values and assumptions used to calculate marine emissions, as well as marine emissions estimates, are provided in **Table 3.3-10**.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

Construction of the discharge pipeline to the Calleguas SMP would involve trenching using a conventional cut and cover technique or directional drilling techniques where necessary to avoid impacts to heavy traveled roadways or sensitive biological areas. Trenchless construction methods would be employed to install pipelines under the Santa Clara River, sensitive drainages, and large intersections. Trenchless installation could include either directional drilling or jack and bore methods. The nearest noise sensitive receptors would be located approximately 25 feet from construction of the pipeline since the pipeline would be constructed in the public right-of-way to the maximum extent practicable.

Construction of the concentrate discharge facility is estimated to occur from January 2021 to February 2023. Complete road closures are not anticipated for installation of the conveyance pipeline. The amount of emissions generated on a daily basis would vary, depending on the amount and types of construction activities occurring at the same time. The estimate of regional daily construction emissions has been prepared utilizing the CalEEMod computer model recommended by the VCAPCD.

TABLE 3.3-10
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE CONCENTRATE
DISCHARGE FACILITY – WITHOUT MITIGATION

	ROC	NO _x	PM	CO	
EF	0.68	2.57	0.15	3.73	Emissions Factor
F	1	0.948	0.822	1	Correction Factor
D	0.44	0.21	0.67	1	Deterioration Factor
A	15	15	15	15	Age of engine when emissions are estimated
UL	30	30	30	30	Useful Life
HP	1,340	1,340	1,340	1,340	Horsepower
LF	0.43	0.43	0.43	0.43	Load Factor
Hr	800	800	800	800	Annual operating hours of the engine
E =	764,825	2,481,973	151,753	5,158,142	grams/year
	1,686	5,472	335	11,372	lbs/year
	4.62	14.99	0.92	31.16	lbs/day
	0.84	2.74	0.17	5.69	tons/year

Source: California Air Resources Board, Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California to the Technical Support Document for Rulemaking to Consider the Adoption of Proposed Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline. Environmental Protection Agency, Analysis of Commercial Marine Vessel Emissions and Fuel Consumption Data, February 2000.

Table 3.3-11 identifies projected emissions resulting from grading and construction activities for the proposed project and shows the estimated maximum daily construction emissions over the course of project construction prior to the application of mitigation.

**TABLE 3.3-11
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE CONCENTRATE
DISCHARGE FACILITY – WITHOUT MITIGATION**

Maximum Daily Pollutant Emissions (lbs/day)						
Year	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2021	8	77	59	0	4	4
2022	7	63	57	0	4	3
2023	6	54	55	0	4	3

Total Construction Impacts for Phase 1

As discussed above, construction of the new facilities would involve the use of a variety of heavy construction equipment within the sites identified for construction of each Ventura Water Supply Projects component. The majority of the equipment and vehicles would be associated with the intensive earthwork, and the structural and paving phases of construction. Large construction equipment, including backhoes, bulldozers, compactors, cranes, excavators, haul trucks, pavers, and rollers, would be used during the construction phase of the proposed projects.

Table 3.3-12 identifies projected emissions resulting from grading and construction activities for all construction activities for every component of Phase 1. The VCAPCD has not adopted quantitative thresholds of significance for construction emissions, since such emissions are temporary. Rather, the VCAPCD recommends implementation of emission and dust control requirements for all construction projects with ROC or NO_x emissions over 25 pounds per day. As shown below, construction emissions from the proposed project would exceed 25 pounds per day for NO_x. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction emissions of criteria pollutants. Mitigation Measure AQ-1 requires that all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, be treated to prevent fugitive dust and closely monitored and that disturbed areas be minimized as much as possible. Mitigation Measure AQ-2 requires that idling time be minimized and the engines of the construction equipment properly maintained.

**TABLE 3.3-12
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR ALL PHASE 1 COMPONENTS – WITHOUT MITIGATION**

Maximum Daily Pollutant Emissions (lbs/day)						
Year	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2020	16	159	109	0	15	11
2021	33	326	239	0	28	20

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2022	29	251	227	0	23	14
2023	35	204	208	0	23	12
2024	4	39	36	0	5	3
2025	3	34	34	0	11	4

Mitigation Measures:

AQ-1: The following control measures provided in the VCAPCD Ventura County Air Quality Assessment Guidelines to minimize the generation of fugitive dust (PM₁₀ and PM_{2.5}), ROC, and NO_x during construction activities shall be implemented during construction:

- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
- Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities:
 - (a) All trucks shall be required to cover their loads, as required by California Vehicle Code Section 23114.
 - (b) All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.
- Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.
- Signs limiting traffic to 15 miles per hour or less shall be posted on-site.
- During periods of winds 25 miles per hour or greater (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties) or at the direction of the City, all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations

from being a nuisance or hazard, either off-site or on-site. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive.

- Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.
- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.

AQ-2: During construction contractors shall comply with the following measures, as feasible, to reduce NO_x and ROC from heavy equipment as recommended by the VCAPCD in its Ventura County Air Quality Assessment Guidelines:

- Minimize equipment idling time.
- Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications.
- Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.
- Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion Project

The AWPf Expansion Project would occur within the footprint of the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion would not create additional construction impacts. Impacts would be less than significant.

Mitigation Measures: None Required.

Significance Determination: Less than Significant.

Ocean Desalination

The desalination treatment components would be located within the footprint of the AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the water conveyance system as construction for both will require the use of a drill rig system. It is anticipated that subsurface intakes would be constructed, consisting of slant wells or infiltration galleries. A slant well would be constructed near the beach at a location with access to roadways. The slant well would require a drilling rig to operate for a period of months to install the well screening. A pipeline connecting the new well with the AWPf would be constructed to convey seawater to the treatment facility. Co-location of these two facilities increases efficiencies in operations and maintenance. Planning, permitting, design, and construction of the ocean intake and concentrate discharge system would

require approximately 10 to 15 years, and may occur in parallel with the ocean water desalination facility. Installation of the intake screens (i.e., if a subsurface intake is determined not feasible) and discharge diffusers requires that barges, support vessels, equipment and crew be mobilized offshore of the VWRf. Construction operations include anchoring, dredging, erosion control measures, and pile driving. Both the intake and the outfall would be constructed in accordance with Ocean Plan requirements.

The desalination treatment components would include construction at the AWPf for the new treatment equipment and new ocean intake, similar to the outfall. **Table 3.3-13** provides projected emissions resulting from excavating/trenching and drilling. VCAPCD has not adopted quantitative thresholds of significance for construction emissions since such emissions are temporary. Rather, VCAPCD recommends implementation of emission and dust control requirements for all construction projects with ROC or NO_x emissions over 25 pounds per day. As shown below, construction emissions from the proposed projects would exceed 25 pounds per day for NO_x. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce construction emissions of criteria pollutants.

TABLE 3.3-13
SHORT-TERM REGIONAL CONSTRUCTION EMISSIONS FOR THE OCEAN DESALINATION – WITHOUT MITIGATION

Year	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
2024	4	34	35	0	2	1
2025	4	32	35	0	1	1

Mitigation Measures: Implement Mitigation Measures AQ-1 and AQ-2.

Significance Determination: Less than Significant with Mitigation.

Phase 1

Operational Impacts

The operation of Phase 1 of the proposed projects would generate approximately 23 vehicle trips per day from employee commuter travel and vendor and chemical truck deliveries. Furthermore, the operation of all Phase 1 components will use approximately 21,284,346 kilowatts-hours (KW/hr) of electricity per year and 14.428 KBTU (thousand British thermal units) of natural gas per year. The operation of all the Phase 1 components and facilities will require approximately 256,000 gallons of water to be used and discharged to the sewer annually. Lastly, the operation of all Phase 1 components and facilities will result in approximately 12 tons of solid waste per year disposed in local landfills.

The Phase 1 operational air quality emissions associated with area sources, energy demand, and mobile sources (motor vehicles) have been calculated with CalEEMod. The results are presented

in **Table 3.3-14**. According to VCAPCD, a project's operational emissions are considered to cause a significant impact to air quality if ROC and NO_x emissions exceed the 25 pounds per day threshold for the county areas not located in the Ojai Planning Area. As shown in Table 3.3-10, Phase 1 of the proposed projects would not exceed the thresholds of significance set by the VCAPCD for ROC or NO_x. Therefore, impacts associated with operational air quality emissions would be considered less than significant.

TABLE 3.3-14
LONG-TERM REGIONAL OPERATIONAL EMISSIONS FOR PHASE 1 – WITHOUT MITIGATION

Source	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Area	2.30	0.00	0.01	0	0.00	0.00
Energy	0.05	0.45	0.38	0	0.03	0.03
Mobile	0.02	0.02	0.25	0	0.13	0.03
Total	2.37	0.47	0.65	0	0.16	0.07
VCAPCD Significance Threshold	25	25	NA	NA	NA	NA
Exceed VCAPCD Significance Threshold?	No	No	NA	NA	NA	NA

Note:

NA = VCAPCD does not have an established significance threshold for CO, SO₂, PM₁₀, and PM_{2.5}.

Advanced Water Purification Facility

The proposed AWPf would operate 24 hours a day, 365 days a year, and would be staffed around the clock. Routine deliveries of chemicals to the site and hauling of residual materials from the site would be conducted during normal day-shift working hours throughout the traditional work week. It is anticipated that the AWPf would require approximately 20 new full-time employees to operate the facility. While these operational activities would generate additional truck trips on the surrounding local and regional circulation system, the number of truck trips during operation would be minimal. Since operation of the proposed AWPf would not substantially generate new trips, the effects on the surrounding circulation system would be negligible and would not cause existing roadway levels of service to decrease. Therefore, mobile air quality impacts generated during operation of the proposed AWPf would be less than significant.

Water Conveyance System

The majority of the pipeline would be located underground with valves and minor piping being located above ground for maintenance purposes. Pipeline and pump station inspection, maintenance, and repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and maintenance of valves. It is anticipated that maintenance and inspection activities would be required throughout the year. The traffic generated from these maintenance and inspection activities would be minimal and would not cause existing roadway levels of

service to decrease. Therefore, mobile air quality impacts generated during operation of the proposed water conveyance system would be less than significant.

Groundwater Wells

The groundwater well sites would be housed within block building and the wells would be accessed by maintenance personnel approximately two times per week. The maintenance activities would typically include equipment inspections and minor repairs. It is anticipated that required maintenance and inspection activities would not result in any substantial increases in traffic patterns throughout Ventura County. As such, the maintenance and inspection activities would not substantially increase mobile emissions of criteria pollutants within the Basin. Therefore, mobile air quality impacts generated during operation of the proposed water conveyance system would be less than significant.

Treatment Wetlands

The wetland would require regular monitoring and maintenance for the first 2 to 3 years as the wetland vegetation becomes established. It is anticipated that 3 to 5 new employees would be required to monitor and maintain the wetlands. While these operational activities would generate worker commuter trips on the surrounding local and regional circulation system, the commuter trips during operation would be minimal. Since operation of the proposed freshwater treatment wetlands would not substantially generate new trips, the effects on the surrounding circulation system would be negligible and would not cause existing roadway levels of service to decrease. Therefore, mobile air quality impacts generated during operation of the proposed treatment wetlands would be less than significant.

VWRF Treatment Upgrade

The upgrade to the VWRF to improve water quality of the remaining VWRF discharges from the freshwater natural treatment wetlands to the SCRE. The VWRF Treatment Upgrades would include the replacement of existing blowers and the construction of a new anoxic tank. It is anticipated that the operation of these new blowers and tank would not substantially increase air quality emissions, required maintenance and inspection activities required to maintain the equipment would not result in any substantial increases in traffic throughout Ventura County.

Concentrate Discharge Facility

Pipeline inspection, maintenance, and repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and maintenance of valves and corrosion control. It is anticipated that required maintenance and inspection activities would not result in any substantial increases in traffic patterns throughout Ventura County. Thus, the maintenance and inspection activities would not substantially increase mobile emissions of criteria pollutants within the Basin. Therefore, mobile air quality impacts generated during operation of the proposed water conveyance system would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

The operation of all Phase 2 components under the AWPf expansion option would use approximately 4,600,000 KW/hr of electricity per year and under the ocean desalination option would use 7,600,000 KW/hr. The operation of all the Phase 1 and 2 components and facilities would use 14.428 KBTU of natural gas per year under both Phase 2 options and require approximately 322,689 gallons of water to be used and dispensed to the sewer annually. Lastly, the operation of all components would result in approximately 12 tons of solid waste per year discarded to local landfills.

The project's operational air quality emissions associated with area sources, energy demand, and mobile sources (motor vehicles) have been calculated with CalEEMod. These results are presented in **Table 3.3-15**. According to the VCAPCD, a project's operational emissions are considered to cause a significant impact to air quality if ROC and NO_x emissions exceed the 25 pounds per day threshold for the county areas not located in the Ojai Planning Area. As shown in Table 3.3-11, the projects would not exceed the thresholds of significance set by the VCAPCD for ROC or NO_x. Therefore, impacts associated with operational air quality emissions would be considered less than significant.

TABLE 3.3-15
LONG-TERM REGIONAL OPERATIONAL EMISSIONS FOR PHASE 2 – WITHOUT MITIGATION

Source	Maximum Daily Pollutant Emissions (lbs/day)					
	ROC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Area	2.30	0.00	0.01	0	0.00	0.00
Energy	0.05	0.45	0.38	0	0.03	0.03
Mobile	0.03	0.10	0.35	0	0.13	0.03
Total	2.38	0.56	0.75	0	0.16	0.07
VCAPCD Significance Threshold	25	25	NA	NA	NA	NA
Exceed VCAPCD Significance Threshold?	No	No	NA	NA	NA	NA

Note:

NA = The VCAPCD does not have an established significance threshold for CO, SO₂, PM₁₀, and PM_{2.5}.

AWPF Expansion

The AWPf expansion would occur within the same footprint as the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. It is anticipated that the operation of the AWPf would result in mobile emissions similar to those generated by the Phase 1 operation components; therefore, the operation of the AWPf expansion would result in less than significant mobile emission air quality impacts.

Ocean Desalination

The operation of the ocean desalination project would be similar to the AWPf. The desalination equipment would be located within the same footprint as the AWPf and would require approximately two new employees who specialize in desalination plant operations and maintenance beyond what is already needed for the AWPf. Typical maintenance would entail the inspection and/or maintenance of valves and corrosion inspections. Similar to the operation of the Phase 1 components, the operation of the ocean desalination is not anticipated to greatly change the traffic patterns within the region; therefore, the mobile emissions generated from the operation of the ocean desalination would result in a less than significant impact.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Cumulatively Considerable

Impact AQ 3.3-3: The proposed projects could have a significant impact if they would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Phase 1

A significant impact may occur if a project would add a considerable cumulative contribution to federal or state non-attainment pollutant. As stated in the Ventura County Air Quality Assessment Guidelines, a project with emissions of 2 pounds per day or greater of ROC, or 2 pounds per day or greater of NO_x that is found to be inconsistent with the AQMP will have a significant cumulative adverse air quality impact. A project with emissions below 2 pounds per day of ROC, and below 2 pounds per day of NO_x, is not required to assess consistency with the AQMP. Inconsistent projects are usually those that cause the existing population to exceed the population forecasts contained in the most recently adopted AQMP.

While the project would exceed 2 pounds per day or greater of NO_x, the project would be consistent with the AQMP as discussed previously. As discussed previously, the project's air quality emissions would be below the VCAPCD significance thresholds (25 pounds per day for ROC and NO_x) and mitigation measures have been identified where appropriate consistent with VCAPCD recommendations. Thus, cumulative air quality impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

As previously stated, the operation of the Phase 2 components will be similar in nature to the operation of the Phase 1 AWPf components. No additional air quality impacts are anticipated to occur from the operation of the Phase 2 components—AWPF expansion and ocean desalination. As previously discussed, the operation of the AWPf facility is expected to result in a less than significant impact to regional air quality. Therefore, operation of the Phase 2 components is expected to result in a less than significant air quality impact.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Sensitive Receptors

Impact AQ 3.3-4: The proposed projects could have a significant impact if they would expose sensitive receptors to substantial pollutant concentrations.

VenturaWaterPure Projects

A significant impact may occur if a project were to generate pollutant concentrations to a degree that would significantly affect sensitive receptors.

CO Hot Spot Analysis

As stated in the Ventura County Air Quality Assessment Guidelines, a CO hotspot screening analysis using the screening procedure in Caltrans' CO Protocol should be conducted for any project with indirect emissions greater than the applicable ozone project significance thresholds discussed previously that may significantly impact roadway intersections that are currently operating at, or are expected to operate at, Levels of Service E or F. As discussed above, the project would not exceed the thresholds of significance set by the VCAPCD for ROC or NO_x. In addition, the operation of the proposed project would generate approximately 23 vehicle trips per day from employee commuter travel and vendor and chemical truck deliveries. Since operation of the proposed AWPf would not substantially generate new trips, the effects on the surrounding circulation system would be negligible and would not cause existing roadway levels of service to decrease. Therefore, according to the VCAPCD guidelines, none of the intersections qualified for a CO hotspot screening analysis and these impacts would be less than significant.

Toxic Air Contaminants

Construction

Intermittent construction activities associated with the proposed projects would result in short-term emissions of diesel particulate matter, which the state has identified as a toxic air contaminant (TAC). During construction, the exhaust of off-road heavy-duty diesel equipment would emit diesel particulate matter during general construction activities, such as site grading, excavation, trenching, materials transport and handling, and building construction.

Diesel particulate matter poses a carcinogenic health risk that is generally measured using an exposure period of 30 years for sensitive residential receptors, according to the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA Guidance), which was updated in 2015 with new exposure parameters including age sensitivity factors (OEHHA 2015). Sensitive receptors are located approximately 25 feet from the water conveyance system pipelines and the groundwater storage and recovery well construction sites, and single-family residences are located approximately 300 feet from the natural treatment wetlands construction. Pierpont Elementary School would also potentially be located within 100 feet of the new ocean outfall. However, localized diesel particulate matter emissions (strongly correlated with PM_{2.5} emissions) are less than significant and presented in Tables 3.3-12 and 3.3-13. Although the localized analysis does not directly measure health risk impacts, it does provide data that can be used to evaluate the potential to cause health risk impacts. The very low level of PM_{2.5} emissions coupled with the short-term duration of construction activity resulted in an overall low level of diesel particulate matter concentrations in the project area. Furthermore, compliance with the CARB airborne toxic control measures (ATCM) anti-idling measure, which limits idling to no more than 5 minutes at any location for diesel-fueled commercial vehicles, would further minimize diesel particulate matter emissions in the project area. Sensitive receptors would be exposed to emissions below thresholds, and construction TAC impacts are less than significant.

Operation

The proposed projects would not include the operation of any land uses routinely involving the use, storage, or processing of carcinogenic or non-carcinogenic toxic air contaminants. The proposed project will include new on-site stationary equipment, specifically a diesel emergency generator. The stationary emission source is subject to air permitting by VCAPCD, and TACs impact will be minimized in accordance with VCAPCD Rule 26 (New Source Review). The proposed projects would be required to obtain air permits and operate within the VCAPCD's guidelines and permit conditions. With regard to on-site sources of emissions, the projects would not generate emissions resulting from trucks queuing and idling at the site. Therefore, the proposed projects would not expose surrounding sensitive receptors to TAC emissions. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Odors

Impact AQ 3.3-5: The proposed projects could have a significant impact if they would create objectionable odors affecting a substantial number of people.

Phase 1

A project-related significant adverse effect could occur if construction or operation of the proposed project would result in generation of odors that would be perceptible in adjacent sensitive areas. The project does not include any of the land uses identified by the VCAPCD as being associated with odors (such as wastewater treatment facilities, sanitary landfills, transfer stations, composting facilities, asphalt batch plants, painting and coating operations, fiberglass operations, food processing facilities, feed lots/dairies, petroleum facilities, chemical manufacturing operations and facilities, and rendering plants). Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents as well as asphalt paving. However, the project would be consistent with all applicable rules and regulations governing construction equipment and processes. Thus, the project would not create objectionable odors affecting a substantial number of people during construction or long-term operation. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion Project

The AWPf Expansion Project would occur within the footprint of the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion would not create additional odors generated from construction activities such as the use of architectural coatings and solvents as well as asphalt paving. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

The desalination treatment components would be located within the footprint of the AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPf facility. Construction of the intake include anchoring, dredging, erosion control measures, and pile driving. Construction activities such as the use of architectural coatings and solvents as well as asphalt paving are not anticipated for the desalination treatment components. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

References

- California Air Resources Board (CARB) 2005. Air Quality and Land Use Handbook, April 2005 Ambient Air Quality Standards (<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>)
- California Air Resources Board, Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California to the Technical Support Document for Rulemaking to Consider the Adoption of Proposed Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline.
- California Air Pollution Control Officers Association 2016. California Emission Estimator Model (CalEEMod) Version 2016.3.2. (www.capcoa.org)
- California State Area Designation Maps (<http://www.arb.ca.gov/desig/adm/adm.htm>)
- California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk, February 2015
- California Office of Environmental Health Hazard Assessment (OEHHA) 2015. Hot Spots Unit Risk and Cancer Potency Values(http://www.oehha.ca.gov/air/hot_spots/2009/AppendixA.pdf)
- U.S. Environmental Protection Agency 2000. Analysis of Commercial Marine Vessel Emissions and Fuel Consumption Data, February 2000.
- City of Ventura General Plan
- VCAPCD 2003. Ventura County Air Quality Assessment Guidelines.
- Ventura County Air Pollution Control District (VCAPCD) 2018. Ambient Air Monitoring Network Plan.

3.4 Biological Resources

This section addresses the potential impacts of the proposed projects on biological resources. The section includes a description of the environmental setting to establish baseline conditions for biological resources; a summary of the regulations related to biological resources; and an evaluation of the proposed projects' potential effects on biological resources.

3.4.1 Biological Data Sources

Field Surveys

Environmental Science Associates (ESA) conducted a biological survey for the potential Advanced Water Purification Facility (AWPF) sites, water conveyance system, groundwater wells, and the natural treatment wetlands (including both the potential new treatment wetlands, and the reconfigured wildlife/treatment ponds), on February 6, 2018. The survey consisted of mapping vegetation communities and conducting a general assessment on foot and by vehicle, to determine if the sites and immediately adjacent areas have the potential to support any special-status plant or wildlife species, sensitive natural communities as defined by the California Department of Fish and Wildlife (CDFW), or contain any jurisdictional features. All sites were surveyed with a 300-foot buffer to assess the adjacent areas where special-status species could potentially occur (ESA 2018).

A separate biological survey of the four existing wildlife/treatment ponds located at the Ventura Water Reclamation Facility (VWRF) was conducted by ESA on March 8, 2018. During this assessment, the treatment ponds, including adjacent areas, were surveyed on foot to determine if the ponds and surrounding vegetation have potential to support special-status plant or wildlife species or any CDFW-designated sensitive natural communities (ESA 2018).

Literature Review

The project survey areas were evaluated for their potential to support special-status species that are known to occur or are expected to occur in the region. Vegetation types and wildlife habitats were characterized on the basis of accepted classification systems. The U.S. Department of Agriculture Soil Survey Geographic Database contains information about soil (on the project site) as collected by the National Cooperative Soil Survey over the course of a century.

The Santa Clara River Estuary (SCRE) was the subject of extensive study by Stillwater Sciences resulting in the preparation of Phase 1, Phase 2, and Phase 3 studies. The Phase 3 Study was completed in February 2018 (Stillwater 2018) and reviewed by the Scientific Review Panel (SRP) and Technical Review Team (TRT). Information for this EIR on the existing condition of the SCRE and impact of the proposed projects is derived from the Phase 3 Study, SRP Report, and TRT review.

3.4.2 Regional Environmental Setting

The proposed projects would be located in Ventura County, which is located along the Pacific Ocean with the County of Santa Barbara to the north, and the County of Los Angeles to the east and south. The county contains varied topography, exposed geological formations, vegetation, built communities, beaches and waterways. Natural resources within the county include lakes, beaches, dunes, rivers, creeks, bluffs, mountains, ridgelines, hillsides, native habitat (e.g., wetlands, oak woodlands, and coastal sage chaparral habitat), and rock outcroppings.

The proposed projects are largely located within the city of Ventura, and may extend into the cities of Oxnard and Port Hueneme. The project components are shown in Figure 2-2 and described in the in Section 2, Project Description. The setting and analysis of biological resources is based on a review of available literature, biological resource database queries, and field surveys within the project area, which includes the project footprint and adjacent terrestrial and aquatic habitats (Figure 3.4-1).

3.4.3 Project Area Environmental Setting

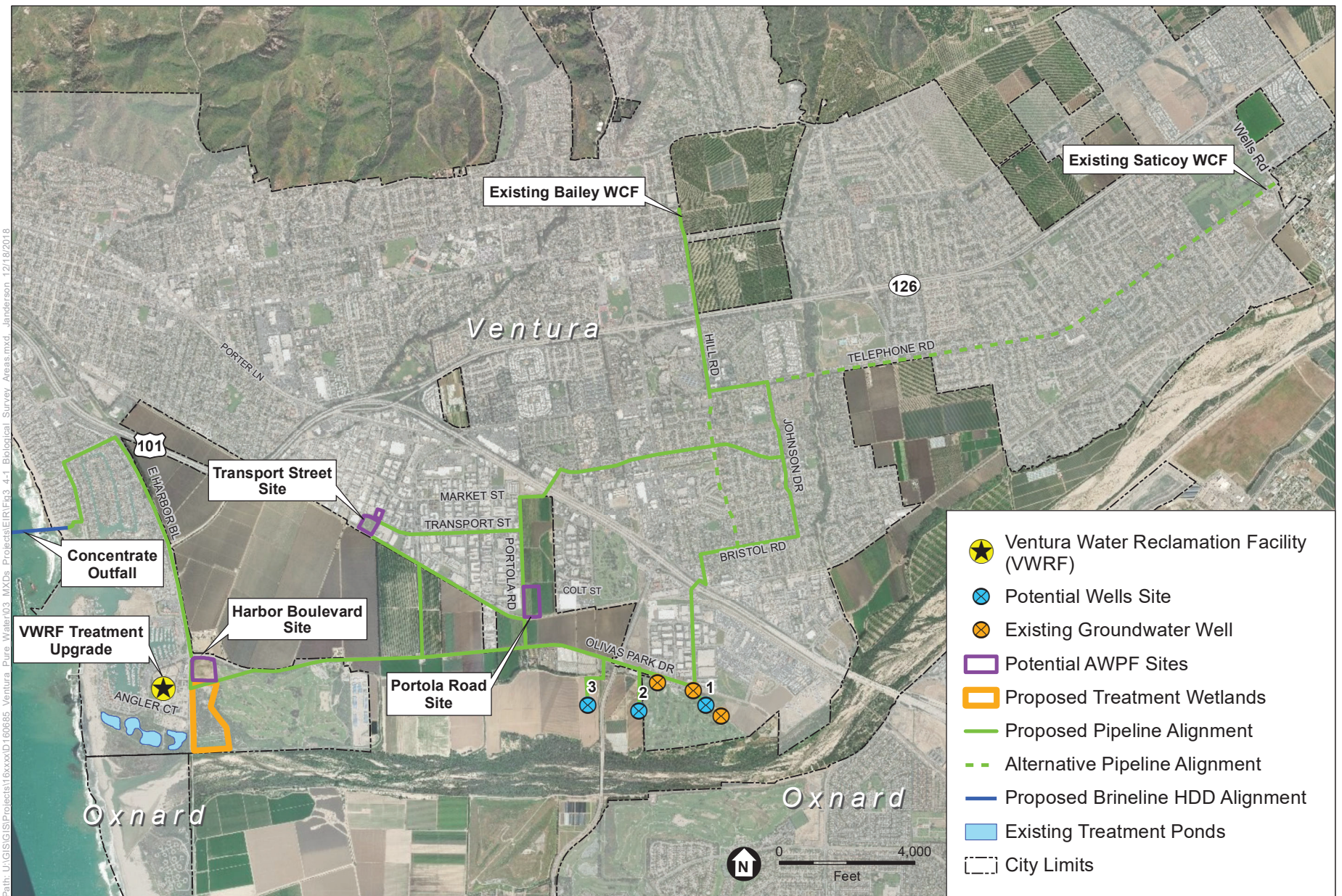
Vegetation Communities

All plant communities and land uses were characterized and delineated during the field survey, and then digitized on aerial maps using Geographic Information System software (ArcGIS). The nomenclature used to describe the vegetation is based on *A Manual of California Vegetation*, Second Edition (Sawyer 2009), or characterized based on species dominance where not recognized in the manual. A vegetation community is a recognizable and complex assemblage of plant, shrub, or tree species which interact with each other as well as with the elements of their environment and is distinct from adjacent assemblages. The vegetation communities located within the upland survey areas are depicted in **Figures 3.4-2 and 3.4-3**.

Wildlife/Treatment Wetlands

Potential New Treatment Wetlands

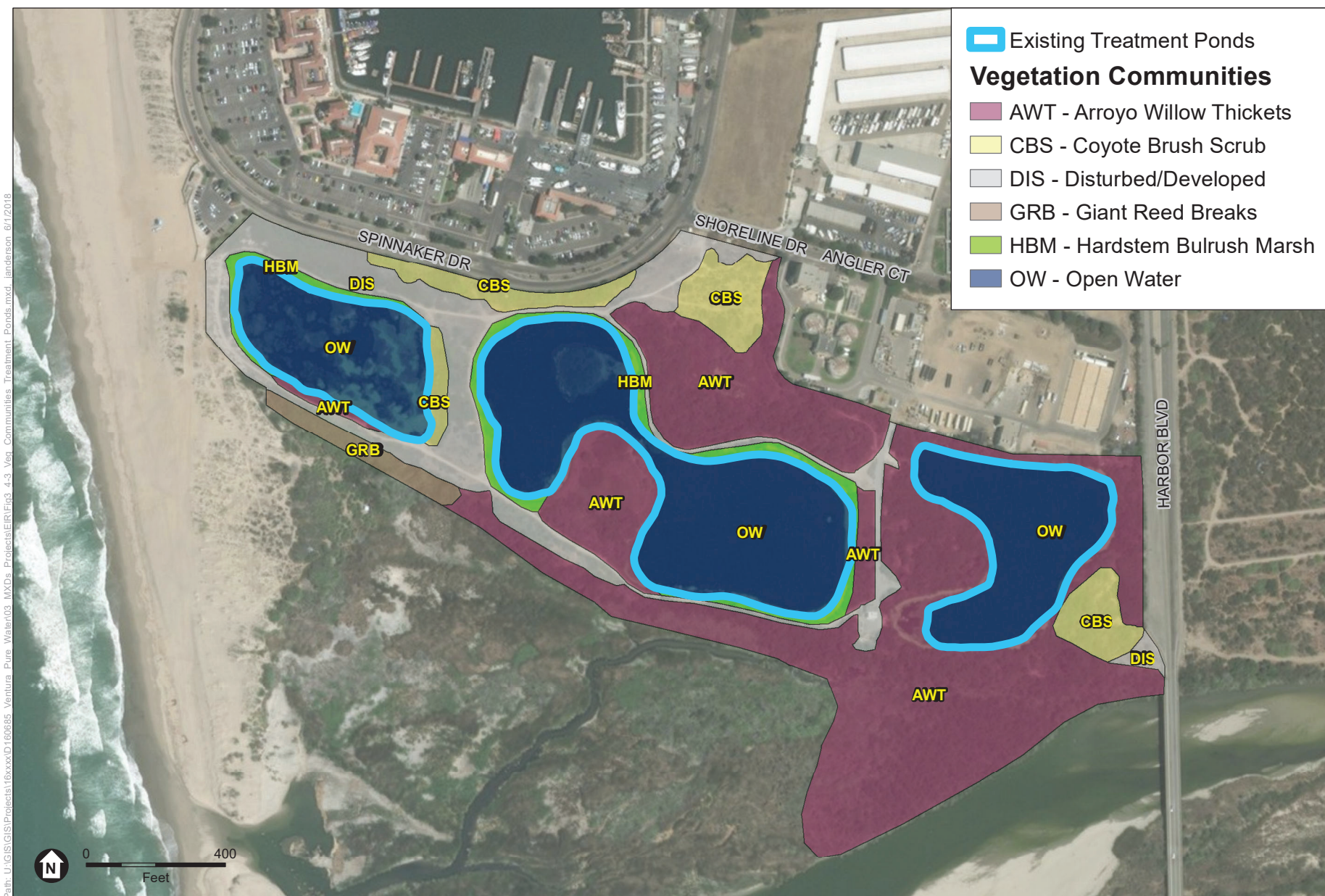
The proposed site for new natural treatment wetlands is approximately 36.09 acres. The site is bordered by Harbor Boulevard to the west, Olivas Links Golf Course to the east, disturbed land to the north, and the Santa Clara River to the south. The site is dominated by a chaparral vegetation community that is generally disturbed by footpaths and cleared areas. Transitional housing for the RiverHaven community is also located on the site. Due to the level of disturbance and human activity, trash and trampling of vegetation, special-status species are not expected to be present on the site.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.4-1
Biological Survey Areas



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.4-3
Existing Vegetation Communities within Wildlife Ponds

The site for the potential new treatment wetlands contains approximately 22.67 acres of chamise chaparral community, mostly located in the center of the site. This community is characterized by chamise (*Adenostoma fasciculatum*), saltbush (*Artiplex* spp.), mulefat (*Baccharis salicifolia*), Ceonothus (*Ceonothus* spp.), California buckwheat (*Eriogonum fasciculatum*), wild cucumber (*Marah fabaceus*), white sage (*Salvia apiana*), and California coffeeberry (*Rhamnus californica*). A portion of both the northern and southern areas of the site and the edges of the site is disturbed (approximately 13.42 acres). These portions are noticeable as several manmade trails have been created and large areas of vegetation have also been removed.

Existing Wildlife/Treatment Ponds

There are four wildlife/treatment ponds, in a 20-acre system, where treated water from the VWRP is conveyed prior to discharge to the SCRE. The ponds are located immediately to the south-southwest of the VWRP and are bordered to the north by Spinnaker Drive, to the east by Harbor Boulevard, beach sand and the Pacific Ocean to the west, and the SCRE to the south. The ponds consist of open water that is used by migrating birds and water fowl such as, but not limited to, mallard (*Anas platyrhynchos*), great blue heron (*Ardea Herodias*), and Canada geese (*Branta Canadensis*). The ponds are surrounded by native and non-native vegetation including seafog (*Carpobrotus chilensis*), black willow (*Salix nigra*) thickets, coyote brush (*Baccharis pilularis*) scrub, and marsh.

Arroyo willow thickets – *Salix lasiolepis* Shrubland Alliance

This community is the largest of the vegetation communities observed at the existing wildlife/treatment ponds, comprising approximately 16.60 acres. This community supports a tree layer dominated by arroyo willow (*Salix lasiolepis*); however, in some areas, most notably within the eastern portion of the property, the tree layer supports a high density of myoporum (*myoporum* sp.). The herbaceous layer is made up of pampass grass (*Cortaderia selloana*), ragweed (*Ambrosia chamissonis*), cape ivy (*Delairea odorata*), ice plant (*Carpobrotus edulis*), lizard tail (*Anemopsis californica*), and Bermuda buttercup (*Oxalis pes-caprae*).

Coyote brush scrub – *Baccharis pilularis* Shrubland Alliance

This community is dominated by coyote brush (*Baccharis pilularis*), approximately 2.50 total acres. Three separate areas within the survey area consists of this vegetation community. One area in particular, in the northern boundary of the site, appears to be a restoration site. This area has drip irrigation tubing and appears to have non-native species removed.

Hardstem bulrush marsh – *Schoenoplectus acutus* Herbaceous Alliance

This community is approximately 2.18 acres and is dominated by dense hardstem bulrush (*Schoenoplectus lacustris*). Hardstem bulrush lines the inside edges of most of the four treatment ponds. Other less dominant species observed within this community include watercress (*Nasturtium officinale*), Baltic rush (*Juncus balticus*), stinging nettle (*Urtica dioica*), and curly dock (*Rumex crispus*).

Giant Reed Brakes – *Arundo donax* Semi-Natural Herbaceous Stands

This community is present only along the southwestern boundary of the property, approximately 0.77 acres. This community is overwhelmingly dominated by giant reed (*Arundo donax*) and supports little other vegetation, including herbaceous species.

Open Water

Open Water comprises approximately 17.10 acres.

Disturbed/Developed

Disturbed and developed areas comprise approximately 4.48 acres. A public pedestrian path wraps around the four treatment ponds. In addition, the eastern portion of the treatment pond area consists of a paved asphalt access road and a building owned and operated by the City.

Potential AWP Sites

Harbor Boulevard site

The Harbor Boulevard site is approximately 10 acres. The site is bordered by Harbor Boulevard to the west, Olivas Links Golf Course to the east, Olivas Park Drive to the north, and the treatment wetlands site to the south. The site is disturbed with non-native grass and weed species spread intermittently throughout the property. No wildlife, including special-status species, was observed at the time of the survey, and none is expected to occur since the property has been disturbed. Similarly, there are no rare plants or sensitive plant communities that occur at this location.

Transport Street site

The Transport site is separated into two parcels (a northern parcel and a southern parcel). The southern parcel is approximately 5.01 acres and is vacant, characterized by compacted soils with non-native grasses and weed species, and a considerable amount of trash and debris. No wildlife, including any special-status wildlife or plant species, was observed during the time of the survey. The northern parcel is approximately 0.92 acre. The southern portion of this property is vacant, while the northern portion consists of a concrete slab where large vehicles and equipment are stored. The remainder of the parcel consists of disturbed soils and a mixture of non-native grasses and weed species.

The Transport Street site (both parcels) is fragmented from natural open space and the disturbed condition of the site renders it unsuitable for supporting special-status plant or wildlife species. Moreover, the surrounding land uses, including the Pacific Railroad easement to the south, business parks to the west and east, and Transport Street to the north, limit the potential for natural recruitment of native plants and movement pathways and foraging opportunities for wildlife.

Disturbed areas comprise the entire 5.93 -acre Transport Street site. The site is vacant, consisting of compacted soils with non-native grasses and weed species. No vegetation communities are associated within this site.

Portola Road site

The Portola Road site is a 15.46-acre agricultural field. It is bordered by the Pacific Railroad easement at its southern boundary, Portola Road to the west and active agricultural fields to the north and east. No wildlife, including special-status species, was observed at the time of the survey, and no special-status species are expected to occur since the fields are actively being harvested. Similarly, there are no rare plants or sensitive plant communities that occur at this location.

Disturbed areas comprise the entire 15.46 -acre Portola Road site. The site currently consists of an active agricultural field, and no vegetation communities exist within this site.

Santa Clara River Estuary

The proposed projects include the potential reduction of discharge from the existing VWRf into the SCRE. The SCRE is situated along the coastline of Ventura County, within the City of Oxnard. The VWRf is located on the north edge of the estuary in the City of San Buenaventura (see Figure 3.4-1). The SCRE and surrounding marshes and riparian areas constitute the 160 acre Santa Clara River Estuary Natural Preserve. McGrath State Beach and campground are located on the south side of the SCRE. The Pacific Ocean is approximately 2,000 feet from the point of the VWRf discharge.

The mouth of the Santa Clara River is frequently closed off by a sand bar, creating a shallow lagoon. The lagoon discharges directly into the Pacific Ocean when the sand bar is breached. When the sand bar is intact, water in the SCRE floods the lagoon and mud flats, inundating the adjacent marsh and low-lying vegetation. During these periods, water depth in the SCRE can be several feet. The sand bar is breached naturally during winter storms or when water pressure from rising water levels in the lagoon forces a breach. When the sand bar is breached, the estuary is subject to tidal influence. As discussed further below, in the section entitled “SCRE Unseasonal Breaching,” the sand bar sometimes is breached by what is thought to be unauthorized manual trenching facilitated by high SCRE stage resulting from VWRf tertiary treated flow discharges. During the Phase 3 study period, 13 breaching events were documented. Four events were associated with storm-induced runoff, while nine events resulted from unauthorized manual trenching of the beach berm.

As described in Section 3.9.1, Surface Water Hydrology, flows into and out of the SCRE vary seasonally, inter-annually, and over longer timescales, due to both natural and anthropogenic influences. This complex and dynamic system is heavily impacted by land uses and water diversions within the larger Santa Clara River watershed, direct discharges to the estuary, and alterations of the berm (SRP 2018). In recent years, the SCRE has been responding to morphological changes induced both by two high magnitude storm events in 2005 and by the more recent drought period (Stillwater Sciences 2018). General vegetation/habitat types currently comprising the SCRE in order of dominance include riparian, open water, mudflats, foredune, ocean, developed/disturbed, open beach, and wetland (including freshwater wetland and a small amount of salt marsh). There has been a recent shift in vegetation successional stage upstream of Harbor Boulevard, reflecting the recovery of riparian vegetation after the 2005 flood, which resulted in large areas of bare riverwash. In general, open water habitats of the main SCRE

lagoon area have relatively little aquatic vegetation due in large part to the regular occurrence of scouring flood flows.

Comparing current vegetation conditions with historical records dating back to the mid-1980s shows that there have been several key changes that are indicative of some of the primary impacts to the Santa Clara River and the SCRE, including a loss of riparian shrublands and woodlands, changes in freshwater wetland distribution, and invasion by non-native plant species, including giant reed (*Arundo donax*). Aquatic habitat types present in the SCRE include open water, freshwater wetlands, and a minimal amount of salt marsh. Depending upon river flows and mouth closure status, the largest aquatic habitat type is open water characterized by shallow sand-bedded flats with scattered emergent vegetation.

Habitat types in the SCRE were field verified during 2015 field surveys conducted by Stillwater Sciences and further updated by conducting aerial imagery interpretation of two datasets—the coarser National Agriculture Imagery Program (NAIP) imagery that depicts the lagoon at full stage in 2016 and imagery from drone flights conducted during September and December 2016 field efforts, which provides higher resolution data to increase accuracy. Together these data were used to update the position and extent of open water as well as boundaries of previously mapped habitat types (Stillwater Sciences 2018).

Descriptions of each habitat type, including the associated vegetation alliances, are based primarily on field data collected as part of a 2009 vegetation mapping effort conducted by Stillwater Sciences. As with the upland communities previously described, vegetation alliance names used to characterize the vegetation within the SCRE are based on the classification system in *The Manual of California Vegetation, Second Edition* (Sawyer et al. 2009), and additional plant species naming conventions follow the taxonomy of *The Jepson Manual, Second Edition* (Baldwin et al. 2012). Any vegetation alliances that are rare natural communities (i.e., natural community of special concern [S1–S3 on CDFW’s List of California Terrestrial Natural Communities; CDFG 2010]) or environmentally sensitive habitat areas (ESHAs) defined in the City of Oxnard Local Coastal Plan (City of Oxnard 1982) are also noted.

Disturbed/Developed

Lands associated with McGrath State Beach campground, related facilities, portions of the VWRP, and access roads are mapped as disturbed/developed, which includes much of the area surrounding the campground. The disturbed/developed area within the VWRP is a mix of developed trails and sandy areas colonized by the non-native invasive sea fig (*Carpobrotus chilensis*) and iceplant (*Carpobrotus edulis*).

Foredune

Foredune habitat is located in a strip along the coastal strand on both sides of the SCRE. This habitat type is composed of predominantly native vegetation dominated by dune mat (*Abronia* spp. – *Ambrosia chamissonis* Herbaceous Alliance, a rare natural community [S3; CDFG 2010]). The foredune also includes large patches of the non-native invasive ice plant mats (*Carpobrotus edulis* or Other Ice Plants Herbaceous Semi-Natural Alliance). In the project area, it is found

immediately inland from the open beach. Dunes are included as an ESHA in the Local Coastal Program (LCP) (City of Oxnard 1982).

Mudflat

Because the mouth of the SCRE was closed at the time of the 2016 mapping, mudflat habitats were initially mapped as open water. Habitat that is mapped as open water, but within intertidal elevations (above mean low water [MLW]) under open mouth conditions is mapped as mudflat habitat. Mudflats provide foraging habitats for shorebirds when exposed and foraging for SCRE fish species when submerged.

Ocean

Ocean is included in acreage mapping to capture the effect of shoreline fluctuation over time with river flow and breach dynamics. It is distinct from estuary waters, which are included in the open water habitat type.

Open Beach

Open beach is characterized as marine-associated open sand uncolonized by vegetation. In the project area, it is found immediately adjacent to the ocean and is generally bounded to the east by either foredune or estuarine open water.

Open Water

The mapping effort considered open water to be any non-ocean water surface that lacked emergent or established vegetation. In the project area, this included the extent of the estuary, ponds, and river water. The mouth of the SCRE was closed at the time of the 2016 mapping.

Riparian

This habitat type is dominated primarily by arroyo willow thickets (*Salix lasiolepis* Woodland and Shrubland Alliances), with smaller representation of shining willow groves (*Salix lucida* Woodland Alliance, a rare natural community [S3.2; CDFG 2010]) and mulefat thickets (*Baccharis salicifolia* Shrubland Alliance), and trace amounts of Riverwash Herbaceous. It also includes large, dense patches of high cover of the non-native invasive giant reed breaks (*Arundo donax* Herbaceous Alliance) in the riparian corridor. In the project area, it is generally found inland from the foredunes and in varying successional stages within a corridor between the bounds of the levees on the north and south sides of the river. Riparian habitat is included as an ESHA in the Oxnard LCP).

Wetland

As indicated in the Phase 3 Study, this habitat type includes both freshwater wetland and small inclusions of salt marsh. The freshwater wetland is comprised of multiple alliances, largely represented by California bulrush marsh (*Schoenoplectus californicus* Herbaceous Alliance; a locally Rare plant species, with trace amounts of cattail marshes (*Typha* [*angustifolia*, *domingensis*, *latifolia*] Herbaceous Alliance), and false waterpepper-white sweetclover patches (*Persicaria hydropiperoides*-*Melilotus albus* Provisional Alliance). Freshwater wetland also includes some sporadic patches of giant reed mixed within other wetland communities, although generally giant reed was included within the riparian vegetation habitat type. The salt marsh is

predominantly Pacific silverweed marshes (*Argentina egedii* Herbaceous Alliance [now *Potentilla anserina* subsp. *pacifica*], a rare natural community [S2; CDFG 2010] and locally Rare plant species, salt grass flats (*Distichlis spicata* Herbaceous Alliance), and creeping rye grass turfs (*Leymus triticoides* Herbaceous Alliance [now *Elymus triticoides*], a Rare natural community [S3; CDFG 2010]).

In the project area, freshwater wetland is generally found near the margins of estuary waters around the perimeter of the SCRE and adjacent to riparian vegetation. The freshwater wetland appears to die back in response to the draining of the SCRE during winter, more saline conditions when the sandbar is breached, and natural season die back. The salt marsh component occurs on the south edge of the SCRE, adjacent to McGrath State Beach, and is likely maintained by the northeast trending levee north of the campground. Wetlands are included as an ESHA in the Oxnard LCP (City of Oxnard 1982).

Common Wildlife

The vegetation plant communities described above form the basis of the wildlife habitats within the biological study area that provide food and water sources upon which wildlife depend, along with nesting and denning sites, movement cover, and protection from adverse weather. Some species are habitat specific for all their life history requirements, while many wildlife species that occur in the area move freely between vegetation communities.

Information about wildlife currently or likely to occur in the biological study areas was obtained from the following sources:

- Field surveys of the survey area conducted by ESA. Survey area includes existing wildlife/treatment ponds, proposed treatment wetlands, potential AWPf sites, and the proposed and alternative pipeline routes.
- Phase 3 Study (Stillwater 2018)
- Ventura Water Supply Projects Biological Resources Technical Report (ESA 2018)
- eBird (<https://ebird.org/home>), a citizen science project managed by the Cornell Lab of Ornithology that compiles voluntary contributions of bird sightings by bird watchers globally.

Upland Areas

Several common wildlife species were observed in upland areas during the biological surveys. Avian species observed included California scrub jay (*Aphelocoma californica*), California towhee (*Melospiza crissalis*), wren (t) (*Chamaea fasciata*), northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaidura macroura*), California gull (*Larus californicus*), and turkey vulture (*Cathartes aura*), American coot (*Fulica americana*), and Anna's hummingbird (*Calypte anna*).

Waterfowl species such as mallard (*Anas platyrhynchos*), gadwall (*Mareca strepera*), cinnamon teal (*Spatula cyanoptera*), great blue heron (*Ardea herodias*), and northern shoveler (*Spatula clypeata*) are known to use the wildlife/treatment ponds during their migration periods. Mammal species observed at the wildlife/treatment ponds include desert cottontail (*Sylvilagus audubonii*)

and California ground squirrel (*Otospermophilus beecheyi*). Reptile species observed include western fence lizard (*Sceloporus occidentalis*) and red-eared slider (*Trachemys scripta elegans*). One amphibian species was observed at the treatment ponds, Baja California chorus frog (*Pseudacris hypochondriaca*). Other common wildlife species are expected to forage and/or breed within the habitats that occur at the proposed wildlife/treatment wetlands and existing wildlife/treatment ponds, including deer mice (*Peromyscus* sp.), side-blotched lizard (*Uta* sp.), Allen's hummingbird (*Selasphorus sasin*), tree swallow (*Tachycineta bicolor*), house sparrow (*Passer domesticus*), and house finch (*Haemorhous mexicanus*).

Open Beach and Foredune

As described in the Phase 3 Study, the surf zone, the part of open beach exposed to wave action, provides habitat for fish, birds, and aquatic invertebrates. Such invertebrates, including bivalves, snails, crabs, amphipods, and marine worms, attract a variety of shorebirds including gulls, sandpipers, dowitchers, and plovers. Insects, reptiles, birds, and small mammals may be observed in the upper beach, the area from the drift line to the base of the foredune, including western fence lizard, side-blotched lizard, gulls (*Larus* spp.), killdeer (*Charadrius vociferous*), and California ground squirrels. Invertebrates found in sand, in organic matter, or from low-growing plants may provide foraging opportunities for species utilizing the upper beach and foredune.

Gulls and shorebirds identified using the open beach and foredune habitats during 2010 bird surveys include willet (*Tringa semipalmata*), whimbrel (*Numenius phaeopus*), western gull (*Larus occidentalis*), and California gull (*Larus californicus*). Other species that may be commonly found using open beach and foredune habitats in the SCRE include black-bellied plover (*Pluvialis squatarola*), semi-palmated plover (*Charadrius semipalmatus*), black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), sanderling (*Calidris alba*), western sandpiper (*Calidris mauri*), least sandpiper (*Calidris minutilla*), and dowitchers (*Limnodromus* spp.).

Mudflat

In the SCRE, mouth breaching drains the estuary, converting open water habitat to exposed or shallow mudflat habitat. These areas can be rich in benthic infauna such as burrowing crustaceans and oligochaetes, epibenthic fauna such snails, as well as stranded nekton or pelagic invertebrates, and serve as valuable foraging habitat for the shorebirds and wading birds. Raccoons and opossums may opportunistically forage in these habitats as well when they are fully exposed.

Freshwater Wetland

Emergent freshwater wetland, one of the most productive wildlife habitats in California, offers high-quality wildlife habitat that provides nesting, foraging, roosting, and cover for a variety of species. Emergent freshwater wetland typically contains numerous invertebrates that in turn provide an important food source for other species. Dabbling ducks eat invertebrates, plant material, and seeds in the water. Freshwater wetland vegetation provides nesting substrate for birds; some bird species construct nests directly suspended in tules or cattails (e.g., marsh wren

[*Cistothorus palustris*], common yellowthroat [*Geothlypis trichas*], red-winged blackbird [*Agelaius phoeniceus*]), while some construct nests on matted vegetation or mud while concealed behind emergent vegetation (e.g., ducks, rails, and grebes).

Common herpetofaunal species found in the SCRE that use emergent freshwater marsh and edges include California toad (*Bufo boreas halophilus*), Baja California treefrog, and garter snake (*Thamnophis* spp.). These species also provide a food source for other wildlife including birds and mammals. The non-native African clawed frog (*Xenopus laevis*), ubiquitous in the SCRE, has been documented feeding on native amphibians and fish including tidewater goby.

Common and uncommon bird species typically associated with emergent freshwater marsh that may be found in the area of the SCRE include rails (e.g., Virginia rail [*Rallus limicola*], common moorhen [*Gallinula chloropus*]), herons, egrets, shorebirds, marsh wren, and common yellowthroat.

Mammal species using habitats typically along the edges of freshwater wetlands include western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus* spp.), and California meadow vole (*Microtus californicus*). Bat species may forage for insect prey over the wetlands as well.

Riparian Shrublands and Woodlands

Riparian shrublands and woodlands are valuable for wildlife since they provide water, favorable microclimates, cover, foraging habitat, and important movement corridors. Bird species typically associated with riparian shrublands and woodlands that are common to this area include Pacificslopes flycatcher (*Empidonax difficilis*), black phoebe (*Sayornis nigricans*), warbling vireo (*Vireo gilvus*), bushtit (*Psaltirparus minimus*), ruby-crowned kinglet (*Regulus calendula*), orangecrowned warbler (*Vermivora celata*), Wilson's warbler (*Wilsonia pusilla*), song sparrow (*Melospiza melodia*), and black-headed grosbeak (*Pheucticus melanocephalus*). Common mammals that can be found using riparian habitats in the SCRE include shrews (*Sorex* spp.), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), bobcat, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and brush rabbit (*Silvilagus bachmani*).

Open Water

Open water habitats support a diversity of bird species, including dabbling ducks, diving ducks, gulls, herons, and grebes. Swallows and flycatchers feed on insects that they catch in flight, often over open water. Bird species that may be observed using open water habitats in the SCRE or wildlife/treatment ponds include gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), bluewinged teal (*Anas discors*), bufflehead (*Bucephala albeola*), ruddy duck (*Oxyura jamaicensis*), pied-billed grebe (*Podilymbus podiceps*), great blue heron (*Ardea herodias*), American coot (*Fulica americana*), western gull (*Larus occidentalis*), and tree swallow (*Tachycineta bicolor*).

The Ventura County Audubon Society conducts annual Christmas bird counts within the SCRE (Ventura County Audubon Society 2018). These bird counts provide a good baseline for

understanding migratory and resident winter bird use within the SCORE. The Christmas bird counts for 2017 are provided below in **Table 3.4-1**.

**TABLE 3.4-1
AUDUBON BIRD COUNTS AT THE SCORE IN 2017**

Birds	SCORE Count (2017)	Birds	SCORE Count 2017
Swans, Geese, and Ducks		Pelicans and Boobies	
Greater White-fronted Goose	13	American White Pelican	8
Snow Goose	4	Brown Pelican	327
Ross's Goose	2	Bitterns and Herons	
Canada Goose	28	Great Blue Heron	24
Gadwall	12	Great Egret	3
American Wigeon	3	Snowy Egret	10
Mallard	81	Green Heron	1
Blue-winged Teal	1	Black-crowned Night-Heron	20
Cinnamon Teal	8	Ibises and Spoonbills	
Northern Shoveler	25	White-faced Ibis	2
Green-winged Teal	45	Old World Sparrows and Finches	
Ring-necked Duck	3	House Sparrow	25
Lesser Scaup	13	Kites, Eagles, and Hawks	
Surf Scoter	2	Osprey	1
Bufflehead	52	Northern Harrier	1
Red-breasted Merganser	1	Cooper's Hawk	3
Ruddy Duck	109	Accipiter	1
Partridges, Quail, Grouse, and Turkeys		Red-shouldered Hawk	3
California Quail	43	Red-tailed Hawk	11
Loons		American Vultures	
Common Loon	2	Turkey Vulture	3
Grebes		Rails and Coots	
Pied-billed Grebe	37	Sora	4
Eared Grebe	4	Common Gallinule	1
Western Grebe	84	American Coot	324
Clark's Grebe	2	Oystercatchers	
Pied-billed Grebe	37	Black Oystercatcher	6
Cormorant		Black-bellied Plover	94
Brandt's Cormorant	67	Plovers	
Double-crested Cormorant	36	Snowy Plover	89
Pelagic Cormorant	3	Killdeer	36

Birds	SCORE Count (2017)	Birds	SCORE Count 2017
Sandpipers and Phalaropes		Hummingbirds	
Spotted Sandpiper	2	Anna's Hummingbird	46
Wandering Tattler	2	Costa's Hummingbird	1
Willet	18	Allen's Hummingbird	86
Whimbrel	2	Kingfishers	
Long-billed Curlew	5	Belted Kingfisher	4
Ruddy Turnstone	7	Falcons	
Black Turnstone	29	American Kestrel	5
Sanderling	70	Peregrine Falcon	2
Least Sandpiper	17	Tyrant Flycatchers	
Wilson's Snipe	2	Blake Phoebe	41
Gulls and Terns		Say's Phoebe	18
Heermann's Gull	37	Cassin's Kingbird	9
Mew Gull	1	Jays, Magpies, and Crows	
Ring-billed Gull	336	Western Scrub-Jay	9
Western Gull	397	American Crow	54
California Gull	284	Common Raven	6
Thayer's Gull	3	Shrikes	
Glaucous-winged Gull	1	Loggerhead Shrike	2
Royal Tern	2	Wren	
Pigeons and Doves		House Wren	3
Rock Pigeon	58	Marsh Wren	2
Band-tailed Pigeon	92	Bewick's Wren	2
Eurasian Collared-Dove	25	Larks	
Mourning Dove	24	Horned Lark	16
Typical Owls		Swallows	
Great Horned Owl	1	Tree Swallow	94
Burrowing Owl	1	Barn Swallow	15
Woodpeckers		Bushtits	
Acorn Woodpecker	11	Bushtit	52
Nuttall's Woodpecker	1	Nuthatches	
Downy Woodpecker	4	Red-breasted Nuthatch	1
Hairy Woodpecker	1	Mockingbirds and Thrashers	
Northern Flicker/ Red-shafted	7	Northern Mockingbird	6
Thrushes and Allies		Grosbeaks and Buntings	
Blue-gray Gnatcatcher	13	Black-headed Grosbeak	2
Golden-crowned Kinglet	1	Blackbirds and Allies	
Ruby-crowned Kinglet	9	Red-winged Blackbird	48
Western Bluebird	5	Western Meadowlark	89

Birds	SCORE Count (2017)	Birds	SCORE Count 2017
Hermit Thrush	7	Brewer's Blackbird	22
American Robin	17	Great-tailed Grackle	14
Starlings		Brown-headed Cowbird	2
European Starling	108	Bullock's Oriole	2
Pipits		Baltimore Oriole	1
American Pipit	28	Sparrows and Allies	
Waxwings		Spotted Towhee	7
Cedar Waxwing	57	California Towhee	26
Warblers		Clay-colored Sparrow	1
Orange-crowned Warbler	14	Savannah Sparrow	1
Common Yellowthroat	54	Fox Sparrow	2
Yellow-rumped Warbler/ Audobon's	60	Song Sparrow	46
Townsend's Warbler	2	Lincoln's Sparrow	5
Wilson's Warbler	2	White-crowned Sparrow	170
Finches		Golden-crowned Sparrow	2
House Finch	89	Dark-eyed Junco/ Oregon	17
Lesser Goldfinch	10		
American Goldfinch	1		

Source: Ventura County Audubon Society, 2018

Special-Status Biological Resources

Special-status biological resources include vegetation communities that are unique, of relatively limited distribution, or of particular value to wildlife; as well as, plant and wildlife species that have been given special recognition by federal or state agencies, or are included in regional conservation plans due to limited, declining, or threatened populations. The determination of biological resources as special-status is based on listing status and/or ranking conducted by federal, state, and local agencies as described below.

Through its California Natural Diversity Data Base (CNDDB) program, CDFW maintains a computerized inventory of information on the location and condition of all animal taxa, sensitive plants species, and California's vegetation alliances (regardless of their legal or protection status). CNDDB element ranks range from 1 through 5 (Global and State) according to their degree of imperilment (as measured by rarity, trends, and threats). Species and vegetation alliances with state ranks of S1, S2, or S3 are considered to be critically imperiled, imperiled, or vulnerable to extinction or extirpation, respectively; and thus considered by CDFW to be rare or sensitive. A question mark (?) after the rank denotes an inexact numeric rank due to insufficient samples over the full expected range of the type, but existing information points to this rank.

The following discussion describes special-status plant and wildlife that have the potential to be present within the project site. Special-status species include those that have been afforded special recognition by Federal, State, or local resource agencies and/or organizations. These species have declining or limited population sizes, usually resulting from habitat loss. Also discussed are sensitive natural communities that consist of habitats that are unique, of relatively limited distribution, or of particular value to wildlife.

Sensitive Natural Communities

Sensitive natural communities are listed by CDFW on their List of Vegetation Alliances and Associations (CDFG 2010). Communities on this list are given a Global (G) and State (S) rarity ranking on a scale of 1 to 5, where communities with a ranking of 5 are the most common and communities with a ranking of 1 are the rarest and of the highest priority to preserve. For the purpose of this report, Sensitive natural communities are those communities that have a state ranking of S3 or rarer, and are generally those that are considered by the CDFW to be imperiled due to their decline in the region and/or the habitat they provide to rare and endemic wildlife species. Continued degradation and destruction of these ecologically important communities could threaten the regional distribution and viability of the community and possibly the sensitive species they support.

The following sources were consulted for information on biological resources within the project area:

- Phase 3 Study (Stillwater 2018)
- Ventura Water Supply Projects Biological Resources Technical Report (ESA 2018)
- CDFW. 2018. California Natural Diversity Data Base (CNDDDB) (Accessed February 2018). This database was queried for special-status species records within the seven United States Geological Survey (USGS) topographic quadrants within and adjacent to the proposed projects, which include: White Ledge Peak, Matilija, Ojai, Pitas Point, Ventura (project location), Saticoy, and Oxnard.
- California Native Plant Society (CNPS). 2018. Inventory of Rare and Endangered Vascular Plants of California. This database was queried for special status species records within the seven United States Geological Survey (USGS) topographic quadrants within and adjacent to the proposed projects, which include: White Ledge Peak, Matilija, Ojai, Pitas Point, Ventura (project location), Saticoy, and Oxnard.
- Google Earth. 2018. Historical aerial imagery between 1994 and 2018

The CNDDDB lists historical and recently recorded occurrences of both special-status plant and wildlife species and the CNPS) database lists historical and recent occurrences of special-status plant species. A review of the most recent CNDDDB records revealed eight sensitive natural communities have been recorded in the vicinity of the proposed projects, including California Walnut Woodland, Coastal and Valley Freshwater Marsh, Southern California Coastal Lagoon, Southern California Steelhead Stream, Southern Coast Live Oak Riparian Forest, Southern Coastal Salt Marsh, Southern Riparian Scrub, and Southern Sycamore Alder Riparian Woodland (CDFW 2018). However, only two of these communities occur within the vicinity of the survey area: Southern California Coastal Lagoon and Southern California Steelhead Stream.

In addition, the Phase 3 Study identified the following sensitive natural communities within the SCRE that are associated with Southern California Coastal Lagoon: Dune Mat (*Ambrosia chamissonis* Herbaceous Alliance), Arroyo Willow Thickets (*Salix lasiolepis* Woodland and Shrubland Alliances), Shining Willow Groves (*Salix lucida* Woodland Alliance), Pacific Silverweed Marsh (*Argentina egedii* Herbaceous Alliance [now *Potentilla anserina* ssp. *pacifica*]), and Creeping Rye Grass Turf (*Leymus triticoides* Herbaceous Alliance [now *Elymus triticoides*]).

Southern California Coastal Lagoon is defined as shallow brackish or marine water bodies separated from the ocean by a barrier island, spit, reef, or sand bank. Depending on the extent of the barriers, they may be partially or totally enclosed, although most are connected at least intermittently to the open ocean by one or more restricted tidal inlets. This sensitive natural community currently exists from the mouth of the Santa Clara River to the Harbor Boulevard Bridge, encompassing approximately 85 acres, and includes the aforementioned sensitive natural communities identified in the Phase 3 Study.

Southern California Steelhead Stream is defined as a stream or creek that has been active in steelhead breeding, nesting and/or rearing. The stream needs to be coastal and have access to the Pacific Ocean. Steelhead are an anadromous species, meaning they are born in freshwater, then migrate to the ocean as juveniles where they grow into adults before migrating back into freshwater to spawn. Estuaries and lagoons are key habitats for steelhead because they are used by both immigrating adults and emigrating juveniles moving between the marine and freshwater environments. Estuaries can be important habitats for young steelhead to feed before moving to the ocean. The SCRE is usually closed to the ocean, with a sand bar blocking access. The whole Santa Clara River is considered for this sensitive natural community, but in the case of the proposed projects, the acreage and limits are the same as the Southern California Coastal Lagoon, described above.

Special-Status Plants

Special-status plants are defined as those plants that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special-status plants are defined as follows:

- Plants listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act or the California Endangered Species Act;
- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380;
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California;

- Plants listed by the CNPS as plants in which more information is needed to determine their status and plants of limited distribution (List 3 and 4 plants); and
- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.)

A review of the CNDDDB (CDFW, 2018) and the CNPS Inventory of Rare and Endangered Plants (CNPS, 2018) revealed a total of 48 special-status plant species recorded within the seven (7) USGS quadrangles that were searched. The potential for special-status plant species to occur is based on on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences, geographic ranges and visual observations made during the focused sensitive plant surveys. Based on the level of disturbance and general lack of suitable habitat at the sites that were surveyed (i.e., Harbor Boulevard, Transport Street site, Portola Road site, the potential new treatment wetland and existing treatment ponds), it is determined that special-status plant species have a low potential to occur on the portions of the project.

Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*, [VMMV]), is a short-lived perennial that was considered extinct until a small number of plants were discovered on a fill mound covering an oil waste dump site in Oxnard in 1997 (Meyer 2007). Currently, this species occurs near the course of the proposed Calleguas SMP alignment, near 5th Street and Harbor Boulevard. **Table 3.4-2** inventories special status plants that could occur within project impacts areas.

TABLE 3.4-2
POTENTIALLY OCCURRING SPECIAL-STATUS PLANT SPECIES WITHIN PROJECT AREA

Common Name	Scientific Name	Status (Federal/State/CNPS)	Habitat	Potential to Occur
Plants				
California satintail	<i>Imperata brevifolia</i>	None/None/ G4/S3/2B.1	Chaparral, coastal scrub, desert scrub, meadows and seeps (often alkali), and riparian scrub habitat.	Low. Species has been observed in Ojai, CA and surrounding foothills. Suitable habitat does not exist within SCRE and adjacent areas.
Coulter's goldfields	<i>Lasthenia glabrata</i> <i>ssp. coulteri</i>	None/None/ G4T2/S2/1B.1	Marshes and swamps (coastal salt), playas, and vernal pools.	High. Species is presumed extant in SCRE and adjacent riparian areas.
Fish's milkwort	<i>Polygala cornuta</i> <i>var. fishiae</i>	None/None/ G5T4/S4/4.3	Chaparral, cismontane woodland, and riparian woodland	Low. Suitable habitat does not exist within SCRE and adjacent habitat. Species has been observed in Ojai and adjacent foothills.
Ocellated Humboldt lily	<i>Lilium humboldtii</i> <i>ssp. ocellatum</i>	None/None/ G4T4?/S4?/4.2	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland	Low. Suitable habitat does not exist within project area. Species has been observed in Malibu, CA and other locations in Los Angeles County.

Common Name	Scientific Name	Status (Federal/State/CNPS)	Habitat	Potential to Occur
Pale-yellow layia	<i>Layia heterotricha</i>	None/None/ G2/S2/1B.1	Cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland	Low. Suitable habitat does not exist within project area. The nearest observations have occurred in the foothills of Ojai.
Plummer's baccharis	<i>Baccharis plummerae</i> ssp. <i>plummerae</i>	None/None/ G3T3/S3/4.3	Broad leafed upland forest, chaparral, cismontane woodland, and coastal scrub	Low. Suitable habitat does not exist within SCRE. The nearest observation has occurred along the mouth of the Ventura River.
Robinson's pepper-grass	<i>Lepidium virginicum</i> var. <i>robinsonii</i>	None/None/ G5T3/S3/4.3	Chaparral and coastal scrub	Low. Suitable habitat does not exist within the SCRE and adjacent riparian areas. The nearest observation has been observed in Ojai.
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	None/None/ G3/S3/1B.2	Marshes and swamps (assorted shallow freshwater)	Low. Suitable habitat does not exist within SCRE. The nearest observations have been located in California's Central Valley.
Southwestern spiny rush	<i>Juncus acutus</i> ssp. <i>leopoldii</i>	None/None/ G5T5/S4/4.2	Coastal dunes, meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)	High. Suitable habitat exists adjacent to SCRE. The most recent observation was made on Ormond Beach in 2007.
Ventura marsh milk vetch	<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	FE/SE/ G2T1/S1/1B.1	Coastal dunes, coastal scrub, marshes and swamps (edges, coastal salt or brackish)	Moderate. Species does not have suitable habitat within SCRE, but is currently present in Oxnard in the vicinity of 5 th Street and Harbor Boulevard.
White rabbit-tobacco	<i>Pseudognaphalium leucocephalum</i>	None/None/ G4/S2/2B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland	High. Suitable habitat exists within SCR, SCRE, and adjacent riparian zone. Species has been observed in these areas.
Woolly seablite	<i>Suaeda taxifolia</i>	None/None/ G2/S4/4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)	Moderate. Suitable habitat exists within SCRE and species has been observed and documented within the estuary and adjacent dune habitat.

Common Name	Scientific Name	Status (Federal/State/CNPS)	Habitat	Potential to Occur
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Key:

Status (Federal/State): FE-federally endangered; SE-state endangered

Status (CNPS): The *global rank* (G-rank) is a reflection of the overall status of an element throughout its global range. Both Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two: G1 = Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Demonstrably Secure — Common; widespread and abundant. The *state rank* (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries: S1 = Critically Imperiled — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province; S2 = Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province; S3 = Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation; S4 = Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors; S5 = Secure — Common, widespread, and abundant in the state. Uncertainty about the rank of an element is expressed in two major ways: by expressing the ranks as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3, or by adding a ? to the rank: e.g., S2?. This represents more certainty than S2S3, but less certainty than S2.

Special-Status Wildlife

Special-status wildlife species are defined as those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. Special-status wildlife species evaluated in this EIR include:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act or the California Endangered Species Act;
- Wildlife that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Wildlife covered under an adopted Natural Community Conservation Plan (NCCP) or Habitat Conservation Plan (HCP);
- Wildlife designated by CDFW as species of special concern, included on the Watch List or are considered Special Animals;
- Wildlife "fully protected" in California (Fish and Game Code Sections 3511, 4700, and 5050); and
- Avian species protected by the MBTA

A query of the most recent CNDDDB (CDFW, 2018) records for the project area (i.e., seven USGS quadrangle search area) revealed 35 special-status wildlife species previously recorded in the vicinity. However, based on the absence of suitable habitat, known geographic distributions and/or range restrictions, it was determined that 13 wildlife species do not have any potential to

occur within the project area. In addition to reviewing the CNDDDB and CNPS Online Inventory, the Phase 3 Study identified additional wildlife species as having potential to occur within the SCRE. Lastly, a review of eBird was also performed, since the SCRE is so widely surveyed by bird watching enthusiasts. Thirty special-status wildlife species were determined to have potential to occur within the vicinity of the project, which includes the SCRE. **Table 3.4-3** below identifies these species and indicates their potential to occur based on the following criteria:

Low Potential: The project area only provides limited habitat for a particular species. In addition, the known range for a particular species may be outside of the survey area.

Medium Potential: The project area provides marginal habitat for a particular species.

High Potential: The project provides suitable habitat conditions for a particular species and/or known populations occur in the immediate area.

Present: The species has been observed or previously recorded within the project area

**TABLE 3.4-3
POTENTIALLY OCCURRING SPECIAL-STATUS WILDLIFE SPECIES WITHIN PROJECT AREA**

Common Name	Scientific Name	Status (Federal/State)	Habitat	Potential to Occur
Birds				
Bank swallow	<i>Riparia riparia</i>	None/FT	Nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs near water sources.	High. The Santa Clara River and SCRE adjacent to the survey area has suitable riparian habitat to support this species.
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingo</i>	None/FE	Grasslands with few trees, including meadows, pastures, grassy roadsides, wetlands, and cultivated fields. Near oceans, they also inhabit tidal saltmarshes and estuaries.	High. The Santa Clara River and SCRE provide suitable habitat and occurrences have been observed within two miles from the SCRE. Observed within the SCRE during Audubon Christmas bird counts.
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE/None	Dense, low, shrubby vegetation, generally early successional stages in riparian areas, brushy fields, woodland, scrub oak, coastal chaparral, and often near water in arid regions.	High (present). Recorded occurrences in the Santa Clara River, but low within the upland project areas. Occurrences have been observed nearby in the SCRE.
Brown Pelican	<i>Pelecanus occidentalis californicus</i>	Delisted/FP	Estuarine, marine subtidal, and marine pelagic waters along the California coast. On the west coast, this species breed on dry, rocky offshore islands.	High. This species forages in the SCRE, but is not expected to forage within the upland project areas. Occurrences have been observed in the SCRE. There is no potential for brown pelicans to nest within the project site, including the SCRE.

Common Name	Scientific Name	Status (Federal/State)	Habitat	Potential to Occur
Burrowing owl	<i>Athene cunicularia</i>	None/SSC	Open, dry annual and perennial grasslands, deserts, and scrublands with low-grading vegetation	High. This species has been observed in chaparral, coastal scrub, and sea fig vegetation located to the south along Harbor Boulevard. No suitable burrows were observed during the field surveys. Observed within the SCRE during Audubon Christmas bird counts.
Coastal California gnatcatcher	<i>Poliophtila californica</i>	FT/SSC	Coastal sage scrub dominated by <i>Artemisia californica</i> . Coastal range between southern California and Baja.	Low. The site contains low-quality coastal sage scrub habitat. One occurrence was reported in the vicinity in 1924.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	None/ST	Grassy, fresh and brackish marshes.	Low. Suitable habitat containing brackish marsh, but not expected in project area since last CNDDDB occurrence was observed in 1936.
California least tern	<i>Sternula antillarum browni</i>	FE/SE	Nests on sand dunes and sand bars close to water among debris and grass.	High. Suitable foraging habitat is present within the SCRE. Not expected to nest within the SCRE. Occurrences (nesting colonies) have been observed along beaches in Oxnard and Port Hueneme.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE/SE	Low brushy vegetation in wet areas, especially riparian willow thickets.	High. Critical habitat occurs within the Santa Clara River and SCRE. Last occurrence in 2008 along Santa Clara River in Santa Paula.
Tricolored blackbird	<i>Agelaius tricolor</i>	None/CE	Nests in colonies in reedy marshes and forages in marshes and farmland.	Low. Suitable habitat within brackish areas and farmland but not expected in project area since last occurrence was 80-100 years ago.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	FT/None	Sandy beaches and shallow inland water bodies.	High. Suitable habitat present adjacent to SCRE. Beaches adjacent to SCRE is critical habitat for species. Occurrences observed at Ormond State Beach and McGrath State Beach; however, does not nest within the SCRE.

Common Name	Scientific Name	Status (Federal/State)	Habitat	Potential to Occur
White-tailed kite	<i>Elanus leucurus</i>	None/FP	Open groves, river valleys, marshes, and grasslands	High. Suitable habitat available in adjacent agriculture fields and estuary, but not expected to nest on project site. Last CNDDDB occurrence was in 2001 along Santa Clara River in Santa Paula.
Yellow warbler	<i>Setophaga petechial</i>	None/SSC	Widespread in any wet brushy habitat.	Medium. Suitable habitat is available. Only occurrence was along Ventura River approximately three miles north of project site.
Least bittern	<i>Ixobrychus exilis</i>	None/SSC	Freshwater or brackish marshes with tall grasses, cattails, and reeds	High: Suitable habitat within the SCRE.
Northern harrier	<i>Circus cyaneus</i>	None/SSC	Breed in wide-open habitats ranging from Arctic tundra to prairie grasslands to fields and marshes. Their nests are concealed on the ground in grasses or wetland vegetation	High: Suitable habitat within the SCRE.
Yellow-breasted chat	<i>Icteria virens</i>	None/SSC	Breeds in areas of dense shrubbery, including abandoned farm fields, clearcuts, powerline corridors, fencerows, forest edges and openings, swamps, and edges of streams and ponds.	High: Suitable habitat within the SCRE.
Mammals				
Mexican long-tongued bat	<i>Cheoronycteris Mexicana</i>	None/SSC	Occurs at altitudes of 300-2,400 meters in deciduous, semi-arid thorn scrub and mixed oak-conifer forests.[]	Low. Project area does not provide the suitable scrub and mixed oak conifer forest habitat.
Pallid bat	<i>Antrozous pallidus</i>	None/SSC	Grasslands, shrublands, woodlands, and coniferous forests; most common in open, dry habitat with rocky areas for roosting, as well as abandon buildings and medal clad structures.	Low. Suitable habitat (abandoned buildings, woodlands, etc.) is not present at project sites. Last CNDDDB occurrence was over 100 years ago.
Western mastiff bat	<i>Eumops perotis</i> ssp. <i>Californicus</i>	None/SSC	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. Roosts in small colonies in rock fissures in high cliff faces	Low. Suitable habitat (chaparral) is present within project sites, but not expected since last CNDDDB occurrence was in 1907.
Western red bat	<i>Lasiurus blossevillei</i>	None/SSC	Riparian woodland. Primarily roosts in trees.	High: SCRE provides suitable roosting and foraging habitat.

Common Name	Scientific Name	Status (Federal/State)	Habitat	Potential to Occur
Reptiles				
California legless lizard	<i>Anniella sp. 1</i>	None/SSC	Chaparral, coastal dunes and coastal scrub.	High. Suitable habitat within and adjacent to project sites (chaparral and coastal dunes), especially within the riparian habitats of the SCRE. Occurrences have been observed within last couple years in Oxnard.
Two-striped garter snake	<i>Thamnophis hammondi</i>	None/SSC	Occurs adjacent to permanent or semi-permanent bodies of water. This species feeds primarily on fish and amphibians.	High: Suitable habitat present within the SCRE.
South coast garter snake	<i>Thamnophis sirtalis ssp.</i>	None/SSC	Coastal plain from Ventura Co. to San Diego Co., from sea level to about 850 m.	High: Suitable habitat present within the SCRE.
Coastal western whiptail	<i>Aspidoscelis tigris ssp. Stejnegeri</i>	None/SSC	Deserts and semiarid areas with sparse vegetation and open areas, woodland and riparian areas.	Low. Suitable habitat within project area but not expected. Last and only occurrence in 2008.
Coast horned lizard	<i>Phrynosoma blainvillii</i>	None/SSC	Various habitats throughout the foothills of California including coast live oak woodland and the herbaceous cover and friable soils.	High. Suitable habitat within project area, especially within the SCRE. All three recorded occurrences were along Santa Clara River in Santa Paula.
Western pond turtle	<i>Emys marmorata</i>	None/SSC	Aquatic habitats with exposed areas for basking, with aquatic vegetation, such as algae and other water plants	High. Suitable habitat within SCRE and treatment ponds site Two CNDDB occurrences have been observed in Oxnard.
Fish				
Santa Ana sucker	<i>Catostomus santaanae</i>	FT/None	Clear, cool rocky pools and runs of creeks and small to medium rivers. Associated with coarse substrates of boulder, rubble, and gravel, but sometimes it occurs on sand/mud bottoms	Low. Suitable habitat is not present within the project area. Species is found in the Santa Clara River, but in far east reaches near Valencia, CA.

Common Name	Scientific Name	Status (Federal/State)	Habitat	Potential to Occur
Steelhead – southern California DPS	<i>Oncorhynchus mykiss irideus pop. 10</i>	FE/None	Coastal creek and rivers that allow fish to enter Pacific Ocean.	High (present): Suitable habitat is not present within the project area. though landlocked steelhead may be present in the SCRE Sandbar currently blocking Santa Clara River from Pacific Ocean which is preventing migration of the species outward.
Tidewater goby	<i>Eucyclogobius newberryi</i>	FE/SSC	Found primarily in waters of coastal lagoons, estuaries, and marshes	High (present): Numerous observations of species from previous surveys in SCRE and nearby lagoons and estuaries. Suitable habitat present and species is expected in SCRE. SCRE is critical habitat for this species.
Unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	FE/SE	Young UTS are typically found at the shallow edges of streams in areas with dense vegetation	Low: Species have been observed in Santa Clara River near Valencia and Highway 5. Suitable habitat not present within project area.

Status

Federal: FE-federally endangered, FT – federally threatened

State: SE – state endangered; state threatened; FP – State Fully Protected, SSC – State Species of Special Concern, CE-Candidate for listing as Endangered

Based on the vegetation and habitats that were characterized during the field survey, 21 wildlife species have a medium to high potential to occur in the vicinity of the project, and/or within the SCRE including: tidewater goby, steelhead, Belding’s savannah sparrow, bank swallow, least Bell’s vireo, brown pelican, burrowing owl, California least tern, southwestern willow flycatcher, western snowy plover, white-tailed kite, yellow warbler, least bittern, northern harrier, yellow breasted chat, two-striped garter snake, south coast garter snake, California legless lizard, coast horned lizard, western pond turtle, and western red bat.

According to the Phase 3 Study, the federally threatened western snowy plover and the federally and state-listed California least tern are known to nest yearly in the open beach and foredunes near the SCRE. California legless lizard and coast horned lizard, both state Species of Special Concern, may utilize foredune habitats around the SCRE. California legless lizards prefer loose soil for burrowing, sparse vegetative cover, and require some moisture in the substrate. They often use surface cover objects such as logs, rocks, or debris. Coast horned lizards typically prefer open areas with areas of loose soil and an abundance of native ants.

Freshwater wetlands provide habitat for four California species of special concern that have potential to occur within the emergent freshwater marsh, though have not been documented in the

SCRE: western pond turtle, California red-legged frog, south coast garter snake, and two-striped garter snake. Western pond turtles, which have been documented in the upper Santa Clara River watershed near Santa Clarita and in the vicinity of Piru Creek (Stillwater Sciences 2018), prefer permanent, slow-moving fresh or brackish water with basking sites such as logs or mats of vegetation in marsh and open water habitats. California red-legged frog has been recorded upstream along the Santa Clara River but not in the SCRE (Stillwater Sciences 2018). California red-legged frogs prefer still or slow moving water with emergent and overhanging vegetation, including wetlands, wet meadows, ponds, lakes, and low-gradient, slow moving stream reaches with permanent pools.

California species of special concern bird species that have been identified in the SCRE—though uncommon or rarely sighted—include least bittern, white-tailed kite, and northern harrier. Tricolored blackbird, a state Species of Special Concern that has not been documented in the SCRE but has the potential to occur, typically nests in large colonies (at least about 50 pairs) within protected substrate such as cattail, tule, blackberry, or willow near open water.

Special-status bird species with the potential to occur within the riparian forest include the southwestern willow flycatcher and least Bell's vireo (both federally and state-endangered species), yellow warbler and yellow-breasted chat (both state Species of Special Concern); all of which are rare or uncommon in the SCRE with the exception of the yellow warbler, which is common. A variety of bat species may roost in trees of riparian habitats including the western red bat, a state Species of Special Concern.

Lastly, large colonies of brown pelican are known to rest within the open water of the SCRE and the treatment ponds. They are a year-round resident of Ventura County and are generally found mostly offshore along coastal waters, but may also venture inland into large open waters. Brown pelicans usually nests on the ground, in trees, or on cliffs along the Pacific Coast. However, the only breeding colonies of this subspecies along the California coast are located on Anacapa Island and Santa Barbara Island. The project site is located along the California coast, where brown pelicans (as well as several other birds) can commonly be found foraging offshore, and groups of brown pelicans are common within the SCRE.

Phase 3 Focal Species Accounts

Tidewater goby. The population in the SCRE is federally listed as endangered under the Endangered Species Act. Tidewater goby use aquatic habitats within the SCRE for their entire life-cycle. They have been one of the most abundant fish species in the SCRE during past surveys, but were relatively scarce during Phase 3 surveys (described in Section 3.4.8). Tidewater goby require shallow habitat with sandy substrate for spawning burrow construction. They are relatively tolerant of salinity fluctuations. Very high water temperatures or extended periods of low dissolved oxygen (DO) may be unsuitable for rearing and spawning tidewater goby.

Major threats to goby in the SCRE include dispersal due to storm flows, dewatering of nests due to breaching (including unauthorized third-party breaches), as well as predation by or competition with native and introduced species.

The project area contains suitable estuarine breeding and rearing habitat for this species, and this species has been documented within the lagoon and the Santa Clara River. Tidewater goby use the SCRE and recent studies have shown the presence of them in the SCRE (Stillwater 2018).

Southern steelhead – Southern California DPS. Steelhead found in the Santa Clara River belong to the Southern California steelhead Distinct Population Segment (DPS), which extends from the Santa Maria River bordering Santa Barbara and San Luis Obispo counties to the U.S.-Mexico border (Stillwater 2018). This DPS is listed as endangered under the federal Endangered Species Act. The Santa Clara River has a documented steelhead run, and the project area is part of designated Critical Habitat for this species. The project area does not contain the shallow, fast flowing stream habitat necessary for spawning steelhead, but it does provide sheltered, deeper rearing and ocean salinity acclimation habitat, and is a migration corridor to upstream spawning habitat and ocean rearing access.

Under historical conditions (before 1946) within the Santa Clara River watershed, steelhead likely spawned and reared in the major tributaries west of the Piru Creek confluence (Kelley 2004, Harrison et al. 2006). These tributaries included primarily Sespe and Piru creeks, although Santa Paula and Hopper creeks also likely provided significant steelhead habitat. The present-day distribution of steelhead in the Santa Clara River watershed is limited by a number of migration barriers that restrict upstream passage of adults, both in the lower mainstem river and most major tributaries (Stillwater 2018). At present, only an estimated 500 adult steelhead remain in the Southern California DPS north of Malibu Creek, California, although in years of substantial rainfall, spawning steelhead may be found as far south as the Santa Margarita River, in northern San Diego County (Stillwater 2018).

The SCRE provides a migratory corridor for upstream adult steelhead spawners and outmigrant smolts, as well as potential rearing habitat for subadults. Migratory steelhead require open mouth conditions during their migration window (November to July). Open mouth conditions outside the migratory period, however, can harm or kill rearing steelhead, which are not physiologically prepared to enter the ocean.

Rearing steelhead require moderately low salinity, relatively high dissolved oxygen, refuge from excessive water temperatures, and cover to avoid avian predation. Poor water quality conditions, including low DO or high temperatures, can interfere with rearing success and migration.

Western snowy plover. Western snowy plover may be found near the SCRE during both the summer (nesting) and winter seasons. Nesting activity typically peaks in May or June. Open beach and foredune habitats are used by the species for nesting, which takes place on the ground above the high tide line on barren to sparsely-vegetated beaches. Western snowy plover uses the same open beach and foredune habitats for foraging, by gleaning for invertebrates such as insects and crustaceans found on the sand, in stranded seaweed on the beach, or from low-growing plants.

Major threats to western snowy plover include habitat loss and degradation due to factors ranging from invasive plant species (e.g., ice plant, giant reed), urban development, and recreational use of beaches. Human interference and predation are both common causes of nest failure in the

SCRE and vicinity. When the SCRE contains more water, during higher stages, habitat curves show decreasing foraging habitat. Higher stages result in more stable nesting habitat, on the other hand, because areas that become inundated at higher stage are not considered suitable nesting habitat based on the risk of nest flooding.

As with tidewater goby and steelhead, the main risk of the existing discharge into the SCRE for western snowy plover, is artificial berm breaching. This issue is discussed further below, in the section entitled “SCRE Unseasonal Breaching.”

California Least Tern. California least tern is found near the SCRE only during the summer (nesting) season. Nesting activity typically peaks in June or July. California least tern forage in aquatic habitats where small bait fish are abundant, including shallow estuaries, lagoons, coastal ponds, or nearshore waters.

Similar to western snowy plover, major threats to California least tern include habitat loss and degradation as a function of invasive plants, urban development, and recreational use of beaches. Human interference, nest abandonment, and predation are common causes of nest failure in the SCRE. Suitable habitat relationships with stage are dependent upon the amounts of open water as well as open beach habitat for foraging and nesting, respectively (Stillwater 2018).

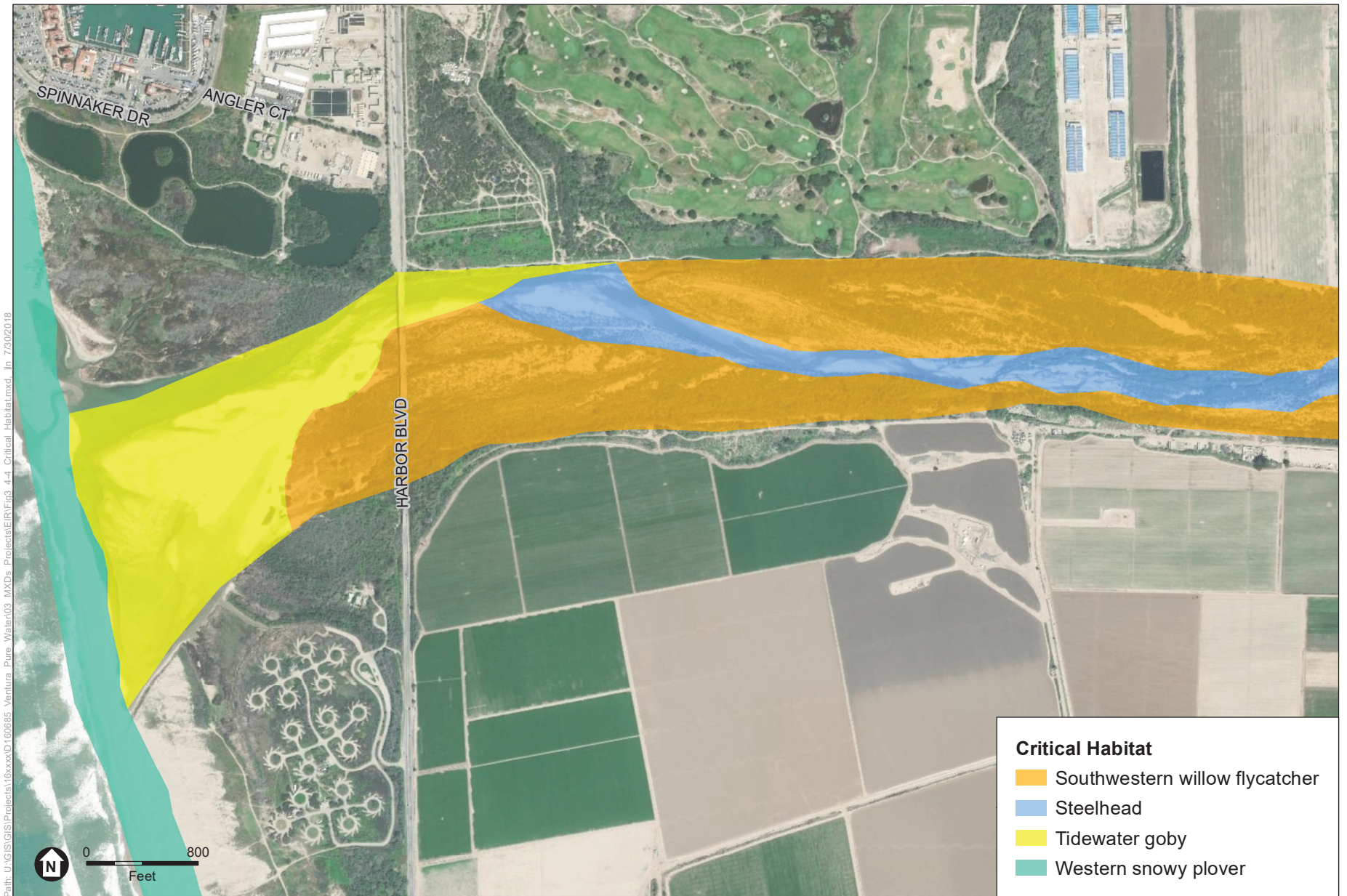
Critical Habitat

The National Marine Fisheries Service (NMFS) designated the SCRE as critical habitat for the Southern California steelhead under the ESA. The U.S. Fish and Wildlife Service (USFWS) has designated the SCRE as critical habitat for the tidewater goby and western snowy plover under the Endangered Species Act, and also published a recovery plan for the endangered fish, which is a plan required by Section 4(f) of the federal Endangered Species Act (FESA) that delineates reasonable actions that are believed to be required to recover and/or provide future protections for a listed species.

In addition to designating the SCRE as critical habitat for Southern California steelhead, it is also designated critical habitat for tidewater goby, southwestern willow flycatcher, and western snowy plover. These species, including Southern California steelhead, have historically used the Santa Clara River and SCRE as habitat, rearing and foraging and have been observed in the vicinity. The critical habitat ranges are provided in **Figure 3.4-4**.

3.4.4 Jurisdictional Waters and Wetlands

Jurisdictional wetlands and waters are subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), Los Angeles Regional Water Quality Control Board (RWQCB), and CDFW. Jurisdictional waters include rivers, streams, creeks, ponds, and lakes. Jurisdictional wetlands are typically areas that are inundated or saturated either periodically or permanently, and often include features such as marshes, mudflats, swamps, and vernal pools. A formal jurisdictional delineation was not performed within the survey area. The SCRE and Edison Canal, which can be seen in **Figure 3.4-5** are located adjacent to the proposed Calleguas SMP pipeline alignment along Harbor Boulevard. These two water features may potentially be subject to the jurisdiction of the USACE, RWQCB, CDFW, and/or the California Coastal Commission (CCC).



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.4-4
Designated Critical Habitat in the Project Area

Edison Canal is a 5-mile-long engineered coastal waterway that is linked to Channel Islands Harbor in Oxnard and provides the adjacent Reliant Mandalay Generating Station with ocean water for its cooling system.

3.4.5 Wildlife Movement Corridors

Wildlife movement corridors are areas where regional wildlife populations regularly and predictably move during dispersal or migration. Movement corridors in California are typically associated with ridgelines, valleys, rivers and creeks supporting riparian vegetation. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

The importance of an area as a movement corridor depends on the species in question and its consistent use patterns. Animal movements generally can be divided into three major behavioral categories: (1) movements within a home range or territory, (2) movements during migration; and (3) movements during dispersal. While no detailed study of wildlife movements was conducted for the project, knowledge of the site, its habitats, and the ecology of the species potentially occurring on-site and in adjacent areas permits sufficient predictions about the types of movements occurring in the region and whether or not proposed construction could constitute an impact to wildlife movements.

The Santa Clara River is the longest free-flowing river in southern California, and is the only one that extends from the desert to the coast. As such, it is of critical biological importance, linking several major ecoregions (Coastal Plain, Coast Ranges, Transverse Ranges, Mojave Desert) (www.audubon.org/important-bird-areas/santa-clara-river-valley). Historically the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, coast ranges, interior ranges, high desert and southern Sierra (via the Transverse and Tehachapi range). Animals moving through the Santa Clara River at one time had unobstructed passage along the river and within its tributaries. The present configuration of the tributary drainages has reduced connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The river corridor and the linkage zones within the Santa Clara River are considered essential to insuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the river, including migratory fish that use the SCRE as a migratory corridor with only transient residence. Prior to outmigration, some juveniles or smolt-sized fish might rear for short periods in the SCRE.

The SCRE is also a resting stop for migrating birds along the Pacific Flyway. The Pacific Flyway is a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites. Birds that are migrating along the Pacific Flyway may stop to rest within the SCRE to feed and regain their strength before continuing. Some species may remain within the SCRE for the entire season, but most stay a few days before moving on (Wilson 2010).

3.4.6 Regulatory Framework

Federal

Federal Endangered Species Act

The USFWS, in the Department of the Interior, and the NMFS, in the Department of Commerce, have responsibility for administration of the FESA. USFWS has authority over terrestrial and freshwater species; the tidewater goby, which spends its entire lifespan in estuaries, is under the jurisdiction of USFWS. NMFS has authority over marine and anadromous species, such as the Southern California steelhead, which spends part of its life in freshwater and part of its life at sea.

FESA provides a process for listing species as either threatened or endangered, and methods of protecting listed species. FESA has four major components: 1) provisions for listing species, 2) requirements for federal agency consultation with USFWS or NMFS, 3) prohibitions against “taking” of listed species, and 4) provisions for permits that allow incidental “take” of listed species for otherwise lawful activities. FESA also requires the preparation of recovery plans and the designation of critical habitat for listed species.

Species are listed as either endangered or threatened under Section 4 of the FESA, which defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its range and “threatened” if a species is likely to become endangered in the foreseeable future. Section 9 of the FESA prohibits “take” of listed endangered species, and may be extended to threatened species by rule. The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Harm under the definition of “take” includes disturbance or loss of habitats used by a threatened or endangered species during any portion of its life history. Under the regulations of the FESA, “take” may be authorized when it is incidental to, but not the purpose of, an otherwise lawful act.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) establishes national policy to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation’s coastal zones. In accordance with Section 307(c) of the CZMA, after approval by the Secretary of Commerce of a state’s management program, any applicant for a required federal license or permit to conduct an activity in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state, shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state’s approved program and that such activity would be conducted in a manner consistent with the program. The federal government certified the California Coastal Management Program (CCMP) in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976.

For all of the California coast, except San Francisco Bay the state agency responsible for implementing the CZMA is the California Coastal Commission (CCC). The CCC is responsible for reviewing proposed federal and federally licensed or permitted activities to assess their consistency with the approved CCMP.

The Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) (U.S. Code Title 16 Section 703–711), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. Under the MBTA it is illegal, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird...” The MBTA protects over 800 species, including geese, ducks, shorebirds, raptors, songbirds, and many relatively common species. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Clean Water Act Section 404

Section 404 of the Clean Water Act (CWA) (33 USC 1251 et seq., 33 CFR Sections 320 and 323) gives the USACE authority to regulate the discharge of dredge or fill material into waters of the U.S., including wetlands. The USACE (Federal Register 1982) and the EPA (Federal Register 1980) jointly define wetlands as: “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Wetlands have the following general diagnostic environmental characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory 1987). Examples of wetlands may include freshwater marsh, seasonal wetlands, and vernal pool complexes that are adjacent to perennial waters of the U.S.

“Other waters of the U.S.” refers to those hydric features that are regulated by the CWA but are not defined as wetlands (33 CFR 328.4). Examples of other waters of the U.S. may include rivers, creeks, ponds, and lakes.

National Pollutant Discharge Elimination System Section 402

The NPDES permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution. Under the NPDES permit program, discharges into navigable waters are prohibited except in compliance with specified requirements and authorizations. In order to discharge to waters of the United States, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent.

USEPA has delegated authority of issuing NPDES permits in California to the SWRQB and its nine Regional Water Quality Control Boards (RWQCBs). The Los Angeles Regional Water Quality Control Board (LARWQCB) regulates water quality in the project area. The NPDES permit program is discussed under state regulations, below, and includes the site-specific operating NPDES permit for the VWRF and the NPDES stormwater permits for construction, municipal stormwater systems, and industrial facilities

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with NMFS, USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in modification of a natural stream or body of water. Federal agencies must consider effects that projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the CWA (concerning the discharge of dredged materials into navigable waters of the United States) and Section 10 of the Rivers and Harbors Act (obstructions in navigable waterways). NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats.

State

California Endangered Species Act

The California Endangered Species Act (CESA) and implementing regulations in the Fish and Game Code, Sections 2050 through 2089, include provisions for the protection and management of plant and animal species listed as endangered or threatened, or designated as candidates for such listing. Incidental take of an endangered species is permitted by CDFW only under certain conditions and provided that the proper federal permits have been obtained and notifications made to the CDFW.

Pursuant to Section 2081 of the code, the CDFW may authorize individuals or public agencies to import, export, take, or possess, any state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if: (1) the take is incidental to an otherwise lawful activity, (2) impacts of the authorized take are minimized and fully mitigated, (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) the applicant ensures adequate funding to implement the measures required by CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Regional Water Quality Control Board

Under Section 401 of the CWA, the local Regional Water Quality Control Board (RWQCB), Los Angeles RWQCB, must certify that actions receiving authorization under Section 404 of the CWA also meet state water quality standards. The RWQCB also regulates waters of the state under the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

California Department of Fish and Wildlife Streambed Alteration Agreement Program

CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. These activities are regulated under the California Fish and Game Code Sections 1600-1616. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. Requirements may include avoidance or minimization of the use of heavy equipment, limitations on work periods to avoid impacts on wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake, or associated riparian or wetland habitat. As defined by the California Fish and Game Code, "wetlands" means lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools (FGC Section 2785).

Protection of Wildlife Species and Populations

Sections 1801-1802 of the California Fish and Game Code state that CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species, and it is state policy to maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the objectives stated in the subdivisions identified in this code.

Sections 2000-2021.5 of the California Fish and Game Code state that it is unlawful to take or possess any bird, mammal, fish, reptile, amphibian, or parts thereof, except as provided in this code or regulations made under it.

Protection of Birds, Nests and Eggs

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptor (i.e., species in the orders *Falconiformes* and *Strigiformes*), including its nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3800 of the California Fish and Game Code affords protection to all nongame birds, which are all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. Section 3513 of the California Fish and Game Code upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

California Fully Protected Species

California fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913)

The Native Plant Protection Act includes measures to preserve, protect, and enhance rare and endangered native plants. The list of native plants afforded protection pursuant to the Native Plant Protection Act includes those listed as rare and endangered under the CESA. The Native Plant Protection Act provides limitations on take as follows: “No person will import into this state, or take, possess, or sell within this state” any rare or endangered native plant, except in compliance with provisions of the act. Individual landowners are required to notify the CDFW at least 10 days in advance of changing land uses to allow the CDFW to salvage any rare or endangered native plant material.

CEQA

If a project would substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare, or threatened species, CEQA defines the impact as significant. Cal. Pub. Res. Code, § 15065(a)(1).

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by the CNDDDB as sensitive are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Regional

Ventura County General Plan

The Ventura County General Plan, which is mandated by state law, sets forth the goals, policies, and programs the County will implement to manage future growth and land uses. The General Plan, adopted by the Board of Supervisors, embodies the vision for the future of unincorporated Ventura County. The Ventura County General Plan includes a biological resources element, which details plant and animal species and their habitats, plant communities and ecosystems. The following goals and policies related to biological resources are applicable to the project.

Goal 1.5.1. Preserve and protect significant biological resources in Ventura County from incompatible land uses and development. Significant biological resources include endangered, threatened or rare species and their habitats, wetland habitats, coastal habitats, wildlife migration corridors and locally important species/communities.

Policy 1.5.2.1. Discretionary development which could potentially impact biological resources shall be evaluated by a qualified biologist to assess impacts and, if necessary, develop mitigation measures.

Policy 1.5.2.2. Discretionary development shall be sited and designed to incorporate all feasible measures to mitigate any significant impacts to biological resources. If the impacts cannot be reduced to a less than significant level, findings of overriding considerations must be made by the decision-making body.

Policy 1.5.2.3. Discretionary development that is proposed to be located within 300 feet of a marsh, small wash, intermittent lake, intermittent stream, spring, or perennial stream (as identified on the latest USGS 7½ minute quad map), shall be evaluated by a County approved biologist for potential impacts on wetland habitats. Discretionary development that would have a significant impact on significant wetland habitats shall be prohibited, unless mitigation measures are adopted that would reduce the impact to a less than significant level; or for lands designated "Urban" or "Existing Community", a statement of overriding considerations is adopted by the decision-making body.

Policy 1.5.2.4. Discretionary development shall be sited a minimum of 100 feet from significant wetland habitats to mitigate the potential impacts on said habitats. Buffer areas may be increased or decreased upon evaluation and recommendation by a qualified

biologist and approval by the decision-making body. Factors to be used in determining adjustment of the 100-foot buffer include soil type, slope stability, drainage patterns, presence or absence of endangered, threatened or rare plants or animals, and compatibility of the proposed development with the wildlife use of the wetland habitat area. The requirement of a buffer (setback) shall not preclude the use of replacement as a mitigation when there is no other feasible alternative to allowing a permitted use, and if the replacement results in no net loss of wetland habitat. Such replacement shall be "in kind" (i.e. same type and acreage), and provide wetland habitat of comparable biological value. On-site replacement shall be preferred wherever possible. The replacement plan shall be developed in consultation with California Department of Fish and Game.

Policy 1.5.2.5. The California Department of Fish and Game, the U.S. Fish and Wildlife Service, National Audubon Society and the California Native Plant Society shall be consulted when discretionary development may affect significant biological resources. The National Park Service shall also be consulted regarding discretionary development within the Santa Monica Mountains or Oak Park Area.

Ventura County Tree Protection Ordinance

Selected trees are protected by the Ventura County Tree Protection Ordinance, found in Section 8107-25 of the Ventura County Non-Coastal Zoning Ordinance (Division 8, Chapter 1, Section 8107-25). The ordinance protects selected native, heritage, or historical trees through regulation of the following activities: tree removal, trimming, or grading/excavating within the root zone, as identified in **Table 3.4-4** below. Oak woodlands are additionally protected as "locally important communities," as discussed below.

**TABLE 3.4-4
PROTECTED TREES IN VENTURA COUNTY¹**

Common Name/Botanical Name (Genus/Species)	Girth Standard (Circumference)
Oak (Single) (<i>Quercus</i> all species)	9.5 in.
Oak (Multi) (<i>Quercus</i> all species)	9.5 in.
Sycamore (<i>Platanus</i> all species)	9.5 in.
Historical Tree ² (any species)	(any size)
Heritage Tree ³ (any species)	90.0 in.

1. Tree species protected within the Scenic Resource Protection Overlay Zone are excluded from the table, as it does not apply to the project area.
2. Any tree or group of trees identified by the County or a city as a landmark, or identified on the Federal or California Historic Resources Inventory to be of historical or cultural significance, or identified as contributing to a site or structure of historical or cultural significance.
3. Any species of tree with a single trunk of 90 or more inches in girth or with multiple trunks, two of which collectively measure 72 inches in girth or more. Species with naturally thin trunks when full grown or naturally large trunks at an early age, or trees with unnaturally enlarged trunks due to injury or disease must be at least 60 feet tall or 75 years old.

SOURCE: Ventura County Tree Protection Ordinance (Sec. 8107-25 and Subsections added by ORD. 3993 – 2/25/92)

The ordinance allows removal of five protected trees (only three of which can be oaks or sycamores; none of which can be heritage or historical trees) through a ministerial permit process. Removal of more/other than this may trigger a discretionary tree permit. If a proposed project cannot avoid impacts to protected trees, mitigation of these impacts (such as replacement of lost

trees) is addressed through the tree permit process, unless the impacts may affect biological resources beyond the tree itself, such as to sensitive status species that may be using the tree, nesting birds, the tree's role as part of a larger habitat, etc.

Ventura County General Plan: Coastal Area Plan

The Ventura County Coastal Area Plan and Coastal Zoning Ordinance constitute the LCP for the unincorporated portions of Ventura County's coastal zone. The main goal of the Coastal Area Plan is to ensure that the local government's land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of and implement the provisions and policies of the Coastal Act. The LCP specifically applies to development in the unincorporated portions of the Coastal Zone of Ventura County. The existing wildlife treatment ponds and the proposed Harbor Boulevard AWP site wildlife/treatment wetlands, and concentrate outfall are located in the Coastal Zone boundary (Ventura County 2018).

Local

City of San Buenaventura General Plan

Adopted in 2005, the City of Ventura General Plan sets long-range goals based on a shared vision to guide Ventura's future. The City Council, advisory boards, commissions, city departments and staff rely on the General Plan to guide certain functions, responsibilities, and services the City of Ventura provides to residents, and the protection of natural and cultural resources in the community. The General Plan includes a Natural Communities element, which establishes policies to protect the community from issues associated within the natural setting of coastline, rivers, and hillside ecosystems (City of Ventura, 2005a). The following goals and policies related to natural communities and biological resources are applicable to the proposed project.

Policy 1C: Improve protection for native plants and animals.

Action 1.16: Comply with directives from regulatory authorities to update and enforce stormwater quality and watershed protection measures that limit impacts to aquatic ecosystems and that preserve and restore the beneficial uses of natural watercourses and wetlands in the city.

Action 1.19: Require projects near watercourses, shoreline areas, and other sensitive habitat areas to include surveys for State and/or federally listed sensitive species and to provide appropriate buffers and other mitigation necessary to protect habitat for listed species.

City of San Buenaventura Local Coastal Plan

The City has an approved LCP covering coastal areas of the City. The City's LCP was approved by the CCC on February 23, 1984. The LCP applies coastal access and aesthetic objectives of the Coastal Plan to development within the coastal zone of the City. The VWRF and proposed natural treatment wetlands are located within the LCP jurisdiction.

City of Oxnard 2030 General Plan

The City of Oxnard 2030 General Plan was adopted in 2011, and amended in 2016. The General Plan contains goals and policies that are intended to guide a wide range of public and private

development decisions through 2030 (City of Oxnard, 2011). The General Plan includes an Environmental Resources element. The following goals and policies related to environmental resources are applicable to the project.

Goal ER-1: Protection of natural and cultural resources, agriculture, and open spaces is well integrated with the built environment and human activities and achieves a mutually-beneficial, sustainable relationship.

Policy ER-1.1: Protect the City's natural resource areas, fish and wildlife habitat, scenic areas, open space areas, parks, and cultural and historical resources from unnecessary encroachment or harm and if necessary, full mitigate the impacts to maximum extent possible.

Goal ER-2: Maintenance and enhancement of natural resources and open space.

Policy ER-2.1: Evaluate existing and potentially sensitive habitat areas as resource protection or open space land uses.

Goal ER-3: Protected, restored, and enhanced of water-related habitats and their associated plant and wildlife species.

Policy ER-3.1: Require the preservation and enhancement of the riparian habitat along the Santa Clara River, Edison Canal, McGrath Lake vicinity, and within the Ormond Beach wetlands.

Policy ER-3.3: Whenever possible, request appropriate feasible County, State, and Federal agency mitigation measures.

Goal ER-4: Protected, restored, and enhanced habitat areas.

Policy ER-4.1: Identify and encourage protection of sensitive habitat area, with attention to habitat that may span small parcels.

City of Oxnard Local Coastal Plan

The city of Oxnard has an LCP that was adopted in 1982 in accordance with Chapter 3 of the Coastal Act. The Oxnard LCP applies to developments between the sea and the first public road paralleling the ocean or within 300 feet of the inland extent of any beach or of the mean high tide line of the sea where there is no beach, whichever is the greater distance. The Oxnard LCP includes policies that are mandated for preserving coastal resources, including maximum public access, recreational uses, preservation of marine resources, sensitive habitats, prime agricultural land and archeological resources; and, guidelines for new residential, commercial and industrial developments. It should be noted that in Oxnard, the "sea" is defined to include the Channel Island Harbor, the Edison Canal and channels associated with the inland waterway development that creates a significant inland bulge of the coastal zone boundary.

City of Port Hueneme Local Coastal Plan

The city of Port Hueneme received certification of their first LCP in 1984. Prior to the certification of the 1984 LCP, Port Hueneme could not unilaterally approve development projects within the Coastal Zone. The Coastal Commission retains primary responsibility and jurisdiction

over the issuance of development permits for projects until the end of the LCP process. The following conditions must be met to comply with the city of Port Hueneme's LCP:

Water and Marine Resources: The biological productivity and quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Environmentally Sensitive Habitat Areas (ESHA): ESHA shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

3.4.7 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to biological resources. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the project would have a significant adverse environmental impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status-species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS (refer to Impact BIO 3.4-1).
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or USFWS (refer to Impact BIO 3.4-2).
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (refer to Impact BIO 3.4-3).
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (refer to Impact BIO 3.4-4).
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (refer to Impact BIO 3.4-5).
- Conflict with provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan (refer to Impact BIO 3.4-6).

A summary of the findings for each impact is presented in **Table 3.4-5**. The analyses below support these findings.

**TABLE 3.4-5
SUMMARY OF BIOLOGICAL RESOURCE IMPACT DETERMINATIONS**

Impacts	3.4-1 Special Status Species	3.4-2 Sensitive Natural Communities	3.4-3 Wetlands	3.4-4 Migratory Wildlife Corridors	3.4-5 Local Policies and Ordinances	3.4-6 HCP and NCCP
Phase 1						
Advanced Water Purification Facility	LTS	LTS	LTS	LTS	LTS	LTS
Water Conveyance System	LTS	LTS	LTS	LTS	LTS	LTS
Groundwater Wells	LTS	LTS	LTS	LTS	LTS	LTS
Wildlife/Treatment Wetlands	LTS	LTS	LTS	LTS	LTS	LTS
VWRF Treatment Upgrade	LTS	LTS	NI	NI	NI	LTS
Concentrate Discharge Facility	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2						
AWPF Expansion	LTS	LTS	LTS	LTS	LTS	LTS
Ocean Desalination	LTS	LTS	LTS	LTS	LTS	LTS

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU – Significant and Unavoidable impact, even after implementation of mitigation

3.4.8 Impacts and Mitigation Measures

Special Status Species

Impact BIO 3.4-1: The proposed projects could have a significant impact if they would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS.

Phase 1

Advanced Water Purification Facility

Construction

As shown in Figure 3.4-1, all three of the potential AWPf locations are previously disturbed and do not contain any special-status plant or wildlife species. Therefore, construction and operation of the proposed AWPf would not affect special-status species. However, there is a potential for nesting birds on and in close proximity to the sites to be impacted during construction.

Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected by implementing minimization and avoidance measures during construction activities. Impacts would be less than significant.

Operation: Reduced Discharge

Staged Reduction of Discharge to the SCRE

Section 1.6 of Chapter 1.0, Introduction, summarizes the series of studies prepared by the City of Ventura to evaluate the effects of VWRf discharge on the SCRE that culminate in the preparation of the Scientific Review Panel (SRP) Report. As discussed in Section 21.6.2, the City of Ventura Special Studies – *Phase 3: Assessment of the Physical and Biological Conditions of the Santa Clara River Estuary*, also known as the Phase 3 Study, provides an updated assessment (from the previous Phase 1 and Phase 2 studies) of the baseline condition of the SCRE and its ecological functions and beneficial uses.

As discussed in Section 1.6.3, the recommendations in the Phase 3 Study regarding the Enhancement Discharge Levels, Maximum Environmentally Protective Discharge Volume (MEPDV), and the Continued Discharge Level (CDL) were considered and peer reviewed by the SRP. The SRP Final Report dated June 11, 2018, reviewed and supported by the TRT, recommended that a diversion of 90 – 100 percent would protect, maintain, and improve SCRE ecological resources. While recognizing that this diversion would reduce open water and freshwater wetland habitat acreage (see Table 3.4-6), the SRP Report found multiple benefits of reduced effluent discharge, including benefits to sensitive species and water quality of reduced nutrient loading, reduced unseasonal berm breaching, and reduction in invasive predatory and competitive non-native aquatic species. The proposed project's diversion volume of 90 – 100 percent was selected by the City based on the scientific recommendation in the SRP report constituting best available science.

The SRP differed from the results of the Phase 3 Study, which found that a VWRF discharge reduction of 60 percent from existing conditions would provide the best balance of beneficial uses in the SCRE. The SRP and TRT concluded that the Analytic Hierarchy Process (AHP) model was overly weighted toward maintaining open water conditions and effluent-sustained freshwater wetlands.. The analysis applied weighting factors for effects on each beneficial use in recognition of the multiple beneficial uses of the SCRE, resulting in a compromise that did not reflect the optimal conditions for steelhead and goby.

The SRP Final Report concluded that the AHP emphasized habitat quantity to the detriment of habitat quality. The SRP re-evaluated the data presented in the Phase 3 Study based on an assumption that zero discharge from the VWRF (i.e., 100 percent discharge diversion) is ecologically preferred unless there is evidence to the contrary. Consistent with the Phase 3 Report, the SRP prioritized habitat for four species (tidewater goby, steelhead, western snowy plover, and California least tern). In its review and analysis, the SRP focused on aquatic life beneficial uses, prioritizing the capacity of the SCRE to provide quality habitat for the tidewater goby in particular, which it viewed as most reliant on the SCRE for all aspects of its life history. It then applied its findings for goby to steelhead and other sensitive species, and found not only that its findings and recommendations were needed to protect steelhead and other sensitive species, but that the SCRE's other beneficial uses would be protected under its CDL too. The SRP concluded that when evaluating habitat quality for the species of concern in the SCRE, a 90 – 100 percent reduction in VWRF discharges would result in substantially improved and preferred conditions compared to existing conditions within the SCRE.

Phase 1 of the proposed projects incorporates a step-down approach to reducing discharge to the SCRE. The first stage of Phase 1 (Phase 1a) would divert 60 percent of discharge (resulting in a CDL of 1.9 million gallons per day [MGD]), reflecting the recommendation of CDFW to provide a minimum average flow of 1.9 MGD as a starting point, subject to reevaluation upon monitoring and analysis. As discussed in greater detail in Section 1.6, the SRP Final Report recommends diversion of 90 – 100 percent of discharge to the SCRE (a CDL from 0.0 – 0.5 MGD). Compared to existing conditions, this level of diversion improves habitat for sensitive native species, providing ecological enhancement. To achieve the conditions that would best replicate natural conditions in the SCRE, thereby providing the most improvement to habitat, the second stage of Phase 1 (Phase 1b) would increase diversion to 90 – 100 percent, as recommended by the SRP. The second stage would be implemented following monitoring and analysis of the effects of diversion during the first stage.

Habitat Changes

Operation of the AWPf would result in a 4.2 MGD reduction of tertiary-treated effluent discharged into the wildlife ponds and SCRE. This 90 – 100 percent reduction from existing average conditions would reduce water levels and open water wetted area in the lagoon, resulting in changes in habitat within the lagoon. These changes in habitat include changes in quantity (acreage) and changes in quality. Both of these factors are discussed below.

Changes in Acreage

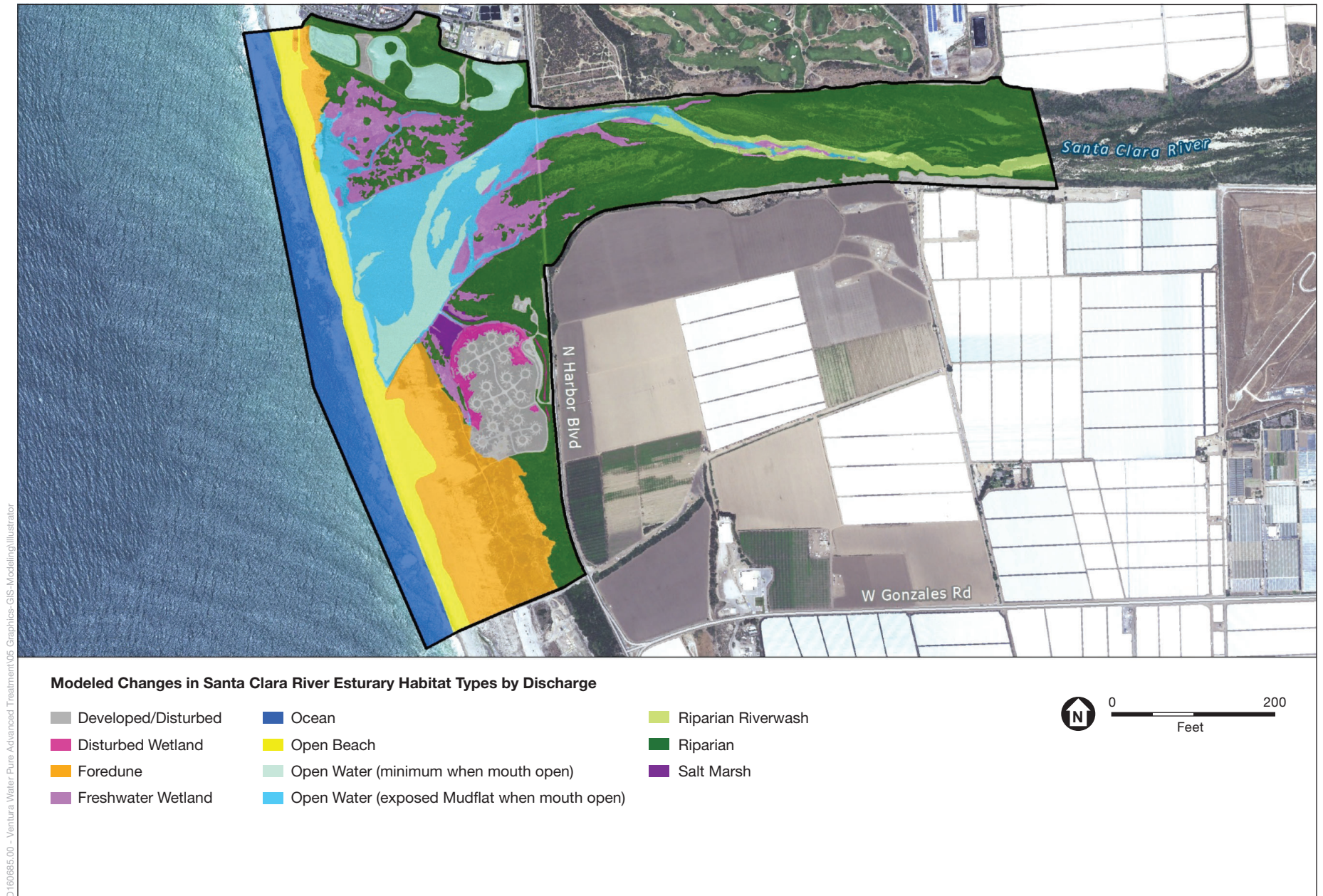
The potential acreage changes to habitat conversion resulting from reduced discharge into the SCRE was studied by Stillwater Sciences as reported in the 2018 Phase 3 Report. **Figure 3.4-6** illustrates habitat areas under existing conditions within the SCRE. **Figure 3.4-7** illustrates predicted habitat under the proposed project 90 percent diversion conditions. **Table 3.4-6** summarizes the estimated change in habitat acreage for each type of habitat found in the SCRE for both stages of Phase 1 of the proposed projects: the 60 and 90 percent diversion scenarios. The analysis predicts that the acreage of open water habitat, tidally exposed mudflats, freshwater wetland habitats, and disturbed wetlands would be reduced compared with existing conditions. Riparian habitat and riparian riverwash habitats would significantly increase in acreage.

As Table 3.4-6 shows, habitat acreages would decrease for some types of habitat. As discussed in the SRP Report, these decreases in quantity must be considered in conjunction with changes to habitat quality. Factors relating to habitat quality are discussed below.

Changes in Quality

Decreased Competition and Predation from Invasive Species

The large open water area of the lagoon supports invasive aquatic species that contribute to the decline of native and special-status species. Examples of species that either compete directly or are predatory to tidewater goby are western mosquitofish (*Gambusia affinis*, competitor) and African clawed frog (*Xenopus laevis*, predator). Decreasing discharge from the VWRP by 90 – 100 percent would promote more salinity stratification immediately following mouth closure and after overtopping events, since the reduced lagoon volume would provide less freshwater dilution than under existing conditions. Increased salinity stratification would help decrease competition and predation from nonnative invasive fishes because, unlike native species that are adapted to salinity stratification, invasive species have less tolerance for these conditions. Reducing the numbers of individual non-native fish, including the predatory carp, green sunfish, and bass, while providing good habitat for the goby, which utilize the open water less than the vegetated fringes of the lagoon, would be a benefit to the species. Reduction of open water would reduce total numbers of non-native fish and increase periods of higher salinity which would reduce impacts of predatory species on native tidewater goby.



SOURCE: Stillwater Sciences, 2018

Ventura Water Supply Projects

Figure 3.4-6
Habitat Types within SCRE under Existing Conditions, 2017



SOURCE: Stillwater Sciences, 2018

Ventura Water Supply Projects

Figure 3.4-7
Modeled Habitat Types with Proposed Project 0.5 MGD Discharge

TABLE 3.4-6
ESTIMATED HABITAT ACREAGE UNDER EXISTING CONDITIONS AND WITH PROPOSED PROJECT

SCRE Habitat Type	Existing Condition (0 percent diversion)	Proposed Project Phase 1a (60 percent diversion)	Proposed Project Phase 1b (90 – 100 percent diversion)	Difference of Proposed Project from Existing Condition
Ocean	76	76	76	0
Open Beach	47	51	53	+6
Foredune	76	76	76	0
Open Water ¹	108	86	49 – 41	-59 – -67
Tidally Exposed Mudflat ²	66	47	11 – 3	-55 – -63
Freshwater Wetland	45	15	7 – 2	-38 – -43
Salt Marsh	2.6	2.6	2.6	0
Riparian	218	261	270 – 256	+52 – 38
Riparian Riverwash	15	20	54 – 62	+39 – 47
Developed/Disturbed	49.6	55.4	55.4 – 73.7	+5.8 – 24.1
Disturbed Wetland	5.8	0.0	0.0	-5.8

¹ The estimate for “Open Water” includes the area of the SCRE that remains open water under open-mouth conditions when the SCRE reaches its minimum stage of 4.5 ft and the constant open water area from the VWRP ponds.

² Mudflat habitats exposed during open mouth condition reflect the differences in inundated area between the predicted equilibrium WSEL and mean lower low water levels (MLLW) modeled in the SCRE.

SOURCE: Stillwater, 2018; Table 5-5

Reduction in SCRE Unseasonal Breaching

Breaching of the SCRE-mouth berm along the beach occurs episodically in response to both natural and anthropogenic influences. In many southern California estuaries, high river discharge during wetter months breaches the berms that create coastal lagoons, causing extended open-mouth periods. During drier months, low river discharge results in extended closed-mouth periods. During closed-mouth periods, the SCRE fills with freshwater, from river baseflow and subsurface water sourced from groundwater, mixed with salt water from ocean-water seepage and wave overwash.

Natural, flow-induced breaching relates to the ability of the SCRE to store high river flows. Natural breaching during storms is a function of the pre-storm (antecedent) water volume in the SCRE and the magnitude and duration of storm-induced flows, as well as sand berm and ocean conditions. In addition to storm-induced wave impacts, wave overwash into the SCRE when the mouth is closed during any season can both add to the SCRE water volume and initiate the formation of a breach-mouth channel, the latter process causing rapid draining of the lagoon when the tide recedes. The lower water levels that would result from the diversion of discharge from the VWRP to 0 – 0.5 MGD CDL would not reduce the likelihood of such natural breaches.

Authorized and unauthorized breaching of the SCRE beach berm has also occurred in the past to alleviate risks of flooding adjacent to the lagoon. Known recent authorized breaches include an emergency breach as part of the 1994 McGrath Lake oil spill and occasional breaches associated with the Ventura Port District’s annual winter dredging disposal operations (ESA 2003). The McGrath Beach State Park 1979 General Plan indicated that park personnel would routinely

breach the SCRE mouth to prevent flooding of the campground. Due to natural resource considerations, this practice ended by 1985. Unauthorized third-party breaches have occurred on several occasions during the Phase 1 through 3 study periods (discussed in Chapter 1.0, Introduction, at Sections 1.6.1 and 1.6.2). Evidence of manual trenching of the beach berm near the VWRF outfall channel's confluence with the lagoon was observed on several occasions over the course of the Phase 3 Study period. Occurrences of substantial trenching were first noted in March 2016 and several times thereafter through the remainder of the year. It was believed by VWRF and State Parks staff that the unauthorized trenching may have been undertaken by homeless individuals residing near the SCRE to drain the lagoon and limit flooding of their encampments. The trenching location was consistently located on the north side of the lagoon near the confluence with the VWRF outfall channel that meanders through a riparian and wetland area. The lower water levels that would result from the diversion of discharge from the VWRF at 0 – 0.5 MGD CDL would reduce the likelihood and possibility of such unnatural breaches that are facilitated at high estuary stages caused by the VWRF discharge.

The combination of natural and artificial breaching has resulted in a SCRE mouth that has been open most consistently during wetter years, but also during drier years due to human activities. Daily observations of the SCRE beach berm made by VWRF staff from 1984 to present (99.9 percent of all days having observations) indicate the mouth has been open approximately 52 percent of observed days. During the Phase 3 Study period, there were 13 distinct mouth-breaching events documented. The first four events that occurred between December 2014 and February 2016 were associated with storm-induced, albeit low-magnitude, runoff events that caused the SCRE stage to rise to a point that destabilized the beach berm and caused the SCRE mouth to open. These open-mouth events were relatively short-lived, lasting only a few days before river flows waned and wave energies reformed the beach berm, closing the mouth. The following nine breach events were not associated with high river flows, but rather with manual trenching of the beach berm by unauthorized individuals. These open-mouth periods persisted many days longer than those formed during the storm-induced periods.

The SRP Report concludes, consistent with the Phase 3 Study, that unseasonal berm breaching poses the greatest risk of adverse impact on the fish that use the estuary and to nesting plovers and terns. Artificial breaching during the crucial summer and early fall life stages of goby and steelhead pose the greatest risk to these species. Nesting plovers may also be impacted if they are nesting in the location of the breach.

The impacts of an artificial breach can be catastrophic and lead to substantial take (injury or death) of fish species. During the low water period of summer and early fall, tidewater goby lay their eggs in burrows in shallow areas of the lagoon, within the sandy substrate. Juvenile salmon reside in the lagoons until they are ready to migrate to the ocean. Closed-mouth conditions protect the lagoon from ocean tides. When dry-weather breaches occur, the lagoon rapidly drains. Artificial breaching has three deleterious effects on sensitive native species and their habitat. First, rapid dewatering can leave fish isolated in small pools or trapped on mud/sand flats that were previously shallow water habitats. Tidewater goby lay their eggs in burrows that are completely susceptible to stranding if water elevations drop. Observations of the SCRE following an artificial breach have shown substantial mortality of stranded steelhead and tidewater goby. Second, rapid dewatering can transport fish out of the estuary to the ocean before they are ready

for ocean conditions. Third, the influx of seawater rapidly increases the salinity within the estuary, when juvenile steelhead and tidewater goby are unable to tolerate salinity changes, especially in early stages of development.

The SRP made recommendations, based on its review and analysis of the Phase 3 Report, on the effects of reducing discharge from the VWRP on the native and special-status species known to use the SCRE. The SRP recommended that 90 to 100 percent of the existing flow should be diverted to best protect special-status species and the ecology of the SCRE. When 90 percent diversion is implemented, discharge of tertiary treated-water would be reduced from the current discharge of 4.7 MGD to 0.5 MGD.

During the Phase 3 study, artificial breaching occurred when the SCRE water level was at 7.4 feet or greater (Table 3-4 in Phase 3 Study). It is likely that this breaching occurred in order to avoid flooding. At 0.5 MGD discharge, the SCRE stabilizes at 5.3 feet elevation (Table 5-5 in Phase 3 Study). The implementation of 90 percent diversion (0.5 MGD discharge) thus would reduce the water surface elevation associated with existing discharge levels, which should reduce the risk for unseasonal breaching.

Water Quality

The Phase 3 report found that water quality conditions resulting in eutrophication (when a body of water becomes overly enriched with minerals and nutrients that induce excessive growth of plants and algae) and low dissolved oxygen concentrations within the lagoon may be present 40 percent of the time under current conditions, primarily during closed mouth conditions. The lagoon is unsuitable for steelhead and goby under these conditions. During extended periods of times the estuary exhibits dissolved oxygen levels of zero or close to zero mg/L such that conditions would be lethal for the species. The primary sources of nutrients driving these patterns are discharges from the VWRP and groundwater exfiltration (Kramer 2018). The proportion of nutrient loading associated with groundwater exfiltration versus VWRP discharges is unknown. However, reducing nutrient loading from the VWRP can only serve to reduce eutrophication and associated hypoxia (oxygen deficiency in a biotic environment). The SRP Report (Kramer 2018) concludes that the benefits of reduced nutrient loading outweigh potential benefits of dilution from VWRP discharge, if indeed the VWRP does provide any dilution benefit (the VWRP discharge may also increase the concentration of nitrate and phosphate in the estuary). Therefore, less discharge from the VWRP would benefit the tidewater goby and juvenile steelhead by improving water quality in the lagoon.

Impacts on Aquatic Species

The previous section provided an overview of the effects of increased diversion on habitat quantity and quality. The following discussion addresses these habitat changes as they affect listed species that rely on the SCRE for habitat.

Steelhead

The SCRE provides a migratory corridor and salinity acclimation habitat for upstream adult steelhead spawners and outmigrant smolts, as well as potential rearing habitat for steelhead smolt. Rearing steelhead require moderately low salinity, relatively high dissolved oxygen, refuge from excessive water temperatures, and cover to avoid avian predation. Key hazards for subadult

steelhead include periods of low DO, high temperatures, and unseasonal breaching which can interfere with life development and migration. Juvenile steelhead prefer lower salinities for rearing. The proposed project would improve water quality conditions compared to existing conditions for steelhead subadults.

During open mouth conditions corresponding to wet weather, steelhead utilize the lagoon to initiate migration upstream to rearing habitat (November to May). Juvenile steelhead rear in the SCRE during the spring and summer months. The proposed project would not reduce the opportunity for migration during open mouth conditions. During closed mouth conditions, when steelhead would not be expected to migrate due to insufficient migration flows in the Santa Clara River mainstem, reduced discharge would result in lower water levels in the lagoon. Lower water levels would protect against unseasonal breaching of the lagoon caused when the water level is too high, as under existing conditions. It would be unlikely that lower water levels could delay open mouth conditions during wet weather compared to recent conditions, but this would be similar to historic conditions where winter storm flows have filled the estuary before breaching the sand berm, which would also provide assurance to steelhead that sufficient flows were present upstream to successfully migrate to tributary spawning grounds. The slight delay in breaching, if any, that could be caused by lower lagoon water levels would not significantly affect migratory opportunities that are most likely to be successful during strong storm events where the sand berm remains open for long periods due to natural hydrology and flowing water in the river channel far up the watershed.

Decreased discharge would also decrease the acreage of open water in the lagoon currently available to steelhead juveniles. However, a stable, low salinity estuary with sufficient DO and water quality provides necessary rearing habitat for early life stages. Even if the habitat acreage of the deeper pool is decreased, shoreline refugia will develop similar to existing conditions. In addition the reduction of non-native invasive species that prey on and compete with steelhead smolt under a CDL of 0 – 0.5 MGD is important for steelhead survival and successful rearing. As a result, the SRP Report (Kramer 2018) concludes that the proposed project would result in an improvement over existing conditions for steelhead.

Tidewater goby

Tidewater goby use aquatic habitats within the SCRE for their entire life-cycle. They have been one of the most abundant fish species in the SCRE during past surveys, but were relatively scarce during Phase 3 surveys. Tidewater goby require shallow habitat with sandy substrate for spawning burrow construction, and the enlarged lagoon area caused by the VWRf discharges in recent years has not resulted in increased tidewater goby populations. Adults are relatively tolerant of salinity fluctuations. Very high water temperatures or extended periods of low DO may be unsuitable for rearing and spawning tidewater goby. Major threats to goby in the SCRE include dispersal due to storm flows, dewatering of nests due to unauthorized breaches, water quality including low DO and high temperature, and predation by or competition with native and introduced species.

According to the Phase 3 Study, tidewater goby is the most reliant on the SCRE of all the special-status species. Although the other special-status species (steelhead, plover, and tern) rely on the SCRE for critical periods of their life, they also spend part of their lives outside of the SCRE.

Because the tidewater goby never leaves the SCRE, it serves as the most sensitive indicator for the ecology of the SCRE ecosystem.

Tidewater goby need low velocity conditions, stable water surface elevations, and low salinities (<15 parts per trillion) during egg, spawning and early larval and juvenile life stages. Unseasonal breaching can result in stranding and/or transport out of the estuary and exposure to high salinities. Early life stages of tidewater goby lack tolerance of abrupt salinity changes, such as those that occur during unseasonal breaches (Stillwater 2018). Not only are these life stages susceptible to transport out of the estuary during artificial breaches, but those that remain in the estuary are exposed to rapid increases in salinity that may be lethal.

Artificial breaches also affect the adult life stage. The adult life stage is the dispersive life stage for tidewater goby, and under natural conditions, natural breaching would occur when storm events increase river flows in the winter and early spring in the SCRE and in adjacent rivers and streams. Under these natural conditions, all of the nearby estuaries breach simultaneously, and freshwater plumes along the coast can guide dispersing adults to adjacent watersheds and provide recolonization or genetic exchange (Stillwater 2018). Artificial breaching can transport them out of the estuary to the coast during summer and fall, when freshwater plumes are not available to direct them to adjacent watersheds and increased salinity can be fatal. This unseasonal transport reduces the genetic exchange that can result from recolonization. Artificial breaching can also strand adults in isolated ponds when rapid dewatering occurs.

The proposed projects would improve water quality compared with existing conditions, reduce the deeper-water, low-salinity habitat that is conducive to predatory invasive species, and eliminate unseasonable breaches. Although the acreage of open water would reduce by 55 – 62 percent, the SRP Final Report concludes that the improved quality of habitat for goby and reduction of non-native invasive species that prey on and compete with goby under a CDL of 0 – 0.5 MGD is more important than the quantity of acreage of open water for long term viability of the species in the SCRE. The proposed project would benefit tidewater goby through improved habitat suitability criteria for each of its lifecycle stages.

Avian Species

Western Snowy Plover

Western snowy plover occupy open beach and foredune habitats for nesting and foraging for invertebrates, such as insects and crustaceans, on the sand, in stranded seaweed on the beach, and from low-growing plants. Major threats to western snowy plover include habitat loss and degradation due to factors ranging from invasive plant species (e.g., ice plant, giant reed), urban development, and recreational use of beaches. Human interference and predation are both common causes of nest failure in the SCRE and vicinity.

The Phase 3 Study notes that foraging habitat decreases with higher lagoon water levels. Consequently, the diversion of discharge would have positive effects on foraging habitat. Nesting habitat is generally farther from the water's edge and is less affected by high water. However, plover nests may be inundated at extremely high water in the lagoon. Reduced discharge to 0 – 0.5 MGD will not appreciably reduce nesting habitat or foraging ability for plovers and may reduce the likelihood of nest flooding by maintaining a lower, stable water surface elevation

through the nesting period. Both the western snowy plover and the California least tern would also benefit from reduced VWRP discharge, since artificial breaches during the summer may impact existing nesting and foraging habitat for the plover. Minimizing disturbance to the estuary and beach after nesting is initiated in spring would benefit western snowy plover.

The proposed project increases beach habitat for western snowy plover. As a result, the proposed project would not adversely affect western snowy plover.

California least tern

California least tern is found near the SCRE only during the summer (nesting) season. Nesting activity typically peaks in June or July. California least tern forage in aquatic habitats where small bait fish are abundant, including shallow estuaries, lagoons, coastal ponds, or nearshore waters. Similar to western snowy plover, major threats to California least tern include habitat loss and degradation as a function of invasive plants, urban development, and recreational use of beaches. Human interference, nest abandonment, and predation are common causes of nest failure in the SCRE. Foraging habitat for California least tern increases with the extent of open water. Nesting habitat is typically sand or gravel beaches above high tide that are relatively free of vegetation as a result of scour from periodic high storm tides (Stillwater 2018).

The proposed projects would reduce the foraging acreage in open water habitat. During the highest stage of the SCRE during closed-mouth periods, open water foraging habitat would be reduced by 55 – 62 percent. Foraging opportunities would remain in the smaller lagoon, similar to a more natural condition, and other foraging opportunities exist along the coastline, including the ocean, Lake McGrath, and coastal inlets all along the Ventura County coastline. Potential nesting habitat, e.g., open beach and foredune habitats above the high tide line on barren to sparsely-vegetated beaches, would increase. The availability of suitable foraging habitat near the SCRE, the enhanced quality of foraging in the SCRE, and improvements to nesting habitat would ensure that the impacts of the proposed projects would be less than significant.

Other Avian Species

The proposed project would increase riparian habitat by 24 percent, resulting in a substantial increase in suitable nesting habitat for least Bell's vireo and southwestern willow flycatcher. Other sensitive avian species potentially present include the California brown pelican, bank swallow, burrowing owl, white-tailed kite, Belding's savannah sparrow, and yellow warbler. Nesting and foraging habitat would remain for these species in greater abundance than under existing conditions. The reduction in open water may reduce its use by California brown pelican. However, other open water opportunities for the California brown pelican exist along the coastline including the ocean, Lake McGrath, and coastal inlets all along the Ventura County coastline. The pelican's range extends for miles up and down coast. As a result, the reduced open water would not result in take of any of these sensitive avian species or reduce habitat availability significantly.

The SCRE supports migratory birds along the Pacific Flyway. Audubon Society bird counts at the SCRE are summarized in Table 3.4-1. The proposed project would not reduce the amount of open space supporting migratory birds, but the changes in habitat type would reduce the acreage of open water preferred by waterfowl for foraging and loafing. Although the extent would be

reduced in size, the lagoon would remain a valuable aquatic habitat in the region supporting migratory and other bird species. Furthermore, the increased riparian acreage would significantly increase habitat for the riparian avian species including the least Bell's vireo and southwestern willow flycatcher. Other open water opportunities for far-ranging migratory birds exist up and down the coast. In the vicinity of the SCRE several major open water features are available to migratory waterfowl: Ormond Lagoon, McGrath Lake, Ventura River Estuary, Mugu Lagoon and Carpinteria Marsh. These systems, which are summarized below, provide comparable open water habitat.

Ormond Lagoon is similar to the SCRE, in that the lagoon berm is seasonally breached when rain events allow. Ormond Lagoon and adjacent Ormond Beach supports over 200 species of migratory birds, including the endangered California least tern and the threatened western snowy plover. The Audubon Society has identified Ormond Beach as an "Important Bird Area" because of its value as breeding, wintering, and migrating habitat for birds. The Ormond shoreline, wetlands, and lagoon provide homes for more shorebirds than any other beach in Ventura County (California Beaches 2018). Ormond Lagoon has approximately 17 acres of open water and 250 acres of wetlands (CCC 2018) and is located approximately 7.5 miles south of the SCRE.

McGrath Lake, located adjacent to McGrath State Beach, serves as a drainage pond for runoff from area farms and agricultural fields, and also as a wetland habitat to scores of migratory waterfowl and other wildlife species. Similar to the SCRE, McGrath Lake and Beach contain nine separate ecosystems: river, freshwater marsh, brackish marsh, coastal dune, ocean, sandy beach, estuary, coastal freshwater back dune lake, and riparian woodland. Among the rare, threatened or endangered animals protected at McGrath are the California least tern, brown pelican and least Bell's vireo. Many migratory birds overwinter at this location and approximately 245 different bird species have been observed. The lake is 17 acres of open water and is approximately 1-mile south of the SCRE.

The Ventura River Estuary is located approximately 4 miles north of the SCRE. Like the SCRE, the Ventura River Estuary is closed until rain events allow water to break through or overtop the berm blocking to the Pacific Ocean. The Ventura River Estuary is approximately 8 acres of open water.

The Carpinteria Marsh is located approximately 20 miles north of SCRE and lies adjacent to a sandy beach, subtidal rocky reef, and kelp beds. It is approximately 110 acres of salt marsh and is home to many rare and endangered plants and birds. It provides sanctuary for close to 200 bird species, including many endangered species such as the Light-footed Clapper Rail, and Belding's Savannah sparrow.

The Mugu Lagoon is approximately 12 miles south of the SCRE. It is a salt marsh located within the Ventura County Naval Base at the foot of the Santa Monica Mountains, approximately 8 miles south of Oxnard. Mugu Lagoon is one of the key coastal wetlands in the state, supporting over 60,000 shorebirds each spring, up to 10,000 in winter (Page and Shuford 2000), and thousands of ducks during migration and winter. One of the world's largest populations of Belding's Savannah Sparrow is found here (California Department of Fish and Game 2000), among all the expected southern California saltmarsh and coastal breeders, including the farthest-

north remaining population of Light-footed Clapper Rail. The Lagoon is approximately 2,000 acres and supports the largest remaining natural Brown Pelican roosting area (non-breeders) in southwestern California (Jaques et al. 1996).

The Oxnard Plain is also important for migrating shorebirds, particularly in fall, when hundreds may be seen foraging in the fields when tidal fluctuations push them out of the mudflats along the coast. The agricultural fields (especially the sod farms) are one of just four regular wintering areas for Pacific Golden-Plover in the state, and the scattered windbreaks are often filled with migrant songbirds in September and October.

Lagoons and estuaries with far less open water than the approximately 49 acres that would remain with reduced discharge (90 percent diversion) provide important avian habitat within the Project region. This supports the conclusion that reduced discharges of tertiary-treated effluent into the lagoon would not significantly reduce migratory bird visitation or adversely affect migratory birds that currently use the SCRE.

Reptiles and Amphibians

Reduced discharge would not affect habitat for the California legless lizard and coast horned lizard. Suitable habitat along the Santa Clara River, SCRE, and undeveloped open space in the area would remain. The new freshwater wetlands would increase habitat for these species. Impacts from reduced discharge would be less than significant.

The reduced discharge would reduce the amount of open water habitat for the western pond turtle, two-striped garter snake and coast garter snake. However, suitable habitat within the Santa Clara River corridor would not be significantly affected. The riparian habitat that would evolve over time from the reduced discharge would still provide valuable habitat for these species and the reduction of open water is not expected to cause any of these species to drop below self-sustaining levels when considering the large amount of available suitable habitat within the Santa Clara River. Impacts from reduced discharge would be less than significant.

Sensitive Plant Species

According to the Phase 3 Study, habitat types associated with special-status plants in the SCRE are present throughout the Santa Clara River corridor. The reduced discharge would not reduce the available habitat for any sensitive plant species since the broad river flood plain would remain undeveloped. The reduced discharge of freshwater into the lagoon would not impact sensitive plant species.

Physical and Biological Features

The USFWS considers physical and biological features (PBF) that species need for life processes and successful reproduction or protection within designated Critical Habitat. These features include: cover and/or shelter; space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; sites for breeding and rearing offspring, germination, or seed dispersal; and habitats that are protected from disturbances or are representative of the historical geographical and ecological distributions of the species (USFWS 2017).

The four focal species are also the only species for which critical habitat has been designated within the project area. **Table 3.4-7**, below describes and analyzes PBFs within the SCRE for the four focal species, including benefits and impacts at the recommended 90 percent diversion.

TABLE 3.4-7
PHYSICAL AND BIOLOGICAL FEATURES – FOCAL SPECIES

Species	PBF Description	Project Benefit (90 percent diversion)	Project Impact (90 percent diversion)
Steelhead	Water quality supporting spawning, incubation and larval development	Not applicable. The proposed projects would not affect steelhead spawning, incubation, and larval development, which occurs higher up in the watershed.	Not applicable. The proposed projects would not affect steelhead spawning, incubation, and larval development, which occurs higher up in the watershed.
	Water quality of freshwater/estuary rearing sites	<p>Reduced nutrient loading to the estuary would benefit estuary water quality. Less discharge from the VWRP would improve water quality and support beneficial uses by reducing overall nutrient loading (Revell et al. 2018).</p> <p>Reduced periods of low DO would improve water quality for steelhead rearing.</p> <p>Higher salinity conditions could help decrease competition and predation from nonnative invasive species such as mosquitofish and African clawed frogs. The SCRE could become more saline at 90 percent diversion compared to its salinity under the VWRP's current discharge, but it is not likely to become hypersaline (Revell et al. 2018).</p> <p>· Reduction of unseasonal breaching would maintain water quality. Spring mouth closure provides low velocity habitat for suitable rearing conditions for juvenile steelhead (Revell et al. 2018).</p>	Since the project would enhance water quality, no adverse impacts would occur.
	Freshwater migration corridors free of obstruction and excessive predation	Reduced open water and more frequent periods of higher salinity would improve migratory corridors by reducing habitat features that benefit invasive predators, including deep water and low salinity.	Berm breaching may be slightly delayed due to lower water levels, potentially delaying the start of steelhead migratory opportunities. This would be a minor impact since it would be closer to historic conditions.
	Estuarine areas free of obstruction and excessive predation	Higher salinity conditions could help decrease competition and predation from nonnative invasive species such as mosquitofish and African clawed frogs.	Berm breaching may occur with less frequency due to lower water levels, delaying periods of higher salinity.
	Tidewater goby	Persistent, shallow, still-to-slow-moving, aquatic habitat.	No adverse impact

Species	PBF Description	Project Benefit (90 percent diversion)	Project Impact (90 percent diversion)
		scenario for breeding, rearing, and foraging.	
	Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction	The SCRE is primarily composed of sand, mud, and silt bottomed flats with low habitat complexity. Suitable substrates will increase with a 90 percent diversion, as these sites will be easier to navigate in slow moving water conditions (Stillwater 2018). Reduced unseasonal breaching will reduce inundation and stranding of burrows.	No adverse impact
	Submerged and emergent aquatic vegetation that provides protection from predators	Emergent or submerged vegetation would occur at the lagoon edges, providing cover opportunities similar to existing conditions. Currently, cover opportunities are not abundant, nor are structural features such as large boulders or woody debris, which provide cover for fish.	No adverse impact
	Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity	The likelihood of an artificial berm breach is reduced dramatically. With the berm unbreached, the lagoon will sustain long periods of stable water levels and salinity compared with existing conditions.	No adverse impact
Western snowy plover	Sandy beach or dune system areas that are below heavily vegetated or developed areas and above the daily high tides	With a 90 percent diversion, the existing sandy beach and dune habitat systems are much less likely to be flooded during an artificial berm breaching event. During an artificial breach, nets, eggs, and juveniles could be swept away. (Revell et al. 2018)	No adverse impact
	Shoreline habitat areas for feeding that support small invertebrates, with minimal vegetation, that are between the annual low tide or low-water flow and annual high tide or high water flow, subject to inundation	Preferred foraging habitat for western snowy plover exists around the edges of the lagoon and along the beach. The reduced potential for unseasonal breaching creates long periods of stable water level conditions suitable for foraging habitat.	No adverse impact
	Minimal disturbance from the presence of humans, pets, vehicles, or human-attracted predators, which provide relatively undisturbed areas for individual and population growth and for normal behavior	No change.	No adverse Impact.

Species	PBF Description	Project Benefit (90 percent diversion)	Project Impact (90 percent diversion)
California least tern	Space for individual and population growth and for normal behavior	The sandy beach and dune habitat system for least tern nesting would not be affected. With a 90 percent diversion, these habitats are much less likely to be flooded during an artificial berm breaching event.	Reduced open water would reduce area available for tern foraging.
	Food, water, and other nutritional and physiological requirements	Preferred foraging habitat for least tern exists within the open water of the lagoon. The reduced potential for unseasonal breaching creates long periods of stable water level conditions, creating a viable coastal lagoon habitat suitable for foraging.	Reduced open water would reduce area available for tern foraging.
	Sites for breeding, reproduction, or rearing (or development) of offspring	The sandy beach and dune habitat system for least tern nesting would not be affected. With a 90 percent diversion, these habitats are much less likely to be flooded during an artificial berm breaching event.	No adverse impact.

Based upon the underlying ecological considerations reviewed in the Phase 3 report, including review of the PBFs for the listed species in the SCRE, the 90 percent discharge reduction would not result in significant impacts to sensitive species.

Summary of Reduced Discharge Impact Conclusions

In summary, the reduction in discharges from the VWRP into the SCRE by 90 – 100 percent would reduce the extent of open water acreage by 55 – 62 percent compared to full stage existing conditions, reduce mudflat commensurate with the open water reduction, and reduce freshwater wetlands by 38 acres. The project would reduce the acreage of spawning and rearing habitat for tidewater goby, rearing habitat for subadult steelhead, and foraging habitat for California least tern. However, the discharge reduction would result in benefits to each of these species through improved water quality including fewer opportunities for eutrophication, reduced suitability for predatory non-native species, and reduced adverse impacts of dry season breaching, including reduced stranding of individuals and nests, reduced transport to sea, and reduced changes in salinity. Moreover, as documented by the SRP and TRT, the project would still provide sufficient habitat area to support the current population of goby and steelhead, and targeted recovery populations based on historic populations and recovery plans.

The TRT and SRP determined that fish and wildlife species native to the SCRE, including the four species listed as threatened or endangered (the tidewater goby, California steelhead, California least tern and western snowy plover), have evolved in and adapted to highly seasonal hydrology characterized by natural low-flow conditions. Consequently, the SRP recommended that protecting the natural habitat of these endangered and threatened species requires that the discharge of tertiary-treated effluent be limited to no more than 0.5 MGD when the berm is closed. The SRP determined that doing so is especially important in order to replicate the “natural

hydrology” of the SCRE,¹ and to reduce the risk of unnatural and untimely breaching of the berm during critical life stages of the tidewater goby and steelhead.² The SRP also determined that doing so would protect all of the other natural beneficial uses of the estuary that evolved with the estuary’s native special status species. The TRT concurred with the SRP’s determinations and recommendation to limit VWRP’s discharges the SCRE.³ In the Phase 3 Study, Scenario 10 best illustrates conditions associated with this minimal discharge recommendation.

In summary, it was the SRP’s best professional judgment that a discharge of between 0 and 0.5 MGD of tertiary-treated effluent would support the most sensitive beneficial uses in the SCRE, which are all related to listed species and their habitats (i.e., RARE, SPAWN, MIGR, and HAB),⁴ by more closely approximating the natural historical hydrological, salinity and nutrient conditions under which the resident endangered and threatened species evolved and by providing these species with suitable habitat.⁵ The SRP found that too much freshwater effluent dampens the natural variations in salinity that normally prevents exotic invasive species (such as carp and arundo) from outcompeting and displacing the native fish.⁶ Too much tertiary-treated effluent also promotes excessive algal growth, leading to lower dissolved oxygen concentrations, and an unacceptable risk of catastrophic hypoxic events to aquatic organisms in the SCRE when the berm is closed.⁷ Finally, discharging larger amounts of tertiary-treated wastewater produces unnaturally high water levels that increase the risk that localized flooding that may adversely impact the nesting habitat of endangered bird species in the estuary.⁸ In short, as described above, reduced discharge of tertiary-treated effluent (≤ 0.5 MGD) will enhance beneficial uses related to native species and habitats within the SCRE during the critical low-flow conditions.

Based on the best available scientific information underlying and set forth in the Phase 3 Study, the TRT Reports, and the SRP Report, and considering the preponderance of scientific opinion, the City accepts the SRP recommendation that discharges of treated wastewater from the VWRP to the SCRE be limited to no more than 0.5 MGD when the berm is closed. Scenario 10 in the Phase 3 Study represent this discharge volume.

These findings are consistent with the State Water Board’s Enclosed Bays and Estuaries Policy (EBEP), which requires the discharge of municipal wastewaters to enclosed bays and estuaries be phased out by the earliest practicable date, except to the extent that continued discharges are consistently treated and discharged in such a manner that it would enhance the quality of the receiving water above that which would occur in the absence of the discharge.⁹ Therefore, the City is committed to build and operate the facilities needed to implement the SRP’s recommendations and achieve the goals of the EBEP.

¹ SRP Report, pg. 16-18; 25

² SRP Report, pg. 15; 25-26

³ Technical Review Team (TRT) - C. Hammersmark, M. Podlech, M. Josselyn and D. Chase. City of Ventura Special Studies - Phase 3: Assessment of the Physical and Biological Conditions of the Santa Clara River Estuary, Ventura County, California. Dec. 8, 2017 and Mar. 9, 2018 (“TRT Report”)

⁴ SRP Report, pg. 3.

⁵ SRP Report, pg. 11; 24-26.

⁶ SRP Report, pg. 26

⁷ SRP Report, pg. 11

⁸ SRP Report, pgs. 25-26; Table 5, pgs. 24-25

⁹ State Water Resources Control Board Res. No. 95-84 (Nov. 16, 1995) as amended (see §A in Ch. 1)

The City is proposing to implement Phase 1 of the project in two stages, beginning with an initial CDL of 1.9 MGD by the year 2025 and completing the full reduction to a CDL of 0.5 MGD by the year 2030. To ensure that the SCRE habitat is protected and enhanced by a CDL of 0.5 MGD, the City will implement a monitoring program that collects data over time, providing baseline information under existing conditions and under the first increment of discharge reduction to 1.9 MGD. The baseline data collected under current conditions and following the reduction to a 1.9 MGD discharge will help inform the final flow reduction to 0 – 0.5 MGD, scheduled to be implemented by 2030. As a mitigation to ensure that 0 – 0.5 MGD does not reduce habitat values compared to 1.9 MGD, the City will implement **Mitigation Measures BIO-5 and BIO-6** which provides for the implementation of a SCRE Monitoring Plan. With implementation of BIO-5 the protection and enhancement of the SCRE ecological values will be ensured, resulting in less than significant impact to sensitive species and habitats.

The City has concluded that the robust scientific investigation of the SCRE, as peer-reviewed by the SRP and the TRT (see Section 1.6), support the conclusion that removing 90 – 100 percent of the existing tertiary-treated effluent from the SCRE would protect and enhance the existing ecology within the SCRE and the sensitive species supported by it. Based on the conclusions of the SRP and TRT, the proposed project would result in a more natural condition that supports all the native sensitive species that utilize the SCRE and its habitat. As a result, the proposed project would not significantly impact sensitive species, would benefit these species, and is needed for their survival and recovery.

As part of the permitting process, the City will consult with the CDFW, USFWS, and NMFS to evaluate whether the proposed project will require formal consultation under the federal and state Endangered Species Acts. Although no direct impacts to listed species would occur, depending on the likelihood that reduced open water conditions result in potential take of a listed species, the City may be required to prepare a Biological Assessment for submittal to USFWS under Section 7 of the Endangered Species Act. The USFWS may impose conditions on the project at their discretion.

For purposes of CEQA significance conclusions, the project's environmental impacts provide overall benefits to endangered species, resulting in habitat of greater quality than under existing conditions. As a result, impacts from the project would be less than significant under CEQA.

Mitigation Measures:

BIO-1. Prior to the start of construction that could affect sensitive species, a qualified biologist shall provide Worker Environmental Awareness Program (WEAP) Training to all construction workers onsite. The training shall include materials to aid workers in identifying sensitive habitats, plants, and wildlife that should be avoided; applicable laws and regulations protecting such resources; and proper avoidance and communication procedures to protect sensitive biological resources, as well as common wildlife whenever possible.

BIO-2: Prior to construction activities within 50 feet of sensitive habitat, a qualified biologist shall survey a 500-foot radius for the presence of sensitive species that could be affected by construction noise and disruption. If construction activities could generate noise in excess of 65 dBA for prolonged periods (averaged over an 8-hour day) in areas

where the ambient noise level is less than 65 dBA and sensitive species are present, the construction contractor shall install noise barriers between the construction activity and the sensitive resource to reduce noise impacts on biological resources.

BIO-3: If nighttime construction is required, lighting shall be kept to the minimum necessary to safely conduct the work. All lighting shall be focused on the construction area and avoid spilling onto habitat areas.

BIO-4: If the nesting season cannot be avoided and construction or vegetation removal occurs between March 1 to September 15 (January 1 to July 31 for raptors), the project shall do the following to avoid and minimize impacts to nesting birds and raptors:

- During the avian breeding season, a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to vegetation disturbance or site clearing. If construction begins in the non-breeding season and proceeds continuously into the breeding season, no surveys are required. However, if there is a break of 7 days or more in cleanup activities during the breeding season, a new nesting bird survey shall be conducted before construction begins again.
- The preconstruction survey shall cover all reasonably potential nesting locations on and within 300 feet of the proposed removal areas, and areas that would be occupied by ground-nesting species such as killdeer. A 500-foot radius shall be surveyed in areas containing suitable habitat for nesting raptors, such as trees, utility poles, rock crevices, and cliffs.
- If an active nest is found during the preconstruction avian nesting survey, a qualified biologist shall implement a 300-foot minimum avoidance buffer for all passerine birds and a 500-foot minimum avoidance buffer for all raptor species. The nest site area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project. Buffer areas may be increased if any endangered, threatened, CDFW fully protected, or CDFW species of special concern are identified during protocol or preconstruction surveys, based on consultation with USFWS or CDFW.
- If a nest is found in an area where ground disturbance is scheduled to occur, the project operator shall avoid the area either by delaying ground disturbance in the area until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, or by relocating the project component(s) to avoid the area.

BIO-5: The City shall prepare and implement a Pre-Construction Santa Clara River Estuary (SCRE) Monitoring Program that will confirm and update the existing baseline hydrological, chemical and biological conditions of the SCRE for a period of 3 years. The City shall coordinate preparation of the monitoring program with the RWQCB, USFWS, NMFS, and CDFW. The purpose of the program shall be to collect specific ecological monitoring data. This data will be used to inform the development of the Post-Construction Monitoring, Assessment, and Adaptive Management Plan, which shall identify action criteria and management measures that will guide and confirm that the implementation of Phase 1b reductions in discharges (to an average annual of 0 – 0.5 MGD in closed-berm conditions) avoids and minimizes significant adverse environmental impacts.

BIO-6: The City shall prepare and implement a Post Construction Santa Clara River Estuary (SCRE) Monitoring, Assessment, and Adaptive Management Program (MAAMP) that will continue data collection in the SCRE, and will evaluate and confirm post-discharge diversion SCRE habitat values and conditions for SCRE listed species. The SCRE MAAMP will consist of the following core elements at a minimum:

- Water depth measurements;
- Aquatic species surveys within the SCRE to document occurrence and abundance of tidewater goby and juvenile steelhead;
- Bird and nesting surveys to document the occurrence and abundance of snowy plover and California least tern using or occupying, or foraging or nesting within the SCRE and its vicinity;
- Acreage and qualitative evaluation of vegetation associations (habitat types) within the SCRE and its vicinity;
- SCRE receiving water quality monitoring, including regular measurements for temperature, salinity, dissolved oxygen, and nutrients collected vertically and horizontally to inform stratification and spatial patterns understanding;
- Documentation of eutrophication episodes within the SCRE;
- SCRE berm condition monitoring including berm heights and breaching events; and
- Continuous VWRP discharge flow data, and instantaneous VWRP discharge water quality data.

The monitoring effort will be initiated following implementation of Phase 1a when discharges have been reduced to a CDL of 1.9 MGD.

The City shall submit annual monitoring reports to the CDFW, USFWS, and NMFS that compile the data collected for a period of five years. The City shall consult with CDFW, USFWS, and NMFS to evaluate the data and trends shown in the monitoring data. In the event that based on the information and analysis provided by the MAAMP, NMFS, USFWS, and or CDFW notifies the RWQCB and the City in writing that reducing the average annual discharge flows below 1.9 MGD in closed berm conditions would result in an unauthorized “take” (as defined in the state or federal Endangered Species Act, as applicable) of one or more listed species contrary to the permits or authorizations those agencies have issued, then the actions specified in the MAAMP shall be implemented to further avoid and minimize adverse impacts to, and take of listed species within the SCRE resulting from Phase 1b reductions, until and unless and until the Regional Board and the wildlife agency with jurisdiction authorize lower discharge.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed project would require a product conveyance system that would connect the VWRP with the AWP, groundwater wells and Bailey WCF. The underground pipelines would be installed in public rights-of-way in areas that are mostly previously disturbed areas. These areas include active agriculture fields, inactive parcels, residential and business neighborhoods, and active streets. Pump stations needed to convey water would be installed on the treatment plant sites or at well head locations. Therefore, impacts to special-status species in regard to

construction and operation of conveyance pipelines would be less than significant. However, there is a potential for nesting birds on-site and near the sites to be impacted during construction. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures BIO-1 through BIO-4.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). None of the potential well locations are within special-status species habitat. However, there is a potential for nesting birds on-site and near the site to be impacted by noise during construction. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected by noise or other disruptions during construction. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures BIO-1 through BIO-4.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

The project would include reconfiguration of the existing wildlife/treatment ponds by adding soil and vegetation throughout the existing ponds. In addition, the project may include new wildlife/treatment wetlands. Based on the surveys conducted by ESA, including Christmas bird count data from 2017 and a review of eBird, no sensitive species currently occupy the wildlife ponds other than perhaps the brown pelican, which may use the ponds for resting. Common waterfowl and passerine birds existing at the site (including brown pelicans) would continue to use the site following the modifications. The reduction in open water habitat would reduce foraging and loafing opportunities for migratory waterfowl. However, the SCRE and availability of high quality open water habitat in close proximity including Ormond Lagoon, McGrath Lake, Ventura River Estuary, Mugu Lagoon and Carpinteria Marsh would continue to support waterfowl.

The new treatment wetland would not be located within special-status species habitat. Reconfiguration of the ponds would result in reduced open water habitat used by common waterfowl. However, the resulting habitat would be suitable for use by other avian species including sensitive passerine species.

There is a potential for construction period impacts on nesting birds on and near the sites. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures BIO-1 through BIO-4.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

VWRF upgrades would occur on previously disturbed land. Therefore, construction and operation of the proposed VWRF Treatment Upgrade would not affect special-status species. However, there is a potential for nesting birds on-site and near the site to be impacted during construction. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures BIO-1 through BIO-4.

Significance Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public right-of-way (see Figure 2-19). The project's potential impacts on the marine environment are described in Section 3.11, Marine Biology.

The proposed pipeline and outfall would be located in developed areas adjacent to western snowy plover critical habitat, which consists of the open beach and foredune habitats. California least tern also use the foredune habitat for nesting. Although no direct impacts to critical habitat would occur, indirect effects could be experienced during construction, including noise impacts and nighttime lighting.

The area near the horizontal directional drilling (HDD) drill pit site is an active recreation area, with public access to the beach provided directly adjacent to the wildlife ponds. Large trucks and passenger vehicles create noise in this area consistently. Furthermore, the commercial area adjacent to the site along Spinnaker Road has nighttime lighting that can be seen from the wildlife ponds. Therefore, temporary noise and lighting impacts would add to existing condition and would not create a new source of disturbance. In addition, implementation of **Mitigation Measures BIO-2** and **BIO-4** would ensure that the HDD construction activities would not significantly affect neighboring areas. Impacts would be less than significant. Therefore, construction and operation of the outfall and associated pipeline would be less than significant with mitigation.

Pipeline to Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP would be constructed in public rights-of-way. As shown in Figure 3.4-5, the alignment would pass under the SCRE, along Harbor Boulevard. This is critical habitat for several species. Directional drilling activities can release drilling fluid into surface waters if drilling pressures result in cracks in the boring tunnel. Implementation of **Mitigation Measure BIO-7** requires that the City prepare a Drilling Fluid Mitigation Plan. There is a potential for construction period impacts on nesting birds on and near the pipeline route. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures BIO-1 through BIO-4 and BIO-7.

BIO-7: Prior to initiating any directional drilling activities, the City shall prepare a Drilling Fluid Mitigation and Response Plan that identifies measures to reduce risks to water quality from accidental release of drilling fluids into surface water. Measures include best practices to employ to minimize the risk of releases. The plan will identify spill containment equipment, monitoring and reporting roles and responsibilities, and implementation procedures sufficient to contain any release of drilling fluids.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf expansion would occur on the AWPf site. As shown on Figure 3.4-1, all three of the potential AWPf locations are previously disturbed and do not have potential to contain any special-status plant or wildlife species. There is a potential for construction period impacts on nesting birds on and near the sites. Implementation of **Mitigation Measures BIO-1 through BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

The reduction in discharges from the VWRf into the SCRE by 100 percent would reduce the extent of open water acreage by 62 percent compared to full stage existing condition. **Table 3.4-8** summarizes the estimated changes in habitat types compared to existing conditions. As described above regarding 90 percent diversion, 100 percent diversion would reduce the acreage of open water that would reduce spawning and rearing habitat for tidewater goby, rearing habitat for subadult steelhead, and foraging habitat for California least tern. However, the discharge reduction would result in benefits to each of these species through improved water quality including fewer opportunities for eutrophication, reduced suitability for predatory non-native species, and eliminated potential for unauthorized breaching. In addition, as the SRP and TRT found, the total acreage of wetted habitat up to 100 percent diversion would provide sufficient habitat to support all of the listed species and their recovery in the watershed.

Based on the conclusions of SRP and TRT, the proposed project would result in a more natural condition that supports all the native sensitive species of the region. As a result, the proposed projects would not have significant adverse impacts on sensitive species.

As part of the permitting process, the City will consult with the CDFW, USFWS, and NMFS to evaluate whether the proposed project will require formal consultation under the federal and state Endangered Species Acts. Although no direct impacts to listed species would occur, depending on the likelihood that reduced open water conditions result in potential take of a listed species, the City may be required to prepare a Biological Assessment for submittal to USFWS under Section 7 of the Endangered Species Act. The USFWS may impose conditions on the project at their discretion.

In addition, 100 percent diversion may result in drying up the existing wildlife/treatment wetlands. This would eliminate the open water and wetland habitat values provided by the existing ponds. As described above, the existing wildlife/treatment wetland do not support

sensitive species. The elimination of the open water would reduce foraging and loafing habitat for migratory fowl. However, other open water habitats exist in the region that would continue to support migratory birds including the SCRE. The elimination of the ponds would result in less than significant impacts to sensitive species.

For purposes of CEQA significance conclusions, the project's environmental impacts provide overall benefits to endangered species, resulting in habitat of greater quality than under existing conditions. As a result, impacts from the project would be less than significant under CEQA.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As shown on Figure 3.4-1 all three of the potential AWPf locations are previously disturbed and do not have potential to contain any special-status plant or wildlife species. There is a potential for construction period impacts on nesting birds on and near the sites. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is undetermined. Pipelines connecting the intake system with the AWPf would follow public rights-of-way within previously disturbed areas that do not contain special-status species habitat. There is a potential for construction period impacts on nesting birds on and near the site. Implementation of **Mitigation Measures BIO-1** through **BIO-4** would ensure that nesting birds are not adversely affected. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure BIO-1 through BIO-4.

Significance Determination: Less than Significant with Mitigation.

**TABLE 3.4-8
ESTIMATED HABITAT ACREAGE UNDER EXISTING CONDITIONS AND WITH PROPOSED PROJECT**

SCRE Habitat Type	Existing Condition Scenario 1 (0 Percent Diversion)	AWPF Expansion Scenario 11 (100 Percent Diversion)	Difference
Ocean	76	76	0
Open Beach	47	53	+6
Foredune	76	76	0
Open Water ¹	108	41	-67
Tidally Exposed Mudflat ²	66	3	-63
Freshwater Wetland	45	2	-43
Salt Marsh	2.6	2.6	0
Riparian	218	256	+38
Riparian Riverwash	15	62	+47
Developed/Disturbed	49.6	73.7	+24.1
Disturbed Wetland	5.8	0.0	-5.8

¹ The estimate for "Open Water" includes the area of the SCRE that remains open water under open-mouth conditions when the SCRE reaches its minimum stage of 4.5 ft and the constant open water area from the VWRP ponds.

² Mudflat habitats exposed during open mouth condition reflect the differences in inundated area between the predicted equilibrium WSEL and mean lower low water levels (MLLW) modeled in the SCRE.

Source: Stillwater, 2018; Table 5-5

Sensitive Natural Communities

Impact BIO 3.4-2: The proposed projects could have a significant impact if they would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or USFWS.

Phase 1

Advanced Water Purification Facility

The proposed projects would include the construction of the AWPF within one of three potential AWPF sites. As shown on Figure 3.4-1 and previously discussed, all three of the potential AWPF locations are previously disturbed and do not contain any sensitive natural communities or riparian habitat. Therefore, construction and operation of the proposed AWPF would not adversely affect a sensitive natural community or riparian habitat. Impacts would be less than significant.

Reduced Discharge

The SCRE encompasses two CDFW-designated sensitive natural community types: Southern California Coastal Lagoon and Southern California Steelhead Stream, and as described in the Phase 3 Study, the following sensitive natural communities are associated with Southern California Lagoon: Dune Mat, Arroyo Willow Thickets, Shining Willow Groves, Pacific Silverweed Marsh, and Creeping Rye Grass Turf. As described above under Impact BIO 3.4-1,

the 90 – 100 percent reduction in discharges from existing average conditions would reduce water levels and wetted area in the lagoon, resulting in habitat changes within the lagoon.

Currently, 11 habitat types exist within or adjacent to the SCRE. These habitats include: ocean, open beach, foredune, open water, tidally exposed mudflat, freshwater wetland, salt marsh, riparian, riparian riverwash, developed/disturbed, and disturbed wetland. With the recommended 90 – 100 percent diversion at 0 – 0.5 MGD, seven of the 11 habitat types will remain the same in acreage or increase in acreage: open beach, foredune, salt marsh, riparian, riparian riverwash, and developed/disturbed. The four habitats that will have a decrease in acreage include: open water, tidally exposed mudflats, freshwater wetland, and disturbed wetland. Figure 3.4-7 shows the estimated vegetation conversion expected as a result of reduced freshwater input. Table 3.4-6 summarizes the estimated change in habitat acreage for each type of habitat found in the SCRE.

Open Water

Open water is considered to be any non-ocean water surface that lacks emergent or established vegetation. In the project area, this includes the extent of the estuary, ponds, and river water. Open water is not in itself a sensitive habitat. It is a constituent of the two sensitive habitats occurring in the SCRE: Coastal Lagoon and Steelhead Stream.

With the 90 – 100 percent diversion of discharge to the SCRE (resulting in a CDL of 0 – 0.5 MGD), open water acreage will decrease from 108 acres to 49 – 41 acres. As the SRP and TRT found, the total acreage of wetted habitat would provide more than enough habitat at the right depths to support all of the listed species and their recovery in the watershed. The decrease in acreage would result in improved habitat quality for fish and aquatic species due in part to elimination of unseasonal breaching, which results in mortality or exposure of juveniles to ocean conditions when they are not physiologically prepared. A stable, low-salinity estuary provides optimal habitat for all life stages of native fish, even if the habitat acreage is decreased.

The SRP Final Report stresses the importance of quality habitat over quantity when considering optimal conditions for native aquatic species. The proposed project would protect and enhance the existing ecology within the SCRE by maintaining or improving overall abundance, diversity, and habitat quality compared to existing conditions. Furthermore, the increase of riparian habitat resulting from reduced discharges would improve the quality of the SCRE for avian species, including the southwestern willow flycatcher, for which the SCRE is designated Critical Habitat. Reduced acreage of open water would improve the functions and values of the identified sensitive natural communities. Due to the availability of high-quality open water opportunities in close proximity, the loss of open water at the SCRE is not a significant impact on sensitive natural communities.

Tidally Exposed Mudflat

Tidally exposed mudflats are submerged during closed mouth conditions. They are only exposed during open-mouth conditions. Because the mouth of the SCRE was closed at the time of the 2016 mapping (for the Phase 3 report), tidally exposed mudflat habitats were initially mapped as open water. Habitat that is mapped as open water, but within intertidal elevations (above MLW) under open mouth conditions, is mapped as tidally exposed mudflat habitat.

The acreage for this habitat type was mapped at 66 acres during the lowest stage. With 90 – 100 percent diversion, the acreage would decrease to 11 – 3. Mudflats provide foraging habitats for shorebirds when exposed. While the acreage for this habitat would decrease substantially, ample feeding opportunities for shorebirds, most notably, the western snowy plover, still exist within this habitat and the adjacent open beach. The exposed mudflats only occur when the sand berm is breached. During closed mouth conditions, exposed mudflat acreage is similar to existing conditions. Loss of the exposed mudflats during open mouth conditions would be less than significant.

Freshwater Wetland

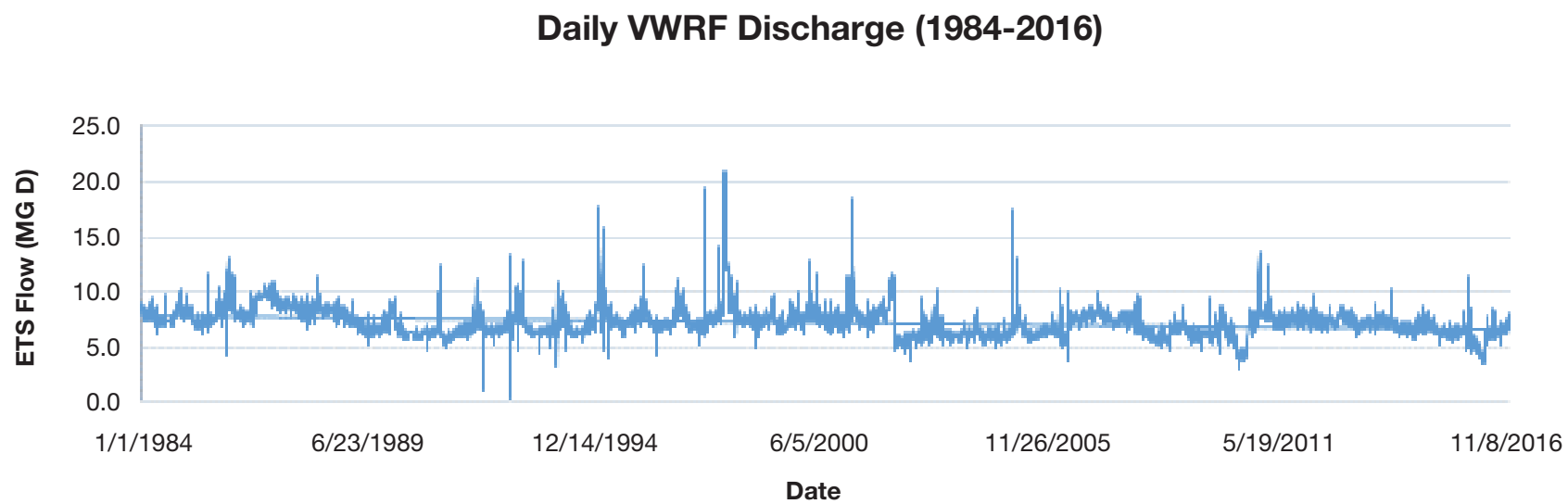
Freshwater wetland is generally found near the margins of estuary waters around the perimeter of the SCRE and adjacent to riparian vegetation. Freshwater wetland acreage varies annually due to high flood events and sand movement. **Table 3.4-9** provides the acreages of habitat types going back to 1977. Although discharges to the SCRE from the VWRF have remained relatively constant since at least 1984, the amount of freshwater wetland has varied. **Figure 3.4-8** shows the hydrograph of discharge. **Figure 3.4-9** shows that the different habitat types, including freshwater wetland, have varied over time, based on factors other than the relatively constant discharge quantity.

Phase 3 mapping identified 45 acres of freshwater wetland. When 90 – 100 percent diversion at 0 – 0.5 MGD is implemented, it is anticipated that the acreage of wetland habitat would be reduced. The exact reduction in wetland acreage is unclear, but is modeled to be around 38 – 63 acres.

**TABLE 3.4-9
COMPOSITION OF HABITAT TYPES IN THE SCRE BY YEAR (ACREAGE)**

Habitat Type	1977	2002	2009	2016
Developed/Disturbed	75.16	53.78	55.54	55.08
Foredune	60.75	95.26	87.60	77.36
Freshwater Wetland	10.20	29.23	42.99	40.09
Ocean	95.18	46.93	30.68	75.67
Open Beach	52.08	49.22	46.28	48.85
Open Water	123.91	102.43	127.79	114.06
Riparian	202.20	258.18	246.29	228.34
Salt Marsh	23.53	7.99	4.15	3.58

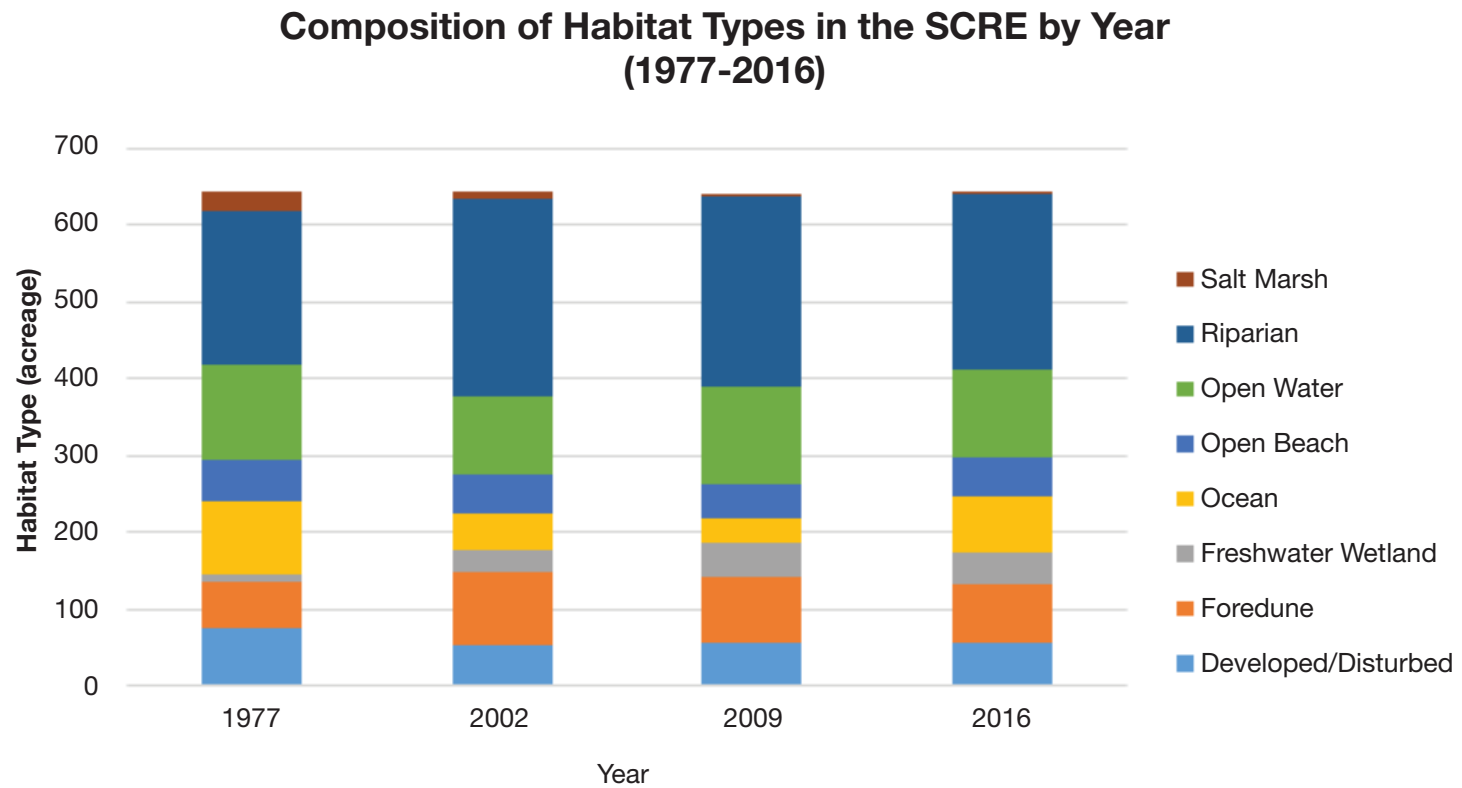
SOURCE: Stillwater 2018. Figure 3-45



SOURCE: Stillwater, 2018

Ventura Water Supply Projects

Figure 3.4-8
VWRF Discharge Hydrograph since 1984



SOURCE: Stillwater, 2018

Ventura Water Supply Projects

Figure 3.4-9
Historic Composition of Habitat Types in the SCRE

The aerial extent of the SCRE will not be diminished by the proposed project. The freshwater wetlands would be replaced by other habitat types in the SCRE such as riparian woodland resulting in better quality Southern California Coastal Lagoon and Southern California Steelhead Stream habitats. As a result, the reduced acreage of freshwater wetlands would not diminish the functions and values of the designated sensitive community types. Impacts to sensitive communities would be less than significant.

Disturbed Wetland

Lands associated with McGrath State Beach campground (adjacent to SCRE), related facilities, portions of the VWRP, and access roads are mapped as developed/disturbed. Approximately 5.8 of the developed/disturbed area surrounding the campground is disturbed wetlands, which would no longer exist during the operation of the proposed projects. Loss of disturbed wetland would not be a significant impact to sensitive habitat because it does not add to the functions and values of either the Coastal Lagoon or Steelhead Stream Communities. Much of this area is associated with inundated campground areas. Conversion of these areas back to upland habitats would not result in a significant impact to sensitive natural communities.

Habitat types with increased acreage

Riparian

This habitat type is dominated primarily by arroyo willow thickets (*Salix lasiolepis* Woodland and Shrubland Alliances), with smaller representation of shining willow groves (*Salix lucida* Woodland Alliance and mulefat thickets (*Baccharis salicifolia* Shrubland Alliance), and trace amounts of Riverwash Herbaceous. It also includes large, dense patches of high cover of the non-native invasive giant reed breaks (*Arundo donax* Herbaceous Alliance) in the riparian corridor. In the project area, it is generally found inland from the foredunes and in varying successional stages within a corridor between the bounds of the levees on the north and south sides of the river. Currently, this habitat type consists of 218 acres, but with 90 – 100 percent diversion at 0 – 0.5 MGD, the total acreage would increase to 270 - 256. This provides more riparian habitat for avian species (such as southwestern willow flycatcher and least Bells vireo) for foraging and nesting opportunities.

Open Beach

Open beach is characterized as marine-associated open sand uncolonized by vegetation. In the project area, it is found immediately adjacent to the ocean and is generally bounded to the east by either foredune or estuarine open water. With 90 – 100 percent diversion at 0 – 0.5 MGD, the acreage of this habitat type would increase from 47 to 53. This increase will provide shorebirds, most notably western snowy plover, more area to forage for food.

Habitat Types with Unchanged Acreage

Other habitat types associated with the SCRE include: ocean, foredune, and salt marsh. The acreage of these three additional habitat types will remain the same after the 90 – 100 percent diversion at 0 – 0.5 MGD. In this case, no special-status species will be affected by the increased diversion.

Critical Habitat

As shown in Figure 3.4-4, the entire SCRE is within critical habitat designated by USFWS. The proposed project would not result in development of the SCRE or diminish its value as critical

habitat supporting several native species, as discussed in greater detail under Impact BIO 3.4-1 above.

Summary

The conclusions of the SRP Final Report suggest that removing 90 – 100 percent of the existing tertiary-treated effluent from the SCRE would protect and enhance the existing ecology within the SCRE and the sensitive species supported by it. Based on the conclusions of this report, the proposed project would result in a more natural condition that supports all the native sensitive species of the region. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed project would construct a product conveyance system that would connect the VWRP with the AWP, groundwater wells and Bailey WCF. The underground pipelines would be installed in public rights-of-way in areas that are mostly previously disturbed areas. These areas include active agriculture fields, inactive parcels, residential and business neighborhoods, and active streets. Pump stations needed to convey water would be installed on the treatment plant sites or at well head locations. No sensitive natural communities would be affected by any of the pipeline routes or well heads. Therefore, impacts to sensitive natural communities with regard to construction and operation of conveyance pipelines would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). None of the potential well locations are within sensitive natural communities. Therefore, construction and operation of the proposed groundwater wells would be less than significant with regard to sensitive natural communities.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

The proposed project could include reconfiguration of the existing wildlife/treatment ponds by adding soil and adding vegetation throughout the ponds. The existing wildlife/treatment ponds support Arroyo Willow Thickets, Hardstem Bulrush Marsh, and Giant Reed Breaks. Much of this habitat would be removed during the reconfiguration of the ponds. In its place, new riparian and wetland habitats would emerge. The reconfigured ponds would have shallower water levels that would more easily support wetland habitats. The proposed project would improve the water

treatment function of the ponds while maintaining nesting, foraging, and loafing habitat for waterfowl and passerines.

As shown in Figure 3.4-3, an approximately 35-acre treatment wetland may be constructed on vacant property to the east of the VWRP. The site currently supports some chaparral habitat, and disturbed scrub habitats. Construction of the new wetlands would eliminate these habitat areas. The affected areas are not designated as sensitive natural communities and do not support sensitive species. As a result, the proposed project would improve the biological values of the site. Impacts of the project would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRP Treatment Upgrade

The upgrades would occur entirely within the VWRP and would have no impact on sensitive natural communities.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor. HDD construction would be conducted from developed areas inland from the beach. The proposed pipeline and outfall would not be located on the beach, within riparian habitat, or within any sensitive natural community. Therefore, construction and operation of the outfall and associated pipeline would be less than significant. For a discussion of construction and operational impacts of the outfall on marine habitats, see Section 3.11, Marine Biology.

Pipeline to the Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP would be constructed in public rights-of-way. As shown in Figure 3.4-5, the alignment would pass under the SCRE, along Harbor Boulevard. This is critical habitat for several species. Directional drilling activities can release drilling fluid into surface waters if drilling pressures result in cracks in the boring tunnel. Implementation of Mitigation Measure BIO-7 requires that the City prepare a Drilling Fluid Mitigation Plan that would ensure sensitive habitats are protected from accidental drilling fluid releases. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure BIO-7.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The proposed expansion project would occur at the proposed AWP. As previously discussed, all three of the potential AWP locations are previously disturbed and are not in or near sensitive

natural communities. Therefore, there would be less than significant impacts to sensitive natural communities or riparian habitat for construction and operation of the AWPf Expansion Project.

In addition, 100 percent diversion may result in drying up the existing wildlife/treatment ponds. This would eliminate the open water and wetland habitat values provided by the existing ponds. As described above, the existing wildlife/treatment wetlands do not contribute to a sensitive natural community. The ponds are constructed treatment wetlands. The elimination of the open water would reduce foraging and loafing habitat for migratory fowl. However, other open water habitats exist in the region including the SCRE, that would continue to support migratory birds. The elimination of the ponds would result in less than significant impacts to sensitive natural communities.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and are not in or near sensitive natural communities. Therefore, there would be less than significant impacts to sensitive natural communities or riparian habitat for construction and operation of desalination facilities at the proposed desalination facility.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. Since the proposed intake system would be underground, impacts to sensitive natural communities would be avoided. All pipelines are proposed to pass through areas that have previously been disturbed or areas that do not contain sensitive natural communities. Therefore, there would be less than significant impacts for construction and operation of sensitive natural communities or riparian habitat.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wetlands

Impact BIO 3.4-3: The proposed projects could have a significant impact if they would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Phase 1

Advanced Water Purification Facility

The proposed project would include the construction of the AWPf within one of three potential AWPf sites. As shown on Figure 3.4-1 and previously discussed, all three of the potential AWPf locations are previously disturbed and do not contain any riparian or wetland habitat. Therefore, construction and operation of the proposed AWPf would not adversely affect wetland or waters that are subject to Section 404 of the Clean Water Act. Impacts would be less than significant.

Reduced Discharge

As described above under Impact BIO 3.4-2, the 90 – 100 percent discharge reduction from existing average conditions would reduce water levels and wetted area in the lagoon, resulting in habitat conversion within the lagoon. The aerial extent of the SCRE would not be diminished. The potential habitat conversion resulting from reduced discharge into the SCRE was studied extensively by Stillwater Sciences as reported in the 2018 Phase 3 Study. Figure 3.4-7 shows the estimated vegetation conversion expected as a result of reduced freshwater input. Table 3.4-6 summarizes the estimated change in habitat acreage for each type of habitat found in the SCRE. With lowering water levels, the model predicts that approximately 38 acres could be converted from freshwater wetlands to riparian.

The reduction in freshwater wetland acreage would occur as a result of habitat conversion associated with an enhancement of the ecological values in the SCRE. The SRP Final Report has concluded that the change in habitat types within the SCRE, including the estimated 38-acre reduction in freshwater wetlands, would result in improved habitat for the native species and designated Critical Habitat within the SCRE.

Phase 1 of the proposed projects incorporates a step-down approach to reducing discharge to the SCRE. The Phase 1a would divert 60 percent of discharge (resulting in a CDL of 1.9 MGD), reflecting the recommendation of CDFW to provide a minimum average flow of 1.9 MGD, subject to reevaluation upon monitoring and analysis. As discussed in greater detail in Section 1.6, the SRP Final Report recommends diversion of 90 – 100 percent of discharge to the SCRE (a CDL from 0.0 – 0.5 MGD). Compared to existing conditions, this level of diversion improves habitat for sensitive native species, providing ecological enhancement. To achieve the conditions that would best replicate natural conditions in the SCRE, thereby providing the most improvement to species habitat, Phase 1b would increase diversion to 90 – 100 percent, as recommended by the SRP. This additional reduction in diversion would follow the implementation of **Mitigation Measure BIO-5**, requiring the implementation of a SCRE Monitoring and Mitigation Plan. The mitigation measure requires the collection of baseline data under current conditions and further data collection following the reduction to a 1.9 MGD discharge, which would inform the final flow reduction to 0 – 0.5 MGD scheduled to be

implemented by 2030. This mitigation measure would ensure that the increased diversion (from 60 – 90 or 100 percent) and decreased discharge to the SCRE (from 1.9 to 0.5 or 0 MGD) would not reduce habitat values.

The SWRCB does not require compensatory mitigation for Ecological Restoration and Enhancement Projects.¹⁰ Therefore, no compensatory mitigation would be required for the potential reduction in freshwater wetlands due to hydrologically induced habitat improvement in the SCRE.

With implementation of **Mitigation Measures BIO-5** and **BIO-6**, the protection and enhancement of the SCRE ecological values will be ensured, resulting in less than significant adverse impact to wetlands compared with existing conditions.

Mitigation Measures: Implement Mitigation Measure BIO-5 and BIO-6

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed project would construct a product conveyance system that would connect the VWRP with the AWP, groundwater wells and the Bailey and Saticoy Water Conditioning Facilities (WCF). The underground pipelines would be installed in public rights-of-way in areas that are mostly previously disturbed areas. These areas include active agriculture fields, inactive parcels, residential and business neighborhoods, and active streets. Pump stations needed to convey water would be installed on the treatment plant sites or at well head locations. No wetlands occur on any of these sites. Therefore, impacts to wetlands or waters that are subject to Section 404 of the Clean Water Act would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). None of the potential well locations are located within wetlands or waters that are subject to Section 404 of the Clean Water Act. Therefore, construction and operation of the proposed groundwater wells would have no impact on wetlands.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

¹⁰ SWRCB July 21, 2017 Final Draft *State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State proposed for inclusion in Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California*. Page 6.

Wildlife/Treatment Wetlands

The proposed projects could include reconfiguration of the existing wildlife/treatment ponds by adding soil and vegetation throughout the ponds. The existing ponds support Arroyo Willow Thickets, Hardstem Bulrush Marsh, and Giant Reed Breaks. Much of this habitat would be removed during the reconfiguration of the ponds. In its place, new riparian and wetland habitats would emerge. The reconfigured ponds would have shallower water levels that would more easily support wetland habitats. The proposed project would improve the water treatment function of the ponds while maintaining nesting, foraging, and loafing habitat for waterfowl and passerines.

In addition, as shown in Figure 3.4-3, the proposed projects could involve the construction an approximately 35-acre treatment wetland on vacant property to the east of the VWRf. The site currently supports some chaparral habitat, and disturbed scrub habitats. Construction of the new wetlands would eliminate these habitat areas. The affected areas are not subject to Section 404 of the Clean Water Act. Once constructed, the new wetlands would support important wetland and riparian habitats. As a result, the proposed project would improve the biological values of the site. Impacts of the project would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRf Treatment Upgrade

The upgrades would include replacing the aeration blowers, existing gravity thickener, and a new anoxic tank within the existing VWRf. The project would not be located within wetlands or waters that are subject to Section 404 of the Clean Water Act. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor. HDD construction would be conducted from developed areas inland from the beach. The proposed pipeline and outfall would not impact wetlands. Therefore, construction and operation of the outfall and associated pipeline would be less than significant.

Pipeline to the Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP would be constructed in public rights-of-way. As shown in Figure 3.4-4, the alignment would pass under the SCRE, along Harbor Boulevard. Directional drilling activities can release drilling fluid into surface waters if drilling pressures result in cracks in the boring tunnel. Implementation of **Mitigation Measure BIO-7** requires that the City prepare a Drilling Fluid Mitigation Plan that would ensure sensitive habitats including wetlands are protected from accidental drilling fluid releases. Impacts would be less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measure BIO-7.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The proposed project would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and do not contain any wetland habitat. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and do not contain any wetland habitat. Therefore, impacts would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is undetermined, but would be underground. It would not affect wetlands and waters of the U.S. that are subject to Section 404 of the Clean Water Act. All pipelines are proposed to pass through areas that have previously been disturbed or areas that do not contain waters of the U.S. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Migratory Wildlife Corridors

Impact BIO 3.4-4: The proposed projects could have a significant impact if they would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Phase 1

Advanced Water Purification Facility

The proposed projects would include the construction of the AWPf within one of three potential AWPf sites. As shown in Figure 3.4-1 and previously discussed, all three of the potential AWPf

locations are previously disturbed and construction of the treatment plant would not impede wildlife movement or native wildlife nursery sites. Therefore, construction and operation of the proposed AWPf would not adversely affect wildlife movement or breeding. Impacts would be less than significant.

Reduced Discharge

The Santa Clara River is identified as a Core 1 recovery stream for California steelhead. Other aquatic and terrestrial species use the SCRE and Santa Clara River as a migration corridor from the ocean inland, and migratory birds forage and find refuge within the riparian habitats of the Santa Clara River during spring and fall migrations. As described above under Impact BIO 3.4-1, the 90 – 100 percent reduction from existing average conditions would reduce water levels and wetted area in the lagoon, resulting in habitat conversion within the lagoon. However, the proposed project would not reduce the size of the SCRE itself, and riparian habitat would increase from current conditions.

As noted above, the SCRE provides a migratory corridor for upstream adult steelhead spawners (breeding fish) and outmigrant smolts (a steelhead that migrates to the sea for the first time), as well as potential rearing habitat for subadults. During open mouth conditions corresponding to wet weather, steelhead utilize the lagoon to initiate migration upstream to rearing habitat (November to May).

The SCRE mouth has been open frequently in recent years due to man-made unseasonable breaching. Daily observations of the SCRE beach berm made by VWRf staff from 1984 to present (99.9 percent of all days having observations) indicate the mouth has been open approximately 52 percent of observed days. This frequency can be at least partly attributed to a combination of relatively high winter flows coming from the watershed, man-made breaching, and the influence of VWRf discharge on mouth breaching during drier months of the year.

During the Phase 3 Study period, there were 13 distinct mouth-breaching events documented. The first four events that occurred between December 2014 and February 2016 were associated with storm-induced, albeit low-magnitude, runoff events that caused the SCRE stage to rise to a point that destabilized the beach berm and caused the SCRE mouth to open. These open-mouth events were relatively short-lived, lasting only a few days before river flows waned and wave energies reformed the beach berm closing the mouth. The following nine breach events were not associated with high river flows, but rather with manually trenching of the beach berm by unauthorized individuals when estuary water stage was high. These open-mouth periods persisted many days longer than those formed during the storm-induced periods (Stillwater 2018).

The proposed project would not reduce the opportunity for migration during open mouth conditions for the reasons discussed in Impact 3.4-1 above. However, given the lowered water levels, while it is unlikely for the reasons discussed in Impact 3.4-1 above, open mouth conditions may be slightly delayed during wet weather, compared to existing conditions.

Reduced discharges also would significantly reduce the number of breaching events to only those storm flows strong enough to fill the lagoon and overflow into the ocean. These events are expected to occur regularly each winter, but with uncertain frequency and duration. However, migratory window availability is constrained by upstream flow as well as open mouth conditions. The migratory window is only available when the river is flowing from the upstream tributaries to the ocean. During these periods, the mouth would be expected to be open with or without any VWRF discharges.

The proposed projects would benefit migration by reducing the potential for unseasonal breaches that affect subadult steelhead smolt rearing in the SCRE. Unseasonal breaching of the lagoon occurs when the water level is too high, which would occur more often under existing conditions. Unseasonal breaching can interfere with life development and migration, and can result in smolt mortality due to stranding. It may invite adult steelhead in from the ocean when the upstream migratory corridor is too dry for successful migration, providing no route to upstream spawning areas.

As a result, although open mouth conditions would be less frequent (but only in conditions in which there is unnatural breaching), the proposed projects would result in an improvement over existing conditions for steelhead migration. Therefore, impacts to migratory aquatic species, including fish and steelhead, as well as to terrestrial and avian species that use the SCRE for movement and breeding would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would construct a product conveyance system that would connect the VWRF with the AWPf, groundwater wells and Bailey WCF. The underground pipelines would be installed in public rights-of-way in areas that are mostly previously disturbed areas. These areas include active agriculture fields, inactive parcels, residential and business neighborhoods, and active streets. Pump stations needed to convey water would be installed on the treatment plant sites or at well head locations. None of these areas are within significant wildlife corridors and the installation of the water conveyance system would not impede local or regional wildlife movement. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). None of the potential well locations are located within a wildlife movement corridor and the installation of the groundwater inject and extraction system would not impede local or regional wildlife movement. Therefore, construction and operation of the proposed groundwater wells would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

The proposed projects could include reconfiguration of the existing wildlife/treatment ponds by adding soil and adding vegetation throughout the ponds and could result in the construction of an approximately 35-acre treatment wetland on vacant property to the east of the VWRP. The site currently supports some chaparral habitat, and disturbed scrub habitats. Construction of the new wetlands would eliminate these habitat areas, which are not significant wildlife corridors and do not support any significant wildlife nursery sites. Once constructed, the new wetlands would support important wetland and riparian habitats that may provide new opportunities for wildlife to forage and breed. As a result, the proposed project would improve the biological values of the site, and would not adversely affect wildlife movement. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRP Treatment Upgrades

The upgrades would include replacing the aeration blowers, existing gravity thickener, and a new anoxic tank within the existing VWRP. The VWRP is not located within a wildlife movement corridor and it would not impede local or regional wildlife movement. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean south of Ventura Harbor. HDD construction would be conducted from developed areas inland from the beach. The proposed pipeline and outfall would not impact wildlife movement. Therefore, construction and operation of the outfall and associated pipeline would be less than significant.

Pipeline to the Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP would be constructed in public rights-of-way. As shown in Figure 3.4-4, the alignment would pass under the SCRE, along Harbor Boulevard. The SCRE and other drainages crossed are considered to be important wildlife movement corridors or support any wildlife nursery sites. Directional drilling would be used to avoid impacts to the drainages. Once constructed, the underground pipeline would not impede wildlife movement. As a result, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed upgrades would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and do not support important wildlife corridors. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and do not support important wildlife corridors. Therefore, impacts would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is undetermined. Since the proposed intake system would be underground, impacts to wildlife movement would be avoided. All pipelines are proposed to pass through areas that have been previously disturbed. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Local Policies and Ordinances

Impact BIO 3.4-5: The proposed projects could have a significant impact if they would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Phase 1

Advanced Water Purification Facility

The proposed projects would include the construction of the AWPf within one of three potential AWPf sites. As shown in Figure 3.4-1 and previously discussed, all three of the potential AWPf locations are previously disturbed and do not contain any sensitive natural communities. If any trees were removed as a result of construction, the City would comply with the Ventura County Tree Protection Ordinance (Table 3.4-4), protecting oaks, sycamores, historical trees and heritage trees. Therefore, construction and operation of the proposed AWPf would not conflict with any local policies protecting biological resources. Impacts would be less than significant.

Reduced Discharge

The SCRE is a highly valued natural area and recreational area for the local and regional community. Policy ER-3.1 of the City of Oxnard 2030 General Plan states “Require the preservation and enhancement of the riparian habitat along the Santa Clara River, Edison Canal, McGrath Lake vicinity, and within the Ormond Beach wetlands.” The McGrath State Beach and Campground is adjacent to the lagoon. Reduced water levels in the lagoon would assist in protecting the campground and associated recreational uses. There are no local policies or ordinances that would apply to the SCRE. The project would not reduce the size of the SCRE or restrict recreational uses compared with existing conditions. Therefore, construction and operation of the proposed AWPf would not conflict with any local policies or ordinances and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would construct a product conveyance system that would connect the VWRf with the AWPf, groundwater wells and Bailey WCF. The underground pipelines would be installed in public rights-of-way in areas that are mostly previously disturbed areas. Although not expected, if any trees are removed as a result of construction, the City would comply with the Ventura County Tree Protection Ordinance. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). None of the potential well locations are within sensitive biological areas. Although not expected, if any trees are removed as a result of construction, the City would comply with the Ventura County Tree Protection Ordinance. Therefore, construction and operation of the proposed groundwater wells would not conflict with local policies or ordinances and impacts would be less than significant.

Mitigation Measures: None Required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

The proposed projects could include reconfiguration of the existing wildlife/treatment ponds and/or construction of an approximately 35-acre wildlife/treatment wetland. Vegetation, including trees, would be removed at these two locations. The existing wildlife/treatment ponds and potential wildlife/Treatment Wetlands would be located within the City of Ventura within the coastal zone. Compliance with the City’s LCP would require that habitat values are restored to their existing condition or better. Compliance with the LCP would ensure that the project is

consistent with the Ventura County General Plan, City of Ventura General Plan, and Ventura County Tree Protection Ordinance. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

The upgrades would include replacing the aeration blowers, existing gravity thickener, and a new anoxic tank within the existing VWRF. The VWRF does not contain protected trees or other biological resources. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

HDD construction would be conducted from developed areas inland from the beach within the coastal zone in the City of Ventura. Compliance with the City's LCP would require that habitat values are restored to their existing condition or better. Compliance with the LCP would ensure that the project is consistent with the City of Ventura General Plan. Impacts would be less than significant.

Pipeline to the Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP would be constructed in public rights-of-way. Much of the pipeline would be constructed within the coastal zone. As a result, the City would be required to obtain a CDP from the City of Ventura, City of Oxnard, City of Port Hueneme, and the County of Ventura. Each of these jurisdictions have LCPs approved by the CCC. Once constructed, the underground pipeline would not conflict with city policies or ordinances. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed upgrades would be constructed at the same location as the proposed AWP. As previously discussed, all three of the potential AWP locations are previously disturbed and subject to the Ventura County Tree Protection Ordinance. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As previously discussed, all three of the potential AWPf locations are previously disturbed and subject to the Ventura County Tree Protection Ordinance. Therefore, impacts would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. All pipelines are proposed to pass through areas that have been previously disturbed. Installation of the outfall would require approval of a CDP from the local LCP as well as the CCC. Consistency with the California Coastal Act would be ensured through the LCP approval process. Impacts to local policies and ordinance would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

HCP and NCCP

Impact BIO 3.4-6: The proposed projects could have a significant impact if they would conflict with provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

There is no applicable HCP or NCCP within the proposed projects' areas (CDFW 2017). United Water Conservation District is in the process of preparing an HCP for the lower Santa Clara River, but it has not yet been approved. Construction, or operation and maintenance, of the proposed projects would not conflict with the provisions of any regional or local HCPs or NCCPs. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.5 Cultural Resources

This section addresses the potential impacts of the proposed projects to cultural resources. The section includes a description of the environmental setting to establish baseline conditions for cultural resources; a summary of the regulations related to cultural resources; and an evaluation of the proposed project's potential effects on cultural resources.

3.5.1 Existing Environmental Setting

Regional Setting

The proposed projects would be located in Ventura County, which is located along the Pacific Ocean (to the west) with the County of Santa Barbara to the north and the County of Los Angeles to the east and south. The county contains varied topography, exposed geological formations, vegetation, built communities, beaches and waterways. Natural resources within the county include lakes, beaches, dunes, rivers, creeks, bluffs, mountains, ridgelines, hillsides, native habitat (e.g., wetlands, oak woodlands, and coastal sage chaparral habitat), and rock outcroppings.

The proposed projects are largely located within the city of Ventura, and may extend into the cities of Oxnard and Port Hueneme. The project components are shown on Figure 2-2 and described in the Project Description in section 2. The setting and analysis of cultural resources is based on a review of available literature, cultural resource record queries, and field surveys within the project area.

Prehistoric Setting

The cultural sequences of Southern California are illustrated within several chronologies (King 1990; King 2011; Wallace 1955; Rogers 1929) that describe the cultural horizons and phases observed in the archaeological records of the Santa Barbara Channel region, Los Angeles Basin, and Southern California coastal region. The most recent regional synthesis, developed by Michael Glassow et al. (2007) for the Santa Barbara Channel, Santa Monica Mountains, and the Los Angeles Basin, in conjunction with Chester King's regional chronology (1990; 2011) serve as the basis for the following discussion.

Paleo-Coastal Period: 11,000–7,000 cal B.C.

It is not definitively known when human habitation in California first began, although some of the earliest evidence for human occupation in North America has been found on the California Channel Islands. The Arlington Springs Woman site on Santa Rosa Island, which contains some of the earliest human remains found in North America, dates to approximately 11,000 calibrated years (cal) B.C., while the Daisy Cave site on San Miguel Island has an early occupation dating to 9,500 cal B.C. (Glassow et al. 2007). On the southern Channel Islands of San Clemente, site CA-SCLI-43 (Eel Point) revealed evidence of boat technology dating to around 6,250 B.C. (Cassidy et al. 2004).

The earliest evidence of occupation on the Santa Barbara Channel mainland comes from the Surf Site near the mouth of the Santa Ynez River, which has been radiocarbon dated to 8,000–7,500

cal B.C. (Glassow et al. 2007). On the Los Angeles and Ventura County coasts, evidence of paleo-coastal occupation is lacking; some of the earliest dated occupation in this area is in the Ballona Creek area, which contains sites that date to approximately 6,000 to 5,000 B.C. (Altschul et al. 1992).

This earliest period of human occupation is characterized by small groups of nomadic hunter-gatherers who occupied small, temporary settlements used for gathering and processing shellfish. Evidence from the Surf site indicates that the earliest inhabitants of the Santa Barbara Channel area collected shellfish and produced flake tools using local chert (Glassow et al. 2007). The artifact assemblage of this time period included a limited collection of rudimentary tool types, each used for multiple tasks; key artifacts included fluted projectile points. Milling tools were not used.

Millingstone Period: 7,000–5,000 cal B.C.

Milling equipment is first observed in the archaeological record during this time (Glassow et al. 2007). During this period, population densities along the coastal mainland increased. Most sites that have been definitively dated to this period are located along the coast; however, there may have been more interior sites of this period that remain unknown due to decreased visibility or lack of organic remains that can be radiocarbon dated (Glassow et al. 2007). Departing from the subsistence strategies of their nomadic predecessors, Millingstone populations established more permanent settlements and relied on more diversified food sources. Settlements were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds, were exploited. However, despite the increase in new food resources, the diet from this period continued to rely heavily on the processing of hard seeds (Wallace 1955). Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than 5,000 B.C. contain a mortar and pestle complex as well, signifying an increased dependence on new food sources, such as acorns and starchy tubers.

Material culture during this period reflected a more diversified stone tool assemblage consisting of fine-worked projectile points, a large number of milling stones and stone bowls, as well as the prevalence of ornamental and ceremonial objects (Glassow et al. 2007). Olivella shell bead manufacture began during this time period.

Little is known about the social organization of Millingstone groups, but available evidence indicates that they likely consisted of small extended family groups with minimal social differentiation or political leadership (Glassow et al. 2007). Millingstone sites include those at Porter Ranch in the northern San Fernando Valley, Encino (CA-LAN-111), and CA-LAN-1 on Las Virgenes Creek (Wallace, 1955; Glassow et al. 2007).

Early Period: 6,000–800 cal B.C.

Between 4,500 and 2,000 cal B.C., several major changes in subsistence occurred. Wide use of the mortar and pestle during this time indicates a greater variety of plant foods were utilized. In addition, a higher frequency of projectile points may stem from the greater importance of hunting,

and possibly a shift in settlement systems and gender-based division of labor (Glassow et al. 2007). Mortuary practices may indicate a greater emphasis on status and leadership. The manufacture of shell beads, use of ritual objects, changing mortuary practices, and evidence of increasing trade across the channel between the islands and the mainland, all point to a corresponding increase in social complexity between 5,000 and 2,000 B.C.

After 2,000 B.C., a broader diet included diverse marine and terrestrial species (Glassow et al. 2007). Contracting stem points, notched net weights, circular shell fishhooks, and mortars and pestles are all characteristic of this period. The use of asphaltum, as evidenced by basketry impressions and tarring pebbles, is also first found in the archaeological record around 2,000 B.C. Between 2,000 B.C. and A.D. 1, new technologies such as the use of asphaltum, net weights, and fishhooks, suggest an intensification in fishing and coastal trade and a highly focused maritime economy (Glassow et al. 2007).

Middle Period: 800 cal B.C.–A.D. 1250

Increasing population densities and numbers of permanent settlements along the coast after 500 B.C. led to competition for resources and increased socioeconomic differentiation. Coastal sites of this period contain substantial midden deposits and cemeteries that were in use for long periods of time, reflecting this population trend.

Two important technological advances were achieved in the Middle Period: the introduction of the wooden plank canoe (called *tomol* by the ethnographic Chumash and *ti'at* by the ethnographic Tongva) and the bow and arrow. The plank canoe, which may have been developed as early as A.D. 500, allowed for passage into deeper waters, facilitating trade and the procurement of large fish and sea mammals (King 1990; Glassow et al. 2007). The bow and arrow, also adopted around A.D. 500 as it was in other regions of California, was used both to hunt large game as well as in inter-group warfare. Early arrow points were often leaf-shaped.

The production of Olivella wall “saucer” type beads underwent a significant expansion around 200 B.C., and such beads remained the most common Olivella bead throughout the Middle Period (King 1990). Shell beads and ornaments, steatite objects, lithic materials, groundstone, and red ochre were traded throughout Southern California during this period (Glassow et al. 2007).

Between A.D. 800 and 1400 there was an episode of sustained drought, known as the Medieval Climatic Anomaly (MCA). While the effects of this environmental change on prehistoric populations are still being debated, it did likely lead to local adaptations in subsistence strategies resulting from substantial stress on natural resources. In the Santa Barbara Channel, some researchers have suggested that environmental stress as a result of the MCA may have led to greater social complexity, increasing sedentism, and extensive trade, all of which are evident toward the end of the Middle Period and beginning of the Late Period (Kennett and Kennett 2000; Glassow et al. 2007). However, others have asserted that increased cultural complexity was more gradual and less influenced by environmental factors (King 1990; Gamble 2005).

It has been postulated that as early as 1500 B.C., a Takic-speaking people arrived in coastal Los Angeles and Orange Counties, having migrated west from inland desert regions (Kroeber 1925;

Golla 2007; Sutton 2009). By around A.D. 500 to 1000, Takic language and cultures had spread to the south and inland to the east. These new arrivals, linguistically and culturally different from earlier coastal populations, may have brought new settlement and subsistence systems with them, along with other new cultural elements (Sutton 2009). This migration has been postulated to be a factor in several of the significant changes in material culture seen in the Late Holocene throughout Southern California (such as the use of smaller projectile points and pottery), as well as the introduction of cremation as a burial practice.

Late Period: A.D. 1250–circa 1769

The increase in social complexity that began in the Middle Period continued into the Late Period, with evidence of ranked society and a hereditary elite class documented from mortuary contexts (Glassow et al. 2007). The population along the Santa Barbara mainland coast reached its highest point during the late period, and population tended to cluster in large coastal settlements (Glassow et al. 2007). Within these coastal settlements, houses were clustered and frequently arranged in a line along the shoreline (Gamble and Russell 2002).

By the late period, manos and metates were not commonly used, and mortars and pestles were the dominant food-processing technology. This shift was likely associated with the increasing importance of acorns in the prehistoric diet (Gamble and Russell 2002). The use of fused shale in lithic tool manufacture peaked during the Late Period, particularly in the Santa Monica Mountains.

The regional exchange network expanded during this period, with trade between the islands and coastal sites increasing and coastal and interior settlements linked through the exchange of marine resources and other goods, such as steatite vessels manufactured on Santa Catalina Island (Glassow et al. 2007). Chiefs or wealthy individuals who owned plank canoes were very influential in this exchange system (Gamble and Russell 2002).

Ethnographic Setting

The projects are located in territory traditionally occupied by the Ventureño Chumash. Ventureño territory extended from the Pacific coast in the vicinity of Ventura in the west to the area between Sespe and Piru Creeks in the west, and from the headwaters of Sespe Creek in the north to the area around Malibu Creek in the south (Kroeber 1925; Grant 1978). However, by the Mission period Ventureño territory extended just east of Piru Creek (King 1975; Glassow et al. 2007). The Ventureño Chumash were bounded by the Tataviam to the east, the Gabrielino-Tongva to the southeast, the Emigdiano Chumash to the north, and the Barbareño, Ynezeño, and Cuyama Chumash to the northwest.

The Chumash were hunter-gatherers and lived in permanent villages. The size of Chumash villages ranged considerably from the coastal areas to the inland areas with many villages on the coast having several hundred occupants (Grant 1978), whereas villages inland were significantly smaller, sometimes containing only a couple dozen inhabitants (Grant 1978). At the beginning of the Mission period it is estimated that the overall Chumash population ranged from 8,000 to 10,000 (Kroeber 1925), with a population estimate for the Ventureño ranging from 2,500 to 4,200 (Grant 1978). Chumash villages were most abundantly located along the coast and were often situated on high ground adjacent to a river or stream that flowed into the ocean or along the borders of sloughs or wetlands (Grant 1978). Ventureño villages were often located near permanent, reliable water sources and were most abundant along the Ventura River, Santa Clarita River, and Calleguas Creek. Ventureño villages located near the projects include *Ishwa*, located on the northern side of the Santa Clara River at its outfall into the Pacific Ocean in the same general area as the proposed Treatment Wetlands, and *Sati'k'oi*, located in the present-day community of Saticoy near the Saticoy Water Conditioning Facility (WCF) (Kroeber 1925).

Chumash subsistence included both terrestrial and maritime resources. Amongst terrestrial plant resources, the acorn, collected mainly from the California live oak, was the most important. Additional plant resources included pine nuts, wild cherry, cattail, California laurel berries, and chia sage seeds. Mule deer, coyote, and fox were hunted using the bow and arrow, and smaller game was taken using deadfalls and snares. Migratory birds such as ducks and geese were also hunted. In addition to terrestrial resources, the Chumash utilized an array of maritime resources including shellfish, sea mammals, and pelagic and schooling fish. Large fish and sea mammals such as seals, sea otters, and porpoises were hunted with harpoons (Grant 1978). Dip nets, seines, and line and hook were used for smaller fish (Grant 1978).

Chumash villages were composed of a patrilineal descent group and usually had at least one chief, known as the *wot* or *wocha*, whose position was inherited but was subject to village approval. Chumash dwellings were hemispherical structures constructed by driving pliable wooden poles into the ground, bending them towards the center of the dwelling, and tying them together (Grant 1978). The wooden pole frame was then covered with interwoven grass mats. While accompanying the Portola expedition, Father Juan Crespi noted that Chumash dwellings could be up to 50 feet in diameter and hold up to 70 people (Grant 1978). Most villages contained one or more sweat houses that were semi subterranean and consisted of a wooden pole frame covered with earth. Additional village structures included store houses and ceremonial enclosures.

Not much is known of the religion practiced by the Chumash. Father Olbés of the Santa Barbara mission noted a Chumash deity called *sup*, and, although the Chumash had no figures or idols of the deity, they made offerings of seeds and feathers to show their acknowledgement and gratitude for the blessings given them (Grant 1978). Additionally, Chumash rock art sites, such as Painted Cave of San Marcos Pass located near the City of Santa Barbara and Burro Flats Painted Cave located in the northwestern portion of the San Fernando Valley, may have represented shrines or sacred areas. Many of the pictographs present at rock art sites consist of geometric figures as well as animal figures and are painted in vibrant colors that may have been painted while under the influence of the hallucinogenic ceremonial drink, toloache, which is associated with the

Chinigchinich religion of the Gabrielino-Tongva (Grant 1978). The Chumash buried their dead with the body being bound in a flexed position (Kroeber 1925). The graves of prominent individuals were marked with planks containing images or from which the possessions of the deceased were hung.

The Chumash were one of the first native Californian groups encountered by Juan Rodriguez Cabrillo when he sailed into the Santa Barbara Channel Island region in 1542–43 (Grant, 1978; Kroeber 1925). The Gaspar de Portola expedition passed through Chumash territory on its way to Monterey Bay in 1769. Between 1772 and 1804, five missions, including Missions San Luis Obispo (1772), San Buenaventura (1782), Santa Barbara (1786), La Purisima Concepcion (1787), and Santa Ynez (1804) were established in Chumash territory. The establishment of the missions fractured the traditional culture of the Chumash, and by 1834, when the missions were secularized, the Chumash population had declined dramatically as a result of European diseases (Grant 1978).

Historic Setting

Regional Overview

Spanish Period (A.D. 1769–1821)

Although Spanish explorers made brief visits the region in 1542 and 1602, sustained contact with Europeans did not commence until the onset of the Spanish Period. In 1769 Gaspar de Portola led an expedition from San Diego, passing through the Santa Clara River Valley on its way to the San Francisco Bay (McCawley 1996). This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle 1990).

In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. In 1782, Father Junipero Serra founded the Mission San Buenaventura, located approximately 3 miles northwest of the projects (California Missions Resource Center 2003). The mission's establishment introduced ranching and agriculture to the region. The mission friars planted fruit trees and established small gardens along the Ventura River that grew a variety of vegetables including melons, corn, and potatoes (SFEI 2011). Cattle and sheep grazed on the vast land holdings of the mission, which included the Ventura and Santa Clara River valleys and large portions of the Oxnard Plain (SFEI 2011). By 1816, the Mission had 23,000 cattle and 12,000 sheep (SFEI 2011).

The operation of Mission San Buenaventura depended heavily on the labor of the neophytes, the newly converted native Chumash, known as Ventureño. Disease and hard labor took a toll on the native population of what would become Ventura County; by 1900, the Native Californian population had declined by as much as 90 percent and native ways of life were significantly altered (Cook 1978).

In an effort to promote Spanish settlement of Alta California, Spain granted several large land concessions from 1784 to 1821. At this time, unless certain requirements were met, Spain retained title to the land (State Lands Commission [SLC], 1982).

Mexican Period (A.D. 1821–1848)

The Mexican Period began when Mexico won its independence from Spain in 1821. Mexico continued to promote settlement of California with the issuance of land grants. In 1833, Mexico began the process of secularizing the missions, reclaiming the majority of mission lands and redistributing them as land grants. According to the terms of the Secularization Law of 1833 and Regulations of 1834, at least a portion of the lands would be returned to the Native populations, but this did not always occur (Milliken et al. 2009). By 1846, what is presently Ventura County had been divided amongst 19 ranchos (SFEI 2011). Mexican-era land grants within the project area include San Miguel (4,694 acres), Santa Paula y Saticoy (17,773 acres), and Rio De Santa Clara o Colonia (44,883-acre).

Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios (native Hispanic Californians), many of whom became wealthy and prominent members of society. The Californios led generally easy lives, leaving the hard work to vaqueros (Hispanic cowhands) and Indian laborers (Pitt 1994; Starr 2007).

American Period (A.D. 1848–present)

In 1846, the Mexican-American War broke out. Mexican forces were defeated in 1847 and Mexico ceded California to the United States as part of the Treaty of Guadalupe Hildalgo in 1848. California officially became one of the United States in 1850. While the treaty recognized right of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities, the claimant was required to prove their right to the land before a patent was given. The process was lengthy, and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr 2007).

When the discovery of gold in northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California. The increased population provided an additional outlet for the Californios' cattle. As demand increased, the price of beef skyrocketed and Californios reaped the benefits. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams 1946; Dinkelspiel 2008). With the decline of the cattle industry, sheep ranching became the predominant industry in the region and by 1870 a population of approximately 190,000 sheep were grazing in Santa Barbara County, which included what is present-day Ventura County (SFEI 2011). However, a second drought in 1877 wiped out most of the sheep herds, and ranching as a viable economic endeavor in the region effectively ended for good (SFEI 2011).

The loss of a viable economic base in the form of cattle and sheep, coupled with the burden of proving ownership of their lands, caused many Californios to lose their lands during the latter half of the 19th century (McWilliams 1946). The large ranchos were subdivided and sold for agriculture and residential settlement. With the subdivision of the ranchos, agriculture became the predominant economic driver in the region. Barley, beans, and sugar beets became the staple crops of the Oxnard Plain and lowland areas of Ventura from the 1870s through the 1920s (SFEI

2011). In the 1890s, fruit and nut orchards were planted in the Santa Clara River Valley and by the 1920s citrus was the dominant crop in the region.

Brief History of the Project Area

Ventura

In 1848, Don Jose Arnaz illegally acquired Mission San Buenaventura and laid out a town site extending from what is present-day Palm Street to the Ventura River (Storke 1891; Smith 1933). Arnaz placed advertisements in eastern journals extolling the climate and agricultural potential of the region and offered town lots for sale to investors (Storke 1891). Ultimately, Arnaz's venture failed, but in 1862 Waterman, Vassault and Co., purchased the lands and laid out their own town site (Storke 1891). The town was incorporated in 1864 as the community of San Buenaventura, named for the mission. The town served the agricultural communities surrounding it and remained relatively small until an oil boom in the 1920s led to its rapid growth and an extended period of economic development (Adamson 2008).

Since the 1860s, California's burgeoning oil industry centered on Ventura and Los Angeles counties, which were known to contain vast oil fields as evidenced by the La Brea tar pits, and the natural oil seeps that dotted the Pacific coastline (Adamson 2008). The Civil War being waged in the east disrupted the transport of oil from Pennsylvania to the West Coast, where cities such as San Francisco used it as illuminating fuel (Adamson 2008). The drop in oil supplies coming from the east caused San Francisco investors to explore the oil fields around Ventura, and by 1900 over two dozen fields had been identified in the region (Adamson 2008). However, throughout the latter part of the 19th century and the early part of the 20th century, oil production was low relative to 20th century standards. This low production was due to the intrusion of groundwater into the borings—the rudimentary oil extraction technology of the time simply could not encase the borings adequately enough to keep the water out. Although production was low, oil was still being extracted in quantities large enough to be commercially viable. In 1872, a wharf was constructed in Ventura allowing oil to be loaded onto ocean-going tankers (Adamson 2008). By 1876 Standard Oil of California (present-day Chevron) constructed a refinery, and in the 1890s, the Union Oil Company constructed pipelines from its fields in Santa Paula, approximately 14 miles to the northeast, to Ventura's wharf (Adamson 2008).

By the 1920s Ventura's oil industry was still relatively small compared to the economic output of the region's agricultural industry. As a result, the politics and economy of Ventura were controlled by the region's wealthy farmers (Adamson 2008). But in 1925 an oil boom was set off in Ventura when the Associated Oil Company completed two wells north of the city's business district that doubled the region's output, reaching 21 million barrels by 1929 (Adamson 2008).

The development of the Ventura Avenue oil field, as it was known, cemented Ventura as the capital of a high quality oil district that would produce for decades leading to a period of sustained population and economic growth (Adamson 2008). An influx of workers to the oil fields spurred rapid growth of Ventura, and by 1930, the city's population reached 19,000, approximately three times its population 10 years prior (Adamson 2008). With such a significant increase in population, the city also expanded rapidly with the construction of 750 buildings in 1926, which included a Masonic temple, a five-story hotel, an Elks Club lodge, a downtown

theater, and grocery and drug stores (Adamson 2008). In October 1933 the Maricopa-Ventura road opened connecting the Ventura Avenue oil field to the oil fields of Kern County. This allowed companies that catered to the local Ventura oil industry to also serve the industry of Kern County needs, and companies such as the Ventura Tool Company and National Supply Company were formed as a result (Adamson 2008).

A second oil boom of the 1940s and early 1950s included the development of over 200 wells in the Ventura Avenue oil field and by 1960 the city's population rose to 30,000 people (Adamson 2008). Today, Ventura has a population of 109,000 residents and encompasses an area of 32 square miles (City of Ventura n.d.).

Olivas Adobe

The Olivas Adobe is located in the City of Ventura and is the only two-story Mexican-era adobe in the Santa Clara Valley. In 1841, Governor Juan B. Alvarado granted the 4,670-acre Rancho San Miguel to Don Raimundo Olivas and Felipe Lorenzana, with Olivas receiving the western half of the rancho, and Lorenzana the eastern half. Olivas was born in Los Angeles in 1809 and joined the Mexican army at the age of 16. He was stationed at the presidio in Santa Barbara, where he met his wife Teodora Lopez (Ventura County Museums n.d.). In 1841, Olivas constructed a small adobe on the land granted to him and in 1849 he constructed a larger two-story adobe connecting the original dwelling to accommodate his large family of 21 children (Ventura County Museums n.d.). In 1847, Olivas began grazing cattle on his land. When the gold rush of 1849 brought an influx of explorers and settlers to the region, Olivas sold his cattle to feed the newcomers. The droughts of the 1860s decimated the Olivas cattle herds, forcing Raimundo to switch to raising sheep (Ventura County Museums n.d.)

In 1879, Raimundo passed away and his land was divided up amongst his many children. In 1899, the adobe passed from the Olivas family, and had many owners over the years. In 1927, the adobe was purchased by Max Fleischmann, manufacturer of Fleischmann's yeast and margarine, who turned it into a hunting lodge (Ventura County Museums n.d.). When Fleischmann passed away in 1951, the adobe was given to the City of Ventura. The City restored the adobe and its walled courtyard, turning it into a museum and a centerpiece of the Olivas Adobe Historic Park in 1972 (Ventura County Museums n.d.). The Olivas Adobe Historic Park is listed on the National Register of Historic Places (NRHP) and is California Historic Landmark #115.

Saticoy

The unincorporated community of Saticoy is situated in the immediate vicinity of, and named for, what was the Chumash village of *Sati'k'oi*. However, by the time Mission San Buenaventura was established in 1782, the village was abandoned (SBRA 2014). Saticoy is located in a region that was part of the Rancho Santa Paula y Saticoy land grant awarded to Manuel Jimeno Carisin in 1843 (SBRA 2014). Carisin was an absentee land owner and the agricultural operations carried out on the rancho were overseen by a majordomo. In the 1850s, the Chumash resettled the Saticoy area, with the Chumash leader, Luis Francisco, becoming chief of the Saticoy Rancheria (SBRA 2014). The Chumash resettlement of Saticoy was relatively short-lived, with the last documented Chumash person, Maria Pomposa, leaving the community for Ventura in 1880 (SBRA 2014).

The Euroamerican settlement of Saticoy began in 1868, when William De Forest Richards purchased 850 acres of land immediately west of present-day Saticoy (SBRA 2014). Over a period of years, settlers attracted by Richards' agricultural outpost moved into the area and soon a rural community was established, consisting of a school, post office, blacksmith shop, hotel, and general store centered along present-day Telephone Road (SBRA 2014). In 1873, a petition for a post office under the name of Saticoy was granted and Eugene A. Duval was appointed Saticoy's first postmaster (SBRA 2014). In 1874, Saticoy became a stopping point on the Santa Clara Valley line of the Atlantic and Pacific Stage Company.

Agriculture was and would remain the primary economic driver for the community, and the early crops grown by the early settlers included grains, beans, and walnuts (SBRA 2014). In 1887 the Southern Pacific Railroad built a depot in Saticoy, making it a main transit point for the distribution of agricultural commodities from the surrounding areas. The arrival of the railroad saw a surge in Saticoy's population and a formal town site was laid out. For a brief period, land sales in Saticoy were brisk, and the town expanded. However, in 1904 the Santa Clara Valley Line of the Southern Pacific railroad became a branch line, reducing the passenger traffic through the region, drastically reducing growth of the town (SBRA 2014). Although the growth of Saticoy was stymied, it remained an agricultural producer in the region, becoming the center of the walnut industry, and crops such as lima beans, sugar beets, barley, corn, hay, and, dried apricots where shipped from its depot (SBRA 2014). To accommodate the cash crops being shipped, a number of warehouses, including those belonging to the Southern Pacific Milling Company and the Saticoy Walnut Growers Association, were built adjacent to the depot (SBRA, 2014). By 1910, Saticoy remained a relatively small community with a population of 200 residents dependent on the agricultural industry, but Saticoy experienced a second surge in population in the 1920s, as hundreds of refugees fleeing the Mexican Revolution poured into the area seeking employment as farm laborers (SBRA 2014). In the 1940s and 1950s, Saticoy experienced an additional, albeit smaller, growth in population as the Saticoy Oil Field, located south of the town, was developed by the Shell Oil Company (SBRA 2014). Today, Saticoy is an unincorporated community of Ventura County with a population of 1,029 and an economy driven by agricultural and oil production.

Port Hueneme

The City of Port Hueneme is located within what was the 44,883-acre Rancho Rio De Santa Clara o Colonia. The rancho was granted by Governor Alvarado to eight retired soldiers in 1837. During the 1860s, American squatters began to illegally settle on the rancho, and, by 1867, cash crops such as barley were grown by these squatters (Storke 1891). In 1869, the rancho was purchased by Thomas R. Bard for \$150,000 (Storke 1891). Shortly after taking possession of the land, Bard evicted the squatters, setting off an ongoing legal conflict between Bard and the squatters, who were led by W.E. Barnard (Smith 1933). Once the legal conflict was resolved, Bard subdivided the rancho for sale to be settled by farmers taking advantage of the fertile Oxnard Plain which would produce cash crops such as barley, lima beans, and sugar beets (Smith 1933).

Although the community that would become Port Hueneme was located on highly productive farmlands, the nearest seaport for shipping produce was located in Ventura. Farmers would have to transport their produce 15 miles to Ventura's port, which required crossing the Santa Clara River (Smith 1933). To address the shipping issues faced by the farmers of the Oxnard Plain, W.E. Barnard started the Hueneme Lighter Company in 1870, establishing a shipping point in the small community of Hueneme. Hueneme was laid out by Bard and included two houses, and the Pioneer Hotel (Storke 1891). The Hueneme Lighter Company transported the crops produced on the Oxnard Plain, shipping 60,000 sacks of grain in the company's first year (Storke 1891). In 1871, Bard and his partner, R. G. Sardam, obtained the right to construct a wharf at Hueneme. This created additional conflict between Bard and Barnard, as the wharf would put Barnard's shipping company out of business. Barnard, as leader of the Squatters League, opposed and attempted to physically block the construction of the wharf. On the night of March 13, 1871, Bard transported carpenters and building materials to the wharf's construction site in Hueneme. Bard and his men built a stockade around the construction site and began to build the wharf. On the morning of March 14, Barnard and the Squatters League found that Bard was constructing the wharf and began to attack the stockade; however, they were turned back by Bard's men and the wharf's construction was completed over the following weeks (Storke 1891; Smith 1933). The completed wharf was 900 feet long and was connected to warehouses on the shore by a tramway (Storke 1891). The wharf was a major shipping point for the region and drew people to the community of Hueneme, which had a population of 166 by 1880 (Smith 1933). By 1883, the community contained several businesses, a telegraph office, a post office, 25 homes, and four large warehouses (Storke 1891).

In the early 1930s, Thomas Bard's son, Richard, and the area's local farmers applied for a \$1.6 million Public Works Administration (PWA) loan to construct a modern port at Hueneme. Amongst the selling points presented by Bard and the farmers was that the port would be located within trucking distance of where 25 percent of California's sugar beets were produced, as well as half of its walnuts and almonds, 60 percent of its cotton, and practically all its borax, potash, and citrus (Port of Hueneme 2018). The PWA did not approve the loan, but Bard and the farmers decided to build the port and created the Oxnard Harbor District on April 29, 1937 (Port of Hueneme 2018). On May 5, 1938, the port district put forth a \$1.75 million bond issue to fund the port's construction, and within 15 minutes of the bond issue's opening, the entire amount of money was obtained (Port of Hueneme 2018). Construction of the port began on January 24, 1939 and was completed by July 4, 1940.

With the Japanese attack on Pearl Harbor in 1941, the United States entered World War II and on March 5, 1942, the United States Navy took control of the port, transforming it into a naval base (Port of Hueneme 2018). The port was expanded to include 5,205 feet of wharf, 1.2 million square feet of buildings, 36 miles of railroad, and six docks with capacity for nine ships (Port of Hueneme 2018). After the war, in 1947, the Navy reached an agreement with the Oxnard Harbor District to the lease Dock #1 to the district. Dock #1 encompassed 16 acres of the port's original 322 acres which the district had to transfer to the Navy at the outset of the war (Port of Hueneme 2018). By 1960, the Oxnard Harbor District purchased Dock # 1, as well as 6 additional acres, from the Navy, along with an additional 35 acres from the City of Port Hueneme. The dock was expanded to include 1,800 linear feet and the ability accommodate three ships (Port of Hueneme

2018). To this day the port is a significant shipping point for the region's agricultural and oil industries.

Oxnard

The City of Oxnard is located on the fertile Oxnard Plain and its history is tied to the agricultural economy of the region. Cash crops including barley and lima beans dominated the Oxnard Plain's agricultural output during the latter half of the 19th century. But in 1897, local farmers Albert Maulhardt and Johannes Borchard began experimenting with growing sugar beets believing them to be the next profitable cash crop of the area (City of Oxnard n.d.). Maulhardt and Borchard invited Henry Oxnard, who, with his three brothers, owned and operated the American Beet Sugar factory in Chino, to build a processing plant for sugar beets being grown on the Oxnard Plain (Oxnard Chamber of Commerce 2015). To entice Oxnard and his brothers, Maulhardt and Borchard pledged 18,000 acres of sugar beets being grown by local farmers (City of Oxnard n.d.). The Oxnard brothers built their \$2 million factory amongst the sugar beet fields in 1898, a few blocks northeast of the small town site that would become the City of Oxnard (Oxnard Chamber of Commerce 2015). Shortly after the factory was built, the Southern Pacific Railroad constructed a spur line to the factory, offering passenger service to the new town site as well as shipping of the processed sugar to markets outside the area (Oxnard Chamber of Commerce 2015). The spur line brought Chinese, Japanese, and Mexican laborers to the region to work in the factory and the sugar beet fields. The town site became known as Oxnard, named for the four brothers, and the town was incorporated in 1903 (City of Oxnard n.d.). The Oxnard's sugar beet factory operated from 1898 until 1959 (City of Oxnard n.d.). During World War II, naval bases were established at Point Mugu and Port Hueneme, located approximately 6 miles and 3 miles from Oxnard, respectively. The bases brought the aerospace and other defense-based industries to the region, creating an economic opportunity outside of the agricultural industry that dominated the region (Oxnard Chamber of Commerce 2015). The opportunities offered by the naval bases led to further growth and development of the City of Oxnard. Presently, Oxnard is the largest city in Ventura County, with a population over 200,000 (City of Oxnard n.d.).

Southern Pacific Railroad

The Southern Pacific Railroad has its origins in the creation of the Central Pacific Railroad. While major cities in Northern California, such as San Francisco, Sacramento, and San Jose were connected via railway in the 1850s and 1860s, the West as a whole remained detached from railways in the East. While working for the Sacramento Valley Railroad, Theodore D. Judah spotted a route to the east, through the Sierra Nevada Mountains. Judah and a few other men formed the Central Pacific Railroad in order to build the western segment of the transcontinental railroad themselves. Unfortunately, Judah had a difficult time securing financial backing, until he met Collis P. Huntington in 1861. Huntington, along with Mark Hopkins, Charles Crocker, and Leland Stanford, purchased enough stock in the company so that it could incorporate under California law (Orsi 2005). These four men later became known as "the Big Four."

Over the next few years, the Big Four and Judah worked furiously at raising the necessary capital by selling company stock and lobbying for federal subsidies (Orsi 2005). In 1863, they began to lay track in Sacramento and on May 10, 1869, the Central Pacific met the Union Pacific at Promontory, Utah, thereby creating the first transcontinental railroad (Orsi 2005).

Next, the Big Four began to purchase several small railroads within California. Henry Newhall had been interested in expanding his railroad interests, but was outsmarted by Southern Pacific and realized he could not compete. He sold his interests to Southern Pacific, which gave him a position on the Board of Directors. Newhall then deeded a right-of-way through the Santa Clara Valley to the Southern Pacific Railroad for one dollar (Magazine of Santa Clarita 2007).

The Southern Pacific Railroad connected Los Angeles to northern rail lines on September 5, 1876 via a 7,000-foot-long tunnel at Newhall Pass near San Fernando (Tunnel 25) and through the Santa Clara Valley. In 1883, the Southern Pacific completed a second transcontinental railway, the Sunset Route from Los Angeles to New Orleans (Orsi 2005).

When Collis P. Huntington died suddenly in 1900, control of the Southern Pacific Railroad passed not to his nephew Henry E. Huntington, but to Edward H. Harriman. Harriman, who controlled the Union Pacific and Illinois Central, had managed to purchase 50 percent of Southern Pacific stock (Orsi 2005). Harriman made significant improvements to the railroad's lines. But in 1913 anti-trust laws forced him to sever his relationship with Southern Pacific (Orsi 2005).

In 1918, America entered into World War I and the United States Railroad Administration controlled the Southern Pacific Railroad until 1922, when it was returned to corporate management (Mullaly and Petty 2002). Beginning in the 1920s, competition from local passenger lines, developing highways, and the rising popularity of the automobile caused a loss of intra-California and interstate passenger service revenues (Livingstone et.al. 2006). The Southern Pacific Railroad was absorbed by the Union Pacific Railroad in 1996.

The Santa Paula Branch

In the late 1880s, the Southern Pacific Railroad was persuaded to build a route from Saugus to Santa Barbara. The 34-mile line, later known as the Santa Paula Branch, connected Saugus with Santa Barbara via Ventura in 1887. This route, which largely parallels State Route 126, served as the main north-south route between Los Angeles and San Francisco until 1904, when the Santa Susanna tunnel provided a more direct route between the two major cities. Passenger service was discontinued in 1934, although the branch line continued in use to ship freight (primarily citrus) until the 1950s/1960s. The railroad line east of Piru was abandoned in 1984. The Southern Pacific Railroad right-of-way between Camulos and Saugus was later purchased by the Newhall Land & Farming Company, and most of the rails were subsequently removed (Santa Clara River Valley Railroad Historical Society 2006). Tracks related to the Santa Paula Branch are located near the projects' proposed water conveyance alignments at two locations: at the southern terminus of Valentine Road and between the Transport Street and Portola Road Advanced Water Treatment Facility sites.

Paleontological Setting

The paleontological records search prepared for the projects by the Natural History Museum of Los Angeles County (LACM) (McLeod 2018) indicates that much of the project area is comprised of surficial deposits of younger Quaternary (Holocene-aged) Alluvium. These deposits include active wash deposits in the Santa Clara River and Harmon Barranca drainages, as well as

active dune sand and estuarine deposits in the coastal plain between Ventura and Oxnard. North of the Santa Clara River these deposits are primarily alluvial fan deposits derived from the mountains just to the north and south of the Santa Clara River. These younger Quaternary deposits are not of sufficient age to contain significant vertebrate fossils, but they may be underlain by older Quaternary deposits that do contain significant vertebrate fossils (McLeod 2018).

Identification of Cultural Resources

SCCIC Records Search

Records searches for the proposed project were conducted on January 31, March 29, and September 20, 2018, at the California Historical Resources Information System (CHRIS) South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton. The records search included a review of all previously recorded archaeological resources and previous studies within the area of the proposed projects plus a 1-mile radius, and historic architectural resources within the area of the proposed projects plus a 0.25-mile radius.

The records search results indicate that 188 cultural resources studies have been conducted within a 1-mile radius of the proposed projects. Approximately 35 percent of the area of the proposed projects has been subject to previous cultural resources study.

A total of 42 previously recorded cultural resources were identified as a result of the records search, consisting of 14 archaeological resources identified within the 1-mile archaeological resources radius and 28 historic architectural resources identified within the 0.25-mile historic architectural resources radius (**Table 3.5-1**). The 14 archaeological resources consist of seven prehistoric archaeological sites, two protohistoric archaeological sites, two multicomponent archaeological sites, two historic-period archaeological sites, and one resource that consists of archaeological deposits associated with the Olivas Adobe. The 28 historic-architectural resources consist of 23 buildings/structures, three historic-period features consisting of Ventura County historic landmarks, one historic-period district (Thomas R. Bard Estate), and one historic-period landscape (McGrath State Beach). Two additional resources, the Santa Clara River Bridge (CA 52C0013) and the Edison Canal Bridge (CA 52C0106), are not on file at the SCCIC, but were identified upon review of the Caltrans historic bridge inventory, bringing the total number of previously recorded resources to forty-four.

TABLE 3.5-1
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary # (P-56-)	Permanent Trinomial (CA-VEN)	Other Identifier	Description	Date(s) Recorded	Distance from Project	NRHP/CRHR Eligibility
000031	31	-	Prehistoric archaeological site: village site of <i>Sa'aqtik'oy</i>	1955; 1999	1,110 feet	Not evaluated
000032	32	-	Prehistoric archaeological site: cemetery associated with village site of <i>Sa'aqtik'oy</i>	1955; 1999	400 feet	Not evaluated
000033	33	-	Prehistoric archaeological site: deposit of groundstone artifacts	1955; 1999	120 feet	Not evaluated

Primary # (P-56-)	Permanent Trinomial (CA-VEN)	Other Identifier	Description	Date(s) Recorded	Distance from Project	NRHP/CRHR Eligibility
000034	34	-	Prehistoric archaeological site: deposit of groundstone artifacts	1955; 1999	220 feet	Not evaluated
000545	545	-	Prehistoric archaeological site: lithic scatter	1977	3,960 feet	Not evaluated
000662	662	-	Prehistoric archaeological site: midden deposits	1979; 2004; 2012	445 feet	Not Stated
000663	663	-	Protohistoric archaeological site: midden deposits possibly representing remains of a <i>tomol</i> camp	1979; 1983	3,960 feet	Not evaluated
000664	664	-	Historic-period archaeological site: remnants of farm buildings and refuse scatter	1979	2,323 feet	Not evaluated
000667	667	-	Prehistoric archaeological site: midden deposits	1979; 1997	180 feet	Not evaluated
000815	815H	-	Historic architectural resource and archaeological site: Olivas Adobe	1985	150 feet	NRHP listed
001234	1234H	-	Protohistoric archaeological site: resource collection area	1979	120 feet	Not evaluated
001392	1392H	-	Historic-period archaeological site: remnants of irrigation system	1997	2,112 feet	Not evaluated
001520	-	-	Historic-period district: McGrath State Beach	2015	100 feet	Not eligible
001807	1807/H	-	Multicomponent archaeological site: prehistoric artifact scatter and historic-period refuse scatter	2010	325 feet	Not evaluated
120003	-	-	Multicomponent archaeological site: prehistoric midden deposits and historic-period remnants of residential structures	1979	85 feet	Not evaluated
150015	-	-	Historic-period feature: Ventura County Landmark #20 commemorating the Bard Family	1978	100 feet	Not evaluated
150016	-	-	Historic-period feature: Ventura County Landmark #37 commemorating the Hueneme Slough	1978	460 feet	Not evaluated
150017	-	-	Historic-period feature: Ventura County Landmark commemorating Ventura Road eucalyptus grove	1978	Within	Not evaluated
151837	-	-	Historic-period district: Thomas R. Bard Estate	1975	100 feet	NRHP listed
152243	-	-	Historic architectural resource: Famers and Merchants Branch of Santa Paula constructed in 1911	1985	575 feet	NRHP eligible
152255	-	-	Historic architectural resource: bungalow constructed in 1925	1989	200 feet	Not evaluated
152256	-	-	Historic architectural resource: bungalow constructed in 1925	1989	200 feet	Not evaluated
152257	-	-	Historic architectural resource: bungalow constructed in 1925	1989	300 feet	Not eligible
152287	-	-	Historic architectural resource: Women's Improvement Club of Hueneme constructed in 1915	1988	581 feet	NRHP Listed
152740	-	-	Historic architectural resource: single-family residence constructed in 1925	1991	5,016 feet	Not evaluated

Primary # (P-56-)	Permanent Trinomial (CA-VEN)	Other Identifier	Description	Date(s) Recorded	Distance from Project	NRHP/CRHR Eligibility
152742	-	-	Historic architectural: single-family residence constructed in 1920	1991	5,016 feet	Not evaluated
152755	-	-	Historic architectural resource: industrial buildings constructed in 1948	1986	0.45 miles	Not eligible
152758	-	-	Historic architectural resource: vernacular style cottages constructed between 1929-1938	1984	400 feet	Not eligible
152759	-	-	Historic architectural resource: commercial structures constructed between 1917-1940	1984	440 feet	Not eligible
152760	-	-	Historic architectural resource: residential buildings constructed between 1890-1938	1984	2,376 feet	Not eligible
152761	-	-	Historic architectural resource: residential buildings constructed between 1893-1940	1984	1,584	Not eligible
152762	-	-	Historic architectural resource: commercial structures constructed between 1893-1912	1984	700 feet	Not eligible
152792	-	-	Historic architectural resource: Butler-style building constructed in 1951	2003	500 feet	Not eligible
152801	-	-	Historic architectural resource: Butler-style building constructed in 1959	2003	500 feet	Not eligible
152808	-	-	Historic architectural resource: Quonset hut constructed in 1944	2004	350 feet	Not eligible
152839	-	-	Historic architectural resource: steel lattice transmission tower constructed in 1958	2004; 2012	528 feet	Not eligible
153002	-	-	Historic architectural resource: steel lattice tower constructed in 1958	2010	340 feet	Not eligible
153003	-	-	Historic architectural resource: Modern style retirement residential building constructed in 1963	2010	634 feet	Not eligible
153056	-	-	Historic architectural resource: warehouse building constructed in the 1950s	2012	100 feet	Not eligible
153094	-	-	Historic architectural resource: steel lattice tower constructed in 1958	2007	50 feet	Not eligible
153099	-	-	Historic architectural resource: steel lattice tower constructed in 1959	2014	1 mile	Not eligible
-	-	Santa Clara River Bridge	Historic architectural resource: deck plat girder bridge constructed in 1956	-	Within	Not eligible for NRHP
-	-	Edison Canal Bridge	Historic architectural resource: bridge crossing the Edison Canal constructed in 1958	-	Within	Not eligible for NRHP

Previously Recorded Resources Within and Adjacent to the Proposed Projects

Three (P-56-150017 [Ventura Road eucalyptus grove], Santa Clara River Bridge [CA 52C0013], and Edison Canal Bridge [CA 52C0106]) of the 44 previously recorded resources are located within the area of the proposed projects. Fifteen additional cultural resources are located in close proximity to (adjacent) the proposed projects, including nine archaeological resources (P-56-000032 [prehistoric site], -000033 [prehistoric site], -000034 [prehistoric site], -000662 [prehistoric site], -000667 [prehistoric site], -000815 [historic-period deposits associated with

Olivas Adobe], -001234 [protohistoric site], -001807 [multicomponent site], and -120003 [multicomponent site]) and six historic architectural resources (P-56-000815 [buildings associated with Olivas Adobe], -001520 [McGrath State Beach], -150015 [Bard Family cemetery], -152256 [bungalow-style residence], -153056 [warehouse building], and -153094 [steel lattice transmission tower]). For archaeological sites with the potential to contain buried components the geographic extent of which are often unknown, 500 feet is defined for the purposes of this analysis as being adjacent. For historic architectural resources, the boundaries of which are clearly defined on the surface, for the purposes of this analysis, 100 feet is considered adjacent. The 18 resources located within and adjacent to the proposed projects are described in more detail below.

P-56-000032 (Within 500 feet)

Resource P-56-000032 is a prehistoric archaeological site originally recorded by Charles Rozaire in 1955 as a cemetery located on a knoll overlooking the ethnographic Chumash village of *Sa'aqtik'oy*. Rozaire described the site as containing manos, metates, pestles, mortars, stone bowls, steatite tubes, and clam shell disc beads, as well as four intact burials and additional bone fragments (Rozaire 1955a). The site was likely destroyed in the early 1950s when the knoll on which it was located was flattened to prepare the land for walnut and citrus cultivation (Rozaire 1955a; Maki and Romani 1999a). In 1998, Conejo Archaeological Consultants conducted subsurface testing at the site as part of a residential development project. The subsurface testing included the excavation of 10 trenches and resulted in the recovery of a single flake from a disturbed soil horizon; however, no intact archaeological deposits were identified (Maki and Romani 1999a). Resource P-56-000032 has not been evaluated for inclusion in the NRHP or California Register of Historical Resources (CRHR). The site is located approximately 400 feet south of the proposed Saticoy WCF water conveyance pipeline.

P-56-000033 (Within 500 feet)

Resource P-56-000033 is a prehistoric archaeological site originally recorded by Charles Rozaire in 1955 as a “metate feature” site consisting of a collection of whole and fragmented metates, manos, mortars and bowls, pestles, and stone balls (Rozaire 1955b). Rozaire states the site was likely destroyed in the 1950s when the area was being leveled by bulldozers for walnut and citrus cultivation (Rozaire 1955b). In 1997, Rincon Consultants surveyed the site and identified a large obsidian knife blade, and historic-period refuse (Rincon Consultants 1998a). In 1998, Conejo Archaeological Consultants conducted subsurface testing at the site as part of a residential development project. The subsurface testing included the excavation of 15 trenches, and recovered five groundstone fragments from a disturbed soil horizon; however, no intact archaeological deposits were identified (Maki and Romani 1999b). Resource P-56-000033 has not been evaluated for inclusion in the NRHP or CRHR. The site is located approximately 120 feet south of the proposed Saticoy WCF water conveyance pipeline.

P-56-000034 (Within 500 feet)

Resource P-56-000034 is a prehistoric archaeological site originally recorded by Charles Rozaire in 1955 as a “metate feature” site consisting of hammerstones, sandstone balls, pestles, manos, and metates (Rozaire 1955c). Rozaire states the site was likely destroyed in the 1950s when the area was being leveled by bulldozers for citrus cultivation (Rozaire 1955c). In 1998, Conejo

Archaeological Consultants conducted subsurface testing at the site as part of a residential development project. The subsurface testing included the excavation of 37 trenches and recovered two shell fragment flakes from a disturbed soil horizon; however, no intact archaeological deposits were identified (Maki and Romani 1999c). Resource P-56-000034 has not been evaluated for inclusion in the NRHP or CRHR. The site is located approximately 220 feet south of the proposed Saticoy WCF water conveyance pipeline

P-56-000662 (Within 500 feet)

Resource P-56-000662 is a prehistoric archaeological site originally recorded by Van Valkenburgh in 1933 as containing various groundstone artifacts and a 3-foot deep subsurface deposit (Horne and Craig 1979a). Van Valkenburgh speculated that the site may represent the ethnographic Chumash village site of *Weneme*. The site was re-visited in 1979 by Horne and Craig who described it as encompassing an area north and south of Hueneme Road, adjacent to offices and warehouses (Horne and Craig 1979a). Cultural constituents identified by Horne and Craig included shell fragments, faunal bone, cores, flakes, and hammerstones (Horne and Craig 1979a).

The site was revisited in 2004, and was described as being mostly destroyed by the expansion of Hueneme Road, underground utilities, commercial buildings, paved parking surfaces, and landscaping (Wlodarski and Bonner 2004). That same year, Extended Phase I testing was conducted by SRS within the site's boundary in support of a housing project. The testing program included the excavation of 14 shovel test probes, 12 test excavation units (TEUs), and 13 trenches (Compass Rose 2010). As a result of the testing, much of the site was found to contain approximately 30-cm deep deposits disturbed by previous agricultural activities; however, a portion of the site was found to contain intact deposits extending approximately 30–90cm in depth. The portion of the site with the intact deposits was designated an open-space easement and capped with 1.5 meters of fill (Compass Rose 2010). The easement is currently a park located on the south side of Port Hueneme Road, approximately 430 feet east of the intersection of Port Hueneme Road and Surfside Drive. During construction of the residential development, 10 archaeological features and a number of artifacts associated with P-56-0000662 were identified during monitoring. These features included intact human burials, a dog burial, a thermal feature, and a concentration of fire-affected rock (Compass Rose 2010). Artifacts recovered included projectile points, bifaces, cores, debitage, ground stone, shell fish hooks, and shell beads. Based on the features and artifacts found within the site, SRS concluded that it likely represents a temporary camp site that was revisited over a long period of time (Compass Rose 2010)

In February 2009, Compass Rose conducted additional Extended Phase I testing within a segment of Port Hueneme Road that bisects the site in support of a water pipeline installation project. The testing included the excavation of seven trenches, which identified truncated yet intact archaeological deposits associated with P-56-000662 underlying the road bed (Compass Rose 2010). The deposits ranged from 15–25 cm thick and contained shellfish and vertebrate faunal remains (including fish and mammal remains), as well as a sandstone bowl rim fragment, two groundstone fragments, and one chert flake (Compass Rose 2010). Based on the results of the Extended Phase I testing, Compass Rose recommended that Phase III data recovery be undertaken prior to the pipeline installation.

In September 2009, Compass Rose conducted Phase III data recovery excavations within the intact deposits underlying Port Hueneme Road identified during the Extended Phase I testing. The Phase III testing included the excavation of eight 1 meter by 0.5 meter TEUs excavated in arbitrary 10-cm levels. The excavations recovered approximately 375 artifacts, 494 grams of vertebrate faunal remains, and 37,803 grams of shellfish remains (Compass Rose 2010). Artifacts include 300 pieces of debitage, 10 projectile points, one biface pre-form, 27 beads, one bead blank, one shell with asphaltum, seven shell fish hook fragments, one fish hook blank, eight pieces of worked bone, two unification mano fragments, and 15 pieces of fire-affected sandstone (Compass Rose 2010). A single radiocarbon date from the Phase III excavation, coupled with dates obtained during SRS's investigations, indicate the site was inhabited between AD 1400–1600. Compass Rose's investigations support SRS's interpretation of the site: that it was likely a seasonal camp inhabited by a small kin-based groups over a number of years (Compass Rose 2010). Resource P-56-000662 has been previously recommended eligible for listing in the NRHP, and is, therefore also eligible for listing in the CRHR. The resource is located approximately 445 feet east of the proposed Port Hueneme Road segment of the proposed discharge pipeline to the Calleguas salinity management pipeline (SMP) alignment.

P-56-000667 (Within 500 feet)

Resource P-56-000667 is a prehistoric archaeological site originally recorded by Horne and Craig in 1979 as a possible shell midden deposit exposed within sand dunes. The deposits are described as dark lenses with the dune sands containing shellfish remains and charcoal (Horne and Craig 1979b). The site was revisited in 1997, and described as containing thin lenses of shell midden eroding out of stable dune sands with a number of artifacts present (Whitley 1997). Resource P-56-000667 has not been evaluated for inclusion in the NRHP or CRHR, and is located approximately 180 feet east of the proposed South Harbor Boulevard segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-000815 (Within 100 feet)

Resource P-56-000815 consists of the historic architectural resources and archaeological deposits associated with the Olivas Adobe. The resource's built component dates to the 1840s and includes two intact adobe buildings, and a courtyard enclosed within an adobe brick wall (Greenwood and Foster 1985). The resource's archaeological component includes large stone foundations and refuse deposits (Greenwood and Foster 1985). Resource P-56-000815 is listed in the NRHP, and, therefore is also eligible for listing in the CRHR. The resource is located approximately 150 feet south of the proposed Olivas Park Drive segment of the proposed water conveyance pipeline.

P-56-001234 (Within 500 feet)

Resource P-56-001234 is a protohistoric archaeological resource consisting of a collection area used by the ethnographic Chumash for gathering *Juncus* grasses used in basket weaving (Horne and Craig 1979b). No artifacts or features were noted as part of the resource; rather, the documentation of the resource is based on input from the Candelaria Native American Council, as well as interviews with Chumash descendants (Horne and Craig 1979b). Resource P-56-001234 has not been evaluated for inclusion in the NRHP or CRHR. The resource is located

approximately 120 feet west of the proposed South Harbor Boulevard segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-001520 (Within 100 feet)

Resource P-56-001520 is a historic-period district consisting of McGrath State Beach. The beach encompasses 295 acres of land acquired by the state from Rita M. McGrath in 1961 (Mourkas and Roberts 2015). The property became a state beach in 1962, and comprises 174 family campsites, a group camp, a hike/bike camping area, three restroom/shower facilities, a day use parking lot, and an amphitheater, all constructed between 1962 and 1964 (Mourkas and Roberts 2015). Resource P-56-001520 has been previously evaluated and recommended as ineligible for listing in the CRHR, but has not been evaluated for inclusion in the NRHP (Mourkas and Roberts 2015). McGrath State Beach bounds the western edge of the North Harbor Boulevard segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-001807 (Within 500 feet)

Resource P-56-001807 is a multicomponent archaeological site recorded in 2010. The site's prehistoric component includes one flake, one groundstone fragment, and one ceramic fragment; the historic-period components consists of two aqua glass insulator fragments (Williams 2010). Resource P-56-001807 has not been evaluated for inclusions in the NRHP or CRHR, and is located approximately 325 feet east of the South Harbor Boulevard segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-120003 (Within 500 feet)

Resource P-56-120003 is a multicomponent archaeological site that includes the remnants of three historic-period residences, as well as prehistoric midden deposits (Horne and Craig 1979c). The site contains no prehistoric artifacts, but historic-period artifacts are present, including cut bone, irrigation tiles, buttons, bottles, broken cement, window glass, linoleum floor fragments, brick fragments, and one horseshoe (Horne and Craig 1979c). The site has not been previously evaluated for inclusion in the NRHP or CRHR. Resource P-56-120003 is mapped northwest of the intersection of North Ventura Road and East Port Hueneme Road, approximately 50 feet west of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-150015 (Within 100 feet)

Resource P-56-150015 is a historic-period feature consisting of a memorial commemorating the Bard Family cemetery. The cemetery was moved to its current location along the west side of North Ventura Road near its intersection with Park Avenue in the City of Port Hueneme in 1951, and contains the remains of Thomas R. Barnes, Mary Barnes, and their infant son (Taylor 1978a). Resource P-56-150015 has not been evaluated for inclusion in the NRHP or CRHR. The resource is Ventura County Landmark #20. The memorial and cemetery are located approximately 60 feet west of the Ventura Road segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-150017 (Within project area)

Resource P-56-150017 is a historic-period feature consisting of a memorial commemorating a 1-mile long grove of Blue Gum eucalyptus trees lining the margins of North Ventura Road south of

34th Avenue in the City of Port Hueneme. The trees were planted in the early 20th century as a windbreak for agricultural fields (Taylor 1978b). Resource P-56-150017 has not been evaluated for inclusion in the NRHP or CRHR. It is located within the project along the Ventura Road segment of the proposed discharge pipeline to the Calleguas SMP alignment.

P-56-151837 (Within 100 feet)

Resource P-56-151837 is a historic-period district consisting of the 62.45-acre Thomas R. Bard estate. The district includes eight buildings, structures, and features associated with the estate including the Bard Mansions (1910), the milk house (1918), the guest house (1925), the swimming pool, tennis courts, gardener tool shed, the Bard family cemetery, and the botanical gardens (Streets 1975). In 1951, the U.S. Navy acquired the estate and established the Naval Construction Battalion Center, Port Hueneme. Many of the buildings associated with the estate were altered or moved by the Navy, and a number of additional buildings were constructed on the property (Streets 1975). The resource is listed in the NRHP and is therefore automatically eligible for listing in the CRHR. Resource P-56-151837 is located approximately 100 feet west of the Ventura Road segment of the discharge pipeline to the Calleguas SMP alignment.

P-56-153056 (Within 100 feet)

Resource P-56-153056 is a historic architectural resource consisting of a warehouse with an International-style façade constructed in the 1950s (Loftus 2012). Resource P-56-153056 has been determined ineligible for listing in the NRHP (Loftus 2012). The resource is located approximately 100 feet north of the West 5th Street segment of the discharge pipeline to the Calleguas SMP alignment.

P-56-153094 (Within 100 feet)

Resource P-56-153094 is a historic architectural resource consisting of a steel lattice-type transmission tower constructed in 1958 (Crawford 2007). Resource P-56-153094 has been determined ineligible for listing in the NRHP (Crawford 2007). The resource is located approximately 50 feet east of the proposed water conveyance pipeline located on Johnson Drive north of the intersection at Albatross Street.

San Clara River Bridge (CA 52C0013) (Within project area)

This resource is a deck plate girder bridge that crosses the Santa Clara River at Harbor Boulevard. The bridge was constructed in 1956 and has been determined ineligible for listing in the NRHP, but has not been evaluated for inclusion in the CRHR (Caltrans 2016). The bridge overlaps the discharge pipeline to the Calleguas SMP alignment on North Harbor Boulevard approximately 0.5 miles south of Olivas Park Drive.

Edison Canal Bridge (CA 52C0106) (Within project area)

This resource is a bridge that crosses the Edison Canal at West 5th Street. The bridge was constructed in 1958 and has been determined ineligible for listing in the NRHP, but has not been evaluated for inclusion in the CRHR (Caltrans 2016). The bridge overlaps the discharge pipeline to the Calleguas SMP alignment on West 5th Street approximately 0.3 miles east of South Harbor Boulevard.

Historic Maps and Aerial Photographs

Historic topographic maps and aerial photographs were examined to provide historical information about the proposed projects and to contribute to an assessment of the area's archaeological sensitivity. Available maps include the 1904 and 1941 Ventura 15-minute topographic quadrangles, the 1904 and 1943 Hueneme 15-minute topographic quadrangles, the 1903 and 1947 Santa Paula 15-minute topographic quadrangles, the 1951 Ventura and Saticoy 7.5-minute topographic quadrangles, and the 1949 Oxnard 7.5-minute topographic quadrangle. Historic aerial photographs of the project area were available for the years 1927, 1929 1934, 1938, 1947, 1958, 1962, 1967, 1975, 1978, 1994, 2001, 2008, and 2012 (historicaerials.com 2017, University of California 2018).

The 1903 and 1904 topographic maps show the towns of Ventura, Saticoy, Oxnard, and Hueneme surrounded by agricultural lands and a grid of generally north-south and east-west roads. The Southern Pacific Railroad Santa Paula Line is depicted running from the Santa Clara River Valley, south of Saticoy and in the southern portion of Ventura. Ventura is clustered on the east side of the Ventura River Valley. The 1941 Ventura 15-minute topographic map shows Ventura has expanded north into the Ventura River Valley and east into the Santa Clara River Valley. Highways 101 and 126 are also depicted. The 1943 Hueneme 15-minute topographic map shows that Oxnard has expanded slightly to the north and south, and shows a port has been constructed immediately west of Hueneme. The 1947 Santa Paula 15-minute topographic map shows little change has occurred within Saticoy, though a number of orchards are depicted around Saticoy. The 1949 Oxnard 7.5-minute topographic map shows the Ventura County Airport located west of Oxnard. The 1951 Ventura 7.5-minute topographic map shows that Ventura continued to expand to the north and west and began to expand to the south towards the Santa Clara River. The 1951 Saticoy 7.5-minute topographic map shows a country club located immediately west of the town, but, overall, little has changed.

The historic aerial photographs largely reflect what is depicted in the topographic maps: that throughout much of the 20th century the land use of the area of the proposed projects was dominated by agriculture, but during the latter half of the century, the cities of Ventura and Oxnard expanded to encompass much of the present-day proposed projects area. The 1927, 1929 1934, 1938, and 1947 photographs depict the communities of Ventura, Saticoy, Oxnard, and Hueneme as being surrounded by agricultural fields. Other than the presence of these communities and the fields very little development is depicted within the area of the proposed projects. The 1958 and 1962 photographs shows large circular tanks and other structures associated with the Ventura Water Reclamation Facility (VWRF). The 1967 aerial photograph shows that residential development associated with Ventura has expanded northeast up the Santa Clara River Valley, and that residential development has connected Oxnard and Port Hueneme. The photograph also show the Olivas Links golf course is indicated immediately south of the water conveyance pipeline alignment on Olivas Park Drive. The 1994, 2001, 2008, and 2012 photographs show the current makeup of the project, much of which is located within residential areas of Ventura, Oxnard, and Port Hueneme.

In sum, the historic topographic map and aerial photograph review indicates that the area of the proposed projects was dominated by agricultural land uses throughout the first half of the 20th

century. Starting in the 1950s and 1960s residential development associated with the cities of Ventura, Oxnard, and Port Hueneme expanded dramatically overtaking many previous farms and orchards.

Geoarchaeological Review

The proposed project area is situated along the Santa Clara River Valley and the Oxnard Plain in southwest Ventura County and is surrounded by the Transverse Ranges. The Transverse Ranges are a series of east-west trending mountains and valleys oriented in opposition to the northwest trend of the adjacent Coast Ranges and Peninsular Ranges (Sarna-Wojcicki et al. 1976). The Transverse Ranges are bisected by the San Andreas Fault system, and is subject to intense north-south compression resulting in rapid uplift of the region. Bedrock of the Transverse Ranges is composed largely of Tertiary sedimentary rock in the west, and Mesozoic granitic rock, and Mesozoic to Paleozoic metamorphic rock in the east. Mountains surrounding the Oxnard Plain itself are composed primarily of Miocene to Pleistocene-aged sandstone, siltstone, claystone and oil-bearing shale (Dibblee and Ehrenspeck 1992a, 1992b; Clahan 2003; Tan et al. 2004). The faulted and folded mountains are subject to substantial erosion and numerous landslides, enabling large amounts of sediment to become mobilized and transported into the Santa Clara Valley and onto the Oxnard Plain.

The Oxnard Plain, which slopes very gently to the south and west, is a large area of alluvium formed by the coalescing of deposits from the Santa Clara River and Calleguas Creek. Surface deposits on the plain consist largely of a veneer (less than approximately 50 feet) of Holocene-aged (11,650 years ago–present) alluvial sand, silt and clay overlying Pleistocene-aged (2,588,000–11,700 years ago) alluvium. Small, isolated areas of Pleistocene alluvium are exposed at the surface of the plain. Active sand dune and estuary deposits are present in the vicinity of the coast. The plain naturally contained a series of marshes, salt flats, and sloughs prior to historic agriculture and other development. All proposed well sites, the majority of the discharge pipeline to the Calleguas SMP alignment, the majority of the proposed water conveyance pipeline alignments, the northern half of the proposed treatment wetlands, and all proposed AWPf sites are situated within areas underlain by Holocene alluvium.

Terracing, grading, and filling for agriculture and commercial development has been a common practice in the area, and several prehistoric archaeological sites in the vicinity of Saticoy and Port Hueneme are buried by several feet, and in cases more than 15 feet, of graded fill. Where the fill material is native soil, there may be potential for redeposited archaeological resources. Mapped areas of fill, which may or may not be engineered, are present at the western end of the proposed pipeline alignment near Ventura Marina and at the south end of the discharge pipeline to the Calleguas SMP alignment at Port Hueneme.

Mapped soils within the area of the proposed projects include Salinas clay loam, Sorrento loam, Copley clay, Diablo silty clay, Hueneme sandy loam and loamy sand, Mocho loam, Pico sandy loam, Camarillo sandy loam, and Pacheco silty clay loam (NRCS 2018). These soils series are generally deep to very deep soils formed in alluvial parent material. Based on published descriptions of typical soil pedons, Salinas, Hueneme, Mocho and Pacheco soils lack

development of a soil B-horizon and the lack of strong soil weathering is consistent with the presumed Holocene age for the soil parent material (McCoy and Sarna-Wojcicki 1978).

The majority of the area of the proposed projects, including all proposed well sites, the majority of the discharge pipeline to the Calleguas SMP alignment, the majority of the proposed water conveyance pipeline alignments, the northern half of the proposed treatment wetlands, and all proposed AWPf sites are situated within areas underlain by Holocene alluvium characterized by sediment deposition contemporary with prehistoric human occupation of the region and is therefore sensitive for the presence of buried archaeological resources. Because the proposed projects are located in a developed area, the potential for encountering intact buried archaeological resources is dependent on very localized conditions related to the extent of past disturbances.

Cultural Resources Survey

A cultural resources survey of the proposed projects was conducted on April 2–4, 2018, and September 27, 2018, to identify surface evidence of archaeological materials, and to identify historic architectural resources within and adjacent to the proposed projects.

Nine archaeological resources were previously recorded within 500 feet of the proposed projects. Of these nine archaeological resources, seven (P-56-000032 [prehistoric site], -000033 [prehistoric site], -000034 [prehistoric site], -000662 [prehistoric site], -000667 [prehistoric site], -000815 [historic-period deposits associated with Oliva Adobe], and -120003 [multicomponent site]) are mapped within what are currently developed areas and are presumed to have either been destroyed or are obscured as a result of the development. The remaining two archaeological resources (P-56-001234 [protohistoric site] and -120003 [multicomponent site]) are mapped in areas where little or no development has occurred, but these areas could not be accessed because they are located on private property or within otherwise inaccessible areas. The mapped locations of these nine resources do not overlap with the area of the proposed projects, and surveyors observed no surface evidence of any of these nine archaeological resources in the portions of the area of the proposed projects closest to the resources' mapped locations.

Nine historic architectural resources were previously recorded within 100 feet of the proposed projects. Of these nine historic architectural resources, three (P-56-150017 [Ventura Road eucalyptus grove], Santa Clara River Bridge [CA 52C0013], Edison Canal Bridge [CA 52C0106]) are located within the area of the proposed projects, and six are located outside of the area. Surveyors confirmed the locations and photo documented each of these 11 historic architectural resources.

One newly recorded resource consisting of a segment of the Southern Pacific Railroad (ESA-Ventura-001B) was documented as a result of the survey and is described below.

ESA-Ventura-001B (Within project area)

Resource ESA-Ventura-001B is a historic architectural resource consisting of an approximately 1-mile long segment of the Santa Paula Branch of the Southern Pacific Railroad. The resource is located immediately adjacent to a segment of the conveyance pipeline alignment that passes

underneath the Telephone Road overpass in the City of Ventura. The railroad segment is bounded by privately-owned agricultural fields to the south and commercial buildings to the north, and was inaccessible during the pedestrian survey. However, the railroad segment could be viewed from atop the Telephone Road overpass. Although the Santa Paula branch of the Southern Pacific Railroad was originally constructed in the 1880s, it has undergone routine maintenance and upgrades and is presently comprised of modern tracks and ties overlaying a gravel bed. This resource has not been evaluated for the listing in the NRHP or the CRHR.

Table 3.5-2 summarizes the resources identified as part of the cultural resources survey.

Native American Consultation

The California Native American Heritage Commission (NAHC) maintains a confidential Sacred Lands File (SLF), which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 29, 2018, to request a search of the SLF. The NAHC responded to the request in a letter dated February 6, 2018. The results of the SLF search conducted by the NAHC indicate that no Native American cultural resources are known to be located within the area of the proposed projects.

TABLE 3.5-2
SUMMARY OF RESOURCES WITHIN AND ADJACENT TO THE PROPOSED PROJECTS

Primary # (P-56-)	Permanent Trinomial (CA-VEN)	Other Identifier	Description	Distance from Proposed Projects	NRHP/CRHR Eligibility	Identified Within/ Adjacent to Proposed Projects?
Previously Recorded Resources						
000032	32	-	Prehistoric archaeological site: cemetery associated with village site of <i>Sa'aqtik'oy</i>	400 feet	Not evaluated	Adjacent
000033	33	-	Prehistoric archaeological site: deposit of groundstone artifacts	120 feet	Not evaluated	Adjacent
000034	34	-	Prehistoric archaeological site: deposit of groundstone artifacts	220 feet	Not evaluated	Adjacent
000662	662	-	Prehistoric archaeological site: midden deposits	Within	Eligible for NRHP	Adjacent
000667	667	-	Prehistoric archaeological site: midden deposits	180 feet	Not evaluated	Adjacent
000815	815H	-	Historic architectural resource and archaeological site: Olivas Adobe	150 feet	NRHP listed	Adjacent
001234	1234H	-	Protohistoric archaeological site: resource collection area	120 feet	Not evaluated	Adjacent
001520	-	-	Historic-period landscape: McGrath State Beach	100 feet	Not CRHR eligible	Adjacent
001807	1807/H	-	Multicomponent archaeological site: prehistoric artifact scatter and historic- period refuse scatter	325 feet	Not evaluated	Adjacent
120003	-	-	Multicomponent archaeological site: prehistoric midden deposits and historic-period remnants of residential structures	85 feet	Not evaluated	Adjacent
150015	-	-	Historic-period feature: Ventura County Landmark #20 commemorating the Bard Family Cemetery	100 feet	Not evaluated	Adjacent
150017	-	-	Historic-period feature: Ventura County Landmark commemorating Ventura Road eucalyptus grove	Within	Not evaluated	Within
151837	-	-	Historic-period district: Thomas R. Bard Estate	100 feet	NRHP listed	Adjacent
153056	-	-	Historic architectural resource: warehouse building constructed in the 1950s	100 feet	Not eligible	Adjacent
153094	-	-	Historic architectural resource: steel lattice transmission tower constructed in 1958	50 feet	Not eligible	Adjacent
-	-	Santa Clara River Bridge	Historic architectural resource: deck plat girder bridge constructed in 1956	Within	Not eligible for NRHP	Within
-	-	Edison Canal Bridge	Historic architectural resource: bridge crossing the Edison Canal constructed in 1958	Within	Not eligible for NRHP	Within
Newly Recorded Resources						
-	-	ESA-Ventura- 001B	Historic architectural resource: segment of Southern Pacific Railroad	Within	Not evaluated	Within

The City has conducted consultation with California Native American tribes to identify the potential for the proposed projects to impact tribal cultural resources pursuant to Assembly Bill (AB) 52 and its implementing regulations. As part of AB 52 consultation, the City sent letters to California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the proposed projects and who have requested in writing to be informed of proposed projects. All of the tribal groups indicated by the NAHC as having affiliation with the area of the proposed projects were among the groups contacted via certified mail as part of the AB 52 consultation notification process. **Table 3.5-3** provides a summary of the Native American contact efforts for the proposed projects.

On February 8, 2018, and March 23, 2018, the City met with tribal representatives Julie Lynn Tumamait-Stenslie and Patrick Tumamait of the Barbareño/Ventureño Band of Mission Indians as part of the AB 52 consultation process. At the February 8, 2018, meeting the City provided an overview of the proposed projects' objectives and components. Mrs. Tumamait-Stenslie and Mr. Tumamait described their knowledge of archaeological resources in the general area and requested to continue to be involved in the proposed projects. At the March 23, 2018, meeting, the City met with Patrick Tumamait to discuss the records search results for the proposed projects obtained from the SCCIC. Mr. Tumamait indicated the possible presence of prehistoric archaeological resources in the vicinity of Saticoy, as well as in the vicinity of the parcel in which groundwater Well Site 1 would be located.

No tribal cultural resources were identified as part of the AB 52 consultation.

Paleontological Resources Records Search

The LACM records search indicates that no fossil localities have been identified within the project area, and no fossil specimens have been identified in the immediate vicinity of the proposed project (McLeod 2018). The LACM records search indicates the closest fossil locality to the proposed projects (LACM 211) comes from the Sexton Canyon area, approximately 1 mile north of the proposed projects, and consists of a fossil specimen of goose, *Chendytes lawi*, identified within older Quaternary alluvium (McLeod 2018). The older Quaternary alluvium in which the fossil specimen was identified, underlies the surface deposits of younger Quaternary alluvium within the proposed projects' area below the veneer of Holocene-age alluvium discussed as part of the geoarchaeological review.

3.5.2 Regulatory Setting

Federal

National Historic Preservation Act

The principal federal law addressing historic properties is the National Historic Preservation Act (NHPA), as amended (54 United States Code of Laws [USC] 300101 et seq.), and its implementing regulations (36 CFR Part 800). Section 106 requires a federal agency with jurisdiction over a proposed federal action (referred to as an "undertaking" under the NHPA) to take into account the effects of the undertaking on historic properties, and to provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

**TABLE 3.5-3
NATIVE AMERICAN CONTACT SUMMARY**

Contact	Tribe/Organization	Date Letter Mailed	Response
Antonia Flores, Chairperson	Santa Ynez Tribal Elders of Council	1/17/2018	-
Beverly Salazar Folkes	Chumash, Tataviam, Fernandefio	1/17/2018	Declined Consultation-offer monitoring services
Carol A. Pulido	Chumash	1/17/2018	-
Charles S. Parra	Chumash	1/17/2018	-
Crystal Baker	Coastal Band of the Chumash Nation	1/17/2018	-
Eleanor Arrelanes	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Fred Collins, Spokesperson	Northern Chumash Tribal Council	1/17/2018	-
Freddie Romero	Santa Ynez Tribal Elders Council	1/17/2018	Deferred to local tribe
Janet Darlene Garcia	Coastal Band of the Chumash Nation	1/17/2018	-
Julie Lynn Tumamait-Stenslie, Chair	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	Requested Consultation
Kathleen Pappo	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Kenneth Kahn, Chairperson	Santa Ynez Band of Chumash Indians	1/17/2018	-
Melissa M. Parra-Hernandez	Chumash	1/17/2018	-
Mia Lopez	Coastal Band of the Chumash Nation	No address included	-
Michael Cordero, Chairperson	Coastal Band of the Chumash Nation	1/17/2018	-
Patrick Tumamait	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	Requested Consultation
PeuYoko Perez	Chumash	1/17/2018	-
Randy Guzman-Folkes	Chumash, Fernandefio, Tataviam, Shoshone, Paiute, Yaqui	1/17/2018	-
Raudel Jone Banuelos, Jr.	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Richard Angulo	Chumash	1/17/2018	-
Sam Cohen	Santa Ynez Band of Chumash Indians	1/17/2018	-
Stephen William Miller	Chumash	1/17/2018	-

The term “historic properties” refers to “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register” (36 CFR Part 800.16(f)(1)). The implementing regulations (36 CFR Part 800) describe the process for identifying and evaluating historic properties, for assessing the potential adverse effects of federal undertakings on historic properties, and seeking to develop measures to avoid, minimize, or mitigate adverse effects. The Section 106 process does not require the preservation of historic

properties; instead, it is a procedural requirement mandating that federal agencies take into account effects to historic properties from an undertaking prior to approval.

The steps of the Section 106 process are accomplished through consultation with the State Historic Preservation Officer (SHPO), federally-recognized Indian tribes, local governments, and other interested parties. The goal of consultation is to identify potentially affected historic properties, assess effects to such properties, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties. The agency also must provide an opportunity for public involvement (36 CFR 800.1(a)). Consultation with Indian tribes regarding issues related to Section 106 and other authorities (such as NEPA and Executive Order No. 13007) must recognize the government-to-government relationship between the Federal government and Indian tribes, as set forth in Executive Order 13175, 65 FR 87249 (Nov. 9, 2000), and Presidential Memorandum of Nov. 5, 2009.

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as “an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (36 CFR 60.2) (U.S. Department of the Interior, 2002). The NRHP recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the NRHP is considered “historic property” under Section 106 of the NHPA.

To be eligible for listing in the NRHP, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

- A. Are associated with events that have made a significant contribution to the broad patterns of our history;
- B. Are associated with the lives of persons significant in our past;
- C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as “the ability of a property to convey its significance” (U.S. Department of the Interior 2002). The NRHP recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the NRHP unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity (U.S. Department of the Interior 2002).

State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the principal statute governing environmental review of projects occurring in the state and is codified at Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The CEQA Guidelines (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA Guidelines apply. If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5(a). Substantial adverse change is defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1)). According to CEQA Guidelines Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

- A. Convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR.
- B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant.
- C. Convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Weeks and Grimer, 1995) is considered to have mitigated its impacts to historical resources to a less-than-significant level (CEQA Guidelines Section 15064.5(b)(3)).

CEQA-Plus

The EPA sponsors the State Revolving Fund Loan Program to provide funding for construction of publicly-owned treatment facilities and water reclamation projects. This funding for capital improvements to wastewater treatment and water recycling facilities is authorized under the federal Clean Water Act. In order to comply with requirements of the SRF Loan Program, which is administered by the SWRCB in California, a CEQA document must fulfill additional requirements known as CEQA-Plus. The CEQA-Plus requirements have been established by the EPA and are intended to supplement the CEQA Guidelines with specific requirements for environmental documents acceptable to the SWRCB when reviewing applications for wastewater treatment facility loans. They are not intended to supersede or replace CEQA Guidelines.

The EPA's CEQA-Plus requirements have been incorporated into the SWRCB's *Environmental Review Process Guidelines for SRF Loan Applicants* (2004). The SWRCB's SRF Guidelines require that a proposed project comply with Section 106 of the NHPA.

California Register of Historical Resources

The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the CRHR are based upon NRHP criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for, or listed in, the NRHP.

To be eligible for the CRHR, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the NRHP, but it may still be eligible for listing in the CRHR.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined eligible for the NRHP.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register).
- Individual historical resources.

- Historical resources contributing to historic districts.

Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by AB 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Assembly Bill 52 and Related Public Resources Code Sections

AB (AB) 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr, on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Regional

Ventura County General Plan

Section 1.8 of the County of Ventura General Plan (2005) contains the following goals, policies and program relevant to cultural resources:

Goals

1. Identify, inventory, preserve and protect the paleontological and cultural resources of Ventura County (including archaeological, historical, and Native American resources) for their scientific, educational and cultural value.

2. Enhance cooperation with cities, special districts, other appropriate organizations, and private landowners in acknowledging and preserving the county's paleontological and cultural resources.

Policies

1. Discretionary developments shall be assessed for potential paleontological and cultural resources impacts, except when exempt from such requirements by CEQA. Such assessment shall be incorporated into a Countywide paleontological and cultural resources data base.
2. Discretionary development shall be designed or re-designed to avoid potential impacts to significant paleontological or cultural resources whenever possible. Unavoidable impacts, whenever possible, shall be reduced to a less than significant level and/or shall be mitigated by extracting maximum recoverable data. Determination of impacts, significance and mitigation shall be made by qualified archaeological (in consultation with recognized local Native American groups), historical or paleontological consultant, depending the type of resource in question.
3. Mitigation of significant impacts on cultural or paleontological resources shall follow the Guidelines of the State Office of Historic Preservation, the state Native American Heritage Commission, and shall be performed in consultation with professionals in their respective areas of expertise.
4. Confidentiality regarding locations of archaeological sites throughout the County shall be maintained in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.
5. During environmental review of discretionary development, the reviewing agency shall be responsible for identifying sites have potential archaeological, architectural or historical significance and this information shall be provided to the County Cultural Heritage Board for evaluation.
6. The building and Safety Division shall utilize the State Historic Building Code for preserving historic sites in the County.

Programs

1. The County Cultural Heritage Board will continue to assist the County of Ventura in identifying and preserving significant County architectural and historical landmarks.
2. The planning Division will continue to compile and retain a list of qualified archaeological, historical, and paleontological consultant to provide additional information to complete Initial Studies and Environmental Analyses.

The General Services Agency will continue to develop a cultural resources program at Oakbrook Park emphasizing Chumash history and heritage.

Local

City of San Buenaventura General Plan

Chapter 9 of the City of Ventura General Plan (2005) contains the following policies and actions relevant to cultural resources:

Policy 9C: Integrate local history and heritage into urban and daily life.

Action 9.10: Provide incentives for preserving structures and sites that are representative of the various periods of the city's social and physical development.

Action 9.11: Organize and promote multicultural program and events that celebrate local history and diversity.

Action 9.12: Allow adaptive reuse of historic buildings.

Action 9.13: Work with community groups to identify location for facilities that celebrate local cultural heritage, such as a living history Chumash village and an agricultural history museum.

Policy 9D: Ensure proper treatment of archaeological and historic resources.

Action 9.14: Require archaeological assessment for project proposed in the Coastal Zone and other areas where cultural resources are likely to be located

Action 9.15: Suspend development activity when archaeological resources are discovered and require the developer to retain a qualified archaeologist to oversee handling of the recourse in coordinating with the Ventura county Archaeological and local Native American organization as appropriate.

Action 9.16: Pursue funding to preserve historic resources.

Action 9.17: Provide incentives to owner of eligible structures to seek historic landmark statues and invest in restoration efforts.

Action 9.18: Require that modification to historically-designated building maintain their character

Action 9.19: For any project in a history district or that would affect any potential historic resource or structure more than 40 years old require an assessment of eligibility for State and federal register and landmark status and appropriate mitigation to protect he resource.

Action 9.20: Seek input from the City's Historic Preservation Commission on any proposed development that may affect any designated or potential landmark.

Action 9.21: Update the inventory of historic properties.

Action 9.22: Create a set of guidelines and/or policies directing staff, private property owners, developers, and the public regarding treatment of historic resources that will be readily available at the counter.

Action 9.23: Complete and maintain historic resource surveys containing all the present and future components of the historic fabric within the built, natural, and cultural environments.

Action 9.24: Create a historic preservation element.

City of Oxnard 2030 General Plan

The Community Development Chapter of the City of Oxnard General Plan (2011) contains the following goals and actions relevant to historic preservation and cultural resources:

Goal CD-11: Protect historic and authentic qualities of Oxnard’s traditional neighborhoods and historic districts.

CD-11.1 Promote Existing Historic Areas: Promote an increased awareness of the Cultural Heritage Area, Heritage Square, Central Business District (CBD), and Henry T. Oxnard Historic District, and their historic landmarks through signage and appropriate pedestrian-oriented street furniture.

CD-11.2 Historical District Expansion: Seek to preserve historical structures and neighborhoods by evaluating the potential to expand and create new historic neighborhoods.

CD-11.3 Protect and Enhance Cultural Resources: Ensure that new public and private investment protects and enhances Oxnard’s existing cultural resources, traditional neighborhoods, and historic districts, to the extent feasible.

CD-11.4 Incorporate Historic Features: Require new developments within historic areas to incorporate historic and natural features and adaptive reuse into site development planning.

City of Port Hueneme General Plan

The Conservation/Open Space/Environmental Resources Element of the Port Hueneme General Plan (2015) includes the following goals and policies relevant to cultural resources:

Goal 10: Maintain and enhance the City’s historically significant sites or structures

Policy 10-1: Identify, designate, and protect facilities of historical significance

Policy 10-2: Retain and protect significant areas of historical value for education and scientific purposes.

Policy 10-3: Development adjacent to a place or structure found to be of historic significance should be designed so that the use and architectural design will protect the visual setting of the historical site.

Policy 10-4: Support the Ventura County Cultural Heritage Board in identifying and preserving Ventura County’s heritage.

Policy 10-5: Require mitigation measures to protect archaeological or paleontological resources in the event that new resources are discovered.

Paleontological Resources

CEQA

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, stating that a project will normally result in a significant impact on the environment if it will “disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study.”

California Public Resources Code Section 5097.5

PRC Division 5, Chapter 1.7, Section 5097.5, and Division 20, Chapter 3, Section 30244 prohibits the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, and district) lands.

Society for Vertebrate Paleontology

Professional Standards

The Society for Vertebrate Paleontology (SVP) has established standard guidelines for acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California state regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

Paleontological Sensitivity

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontological Resources," the SVP (1995) defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential:

- **High Potential.** Rock units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered and are considered to have a high potential for containing significant nonrenewable fossiliferous resources. These units include, but are not limited to, sedimentary formations and some volcanic formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical; and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Also classified as significant are areas that contain potentially datable organic remains older than Recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways.
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils. Such units will be poorly represented by specimens in institutional collections.
- **Undetermined Potential.** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials.

- **No Potential.** Metamorphic and granitic rock units generally do not yield fossils and therefore have no potential to yield significant non-renewable fossiliferous resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts will not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontological potential of the rock units present within the study area

3.5.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to cultural resources. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the project would have a significant adverse environmental impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5 (refer to Impact CUL 3.5-1).
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5 (refer to Impact CUL 3.5-2).
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature (refer to Impact CUL 3.5-3).
- Disturb any human remains, including those interred outside of formal cemeteries (refer to Impact CUL 3.5-4).

A summary of the findings for each impact is presented in **Table 3.5-4**. The analyses below support these findings.

TABLE 3.5-4
SUMMARY OF CULTURAL RESOURCE IMPACT DETERMINATIONS

Impacts	3.5-1 Historical Resources	3.5-2 Archaeological Resources	3.5-3 Paleontological Resources	3.5-4 Human Remains
Phase 1				
Advanced Water Purification Facility	LTSM	LTSM	LTSM	LTSM
Water Conveyance System	LTSM	LTSM	LTSM	LTSM
Groundwater Wells	LTSM	LTSM	LTSM	LTSM
Wildlife/Treatment Wetlands	LTSM	LTSM	LTSM	LTSM
VWRF Treatment Upgrade	LTSM	LTSM	LTSM	LTSM
Concentrate Discharge Facility	LTSM	LTSM	LTSM	LTSM
Phase 2				
AWPF Expansion	NI	NI	NI	NI
Ocean Desalination	LTSM	LTSM	LTSM	LTSM

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.5.4 Impacts and Mitigation Measures

Historical Resources

Impact CUL 3.5-1: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5.

Phase 1

Known Resources

The SCCIC records search and cultural resources survey identified 10 historic architectural resources within and adjacent to (within 100 feet) of the area of the proposed projects (P-56-00815 [buildings associated with Olivas Adobe], -001520 [McGrath State Beach], -150015 [Bard Family Cemetery], -150017 [Ventura Road eucalyptus grove], -151837 [Thomas R. Bard Estate], -153056 [warehouse building], -153094 [steel lattice transmission tower], ESA-Ventura-001B [Southern Pacific Railroad segment], Santa Clara River Bridge [CA 52C0013] and Edison Canal Bridge [CA 52C0106]). Of these 10 resources, three (P-56-001520 [McGrath State Beach], -153056 [warehouse building], and -153094 [steel lattice transmission tower]) have been evaluated as not eligible for listing CRHR and do not qualify as historical resources, five (P-56-150015 [Bard Family Cemetery], -150017 [Ventura Road eucalyptus grove], CA 52C0013 [Santa Clara River Bridge], CA 52C0106 [Edison Canal Bridge], and ESA-Ventura-001B [Southern Pacific Railroad segment]) have not been previously evaluated for the CRHR and have the potential to qualify as historical resources, and two (P-56-000815 [buildings associated with the Olivas Adobe] and -151837 [Thomas R. Bard Estate]) are listed in the NRHP and would automatically qualify for listing in the CRHR, and therefore qualify as historical resources under CEQA.

All of the seven resources (P-56-000815 [buildings associated with the Olivas Adobe] -151837 [Thomas R. Bard Estate], -150015 [Bard Family Cemetery], -150017 [Ventura Road eucalyptus grove], Santa Clara River Bridge, Edison Canal Bridge, and ESA-Ventura-001B [Southern Pacific Railroad segment]) that qualify as historical resources or have the potential to qualify as historical resources would be avoided by the proposed projects. Therefore, the proposed projects would not result in impacts to historic architectural resources qualifying as historical resources under CEQA.

The SCCIC records and cultural resources survey identified nine archaeological resources within and adjacent to (within 500 feet) of the proposed project area including five prehistoric archaeological sites (P-56-000032, -000033, -000034, -000662, and -000667), one protohistoric archaeological site (P-56-001234), two multicomponent archaeological sites (P-56-001807 and -120003), and one resource containing historic-period archaeological deposits associated with the Olivas Adobe (P-56-000815). Two of the nine archaeological resources (P-56-000815 [historic deposits associated with the Olivas Adobe] and P-56-00062 [prehistoric site]) are either listed in or have been recommended eligible for listing in the NRHP and would automatically qualify for listing in the CRHR and, therefore qualify as historical resources under CEQA. The remaining seven (P-56-000032, -000033, -000034, -000667, -001234, -001807 and -120003) have not been previously evaluated for the CRHR and have the potential to qualify as historical resources. All of these resources would be avoided by the proposed projects, and therefore, the proposed projects would not result in impacts to archaeological resources qualifying as historical resources under CEQA.

Unknown Resources

Based on the geoarchaeological review and the results of the records search, the proposed projects are considered sensitive for the presence of subsurface archaeological deposits. However, the potential for subsurface archaeological deposits across the proposed projects' area is variable and largely dependent on localized conditions related to the degree of previous historic and modern disturbances. The proposed locations of components including the Harbor Boulevard, Transport Street, and Portola Road AWPf sites, as well as the new treatment wetlands, and groundwater Well Sites 1, 2, and 3 have not been subject to past development and, therefore, have the potential to contain intact subsurface archaeological resources. The proposed locations of the water conveyance pipelines and the concentrate discharge pipelines, which would largely be installed in road rights-of-way would likely have some degree of near-surface disturbances associated with roadway construction and therefore would have potential, albeit lower, for encountering intact subsurface archaeological resources beyond the first foot below surface. The existing wildlife/treatment ponds has a lower likelihood of containing intact archaeological deposits, given these proposed locations have been subject to previous ground disturbance associated with the development of the existing ponds. Archaeological resources discovered during ground-disturbing activities could be eligible for listing in the CRHR and therefore would qualify as historical resources under CEQA.

Advanced Water Purification Facility

The Harbor Boulevard, Transport Street, and Portola Road AWPf sites could not be accessed during the cultural resources survey because they are located on private property and access agreements with the landowners have not yet been obtained. As noted above, the proposed projects would not impact known resources that qualify or have the potential to qualify as historical resources. However, given the archaeological sensitivity of the project area, ground-disturbing activities associated with the construction of the AWPf has the potential to impact unknown archaeological resources that may qualify as historical resources under CEQA. Implementation of **Mitigation Measures CUL-1** through **CUL-5** is required to ensure that the Harbor Boulevard, Transport Street and Portola Road AWPf sites would be subject to cultural resources surveys and that impacts associated with the construction of the AWPf to unknown archaeological resources qualifying as historical resources are less than significant (**Figure 3.5-1**).

The operation of the AWPf would not include ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures:

CUL-1: Prior to the start of any ground-disturbing activity, a Qualified Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior 2008) shall be retained by the City to carry out all mitigation measures related to archaeological resources.

CUL-2: Cultural resources survey shall be conducted prior to any ground-disturbing activities associated with unsurveyed portions of the project area. The portions of the area of the proposed projects not surveyed include the Harbor Boulevard, Transport Street and Portola Road AWPf sites, the parcels within which groundwater Well Sites 2 and 3

would be located, and the portions of the proposed water conveyance pipeline located on private lands. Any resources identified during the survey that would be impacted as a result of the proposed projects should be evaluated for listing in the NRHP and CRHR. Avoidance and preservation in place shall be the preferred manner of mitigating impacts to historical resources under CEQA.

CUL-3: Prior to any ground-disturbing activities associated with the proposed projects, the Qualified Archaeologist should conduct cultural resources sensitivity training for all construction personnel. Construction personnel should be informed of the types of archaeological resources that may be encountered, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. The City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-4: Prior to the start of ground-disturbing activities associated with the proposed projects, an archaeological monitor working under the supervision of the Qualified Archaeologist and a Native American monitor associated with the Barbareño/Ventureño Band of Mission Indians, or other locally affiliated tribe, shall monitor all project-related ground-disturbing activities within previously undeveloped project parcels, all jack-and-bore receiving pits, and all pot-holing activities within existing road rights-of-way. Previously undeveloped parcels requiring monitoring include the Harbor Boulevard, Transport Street, and Portola Road AWP sites, as well as the new treatment wetlands parcel, and groundwater Well Sites 1, 2, and 3. For the pipeline alignments to be installed within existing road rights-of-way, a monitoring plan shall be prepared by the Qualified Archaeologist outlining the locations and timing of monitoring based on level of disturbance identified during pot-hole monitoring, as well as any geotechnical report to be prepared as part of project implementation. Based on observations of subsurface soil stratigraphy or other factors during initial ground-disturbing activities across the project area, and in consultation with the City and Native American monitor, the Qualified Archaeologist may reduce or discontinue monitoring as warranted if the Qualified Archaeologist determines that the possibility of encountering archaeological deposits is low in a given area or during a given activity. Archaeological monitors shall maintain daily logs documenting their observations. Monitoring activities shall be documented in a Monitoring Report to be prepared by the Qualified Archaeologist at the completion of construction and shall be provided to the City and filed with the SCCIC within 6 months of construction completion.

CUL-5: In the event of the unanticipated discovery of archaeological materials during implementation of the proposed projects, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with the City on the significance of the resource.

If it is determined that the discovered archaeological resource constitutes a significant resource, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is demonstrated to be infeasible and data recovery through excavation is the only feasible mitigation available, a Cultural Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with City and Barbareño/Ventureño Band of Mission Indians, or other locally affiliated tribe, that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.5-1
Portions of the Project Requiring Additional Survey

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Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

Portions of the water conveyance system could not be accessed during the cultural resources survey. As noted above, the proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources; however, given the archaeological sensitivity of the proposed projects, ground-disturbing activities associated with the construction of the water conveyance system have the potential to impact archaeological resources that may qualify as historical resources under CEQA. Implementation of **Mitigation Measures CUL-1** through **CUL-5** is required to ensure that unsurveyed portions of the water conveyance system are subject to cultural resources survey and that impacts associated with the construction of the conveyance system to unknown archaeological resources qualifying as historical resources are less than significant.

The operations would not include ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The parcels in which the groundwater Well Sites 2 and 3 are located could not be accessed during the cultural resources survey because they are located on private property and access agreements with the landowners have not yet been obtained. As noted above, the proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources; however, given the archaeological sensitivity of the proposed projects, ground-disturbing activities associated with the construction of the groundwater wells have the potential to impact archaeological resources that may qualify as historical resources under CEQA. Implementation of **Mitigation Measures CUL-1** through **CUL-5** is required to ensure that unsurveyed portions of the groundwater wells are subject to cultural resources survey and that impacts associated with the construction of the injection and extraction system to unknown archaeological resources qualifying as historical resources are less than significant.

The operations would not include ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources. Therefore, no known historical resources or unknown archaeological resources qualifying as historical resources would be impacted by the groundwater wells operations.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources. Although the area is sensitive for the presence of subsurface

archaeological resources that may qualify as historical resources under CEQA, the previous disturbances associated with construction of the wildlife ponds likely precludes the possibility of impacting intact archaeological deposits. Therefore, cultural resources monitoring is not warranted for this project component, but the possibility of inadvertently encountering archaeological resources remains nonetheless. Implementation of **Mitigation Measures CUL-1, CUL-3, and CUL-5** is required to ensure potential impacts associated with the reconfiguration of the wildlife ponds to unknown archaeological resources qualifying as historical resources are less than significant.

The operations would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1, CUL-3, and CUL-5.

Significant Determination: Less than Significant with Mitigation.

New Wildlife/Treatment Wetland

The parcel in which the new wildlife/treatment wetlands would be located could not be accessed during the cultural resources survey due to safety concerns. As noted above, the proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources; however, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the new wildlife/treatment wetland have the potential to impact unknown archaeological resources that may qualify as historical resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the parcel in which the new treatment wetland is located is subject to cultural resources survey and that impacts associated with the construction of the new treatment wetland to unknown archaeological resources qualifying as historical resources are less than significant.

The operation of the new wetland would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

The proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources. Although the surrounding area is sensitive for the presence of subsurface archaeological resources that may qualify as historical resources under CEQA, the previous disturbances associated with construction of the VWRF likely precludes the possibility of impacting intact archaeological deposits. Therefore, cultural resources monitoring is not warranted for this component, but the possibility of inadvertently encountering archaeological resources remains nonetheless. Implementation of **Mitigation Measures CUL-1, CUL-3, and CUL-5** is required to ensure potential impacts associated with the treatment upgrades to unknown archaeological resources qualifying as historical resources are less than significant.

The operation of the treatment upgrades would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1, CUL-3, and CUL-5.

Significant Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

New Outfall

The directional drilling operation for the outfall pipe would be located within Marina Park. As noted above, the proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources; however, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the new outfall have the potential to impact unknown archaeological resources that may qualify as historical resources under CEQA. Implementation of **Mitigation Measures CUL-1** through **CUL-6** is required to ensure that the parcel in which the drilling operation for the new outfall is located is subject to cultural resources survey and that impacts associated with the construction of the new outfall to unknown archaeological resources qualifying as historical resources are less than significant.

The operation of the new outfall would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-6

CUL-6: Prior to development of the new outfall and the Phase 2 Ocean Desalination ocean intake system, the City should retain a qualified archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (U.S. Department of the Interior 2008), to conduct a cultural resources assessment of the ocean intake system that includes: a records search at the South Central Coastal Information Center; a Sacred Lands File search at the California Native American Heritage Commission; a desktop geoarchaeological review of onshore and offshore components; a shipwrecks database review for offshore components; a paleontological resources records check conducted by the Los Angeles County Natural History Museum, a pedestrian field survey for onshore components; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study. All identified cultural resources should be assessed for the ocean intake system's potential to result in direct and/or indirect effects to those resources. Cultural resources that will be directly and/or indirectly affected and cannot be avoided should be evaluated for their potential significance prior to the City's approval of the ocean intake system plans and publication of subsequent CEQA documents. The qualified archaeologist should provide recommendations regarding archaeological and Native American monitoring, protection of avoided resources, and/or recommendations for additional work or treatment of significant resources (i.e., resources that qualify as historical resources or unique archaeological resources under CEQA or resources that qualify as historic properties pursuant to Section 106 of the NHPA) that will be affected by construction of the ocean intake system.

Significance Determination: Less than Significant with Mitigation.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources. However, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the discharge pipeline to the Calleguas Salinity Management Pipeline (SMP) has the potential to impact unknown archaeological resources that may qualify as historical resources. Implementation of **Mitigation Measures CUL-1 and CUL-3 through CUL-5** is required to ensure impacts associated with the construction of the discharge pipeline to the Calleguas SMP to unknown archaeological resources qualifying as historical resources are less than significant.

The operation of the discharge pipeline to the Calleguas SMP would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 and CUL-3 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf Expansion would not include construction; rather, it would be an operational change at the plant. Therefore, no unknown archaeological resources qualifying as historical resources would be impacted. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed desalination facility would be constructed at the same location as the proposed AWPf. As discussed above, ground-disturbing activities occurring within the AWPf sites have the potential to impact to unknown archaeological resources qualifying as historical resources. Therefore, construction of the desalination facility has the potential to impact unknown archaeological resources qualifying as historical resources pursuant to CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the Harbor Boulevard, Transport Street, and Portola Road AWPf sites will be subject to cultural resources surveys and that impacts associated with the construction of the desalination facility to unknown archaeological resources qualifying as historical resources are less than significant.

The operations would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Ocean Intake

The location of the intake has not been delineated. Therefore, implementation of **Mitigation Measure CUL-6** is required to determine potential impacts to historical resources resulting from the construction of the ocean intake system.

Mitigation Measures: Implement Mitigation Measures CUL-6.

Significance Determination: Less than Significant with Mitigation.

Archaeological Resources

Impact CUL 3.5-2: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a unique archaeological resource pursuant to § 15064.5.

Phase 1

The SCCIC records and cultural resources survey identified nine archaeological resources within and adjacent to (within 500 feet) of the proposed projects' area, including five prehistoric archaeological sites (P-56-000032, -000033, -000034, -000662, and -000667), one protohistoric archaeological site (P-56-001234), two multicomponent archaeological sites (P-56-001807 and -120003), and one resource containing historic-period archaeological deposits associated with the Olivas Adobe (P-56-000815). Two of the nine archaeological resources (P-56-000815 [historic deposits associated with the Olivas Adobe] and P-56-00062 [prehistoric site]) are either listed in or have been recommended eligible for listing in the NRHP and would automatically qualify for listing in the CRHR and, therefore qualify as historical resources, which precludes them from qualifying as unique archaeological resources under CEQA. The remaining seven archaeological resources (P-56-000032, -000033, -000034, -000667, -001234, -001807 and -120003) have not been previously evaluated as unique archaeological resources. All of these resources would be avoided by the proposed projects, and therefore the proposed projects would not result in impacts to unique archaeological resources under CEQA.

Advanced Water Purification Facility

The Harbor Boulevard, Transport Street, and Portola Road AWPf sites could not be accessed during the cultural resources survey because they are located on private property and access agreements with the landowners have not yet been obtained. As noted above, the proposed projects would not impact known archaeological resources. However, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the AWPf have the potential to impact unknown archaeological resources qualifying as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the Harbor Boulevard, Transport Street, and Portola Road AWPf sites will be subject to cultural resources surveys and that impacts associated with the

construction of the AWPf to unknown archaeological resources qualifying as unique archaeological resources are less than significant.

The operation of the AWPf would not include any ground disturbance and would not have the potential to impact unknown archaeological resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

Portions of the water conveyance system could not be accessed during the cultural resources survey. As noted above, the proposed projects would not impact known archaeological resources. However, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the water conveyance system have the potential to impact archaeological resources qualifying as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that unsurveyed portions of the water conveyance system are subject to cultural resources survey and that impacts associated with the construction of the conveyance system to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

Activities associated with the water conveyance system operations would not include any ground disturbance and would not have the potential to impact unknown archaeological resources. Therefore, no unknown archaeological resources qualifying as unique archaeological resources under CEQA would be impacted by the water conveyance system.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The parcels in which groundwater Well Sites 2 and 3 are located could not be accessed during the cultural resources survey. As noted above, the proposed projects would not impact known archaeological resources. However, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the groundwater wells have the potential to impact archaeological resources qualifying as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that unsurveyed portions of the groundwater wells are subject to cultural resources survey and that impacts associated with the construction of the wells to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

Activities associated with the groundwater wells operations would not include any ground disturbance and would not have the potential to impact unknown archaeological resources. No impact would occur.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The proposed projects would not impact known archaeological resources. Although the area is sensitive for the presence of subsurface archaeological resources, the previous disturbances associated with reconfiguration of the wildlife ponds likely precludes the possibility of impacting intact archaeological deposits. Therefore, cultural resources monitoring is not warranted for this project component, but there is always the possibility of inadvertently encountering archaeological resources. Implementation of **Mitigation Measures CUL-1, CUL-3, and CUL-5** is required to ensure impacts associated with the reconfiguration of the existing wildlife ponds to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

The operation associated with the wildlife ponds would not include any ground disturbance and would not have the potential to impact unknown archaeological resources.

Mitigation Measures: Implement Mitigation Measures CUL-1, CUL-3, and CUL-5.

Significant Determination: Less than Significant with Mitigation.

New Wildlife/Treatment Wetland

The parcel in which the new treatment wetlands would be located could not be accessed during the cultural resources survey due to safety concerns. As noted above, the proposed projects would not impact known archaeological resources. However, given the archaeological sensitivity of the area, ground-disturbing activities associated with the construction of the new treatment wetlands has the potential to impact unknown archaeological resources qualifying as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the parcel in which the new treatment wetlands is located is subject to cultural resources survey and that impacts associated with the construction of the new treatment wetlands to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

The operation of the new treatment wetlands would not include any ground disturbance and would not have the potential to impact unknown archaeological resources. Therefore, no unknown archaeological resources qualifying as unique archaeological resources under CEQA would be impacted by the new treatment wetlands operations.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

The proposed projects would not impact known archaeological resources. Although the project area is sensitive for the presence of subsurface archaeological resources, the previous disturbances associated with the construction of the VWRF likely precludes the possibility of impacting intact archaeological deposits. Therefore, cultural resources monitoring is not

warranted for this project component, but there is always the possibility of inadvertently encountering archaeological resources. Implementation of **Mitigation Measures CUL-1, CUL-3, and CUL-5** is required to ensure impacts associated with the treatment upgrade to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

Operations of the treatment upgrades would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources. Therefore, no known historical resources or unknown archaeological resources would be impacted by the treatment upgrades operations.

Mitigation Measures: Implement Mitigation Measures CUL-1, CUL-3, and CUL-5.

Significant Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

New Outfall

The directional drilling operation for the outfall pipe would be located within Marina Park. As noted above, the project would not impact known resources archaeological resources; however, given the archaeological sensitivity of the project area, ground-disturbing activities associated with the construction of the new outfall has the potential to impact unknown archaeological resources that may qualify as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the parcel in which the drilling operation for the new outfall is located is subject to cultural resources survey and that impacts associated with the construction of the new outfall to unknown archaeological resources are less than significant.

Activities associated with the new outfall operations would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources. Therefore, no known resources or unknown archaeological resources would be impacted by the new outfall operations.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed projects would not impact known resources that qualify as or have the potential to qualify as historical resources. However, given the archaeological sensitivity of the project, ground-disturbing activities associated with the construction of the discharge pipeline to the Calleguas SMP has the potential to impact unknown archaeological resources that may qualify as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 and CUL-3 through CUL-5** is required to ensure impacts associated with the construction of the new outfall or the discharge pipeline to the Calleguas SMP to unknown archaeological resources qualifying as historical resources are less than significant.

The operation of the discharge pipeline to the Calleguas SMP would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as unique archaeological resources. No impact would occur.

Mitigation Measures: Implement Mitigation Measures CUL-1 and CUL-3 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf expansion would not include construction. Rather, it would be an operational change at the plant. Therefore, no unknown archaeological resources would be impacted. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed desalination facility would be constructed at the same location as the proposed AWPf. As discussed above, ground-disturbing activities occurring within the AWPf sites have the potential to impact to unknown archaeological resources. Therefore, construction of the desalination facility has the potential to impact unknown archaeological qualifying as unique archaeological resources under CEQA. Implementation of **Mitigation Measures CUL-1 through CUL-5** is required to ensure that the Harbor Boulevard, Transport Street, and Portola Road AWPf sites will be subject to cultural resources surveys and that impacts associated with the construction of the desalination facility to unknown archaeological resources qualifying as unique archaeological resources under CEQA are less than significant.

The operation of the desalination facility would not include any ground disturbance and would not have the potential to impact subsurface archaeological resources qualifying as historical resources. No impact would occur.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Ocean Intake

The location of the ocean intake system has not been delineated, and the system requires a project-level analysis to determine its potential impacts to unique archaeological resources. Therefore, implementation of **Mitigation Measure CUL-6** is required to identify potential impacts to archaeological resources qualifying as unique archaeological resources under CEQA resulting from the construction of the ocean intake system.

Mitigation Measures: Implement Mitigation Measure CUL-6.

Significance Determination: Less than Significant with Mitigation.

Paleontological Resources

Impact CUL 3.5-3: The proposed project could result in a significant impact if they would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Phase1

The paleontological records search prepared by the LACM indicates the project is comprised of surficial deposits of younger Quaternary (Holocene-age) alluvium, which has low potential for the presence paleontological resources due to its young age. The younger Quaternary alluvium is underlain by older Quaternary deposits, which do have the potential to contain paleontological resources. As indicated by the geoarchaeological review, the veneer of Holocene-age alluvium extends to depths of up to 50 feet, meaning the depth of the older Quaternary alluvium is variable and may occur at depths shallower than 50 feet. For the purposes of this project it is assumed older Quaternary deposits may be encountered at depths as shallow as 20 feet deep. Given that the older Quaternary alluvium, which has the potential to contain paleontological resources, underlies the project, project ground-disturbing activities extending to depths of 20 feet have the potential to extend into older Quaternary alluvial soils, and therefore have the potential to directly or indirectly destroy unique paleontological resources and/or unique geologic features.

Advanced Water Purification Facility

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Should ground-disturbing activities associated with the construction of the AWPf exceed 20 feet deep, there exists the possibility it could directly or indirectly destroy unique paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-7** through **CUL-10** is required to ensure potential impacts associated with the construction of the AWPf to unique paleontological resources or unique geologic features are less than significant.

Activities associated with the AWPf operations would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted by the AWPf operations.

Mitigation Measures:

CUL-7: Prior to the start of project-related ground-disturbing activities, the City shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology's professional standards (2010) to carry out all mitigation measures related to paleontological resources.

CUL-8: Prior to the start of project-related ground-disturbing activities, the qualified paleontologist shall conduct a paleontological resources sensitivity training for all construction personnel working on the project. This may be conducted in conjunction with the archaeological resources training required by Mitigation Measure CUL-2. The training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. The City shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.

CUL-9: The qualified paleontologist, or a paleontological monitor working under the direct supervision of the qualified professional paleontologist, shall spot check open and visible excavations and/or spoil piles originating from construction activities exceeding depths of 20 feet. The qualified paleontologist shall review engineering plans to determine where ground-disturbing activities will exceed 20 feet deep and will coordinate with construction staff to determine the scheduling of spot checks. In the event that sensitive Quaternary older alluvial deposits are observed during spot check monitoring, the qualified paleontologist may make recommendations to modify the spot check protocols. Likewise, if monitoring observations suggest no potential for paleontological materials, the paleontologist may recommend to reduce or to discontinue the spot checks. The paleontological monitor shall prepare daily logs. After construction has been completed, a report that details the results of the spot check monitoring will be prepared and submitted to the City.

CUL-10: In the event of the unanticipated discovery of paleontological resources during project implementation, all work shall immediately cease in the area (within approximately 100 feet) of the discovery until it can be evaluated by a qualified paleontologist. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. Construction shall not resume until the qualified paleontologist has conferred with the City on the significance of the resource.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Should ground-disturbing activities associated with the construction of the water conveyance system exceed 20 feet deep, they could directly or indirectly destroy unique paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-7** through **CUL-10** is required to ensure potential impacts associated with the construction of the

water conveyance system to unique paleontological resources or unique geologic features are less than significant.

The operation of the water conveyance system would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. No impact would occur.

Mitigation Measures: Implement Mitigation Measures CUL-7 through CUL-10.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Ground-disturbing activities associated with the installation of the groundwater wells will extend to depths of 1,500 feet. However, boring techniques used to install the wells are not conducive to the identification of paleontological resources, and paleontological spot checking is not warranted. Should fossils be identified during construction of the groundwater wells, implementation of **Mitigation Measures CUL-7, CUL-8, and CUL-10** would reduce potential impacts to paleontological resources and/or unique geologic features to less than significant.

The operation of the groundwater wells would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. No impact would occur.

Mitigation Measures: Implement Mitigation Measure CUL-7, CUL-8, and CUL-10.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. The reconfiguration of the wildlife ponds would include putting fill into the ponds to raise the pond floor to approximately 3 feet of the water surface. The reconfiguration would not include any activity that would include excavation to a depth of 20 feet. Therefore, impact to unique paleontological resources or unique geologic features would be less than significant.

Activities associated with the reconfigured existing ponds operations would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

New Treatment Wetland

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Should ground-disturbing activities associated with the construction of the new treatment wetlands exceed 20 feet deep, there exists the possibility they may directly or indirectly destroy unique paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-7 through CUL-10** is required to ensure potential impacts associated with the construction of the new treatment wetlands to unique paleontological resources or unique geologic features are less than significant.

The operation of the new treatment wetlands would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted by the new treatment wetlands operations.

Mitigation Measures: Implement Mitigation Measure CUL-7 through CUL-10.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Should ground-disturbing activities associated with the construction of the treatment upgrade exceed 20 feet deep, there exists the possibility they may directly or indirectly destroy unique paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-7 through CUL-10** is required to ensure potential impacts associated with the construction of the treatment upgrade to unique paleontological resources or unique geologic features are less than significant.

The operation of the treatment upgrade would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted by the treatment upgrade operations.

Mitigation Measures: Implement Mitigation Measures CUL-7 through CUL-10.

Significant Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located within the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprises the project's surface deposits. Should ground-disturbing activities associated with the construction of the new outfall or the discharge pipeline to the Calleguas SMP exceed 20 feet deep, there exists the possibility they may directly or indirectly destroy unique paleontological resources and/or unique geologic features.

Implementation of **Mitigation Measures CUL-7** through **CUL-10** is required to ensure potential impacts associated with the construction of the new outfall or the discharge pipeline to the Calleguas SMP to unique paleontological resources or unique geologic features are less than significant.

The operation of the new outfall and/or the discharge pipeline to the Calleguas SMP would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted by the new outfall or Calleguas SMP operations.

Mitigation Measures: Implement Mitigation Measures CUL-7 through CUL-10.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf expansion would not include construction; rather, it would be an operational change at the plant. Therefore, the project would not directly or indirectly destroy unique paleontological resources and/or unique geologic features. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

As noted above, project ground-disturbing activities exceeding depths of 20 feet have the potential to impact paleontological resources located with the older Quaternary alluvium underlying the veneer of Holocene-age alluvium that comprise the project's surface deposits. Should ground-disturbing activities associated with the construction of the desalination facility exceed 20 feet deep, there exists the possibility it could directly or indirectly destroy unique paleontological resources and/or unique geologic features. Implementation of **Mitigation Measures CUL-7** through **CUL-10** is required to ensure potential impacts associated with the construction of the desalination facility to unique paleontological resources or unique geologic features are less than significant.

The operation of the desalination facility would not include any ground disturbance and would not have the potential to impact unique paleontological resources and/or unique geologic features. Therefore, no unique paleontological resources and/or unique geologic features would be impacted by desalination facility operations.

Mitigation Measures: Implement Mitigation Measures CUL-7 through CUL-10.

Significance Determination: Less than Significant with Mitigation.

Ocean Intake

The location of the ocean intake system has not been delineated, and the system requires a project-level analysis to determine its potential impacts on paleontological resources. Therefore, implementation of **Mitigation Measure CUL-6** would require the identification of potential impacts to unique paleontological resources and/or unique geologic features resulting from the construction of the Ocean Intake System.

Mitigation Measures: Implement Mitigation Measure CUL-6.

Significance Determination: Less than Significant with Mitigation.

Human Remains

Impact CUL 3.5-4: The proposed projects could result in a significant impact if they would disturb any human remains, including those interred outside of formal cemeteries.

The SCCIC records search identified a prehistoric archaeological site, P-56-000662, within 500 feet of the project that was found to contain intact human burial during excavations. Although no additional human burials have been identified within or adjacent to the project, the project area's archaeological sensitivity and the previous discovery of inhumations within 500 feet of the project indicate that ground-disturbing activities associated with project implementation have the potential to disturb human remains including those interred outside of formal cemeteries.

Phase 1

Advanced Water Purification Facility

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the construction of the AWPf would have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that, should human remains be discovered during excavations, such remains would be handled appropriately and, with implementation of this measure, impacts of AWPf construction to unknown human remains within the project area would be less than significant.

Activities associated with the AWPf operations would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the AWPf operations.

Mitigation Measures:

CUL-11: If human skeletal remains are uncovered during project construction, all work within 100 feet of the find shall be immediately halted, and the Ventura County coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set

forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). The NAHC shall then identify a Most Likely Descendant (MLD) of the deceased Native American, who shall then help determine what course of action should be taken in the disposition of the remains.

Per PRC 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the MLD regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the construction of the water conveyance system have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

Activities associated with the water conveyance system operations would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the water conveyance system operations.

Mitigation Measures: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the construction of the groundwater wells have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

The operation of the groundwater well would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the groundwater well operations.

Mitigation Measures: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the reconfiguration of the wildlife ponds or the construction of the new treatment wetlands have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

Activities associated with the reconfigured existing ponds and/or the new treatment wetlands operations would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the operations associated with the reconfigured existing ponds or the new treatment wetlands.

Mitigation Measures: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

Given project's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the treatment upgrade has the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

Activities associated with the VWRF treatment upgrade operations would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the VWRF treatment upgrade operations.

Mitigation Measures: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the construction of the new outfall or the discharge pipeline to the Calleguas SMP have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

Activities associated with the new outfall or the discharge pipeline to the Calleguas SMP operations would not include any ground disturbance and would not have the potential to impact human remains. No impact would occur.

Mitigation Measures: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf expansion would not include construction; rather it would be an operational change at the plant. Therefore, the project would not disturb human remains. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

Given the project area's archaeological sensitivity and the proximity of previously identified prehistoric human remains, ground-disturbing activities associated with the construction of the desalination facility have the potential to disturb human remains, including those interred outside formal cemeteries. Implementation of **Mitigation Measure CUL-11** would ensure that such impacts are less than significant.

The operation of the desalination facility would not include any ground disturbance and would not have the potential to impact human remains. Therefore, no human remains, including those interred outside of formal cemeteries would be impacted by the desalination operations.

Mitigation Measure: Implement Mitigation Measure CUL-11.

Significance Determination: Less than Significant with Mitigation.

Ocean Intake

Because the ocean intake system has not yet delineated, it is unclear if operations associated with the system would impact human remains. Therefore, implementation of **Mitigation Measure CUL-6** and **CUL-11** would be implemented to identify potential impacts to human remains, including those interred outside of formal cemeteries as a result of ocean intake system construction.

Mitigation Measures: Implement Mitigation Measures CUL-6 and CUL-11.

Significance Determination: Less than Significant with Mitigation.

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3.6 Geology, Soils, and Seismicity

This section addresses the potential impacts of the proposed projects to geology, soils, and seismicity. The section includes a description of the environmental setting to establish baseline conditions, a summary of the relevant regulations, and an evaluation of the impacts.

3.6.1 Existing Environmental Setting

Regional Geology

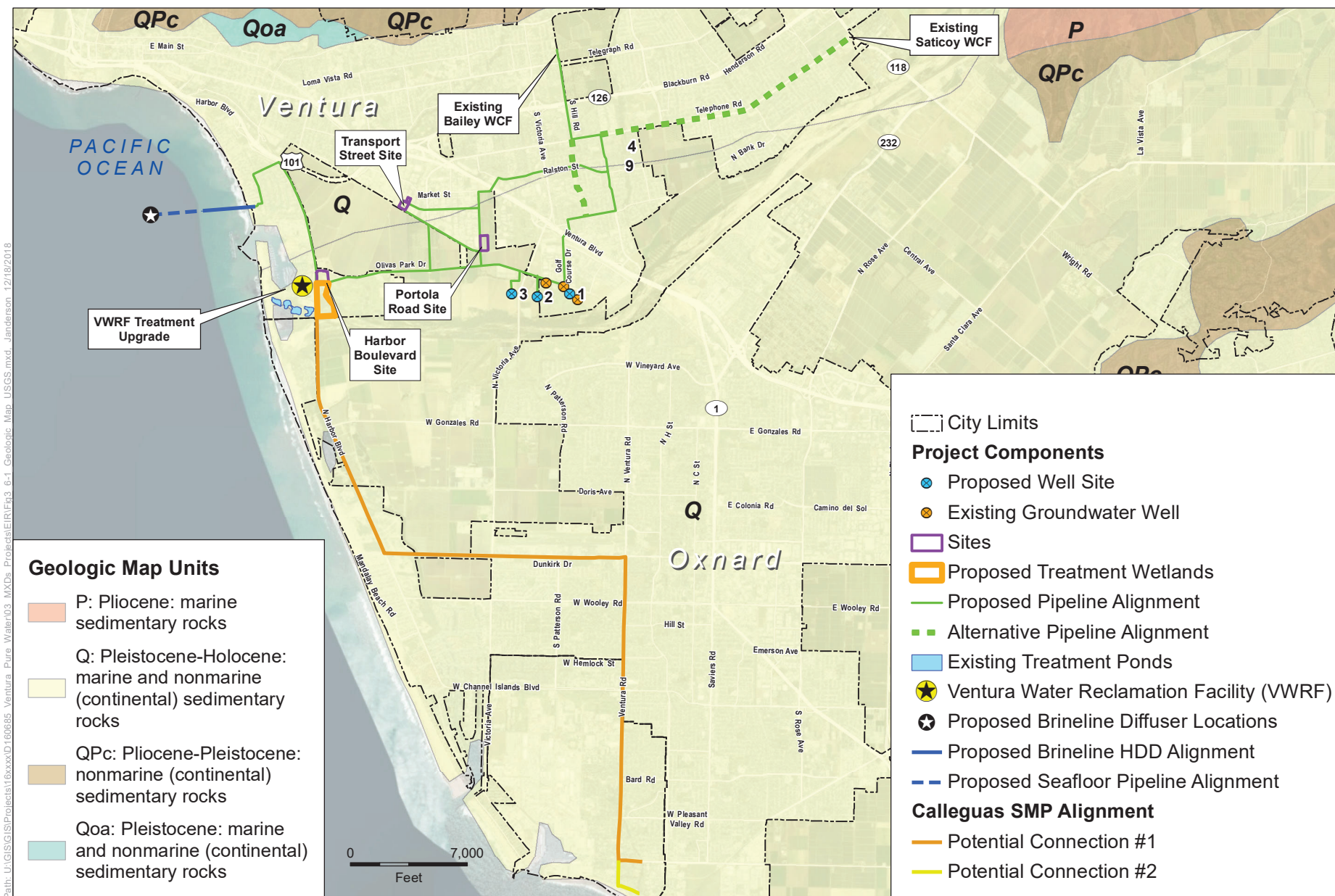
The project area is located within western Ventura County, which is within the Transverse Ranges geomorphic province. The Transverse Ranges are a complex series of east-west trending mountain ranges and valleys that strongly contrast with the northwest trend of the adjacent Coast Ranges (to the north) and Peninsular Ranges (to the south). Great thicknesses of Cenozoic petroleum-rich sedimentary rocks have been folded and faulted, making the region one of the important oil-producing areas in the United States (CGS 2002a). The Transverse Ranges are largely made up of tertiary sedimentary rocks and quaternary sedimentary deposits in the west and Mesozoic granitic rock, Mesozoic and Paleozoic metamorphic rock, and quaternary sedimentary deposits to the east (CGS 2002b).

The project area lies within the westernmost portion of the east-west Ventura Basin, a structural trough bounded on the north by the Ventura Foothills and the south by the Santa Monica Mountains (Swanson and Irvine 2015). Sediments deposited in the Ventura Basin are up to 55,000 feet thick (UWCD 2012). The project area is located within the northwestern most onshore portion of the Ventura Basin (Larry Walker Associates 2015). The Ventura Basin has been subdivided into subbasins, with most of the project components located within the Mound Basin and Oxnard Plain Basin.

The Mound Basin, formed as part of the Ventura Basin Syncline,¹ is bounded by the Ventura Foothills and the east-west Ventura-Foothill faults on the north and the east-west Montalvo Anticline on the south (UWCD 2012).² The synclinal trough plunges gradually to the west, extending offshore as a gently sloping submarine shelf. The Oxnard Plain Basin is bounded by the Santa Monica Mountains, the Santa Susana Mountains, and the Topatopa Mountains to the north, the Santa Clara River Valley to the northeast, and the Santa Barbara Channel to the south and west. The topography of the plain is relatively level. It has been formed chiefly by the deposition of sediments from Santa Clara River Valley and the watershed of Calleguas Creek before they flow into the Pacific Ocean. The local surface geology is shown in **Figure 3.6-1**.

¹ A syncline is a trough or fold of stratified rock in which the strata slope upward from the axis.

² An anticline is a ridge-shaped fold of stratified rock in which the strata slope downward from the crest.



SOURCE: ESRI; USGS

Ventura Water Supply Projects

Figure 3.6-1
Regional Geology

Local Topography and Drainage

Elevations of the project components range from about 155 feet above mean sea level (amsl) at the Saticoy Water Conditioning Facility (WCF) in the east to about 20 feet amsl at the wildlife/treatment ponds in the west. Drainage in the project area is generally south to the Santa Clara River and then west to the Pacific Ocean. Upstream and near the well sites, the Santa Clara River is a seasonal stream (intermittent) with flow occurring during the rainy season when smaller upstream waters are flowing. Flow generally does not occur during the dry season. Downstream and near the well sites, the Santa Clara River flows to an estuary at the coast and then into the Pacific Ocean.

Local Geology

The following description of the local geology is from United Water Conservation District (2012) and Larry Walker Associates (2015) unless otherwise cited.

Mound Basin water-bearing sediments occur within the upper 3,000 feet consist of Holocene³ to late Pleistocene⁴ alluvial deposits, underlain by the Pleistocene San Pedro Formation.⁵ All of the proposed injection wells would be drilled to about 1,500 feet in depth into the San Pedro Formation. Because the project would not encounter deeper underlying formations, they are not discussed in this EIR.

Faulting in the area is primarily reverse faulting,⁶ with some strike-slip movement,⁷ on the north (Ventura-Foothill faults), south (Oak Ridge, McGrath, Mound NW 3, and Mound NW 2 faults), and east (Country Club fault is east of the view in Figure 3.6-1) sides of the basin. The northern basin boundary extends to the Ventura-Foothill faults and the exposed area of the San Pedro Formation in the Ventura Foothills. The southern basin boundary coincides with the axis of the Montalvo anticline. There are several faults in and around the Mound Basin, but none have displacements large enough to juxtapose the San Pedro Formation against the underlying low-permeability Santa Barbara Formation. Investigations to date have concluded that groundwater flow across the Oak Ridge and Ventura faults is likely.

The alluvial deposits are composed of lagoonal, beach, river/flood plain, alluvial fan, terrace, and marine terrace clays, silts, sand, and gravel deposits. These deposits are predominately interbedded, lenticular clays with some silts, sands, and gravels. Some of the shallow alluvium is dominated by clays in the Mound Basin. The proposed injection wells would be screened within the San Pedro Formation deposits, which are composed of marine and continental clays, silts,

³ Holocene time is from the present to 11,000 years ago; the USGS uses 15,000 years.

⁴ Pleistocene time is from about 11,000 to 1.6 million years before present.

⁵ Recent work by Swanson and Irvine (2015) has reassigned portions of the San Pedro Formation to the Saugus and Las Posas Formations to address regional naming convention conflicts. For the purpose of this EIR, we have retained the San Pedro Formation nomenclature.

⁶ For a reverse fault, the hanging wall has moved upward relative to the footwall. Reverse faults occur where two blocks of rock are forced together by compression.

⁷ Strike-slip movement on a fault displaces rock strata mainly in a horizontal direction, parallel to the line of the fault.

sands, and gravels. The San Pedro Formation is up to approximately 4,500 feet thick in the center of the basin with decreasing thickness toward the north and south edges of the basin.

Active thrust faults border the basins of the Santa Clara River valley, including the Oxnard Plain Basin, causing rapid uplift of the adjacent mountains and the formation of deep basins within regional synclinal features located between the areas of uplift. The basins are filled with thick accumulations of Tertiary and Quaternary sediments that were deposited in both marine and terrestrial settings. The groundwater basins underlying the Oxnard Plain are filled with sediments deposited on a wide delta complex that formed at the terminus of the Santa Clara River. The eastern portion of the Oxnard coastal plain is commonly known as the Pleasant Valley Basin, where younger sediment is derived largely from the Calleguas Creek watershed. These sediments tend to be relatively fine-grained, as the Calleguas Creek watershed is smaller and less mountainous than the Santa Clara River watershed to the north (UWCD, 2016).

Local Soils

Soil mapping indicates that the project components would mostly traverse clay and silty clay loam⁸ soil units where not replaced with fill (NCRS 2017). Soil properties that could impact project components are summarized below in **Table 3.6-1**.

TABLE 3.6-1
SUMMARY OF SOIL PROPERTIES

Soil Criteria	VWRF, Harbor Boulevard, Wildlife/Treatment Ponds	Transport Street Site	Portola Road Site
Expansive Soils (a)	Low	Moderate	Moderate
Erosion – Water	Low	Moderate	Moderate
Erosion – Wind	Moderate	Low	Low
Corrosion – Concrete	Moderate	Low	Low
Corrosion – Steel	Moderate	Moderate	Moderate

(a) Also referred to as shrink-swell potential or linear extensibility.

SOURCE: NCRS, 2017

Seismicity

Southern California is a region of high seismic activity with numerous active and potentially active faults. Earthquakes along the San Andreas fault relieve convergent plate stress in the form of right lateral strike slip offsets. The Transverse Ranges generally causes the San Andreas fault to bend and producing compressional stresses that are manifested as reverse, thrust, and right lateral faults. Faulting associated with the compressional forces creates earthquakes and is primarily responsible for the mountain building, basin development, and regional upwarping found in this area.

⁸ Loam is a general term for soil composed of a mix of sand, silt, and clay.

Major earthquakes have affected the region in the past and can be expected to occur again in the near future on one of the principal active faults in the San Andreas Fault System. Within the project area, potentially active faults include the Ventura-Foothill, Oak Ridge, McGrath, and Country Club faults, as described in more detail below and as shown in **Figure 3.6-2** and **Figure 3.6-3** (City of Ventura 2005b).

Ventura-Foothill Fault

The Ventura-Foothill fault is considered active and was designated as an Alquist-Priolo Earthquake Fault Zone (see discussion below under Regulatory Setting) by the State Geologist in 1978. The Ventura-Foothill fault trends east-west across the northern section of the city near the base of the foothills. Properties along this fault trace have the greatest potential for surface rupture in the city.

County Club Fault

The County Club fault is a northwest-southwest trending zone in the eastern portion of the city. This fault is considered potentially active, but not determined to be an Alquist-Priolo Earthquake Fault Zone.

Oak Ridge and McGrath Faults

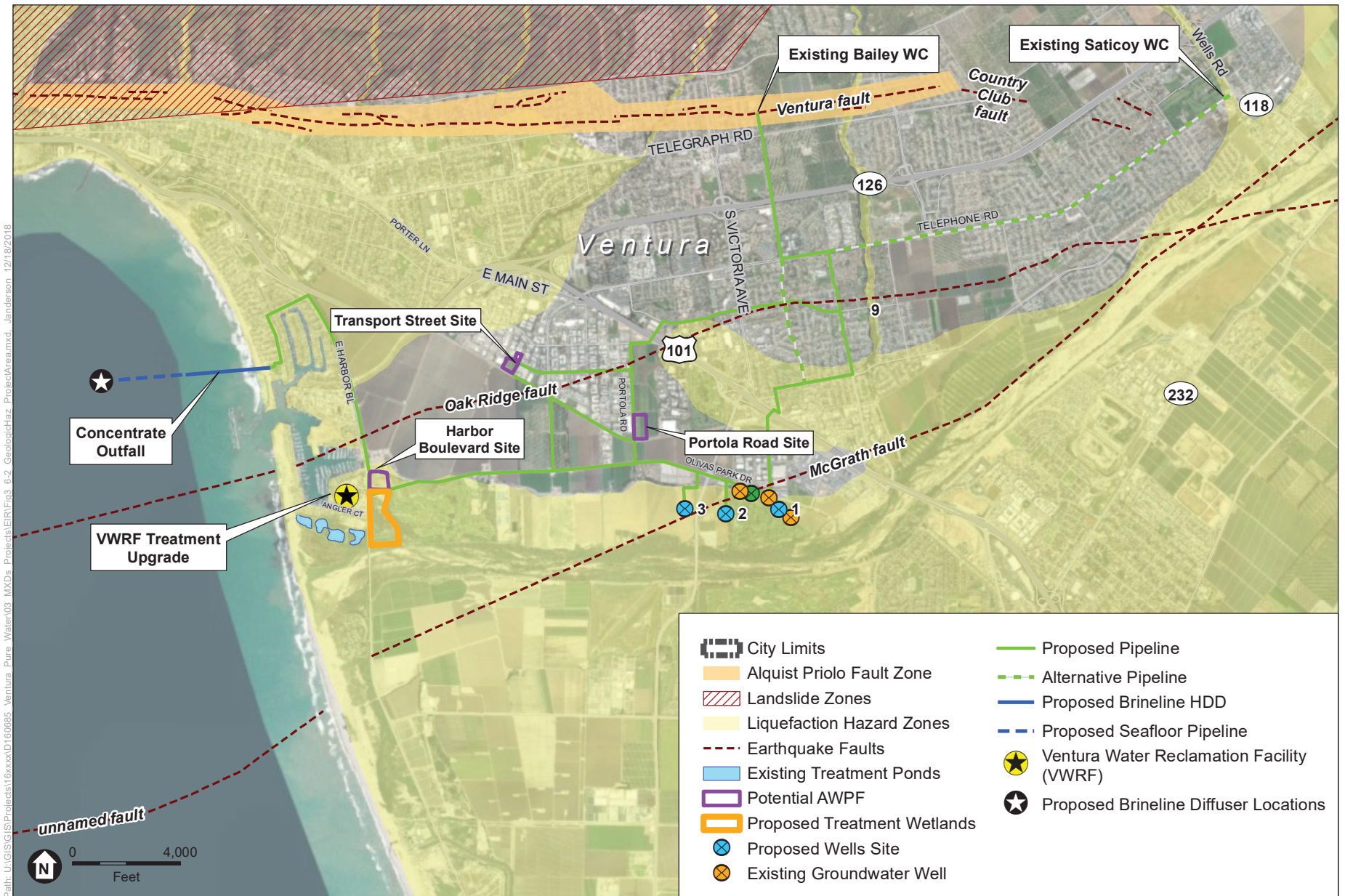
The Oak Ridge and McGrath faults comprise a zone that trends northeast-southwest and across the southern portions of the city. The fault has thousands of feet of subsurface displacement but is poorly defined at the surface. This fault zone is considered at least potentially active and probably active, respectively.

Table 3.6-2 shows the estimated maximum credible earthquake that may occur due to activity along the most significant faults that could affect the city, including the project area. The table includes active regional faults, such as the San Andreas and the Anacapa faults, though miles distant, which are known to produce tremors sufficient in magnitude to affect large areas.

TABLE 3.6-2
SIGNIFICANT FAULTS WITHIN THE CITY AND ESTIMATED MAXIMUM CREDIBLE EARTHQUAKE SIZE

Fault Name	Estimated Maximum Credible Earthquake
Ventura-Pitas Point	6.9
Red Mountain	7.0
Oak Ridge	7.0
Simi-Santa Rosa	7.0
San Cayetano	7.0
Arroyo Parida-More Ranch	7.2
Mid Channel	6.6
Santa Ynez (East)	7.1
Malibu Coast	6.7
Anacapa	7.5
San Andreas	7.4

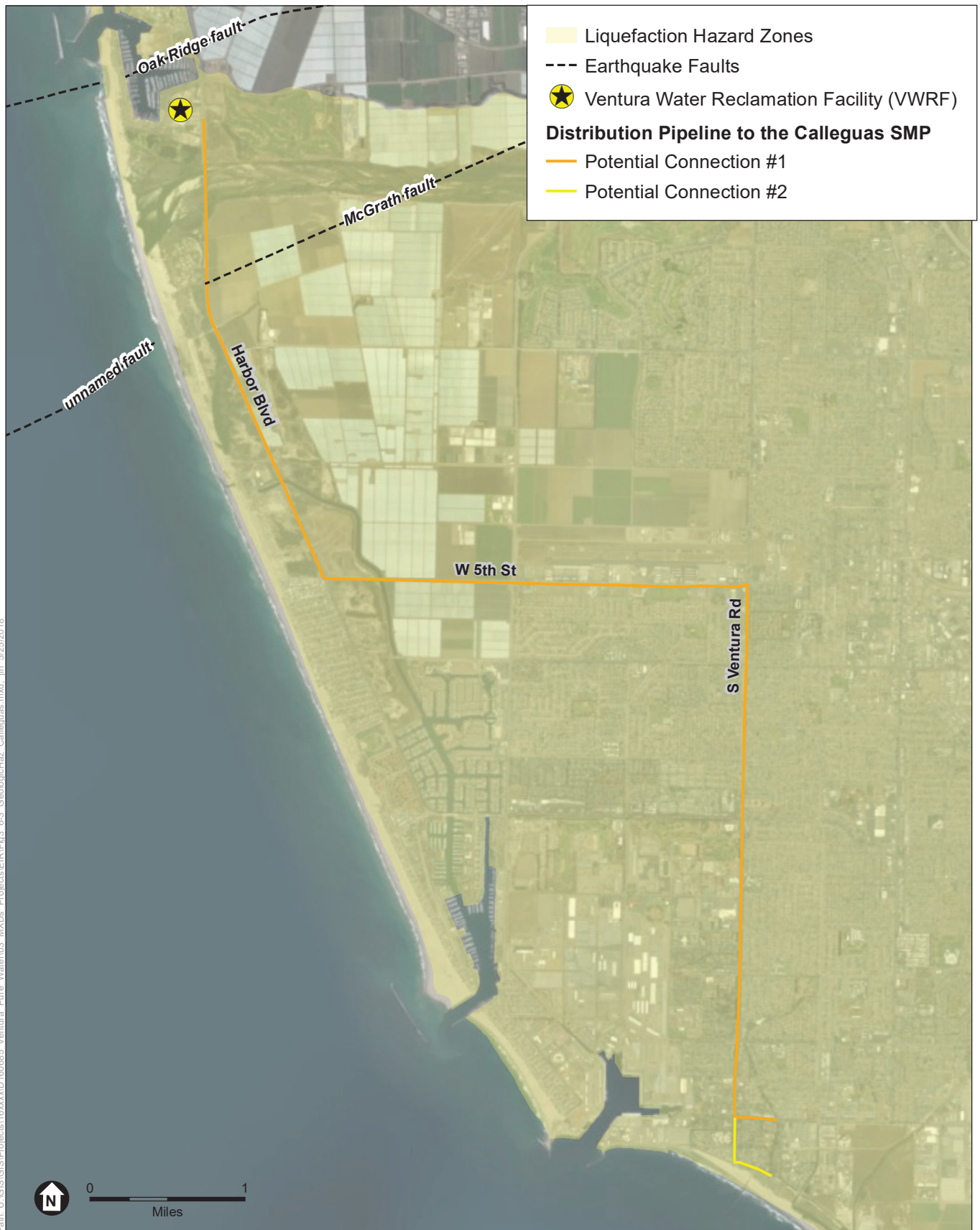
SOURCE: City of Ventura, 2005b



SOURCE: ESRI; California Geologic Survey

Ventura Water Supply Projects

Figure 3.6-2
Geologic Hazards in Project Area



SOURCE: ESRI; California Geologic Survey

Ventura Water Supply Projects

Figure 3.6-3
Geologic Hazards in Calleguas SMP Area

Seismic Hazards

Surface Fault Rupture

Surface rupture occurs when movement on a fault breaks through to the surface. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Fault rupture almost always follows preexisting faults, which are zones of weakness (CDOC 2018a). The Alquist-Priolo Earthquake Fault Zoning Act, described in more detail below in Section 3.6.2, Regulatory Framework, was passed in California following the 1971 San Fernando earthquake to mitigate the hazard of surface faulting to structures for human occupancy. The Alquist-Priolo Earthquake Fault Zoning Act requires publication of earthquake fault zone maps around the surface traces of active faults so these areas can be avoided for future development (CDOC 2018b). As shown in Figure 3.6-1, an Alquist-Priolo Earthquake Fault Zone, the Ventura-Foothill fault, passes through the northern portion of the project area.

Ground Shaking

Earthquakes on major faults can produce strong ground shaking, which can produce comprehensive damage. Ground shaking is affected by several factors, including the size of the earthquake, the type of ground the earthquake waves travel through, and the distance away from the earthquake source (CDOC 2018a).

Liquefaction

Liquefaction occurs when very wet soil is affected by strong ground motion. Soil particles (sand and silt) shift and separate during shaking. This reduces the ability of the ground to support the building on top of it, and may cause buildings to sink and foundations to separate (CDOC 2018a). Shaking causes the soils to lose strength and behave as liquid. Liquefaction-related effects include loss of bearing strength, ground oscillations, lateral spreading, and flow failures or slumping. Liquefaction occurs primarily in saturated, loose, fine- to medium-grained soils in areas where the groundwater table is within approximately 50 feet of the surface. Site-specific geotechnical studies are the only reliable way of determining the specific liquefaction potential of a site; however, a determination of general risk potential can be provided based on soil type and depth of groundwater. As shown in Figure 3.6-1 and Figure 3.6-2, the project area contains areas of liquefaction risk.

Geologic Hazards

Landslides, Slope Failure, and Lateral Spreading

Seismically induced landslides and rock falls is the downhill movement of ground caused primarily by gravity acting on weakened rock or soils (CDOC 2018a). Many things can contribute to a landslide, including erosion, groundwater, human activity such as grading, or vibrations from earthquakes. Landsliding can range from downslope creep of soil and rock material to sudden failure of entire hillsides (City of Ventura 2002). Landslides include rockfalls, slumps, mudslides, debris flows, mud flows, and lateral spreading (USGS 2004). Lateral spreads are a type of landslide that usually occur on very gentle slopes or flat areas. Lateral spreads can be triggered by an earthquake or be artificially induced.

The hillsides north of Poli Street/Foothill Road and east of Ventura Avenue and Cedar Street contain many existing landslides and are very likely to experience future landslide activity (City of Ventura 2002). In 1992, heavy rains produced mudslides near Ventura Avenue that killed several people. Slope stability conditions vary locally in the hillside area based on soil and rock type and groundwater depth. Figure 3.6-1 and Figure 3.6-2 show the landslide risk areas within the project area. Landslide risk areas are all greater than 2000 feet away from any proposed construction areas.

Subsidence

Subsidence occurs when land collapses upon itself and is a result of excessive pumping of either groundwater or oil in certain types of sediments. Under certain circumstances, densification or compaction of soils can result in settlement that can cause damage to foundations and structures, as well as water and sewer lines. Damage caused by subsidence generally is not immediate or violent in nature, as the settling of the land surface is a process that tends to take many years.

A very significant area in Ventura County is experiencing subsidence, including the project area (County of Ventura 2013). Data suggests that groundwater has been extracted from the aquifers underlying the Oxnard Plain at a rate that exceeds the rate of replenishment, referred to as “overdraft.”

Gradual inundation by surface water is a potentially serious secondary effect of subsidence in the city, as both the ocean and Santa Clara River could flow into depressed areas (City of Ventura 2005b). In the case of the coastal portion of Ventura, beach erosion may extend inland due to the loss of elevation caused by subsidence. Any area where probable subsidence is on the order of 0.05 feet per year is considered highly susceptible. In Ventura, this category extends along the coast roughly from Pierpont to the intersection of Highway 101 with the Santa Clara River.

Expansive Soils

Expansive soils are soils that have a significant amount of clay particles which can give up water (shrink) or take on water (swell) depending on the amount of moisture present. The cyclical change in volume over time exerts stress on buildings and other loads placed on these soils that can lead to damage. Expansive soils are also often prone to erosion (City of Ventura 2005b).

According to the U.S. Department of Agriculture (USDA) Web Soil Survey, the project area contains pico sandy loam, sorrento silty clay loam, sorrento loam, metz loamy sand, salinas clay loam, and cropley clay (USDA 2018). As a result of clay particles in the soil, a large portion of the city is located in a moderate expansive soil zone (City of Ventura 2005b). Zones of highly expansive soils within the city occur in the hillsides and in the southern portion of the city along the Santa Clara River. Specifically, areas of high expansive soils are located west of the intersection of Harbor Boulevard and Olivas Park Drive and around the intersection of Victoria Avenue and Olivas Park Drive.

Erosion

Erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of water and wind. Excessive soil erosion can eventually damage infrastructure such as pipelines, wellheads, building foundations, and roadways. In general, granular soils with relatively low cohesion and soils located on steep topography have a higher potential for erosion. As previously discussed, expansive soils are often prone to erosion (City of Ventura 2005b). Zones of highly expansive soils within the city occur in the hillsides and in the southern portion of the city along the Santa Clara River.

3.6.2 Regulatory Framework

Federal

International Building Code

The International Building Code (IBC) is the building code that must be implemented throughout the United States and its territories and is an essential tool to preserve public health and safety that provides safeguards from hazards associated with the built environment. It addresses design and installation of innovative materials that meet or exceed public health and safety goals. Provisions within the IBC are intended to ensure that structures can adequately resist seismic forces during earthquakes. These seismic provisions represent the best available guidance on how structures should be designed and constructed to limit seismic risk (FEMA 2018).

American Lifelines Alliance Seismic Guidelines for Water Pipelines

Although pipelines can be damaged by ground shaking, landslide, liquefaction, and settlement, seismic designs for water pipelines are not explicitly included in the current American Water Works Association Standards. Therefore, the Seismic Guidelines for Water Pipelines were published by the Federal Emergency Management Agency (FEMA) American Lifelines Alliance (ALA) to provide varying design requirements for different types of water-conveying pipelines depending on the pipelines' overall importance to their water utility network and the localized risk of earthquakes. The guidelines recommend performance of a seismic hazard analysis to determine which earthquake hazards may affect the seismic performance of the pipes. Design methods are then geared to provide suitable water-system-wide performance and post-earthquake reliability in the event of a rare earthquake. Reliability can be increased by ensuring a break in one pipe will not lead to damage in other pipes, a minimum-needed flow is maintained post-earthquake, and pipelines are spatially separated through ground deformation zones so that each pipe is not subjected to the same amount of ground deformation (ALA 2005).

State

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and

maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which by law is responsible for coordinating all building standards. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 IBC and took effect on January 1, 2017. The CBC provides requirements for general structural design and includes means for determining earthquake loads.⁹ Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. According to the CBC, structures should be able to (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Although no guarantees can be made, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

Seismic design specifications are determined according to the seismic design category (SDC) in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), and load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For SDCs D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act)

The Alquist-Priolo Act was passed in 1972 to provide a mechanism for reducing losses from surface fault rupture on a statewide basis. The main intent of the Alquist-Priolo Act is to ensure public safety by preventing the construction of buildings used for human occupancy on the surface trace of active faults. The Alquist-Priolo Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The law requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities,

⁹ A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure.

counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones.

California Well Standards

In June of 1991, the California Department of Water Resources (DWR) published well standards to ensure groundwater quality is protected. These standards include surface construction features, sealing, casing, and rehabilitation and repair standards (DWR 1991).

Regional

Ventura County General Plan

The Ventura County General Plan, which is mandated by state law, sets forth the goals, policies, and programs the County of Ventura (County) will implement to manage future growth and land uses. The General Plan, adopted by the Board of Supervisors, embodies the vision for the future of unincorporated Ventura County. The Ventura County General Plan includes a Hazards Element, which details geologically related hazards in the county, including from fault rupture, ground shaking, liquefaction, seiche, landslides, and expansive soils. The following goals and policies related to geology and soils are applicable to the proposed projects.

Goal 2.2.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from fault rupture.

Policy 5. Roads, streets, highways, utility conduits, and oil and gas pipelines, shall be planned to avoid crossing active faults where feasible. When such location is unavoidable, the design shall include measures to reduce the effects of any fault movement as much as possible.

Goal 2.3.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from ground shaking.

Goal 2.4.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from liquefaction.

Goal 2.5.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from a seiche.

Goal 2.6.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from a tsunami.

Goal 2.7.1 Minimize the risk of loss of life, injury, collapse of habitable structures, and economic and social dislocations resulting from landslides/mudslides.

Goal 2.8.1 Minimize the risk of damage to structures from the effects of expansive soils.

Policy 1. Construction must conform to established standards of the Ventura County Building Code, adopted from the California Buildings Code.

Goal 2.9.1. Minimize the risk of damage to structures, transportation corridors, and infrastructure from the effects of subsidence.

Goal 2.10.1.1 Minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.

Goal 2.11.1 Minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from inundation by dam failure.

Goal 2.12.1 Minimize the risk from the damaging effects of coastal wave hazards and beach erosion.

Local

City of San Buenaventura General Plan

Adopted in 2005, the City of Ventura General Plan sets long-range goals based on a shared vision to guide Ventura's future. The City Council, advisory boards, commissions, city departments and staff rely on the General Plan to guide certain functions, responsibilities, and services the City of Ventura (City) provides to residents, and the protection of natural and cultural resources in the community. The General Plan includes a Healthy and Safe Community Element, which establishes policies to protect the community from risks associated with seismic, geologic, flood, and other hazards (City of Ventura 2005a). The following policy is related to geology and soils and is applicable to the proposed projects.

Policy 7B: Minimize risks from geologic and flood hazards.

City of Oxnard 2030 General Plan

The City of Oxnard 2030 General Plan was adopted in 2011, and amended in 2016. The General Plan contains goals and policies that are intended to guide a wide range of public and private development decisions through 2030 (City of Oxnard 2011). The General Plan includes a Safety and Hazards Element. The following goals and policies related to geology and soils are applicable to the proposed projects.

Goal SH-1 Minimal damage to structures, property, and infrastructure as a result of liquefaction and subsidence.

Policy SH-1.3 Building Code Standards. Require that all new buildings and alterations to existing buildings be built according to the seismic requirements adopted within the most current City of Oxnard Building Code, or its adopted equivalent.

City of Port Hueneme General Plan

The City of Port Hueneme General Plan serves as an overall guide in making day-to-day development decisions and sets forth policy for the future (City of Port Hueneme 2015). The General Plan includes a Public Safety and Facilities Element, which explores issues involving both natural/environmental hazards. The following goal is related to geology and soils and is applicable to the proposed projects.

Goal 2: Mitigate the potential for loss of life, injuries, damage to property, and economic and social displacement resulting from future earthquakes or other geologic hazards by the avoidance, elimination, or reduction of risk to an acceptable level.

3.6.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to geology, soils, and seismicity. The issues presented in the environmental checklist have been used as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Impact GEO 3.6-1)
 - Strong seismic ground shaking (refer to Impact GEO 3.6-2)
 - Seismic-related ground failure, including liquefaction (refer to Impact GEO 3.6-3)
 - Landslides (refer to Impact GEO 3.6-4)
- Result in substantial soil erosion or the loss of topsoil (refer to Impact GEO 3.6-5).
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse (refer to Impact GEO 3.6-6).
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property (refer to Impact GEO 3.6-7).
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water (refer to Impact GEO 3.6-8).

A summary of the findings for each impact is presented in **Table 3.6-3**. The analyses below support these findings.

**TABLE 3.6-3
SUMMARY OF GEOLOGY, SOILS, AND MINERAL RESOURCE IMPACT DETERMINATIONS**

Impacts	3.6-1 Fault Rupture	3.6-2 Ground Shaking	3.6-3 Ground Failure	3.6-4 Land- slides	3.6-5 Soil Erosion	3.6-6 Unstable Geologic Unit	3.6-7 Expansive Soil	3.6-8 Septic Tank
Phase 1								
Advanced Water Purification Facility	LTS	LTS	LTSM	LTS	LTS	LTS	LTSM	NI
Water Conveyance System	LTS	LTS	LTSM	LTS	LTS	LTS	LTSM	NI
Groundwater Wells	LTS	LTS	LTSM	LTS	LTSM	LTS	LTSM	NI
Wildlife/Treatment Wetlands	NI	LTS	LTSM	LTS	LTSM	LTS	LTSM	NI
VWRF Treatment Upgrade	LTS	LTS	LTSM	LTS	LTSM	LTS	LTSM	NI
Concentrate Discharge Facility	LTS	LTS	LTSM	LTS	LTSM	LTS	LTSM	NI
Phase 2								
AWPF Expansion	LTS	LTS	LTSM	LTS	LTS	LTS	LTSM	NI
Ocean Desalination	LTS	LTS	LTSM	LTS	LTSM	LTS	LTSM	NI

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.6.4 Impacts and Mitigation Measures

Fault Rupture

Impact GEO 3.6-1: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.

Phase 1

Advanced Water Purification Facility

The proposed Advanced Water Purification Facility (AWPF) would be located within the city of Ventura or in nearby unincorporated Ventura County within a 5- to 20-acre site. Three alternative AWPF locations have been identified, referred to as the Harbor Boulevard site, Transport Street site, and Portola Road site. The proposed projects would include the construction of an AWPF within one of the three potential sites. As shown in Figure 3.6-2, none of the AWPF locations are located on either the Oak Ridge fault or the Ventura fault. However, the Harbor Boulevard, Transport Street, and Portola Road AWPF sites would be located within approximately 0.5 mile of the Oak Ridge fault and 0.75 mile from the McGrath fault. Neither the Oak Ridge or the McGrath faults are designated as an Alquist-Priolo Earthquake Fault Zone; they are listed as potentially active and probably active in the City's General Plan, respectively, and therefore

could be exposed to fault rupture. As a result, the AWPf sites have the potential to be impacted by fault ruptures. However, the proposed projects would comply with all applicable local, state, and federal laws regarding building code construction practices. Compliance with the CBC will ensure that the new structures would be designed to withstand predicted seismic activity. Therefore, construction and operation of the proposed AWPf would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would construct a product conveyance system that includes raw groundwater to the AWPf from the proposed extraction wells, purified water from the AWPf to Aquifer Storage and Recovery (ASR) wells and/or the Bailey Water Conditioning Facility (WCF) or Saticoy WCF, and extracted groundwater from the ASR wells to the Bailey WCF or Saticoy WCF or to the distribution system. The proposed pump stations would be located at the Ventura Wastewater Reclamation Facility (VWRF) and at the proposed AWPf. As shown in Figure 3.6-1, the proposed conveyance pipelines throughout the proposed system, depending on which AWPf site is chosen, will cross the Oak Ridge fault and/or the McGrath fault. Neither the Oak Ridge or the McGrath fault is designated as an Alquist-Priolo Earthquake Fault Zone. However, they are listed as potentially active and probably active in the City's General Plan, respectively, and therefore could experience fault rupture. All pipelines would adhere to standard engineering and construction practices and conform with the CBC and the ALA, which would help ensure structural resiliency should an earthquake occur within the project area. In addition, the proposed projects do not include habitable structures, and would not put new residents at risk. Therefore, fault rupture impacts for construction and operation of the conveyance facilities would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). As shown in Figure 3.6-1, there are several proposed wells near the McGrath fault, which transverse the Oxnard Plain Basin. The McGrath fault is not designated as an Alquist-Priolo Earthquake Fault Zone, but is listed as potentially active in the City's General Plan, and therefore could be exposed to fault rupture. However, all wells and auxiliary components would adhere to standard engineering and construction practices and conform with the CBC and the ALA, which would help ensure structural resiliency should an earthquake occur within the project area. In addition, the proposed projects do not include habitable structures, and would not put new

residents at risk. Therefore, fault rupture impacts for construction and operation of the conveyance facilities would be less than significant. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetland

The proposed projects would include reconfiguration of the existing wildlife/treatment ponds by adding fill to raise the ponds' floors to approximately 3 feet from the surface and adding new vegetation throughout the ponds. In addition, the proposed projects would include an approximately 35-acre new treatment wetland just east of the VWRf. Both the existing ponds and the new treatment wetland would not be located on active faults (Figure 3.6-2). The closest fault (Oak Ridge fault) would be approximately 0.5-mile north of the sites. The wetlands do not include any habitable structures, and would not put new residents at risk. Therefore, construction and operation of the wildlife/treatment wetlands would not be at risk from fault rupture, and no impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRf Treatment Upgrade

The upgrades would include replacing the aeration blowers and existing gravity thickener and constructing a new anoxic tank within the existing VWRf. The treatment upgrades (anoxic tank) would not be located on active faults. The closest fault (Oak Ridge fault) would be approximately 0.5-mile north of the VWRf. The VWRf upgrades do not include any habitable structures, and would not put new residents at risk. Therefore, construction and operation of the plant upgrades would not be at risk of fault rupture. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed at Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public rights-of-way. The proposed pipeline and outfall would not be located on active faults. The new outfall would run parallel with Oak Ridge fault, which would be approximately 0.5-mile north of the proposed outfall. The outfall does not include any habitable structures, and would not put new residents at risk. Therefore, construction and operation of the outfall and associated pipeline would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed discharge pipeline to the Calleguas Salinity Management Pipeline (SMP) alignment would convey brine from the AWPf to the existing Calleguas SMP ocean outfall. The new pipeline would be constructed in public rights-of-way. As shown in Figure 3.6-2, the alignment would not pass through any active faults. Therefore, construction and operation of the SMP pipeline would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, and no impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

In the future, if additional VWRF tertiary-treated discharge in excess of the maximum environmentally protective diversion volume (MEPDV) becomes available, or is mandated for diversion to reuse by the responsible agencies with jurisdiction, then the AWPf would be expanded to produce up to an additional 1.2 million gallons a day (MGD) (1,400 acre-feet per year [AFY]) of product water. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. Refer to the Phase 1 analysis above for the potential impacts related to fault rupture at the proposed AWPf sites. Fault rupture impacts for construction and operation of desalination facilities at the proposed AWPf would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. Refer to the Phase 1 analysis above for the potential impacts related to fault rupture at the proposed AWPf sites. Fault rupture impacts for construction and operation of desalination facilities at the proposed AWPf would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is undetermined, and therefore could potentially be located within the vicinity of the Oak Ridge fault, which extends west into the ocean. As described above, all pipelines would adhere to standard engineering and construction practices and conform with the CBC and the ALA, which would help ensure structural resiliency should an earthquake occur within the project area.

Therefore, fault rupture impacts for construction and operation of ocean intake facilities would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ground Shaking

Impact GEO 3.6-2: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving strong seismic ground shaking.

Like all of Southern California, the project area is located in a seismically active region, and has the potential to experience strong ground shaking. As described in Section 3.6.2, there are four potentially active faults in the vicinity of the project area, including the Ventura-Foothill fault and McGrath fault, within the Alquist-Priolo Earthquake Fault Zone. A major earthquake associated with these faults could result in moderate to severe ground shaking in the project area and would be a potential hazard to the proposed projects. Damage to conveyance pipelines and aboveground facilities associated with the proposed projects could be expected as a result of ground shaking during a major seismic event. Where applicable, the proposed aboveground facilities would be constructed according to CBC requirements, which include seismic design stipulations designed to reduce effects from ground shaking on these structures and minimize structural damage. Further, proposed groundwater wells would be designed in accordance with the California Well Standards, which include well sealing and casing provisions to prevent corrosion and leaks that would also help secure the well in the event of ground shaking. In addition, proposed conveyance pipelines would be designed per applicable federal, state, and local engineering standards and specifications, which would ensure structural resiliency. With implementation of all CBC and related federal, state, and local standards for all components of the proposed projects, construction and operational impacts related to ground shaking would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ground Failure

Impact GEO 3.6-3: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

As shown in Figure 3.6-2, many of the Ventura Water Supply Projects' components are located on a liquefaction hazard zone. Proposed components, including the Harbor Boulevard site, a portion of the proposed groundwater wells, the treatment wetland, the proposed treatment

upgrades at the existing VWRP, and a portion of conveyance pipelines (including the discharge pipeline to the Calleguas SMP), are at risk of liquefaction due to the shallow groundwater, creating a potentially significant impact related to seismic-related ground failure. However, with implementation of **Mitigation Measure GEO-1**, as detailed below, a soils report and a geotechnical investigation report would be prepared for all facilities at risk of liquefaction. The geotechnical report would determine whether liquefaction risk exists, provide recommendations for building materials, and identify structural design requirements that shall be incorporated into the specifications for the proposed projects. The proposed reconfiguration of existing wetland/treatment ponds and new treatment wetlands would not include any aboveground or belowground facilities, and therefore would not likely be affected by liquefaction. With implementation of Mitigation Measure GEO-1, impacts would be less than significant related to ground failure during construction and operation of all project components.

Mitigation Measures

GEO-1: A soils report and geotechnical investigation report shall be prepared by a California licensed geotechnical engineer for all facilities with potential to encounter shallow groundwater or expansive soils. These reports shall evaluate various geotechnical characteristics, including existing liquefaction risk, expansive soils, and soil stability, and whether the operation of the proposed projects would exacerbate an existing risk of liquefaction or soil instability or create a new risk. The reports shall provide recommendations for facility design per these findings; these recommendations shall be incorporated into facility design.

Significance Determination: Less than Significant with Mitigation.

Landslides

Impact GEO 3.6-4: The proposed projects could result in a significant impact if they would expose people or structures to the risk of loss, injury, or death involving landslides.

Ventura Water Supply Projects

As shown in Figure 3.6-2, none of the Ventura Water Supply Projects components is located within a landslide hazard zone. The proposed projects would be installed in areas that are relatively flat and surrounded by development or agricultural land. In addition, a portion of the proposed projects, including groundwater wells and conveyance pipelines, would be installed belowground, with the existing grade restored following their installation. Therefore, these facilities would not be exposed to the adverse risks of landslides on the ground surface, nor would they add to the landslide risk of the area. Therefore, the potential for landslides is low, and impacts related to landslides would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Soil Erosion

Impact GEO 3.6-5: The proposed projects could result in a significant impact if they would result in substantial soil erosion or the loss of topsoil.

Phase 1

Advanced Water Purification Facility

Construction of the AWPf would require ground-disturbing activities such as grading and excavation. All three potential AWPf sites would disturb greater than an acre of ground surface, and would require coverage under the Construction General National Pollutant Discharge Elimination System (NPDES) Permit, which includes preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) (see Section 3.9, Hydrology and Water Quality). A SWPPP includes various best management practices (BMPs) designed to minimize the occurrence of erosion and sedimentation during construction. Therefore, potential erosion impacts during construction of the AWPf facilities would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would include construction of a conveyance system to transport raw groundwater to the AWPf from the proposed extraction wells, purified water from the AWPf to groundwater wells and/or the Bailey WCF or Saticoy WCF, and extracted groundwater from the groundwater wells to the Bailey WCF or Saticoy WCF or to the distribution system. Construction associated with the proposed conveyance system would require grading and excavation. Conveyance facilities would be installed underground primarily within previously disturbed areas and rights-of-way; thus, there would be no loss of topsoil. However, ground disturbance of conveyance pipelines could result in stormwater-driven or wind-driven soil erosion. Construction of these facilities would likely disturb greater than an acre of ground surface and would require preparation and implementation of a SWPPP. A SWPPP includes various BMPs designed to minimize the occurrence of erosion and sedimentation during construction. Therefore, potential erosion impacts during construction of conveyance facilities would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). Construction of the wells would require minor grading and drilling; however, the proposed wells would not likely disturb more than 1 acre, and thus would not be covered under the Construction General NPDES Permit. However, construction would be required to comply with **Mitigation Measure GEO-2**, which entails implementation of various BMPs, including erosion- and sedimentation-control BMPs on-site designed to prevent stormwater-driven and

wind-driven erosion and the movement of topsoil off site. Therefore, erosion would be minimized during groundwater well construction. Operation of the groundwater wells would not result in topsoil disturbance or erosion. Impacts would be less than significant with mitigation.

Mitigation Measures:

GEO-2: For construction sites less than 1 acre, the following types of BMPs shall be implemented during construction: (1) preservation of existing vegetation to the maximum extent practicable, (2) implementation of erosion control and sediment control best management practices, (3) implementation of waste management best management practices, and (4) good housekeeping. The California Stormwater Quality Association Best Management Practices Handbook shall be consulted for implementation instructions for the aforementioned BMPs. The contractor shall identify a construction monitor prior to construction. The construction monitor shall inspect the installation and ongoing maintenance of the BMPs for the duration of the construction activities.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Construction and reconfiguration of the wildlife/treatment ponds would require the placement of soil in order to bring the pond floors to approximately 3 feet from the surface. Material would be required to be stockpile for a short period of time while the ponds are being filled up. During the construction of the new treatment wetlands, large amounts of earth will be moved and stockpiled to be used at a later date to create berms and/or transported to the wildlife/treatment ponds as fill. Since stockpiles would likely include sediment in addition to debris and some aquatic material, **Mitigation Measure GEO-3** would require that a stockpile management BMP be implemented during the reconfiguration of the wildlife/treatment ponds and construction of the treatment wetlands to prevent erosion from occurring by wind or storm events. All stockpiled debris and aquatic material left unmoved for 14 days would be covered and secured with fiber rolls to prevent erosion from occurring during wind and storm events. With implementation of Mitigation Measure GEO-3, impacts related to soil erosion would be less than significant.

Mitigation Measures:

GEO-3: During operation, all inactive (unmoved for 14 days) stockpiles shall be covered and contained within temporary perimeter sediment barriers, such as berms, dikes, fiber rolls, or sandbag barriers.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

The upgrades would include replacing the aeration blowers and an existing gravity thickener and installation of a new anoxic tank within the existing VWRF. The treatment upgrades (anoxic tank) would likely not disturb more than 1 acre, and thus would not be covered under the Construction General NPDES Permit. However, construction would be required to comply with **Mitigation Measure GEO-2**. Therefore, erosion would be minimized during new tank construction. Operation of the treatment upgrades would not result in topsoil disturbance or erosion. Impacts would be less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measure GEO-2.

Significance Determination: Less than Significant with Mitigation.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed at Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public rights-of-way (see Figure 2-2). The proposed outfall may not disturb more than 1 acre, and would not be covered under the Construction General NPDES Permit. However, construction would be required to comply with **Mitigation Measure GEO-2**. Therefore, erosion would be minimized during construction of the outfall. Operation of the outfall would not result in topsoil disturbance or erosion. Impacts would be less than significant with mitigation.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed discharge pipeline to the Calleguas SMP would convey brine from the new AWPf to the existing Calleguas SMP ocean outfall. Construction of this pipeline would disturb greater than an acre of ground surface and would require coverage under the Construction General NPDES Permit through implementation of a SWPPP. BMPs would minimize the occurrence of erosion and sedimentation during construction. Therefore, compliance with the Construction General Permit and the implementation of **Mitigation Measure GEO-2** would reduce erosion impacts during construction of conveyance facilities to less than significant levels.

Mitigation Measures: Implement Mitigation Measure GEO-2.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. The expansion to the AWPf would not include any new impacts outside of the original construction footprint for the AWPf as described above. No ground disturbance is anticipated. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. The AWPf sites are sized to accommodate the future desalination treatment components if the desalination project is needed to supplement the city's water supply. The expansion to the AWPf to accommodate the desalination treatment trains would not include any

new impacts outside of the original construction footprint for the AWPf as described above. No ground disturbance is anticipated. No impact would occur.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is undetermined. However, construction would be required to comply with either **Mitigation Measure GEO-1** or **GEO-2**, depending on the amount of ground disturbance. Therefore, erosion would be minimized during construction of the ocean intake. Operation of the intake would not result in topsoil disturbance or erosion. Impacts would be less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measures GEO-1 and GEO-2.

Significance Determination: Less than Significant with Mitigation.

Unstable Geologic Unit

Impact GEO 3.6-6: The proposed projects could result in a significant impact if they would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the projects, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Landslide impacts, including lateral spreading, were addressed in Impact GEO-3.6-4, and liquefaction impacts were addressed in Impact GEO-3.6-3. The following analysis addresses impacts related to soil instability that results in subsidence or collapse.

The Ventura Water Quality Projects components would be located in an area of documented subsidence (County of Ventura 2013). As detailed above, subsidence is exacerbated by the extraction of groundwater. Construction and operation of the proposed AWPf, conveyance pipelines, treatment wetlands, VWRf treatment upgrade and concentrate discharge facilities would not involve the extraction or injection of groundwater.

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). Each well would have capacity to inject/extract between 1.2 and 2.2 MGD of purified water in the Oxnard Plain Basin. The wells would be completed to a depth of approximately 250 feet in the Oxnard Plain Basin. As part of this system, monitoring wells would be installed outside and within the groundwater wells cone of influence to comply with potable reuse permitting requirements and to monitor water quality in the groundwater basin. Monitoring of the groundwater levels would ensure that water extraction operations would not result in subsidence. As a result, subsidence is not anticipated to occur because the baseline groundwater levels would not decrease as a result of the proposed projects.

The potential construction of the proposed ocean desalination facility would be beneficial to the region, ensuring a drought-proof reliable water supply, supplementing the reliance on groundwater. Impacts related to subsidence would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Expansive Soil

Impact GEO 3.6-7: The proposed projects could result in a significant impact if they would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

As previously detailed, due to clay particles in the soil, a large portion of the city is located in a moderate expansive soil zone (City of Ventura 2005b). The project area includes zones of highly expansive soils, specifically in the southern portion of the city along the Santa Clara River. However, with implementation of **Mitigation Measure GEO-1**, as detailed above, a soils report and a geotechnical investigation report would be prepared for all facilities at risk of expansive soils. The geotechnical report will determine whether expansive soil exists, provide recommendations for materials, and identify structural design requirements that shall be incorporated into the specifications for the proposed projects. The proposed reconfiguration of existing wildlife/treatment ponds and new treatment wetlands would not include any aboveground or belowground facilities, and therefore would not likely be affected by expansive soils. With implementation of Mitigation Measure GEO-1, impacts would be less than significant related to expansive soil during construction and operation of all project components.

Mitigation Measures: Implement Mitigation Measure GEO-1.

Significance Determination: Less than Significant with Mitigation.

Septic Tank

Impact GEO 3.6-8: The proposed projects could result in a significant impact if they would have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The proposed projects would not include the construction or operation of septic tanks or alternative water disposal systems. Therefore, no impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.7 Greenhouse Gas Emissions

This section addresses the potential impacts of the proposed projects on greenhouse gas (GHG) emissions. The section includes a description of the environmental setting to establish baseline conditions for GHG emissions, a summary of the regulations related to GHG emissions, and an evaluation of the proposed projects' potential effects on GHG emissions.

3.7.1 Existing Environmental Setting

Regional Setting

The proposed projects are located in the Central South Coast Air Basin, which covers San Luis Obispo, Santa Barbara, and Ventura counties. The Ventura County Air Pollution Control District (VCAPCD) monitors and regulates the local air quality in Ventura County and manages the Air Quality Management Plan (AQMP). Air quality is affected by stationary sources (e.g., land use and development) and mobile sources (e.g., motor vehicles). Air quality at a given location is a function of several factors, including the quantity and types of pollutants emitted locally and regionally, and the dispersion rates of pollutants in the region. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The climate of the region is strongly influenced by its proximity to the Pacific Ocean. Airflow around the County plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

Global Climate Change – Greenhouse Gases

Global climate change can be measured by changes in wind patterns, storms, precipitation, and temperature. Scientific consensus has identified that human-related emissions of greenhouse gases (GHGs) above natural levels significantly contribute to global climate change. GHGs are emissions that trap heat in the atmosphere and regulate the Earth's temperature, and include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ground level ozone, and fluorinated gases, such as chlorofluorocarbons (CFCs), hydro chlorofluorocarbons (HCFCs), and halons. The potential impacts of climate change include severe weather patterns, flooding, reduced quality and availability of water, sea level rise, and beach erosion. Primary activities associated with GHG emissions include transportation, operation of utilities (e.g., power generation and transport), industrial activities, manufacturing, agriculture, and residential uses. End-use sector sources of GHG emissions in California are as follows: transportation (39 percent), industry (21 percent), electricity generation (16 percent), agriculture and forestry (8 percent), residential (6 percent), commercial (4 percent), recycling and waste (2 percent), and other (5 percent).¹

¹ California Air Resources Board, California Greenhouse Gas Emission Inventory – 2018 Edition. Available at: <https://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed November 2018.

Assembly Bill (AB) 32 is a California law that establishes a comprehensive program to reduce GHG emissions from all sources throughout the state. AB 32 requires the California Air Resources Board (CARB) to develop regulations and market mechanisms to reduce California's GHG emissions to 1990 levels by 2020, representing a 25 percent reduction statewide, with mandatory caps beginning in 2012 for significant emissions sources.²

3.7.2 Regulatory Framework

Federal

On December 7, 2009, the U.S. Environmental Protection Agency (USEPA) administrator made two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act (CAA). The USEPA adopted a Final Endangerment Finding for the six defined GHGs: CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA. The USEPA also adopted a Cause or Contribute Finding, in which the USEPA administrator found that GHG emissions from motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

On May 19, 2009, the president announced a national policy for fuel efficiency and emissions standards in the U.S. auto industry. The standards were jointly adopted by the USEPA and U.S. Department of Transportation (USDOT) in 2010 and apply to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy (CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO₂ per mile by model year 2016, based on USEPA calculation methods. In August 2012, standards were adopted for model year 2017 through 2025 passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.³

In September 2011, USEPA and the National Highway Traffic Safety Administration (NHTSA) developed a program designed to reduce fuel consumption (and GHG emissions by association) from medium- and heavy-duty vehicles. The Heavy Duty Vehicle Greenhouse Gas Regulation National Program was directed at model year 2014 to 2018 vehicles and is projected to reduce GHG emissions by approximately 270 million metric tons. In February 2014, the president directed the USEPA and NHTSA to extend the Heavy-Duty National Program beyond vehicle model year 2018, to further reduce fuel consumption through the application of advanced technologies. The USEPA and the NHTSA, in collaboration with CARB, issued a notice of

² Assembly Bill 32, California Air Resources Board; <http://arb.ca.gov/cc/ab32/ab32.htm> (accessed May 2018)

³ U.S. Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF>. Accessed November 2018.

proposed rulemaking in June 2015. Requirements of this program apply to heavy- and medium-duty trucks used during proposed construction activities.

Other specific GHG regulations that USEPA has adopted to date are as follows:

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule. This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO₂e emissions per year (USEPA 2013). Additionally, reporting of emissions is required for owners of SF₆- and PFC-insulated equipment when the total nameplate capacity of these insulating gases is above 17,280 pounds.

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. USEPA recently mandated to apply Prevention of Significant Deterioration (PSD) requirements to facilities whose stationary source CO₂e emissions exceed 75,000 tons per year (USEPA 2010).

The USEPA also recently released a proposed rule which would regulate GHG emissions from existing power plants across the nation. The proposed rule establishes state-by-state 2030 GHG goals.

State

In response to growing scientific and political concern regarding global climate change, in the last decade California has promulgated a series of executive orders, laws, and regulations aimed at reducing both the level of GHGs in the atmosphere and emissions of GHGs from commercial and private activities within the state.

California Air Resources Board

CARB is a part of the California Environmental Protection Agency (CalEPA) responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards, or CAAQs), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts. The SIP is required for the state to take over implementation of the federal CAA.

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (TACs) (Title 13 California Code of Regulations, Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a

necessary function, such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California. CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. Refer to Section 3.2, Air Quality, for additional details regarding these regulations. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

California Greenhouse Gas Reduction Targets

The governor announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels

In accordance with Executive Order S-3-05, the secretary of CalEPA is required to coordinate efforts of various agencies, which comprise the California Climate Action Team (CAT), in order to collectively and efficiently reduce GHGs. These agencies include CARB; the Secretary of the Business, Transportation, and Housing Agency; Department of Food and Agriculture; the Resources Agency; the California Energy Commission (CEC); and the California Public Utilities Commission (CPUC). The CAT provides periodic reports to the governor and legislature on the state of GHG reductions in the state as well as strategies for mitigating and adapting to climate change. The first CAT Report to the Governor and the Legislature in 2006 contained recommendations and strategies to help meet the targets in Executive Order S-3-05. The 2010 CAT Report, finalized in December 2010, expands on the policies in the 2006 assessment. The new information detailed in the CAT Report includes development of revised climate and sea-level projections using new information and tools that became available and an evaluation of climate change within the context of broader social changes, such as land use changes and demographic shifts.

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.

- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

As required by HSC Division 25.5, CARB adopted the Climate Change Scoping Plan in 2008 for achieving the maximum technologically feasible and cost-effective GHG emission reduction and approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. CARB has determined that the target, based on global warming potential (GWP) values from the International Panel on Climate Change (IPCC) Fourth Assessment Report (AR4), for the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 million metric tons of CO₂ equivalent (MMTCO₂e). The first update to the Scoping Plan was approved by CARB in May 2014 and built upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB updated the state's 2020 "business-as-usual" (BAU) emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's updated 2020 BAU emissions estimate using the GWP values from the IPCC AR4 is 509.4 MMTCO₂e. Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMTCO₂e would be 78.4 MMTCO₂e, or a reduction of GHG emissions by approximately 15.4 percent.

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities. CARB adopted the 2017 Climate Change Scoping Plan on December 14, 2017. The Scoping Plan Update outlines the strategies the state will implement to achieve the 2030 GHG reduction target, which build on the cap-and-trade regulation, the low carbon fuel standard, improved vehicle, truck and freight movement emissions standards, increasing renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet our energy needs. A summary of the GHG emissions reductions required under HSC Division 25.5 is provided in **Table 3.7-1**.

**TABLE 3.7-1
ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS REQUIRED BY HSC DIVISION 25.5**

Emissions Category	GHG Emissions (MMTCO₂e)
2008 Scoping Plan (IPCC SAR)	
2020 BAU Forecast (CARB 2008 Scoping Plan Estimate)	596
2020 Emissions Target Set by HSC Division 25.5 (i.e., 1990 Level)	427
Reduction below BAU Necessary to Achieve 1990 Levels by 2020	169 (28.4%) ^a
2011 Scoping Plan (GHG Estimates Updated in 2014 to Reflect IPCC AR4 GWPs)	
2020 BAU Forecast (CARB 2011 Scoping Plan Estimate)	509.4
2020 Emissions Target Set by HSC Division 25.5 (i.e., 1990 Level)	431
Reduction below BAU Necessary to Achieve 1990 Levels by 2020	78.4 (15.4%) ^b
Second Update to the Scoping Plan	
2030 BAU Forecast (CARB Second Update to Scoping Plan Estimate)	389
2030 Emissions Target Set by HSC Division 25.5 (i.e., 40% below 1990 Level)	260
Reduction below BAU Necessary to Achieve 40% below 1990 Level by 2030	129 (33.2%) ^c

^a $596 - 427 = 169 / 596 = 28.4\%$

^b $509.4 - 431 = 78.4 / 509.4 = 15.4\%$

^c $389 - 260 = 129 / 389 = 33.2\%$

SOURCE: California Air Resources Board, Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document (FED), Attachment D, August 19, 2011; California Air Resources Board, 2020 Business-as-Usual (BAU) Emissions Projection, 2014 Edition, 2018. Available at: <http://www.arb.ca.gov/cc/inventory/data/bau.htm>. Accessed November 2018; California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed November 2018.

Transportation Sector

In response to the transportation sector accounting for a large percentage of California's CO₂ emissions, AB 1493 (HSC Section 42823 and 43018.5), enacted on July 22, 2002, required CARB to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. As discussed previously, the USEPA and USDOT adopted federal standards for model year 2012 through 2016 light-duty vehicles and standards for model year 2017 through 2025 vehicles. These standards are slightly different from California's Pavley Phase I and Phase II standards, but the State of California has agreed not to contest these standards, in part due to the fact that while the national standard would achieve slightly less reductions in California, it would achieve greater reductions nationally and is stringent enough to meet state GHG emission reduction goals. In 2012, CARB adopted regulations that allow manufacturers to comply with the national standards to meet state law.

Energy Sector

In 1978, the CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would

result in fewer GHG emissions from residential and nonresidential buildings subject to the standards. The standards are updated periodically (typically every 3 years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. Part 11 of Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality.”⁴ Since 2011, the CALGreen Code has been mandatory for all new buildings constructed in the state, which establishes mandatory measures for new residential and non-residential buildings including energy efficiency, water conservation, material conservation, planning and design and overall environmental quality.⁵ The Title 24 and CALGreen Code standards were most recently updated in 2016 to include new mandatory measures for residential and nonresidential uses; the new measures took effect January 2017.⁶

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2, California's Renewables Portfolio Standard is an ambitious renewable energy standard. The Renewables Portfolio Standard requires that 33 percent of total retail sales of electricity be procured from eligible renewable sources by the end of 2020. In 2018, SB 100 further increased California's Renewables Portfolio Standard and requires retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and requires that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. Renewables Portfolio Standard requirements were conservatively excluded from emission calculations associated with electricity use. Although not directly applicable to the proposed project, this serves to illustrate the GHG regulatory framework.

SB 1368, signed by Governor Schwarzenegger in September 2006, required the CPUC to establish a GHG emission performance standard for baseload generation from investor-owned utilities. CPUC adopted a GHG Emissions Performance Standard in January 2007. The CEC adopted consistent regulations for implementing and enforcing SB 1368 for the state's publicly owned utilities in August 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

SB 97, enacted in 2007, directed the State Office of Planning and Research (OPR) to develop CEQA Guidelines “for the mitigation of GHG emissions or the effects of GHG emissions.” In

⁴ California Building Standards Commission, 2010 California Green Building Standards Code, 2010.

⁵ California Building Standards Commission, 2010 California Green Building Standards Code, 2010.

⁶ California Building Standards Commission, CALGreen (Part 11 of Title 24). Available <http://www.bsc.ca.gov/Home/CALGreen.aspx>.

December 2009, OPR adopted amendments to the CEQA Guidelines, Appendix G Environmental Checklist, which created a new resource section for GHG emissions and indicated criteria that may be used to establish significance of GHG emissions.

Regional

Ventura County Air Pollution Control District

The project site is located in the Central South Coast Air Basin, which covers San Luis Obispo, Santa Barbara, and Ventura counties. VCAPCD monitors and regulates the local air quality in Ventura County and manages the AQMP.

3.7.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to GHG emissions. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (refer to Impact GHG 3.7-1).
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases (refer to Impact GHG 3.7-2).

As noted above, the increased concentration of GHGs in the atmosphere has been linked to global warming, which can lead to climate change. Construction and operation of the proposed project would incrementally contribute to GHG emissions along with past, present and future activities. As such, impacts of GHG emissions are analyzed here on a cumulative basis.

The Appendix G threshold requires a determination of when GHG will have a “significant impact” on the environment. The City and the VCAPCD have not adopted or approved a threshold of significance for GHG emissions when evaluating discretionary projects under CEQA. Recognizing that “[e]ntities acting as lead agencies in the CEQA process are looking for guidance on how to adequately address the potential climate change impacts in meeting their CEQA obligations,” (White Paper at 1), the California Air Pollution Control Officers Association (CAPCOA) developed an analysis that was “intended to provide a common platform for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA.” (CAPCOA 2008) Its analysis was developed in coordination with CARB, OPR, and two environmental consulting firms. (CAPCOA 2008)

CAPCOA investigated a variety of analytical procedures and ranges of what would be considered significant for projects, and suggests a screening criteria threshold of 10,000 metric tons per year of CO₂e (MT/yr CO₂e) to be considered potentially significant. The 10,000 MT/yr CO₂e criteria is the GHG emissions level considered by the Market Advisory Committee for inclusion in a GHG cap-and-trade system in California. In a cap-and-trade system, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, industrial facilities, and other stationary source facilities) and declines over time, and facilities subject to the cap can trade permits to emit GHGs so long as the declining overall limit is not exceeded. CAPCOA's highest considered threshold was 50,000 MT/yr CO₂e, for large-scale construction projects.

As discussed above, the City and the VCAPCD have not adopted or approved a threshold of significance for GHG emissions when evaluating discretionary projects under CEQA. In the absence of an adopted quantitative threshold, the City has considered the CAPCOA guidance discussed above for evaluating the proposed projects. The proposed projects, which consist of a recycled water project that would divert tertiary-treated discharge from the Ventura Water Reclamation Facility (VWRF) for treatment at a new advanced water purification facility (AWPF) and additional water supply to meet the needs of planned growth, are characterized as an industrial project, which is similar to the types of facilities that the Market Advisory Committee considered for inclusion in a cap-and-trade system based on an emissions level of 10,000 MT/yr CO₂e as discussed in the CAPCOA guidance. Therefore, given the industrial nature of the proposed projects, the City has determined that for the proposed projects, the threshold option of 10,000 MT/yr CO₂e is appropriate.⁷

For each component of the proposed projects, GHG analyses were conducted for construction and operation, as described further in the following section.

A summary of the findings for each impact is presented in **Table 3.7-2**. The analyses below support these findings.

⁷ California Air Pollution Control Officers Association, CEQA & Climate Change, Table 1, page 18, January 2008. Available at: <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>. Accessed May 2018.

**TABLE 3.7-2
SUMMARY OF GREENHOUSE GASES EMISSION IMPACT DETERMINATIONS**

Impacts	3.7-1 Generate GHG	3.7-2 Conflict with Plans
Phase 1		
Advanced Water Purification Facility	LTS	LTS
Water Conveyance System	LTS	LTS
Groundwater Wells	LTS	LTS
Wildlife/Treatment Wetlands	NI	LTS
VWRF Treatment Upgrade	LTS	LTS
Concentrate Discharge Facility	LTS	LTS
Phase 2		
AWPF Expansion	LTS	LTS
Ocean Desalination	LTS	LTS

3.7.4 Impacts and Mitigation Measures

Greenhouse Gas Emissions

Impact GHG 3.7-1: The proposed projects could have a significant impact if they would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Phase 1

Construction-Related Impacts

Construction emissions represent an episodic, temporary source of GHG emissions. Emissions are generally associated with the operation of construction equipment and the disposal of construction waste. To be consistent with the methodology for calculating criteria pollutants from construction activities, only GHG emissions from on-site construction activities and off-site hauling and construction worker commuting are considered as project-generated. As explained by CAPCOA in its 2008 white paper, the information needed to characterize GHG emissions from manufacture, transport, and end-of-life of construction materials would be speculative at the CEQA analysis level. CEQA does not require an evaluation of speculative impacts (CEQA Guidelines Section 15145). Therefore, the construction analysis does not consider such GHG emissions, but does consider non-speculative on-site construction activities and off-site hauling and construction worker trips.

All GHG emissions are presented on an annual basis. Emissions of GHGs were calculated using CalEEMod 2016.3.2 for construction of the project. CalEEMod is a statewide emissions computer model designed to provide a uniform platform for government agencies, planners, and environmental professionals to quantify criteria pollutant and GHG emissions from a variety of

projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local regulations and conditions. Many California air districts recommend that construction emissions associated with a project be amortized over the “life of the project” (typically assumed to be 30 years) and added to the operational emissions in order to include these emissions as part of a project’s amortized lifetime total emissions so that GHG reduction measures would address construction GHG emissions as part of the operational GHG reduction strategies.⁸ Therefore, construction GHG emissions have been amortized over a 30-year period and have been added to the annual operational GHG emissions of the project.

Construction of the proposed projects would generate GHG emissions from a variety of sources, such as construction equipment activity, importing and exporting material, vendor deliveries, and workers commuting to and from the project site. GHG emissions would be generated during construction of the proposed project components in the project area. **Table 3.7-3** presents the summary of the estimated construction GHG emissions of all the Phase 1 components. The data sheets in Appendix 2 provide detailed information about the calculation of GHG emissions.

Advanced Water Purification Facility

Construction of the AWPf is estimated to occur from June 2020 to December 2023. The Proposed Project Sites for the AWPf are currently vacant and would not require any demolition activities. Construction of the AWPf would consist of site clearing and grading, excavation, building construction, equipment installation, and site completion activities. Construction equipment could include the following: excavators, graders, backhoe, bulldozer, loader, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck. As shown in Table 3.7-3, construction of the proposed project would result in a total of 5,258 MT of CO₂e. Amortized over 30 years, the total is estimated to be 175 MT of CO₂e.

**TABLE 3.7-3
CONSTRUCTION GHG EMISSIONS – ADVANCED WATER PURIFICATION FACILITY**

Year	CO₂e (MT/year)
2020	543
2021	756
2022	2,005
2023	1,955
Total CO₂e	5,258
Amortized over 30 years	175

⁸ South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, 2008. Available at: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf?sfvrsn=2). Accessed November 2018.

Water Conveyance System

The project would include a system of conveyance pipelines to transfer water through the service area. The system would include pipelines from the extraction wells to the AWPf, from the VWRf to the AWPf, from the AWPf to the injection wells for indirect potable reuse, and from the AWPf and wells to the Baily Water Conditioning Facility (WCF) and Saticoy WCF. Construction of the water conveyance system is estimated to occur from January 2020 to March 2023. As shown in **Table 3.7-4**, construction of the proposed project would result in a total of 6,198 MT of CO₂e. Amortized over 30 years the total is estimated to be 207 MT of CO₂e.

**TABLE 3.7-4
CONSTRUCTION GHG EMISSIONS – WATER CONVEYANCE SYSTEM**

Year	CO ₂ e (MT/year)
2020	1,495
2021	2,115
2022	2,113
2023	475
Total CO₂e	6,198
Amortized over 30 years	207

Groundwater Aquifer Storage and Recovery Wells

Depending on the chosen well site, construction of the proposed wells would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, well drilling, installation of well casing, gravel packing and finishing with a cement seal. Construction of the groundwater aquifer storage and recovery (ASR) wells is estimated to occur from January 2021 to December 2023. Construction equipment would likely include an auger rig, drill rig, small crane, welder, pipe trailer, forklift, generator, circulation pits, Baker tanks, and backhoe. As shown in **Table 3.7-5**, construction of the proposed project would result in a total of 1,410 MT of CO₂e. Amortized over 30 years the total is estimated to be 47 MT of CO₂e.

**TABLE 3.7-5
CONSTRUCTION GHG EMISSIONS – GROUNDWATER AQUIFER STORAGE AND RECOVERY WELLS**

Year	CO ₂ e (MT/year)
2021	473
2022	472
2023	466
Total CO₂e	1,410
Amortized over 30 years	47

Natural Treatment Wetlands

Natural treatment wetlands would be constructed to provide additional treatment to the remaining tertiary effluent prior to its discharge to the SCRE. Construction of the wetlands is estimated to occur from January 2021 to February 2025. This component may also require reconfiguration and repurposing of some or all of the existing wildlife ponds. As shown in **Table 3.7-6**, construction of the proposed project would result in a total of 4,239 MT of CO₂e. Amortized over 30 years the total is estimated to be 141 MT of CO₂e.

**TABLE 3.7-6
CONSTRUCTION GHG EMISSIONS – NATURAL TREATMENT WETLANDS**

Year	CO₂e (MT/year)
2021	897
2022	1,046
2023	1,037
2024	1,134
2025	125
Total CO₂e	4,239
Amortized over 30 years	141

Concentrate Discharge Facility

New Outfall

Construction of a new ocean outfall includes a pipeline from the AWPF to the ocean where the concentrate would be discharged through an outfall. The pipeline would be constructed utilizing directional drilling techniques to avoid impacts to sensitive biological areas.

Marine vessels would be used to transport workers and materials for the offshore construction activities. Average operating hours for the use of these marine vessels is assumed to be 10–12 hours per day for 9 months (100 days in year 1 and 100 days in year 2). Guidance from CARB to estimate emissions from a commercial harbor craft engine were utilized to determine the approximate amount of CO₂e generated from marine vessels transporting workers and construction material to and from the shore.⁹ It was estimated that approximately 32 MT of CO₂e would be generated from marine vessels during construction. Amortized over 30 years, the total is estimated to be 1.1 MT of CO₂e.

⁹ California Air Resources Board, Technical Support Document for Rulemaking to Consider the Adoption of Proposed Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline, Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, 2012. Available at: <https://www.arb.ca.gov/msei/chc-appendix-b-emission-estimates-ver02-27-2012.pdf>. Accessed November 2018.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

Construction of the pipeline to the Calleguas salinity management pipeline would involve trenching using a conventional cut and cover technique or directional drilling techniques where necessary to avoid impacts to heavy traveled roadways and sensitive biological areas. Trenches would be backfilled at the end of each work day or temporarily closed by covering with steel trench plates.

Trenchless construction methods would be employed to install pipelines under the Santa Clara River, sensitive drainages, and large intersections. Trenchless installation could include either directional drilling or jack and bore methods. The nearest noise sensitive receptors would be located approximately 25 feet from construction of the pipeline since the pipeline would be constructed in public right-of-way to the maximum extent practicable. Construction of the concentrate discharge facility is estimated to occur from January 2021 to February 2023. Complete road closures are not anticipated for installation of the conveyance pipeline.

As shown in **Table 3.7-7**, construction of the proposed project would result in a total of 3,078 MT of CO₂e. Amortized over 30 years the total is estimated to be 103 MT of CO₂e.

TABLE 3.7-7
CONSTRUCTION GHG EMISSIONS – CONCENTRATE DISCHARGE FACILITY

Year	CO₂e (MT/year)
2021	1,396
2022	1,467
2023	215
Total CO₂e	3,078
Amortized over 30 years	103

Phase 2

AWPF Expansion

The AWPf expansion would be within the same footprint on the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added.

Ocean Desalination

The desalination treatment components would be within the same footprint on the AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPf facility. Co-location of these two facilities increases efficiencies in operations and maintenance. Planning, permitting, design, and construction of the ocean intake and concentrate discharge system would require approximately 10 to 15 years, and may occur in parallel with ocean water desalination facility.

Installation of the intake screens (i.e., if a subsurface intake is determined not feasible) and discharge diffusers requires that barges, support vessels, equipment, and crew be mobilized offshore of the VWRP. Construction operations include anchoring, dredging, erosion control measures, and pile driving. Both the intake and the outfall would be constructed in accordance with Ocean Plan requirements.

The desalination treatment components would include construction at the AWP for the new treatment equipment and a new ocean intake, similar to the outfall. **Table 3.7-8** provides projected CO₂e emissions resulting from excavating/trenching and drilling.

As shown in Table 3.7-8, construction of the proposed project would result in a total of 1,893 MT of CO₂e. Amortized over 30 years, the total is estimated to be 63 MT of CO₂e.

TABLE 3.7-8
CONSTRUCTION GHG EMISSIONS – OCEAN DESALINATION

Year	CO₂e (MT/year)
2024	746
2025	1,148
Total CO₂e	1,893
Amortized over 30 years	63

Phase 1

Operational Impacts

Phase 1 components of the proposed projects would include diversion of the tertiary treated flows to a new AWP to produce highly purified water for groundwater augmentation or potable reuse, providing a drought resilient water supply source to the city. Associated facilities of the Phase 1 component include a water conveyance system, ASR wells, a concentrate discharge system, and reconfigured and potentially new freshwater wildlife/treatment wetlands for any remaining discharges. The operation of the proposed project would generate approximately 23 vehicle trips per day from employee commuter travel and vendor and chemical truck deliveries. Furthermore, the operation of all Phase 1 components will utilize approximately 21,284,346 kilowatt-hours (KW/hr) of electricity per year and 14.428 thousand British thermal units (KBTU) of natural gas per year. The operation of all the Phase 1 components and facilities will require approximately 256,000 gallons of water to be used and dispensed to the sewer. Lastly, the operation of all Phase 1 components will result in approximately 12 tons of solid waste discarded to local landfills.

The project's operational CO₂e emissions associated with the usage of on-road motor vehicles, electricity, natural gas, and water and generation of solid waste and wastewater have been calculated with CalEEMod. These results are presented below in **Table 3.7-9**. As shown, the

GHG emissions generated from the construction and operation of the project would be approximately 4,497 MT of CO₂e, which would be under 10,000 MT of CO₂e per year.

**TABLE 3.7-9
PHASE 1 PROJECT OPERATIONAL GHG EMISSIONS**

Year	CO₂e (MT/year)
Area	0
Energy	3,800
Mobile	15
Waste	6
Water	1
Total Operation CO₂e	3,822
AWPF Construction Emissions	175
Water Conveyance System Construction Emissions	207
Groundwater Well Construction Emissions	47
Wildlife/Treatment Wetlands Construction Emissions	141
Concentrate Discharge Facility Construction Emissions	103
Marine Vessels	1.1
Total Operation and Construction Emissions	4,497

As discussed above, the project's total construction and operational GHG emissions would not exceed the CAPCOA 10,000 MT of CO₂e per year threshold and through required implementation of the 2016 Title 24 standards, which establishes required building energy efficiency requirements for reduced consumption of electricity, natural gas, and other fuels from buildings subject to the standards (refer to discussion in subsection 3.7.2, Regulatory Framework – State).

Therefore, based on the discussion above, the project's generation of GHG emissions would not be considered cumulatively considerable because of the scope of the emissions (i.e., the project would not exceed the 10,000 MT of CO₂e per year threshold) and because the project would not conflict with an applicable plan, policy or regulation for the purposes of reducing the emissions of greenhouse gasses. Therefore, the project's cumulative impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

Operational Impacts

The operation of all Phase 2 components under the AWP Expansion option would utilize approximately 4,600,000 KW/hr of electricity per year and under the Ocean Desalination option would utilize 7,600,000 KW/hr. The operation of all the Phase 1 and 2 components and facilities would utilize 14.428 KBTU of natural gas per year under both Phase 2 options and require approximately 322,689 gallons of water to be used and dispensed to the sewer. Lastly, the operation of all components would result in approximately 12 tons of solid waste discarded to local landfills.

The projects' operational CO₂e emissions associated with the usage of on-road motor vehicles, electricity, natural gas, water, and generation of solid waste and wastewater have been calculated with CalEEMod. These results are presented below in **Table 3.7-10**. As shown, the GHG emissions generated from the construction and operation of Phase 2 of the projects would be approximately 978 MT of CO₂e under the AWP Expansion option and 1,500 MT of CO₂e under the Ocean Desalination option, which, combined with the emissions generated from the construction and operation of Phase 1, would be 5,475 MT of CO₂e and 5,997 MT of CO₂e, respectively, which would both be below the CAPCOA threshold of 10,000 MT of CO₂e per year.

TABLE 3.7-10
PHASE 1+2 PROJECT OPERATIONAL GHG EMISSIONS

Year	Phase 2 Option	
	AWPF Expansion (CO ₂ e (MT/year)	Ocean Desalination (CO ₂ e (MT/year)
Phase 2 Operational CO₂e Emissions		
Area	0	0
Energy	892	1,414
Mobile	6	15
Waste	1	6
Water	1	1
Total Phase 2 Operation CO₂e	915	1,437
Phase 2 - Ocean Desalination Construction Emissions	63	63
Total Phase 2 Operation and Construction Emissions	978	1,500
Total Phase 1 Operation and Construction Emissions	4,497	4,497
Total Phase 1 and Phase 2 Operation and Construction Emissions	5,475	5,997

As discussed above, the proposed projects' total construction and operational GHG emissions would not exceed the CAPCOA threshold. Through required implementation of the 2016 Title 24 standards, the proposed projects would be consistent with local and State-wide goals and policies

aimed at reducing the generation of GHGs, including CARB's AB 32 Scoping Plan aimed at achieving 1990 GHG emission levels by 2020.

Therefore, based on the discussion above, the proposed projects' generation of GHG emissions would not be considered cumulatively considerable because of the scope of the emissions (i.e., the proposed projects would not exceed the 10,000 MT of CO₂e per year threshold) and because the proposed projects would not conflict with an applicable plan, policy or regulation for the purposes of reducing the emissions of greenhouse gasses. Therefore, the proposed projects' cumulative impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Greenhouse Gas Emissions Plans

Impact GHG 3.7-2: The proposed projects could have a significant impact if they would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Phase 1

As discussed in Impact 3.7-1, the GHG emissions generated by the construction and operation of the proposed projects would not exceed CAPCOA's recommended criterion of 10,000 MT CO₂e per year. The primary source of GHG emissions would be construction, which would be temporary in nature. During construction, contractors would be required to be in compliance with regulations including the USEPA Heavy Duty Vehicle Greenhouse Gas Regulation, CARB ATCM that limits heavy-duty diesel motor vehicle idling (as required by Mitigation Measure AQ-2; refer to Section 3.3, Air Quality, for additional details), and the low carbon fuel standard. Additionally, as the program is not a land use project, GHG emissions associated with mobile sources would only occur from periodic vehicle trips by workers for inspection and maintenance purposes, which would not generate substantial emissions. Emissions from maintenance would include electricity demand. Electricity demand from the upgraded facilities would be increased as compared to current electricity demand levels, but would represent a nominal increase on regional energy consumption and reasonably foreseeable electricity supplies would be expected to meet the project's electricity demand, and operation of the facilities would not result in the need to construct new energy facilities or expand existing facilities (see Section 3.19, Utilities, Service, Energy, for additional details). In addition, electric utility providers would be required to comply with the state's Renewables Portfolio Standard. Consequently, the implementation of the proposed projects would not generate substantial amounts of GHG emissions that would hinder the state's ability to achieve the goal under HSC Division 25.5 of achieving 1990 levels of GHG emissions by 2020.

Through the 2017 Scoping Plan Update, CARB is implementing a variety of statewide programs to reduce GHG emissions that will contribute to meeting reduction goals of AB 32, SB 32, and Executive Order S-3-05. These and other efforts would reduce emissions related to energy

generation and therefore would reduce emissions from all activities that use energy, including the Projects. Thus, it is reasonable to expect that project GHG emissions would decline with implementation of the regulatory initiatives identified by CARB in the Scoping Plan (including the 2014 and 2017 updates) as well as other technological innovations.^{10,11,12} The 2017 Scoping Plan Update recognizes that AB 32 and SB 32 establish an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target. The Scoping Plan “identifies how the State can reach our 2030 climate target to reduce greenhouse gas (GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.”¹³ The regulations, programs, and other mechanisms outlined by the Scoping Plan for reducing GHG emissions in California would serve to reduce the Project’s post-2020 emissions level to the extent applicable by law, such as transitioning the energy sector toward zero carbon.

In recognizing the close ties between water use reduction and energy-efficient water treatment and conveyance and energy/GHG reduction, the Scoping Plan points to data showing that the greatest potential for water-related energy savings resides with water end users. However, the 2017 Scoping Plan Update does not specify GHG reductions needed from the water sector to meet the goals of AB 32 and SB 32, recognizing that the energy intensity of water varies greatly depending on the geography, water source, and end use, and that “(a)s the energy sector is decarbonized through measures such as increased renewable energy and improved efficiency, energy intensities will also be reduced.”¹⁴ With mandated GHG reductions by utility providers (SB 350) where electric utility providers would be required to comply with the state’s Renewables Portfolio Standard, the projects would be in line with the 2017 Scoping Plan Update strategies to increase water-related energy savings, as the projects would maximize available recycled water for potable reuse by taking VWRP tertiary-treated flows and/or low-quality groundwater to a new AWPf to produce highly purified water, while operating on energy that complies with state’s Renewables Portfolio Standard.

Furthermore, the proposed projects would not conflict with or impede the future statewide GHG emission reductions goals. CARB has outlined a number of potential strategies for achieving the 2030 reduction target of 40 percent below 1990 levels. These potential strategies include renewable resources for half of the state’s electricity by 2030, reducing petroleum use in cars and trucks, and reducing the carbon content of transportation fuels. The proposed projects would comply with these future regulations, as promulgated by the USEPA, CARB, CEC, or other agencies. As a result, the proposed projects would be expected to exhibit a declining GHG emissions trajectory, in line with future state GHG reductions goals codified in HSC Division 25.5 for 2030. As a result, this impact would be less than significant.

¹⁰ California Air Resources Board, Climate Change Proposed Scoping Plan: A Framework for Change, adopted December 2008.

¹¹ California Air Resources Board, First Update to the Climate Change Scoping Plan, May 2014.

¹² California Air Resources Board, California’s 2017 Climate Change Scoping Plan, November, 2017.

¹³ California Air Resources Board, California’s 2017 Climate Change Scoping Plan, November, 2017.

¹⁴ California Air Resources Board, California’s 2017 Climate Change Scoping Plan, November, 2017.

The 2017 Scoping Plan Update describes how the state is currently implementing several targeted, agricultural, urban, and industrial-based water conservation, recycling, and water use efficiency programs as part of an integrated water management effort that will help achieve GHG reductions through reduced energy demand within the water sector. The 2017 Scoping Plan Update also notes that while it is important for every sector to contribute to the state's climate goals, the right to "safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes" as outlined in AB 685, also known as the "human right to water" bill, should take precedence over achieving GHG emission reductions from water sector activities where a potential conflict exists.¹⁵ This is consistent with a 2014 letter sent by CARB Chairman Mary Nichols to the Association of California Water Agencies, clarifying the intent of the 2014 Scoping Plan Update with respect to water reliability and diversification. Ms. Nichols indicated, "[a]lthough the Update and the Water Action Plan emphasize the importance of conservation and water use efficiency for sustaining our water sources, it also recognizes the importance of local agencies developing new water supplies. We acknowledge that local water agencies must balance many factors, including supply diversification, to ensure a reliable water supply. As noted by the Board, a one-size fits-all approach for the water sector would not be appropriate for California Water utilities facing a wide variety of conditions."¹⁶ The projects would therefore be consistent with AB 685, as objectives of the projects include augmenting local water supply in an environmentally responsible and cost-efficient manner, providing a drought- and disaster-resilient water supply, and protecting maintaining, and improving municipal groundwater supply quality within the service area.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

The subsequent phases would be expected to comply with applicable construction and operational GHG regulations as discussed under the project-level analysis above. Therefore, implementation of the subsequent phases of the proposed projects would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

¹⁵ California Air Resources Board, California's 2017 Climate Change Scoping Plan, November, 2017.

¹⁶ California Air Resources Board, First Update to the Climate Change Scoping Plan, May 2014.

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Ventura County Air Pollution Control District (VCAPCD)
Ambient Air Monitoring Network Plan, 2018.
Ventura County Air Quality Assessment Guidelines (October 2003)

3.8 Hazards and Hazardous Materials

This section addresses the potential impacts of proposed projects to hazards and hazardous materials. The section includes a description of the environmental setting to establish baseline conditions for hazards and hazardous materials, a summary of the regulations related to hazards and hazardous materials, and an evaluation of the projects' potential effects on hazards and hazardous materials.

3.8.1 Existing Environmental Setting

Hazardous Materials Sites

A search of hazardous materials sites was performed using the State Water Resources Control Board's (SWRCB) GeoTracker and EnviroStor databases to identify potential contaminated sites in the proposed projects area. Closed sites and sites located down gradient of the project area are not discussed because those sites would not have the potential to affect the project area. Site closure is achieved when remaining contamination meets a risk or cleanup threshold determined not to pose a threat to human health or the environment (USEPA 2018). **Table 3.8-1** shows the active hazardous material sites in the vicinity of the project components.

Schools

There are 14 schools within 0.25 mile of the proposed project components, as detailed in **Table 3.8-2** below.

Airports

The Oxnard Airport is the public airport located nearest to the proposed project. The Oxnard Airport is located approximately 1 mile from the proposed discharge pipeline to the Calleguas Salinity Management Pipeline (SMP) alignment. The proposed discharge pipeline to the Calleguas SMP alignment is located within the Oxnard Airport Outer Safety Zone and the Height Restriction Zone.

The Point Mugu Naval Air Station is the nearest private airstrip to the proposed projects. The Point Mugu Naval Air Station is located approximately 4 miles south of the nearest proposed facility (the proposed discharge pipeline to the Calleguas SMP alignment). According to the Airport Land Use Commission (ALUC) Airport Comprehensive Land Use Plan (ACLUP), the proposed projects are not located within the Point Mugu Naval Air Station safety zones.

Wildfires

All of California is subject to some degree of fire hazard, but specific features make some areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) establishes fire hazard severity zones throughout the state that are determined based on factors that influence fire likelihood and fire behavior. Many factors are considered including fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather (CAL FIRE 2007).

**TABLE 3.8-1
HAZARDOUS MATERIALS SITES NEAR THE PROJECT COMPONENTS**

Hazardous Materials Site	Type of Site	Distance from Phase 1 Project Area	Potential Contaminants	Potential Media of Concern	Cleanup Status/Notes
Kalgard Facility 4476 Dupont Court Ventura, CA	Evaluation	300 feet east of the proposed pipeline within Telephone Road, and adjacent to the pipeline within the railroad right of way	None specified	None specified	None specified. The database also listed 4476 Dupont Court as completed, case closed as of January 2006.
Oxnard Dunes Subdivision Harbor Boulevard Oxnard, CA 93030	Cleanup Program Site	230 feet east of the proposed discharge pipeline to the Calleguas SMP alignment within North Harbor Boulevard	None specified	None specified	Open - Inactive
Southern California Edison Mandalay Generating Station 373 North Harbor Boulevard Oxnard, CA 93030	Corrective Action	200 feet west of the proposed discharge pipeline to the Calleguas SMP alignment within North Harbor Boulevard	Polychlorinated biphenyls, Vanadium and compounds	Other groundwater affected (uses other than drinking water), soil	Active
North Shore at Mandalay Bay Harbor Boulevard West Fifth Street Oxnard, CA 93035	Voluntary Cleanup	Adjacent and east of the proposed discharge pipeline to the Calleguas SMP alignment within North Harbor Boulevard	Benzene, dioxin (as 2, 3, 7, 8-TCCDD TEQ), petroleum, polychlorinated biphenyls, polynuclear aromatic hydrocarbons	Other groundwater affected (uses other than drinking water), soil	Active
Former Pneumo Abex Aerospace Facility 3151 West 5th Street Oxnard, CA 93030	Cleanup Program Site	Adjacent to the proposed discharge pipeline to the Calleguas SMP alignment within 5th Street	Volatile organic compounds	Other groundwater affected (uses other than drinking water), soil, soil vapor	Open – Assessment and Interim Remedial Action
Grog & Grocery Market 1050 Ventura Road Oxnard CA 93030	LUST Cleanup Site	Adjacent to and east of the proposed discharge pipeline to the Calleguas SMP alignment within South Ventura Road	Gasoline	Other groundwater affected (uses other than drinking water)	Open – Eligible for closure as of June 2015

SOURCE: DTSC 2018b

Wildland fire protection in California is the responsibility of either the state, local, or the federal government. State responsibility area (SRA) is a legal term defining the area where the state has financial responsibility for wildland fire protection. Local responsibility areas (LRAs) include incorporated cities, cultivated agriculture lands, and portions of the desert. LRA fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government (CAL FIRE 2018). According to CAL FIRE's Very High Fire Hazard Severity Zones (VHFHSZ) map for Ventura County, the proposed projects are not located within VHFHSZs (CAL FIRE 2010).

TABLE 3.8-2
SCHOOLS WITHIN 0.25 MILE OF THE PROPOSED PROJECT AREA

No.	School	Address	Proposed Facilities within 0.25 Mile
1	Las Posas Children's Center	4435 McGrath Street #308, Ventura CA 93003	AWPF Transport Street Site
2	TDC (Adult Education)	5200 Valentine Road, Ventura CA 93003	Water Conveyance System
3	Temple Christian Elementary School	5353 Walker Street, Ventura CA 93003	Water Conveyance System
4	Montalvo Elementary School	2050 Grand Avenue, Ventura CA 93003	Water Conveyance System
5	Portola Elementary School	6700 Eagle Street, Ventura CA 93003	Water Conveyance System
6	Mound Elementary School	455 South Hill Road, Ventura CA 93003	Water Conveyance System
7	Balboa Middle School	247 South Hill Road, Ventura CA 93003	Water Conveyance System
8	Poinsettia Elementary School	350 North Victoria Avenue, Ventura CA 93003	Water Conveyance System
9	Junipero Serra Elementary School	8880 Halifax Street, Ventura CA 93004	Water Conveyance System
10	Ventura Children's Learning Center	1110 S Petit Avenue, Ventura CA 93004	Water Conveyance System
11	Saticoy Elementary School/Academy of Technology and Leadership at Saticoy	700 Jazmin Avenue, Ventura CA 93004	Water Conveyance System
12	Pierpont Elementary School	1254 Marthas Vineyard Court, Ventura, CA 93001	Outfall
13	Juan Lagunas Soria Elementary School	3101 Dunkirk Drive, Oxnard CA 93035	The discharge pipeline to the Calleguas SMP
14	McKinna Elementary School	1611 South J Street, Oxnard CA 93033	The discharge pipeline to the Calleguas SMP

Source: ESA, 2018

3.8.2 Regulatory Framework

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. Sections 6901–6987) was enacted in 1976 and gave the U.S. Environmental Protection Agency (USEPA) the authority to control hazardous waste from “cradle to grave,” which includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The federal Hazardous and Solid Waste Amendments (HSWA) were added to RCRA in 1984 and focused on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law

include increased USEPA enforcement authority, more stringent hazardous waste management standards, and a comprehensive underground storage tank program (USEPA 2017a).

Toxic Substance Control Act

The Toxic Substances Control Act of 1976 (TSCA) provides the USEPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, importation, use, and disposal of specific chemicals, including polychlorinated biphenyls (PCBs). Under TSCA, the USEPA has the ability to track the 83,000 industrial chemicals currently produced or imported in the United States and can ban the manufacture and import of those chemicals that pose an unreasonable risk (USEPA 2017b). The Frank R. Lautenberg Chemical Safety for the 21st Century Act was signed into law on June 22, 2016, amending the TSCA. The act included mandatory requirements for USEPA to evaluate existing chemicals with clear and enforceable deadlines and increased public transparency for chemical information (USEPA 2017c).

Hazardous Materials Transportation Act and Hazardous Materials Transportation Uniform Safety Act

The Hazardous Materials Transportation Act of 1975 (HMTA) allowed the Secretary of Transportation to designate as hazardous material any “particular quantity or form” of a material that “may pose an unreasonable risk to health and safety or property.” The HMTA is enforced by compliance orders, civil penalties, and injunctive relief (OSHA 2018a).

The Hazardous Materials Transportation Uniform Safety Act was passed in 1990 and clarified conflicting federal, state, and local regulations. The act required the Secretary of Transportation to promulgate regulations for the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The secretary also retains authority to designate materials as hazardous when they pose unreasonable risks to health, safety, or property (OSHA 2018a).

Occupational Safety and Health Administration Worker Safety Requirements

The Occupational Safety and Health Administration (OSHA) is the federal agency responsible for ensuring worker safety. The federal regulations for worker safety are contained in Title 29 of the Code of Federal Regulations (CFR), as authorized in the Occupational Safety and Health Act of 1970. These regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling (OSHA 2018b). Specifically, CFR Section 1910.120 is titled “Hazardous waste operations and emergency response” and covers cleanup operations involving hazardous substances, operations involving hazardous substances, and emergency response operations for releases or substantial threats of releases of hazardous substances (OSHA 2018c).

Marine Safety Manual

The U.S. Congress established the U.S. Coast Guard with roles in maritime homeland security, maritime law enforcement, search and rescue, marine environmental protection, the maintenance of river, and intracoastal and offshore aids to navigation. Marine safety is one of its core missions, which includes inspecting commercial vessels, responding to pollution, investigating marine casualties and merchant mariners, managing waterways, and licensing merchant mariners.

The U.S. Coast Guard implements and enforces the Marine Safety Manual, which includes procedures and performance standards regarding commercial marine vessels, marine pollution prevention, and navigational safety.

State

California Code of Regulations

The California Code of Regulations (CCR) is the official compilation and publication of the regulations adopted, amended or repealed by state agencies pursuant to the Administrative Procedure Act. Properly adopted regulations that have been filed with the Secretary of State have the force of law. The CCR is compiled into titles and organized into divisions containing the regulations of state agencies. Many of the regulations that pertain to hazardous materials are found in Title 22 (Social Security) Divisions 4 (Environmental Health) and 4.5 (Environmental Health Standards for the Management of Hazardous Waste).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In 1994, the legislature created a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program to consolidate and coordinate the activities of six separate hazardous materials programs under one agency, a Certified Unified Program Agency (CUPA). The intent has been to simplify the hazardous materials regulatory environment and provide a single point of contact for businesses to address inspection, permitting, billing, and enforcement issues. The Ventura County Resource Management Agency is designated as the CUPA for Ventura County where the projects are located.

Department of Toxic Substance Control

Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Sections 25100, et seq., the California Environmental Protection Agency (CalEPA), the state Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as USEPA has determined the state program is at least as stringent as federal RCRA requirements. California's hazardous waste program has been federally approved. Thus, in California, DTSC enforces hazardous waste regulatory requirements. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

DTSC is also the administering agency for the California Hazardous Substance Account Act, California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 et seq., also known as the state Superfund law, providing for the investigation and remediation of hazardous substances pursuant to state law.

DTSC maintains a Hazardous Waste and Substances Site List for site cleanup. This list is commonly referred to as the Cortese List. Government Code Section 65962.5 requires CalEPA to

update the Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

California Accidental Release Prevention Program

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the state Emergency Management Agency (EMA), which coordinates the responses of other agencies, including CalEPA, California Highway Patrol, the Department of Fish and Wildlife, the Regional Water Quality Control Board, and the local fire department.

EMA is also the state administering agency for the California Accidental Release Prevention Program and California's Hazardous Materials Release, Response and Inventory Law. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of and, in the event that such materials are accidentally released, to prevent or to mitigate injury to human health or the environment. These laws require hazardous materials users to prepare written plans, such as hazard communication plans and hazardous materials management plans. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely. Primary responsibility for enforcement of these laws has generally been delegated to local agencies.

California Health and Safety Code – Hazardous Materials Business Plans

The State of California Health and Safety Code Section 25501 requires an owner or operator of a facility to complete and submit a Hazardous Material Business Plan (HMBP) if the facility handles a hazardous material or mixture containing a hazardous material that has a quantity at any one time during the reporting year equal to or greater than 55 gallons of liquids, 500 pounds of solids, or 200 cubic feet for a compressed gas. The intent of HMBPs is to provide basic information necessary for use by first responders in order to prevent or mitigate damage to the public health and safety and to the environment from a release or threatened release of a hazardous material, as well as satisfy federal and state community right-to-know laws. A HMBP is a document containing detailed information on the inventory of hazardous materials at a facility; emergency response plans (ERP) and procedures in the event of a reportable release or threatened release of a hazardous material; a site safety plan with provisions for training for all new employees and annual training, including refresher courses, for all employees in safety procedures in the event of a release or threatened release of a hazardous material; a site map that contains north orientation, loading areas, internal roads, adjacent streets, storm and sewer drains, access and exit points, emergency shutoffs, evacuation staging areas, hazardous material handling and storage areas, and emergency response equipment (Cal OES 2014).

California Code of Regulations – Hazardous Waste Regulations

CCR Title 22, Division 4.5 contains regulations pertaining to hazardous wastes (DTSC, 2018). Pertinent chapters are described below.

- **Chapter 11** identifies a hazardous waste as a waste that exhibits characteristics that may (a) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or (b) pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed.
- **Chapter 12** includes standards applicable to hazardous waste generators, including pre-transport requirements, recordkeeping and reporting, and importing/exporting of hazardous wastes.
- **Chapter 13** includes regulatory requirements for the transport of hazardous wastes. Chapter 13 requires hazardous waste transporters to be registered with DTSC. To obtain registration status, transporters must complete and submit a Hazardous Waste Hauler Application Form and proof of ability to provide adequate response in damages for DTSC review. Registered hazardous waste transporters are subject to random inspection by the California Highway Patrol. Registered transporters must also report any changes in their operations to DTSC. Transporters must also receive an identification number from DTSC. This chapter also requires immediate action is taken to protect human health and the environment in the event of a hazardous waste discharge.
- **Chapter 31** covers pollution prevention and hazardous waste source reduction and management review. This requires hazardous waste generators to conduct a source reduction and evaluation review and plan for hazardous waste, as well as a hazardous waste management performance report. This plan and report format is designed to prevent hazardous waste generation and to report hazardous waste generation amounts, respectively.

California Code of Regulations – Hazard Communication

CCR Title 8, Subchapter 7, Group 16, Article 109, Section 5194 contains regulations pertaining to hazards communication. According to this section, employers must develop, implement, and maintain at the workplace a written hazard communication program for their employees. The program should include a list of the hazardous chemicals known to be present using a product identifier that is referenced on the appropriate safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas). The program must also include the methods the employer will use to inform employees of the hazards of non-routine tasks, and the hazards associated with chemicals contained in unlabeled pipes in their work areas.

California Code of Regulations – Fire Protection and Prevention

CCR Title 8, Division 1, Chapter 4, Subchapter 4, Article 36 of the CCR contains regulations pertaining to Fire Protection and Prevention during construction. Some of the pertinent sections are described below:

- **Section 1921: Water Supply.** A temporary or permanent water supply required to properly operate firefighting equipment shall be made available as soon as combustible materials accumulate.
- **Section 1933: Fire Control.** Suitable fire control devices such as a small hose or portable fire extinguisher shall be available at locations where flammable or combustible liquids are stored.
- **Section 1965: Use of Flammable Liquids.** Flammable liquids shall be kept in closed containers when not actually in use and leakage or spillage of flammable or combustible

liquids shall be disposed of promptly and safely. These liquids shall not be used near open flames or sources of ignition within 50 feet.

- **Section 1936:** Service and Refueling Areas. Flammable liquids shall be stored in approved closed containers or tanks. Smoking or open flames shall not be permitted in areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing flammable liquids. Conspicuous and legible signs prohibiting smoking shall be posted within site of the person being served. The motors of all equipment being fueled shall be shut off during the fueling operation except for emergency generators, pumps, etc., where continuing operation is essential.
- **Section 1938:** Construction Site, General. Internal combustion engine powered equipment shall be located so that exhausts are well away from combustible materials.

California Division of Occupational Safety and Health

The California Division of Occupational Safety and Health (Cal/OSHA) protects and improves the health and safety of working men and women in California and the safety of passengers riding on elevators, amusement rides, and tramways through setting and enforcing standards; providing outreach, education, and assistance; and issuing permits, licenses, certifications, registrations, and approvals (CDIR 2017).

Cal/OSHA has requirements specific to fire protection and prevention during construction. Employers must establish an effective fire prevention program and ensuring it is followed through all phases of construction work. Firefighting equipment must be freely accessible at all times, placed in a conspicuous location, and well maintained. As soon as combustible materials accumulate, a water supply adequate to operate firefighting equipment must be made available. Workers must receive annual training in the use of fire extinguishers (Cal/OSHA 2015).

Regional

Ventura County General Plan

The Ventura County General Plan, which is mandated by state law, sets forth the goals, policies, and programs the County will implement to manage future growth and land uses (County of Ventura 2016). The General Plan, adopted by the Board of Supervisors, embodies the vision for the future of unincorporated Ventura County. The Ventura County General Plan includes a Hazards Element, which details hazards in the County, including fire hazards, transportation-related hazards, and hazardous materials and waste. The following goals and policies related to hazards and hazardous materials are applicable to the proposed projects.

Goal 2.13.1.1 Minimize the risk of loss of life, injury, damage to structures, and economic and social dislocations resulting from fire hazards.

Goal 2.13.1.2 Ensure that development in high fire hazard areas is designed and constructed in a manner than minimizes the risk from fire hazards.

Goal 2.14.1.1 Minimize the loss of life, injury, damage to structures, and economic and social dislocations resulting from hazards created by proximity to airports, railroads, and truck routes.

Goal 2.15.1.1 Minimize the risk of loss of life, injury, serious illness, damage to property, and economic and social dislocations resulting from the use, transport, treatment and disposal of hazardous materials and hazardous wastes.

Local

City of San Buenaventura General Plan

Adopted in 2005, the City of Ventura General Plan sets long-range goals based on a shared vision to guide Ventura's future (City of Ventura 2005). The City Council, advisory boards, commissions, city departments, and staff rely on the General Plan to guide certain functions, responsibilities, and services the City provides to residents, and the protection of natural and cultural resources in the community. The General Plan includes a Healthy and Safe Community Element, which establishes policies to protect the community from risks associated with hazardous materials. The following goals and policies related to fire and emergency resources and hazards and hazardous materials are applicable to the proposed projects.

Policy 7D. Minimize exposure to air pollution and hazardous substances.

Action 7.27. Require proponents of projects on or immediately adjacent to lands in industrial, commercial, or agricultural use to perform soil and groundwater contamination assessments in accordance with American Society for Testing and Materials standards, and if contamination exceeds regulatory action levels, require the proponent to undertake remediation procedures prior to grading and development under the supervision of the County Environmental Health Division, County Department of Toxic Substances Control, or Regional Water Quality Control Board (depending on the nature of any identified contamination).

Action 7.30. Require all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use, or transport and to notify the appropriate City, County, state, and federal agencies in the event of a violation.

City of Oxnard 2030 General Plan

The City of Oxnard 2030 General Plan was adopted in 2011, and amended in 2016. The General Plan contains goals and policies that are intended to guide a wide range of public and private development decisions through 2030 (City of Oxnard 2011). The General Plan includes a Safety and Hazards Element. The following goals and policies related to hazards and hazardous materials are applicable to the proposed project.

Goal SH-3 New development required to take necessary precautions prior to any construction to mitigate hazards and protect the health and safety of the inhabitants.

Goal SH-4 Emergency preparedness through the provision of adequate fire and police protection, infrastructure, emergency supply stockpiling, public education, EOC planning and procedures, and outreach programs.

Policy SH-4.6 Ensure that access and evacuation corridors are identified in the event of various types of major and minor emergencies.

Goal SH-7 Minimize risk associated with the transport distribution, use, and storage of hazardous materials.

Policy SH-7.2 Require that hazardous materials are used, stored, transported and disposed of within the City in a safe manner and in compliance with local, state, and federal standards.

Policy SH-7.12 Ensure that the proponents of new development projects address hazardous materials through the preparation of Phase I or Phase II hazardous materials studies for each identified site as part of the design phase for each project. Recommendations required to satisfy federal or state cleanup standards outlined in the studies will be implemented as part of the construction phase for each project.

City of Port Hueneme General Plan

The City of Port Hueneme General Plan serves as an overall guide in making day-to-day development decisions and sets forth policy for the future (City of Port Hueneme 2015). The General Plan includes a Public Safety and Facilities Element, which explores issues involving both natural/environmental hazards. The following goals and policies related to hazards and hazardous materials are applicable to the proposed projects.

Goal 3: Ensure that life and property in Port Hueneme are not endangered by the use, storage, or transport of hazardous materials.

Policy 3-4: Support the enforcement of state and federal safety standards for the transportation of hazardous materials.

Goal 4: Protect all persons and property in Port Hueneme from urban fires.

3.8.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to hazard and hazardous materials. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the project would have a significant adverse environmental impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (refer to Impact HAZ 3.8-1).
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (refer to Impact HAZ 3.8-2).
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school (refer to Impact HAZ 3.8-3).
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment (refer to Impact HAZ 3.8-4).
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would result in a safety hazard for people residing or working in the project area (refer to Impact HAZ 3.8-5).

- For a project within the vicinity of a private airstrip, the project would result in a safety hazard for people residing or working in the project area (refer to Impact HAZ 3.8-5).
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan (refer to Impact HAZ 3.8-6).
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (refer to Impact HAZ 3.8-7).

A summary of the findings for each impact is presented in **Table 3.8-3**. The analyses below support these findings.

TABLE 3.8-3
SUMMARY OF HAZARDS AND HAZARDOUS MATERIALS IMPACT DETERMINATIONS

Impacts	3.8-1 Routine Transport, Use, or Disposal	3.8-2 Foreseeable Upset and Accident	3.8-3 School Site	3.8-4 Hazardous Materials Site	3.8-5 Public and Private Airport	3.8-6 Emergency Evacuation Plan	3.8-7 Wildland Fires
Phase 1							
Advanced Water Purification Facility	LTS	LTS	LTS	LTS	LTS	LTSM	NI
Water Conveyance System	LTS	LTS	LTS	LTS	LTS	LTSM	NI
Groundwater Wells	LTS	LTS	LTS	LTS	LTS	LTSM	NI
Wildlife/Treatment Wetlands	LTS	LTS	LTS	LTS	LTS	LTSM	NI
VWRF Treatment Upgrade	LTS	LTS	LTS	LTS	LTS	LTSM	NI
Concentrate Discharge Facility	LTS	LTSM	LTS	LTS	LTS	LTSM	NI
Phase 2							
AWPF Expansion	LTS	LTS	LTS	NI	NI	NI	NI
Ocean Desalination	LTS	LTS	LTS	NI	NI	LTSM	NI

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.8.4 Impacts and Mitigation Measures

Routine Transport, Use, or Disposal

Impact HAZ 3.8-1: The proposed projects could result in a significant impact if they would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Phase 1

Construction activities of the proposed Ventura Water Supply Projects components would involve drilling, trenching, excavation, grading, and other ground-disturbing activities. These

construction activities would require small amounts of routinely used hazardous materials including but not limited to petroleum products (i.e., oil, gasoline, and diesel fuels), automotive fluids (i.e., antifreeze and hydraulic fluids), and other chemicals (i.e., adhesives, solvents, paints, thinners, and other chemicals). No acutely hazardous materials would be used on site during construction of the proposed projects. The materials handled would not pose a significant risk off site to the public. In addition, the construction contractor would be required to comply with all applicable federal, state, and local regulations pertaining to hazardous material use, handling, storage, and disposal. Adherence to these regulations would reduce potential proposed projects construction impacts related to hazardous materials to less than significant levels.

Advanced Water Purification Facility and Groundwater Wells

Operation of the proposed projects would include facilities designed to recharge, monitor, extract, discharge, store, and convey water. Operation of the conveyance system, outfall facilities, and freshwater treatment wetlands would not require the transport, use, or disposal of hazardous materials. However, the advanced water purification facility (AWPF) and groundwater extracted from proposed wells would require disinfection or treatment. Chemicals may need to be routinely transported, used, or disposed, depending on the required treatment and disinfection processes. Both the AWPF and aquifer storage and recovery (ASR) well sites would require the use and storage of chemical including but not limited to aqueous ammonia and hypochlorite for the disinfection process. Transportation of chemicals required for operations would likely be handled through a professional chemical company via tanker truck.

Transportation would be expected to take place on major freeways and roads, avoiding residential areas as feasible, and would comply with U.S. Department of Transportation regulations, including placarding. In addition, the use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials including preparation of and compliance with an HMBP, ERP, and Risk Management Plan (RMP), as managed and overseen by the Ventura County Resource Management Agency CUPA Hazardous Materials Program. These requirements include such safety measures as ensuring the use of appropriate storage vessels, secondary containment features, safety labeling, readily available spill absorbent materials, and training of site workers to respond to any accidental release. Adherence to these requirements would ensure that impacts to the environment and public health and safety due to routine use of hazardous materials during operation would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

In the future, if additional Ventura Water Reclamation Facility (VWRF) tertiary-treated effluent in excess of the maximum ecologically protective diversion volume becomes available, or is mandated for diversion to reuse by the responsible agencies with jurisdiction, then the AWPF

would be expanded to produce up to an additional 1.2 million gallons per day (1,400 acre-feet per year) of product water. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, pipelines, or related infrastructure would be needed or added. Additional chemicals may be required to accommodate the treatment process; however, the use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials. Adherence to these requirements would ensure that impacts to the environment and public health and safety due to routine use of hazardous materials during operation would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed desalination facilities would be constructed at the same location as the proposed AWPf. In the event that recycled water is insufficient to meet future water demands, the AWPf would be expanded to include desalinate ocean water for potable use. The AWPf sites are sized to accommodate the future desalination treatment components if the desalination project is needed to supplement the City's water supply. The expansion to the AWPf to accommodate the desalination treatment trains would not include any new impacts outside of the original construction footprint for the AWPf as described above. These construction activities would require small amounts of routinely used hazardous materials including but not limited to petroleum products (i.e., oil, gasoline, and diesel fuels), automotive fluids (i.e., antifreeze and hydraulic fluids), and other chemicals (i.e., adhesives, solvents, paints, thinners, and other chemicals). No acutely hazardous materials would be used on site during construction of the proposed projects. The materials handled would not pose a significant risk off site to the public. In addition, the construction contractor would be required to comply with all applicable federal, state, and local regulations pertaining to hazardous material use, handling, storage, and disposal. Adherence to these regulations would reduce potential proposed projects construction impacts related to hazardous materials to less than significant levels.

Operation of the ocean desalination facility would require disinfection for treatment. New chemicals may need to be routinely transported, used, or disposed, depending on the required treatment and disinfection processes. The use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials. Adherence to these requirements would ensure that impacts to the environment and public health and safety due to routine use of hazardous materials during operation would be less than significant.

Ocean Intake

The proposed ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. Although the location of the ocean intake system is undetermined, the construction impacts would temporarily occur near or within the ocean floor. These construction activities would require small amounts of routinely used hazardous materials

including petroleum products (i.e., oil, gasoline, and diesel fuels), automotive fluids (i.e., antifreeze and hydraulic fluids), and other chemicals (i.e., adhesives, solvents, paints, thinners, and other chemicals). The materials handled would not pose a significant risk off site to the public. The use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials. Adherence to these regulations would reduce potential proposed projects construction impacts related to hazardous materials to less than significant levels.

Operation of the ocean intake would not include the use of hazardous materials. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Foreseeable Upset and Accident

Impact HAZ 3.8-2: The proposed projects could result in a significant impact if they would create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment.

Phase 1

As described above under Impact HAZ 3.8-1, construction activities would require the transport, use, and disposal of small amounts of hazardous materials. If not properly handled, accidental release of these substances could degrade soils or become entrained in stormwater runoff, resulting in adverse effects on the public or the environment. However, the construction contractor would be required to comply with all applicable federal, state, and local laws and regulations that pertain to avoiding and, if necessary, mitigating the accidental release of hazardous materials during construction of proposed facilities. For example, Cal/OSHA would require construction contractors to prepare and implement a Construction Safety Plan, which would include such items as construction worker training, availability of safety equipment, an accident prevention program, and hazardous substance exposure warning protocols. CCR Section 5194 requires a hazards communication program that clearly identifies hazardous materials on site, thereby increasing employee education and awareness of hazardous materials on site and reducing the potential for a spill. CFR Section 1910.120 details requirements for emergency response to releases or substantial threats of releases of hazardous substances. In addition, best management practices (BMPs) would be included in the Storm Water Pollution Prevention Plan (SWPPP) that would be required for the proposed projects (see Section 3.9, Hydrology and Water Quality), to prevent accidental release of hazardous materials into the environment that could affect soils or contaminate groundwater. Implementation of these BMPs would further reduce potentially significant impacts associated with hazardous substance spills during construction to less than significant levels.

Advanced Water Purification Facility and Groundwater Wells

Of the Ventura Water Supply Projects, only the AWPf and ASR wells would require the use and storage of chemicals. Facility operators would use various chemicals to treat the water as it passes through the treatment processes to ensure the water meets water quality requirements. The chemicals used during the treatment process would be stored on site at the purification facility in accordance with applicable regulatory requirements. Chemical storage facilities would include secondary concrete containment, alarm notification systems, and fire sprinklers. **Table 3.8-4** summarizes the chemicals that would be used during the water purification process and the projected annual usage amounts.

The main treatment process chemicals would be housed in various bulk storage tanks of up to 8,300 gallons, located inside or next to the process building within the AWPf site. Cleaning chemicals would be stored in smaller containers. Sumps and sump pumps within the chemical containment area and loading areas would collect and contain any chemicals accidentally released during operations. In addition, each well site would potentially include on-site treatment processes, including housed chemical storage areas. Chemicals at the well sites could include aqueous ammonia and hypochlorite for the purposes of treating the extracted water before the groundwater enters the conveyance system. The SWPPPs prepared for proposed facilities would include permanent BMPs to be implemented to avoid hazardous materials release into stormwater runoff during operation. In addition, should hazardous material use at the AWPf site or well sites satisfy CFR requirements for preparation of an HMBP, information in the HMBP and ERP would be used by the fire department as first responders to appropriately address an accidental hazardous material spill.

TABLE 3.8-4
TREATMENT PROCESS AND CLEANING CHEMICALS AND ANNUAL USAGE

Chemical	Application	Annual Usage (pounds)
Sulfuric Acid	RO Feed, UV AOP Feed, UF and RO Cleaning	1,811,000
Antiscalant	RO Feed and SWRO Feed	106,000
Calcium Chloride	Product Water Stabilization	738,000
Carbon Dioxide	Product Water Stabilization	1,107,000
Aqueous Ammonia	UF Feed	29,000
Sodium Hypochlorite	UF Feed, UV AOP Feed, Product Water, and UF Cleaning	270,000
Liquid Oxygen	Ozone Dose	658,000
Sodium Bisulfite	Ozone Effluent and UF Cleaning	55,000
Sodium Hydroxide	UF and RO Cleaning and Product Water Stabilization	1,329,000
Citric Acid	UF and RO Cleaning	700
Ferric Chloride	SWRO Feed	49,000
Polymer	SWRO Feed	98,000

SOURCE: Carollo 2019

The construction contractor would be required to comply with all relevant and applicable federal, state, and local regulations that pertain to hazardous material spills during operation of the proposed projects. Compliance with these laws would minimize the potential hazard to the public or environment related to the accidental release of hazardous materials. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge offshore in the ocean north of Ventura Harbor (see Figure 2-19). The construction of the outfall would require marine vessels to connect and secure the outfall to the ocean floor. Tugboats would guide a barge to the offshore work area, where it would be anchored to the seafloor. The construction zone would be near the entrance of the Ventura Marina and could interfere with marine vessels, including sail boats. In addition, the construction of the concentrate discharge facility would require use of hazardous materials, such as the standard construction materials noted above, along with marine fuel. If not properly handled, accidental release of these substances could degrade soils, become entrained in stormwater runoff, or released in the ocean, resulting in adverse effects on the public or the environment.

To reduce the potential for offshore hazards during marine construction operations, **Mitigation Measure HAZ-1** would require the preparation of an Anchoring Plan to ensure marine vessels are moored effectively and safely, **Mitigation Measure HAZ-2** would cover safety measures needed for marine construction activities. Through compliance with existing federal and state regulations and implementation of Mitigation Measures HAZ-1 and HAZ-2, impacts associated with the handling, storage, transportation, and disposal of hazardous materials during construction would be less than significant.

Mitigation Measures:

HAZ-1: The City of Ventura shall prepare an Anchoring Plan that applies to all ships, barges, and other oceangoing vessels and describes procedures for deploying, using, and recovering anchorages. The City shall submit this plan to the California Coastal Commission Executive Director for review and approval prior to initiation of offshore activities. The Anchoring Plan shall include, but not be limited to, the following elements:

- Training for the project manager for marine activities, vessel operators, field supervisors, and environmental monitors to ensure familiarity with the Anchoring Plan.
- A brief overview of the project objectives.
- Description of anchor set and anchor leg (wires, winches, and other support equipment).
- Description of vessels to be anchored and support tugs to be used.

- Description and delineation of safety zone and anchor zone, including identification and mapping all areas of kelp, seagrasses, and hard substrate found within the work area.
- Identification of Contractor Vessels and Buoys, including daylight and nighttime marking schemes.
- Anchoring procedures in compliance with Coast Guard Navigation Standards Manual.
- Local notice to U.S. Coast Guard and mariners.

All elements of the Anchoring Plan shall be in compliance with U.S. Coast Guard regulations.

HAZ-2: Prior to any offshore construction, the contractor shall prepare a Marine Safety Plan. The Marine Safety Plan would apply to all marine construction activities that would take place for the construction of the concentrate discharge pipes. The purpose would be to provide a precise set of procedures and protocols that shall be used by the marine contractors during the marine portions of the construction work, with a focus on personal, environmental, and vessel safety. The Marine Safety Plan shall include, but not be limited to, the following elements:

- A brief overview of the project objectives.
- Distribution of Marine Safety Plan, which shall include the U.S. Coast Guard, each vessel involved in the marine activities, all environmental monitors, and all support radio operators.
- Training for the project manager for marine activities, vessel operators, field supervisors, and environmental monitors to ensure familiarity with the Marine Safety Plan.
- Description and maps depicting the marine project location.
- Description of marine operations protocols.
- Description of critical operations and curtailment plan, including offshore fueling procedures and storm procedures.
- Marine communications plan.
- Marine transportation plan for barges, tugboats, crew boats, and other vessels.
- Navigational marking and lighting plan.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

To expand the AWPF, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, pipelines, or related infrastructure would be needed or added. Additional chemicals may be required to accommodate the treatment process;

however, the use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials. Adherence to these requirements would ensure that impacts to the environment and public health and safety due to routine use of hazardous materials during operation would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. The AWPf sites are sized to accommodate the future desalination treatment components if the desalination project is needed to supplement the City's water supply. The expansion to the AWPf to accommodate the desalination treatment trains would not include any new impacts outside of the original construction footprint for the AWPf as described above.

Operation of the ocean desalination component would require disinfection for treatment. Therefore, chemicals may need to be routinely transported, used, or disposed, depending on the required treatment and disinfection processes. The use of such hazardous materials would be required to comply with existing regulatory standards with respect to the storage and handling of hazardous materials. Adherence to these requirements would ensure that impacts to the environment and public health and safety due to routine use of hazardous materials during operation would be less than significant. In addition, BMPs included in the SWPPP would be required for the Phase 2 components to prevent accidental release of hazardous materials into the environment that could affect soils or contaminate groundwater (see Section 3.9, Hydrology and Water Quality). Implementation of these BMPs would further reduce potentially significant impacts associated with hazardous substance spills during construction to less than significant levels.

Ocean Intake

The proposed ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The intake system would be underground and would not affect ocean water. Operation of the ocean intake would not include the use of hazardous materials. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

School Site

Impact HAZ 3.8-3: The proposed projects could result in a significant impact if they would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

Phase 1

As detailed above in Table 3.8-2, there are 14 schools within 0.25 mile of the Ventura Water Supply Projects components, including near the proposed well sites, pipeline alignments, and the Transport Street AWPf site. Construction activities for all proposed facilities would use limited quantities of hazardous materials, such as gasoline and diesel fuel. Additionally, the construction contractor would be required to comply with all applicable federal, state, and local laws and regulations that pertain to the release of hazardous materials during construction of proposed facilities. Compliance with all hazardous materials regulations would reduce potential impacts regarding hazardous materials emissions within 0.25 mile of a school. Therefore, construction impacts would be less than significant.

Advanced Water Purification Facility and Groundwater Wells

Of the Ventura Water Supply Projects, only the AWPf and ASR wells would require the usage and storage of chemicals. Facility operators would use various chemicals to treat the water as it passes through the treatment processes to ensure the water meets water quality requirements. The chemicals used during the treatment process would be stored on site at the AWPf and within the ASR well buildings in accordance with applicable regulatory requirements. The storage facilities would be completely secure and continuously monitored and would only be accessible to authorized personnel. Chemical storage facilities would include secondary concrete containment, alarm notification systems, and fire sprinklers. Operators and contractors would comply with all applicable regulations pertaining to handling, storage, use, and disposal of hazardous substances. Furthermore, hazardous materials deliveries and transport would be confined to designated roads that do not travel near schools. Therefore, impacts related to handling hazardous materials near a school would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, pipelines, or related infrastructure would be needed or added. Additional chemicals may be required to accommodate the treatment process; however, hazardous materials deliveries and transport would be confined to designated roads that do not travel near schools. As previously stated, operators would utilize applicable BMPs and would be required to comply with existing and future hazardous materials laws and regulations for the transport use and disposal of hazardous materials.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

Similar to the project-level components, schools would potentially be located within 0.25 mile of the program-level components. Construction activities for all proposed facilities would use limited quantities of hazardous materials such as gasoline and diesel fuel. During construction activities, hazardous materials could accidentally be spilled or released into the environment exposing construction workers, the public, and/or the environment to potentially hazardous substances. However, the construction contractor would be required to comply with all applicable federal, state, and local laws and regulations that pertain to the release of hazardous materials during construction of proposed facilities. Compliance with all hazardous materials regulations would reduce potential impacts regarding hazardous materials emissions within 0.25 mile of a school. Therefore, construction impacts would be less than significant.

Operation of the ocean desalination component would require disinfection for treatment. Chemicals may need to be routinely transported, used, or disposed, depending on the required treatment and disinfection processes. Hazardous materials deliveries and transport would be confined to designated roads that do not travel near schools. As previously stated, operators would utilize applicable BMPs and would be required to comply with existing and future hazardous materials laws and regulations for the transport use and disposal of hazardous materials.

Ocean Intake

There are no schools within the immediate vicinity of the ocean intake proposed alignment. Compliance with all hazardous materials regulations would reduce potential impacts regarding hazardous materials emissions within 0.25 mile of a school. Therefore, construction impacts would be less than significant.

Operation of the ocean intake would not include the use of hazardous materials. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Hazardous Materials Site

Impact HAZ 3.8-4: The proposed projects could result in a significant impact if they would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would create a significant hazard to the public or the environment.

Phase 1

As detailed in Section 3.8.2, no open hazardous materials sites are located on or surrounding any of the AWPf alternative sites. Further, no designated hazardous materials sites are located on or surrounding the existing or proposed wastewater treatment ponds, proposed well sites, or within the rights-of-way where conveyance pipelines would be located.

There are eight hazardous materials sites surrounding the alignments of the proposed conveyance pipelines, as detailed above in Table 3.8-1. These sites consist of voluntary cleanup sites, ongoing evaluations, corrective actions, and one leaking underground storage tank (LUST) cleanup site (DTSC 2018b). While these designated sites are not located on the proposed alignments themselves, groundwater or soil movement could have caused contamination to migrate into the project area.

Project components disturbing more than 1 acre would be required to comply with the Construction General Permit, including the preparation and implementation of a site-specific SWPPP. The SWPPP would contain BMPs to monitor and prevent pollutants (including sediment and hazardous materials) from leaving the construction site in runoff. In addition, compliance with federal and state standards would be required. Therefore, with implementation of BMPs and compliance with existing standards, construction of the proposed projects would not create a significant hazard to the public or environment, and impacts would be less than significant.

As no hazardous materials sites are located on or surrounding any of the AWPf alternative sites, the proposed treatment ponds, or well sites, these components would not create a hazard to the public or environment during operation. While conveyance pipeline alignments would be located near designated hazardous materials sites, during operation, pipelines would be sealed and located entirely underground. All pipelines would be constructed in accordance with industry standards, and pipelines would be designed to withstand surrounding ground conditions. All identified sites in Table 3.8-2 would be required to be cleaned up in accordance with federal, state, and local standards. Therefore, the proposed projects would not create a significant hazard to the public or environment, and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed AWP expansion would be located at the same location as the proposed AWP. As detailed above, no open hazardous materials sites are located on or surrounding any of the AWP sites. Therefore, there would be no impact to the public or environment.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWP. As detailed above, no open hazardous materials sites are located on or surrounding any of the AWP sites. Therefore, there would be no impact to the public or environment.

Mitigation Measures: None required.

Significance Determination: No impact.

Ocean Intake

As detailed in Table 3.8-2, no open hazardous materials sites are located on or surrounding the anticipated alignment of the ocean intake. Therefore, there would be no impact to the public or environment.

Mitigation Measures: None required.

Significance Determination: No impact.

Public and Private Airport

Impact HAZ 3.8-5: The proposed projects could result in a significant impact if they are located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project and would result in a safety hazard for people residing or working in the project area. For a project within the vicinity of a private airstrip, the proposed projects could result in a significant impact if they would result in a safety hazard for people residing or working in the project area.

Phase 1

As detailed above in Section 3.8.2, the Oxnard Airport is the public airport located nearest to the proposed projects, and the Point Mugu Naval Air Station is the nearest private airstrip to the proposed projects. According to the Ventura County ALUC ACLUP, the proposed projects are not located within a safety zone or height restriction zone for the Point Mugu Naval Air Station (Ventura County ALUC 2000). Therefore, due to distance from these airports, construction and operation of the proposed projects would not expose workers to airport-related hazards.

A segment of the proposed discharge pipeline to the Calleguas SMP alignment would be located approximately 500 feet south of the Oxnard Airport, and would be located within a portion of the Oxnard Airport Outer Safety Zone and Height Restriction Zone. While utilities are considered an acceptable land use within the Outer Safety Zone, construction of the segment of pipeline in the airport vicinity could expose workers to airport-related hazards. However, FAA regulations require submittal of a Form 7460 with construction information that allows the FAA to determine whether the construction activities occurring adjacent to a public airport would be a hazard. Therefore, construction of the segment of the proposed discharge pipeline to the Calleguas SMP alignment would not proceed without a determination from FAA that no airport-related hazards would result.

Once operational, the proposed pipeline adjacent to the Oxnard Airport would operate below ground to convey concentrate to the SMP. Since the proposed pipeline would operate below ground, it would be compatible with airport operations and restrictions, and would not affect airport operations or increase the persons in the area, exposing them to airport related hazards. As a result, construction and operation-related impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed AWP expansion would be located at the same location as the proposed AWP. As detailed above, the AWP expansion would not be located within the Oxnard Airport or Point Mugu Naval Air Station hazard zones. Therefore, no impact would occur related to exposing the public or workers to airport related hazards.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWP. As detailed above, the AWP expansion would not be located within the Oxnard Airport or Point Mugu Naval Air Station hazard zones. Therefore, no impact would occur related to exposing the public or workers to airport related hazards.

Ocean Intake

The ocean intake would be located on the ocean floor and would not affect airport operations or increase the persons in the area, exposing them to airport related hazards. There would be no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Emergency Evacuation Plan

Impact HAZ 3.8-6: The proposed projects could result in a significant impact if they would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Phase 1

Construction of the AWPf, groundwater wells, and treatment wetlands would not require construction within any road rights-of-way, and therefore would not impair an emergency response plan. However, the product water conveyance and concentrate discharge facilities, including the discharge pipeline to the Calleguas SMP alignment, would be constructed within road rights-of-way. Therefore, these components could potentially result in temporary lane or roadway closures or block access to roadways and driveways for emergency vehicles. As detailed in Section 3.17, Traffic and Transportation, **Mitigation Measure TRAF-1** would require construction contractors to notify emergency responders, including local fire departments, police departments, and ambulances, of planned roadway closures and/or roadway and driveway blockages. Conveyance facilities within rights-of-way would be installed belowground and would not interfere with roadways during operation, such that no impact would occur. Therefore, construction would not substantially impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan requiring the use of these roadways with implementation of Mitigation Measure TRAF-1.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, pipelines, or related infrastructure would be needed or added. There would be no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities, including the proposed ocean intake, may require construction within roadway rights-of-way. Similar to the Phase 1 components, the desalination construction may result in temporary lane or roadway closures or block access to roadways and driveways for emergency vehicles. As mentioned above, **Mitigation Measure TRAF-1** would require construction contractors to notify emergency responders, including local fire departments, police departments, and ambulances, of planned roadway closures and/or roadway and driveway blockages. Conveyance facilities within the right-of-way would be installed belowground and would not interfere with roadways during operation, such that no impact would occur. Therefore, construction would not substantially impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan requiring the use of these roadways with implementation of Mitigation Measure TRAF-1.

Mitigation Measures: Implement Mitigation Measure TRAF-1 .

Significance Determination: Less than Significant with Mitigation.

Ocean Intake

The ocean intake would be located on the ocean floor and would not affect emergency response plan or emergency evacuation plans. There would be no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildland Fires

Impact HAZ 3.8-7: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Phase 1

According to CAL FIRE's VHFHSZ map for Ventura County, the proposed project is not located within a VHFHSZ (CAL FIRE 2010). In addition, all construction must comply with fire protection and prevention requirements specified by the CCR and Cal/OSHA. This includes various measures, such as easy accessibility of firefighting equipment, proper storage of combustible liquids, no smoking in service and refueling areas, and worker training for fire extinguisher use. Therefore, construction of the proposed project would not expose workers and/or neighboring residential areas or structures to wildland fires.

During operation, the project would not substantially add to the fire risk in the project area. Conveyance facilities would operate below ground and would not result in a fire risk. Aboveground structures associated with AWPf and the VWRF upgrades would be constructed in

accordance with the California Building Code, California Fire Code, and Ventura County Fire Code. Therefore, no impacts would occur related to wildland fires during construction or operation of the proposed project.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

Similar to the discussion above, the AWP expansion would not be located within a VHFHSZ (CAL FIRE 2010). There would be no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

Similar to the discussion above, the desalination components would not be located within a VHFHSZ (CAL FIRE 2010). In addition, all construction must comply with fire protection and prevention requirements specified by CCR and Cal/OSHA. Therefore, construction would not expose workers and/or neighboring residential areas or structures to wildland fires.

Conveyance facilities, including the desalination ocean intake, would operate below ground and would not contribute to a fire risk. All facilities would be constructed in accordance with the California Building Code, California Fire Code, and Ventura County Fire Code. Therefore, no impacts would occur related to wildland fires during construction or operation of desalination components.

Ocean Intake

The ocean intake would be located on the ocean floor and would not expose workers and/or neighboring residential areas or structures to wildland fires. There would be no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.9 Hydrology and Water Quality

This section addresses the potential impacts of the proposed projects on hydrology and water quality. The section includes a description of the environmental setting to establish baseline conditions, a summary of the relevant regulations, and an evaluation of the impacts.

3.9.1 Environmental Setting

The following sections discuss the regional hydrologic setting and the proposed projects' specific setting for onshore surface water hydrology and water quality, groundwater, and the offshore marine environment, flooding, and flood hazards.

Regional Environmental Setting

The proposed projects are located along the coastal plains within Ventura County, which is within the South Coast Hydrologic Region (DWR 2003). The coastline between Point Conception and the Mexican border is generally oriented from northwest to southeast. Over time, the continental margin has been slowly emerging, causing a predominantly shear coastline broken by plains around the cities of Oxnard-Ventura, Los Angeles, and San Diego.

The coastal plains within this region have a Mediterranean climate with mild rainy winters and warm dry summers, while the inland slopes and basins have more extreme temperatures and less precipitation. These variations of climate within the region can be attributed to variable topography. Prevailing winds from the west and northwest carry moist air from the Pacific Ocean inland until it is forced upward by the San Gabriel Mountains. Approximately 75 percent of the annual precipitation occurs in the months from December through March. Average annual precipitation along the coast is approximately 14 inches near the Santa Clara River estuary.

Onshore Surface Water Hydrology

Santa Clara River

The Santa Clara River is the predominant river in the Ventura Basin, flowing 84 miles from the San Gabriel Mountains west to the Pacific Ocean (Larry Walker Associates 2015). Natural streamflow in the river and its tributaries is perennial, intermittent¹ to ephemeral,² with streamflow occurring primarily during December to April. River flow occurs as long periods of little to no flow punctuated by high-flow events caused by short-duration, high-intensity precipitation events that travel quickly through the watershed (Carollo 2014). In general, flows in the river are influenced by natural processes and variability in hydrologic conditions as well as anthropogenic activities/infrastructure including agricultural irrigation, water supply dams, and urbanization. Surface water drainage within the project area is generally south to the Santa Clara River and then west to the Pacific Ocean. With the exception of the Concentrate Discharge Facility option to pipe post-treatment brine south to the existing Calleguas Salinity Management Pipeline, all of the proposed projects' components would be located north of the Santa Clara River.

¹ Intermittent flow occurs during the wet season (winter-spring) but normally not during the dry season.

² Ephemeral flow occurs only during and immediately after rain.

Santa Clara River Estuary

The Santa Clara River flows into the Santa Clara River Estuary (SCRE) at the coast and then into the Pacific Ocean (see Figure 2-2). The semi-arid climate in the region is interrupted by periods of intense winter storms that often cause high-water flow in the Santa Clara River. The river hydrology is dominated by storm flow. Flows through the lower river reaching the SCRE can be intermittent between wet periods depending on watershed precipitation amounts in any given year, with some sub-reaches going dry for much of the year. Even in dry years and during the dry season, the lowermost reach of the river leading into the SCRE is characterized by perennial, low-volume flow during most water-year types. This base flow, which is driven by inputs from the semi-perched aquifer, is supplemented by seasonal agricultural runoff (Stillwater Sciences 2018).

The SCRE is composed of an estuary/lagoon system. Estuaries are semi-enclosed coastal water bodies at the lower ends of rivers or creeks that are connected to the ocean (i.e., undergo cyclic tidal exchange and flushing), and within which seawater is mixed with, and measurably diluted by, freshwater inflow derived from land drainages, such as the Santa Clara River (Kjerfve 1994). The SCRE, like many California coastal stream estuaries, loses connectivity to the ocean episodically due to the formation of a barrier beach (sandbar) across the estuary mouth, forming a temporary fresh/brackish lagoon separated from the marine environment (discussed in detail below).

Estuary/Lagoon Systems

Lagoon formation in southern California is primarily a function of low summer stream flow and wave dynamics (Elwany 2011). Lagoons typically form between May and August as a function of wave dynamics and decreasing seasonal streamflow, and are breached between November and December when winter storms increase seasonal streamflow (Hayes et al. 2008). Lagoon systems are typically hydraulically connected to the marine environment from winter to late spring by channels formed in sandbars (Kjerfve 1994; Hanes et al. 2011), and these channels maintain freshwater outflow and allow tidal inflow, facilitating tidal flushing and water circulation. The processes governing sandbar formation and inlet channel closure are complex and dependent on a range of dynamic variables such as streamflow, inlet channel morphology, wave dynamics, and sediment transport (Smith 1990; Elwany 2011).

Coastal lagoons share many ecological, biological, and physical attributes with estuaries but are characterized by key differences in physical processes (Kjerfve 1994). Like estuaries, lagoons are located at the lower ends of rivers and creeks. However, lagoon systems differ from estuaries in that they are subject to extreme hydrologic and water quality variations due to intermittent restriction of ocean influence through the seasonal formation of sandbars across the coastal river mouth (Kjerfve 1994; Kraus et al. 2002). Deposition of sand into lagoon inlet channels (sandbar formation) restricts surface connectivity with the ocean, reduces tidal influence, and impounds freshwater inflow from the upper watershed, resulting in the formation of a low-velocity body of freshwater (Kjerfve 1994; Bond et al. 2008; Elwany et al. 2011). Lagoons are characterized by a higher degree of temporal variability in terms of hydrology, water quality, and productivity (see Section 3.4, Biological Resources) as compared to estuaries.

SCRE/Lagoon Hydrology and Geomorphology

Historically, the SCRE contained an unconstrained river channel and main lagoon area that drained to the ocean towards the north (Stillwater Sciences 2018). However, the combined impacts of continued encroachment of agricultural land, the establishment of levees for flood protection, and the completion of Harbor Boulevard bridge has decreased the overall area of the SCRE by at least 75 percent, decreased the effective flow width during flood events, and essentially “locked” the SCRE into its present-day location and extent.

A large amount of sediment passes through the SCRE and is discharged to the nearshore ocean, with coarser sediment contributing to the building of both offshore and nearshore deltas, which in turn supply sediment for subsequent mouth berm building and down-coast beach replenishment. The main SCRE lagoon contains a network of channels and bars that are formed and reworked during storm events and subsequent tidal exchange while the river mouth remains open. The total inundated area, defined by the maximum inundation extent within the river channel and main lagoon under closed-mouth, low-flow conditions, is currently about 180 acres. During closed-mouth periods, the lagoon fills causing the ponded water to rise and extend upstream of the Harbor Boulevard bridge.

The SCRE receives water from groundwater upwelling, precipitation, and four surface water sources: Santa Clara River flow, local runoff, Ventura Wastewater Reclamation Facility (VWRF) discharge, and tidal flow. Flows into and out of the SCRE vary seasonally, inter-annually, and over longer timescales, due to both natural and anthropogenic influences. February typically experiences the highest monthly flows (~750 cubic feet per second [cfs] in the lower river) while August and September are characterized by the lowest flows (~1 cfs in the lower river) (Stillwater Sciences 2018). As expected, these patterns closely follow seasonal variability of precipitation. During normal and wet water-year types, river flows typically dominate water inputs to the SCRE from fall to spring, while VWRF discharge (~5–10 cfs) is the predominant source during closed mouth conditions in the summer. Long-term daily averages show Santa Clara River inflow to the SCRE is typically low (<80 cfs, 90 percent of the time), but is punctuated by large storm events. During these low-flow conditions, the SCRE fills gradually, typically over a period of weeks. VWRF discharge can maintain the SCRE at a quasi-equilibrium “full” stage that can be maintained for extended periods. When storm-induced river flows enter the SCRE during closed-mouth periods, the filling rate is much more rapid and the stage associated with berm breaching can be higher than the breaching stage during low-flow conditions. Water outputs from the SCRE occur through outflow to the ocean during open-mouth conditions as well as evaporation, subsurface outflow through the mouth berm, and groundwater seepage to the semi-perched aquifer.

In recent years, the SCRE has been responding to morphological changes induced both by two high-magnitude storm events in 2005 (with peak flows of 136,000 and 82,000 cfs) and by the more recent drought period (Stillwater Sciences 2018). The 2005 flood event resulted in significant expansion and oceanward-migration of the SCRE lagoon. Since 2005, the lagoon had been steadily contracting as the beach berm migrates landward with prolonged periods of closed-mouth lagoon conditions between 2011 and 2015. Long-term trends show relatively high frequency of mouth berm breaching and subsequent open-mouth conditions from November through June (i.e., the mouth is open >50 percent of the time on average), with low breach

frequency during summer months (mouth closed >50 percent of the time on average) (Stillwater Sciences 2018). However, the persistence of dry conditions in recent years resulted in extended closed mouth periods throughout 2015 and 2016. From December 2014 through November 2016, 13 breach events occurred. The first four events that occurred between December 2014 and February 2016 were associated with storm-induced runoff events that caused the SCRE stage to rise to a point that destabilized the beach berm and caused the SCRE mouth to open. These open-mouth events were relatively short-lived, lasting only a few days before river flows waned and wave energies reformed the beach berm closing the mouth. The following nine breach events were not associated with high river flows, but rather with manually trenching of the beach berm by unauthorized individuals. These open-mouth periods persisted many days longer than those formed during the storm-induced periods (Stillwater Sciences 2018).

McGrath Lake

To the south of the SCRE lies McGrath Lake, a natural surface expression of the semi-perched aquifer water table (Stillwater Sciences 2018). McGrath Lake is the only remaining freshwater, coastal back-dune lake in Southern California and currently has an area of approximately 30 acres and an average depth of approximately 2 feet. The lake receives runoff from the floodplain south of the SCRE and river via a network of agriculture drainage ditches. When water levels in the lake reach a certain level, the lake is partially pumped, delivering water to an outfall pond where the water then seeps through or flows over the beach and reaches the ocean. Note that pumped water or other surface outflows do not enter the SCRE, except under some circumstances when SCRE stage is high. Land use within the floodplain adjacent to the SCRE includes open beach/dunes, agriculture, park land (McGrath State Beach), oil exploration, and the VWRF.

Between the Phase 1 Study and Phase 3 Study periods, it was observed that the southern end of the ponded lagoon of the SCRE would connect with the McGrath Lake outfall channel during closed-mouth conditions. The most recent surface-water connection between the SCRE and McGrath Lake's outfall channel was observed in aerial imagery captured on January 22, 2014. No surface-water connection was observed in the field or in aerial imagery at any time during the Phase 3 Study period.

VWRF Discharge Flows

The VWRF and wildlife/treatment ponds are located on the north side of the SCRE. The VWRF discharge flows to the estuary are measured at a transfer station before the discharge enters the wildlife /treatment ponds, flowing west to east through Bone Pond, Snoopy Pond, Lucy Pond, and then into the estuary via the SCRE outfall channel. Flows typically differ between the transfer station and the SCRE outfall channel by approximately 1.3 MGD (2 cfs), which is attributed to water loss from the ponds via evaporation, groundwater seepage to the SCRE and semi-perched aquifer (Stillwater Sciences 2018; Carollo 2014).

The average annual VWRF discharge flow, as measured at the transfer station from 2011 to 2017 ranged from 6.60 to 7.70 MGD (4.4 to 4.9 cfs) (see Table 2-4). Comparison of monthly mean VWRF discharge with Santa Clara River discharge reveals a seasonal pattern similar to Santa Clara River hydrology, with the greatest flow occurring in February and the least in the summer months (August–September). In the wetter months, the VWRF discharge to the SCRE has been about one-tenth the river flow. During the late summer (August–September), the monthly mean VWRF discharge into the SCRE is the dominant source of flow discharging into the SCRE (up to approximately 8 cfs monthly mean VWRF discharge as compared to approximately 1 cfs of lower Santa Clara River mean monthly discharge (Stillwater Sciences 2018)).

Onshore Surface Water Quality

The quality of surface water is primarily a function of land uses in the project area. Pollutants and sediments are transported in watersheds by stormwater runoff that reaches streams, rivers, storm drains, and reservoirs. Local land uses influence the quality of the surface water in the Santa Clara River and the SCRE through point source discharges (i.e., discrete discharge from a wastewater treatment plant) and nonpoint source discharges (e.g., storm runoff). Water quality in the project area is regulated by the Los Angeles Regional Water Quality Control Board (LARWQCB). Surface water quality relevant to the proposed project is described below. The relevant water quality information for the SCRE and VWRF discharges discussed below comes from the Phase 3 SCRE assessment (Stillwater Sciences 2018) unless otherwise cited.

Santa Clara River Estuary and VWRF Discharge

Water quality conditions have both direct and indirect impacts on beneficial uses in the SCRE, and both the VWRF discharge and ambient water quality within and contributing to the SCRE have been intensively studied for the past decade. Data synthesized from a number of sources, including prior Estuary Study phases (see Section 2.3), National Pollutant Discharge Elimination System (NPDES) monitoring, and data collected as part of the Phase 3 Study characterize physical and chemical water quality conditions in the SCRE, including spatial and temporal patterns and the relative contributions of various sources to observed conditions (Stillwater Sciences 2018).

Water quality monitoring data for the SCRE are described in detail in the Phase 3 Study (Stillwater Sciences 2018), a summary of which is provided here. Water quality within the SCRE is monitored regularly both through in situ grab sampling as well as continuous monitoring (Carollo 2014). Parameters routinely monitored include dissolved oxygen, pH, temperature, conductivity and turbidity. In addition to the routine monitoring within the estuary, the City conducts regular receiving water quality monitoring as part of their VWRF NPDES permit. The City's VWRF meets its NPDES permit requirements for its receiving water body (SCRE), including metals, with only occasional exceedances of copper in 2016 but none in recent years. As a condition of its NPDES permit, the City has completed annual Benthic Macroinvertebrate (BMI) studies to investigate further the issue of toxicity within the SCRE and the VWRF's contribution to potential toxicity (described below).

Water quality conditions within the SCRE vary on annual, seasonal, and daily timescales. Variability in water quality is driven by climatic conditions as well as temporally varying

predominance of water inputs to the SCRE. SCRE water temperatures vary from wintertime lows near 8° C (46° F) to summertime highs approaching and sometimes exceeding 28° C (82° F). During open-mouth conditions, tidal exchange exerts strong control on water quality conditions. Salinity levels during closed mouth periods are typical of freshwater or oligohaline brackish environments, with periods of higher salinity driven by tidal exchange during open mouth conditions. Upon mouth closure, mineral salts and observed nutrient levels approach those of the dominant water source as the SCRE fills, which varies seasonally as described under “Onshore Surface Water Hydrology”, above.

Water quality conditions within the SCRE are generally spatially uniform with some spatial variation in temperature, dissolved oxygen, and conductivity (salinity) during some periods. The VWRf outfall channel is characterized by generally lower temperatures and conductivity from winter into early summer with some evidence of warmer surface temperatures in summer and early fall. The SCRE is eutrophic, resulting from high nutrient loading from groundwater, VWRf discharge, and riverine and local runoff. Nutrient concentrations in the SCRE remain above the saturation level for algal production, resulting in high algal biomass in the SCRE. The Phase 3 monitoring (Stillwater Sciences 2018) found elevated concentrations of nitrate in upstream groundwater wells, indicating that upstream sources, along with VWRf discharge, may also contribute to nitrate loading in the SCRE. The resultant high algal production drives variable patterns in dissolved oxygen and pH. High primary productivity results in periods of dissolved oxygen saturation, while algal die-offs can lead to periods of near anoxia (absence of oxygen) due to the oxygen demand of bacterial decomposition of algal detritus.

Due to sediment conditions and frequent flood scour events within the estuary, the likelihood of bioaccumulation to toxic levels within the ecosystem is relatively low. Toxicity results from the Phase 3 quarterly testing during 2015–2016 indicated no significant toxicity effects on test organisms for water samples collected in SCRE or VWRf sites. Trace metal analysis shows some periods of elevated zinc and copper concentrations, with concentrations generally higher in the outfall channel than in the SCRE (though elevated copper concentrations were observed in an upstream SCRE location, suggesting an upstream source). Analysis of over 100 constituents of emerging concern (CECs), which encompass many unregulated chemicals that occur in air, water, sediment, and biota, showed the potential risks of CECs is low for aquatic species within the SCRE (Stillwater Sciences 2018).

Clean Water Act 303(d)³ List of Water Quality Limited Segments of the Santa Clara River

Historically, SCRE waters have exceeded Basin Plan objectives for several parameters, including ammonia, nitrate, toxicity, bacteria, dissolved oxygen, and pH (LARWQCB 2014), resulting in the impairment of designated beneficial uses. Total maximum daily loads (TMDLs) have been completed for indicator bacteria,⁴ nitrate, toxaphene, and ChemA. VWRf discharge currently meets NPDES discharge effluent limitations⁵ for water quality parameters addressed by TMDLs.

³ Section 303(d) of the Clean Water Act is described below, in Section 3.9.2.

⁴ Previously described as Coliform Bacteria.

⁵ The NPDES program is described below, in Section 3.9.2.

The most recent Draft California 2016 Integrated Report for the 303(d) List/305(b) Report recommends listing of the SCRE for apparent exceedances of water quality objectives for ammonia and pH, as well as maintaining the impaired status for toxicity (SWRCB 2017). In March 2017, the City submitted detailed comments on the proposed listings for ammonia, pH, toxicity, and indicator bacteria, requesting recalculation of exceedances and consideration of appropriate determinations based on water quality conditions that are typical and biologically attainable within estuaries, and using recent data that is more reflective of current SCRE conditions (Stillwater Sciences 2018). The city also requested delisting of nitrogen and nitrate based on recalculation using appropriate data and correct averaging periods.

Groundwater Hydrology

The project area lies within the westernmost portion of the east-west Ventura Basin, a structural trough bounded on the north by the Santa Ynez and Topatopa Mountains, and the south by the Santa Monica Mountains (see Section 3.6, Geology, Soils, and Seismicity for discussion of geologic units and structure). The basins that would include groundwater-related project components are discussed below.

Mound Basin

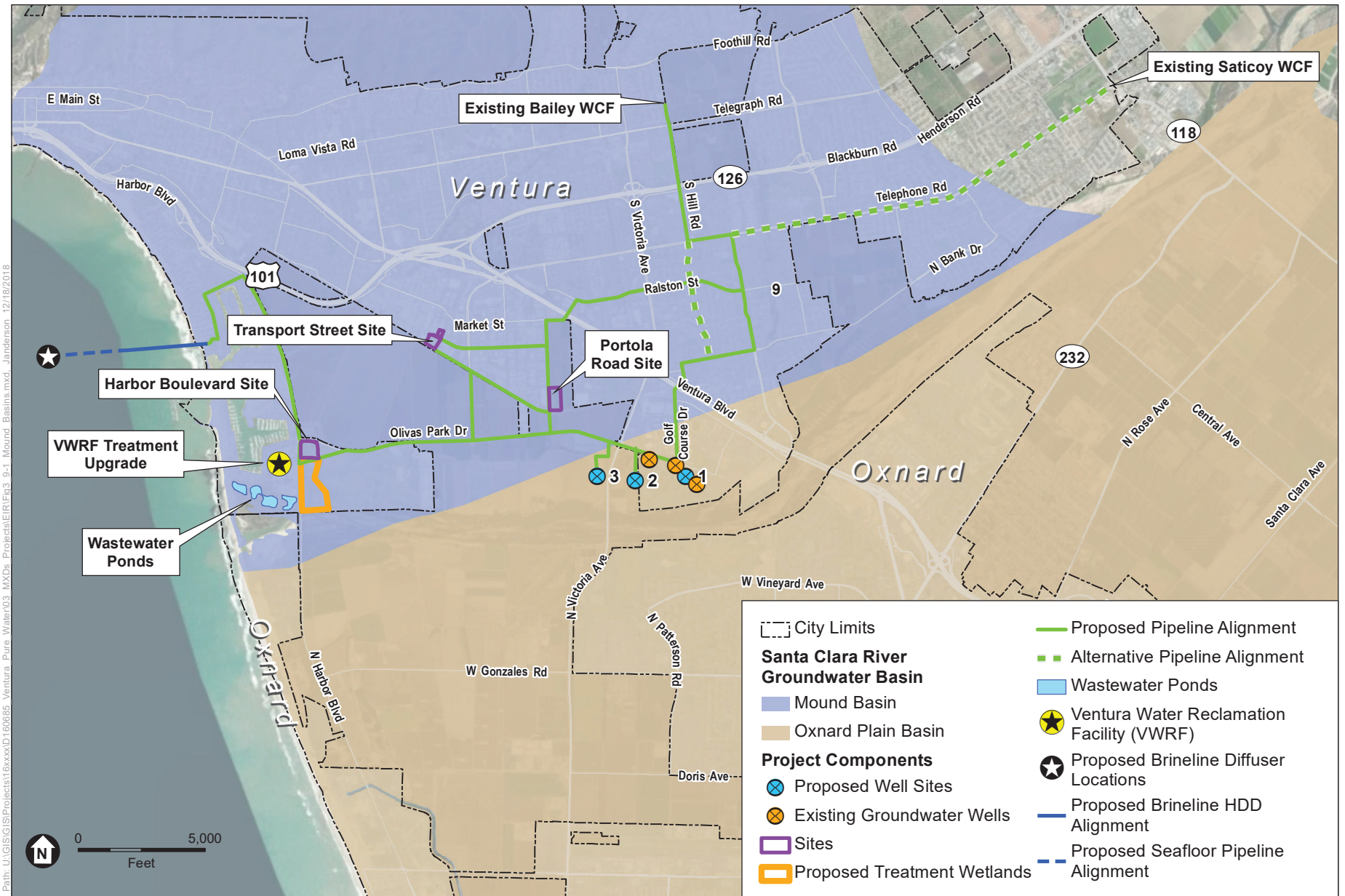
The groundwater hydrology information for the Mound Basin discussed below comes from the Mound Basin Assessment (UWCD 2012) or the Lower Santa Clara River Salt and Nutrient Management Plan (Larry Walker Associates 2015), unless otherwise cited. Note that the Mound Basin has some perched water at relatively shallow depths.

Location

The Ventura Basin called the Mound Basin, the Oxnard Plain Basin to the south, Forebay Basin to the southeast, and Santa Paula Basin to the east are shown on **Figure 3.9-1**. The Mound Basin is bounded on the north by the Santa Ynez and Topatopa Mountains (also referred to as the Ventura Foothills), the west by the Pacific Ocean, and the east by the Santa Paula Basin and Country Club Fault. Depending on the researcher, the southern basin boundary is either the Oak Ridge and Saticoy Faults (Carollo 2014) or the axis of the Montalvo Syncline (UWCD 2012).

Lower Aquifer System

The schematic in **Figure 3.9-2** illustrates the hydrostratigraphy of the Mound Basin including aquifer systems and aquifers, and geologic formations. As shown, the San Pedro Formation is within the upper portions of the Lower Aquifer System that includes from shallower to deeper, the Hueneme and Fox Canyon Aquifers. The Lower Aquifer System is confined by the shallower confining layers in the Upper Aquifer System, as verified by the groundwater levels discussed below.

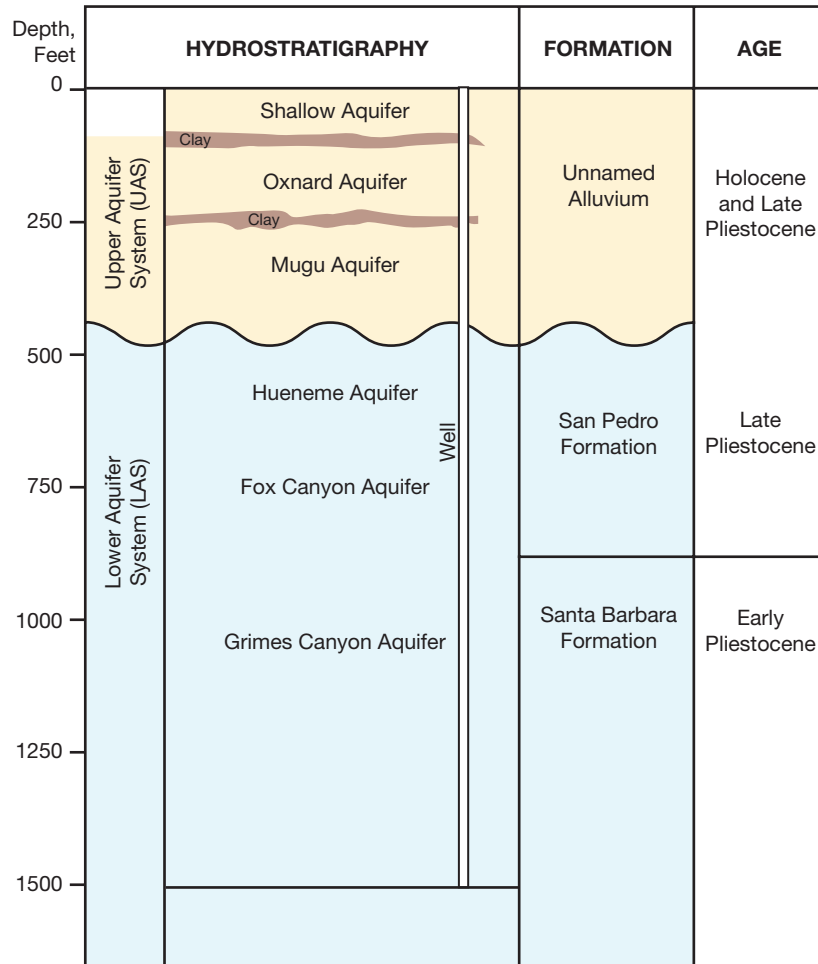


SOURCE: ESRI

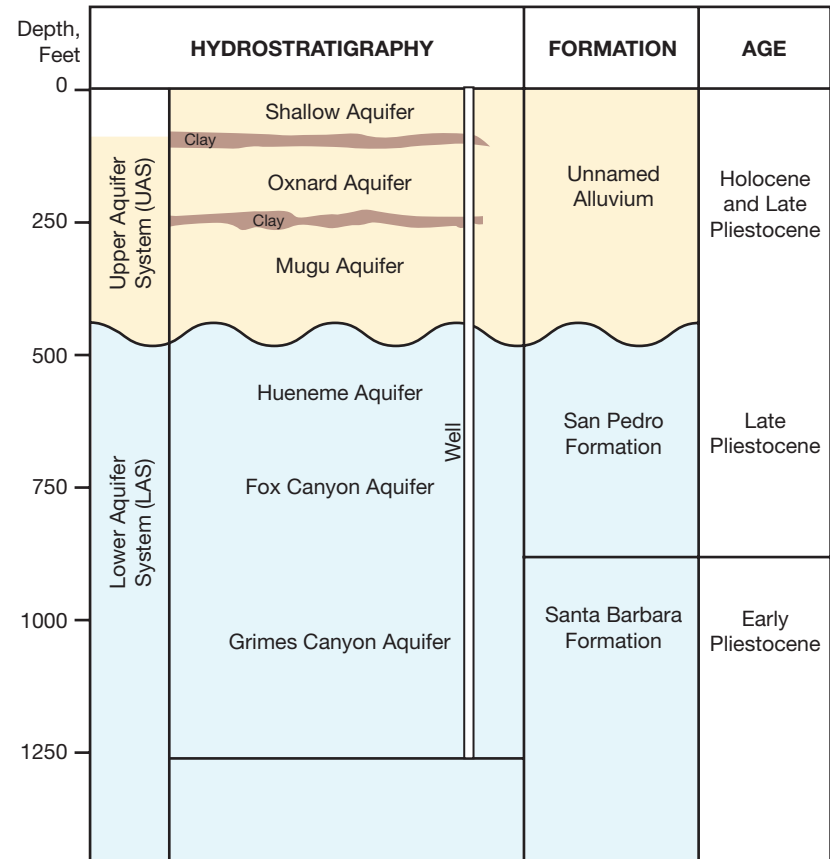
Ventura Water Supply Projects

Figure 3.9-1
Groundwater Basin Boundaries

Mound Basin



Oxnard Plain Basin



SOURCE: Larry Walker Associates, 2015; Carollo, 2017

Ventura Water Supply Projects

Figure 3.9-2
Mound and Oxnard Plain Aquifer Systems

The Mound Basin is within an east-west structural trough. Consequently, the depth interval of geologic units become shallower away from the central trough axis and toward the north and south edges of the trough. The majority of the lower portions of the San Pedro Formation consists principally of sand and gravel zones with variable thicknesses of interstratified clay and silt. Based on the production rate of Victoria Well No.2 in the eastern part of the Mound Basin, the hydraulic conductivity of San Pedro Formation deposits is estimated at 100 feet per day (Hopkins 2013).

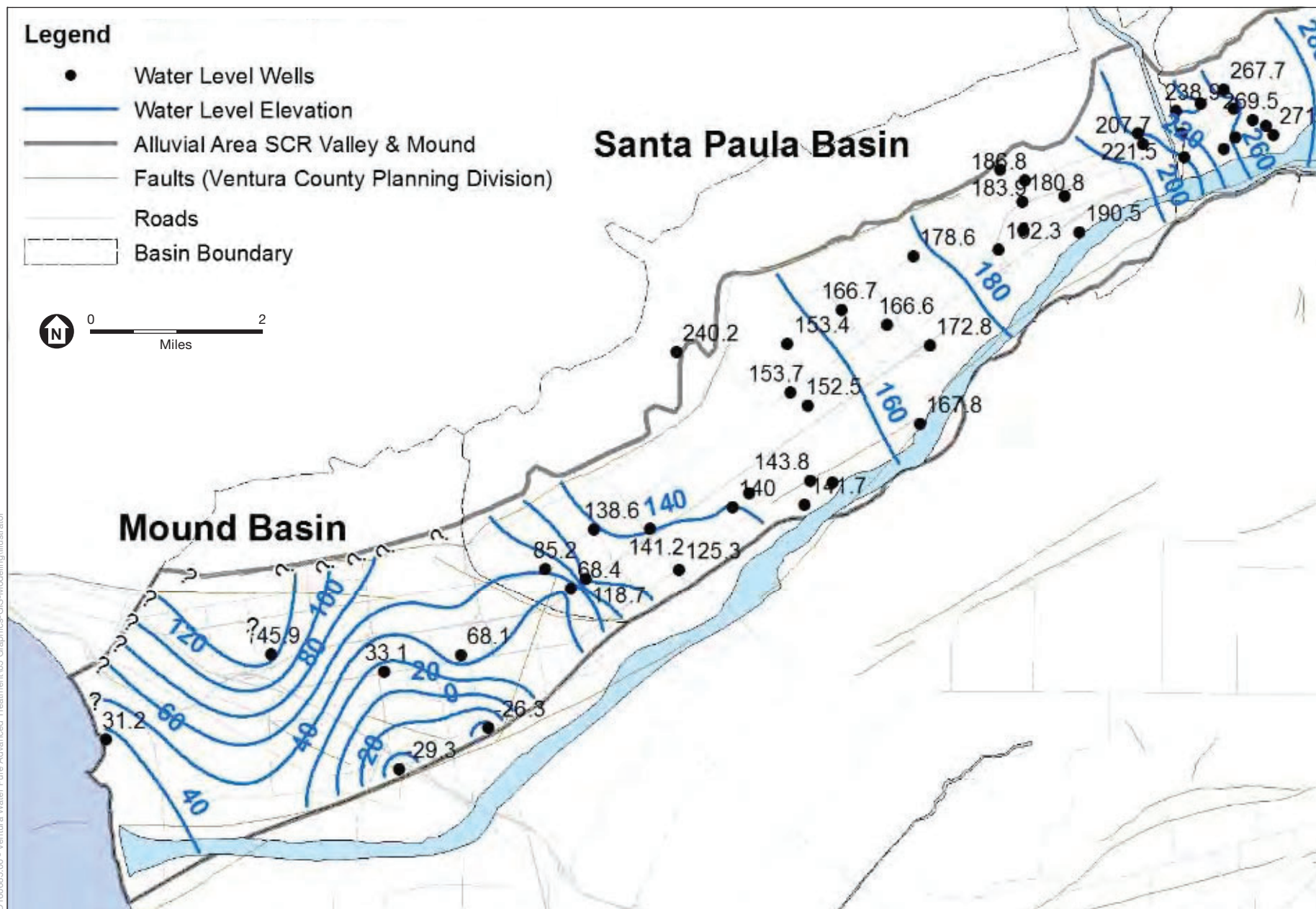
Groundwater Flow and Levels

The overall groundwater flow pattern is generally from east to west down the axis of each of the basins in the Santa Clara River Valley, as shown on **Figure 3.9-3** (Spring 2015) and **Figure 3.9-4** (Fall 2015) (Ventura County 2016). Note that groundwater flow during 2015 in much of the Mound Basin is to the south and southeast to the Oxnard Plain Basin and groundwater located further southeast in the Oxnard Plain Basin. Historical water level records suggest groundwater likely flows between the Oxnard Plain Basin and the Mound Basin, depending on climate, season, and local pumping. The southeastern flow direction also appears on groundwater flow maps in the Oxnard Plain Basin, as discussed further below in the Oxnard Plain Basin section.

Although there are some appreciable offsets on the faults bounding the Mound Basin, the low-permeability Santa Barbara Formation that underlies the San Pedro Formation does not extend to sufficiently shallow depths to impede groundwater flow (UWCD 2012). In most cases, there is a significant thickness of the San Pedro Formation (aquifer materials) existing above the faults, or on both sides of the faults. Whether the faults themselves impede flow is not known. However, groundwater flow and basin recharge across these zones is considered most probable. The slope of the potentiometric surface within the basin is generally flat during dry periods and the gradient increases somewhat following periods of above-average rainfall. Groundwater elevations in many wells fall below sea level during dry periods.

Oxnard Plain Basin

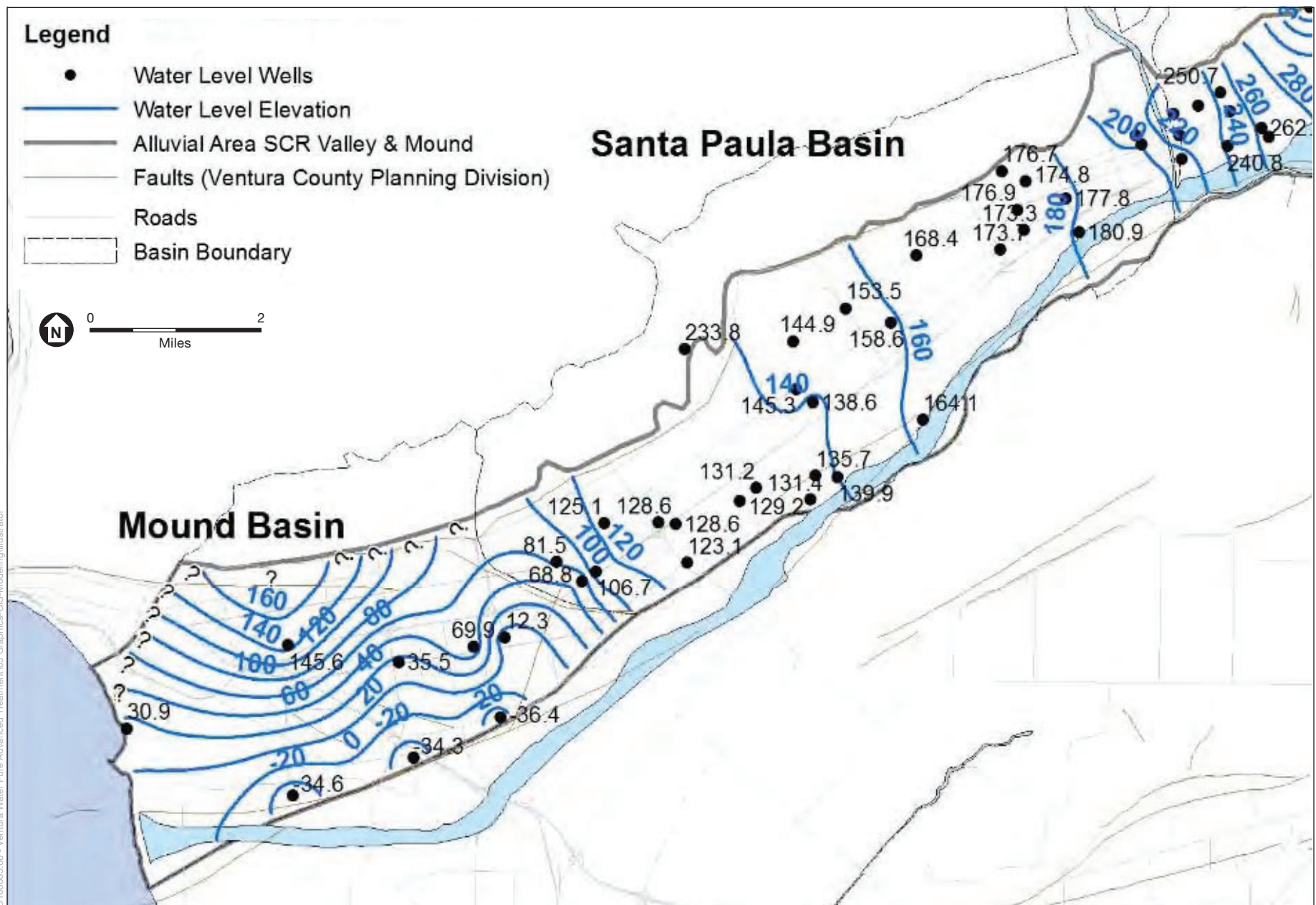
The groundwater hydrology information for the Oxnard Plain Basin discussed below comes from the Fox Canyon Groundwater Management Agency Groundwater Management Plan (Fox 2007), the Lower Santa Clara River Salt and Nutrient Management Plan (Larry Walker Associates 2015) or the Ventura County Watershed Protection District 2015 annual groundwater report (Ventura County 2016), unless otherwise cited.



SOURCE: Ventura County Watershed Protection District, 2016

Ventura Water Supply Projects

Figure 3.9-3
Mound Basin Potentiometric Surface Map – Spring 2015



SOURCE: Ventura County Watershed Protection District, 2016

Ventura Water Supply Projects

Figure 3.9-4
Mound Basin Potentiometric Surface Map – Fall 2015

Location

The proposed well sites would be located within the southwestern most onshore portion of the Ventura Basin called the Oxnard Plain Basin, bounded by the Mound Basin to the north, the Oxnard Forebay, West Las Posas, and Pleasant Valley Basins to the east, the Boney Mountains to the south, and the Pacific Ocean to the west. The northern portion of the Oxnard Plain Basin, where the proposed aquifer storage and recovery (ASR) wells would be located, is included on Figure 3.9-1. The specific proposed well locations are pending, depending on groundwater modeling and access considerations. The Oxnard Forebay Basin is considered an upgradient unconfined portion of the downgradient and confined Oxnard Plain Basin. Depending on the researcher, the northern basin boundary is either the Oak Ridge and Saticoy Faults (Carollo 2014) or the axis of the Montalvo Syncline (UWCD 2012).

Lower Aquifer System

Similar to the Mound Basin, the Oxnard Plain Basin also consists of the Upper Aquifer System and Lower Aquifer System, with the Lower Aquifer System also confined by shallower confining layers. The Lower Aquifer System consists of, from shallowest to deepest, the Hueneme, Fox Canyon and Grimes Canyon Aquifers. The Hueneme and Fox Canyon are composed of the San Pedro Formation, where the screen intervals of the proposed wells would be constructed. The Oxnard Plain Basin is also an east-west structural trough. Consequently, the depth interval of geologic units become shallower away from the central trough axis and toward the north and south edges of the trough.

The aquifers are comprised of sand and gravel deposited along the ancestral Santa Clara River, within alluvial fans along the flanks of the mountains, or in a coastal plain/delta complex at the terminus of the Santa Clara River and Calleguas Creek. The aquifers are recharged by infiltration of streamflow (primarily the Santa Clara River), artificial recharge of diverted streamflow, mountain-front recharge along the exterior boundary of the basins, direct infiltration of precipitation on the valley floors of the basins and on bedrock outcrops in adjacent mountain fronts, return flow from agricultural and household irrigation in some areas, and in varying degrees by groundwater underflow from adjacent basins. The aquifers within the Lower Aquifer System are commonly isolated from each other vertically by low-permeability units (silts and clays) and horizontally by regional fault systems.

The proposed injection wells within the Oxnard Basin would be drilled to maximum depths of about 1,500 feet below the ground surface (bgs) to target the San Pedro Formation. The well screens would be constructed within the 400 to 1,500 feet bgs depth interval, depending on subsurface conditions, to place the injected advanced treated water into the San Pedro Formation.

Municipal pumping also occurs at three wells (Golf Course Wells No. 5, No. 6, and No. 7) at the Buenaventura Golf Course at the southeast corner of Victoria Avenue and Olivas Park Drive (see Figure 3.9-1). These wells are in the Oxnard Plain Basin. All three are screened in the Hueneme/Fox Canyon Aquifer, which correlates with the San Pedro Formation, as shown on Figure 3.9-2. The screen intervals are 403 feet to 853 feet for Wells No. 5 and 6, and 400 feet to 610 feet, and 820 feet to 920 feet for Golf Course Well No. 7.

Groundwater Flow and Levels

The overall groundwater flow pattern in the Lower Aquifer System in the area where the proposed wells would be installed is generally southeast from the Mound Basin to the Oxnard Plain Basin and groundwater depressions further southeast, as shown on **Figure 3.9-5** (Spring 2015) and **Figure 3.9-6** (Fall 2015) (Ventura County, 2016). Historical water level records suggest groundwater likely flows between the Oxnard Plain Basin and the Mound Basin, depending on climate, season, and local pumping. However, note that the slope of the potentiometric surface within the Oxnard Plain Basin in the northwest third of the basin next to the Mound Basin is generally flat.

Groundwater elevations and locations for wells near selected project components are summarized in **Table 3.9-1**. Note that the groundwater elevations are well above the top of the Lower Aquifer System (about 400 feet bgs), indicating that the Lower Aquifer System is confined.

TABLE 3.9-1
SUMMARY OF SELECTED OXNARD PLAIN BASIN GROUNDWATER LEVELS

	02N22W21M01S	Fox Cyn Wells
Location	About 1,000 feet east of east edge of golf course	2 wells about 850 feet west of golf course
Ground Surface (feet amsl)	60	43
Well depth (feet below ground)	300	Within Lower Aquifer System
Recent High Elevation (feet amsl)	41.961 (June 2011)	?
Recent Low Elevation (feet amsl)	-16.319 (Sept 2015)	?
Most Recent Elevation (feet amsl)	-12.079 (January 2018)	-44.9 and -47.5 (Fall 2016)

NOTES: amsl = above mean sea level

SOURCE: CASGEM, 2018; Fox Canyon 2016

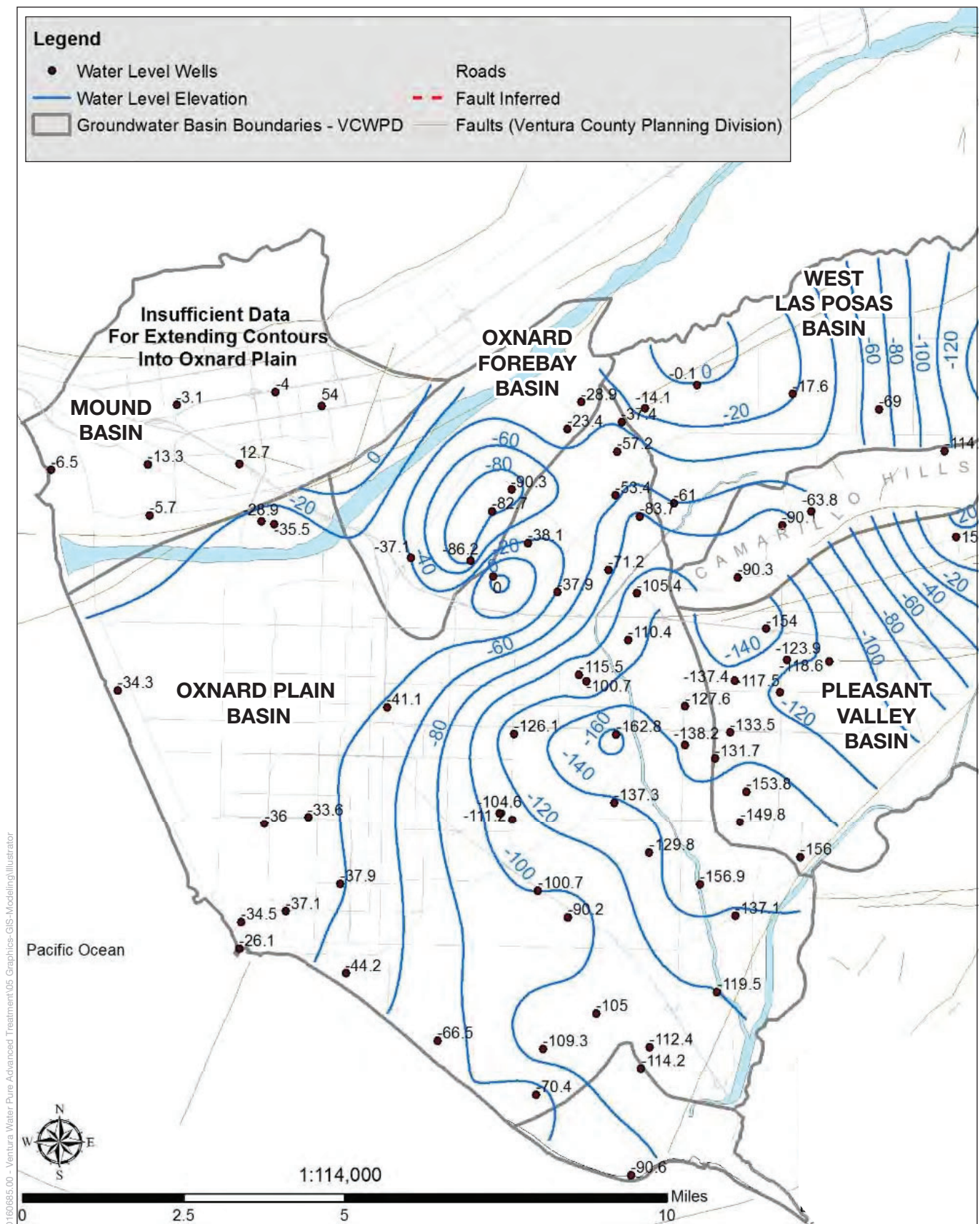


Figure 3.9-5
Potentiometric Surface Map – Oxnard Plain Basin,
Lower Aquifer System Spring 2015

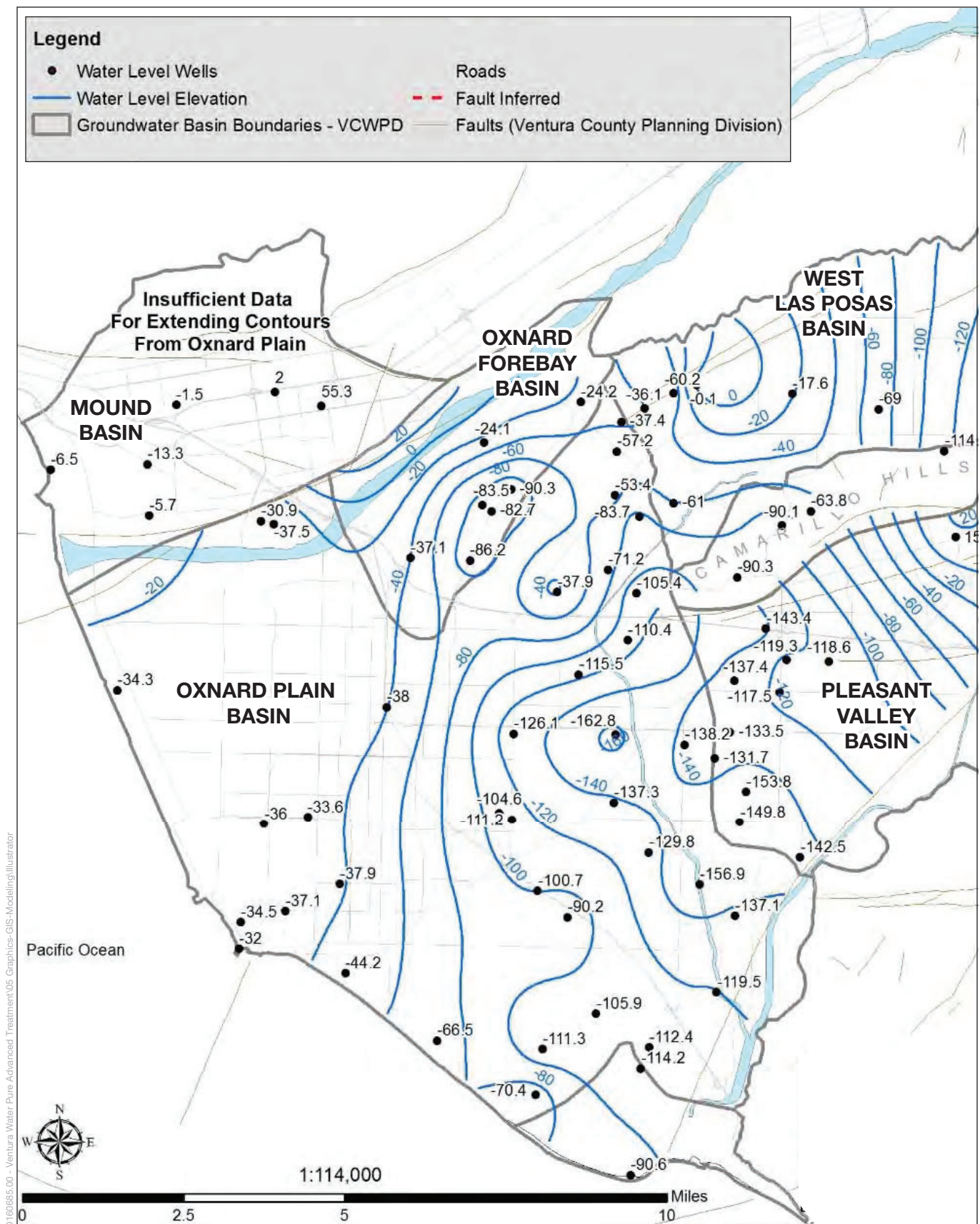


Figure 3.9-6
Potentiometric Surface Map – Oxnard Plain Basin,
Lower Aquifer System Fall 2015

Groundwater Quality

Groundwater quality data for wells screened in the Hueneme and Fox Canyon Aquifers (Lower Aquifer System) are summarized below in **Table 3.9-2** (Ventura County 2016).

TABLE 3.9-2
SUMMARY OF NORTHERN OXNARD PLAIN BASIN GROUNDWATER QUALITY
(ALL CONCENTRATIONS IN MILLIGRAMS PER LITER)

	02N22W30F3	Secondary Maximum Contaminant Level (MCL)
Total Dissolved Solids (TDS)	944	500 (recommended) 1,000 (upper limit)
Sodium	99	ne
Calcium	130	ne
Magnesium	37	ne
Chloride	42	250 (recommended) 500 (upper limit)
Bicarbonate	240	ne
Sulfate	390	250 (recommended) 500 (upper limit)
NOTES: Samples collected 2015 to 2016 ne = not established SOURCE: Ventura County 2016		

Offshore Marine Conditions

As part of Phase 1 (VenturaWaterPure Project), two options for disposing of reverse osmosis (RO) concentrate are proposed: construction of a new outfall for ocean discharge 1 to 2 miles offshore, or use of the existing Calleguas Salinity Management Pipeline (SMP) outfall, located approximately 10 miles south of the SCRE offshore of Port Hueneme. These outfall locations are located within the nearshore waters⁶ along the Ventura County coastline within the Southern California Bight (SCB) coastal environment. The SCB coastal environment extends more than 600 km from Point Conception (USA) to Punta Banda (Mexico). The following sections characterize existing physical conditions relevant to the proposed outfall locations.

Depth and Bathymetry

Oceanographic conditions in the areas proposed for RO concentrate disposal are influenced by local conditions of depth and bathymetry, as well as submarine topography. The water depth at the end of the existing Calleguas discharge structure is approximately 47 feet (below mean lower low water). The area offshore of the SCRE where the new outfall is proposed is characterized by a gently sloping (approximately 0.5 percent) continental shelf, such that at the 3-nautical-mile

⁶ The nearshore coastal waters are defined here as the shoreline, seafloor conditions (such as bathymetry and sediments), and waters occurring along the Ventura County coastline out to a water depth of approximately 40 meters (125 feet).

(5.6 km) limit of California's State Waters, water depths are approximately 65 to 100 ft (USGS 2012); at 1 to 2 miles offshore, the new outfall would be located at approximately 40 to 50 ft deep, similar to the existing Calleguas outfall.

The width of the shallow sloping continental shelf ranges from approximately 9 miles offshore of SCRE, forming a large central plateau, to a narrower shallow shelf of approximately 1 mile near Port Hueneme that is dissected by the Hueneme and Mugu Submarine Canyon system, which includes Hueneme Canyon and parts of three smaller, unnamed headless canyons incised into the shelf southeast of Hueneme Canyon. The Hueneme Submarine Canyon extends about 15 km offshore from its canyon head near the dredged navigation channel of the Port of Hueneme. The canyon is relatively deep (approximately 500 ft at the California's State Waters limit) and steep (canyon flanks as steep as 25 to 30 percent) (USGS 2012). The heads of three small unnamed submarine canyons are present in the area southeast of Hueneme Canyon, but the canyons do not extend into the nearshore zone. Submarine canyons can result in anomalies in the direction and velocity of currents and may further enhance transport of bottom water or serve as migratory corridors for fish and invertebrates (see Section 3.11, Marine Biology).

Ocean Tides, Currents, and Circulation

In the eastern North Pacific Ocean where the California coast is located, the tidal currents follow a counter-clockwise direction. Resulting flood tide currents flow up the coast, while ebb tide currents flow down the coast (WBMWD 2018). Tides occurring along the California coastline are defined as mixed semi-diurnal, having two unequal highs and two unequal lows over a 24-hour period. In general, water enters SCB from the south and flows in a counterclockwise eddy. During the winter months, a clockwise gyre may occur, with longshore flow of 2 cm/s (0.06 fps). Studies indicate that the clockwise gyre may be the dominant pattern on the continental shelf, and that such flows reverse for several days at a time as the result of tidal action.

Water in the northern Pacific Ocean is moved eastward by prevailing westerly winds until it reaches the western coast of North America, where it is diverted both to the north and south. The Channel Islands are located offshore of Southern California and affect water circulation patterns and oceanographic characteristics along the coastline. The California Current, a diffuse and meandering water mass which generally flows to the southeast, makes up the southern component, and flows without having a defined western boundary; however, greater than 90 percent of the water transport occurs within 725 kilometers (km) of the California coastline. The California Current diverges south of Point Conception, with flows turning to the north and flows inshore of the Channel Islands as the southern California Countercurrent. Within the Countercurrent, surface speeds range from 5 to 10 cm/s (0.16 to 0.32 fps) (WBMWD 2018). Small eddies that fluctuate seasonally and are well developed during summer and autumn and weak or even absent in winter, occur near the Channel Islands and affect flows. Currents near the Southern California coast are strongly influenced by wind, tide, and topography. Wind-driven currents that are superimposed on the tidal motion cause a strong diurnal component. As such, currents near the coast may vary considerably in both direction and speed over the short-term.

Large-scale upwelling along the California coastline is largely the result of northwesterly winds. Between the months of February to October, such winds induce offshore movement (Ekman

transport) of surface water, causing an upward movement of deeper ocean waters near the coast. The upwelled water is colder, denser, and has higher salinity concentrations, less oxygen, and greater nutrient concentrations than surface waters. Upwelling therefore alters the physical properties of the surface waters, with the nutrients enhancing biological productivity (see Section 3.11, Marine Biology).

Sediment and Sediment Transport

The Oxnard plain represents part of the alluvial plain formed by the Santa Clara River and, to a lesser extent, the Ventura River and Calleguas Creek. South of the Santa Clara River mouth, sandy beaches are present northwest of Channel Islands Harbor (Hollywood Beach, Oxnard Beach), between Channel Islands Harbor and the Port of Hueneme (Silver Strand), and southeast of the Port of Hueneme (Ormond Beach). The Santa Clara River is by far the biggest sediment source to the marine environment in the project area and provides an average of about 3.1 million tons of sediment to the coastal ocean per year, and it is the largest sediment source in all of southern California (USGS 2012). Ocean currents transport sediment down the coast toward Port Hueneme.

Offshore, the seafloor is composed largely of unconsolidated sediments that are generally finer as distance from the shore increases. The majority of nearshore sediments in the project area are comprised of finer sands and mud, although cobbles of various sizes also occur. Sediments are typically coarsest nearshore where greater turbulence near the surf zone suspends finer particles which are deposited further offshore in calmer water. During the summer months, reduced wave activity allows sand and finer materials to accumulate nearshore. In the winter, storms transport these finer materials offshore to deeper water. Nearshore sands typically move parallel to shore by longshore drift and may be transported into the heads of submarine canyons.

Offshore Marine Water Quality

This section characterizes baseline offshore water quality conditions with a focus on salinity and temperature (which can affect ocean water density and receiving water mixing and dilution dynamics).

Freshwater inflow to the nearshore waters, which can influence salinity concentrations (discussed below) comes from municipal and industrial wastewater discharges, surface runoff, creeks, and rivers, as well as ephemeral streambeds that terminate at the coast. Rainfall, and the associated freshwater inflow to the nearshore waters, are episodic within any given year, and can vary substantially among years. Urban runoff has the potential to directly affect water quality in nearshore waters as a nonpoint source discharge (see Section 3.9.1 for additional information regarding water quality regulations and water quality impairment issues relevant to the beneficial uses of the SCRE and nearshore waters). The beneficial uses of the ocean waters of the State and coastal features in the Los Angeles Region are outlined in the Ocean Plan and the Basin Plan (see Section 3.9.1).

Physical water quality parameters (e.g. salinity, temperature, and dissolved oxygen) within the SCB nearshore waters exhibit distinct seasonal variations and spatial distributions. such as with depth. Such variation is a result of interactions among bathymetry, vertical mixing, freshwater

discharge, and biological processes. The seasonal cycles correspond to oceanic patterns such as water masses transported by the California Current from the northwest and the Southern California Countercurrent from the south and freshwater discharges from major surface water bodies.

Salinity, Temperature, and Density

Salinity is measured by the concentration of salts in water and is expressed as a weight of salts dissolved in a volume of water. The concentration of salt in ocean waters is typically on average around 35 grams per kilogram of water, commonly reported as parts per thousand (i.e. 35 ppt). Salinity levels are generally constant in ocean waters; however, such levels fluctuate within coastal zones due to introduction of freshwater sources from storm runoff. Within SCB nearshore waters, salinity levels are generally uniform and vary from 33 ppt to 34 ppt. The lowest salinities are located along the coast near the mouth of major creeks and rivers due to the influence of fresh water inputs associated with winter rainstorm events that produce high flows of freshwater into the coastal nearshore waters.

Water temperatures fluctuate year-round from approximately 12.3°C to 17.8°C (CMWD 2007) as a result of seasonal and diurnal variations in currents, meteorological conditions (i.e., wind, air temperature, relative humidity, and cloud cover), and other conditions, such as ocean waves and turbulence. Natural surface water temperatures may be expected to vary a few degrees on a daily basis depending on the weather. Weak winds, clear skies, and warm air temperatures contribute to rapid daytime warming of the sea surface; overcast skies, moderate air temperatures, and the mixing of surface waters by winds and waves generally limit the potential for daily warming. The density of seawater in the Santa Monica Bay corresponds to temperature. As a result, density depth gradients are most pronounced when thermoclines are present during the spring and summer months. Regionally, nearshore densities in the upper 100 meters of the water column range from about 24 to 25 sigma-t (σ_T)⁷ throughout the year (CMWD 2007).

Dissolved Oxygen and pH

In combination with nutrients, dissolved oxygen is necessary for a healthy marine ecosystem. Factors such as physical, chemical, and biological variables may affect the dissolved oxygen concentration of seawater. High dissolved oxygen concentrations are typically associated with cool water temperatures (solubility of oxygen in water increases as temperature decreases), active photosynthesis, and/or mixing at the air-water interface. Conversely, lower concentrations may occur with high water temperatures, high rates of organic decomposition, and/or extensive mixing of surface waters with oxygen-poor subsurface waters. Pollutants high in organic constituents can locally deplete dissolved oxygen levels and deleteriously affect marine organisms. Oxygen depletion arises from the bacterial degradation of oxidizable components in organic wastes. In extreme cases, this additional oxygen demand can reduce dissolved oxygen levels to below those necessary to support biological processes. Because of this, the Ocean Plan (see Section 3.9.1) limits the discharge of oxygen-demanding constituents within wastewater so that the resulting depression in dissolved oxygen concentrations does not exceed 10 percent from natural

⁷ Sigma-t (σ_T) is used in oceanography as a measure of seawater density at a given temperature and salinity. σ_T is defined as $\rho(S,T)-1000 \text{ kg m}^{-3}$, where $\rho(S,T)$ is the density of a sample of seawater at temperature T and salinity S, measured in kg m^{-3} , at standard atmospheric pressure.

conditions. Anoxic conditions can occur in the water column as well as in seafloor sediments, although such an occurrence in the well-flushed open ocean is rare.

Dissolved oxygen concentration typically varies in the nearshore temperate environment around 7.5 milligrams per liter (mg/l) (parts per million [ppm]). The threshold of biological concern for dissolved oxygen concentration is 5 mg/l, representing a minimal desirable level below which stress and/or mortality can occur in aquatic wildlife. Although dissolved oxygen varies within the water column, bottom dissolved oxygen concentrations are typically lower than surface values. The hydrogen ion concentration (pH) of marine waters in the region is similar to that of seawater in most other oceans of the world. It is slightly alkaline, with a pH ranging between 7.5 and 8.5.

Other Constituents

Pollutants enter coastal nearshore waters through river drainages, municipal and industrial wastewater discharges, dumping, air emissions, chemical spills, vessel discharges, and surface runoff. Pollutant discharges to SCB nearshore waters stabilized and began to decline after passage of the Clean Water Act (CWA) in 1972. Since then, the predominant source of pollutant loading has shifted from point-source wastewater discharges to nonpoint-source urban runoff. However, the legacy of pollutant discharge has left contamination in nearshore waters and sediments, often at levels of potential biological concern, as reflected in the 303 (d) listing for nearshore waters (see Section 3.9.1). Areas of the nearshore coastal waters off Ventura County are listed on the CWA 303 d list as non-attainment for bacteria, arsenic, cadmium, DDT, Dieldrin, PAHs and PCBs (AMS 2018). Reflecting historic pollutant levels, the Ocean Plan identifies background seawater concentrations for five constituents, which include arsenic, copper, mercury, silver, and zinc (see Section 3.9.1).

The implications of these pollutants vary. Some, such as DDT and PCBs have bioaccumulated, contaminating seafood. Ongoing inputs of these legacy contaminants are very small; most fish contamination is due to existing sediment contamination, a result of legacy discharges of contamination from wastewater outfalls and other sources (Wang and Protopapadakis 2015). Pathogens may cause potential health risks if their concentration is elevated above the level of concern. The sources or pathways of pathogen pollutants vary as well. Pathogens found in stormwater and urban runoff are the primary contaminants of concern at beaches and in areas of high water use for recreation. Heavy metals are found in both wastewater treatment plant and storm drain discharges while on the other hand, contaminated sediments are the only major source for pollutants such as DDT and PCBs that have been banned or restricted. Atmospheric deposition, boating activities, and on-site wastewater treatment (septic) systems have also been known to contribute loading of various pollutants to coastal nearshore waters.

Flood, Tsunami, and Seiche Hazard Zones

The Federal Emergency Management Agency delineates regional flooding hazard areas as part of the National Flood Insurance Program. Areas that have a 1 percent chance of flooding in any given year are referred to as 100-year flood hazard zones. The County of Ventura Countyview GIS website was checked to identify project components located within the 100-year flood hazard zone (Ventura County 2018a). The Golf Course site is within the 100-year flood zone. Proposed Well 9 may be within, and proposed Well 11 is adjacent to, the 100-year flood zone.

A tsunami is a large wave or series of waves generated by an earthquake, volcanic eruption, or coastal landslide. The County of Ventura Countyview GIS website also provides tsunami hazard zone maps and was checked to identify project components located within the tsunami hazard zone (Ventura County 2018a). The wastewater ponds are within, and the VWRP is adjacent to, the tsunami hazard zone.

A seiche is a standing wave that occurs on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. The Santa Clara River is the only water body near the project components but does not sustain enough flow to be susceptible to a seiche.

Coastal Flooding and Sea-Level Rise

During the winter months (generally November to February), offshore storms occurring over the Pacific Ocean, combined with high tides and strong winds, have the potential to cause coastal flooding as a result of wave run-up.⁸ The Base Flood Elevations mapped on the FIRMs are based on the 100-year elevations (i.e. extreme high tide), as well as surge components (atmospheric pressure, wind setup, El Niño sea-level effects) and wave components (wave setup and swell from the Pacific Ocean). A limited area around the SCRE located along the coastline has been identified by FEMA as being located in a Special Flood Hazard Area Zone A (i.e. within the 100-year flood zone) for coastal flood hazards. None of the proposed project components are located within this zone.

Rising sea levels will increase the potential for coastal flooding, and the issue of sea-level rise is important in land use planning and hazard analysis in coastal areas. California Executive Order S-13-08, signed by the governor on November 14, 2008, specifies that all state agencies planning construction projects in areas that are vulnerable to future sea-level rise must consider a range of scenarios for 2050 and 2100 to assess project vulnerability, and, to the extent feasible, must reduce expected risks and increase resiliency with respect to sea-level rise. Until the year 2050, most of the climate models predict a similar degree of sea-level rise; however, after 2050, projections of sea-level rise become less certain because of divergent modeling results and differences in various estimates of the degree to which the international community will decrease greenhouse gas emissions (California Climate Action Team 2010).

The Intergovernmental Panel on Climate Change (IPCC) has indicated that globally, sea level rose at an average annual rate of approximately 1.5 millimeters from 1901 to 1990 and at an average annual rate of approximately 3.2 millimeters from 1993 to 2010 (IPCC 2013). By year 2100, sea levels may rise up to 55 inches (1.4-meters), causing an increase in coastal areas vulnerable to the 100-year flood event (CCC 2015). Based on mapping completed by the Pacific Institute, much of the Pacific Coast could be subject to flooding associated with a 100-year flood event with a sea-level rise of 55 inches (Herberger 2009).

Dam Inundation Zones

The Santa Clara River, its adjacent low-lying areas, the VWRP, the wildlife/wastewater treatment ponds, and the proposed Golf Course AWP site is located within the Dam Failure Inundation

⁸ Wave run-up is the uprush of water from wave action on a shore barrier, such as a beach or other coastline feature. The extent of run-up can vary greatly from wave to wave in storm conditions.

Areas for Bouquet Canyon Reservoir (60 miles to the east), Castaic Lake (48 miles to the east), and Santa Felicia Dam (Lake Piru; 36 miles to the east), as designated by the County of Ventura (County of Ventura 2018b).

3.9.2 Regulatory Framework

Federal

Clean Water Act

The federal CWA and subsequent amendments, under the jurisdiction of the U.S. Environmental Protection Agency (USEPA), was enacted “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The Clean Water Act gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. In California, implementation and enforcement of the National Pollutant Discharge Elimination System (NPDES) program is conducted through the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (Regional Boards). The Clean Water Act also sets water quality standards for surface waters and established the NPDES program to protect water quality. The relevant sections of the CWA are summarized below.

Section 303: Water Quality Standards and Implementation Plans

Section 303 of the CWA requires states to designate beneficial uses for water bodies or segments of water bodies and to establish water quality standards to protect those uses for all waters of the United States. Section 303 of the CWA requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all Waters of the United States.

Under Section 303(d) of the CWA, states, territories and authorized tribes are required to develop lists of impaired waters. Impaired waters are the waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans to improve water quality. This process includes development of TMDLs that set discharge limits for nonpoint source pollutants. The list is administered by the Regional Boards, which for the proposed projects, is the Los Angeles Regional Water Quality Control Board.

Once the water body or segment is listed, the state is required to establish a TMDL for each pollutant causing the conditions of impairment. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating water quality standards. Listing of a water body as impaired does not necessarily suggest that the pollutants are at levels considered hazardous to humans or aquatic life or that the water body segment cannot support the beneficial uses. The intent of the 303(d) list is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for continued water quality degradation.

The Santa Clara River from the estuary to the Highway 101 bridge is listed as impaired for bacteria and nitrogen compounds (Ventura County Watershed Protection District 2015). The

Santa Clara Estuary is listed as impaired for ChemA (unspecified chemical affecting fish tissue), coliform bacteria, nitrate and toxaphene (an insecticide), organism toxicity (SWRCB 2012), as described in detail below in State Regulations.

Section 401: Water Quality Certification

Section 401 of the CWA requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into navigable waters, including the crossing of rivers or streams during road, pipeline, or transmission line construction, to obtain a certification from the state in which the discharge originates. The certification ensures that the discharge will comply with the applicable effluent limitations and water quality standards. The state agency responsible for implementing Section 401 of the CWA in California is the California State Water Resources Control Board (SWRCB) and the local Los Angeles Regional Board as regulated under the Porter-Cologne Act Water Quality Control Act (Porter Cologne Act), discussed under State Regulations, below.

Section 402: National Pollutant Discharge Elimination System

The NPDES permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution. Under the NPDES permit program, discharges into navigable waters are prohibited except in compliance with specified requirements and authorizations. In order to discharge to waters of the United States, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent.

USEPA has delegated authority of issuing NPDES permits in California to the SWRQB and its nine RWQCBs. The LARWQCB regulates water quality in the project area. The NPDES permit program is discussed under State Regulations, below, and includes the site-specific operating NPDES permit for the VWRF and the NPDES stormwater permits for construction, municipal stormwater systems, and industrial facilities.

Section 404: Discharge of Dredged or Fill Material

Section 404 of the Clean Water Act requires that any person conducting any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands, obtain a permit. The U.S. Army Corps of Engineers (USACE) is responsible for issuing permits for the placement of fill or discharge of material into waters of the United States required under CWA Sections 401 and 404. Projects that involve construction in streams or wetlands trigger the need for these permits and related environmental reviews by USACE. Wetlands are generally considered to be areas that are periodically or permanently inundated by surface water or groundwater, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the USACE, which generally defines wetlands through consideration of three criteria: hydrology, soils and vegetation. Under CWA Section 404, the USACE is responsible for regulating the discharge of dredged or fill material into waters of the United States. The term “waters of the United States” includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations.

Executive Order 11988 and National Flood Insurance Program

Under Executive Order 11988, the Federal Emergency Management Agency (FEMA) is responsible for management of floodplain areas, defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1 percent or greater chance of flooding in any given year (representing the 100-year flood hazard zone). Also, FEMA administers the National Flood Insurance Program (NFIP), which requires that local governments covered by federal flood insurance enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year flood zone. To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements.

Specifically, the NFIP requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year floodplain be elevated to or above the 100-year flood level (known as base flood elevation), and a requirement that subdivisions be designed to minimize exposure to flood hazards. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972 provides for management of the Nation's coastal resources and balances economic development with environmental conservation. In 1990, Congress passed the Coastal Zone Act Reauthorization Amendments (CZARA) to address nonpoint source pollution problems in coastal waters. The California Coastal Commission (CCC) has jurisdiction for CZMA implementation throughout the state. The CCC, through the California Coastal Act, applies the water quality policies of the CZARA when reviewing federally licensed and permitted activities to ensure they are consistent with the State's coastal management program in accordance with the CZMA federal consistency provision. The California Coastal Act contains numerous enforceable policies that are directed at protecting and, where feasible, restoring coastal water quality (described under State Regulations, below). See EIR Section 3.10.2 and Figure 3.10-2.

Rivers and Harbors Appropriations Act of 1899

The Rivers and Harbors Appropriations Act of 1899 authorizes the U.S. Army Corps of Engineers (USACE) to exercise control over all construction projects that occur within navigable waters of the United States. The Rivers and Harbors Act was intended for the protection of navigation and navigable capacity and was later amended to include protection of the environment. Section 10 of the Act regulates work and structures occurring in, over, and under navigable waters that affect the course, location, condition, or capacity of navigable waters of the United States, including dredging, wharf improvements, overwater cranes, and artificial islands and installations on the outer continental shelf. Under Section 13 of the Act, discharge of refuse into any navigable water is prohibited without approval of the USACE.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California. The Act establishes the authority of the SWRCB and the nine RWQCBs. The SWRCB administers water rights, sets state policy for water pollution control, and implements various water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and most enforcement activities. The proposed projects are within the jurisdiction of the LARWQCB.

The Porter-Cologne Water Quality Control Act requires the SWRCB and/or the RWQCBs to adopt statewide and/or regional water quality control plans, the purpose of which is to establish water quality objectives for specific water bodies. In the Los Angeles region, the Water Quality Control Plan for the Los Angeles Region (Basin Plan) serves as the legal, technical, and programmatic basis of water quality regulation in the region and along the coast. The Act also authorizes the SWRCB and RWQCBs to implement the NPDES program, which establishes discharge limitations and receiving water quality requirements for discharges to waters of the United States. The Act also authorizes the NPDES program under the CWA, which establishes effluent limitations and water quality requirements for discharges to waters of the state. The Basin Plan and the NPDES permits relevant to the proposed projects are discussed further below.

Anti-Degradation Policy

The SWRCB's Anti-Degradation Policy, otherwise known as Resolution No. 68-16, sets specific restrictions for surface and groundwater that have higher than the required quality in order to avoid degradation of those water bodies. Requirements of this policy must be included within all Basin Plans throughout California. Under this policy, actions that would lower the water quality in designated water bodies would only be allowed if the action would provide a maximum benefit to the people of California, if it will not unreasonably affect beneficial uses, and if it will not lower water quality below applicable standards.

Los Angeles Region Water Quality Control Plan

The SWRCB and the Los Angeles RWQCB share the responsibility, under the Porter-Cologne Act, to formulate and adopt water policies and plans and to adopt and implement measures to fulfill CWA requirements. The Los Angeles RWQCB has prepared the Water Quality Control Plan – Los Angeles Region (Basin Plan) that identifies beneficial uses for the Santa Clara River and major tributaries in the project area, as well as the SCRE (see **Tables 3.9-3** and **3.9-4** below). The Basin Plan also includes water quality objectives for inland surface water, enclosed bays and estuaries, and groundwater basins that correspond to the identified beneficial uses. Groundwater beneficial use designations for the Mound Basin and the Oxnard Plain Basin confined aquifer, including the Lower Aquifer System, described in the Environmental Setting, include Municipal and Domestic Supply (MUN), Industrial Service Supply (IND), Industrial Process Supply (PROC), and Agricultural Supply (AGR).

**TABLE 3.9-3
BENEFICIAL USE DESIGNATIONS FOR SURFACE WATER BODIES IN THE PROJECT AREA**

	Santa Clara River Reach 1 (Estuary to Highway 101 Bridge)	Santa Clara River Estuary
MUN	X	
AGR	X	
PROC	X	
IND	X	
GWR	X	
FRSH	X	
NAV		X
REC-1	X	X
REC-2	X	X
COMM		X
WARM	X	
COLD	X	
EST		X
WET	X	X
MAR		X
WILD	X	X
RARE	X	X
MIGR	X	X
SPWN		X
SOURCE: RWQCB Basin Plan 2014		

**TABLE 3.9-4
DEFINITIONS OF BENEFICIAL USES OF SURFACE WATERS**

Beneficial Use	Description
Municipal and Domestic Supply (MUN)	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
Agricultural Supply (AGR)	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
Industrial Process Supply (PROC)	Uses of water for industrial activities that depend primarily on water quality.
Industrial Service Supply (IND)	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
Groundwater Recharge (GWR)	Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.
Freshwater Replenishment (FRSH)	Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity) which includes a water body that supplies water to a different type of water body, such as, streams that supply reservoirs and lakes, or estuaries; or reservoirs and lakes that supply streams. This includes only immediate upstream water bodies and not their tributaries.

Beneficial Use	Description
Navigation (NAV)	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
Hydropower Generation (POW)	Uses of water for hydropower generation
Water Contact Recreation (REC 1)	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs.
Non-Contact Water Recreation (REC 2)	Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Commercial and Sport Fishing (COMM)	Uses of water for commercial or recreational collection of fish, shellfish, or other organism including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
Warm Freshwater Habitat (WARM)	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Cold Freshwater Habitat (COLD)	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates
Estuarine Habitat (EST)	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds). An estuary is generally described as a semi-enclosed body of water having a free connection with the open sea, at least part of the year and within which the seawater is diluted at least seasonally with fresh water drained from the land. Included are water bodies which would naturally fit the definition if not controlled by tide gates or other such devices.
Wetland Habitat (WET)	Uses of water that support wetland ecosystems, including, but not limited to, preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions which enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.
Marine Habitat (MAR)	Uses of water that support marine ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
Wildlife Habitat (WILD)	Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
Preservation of Rare and Endangered Species (RARE)	Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.
Migration of Aquatic Organisms (MIGR)	Uses of water that support habitats necessary for migration or other temporary activities by aquatic organism, such as anadromous fish.
Spawning, Reproduction, and/or Early Development (SPWN)	Uses of water that support high-quality aquatic habitats suitable for reproduction and early development of fish.
SOURCE: RWQCB Basin Plan 2014	

Water Recycling Policy and Salt and Nutrient Management Plans

In February 2009, the State Water Resources Control Board (SWRCB) adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy. Draft amendments to the Recycled Water Policy were released in May 2012, September 2012, October 2012 (SWRCB hearing change sheets), and January 2013. The Recycled Water Policy Amendment was adopted by the SWRCB on January 22, 2013 and recently updated in 2018. The Recycled Water Policy encourages increased use of recycled water and local storm water. It also requires local water and wastewater entities, together with local salt/nutrient contributing stakeholders to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin and subbasin in California.

The Ventura County Watershed Protection Department has prepared a SNMP for the Mound Basin (Larry Walker 2015). The plan concludes that the Mound Basin exceeds plan objectives for TDS, but does have some assimilative capacity for chlorides and nitrates.

The City of Oxnard initiated the development of the Oxnard Plain and Pleasant Valley SNMP which includes analysis of the Oxnard Forebay, Oxnard Plain, and Pleasant Valley Basins. The City completed the Preliminary Draft SNMP in July 2016 (Carollo Engineers, Inc.). No additional work on the Oxnard Plain and Pleasant Valley SNMP has been conducted since 2016.

Water Quality Control Plan for Ocean Waters of California (Ocean Plan)

The *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) (SWRCB 2016), adopted by the SWRCB in May 2015 and effective January 2016, establishes water quality requirements and objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the state's coastal waters. The plan applies to point and nonpoint source discharges. Both SWRCB and the six coastal RWQCBs implement and interpret the Ocean Plan.

The Ocean Plan identifies the applicable beneficial uses of marine waters. These beneficial uses include preservation and enhancement of designated Areas of Special Biological Significance (ASBS), rare and endangered species, marine habitat, fish migration, fish spawning, shellfish harvesting, recreation, commercial and sport fishing, mariculture, industrial water supply, aesthetic enjoyment, and navigation. The nearshore waters along beaches in the project area are currently listed under Section 303(d) of the CWA as being impaired for water contact recreation beneficial uses as a result of high bacteria concentrations due to urban nonpoint source runoff (USEPA 2018).

The water quality requirements and objectives of the Ocean Plan are incorporated into NPDES permits for ocean discharges. The Ocean Plan requirements do not apply to vessel wastes or to the control of dredge-material disposal or discharge.

Ocean Plan Water Quality Objectives

The Ocean Plan establishes a set of narrative and numerical water quality objectives to protect beneficial uses. These objectives are based on bacterial, physical, chemical, and biological characteristics as well as radioactivity. **Table 3.9-5** presents the numeric water quality objectives for water quality constituents established in the Ocean Plan. The water quality objectives in the Ocean Plan apply to all receiving waters under the jurisdiction of the plan and are established for the protection of aquatic life and for the protection of human health from both carcinogens and

noncarcinogens. The water quality objectives detail 21 objectives for protecting aquatic life, 20 for protecting human health from noncarcinogens, and 42 for protecting human health from exposure to carcinogens.

The Ocean Plan also includes an implementation program for achieving water quality objectives. Effluent limitations for discharges regulated under the NPDES permit system incorporate the Ocean Plan water quality objectives for the protection of marine waters.

**TABLE 3.9-5
WATER QUALITY OBJECTIVES IN THE 2016 OCEAN PLAN**

	Units of Measurement	Limiting Concentrations		
		6-month Median	Daily Maximum	Instantaneous Maximum
Water Quality Objectives for Protection of Marine Life				
Arsenic	µg/L	8	32	80
Cadmium	µg/L	1	4	10
Chromium (Hexavalent)	µg/L	2	8	20
Copper	µg/L	3	12	30
Lead	µg/L	2	8	20
Mercury	µg/L	0.04	0.16	0.4
Nickel	µg/L	5	20	50
Selenium	µg/L	15	60	150
Silver	µg/L	0.7	2.8	7
Zinc	µg/L	20	80	200
Cyanide	µg/L	1	4	10
Total Chlorine Residual	µg/L	2	8.0	60
Ammonia (expressed as Nitrogen)	µg/L	600	2400	6000
Acute Toxicity	TUa	N/A	0.3	N/A
Chronic Toxicity	TUc	N/A	1	N/A
Phenolic Compounds (non-chlorinated)	µg/L	30	120	300
Chlorinated Phenolics	µg/L	1	4	10
Endosulfan	µg/L	0.009	0.018	0.027
Endrin	µg/L	0.002	0.004	0.006
HCH	µg/L	0.004	0.008	0.012
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations.			

Chemical	30-day Average (micrograms per liter or µg/L)
acrolein	220
antimony	1,200
bis(2-chloroethoxy) methane	4.4
bis(2-chloroisopropyl) ether	1,200
chlorobenzene	570
chromium (III)	190,000
di-n-butyl phthalate	3,500
dichlorobenzenes	5,100
diethyl phthalate	33,000
dimethyl phthalate	820,000
4,6-dinitro-2-methylphenol	220
2,4-dinitrophenol	4.0
ethylbenzene	4,100
fluoranthene	15
hexachlorocyclopentadiene	58
nitrobenzene	4.9
thallium	2
toluene	85,000
tributyltin	0.0014
1,1,1-trichloroethane	540,000
acrylonitrile	0.10
Aldrin	0.000022
benzene	5.9
benzidine	0.000069
beryllium	0.033
bis(2-chloroethyl) ether	0.045
bis(2-ethylhexyl) phthalate	3.5
carbon tetrachloride	0.90
chlordane	0.000023
chlorodibromomethane	8.6
chloroform	130
DDT	0.00017
1,4-dichlorobenzene	18
3,3'-dichlorobenzidine	0.0081

Chemical	30-day Average (micrograms per liter or µg/L)
1,2-dichloroethane	28
1,1-dichloroethylene	0.9
dichlorobromomethane	6.2
dichloromethane	450
1,3-dichloropropene	8.9
dieldrin	0.00004
2,4-dinitrotoluene	2.6
1,2-diphenylhydrazine	0.16
halomethanes	130
heptachlor	0.00005
heptachlor epoxide	0.00002
hexachlorobenzene	0.00021
hexachlorobutadiene	14
hexachloroethane	2.5
isophorone	730
N-nitrosodimethylamine	7.3
N-nitrosodi-N-propylamine	0.38
N-nitrosodiphenylamine	2.5
Polyaromatic hydrocarbons (PAHs)	0.0088
Polychlorinated biphenyls (PCBs)	0.000019
2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) equivalents	0.0000000039
1,1,2,2-tetrachloroethane	2.3
tetrachloroethylene	2.0
toxaphene	0.00021
trichloroethylene	27
1,1,2-trichloroethane	9.4
2,4,6-trichlorophenol	0.29
vinyl chloride	36

The Ocean Plan details implementation provisions and specifies a methodology to derive in-pipe constituent concentrations for discharges for determining compliance with the numeric water quality objectives. The compliance methodology incorporates consideration of the background concentrations of some constituents occurring in receiving waters as one of the factors. Background concentrations are provided for five constituents under the Ocean Plan: arsenic, copper, mercury, silver, and zinc; for other constituents it is assumed to be zero (SWRCB 2016).

The Ocean Plan water quality objectives are to be met after the initial dilution of a discharge into the ocean. Initial Dilution is defined as the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. For a submerged buoyant discharge, characteristic of Phase 1 of the proposed projects and most municipal and industrial wastes that are released from the submarine outfalls, initial dilution is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally. For non-buoyant (also referred to as negatively buoyant, or dense) discharges, turbulent mixing results primarily from the momentum of the discharge and initial dilution in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution. Initial dilution occurs in an area known as the zone of initial dilution (ZID). Typically, constituent concentrations are permitted to exceed water quality objectives within the ZID, which is limited in size. Thus, in the case of the proposed projects, the Ocean Plan water quality objectives would apply at the edge or boundary of the ZID. Dilution occurring within the ZID from an operational discharge is conservatively calculated as the minimum probable initial dilution (Dm). The water quality objectives established in the Ocean Plan are considered in the context of the calculated Dm to derive the NPDES effluent limits for a wastewater discharge in-pipe (i.e., prior to ocean dilution).

Desalination Amendment to the California Ocean Plan

In 2015, the Ocean Plan was amended to address effects associated with the construction and operation of seawater desalination facilities and to clarify the SWRCB's authority over desalination facility intakes and discharges. The current Ocean Plan provides a uniform, consistent process for permitting seawater desalination facilities statewide, allowing for the use of ocean water as a reliable supplement to traditional water supplies while protecting marine life and water quality. The Ocean Plan now also provides direction for regional water boards when permitting new or expanded desalination facilities and provides specific implementation and monitoring and reporting requirements. The Ocean Plan now includes the following provisions that are applicable to Phase 2 of the proposed projects if it includes an ocean desalination component:

- Implementation procedures for conducting Water Code Section 13142.5, subdivision (b) (hereafter 13142.5(b)) evaluations of the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life at new or expanded desalination facilities.⁹
- A receiving water limitation for salinity applicable to all desalination facilities to ensure that brine discharges to ocean waters do not cause adverse effects to aquatic life beneficial uses.
- Procedures for applying for regional water board approval of an alternative intake screening technologies, brine disposal methods, or receiving water limitation for salinity.

⁹ California Water Code Section 13142.5(b) was adopted as part of the California Ocean Plan Amendment, and requires that any "new or expanded coastal power plant or other industrial installation using seawater for cooling, heating or industrial processing" must use "the best available site, design, technology and mitigation measures feasible . . . to minimize the intake and mortality of all forms of marine life." This determination is to be made by RWQCBs, and is known as a "Water Code Section 13142.5(b) determination."

- Monitoring and reporting requirements that include effluent monitoring, as well as monitoring of the water column bottom sediments and benthic community health to ensure that discharges do not harming aquatic life or impair beneficial uses beyond the defined regulatory brine mixing zone (BMZ)¹⁰.
- Requirements that waste management systems that discharge into the ocean be designed and operated in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in treatment so as to maintain indigenous marine life and a healthy and diverse marine community.
- Requirements that waste discharged to the ocean be essentially free of substances that will accumulate to toxic levels in marine waters, sediments, or biota.
- Waste effluents must be discharged in a manner that provides sufficient initial dilution to minimize the concentrations of substances not removed in treatment.
- The SWRCB defines subsurface intakes as the preferred technology for desalination facility water intake design. However, surface water intakes are allowed where subsurface intakes are found infeasible (SWRCB 2015).

Concerning brine discharge from a potential Phase 2 desalination plant, the Ocean Plan requires an evaluation of the availability and feasibility of diluting brine by commingling it with wastewater. If wastewater is unavailable, then multiport diffusers are considered to be the preferred method for discharging brine (SWRCB 2016). Multiport diffusers are installed as an end-of-pipe system on submerged marine outfalls, allowing effluent to be discharged through various ports or openings. Pressure is increased through the ports at the discharge and allows for the brine to rapidly mix and disperse brine in receiving water bodies, facilitating rapid dilution and a reduction of salinity. The use of multiport diffusers requires a relatively limited area to enable rapid turbulent mixing that disperses and dilutes brine. Additionally, mitigation measures are required to address harmful impacts on marine life that occur after a desalination facility uses the best available site, design, and technology feasible. Feasibility considerations regarding site, design, technology, and mitigation measures consider economic, environmental, social, and technological factors.

Ocean Plan Salinity Requirements

The Ocean Plan Amendment includes new requirements to address brine discharges from desalination facilities along the California coast. The most relevant of these Phase 2 projects are contained in Section III.M.3, “Receiving Water Limitation for Salinity.” The receiving water limitation for salinity requires that discharges not exceed a daily maximum of 2 ppt above natural background salinity measured no further than 100 meters (328 feet) horizontally from each discharge point, representing the BMZ. The value of 2 ppt represents the maximum incremental increase above natural background salinity allowed at the edge of the BMZ. The Ocean Plan specifies a methodology for assessing brine discharges to determine that such discharges meet the receiving water limitation. The methodology involves calculating the minimum dilution of the proposed discharges using applicable water quality models that have been approved by the

¹⁰ As discussed in more detail below, the Brine Mixing Zone (BMZ) is defined as “the area where salinity may exceed 2.0 parts per thousand above natural background salinity or the concentration of salinity approved as part of an alternative receiving water limitation. The standard brine mixing zone shall not exceed 100 meters (328 feet) laterally from the points of discharge and throughout the water column.”

RWQCBs in consultation with SWRCB staff. The minimum dilution is then applied to a specified formula to determine the incremental increase in salinity above natural background salinity (a detailed discussion of the methodology for determining compliance with the Ocean Plan salinity requirement and the application of this method to the assessment of the proposed Phase 2 projects is presented in Section 3.9.4, Impacts and Mitigation Measures).

Ocean Plan Monitoring Requirements

The Ocean Plan requires that desalination facilities implement a Monitoring and Reporting Program that has been reviewed and approved by the RWQCB prior to construction (Section III.M.4, Monitoring and Reporting Program; SWRCB 2016). The Monitoring and Reporting Program must include provisions for facility-specific monitoring of effluent and receiving water characteristics to demonstrate compliance with the receiving water limitation for salinity (described above), and to evaluate the potential effects of the discharge within the water column, in bottom sediments, and on benthic communities and other forms of marine life. Specifically, operators must evaluate the potential effects of the discharge on benthic community health, aquatic life toxicity, hypoxia, and receiving water characteristics. Further, the Monitoring and Reporting Program must be consistent with monitoring procedures detailed in Appendix III of the Ocean Plan, which specifies methodological design and provides details for determining compliance with the receiving water limitation in Chapter III.M.3. For example, the Ocean Plan requires that receiving water monitoring for salinity compliance be conducted at times when the monitoring locations detailed in the Monitoring and Reporting Program are most likely affected by the discharge (i.e., worst-case scenario). Additionally, the owner or operator is required to conduct biological surveys to establish baseline biological conditions at the discharge location as well as at a reference location outside the influence of the discharge prior to commencement of construction and then to evaluate differences between biological communities at the reference site and at the discharge location (e.g., Before-After Control-Impact studies) after discharges commence.

The RWQCB uses the data and results from the surveys and any other applicable monitoring data for evaluating and renewing the requirements set forth in a facility's NPDES permit. Such monitoring is required to continue until the RWQCB determines that a regional monitoring program is adequate to ensure compliance with the receiving water limitation. The Monitoring and Reporting Program would require review and approval by the RWQCB prior to implementation of the Phase 2 projects, and would be revised if necessary, as part of the NPDES permit process.

Thermal Plan

The Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (or Thermal Plan) adopted by the SWRCB in 1995 establishes temperature requirements for existing and new discharges in California coastal waters, interstate waters, enclosed bays, and estuaries. Water quality objectives for existing discharges into coastal waters require that wastes with elevated temperature comply with limitations necessary to assure protection of designated beneficial uses. The Thermal Plan defines new discharges as "discharges that are not presently taking place" and elevated-temperature wastes as

“liquid, solid, or gaseous material including thermal waste¹¹ discharged at a temperature higher than the natural temperature of receiving water”. The Thermal Plan establishes the following standards for all new discharges (SWRCB 1995):

- The maximum temperature of thermal waste discharges shall not exceed the natural temperature of receiving waters by more than 20°F.
- The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at the shoreline, the surface of any ocean substrate, or the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any complete tidal cycle.

California Code of Regulations, Title 22, Division 4, Chapter 3 Water Recycling Criteria

The use of recycled water throughout the State of California is governed by 22 CCR, Division 4, Chapter 3, *Water Recycling Criteria*. Water Recycling Criteria are incorporated in water reclamation requirements issued by the local RWQCB, which include groundwater replenishment using recycled water. The California Division of Drinking Water (a division of the SWRCB) has updated the regulations to govern groundwater replenishment for aquifers designated as sources of drinking water using recycled water from domestic wastewater sources (22 CCR Division 4, Chapter 3, Article 5.2, *Indirect Potable Reuse: Groundwater Replenishment – Subsurface Application*). The regulations for groundwater replenishment using recycled water became effective on July 16, 2015, and are implemented through the SWRCB and its RWQCBs. A Discharge Permit must be obtained from the Los Angeles RWQCB for the use of recycled water. Further details for the reuse of 22 CCR recycled water and the discharge of fully advanced treated water intended for groundwater recharge or injection are summarized below.

Groundwater Replenishment Reuse Project Regulations

The proposed projects are considered a Groundwater Replenishment Reuse Project (GRRP). As defined by 22 CCR Section 60301.390, a GRRP is “a project involving the planned use of recycled municipal wastewater that is operated for the purpose of replenishing a groundwater basin designated in the Water Quality Control Plan for use as a source of municipal and domestic water supply.” Prior to operating a GRRP, the treatment facility is required to site and construct at least two monitoring wells down gradient of the GRRP such that at least one monitoring well is located no less than 2 weeks but no more than 6 months of travel time from the GRRP, and one monitoring well is at least 30 days of travel time upgradient of the nearest drinking water well. GRRP groundwater monitoring well requirements are set forth in 22 CCR Section 60320.226.

Pursuant to 22 CCR Section 60320.226, the project sponsor is required to collect groundwater samples from each aquifer that will receive the GRRP’s recharge water or that is validated as receiving recharge water from the GRRP. In addition, the monitoring wells would provide data on water levels and groundwater mounding as a result of recharge. The City would monitor groundwater levels and recycled water and groundwater quality, as required by the GRRP regulations (22 CCR Section 60320).

¹¹ Cooling water and industrial process water used for the purpose of transporting waste heat.

Title 22 Engineering Report

22 CCR Section 60323 requires the submittal of a Title 22 Engineering Report. The purpose of the Title 22 Engineering Report is to provide data and information on the treatment facility and to describe the broader framework of the City's plan for compliance with the GRRP regulations. The Division of Drinking Water's approval of the Title 22 Engineering Report would be required prior to the production of reclaimed recycled water for reuse from the WRF and as a condition of the Discharge Permit. Among other things, the Title 22 Engineering Report would include a hydrogeological assessment of groundwater conditions in the project vicinity, as required by the GRRP regulations. The hydrogeological assessment would include the following:

- The report shall be prepared by a qualified engineer licensed in California and experienced in the field of wastewater treatment, and include the qualifications of the individual(s) preparing the assessment;
- A general description of geologic and hydrogeological setting of the groundwater basin(s) potentially directly impacted by the project;
- A detailed description of the stratigraphy beneath the facility, including the composition, extent, and physical properties of the affected aquifers;
- The existing hydrogeology and the hydrogeology anticipated as a result of the operation of the GRRP;
- Maps showing quarterly groundwater elevation contours, along with vector flow directions and calculated hydraulic gradients; and
- The estimated response retention time (see further discussion below);
- A description of the design of the proposed reclamation system;
- The means for compliance with these regulations and any other features specified by the regulatory agency;
- A contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use area.

Response Retention Time

As required by 22 CCR Section 60320.224, recycled municipal wastewater applied by a GRRP shall be retained underground for a required period of time (i.e., response retention time). The investigation shall determine the amount of time necessary to allow a project sponsor sufficient response time to identify treatment failures and implement actions. The minimum response retention time is 2 months. The GRRP regulations identify four methods of quantifying the response retention time that include conducting an operational tracer test or conducting numerical or analytical modeling of groundwater flow travel times.

Monitoring Programs

Recycled Water Monitoring Program. In accordance with 22 CCR Section 60320.210, 60320.212, 60320.218, and 60320.220, the City would be required to monitor WRF recycled water prior to injecting into the groundwater. Each quarter, the GRRP sponsor is required to sample and analyze the recycled municipal wastewater and groundwater for priority toxic pollutants and other chemicals specified by the California Division of Drinking Water (DDW) based on the Engineering Report. WRF recycled water quality monitoring is performed to protect

the drinking aquifers in the event of a treatment breakthrough. The treatment processes are required to undergo routine performance monitoring to demonstrate treatment of specific indicator compounds to specific performance standards, which include various organic and inorganic compounds, and pathogenic microorganisms (specifically *Giardia* and *Cryptosporidium*).

Operational Groundwater Monitoring Program. In accordance with 22 CCR Section 60320.220 and 60320.226, the City would monitor each nested piezometer at each monitoring well location to assess changes in groundwater quality associated with groundwater replenishment activities. The GRRP is required to collect two samples prior to operation and at least one sample each quarter after operation begins. Each sample is to be analyzed for total nitrogen, nitrate, nitrite, and any contaminants specified by the DDW or RWQCB.

Annual Reporting

As required by 22 CCR Section 60320.228, the City would be required to submit an annual report no later than 6 months after the end of each calendar year to the Division of Drinking Water and the RWQCB. Public water systems and drinking water well owners having downgradient sources potentially affected by the GRRP and within 10 years' groundwater travel time from the GRRP shall be notified by direct mail and/or electronic mail of the availability of the report. The report shall be prepared by an engineer licensed in California and experienced in the fields of wastewater treatment and public water supply. The report shall include the following:

- A summary of the GRRP's compliance status with the monitoring requirements and criteria of this Article during the previous calendar year.
- For any violations of this Article during the previous calendar year:
 - the date, duration, and nature of the violation
 - a summary of any corrective actions and/or suspensions of subsurface application of recycled municipal wastewater resulting from a violation
 - if uncorrected, a schedule for and summary of all remedial actions
- Any detections of monitored chemicals or contaminants, and any observed trends in the monitoring wells and diluent water supplies.
- Information pertaining to the vertical and horizontal migration of the recharge water plume;
- A description of any changes in the operation of any unit processes or facilities.
- A description of any anticipated changes, along with an evaluation of the expected impact of the changes on subsequent unit processes.
- The estimated quantity and quality of the recycled municipal wastewater and diluent water to be applied for the next calendar year.
- A summary of the measures taken to comply with Sections 60320.206 and 60320.200(j), and the effectiveness of the implementation of the measures.
- Increases in RWC during the previous calendar year and RWC increases anticipated for the next calendar year.

Five-Year Reporting

Every 5 years from the date of the initial approval of the Title 22 Engineering Report required pursuant to 22 CCR Section 60323, the City shall update the report to address any project changes and submit the report to the DDW and the RWQCB. The update shall include, but not be limited to:

- Anticipated recycled municipal wastewater contribution (RWC)¹² increases, a description of how the RWC requirements in 22 CCR Section 60320.216 will be met, and the expected impact the increase will have on the GRRP's ability to meet the requirements of this Article.
- Evidence that the requirements associated with retention time in 22 CCR Section 60320.208, if applicable, and 22 CCR Section 60320.224 have been met.
- A description of any inconsistencies between previous groundwater model predictions and the observed and/or measured values, as well as a description of how subsequent predictions will be accurately determined.

California Water Code, Article 4 Waste Discharge Requirements

The California Water Code Division 7, Water Quality, Sections 13000 through 16104, provide regulations for water quality. For this project, Chapter 4 Regional Water Quality Control, Article 4 Waste Discharge Requirements, Sections 13260 through 13276, provide waste discharge requirements that apply to the VWRP and the AWP, including the requirement to submit a Report of Waste Discharge (ROWD) describing the treatment facility structures and operations, the nature and volume of waste to be discharged, the waste treatment procedures to be implemented to reduce the waste characteristics to within effluent limitations prior to discharge, and discharge prohibitions.

NPDES Waste Discharge Program

The federal CWA established the NPDES program to protect the water quality of receiving waters of the United States. Under CWA Section 402, discharging pollutants to receiving waters of the United States is prohibited unless the discharge is in compliance with an NPDES permit. In California, administration of the NPDES program has been delegated by USEPA to the SWRCB and its nine RWQCBs.

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. Through the nine RWQCBs, point source dischargers are required to obtain NPDES permits (or, in California under authority of Porter-Cologne, Waste Discharge Requirements). Point sources include municipal and industrial wastewater facilities and stormwater discharges.

Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. When developing effluent limitations for an NPDES permit, a permit applicant must consider limits based on both the technology available to control the

¹² 22 CCR Section 60301.705. Recycled Municipal Wastewater Contribution (RWC) means the fraction equal to the quantity of recycled municipal wastewater applied at the GRRP divided by the sum of the quantity of recycled municipal wastewater and credited diluent water.

pollutants (i.e. technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e. water quality-based effluent limits¹³ if technology-based limits are not sufficient to protect the water body).

For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan. For ocean discharges, such as under the proposed projects, the Ocean Plan contains beneficial uses, water quality objectives, and effluent limitations (described in detail above).

There are two types of NPDES permits: individual permits tailored to an individual facility and general permits that cover multiple facilities or activities within a specific category. Prior to issuance of any NPDES permits for construction activities or operational discharges, or issuance of licenses, a review and authorization process by the local RWQCB, in this case the Los Angeles RWQCB, is required to ensure such permits and licenses are protective of designated beneficial uses and water quality and that TMDL requirements are incorporated as permit conditions in a manner consistent with relevant plans, policies, and guidelines. The NPDES permits relevant to construction and operation of the proposed projects are described below.

VWRF NPDES Permits R4-2013-0174

The existing VWRF currently operates under NPDES Permit No. CA0053651, Waste Discharge Requirements (WDR) Order No R4-2013-0174. The permit requires compliance with full tertiary treatment requirements (i.e. filtration and disinfection). The tertiary-treated municipal wastewater is sequentially discharged through three wastewater ponds and then to the SCRE. The 1974 Water Quality Control Policy for the Enclosed Bays and Estuaries of California prohibits discharges of municipal wastewater to enclosed bays and estuaries except “when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge.” In 1976, the City submitted a plan for effluent utilization that included a “demonstration of enhancement” due to the VWRF discharge of freshwater to the SCRE. This plan indicated that some of the beneficial uses of the estuary, such as fish and wildlife habitat and non-contact water recreation, were more fully realized by the presence of the discharge. Consequently, Order No. 77-100, adopted by the RWQCB in May 1977, granted the City an exception to the discharge prohibition and allowed continued discharge of the VWRF tertiary-treated wastewater into the estuary.

Prior to the 2008 renewal of the City’s NPDES permit for the VWRF, several questions arose regarding the definition of enhancement, the benefits that the discharge provides to the Estuary and adjacent subwatershed, and how discharge practices could be modified over time to protect and enhance habitat and water quality of the portion of the SCRE directly affected by the VWRF discharge. To address these issues the LARWQCB ordered the City to complete a series of Special Studies under Order R4-2008-0011 (described in detail in Section 2.3). Following the completion of these studies, stakeholders expressed concerns about identified data gaps and the

¹³ Water quality-based effluent limits specify the level of pollutant (or pollutant parameter), generally expressed as a concentration, that is allowable.

study findings. In response to these concerns, the Regional Board adopted requirements in the City's current NPDES Permit, Order R4-2013-0174 for VWRf discharges (Ventura NPDES Permit) mandating the following additional special studies: the *Phase 3 Estuary Studies* (Phase 3 Study), the *Nutrient, Dissolved Oxygen and Toxicity Special Study*, and the *Groundwater Special Study* (described in detail in Section 2.3).

The Phase 3 Study provides an updated assessment of the VWRf discharge on the ecological functions and beneficial uses supported by the SCRE to facilitate the Los Angeles Regional Board's determination of "enhancement" as defined by EBE Policy in connection with the next renewal of the Ventura NPDES Permit. Additionally, as described in Chapter 1, the Phase 3 Study was conducted as part of the scientific analysis leading to the determination of the MEPDV pursuant to conditions of Tertiary Treated Flows Consent Decree and Stipulated Dismissal among the Wishtoyo Foundation Ventura Coastkeeper (VCK), Heal the Bay (HTB) and the City (Consent Decree described in detail below). Stillwater Sciences' data and analysis were subsequently independently reviewed by a Technical Review Team (TRT) assembled by the Wishtoyo Foundation, VCK, and HTB. It was also independently reviewed by a separate Scientific Review Panel (SRP). Both review groups were composed of experts in the fields of aquatic ecology, estuarine ecology, fisheries ecology and hydrology/engineering. The TRT and SRP independently analyzed the available flow, water quality and habitat data assembled by Stillwater Sciences, and carefully evaluated the models and findings presented in the Phase 3 Study. The MEPDV reflects the review and input of the Scientific Review Panel convened pursuant to the Consent Decree, as well as the Resources Agencies with jurisdiction to environmentally review, consult with respect to, certify, approve, condition, or otherwise permit modifications to the existing VWRf.

Calleguas SMP NPDES Permit R4-2014-0033

The Calleguas Municipal Water District (CMWD) owns and operates the Calleguas SMP. The SMP is located approximately 10 miles from the Ventura AWPf. The SMP was constructed to discharge both tertiary-treated municipal wastewaters and concentrates generated by membrane treatment of groundwater and wastewater treatment facilities to the Pacific Ocean. CMWD has completed construction of the Calleguas SMP Outfall and the first 13.5 miles of the SMP. CMWD already has a NPDES permit for the SMP (Order R4-2014-0033, NPDES NO. CA0064521) which is currently operating. The outfall of the SMP (Calleguas SMP Outfall) is located in proximity to the Port Hueneme Pier and has a capacity of 19 million gallons per day (MGD), but discharges are limited to a maximum of 17.52 MGD under the current NPDES permit. The minimum initial dilution (Dm) established in the NPDES permit at the point of discharge for operations by the CMWD is 1:72 (parts effluent to seawater). The Dm is used by the RWQCB to determine compliance with the water quality effluent limitations established in the NPDES permit for in-pipe water quality (i.e. prior to discharge) that are based on water quality objectives contained in the Ocean Plan (described above). The effluent limitations in the permit are based on and are consistent with the water quality objectives contained in the Ocean Plan. The NPDES permit incorporates the Ocean Plan water quality objectives established by the SWRCB in order to ensure the protection of the beneficial uses of receiving ocean waters.

Under the proposed projects, RO treated wastewater (Phase 1) could be discharged via the SMP at the Calleguas SMP Outfall. CMWD requires that all discharges to the SMP meet the SMP

NPDES permit discharge limits at the point of connection. This is enforced through monthly sampling reports provided by the discharger to CMWD. A CMWD SMP NPDES Permit does not accept discharges of ocean water desalination brine.

NPDES General Construction Permit for Storm Water Runoff

Construction associated with the proposed projects would disturb more than 1 acre of land surface affecting the quality of stormwater discharges into waters of the U.S. The proposed projects would therefore be subject to the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to waters of the U.S. from construction sites that disturb 1 or more acres of land surface, or that are part of a common plan of development or sale that disturbs more than 1 acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines. That General Permit requires storm water discharges and authorized non-storm water discharges must not contain pollutants that cause or contribute to an exceedance of any applicable water quality objective or water quality standards (identified in the Basin Plan).

The Construction General Permit requires construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g. grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

1. Effluent standards
2. Erosion and sediment controls
3. Good site management (“housekeeping”)
4. Inspection, maintenance, and repair
5. Non-stormwater management
6. Monitoring and reporting requirements
7. Run-on and runoff controls

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific best management practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater as well as non-storm water and from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

Receiving water risk is based on whether the project drains to a sediment-sensitive water body. A sediment-sensitive water body is one that appears on the most recent 303(d) list for water bodies as impaired for sediment, has a USEPA-approved TMDL implementation plan for sediment, or has the beneficial uses of cold freshwater habitat, fish migration, and fish spawning.

Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e. implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

In addition to stormwater discharges, the Construction General Permit also covers other non-storm water discharges including irrigation of vegetative erosion control measures, water to control dust, uncontaminated groundwater from dewatering, and other discharges not subject to a separate general NPDES permit adopted by the RWQCB. The discharge of non-storm water is authorized under the following conditions:

1. The discharge does not cause or contribute to a violation of any water quality standard;
2. The discharge does not violate any other provision of the General Permit;
3. The discharge is not prohibited by the applicable Basin Plan;
4. The discharger has included and implemented specific BMPs required by the General Permit to prevent or reduce the contact of the non-storm water discharge with construction materials or equipment.
5. The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
6. The discharge is monitored and meets the applicable numeric action levels; and
7. The discharger reports the sampling information in the Annual Report.

Dischargers are required to electronically submit a notice of intent (NOI) and permit registration documents (PRDs) in order to obtain coverage under this Construction General Permit.

Dischargers are responsible for notifying the RWQCB of violations or incidents of non-compliance, as well as for submitting annual reports identifying deficiencies of the BMPs and how the deficiencies were corrected. The risk assessment and SWPPP must be prepared by a state Qualified SWPPP Developer and implementation of the SWPPP must be overseen by a state Qualified SWPPP Practitioner. A Legally Responsible Person, who is legally authorized to sign and certify PRDs, is responsible for obtaining coverage under the permit.

NPDES Phase I Municipal Separate Storm Sewer System (MS4) General Permit

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer (drain) systems (MS4s). Stormwater runoff and authorized non-storm flows (conditionally exempt discharges) are regulated under NPDES stormwater permits. Phase I NPDES permits require medium and large cities, or certain counties with populations of 100,000 or more, to obtain NPDES permit coverage for their stormwater discharges. The MS4 permits

require the discharger to develop and implement a Stormwater Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable, the performance standard specified in CWA Section 402(p), typically through the application of BMPs. The management programs specify what BMPs will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post-construction; and good housekeeping for municipal operations.

The Permittees, consisting of the Ventura County Watershed Protection District, the County of Ventura, and all incorporated cities, prepared a Storm Water Management Program (SMP) to comply with the Phase I Small MS4 NPDES permit (Water Quality Order No. R4-2010-0108-DWQ) issued by the RWQCB on July 8, 2010. The permit contains discharge prohibitions, receiving water limitations, SMP implementation requirements, and other provisions to reduce the discharge of pollutants and mandate participating municipalities to implement SMPs. The SMPs incorporate BMPs that include construction controls (such as a grading ordinance), legal and regulatory approaches (such as stormwater ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies. During operation of the proposed projects, non-stormwater discharges from facility sites would be prohibited (with some conditional exceptions). Stormwater discharges must meet water-quality-based effluent limitations, or water quality standards for discharges leaving the site, and must not cause or contribute to the exceedance of receiving water limitations (water quality standards for receiving waters). The current permit will be updated shortly and after review of the Report of Waste Discharge submitted by the Ventura County Watershed Protection District.

NPDES General Industrial Permit for Stormwater Runoff

The NPDES General Industrial Permit regulates storm water discharge associated with ten broad categories of industrial activity within California (Order No. 2014-0057-DWQ). The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable and best pollutant control technology. The General Industrial Permit also requires the development of a SWPPP and a monitoring plan. Category 9, Sewage and Wastewater Treatment Works, includes facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage and land designated to the disposal of sewage sludge that are located within the confines of a facility with a design flow of one million gallons per day or more are required to have an approved pretreatment program under 40 CFR Part 403. The City would be required to revise and renew the General Industrial Permit for the VWRf to include the new proposed facilities, and to acquire coverage under this permit for the new AWPf. The BMPs includes measures to prevent the discharge of pollutants into the storm drainage systems, eliminate or significantly reduce outdoor pollutant sources that are likely to be washed into the storm drain system upon contact with rainfall, and utilize advanced BMPs that infiltrate or reuse storm water, where feasible.

LARWQCB NPDES Groundwater Dewatering General Permit

The LARWQCB General NPDES Permit No. CAG994004 (R4-2003-0111) covers discharges of treated and untreated groundwater generated from permanent or temporary dewatering operations, including groundwater generated from construction dewatering activity. In addition, this permit covers discharge from cleanup of contaminated sites where other project-specific

General Permits may not be appropriate, such as groundwater impacted by metals and/or other toxic compounds. This permit regulates the discharge of groundwater that may or may not be impacted by toxic compounds and/or conventional pollutants and ensures the pollutant concentrations in the discharge will not violate any water quality objectives for receiving waters, including discharge prohibitions. Required groundwater samples taken prior to discharging operations determine whether the water must be treated prior to being discharged. Various biological, chemical, physical, and thermal treatment systems may be employed to remove these toxic or conventional pollutants in groundwater to applicable permit limits.

Dischargers must submit a Report of Waste Discharge prior to permit authorization, including a feasibility study on reuse/alternative disposal methods and a description of treatment, collection, and discharge system. An ongoing monitoring and reporting program is also required under this permit. When treatment is required prior to discharge, dischargers are required to submit schematics of treatment flow diagrams with descriptions of the treatment system, including statements on the effectiveness of the system to achieve the applicable permit limits during the permit process.

Statewide NPDES General Permit for Drinking Water System Discharges

The SWRCB is responsible for issuance of NPDES permits for discharges from drinking water systems to surface waters in California (Order No. WQ 2014-0194, NPDES No. CAG140001) (RWQCB 2014). Drinking water systems with 1,000 connections or greater that are regulated by the SWRCB Division of Drinking Water or a local county department of public health, with the primary purpose of transmitting, treating, or distributing safe drinking water, are subject to the permit requirements. The Order provides regulatory coverage for short-term or seasonal planned and emergency (unplanned) discharges resulting from a water purveyor's essential operations and maintenance activities undertaken to comply with the federal Safe Drinking Water Act, the California Health and Safety Code, and the SWRCB's Division of Drinking Water permitting requirements for providing reliable delivery of safe drinking water. Such discharges include, but are not limited to, discharges from supply wells, transmission systems, water treatment facilities, water distribution systems, and storage facilities.

Planned discharges include regularly scheduled, automated, or non-regularly scheduled activities that must take place to comply with regulations and that the water purveyor knows in advance will result in a discharge to surface water. Emergency discharges include unplanned discharges that occur due to facility leaks, system failures, operational errors, or catastrophic events for which the water purveyor is not aware of the discharge until after the discharge has commenced. Planned and emergency discharges may occur directly, through a constructed storm drain or through another conveyance system, to waters of the United States. Discharges of a pollutant from a drinking water system, regardless of the size of the system, are required to be regulated by an NPDES permit if the discharges flow into a water of the United States.

Discharges authorized under the permit are determined to not adversely affect or impact beneficial uses of the receiving waters when properly managed through BMPs. Any discharges that are likely to cause or contribute to an exceedance of a water quality objective, other than those granted an exception under the SWRCB Resolution 2014-0067, are not authorized under the permit. Requirements of this general permit implement the Ocean Plan water quality

objectives and TMDL requirements and are applicable to discharges directly into the Ocean or indirectly via a stormwater system that drains into the Ocean. All discharges regulated under this permit must implement BMPs for the treatment or control of pollutants from pipeline disinfection discharges to protect beneficial uses of the receiving waters.

NPDES General Permit for Vessel Incidental Discharges

Under Section 402 of the CWA, USEPA regulates discharges incidental to the normal operation of a commercial (i.e., non-military, non-recreational) vessel. This includes a broad range of incidental discharges, such as ballast water, bilgewater, graywater (e.g., water from sinks and showers), and deck washdown and runoff. USEPA controls these incidental discharges primarily through two NPDES general permits: The Vessel General Permit (VGP), covering vessels greater than 79 feet in length and ballast water from commercial vessels of all sizes, and; the Small Vessel General Permit (sVGP), for the control of incidental discharges for vessels less than 79 feet in length. The VGP and sVGP contain numeric ballast water discharge limits for most vessels. The VGP also contains stringent requirements for oil-to-sea interfaces and exhaust gas scrubber washwater for the protection of U.S. waters. USEPA is responsible for implementing the VGP and sVGP, and all vessels associated with the proposed projects in marine waters would be required to adhere to the conditions of the relevant permit.

Waiver of Waste Discharge Requirements

California Water Code Section 13269 authorizes the RWQCB to waive Waste Discharge Requirements for specific discharges or specific types of discharges where such a waiver is consistent with any applicable state or regional water quality control plan and is in the public interest. Waivers may be granted for discharges to land and may not be granted for discharges to surface waters or conveyances thereto that are subject to the federal CWA requirements for NPDES permits.

California Coastal Act

The California Coastal Act (Public Resources Code [PRC]) Section 30000 et seq.) provides for the long-term management of lands within California's coastal zone boundary. The coastal zone is an area in which the CCC plans and regulates the use of land and water. On land the coastal zone varies in width from several hundred feet in highly urbanized areas up to 5 miles in certain rural areas, and offshore the coastal zone includes a 3-mile-wide band of ocean. Implementation of Coastal Act policies is accomplished primarily through the preparation of local coastal programs (LCPs) that are required to be completed by each of the coastal zone counties and cities. Development within the coastal zone may not commence until a Coastal Development Permit (CDP) has been issued by either the CCC or the local government that has a CCC-certified LCP. Development activities are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters.

The existing VWRf site and several proposed projects components, including the treatment wetland site, the onshore and offshore portions of the proposed new outfall, and the associated pipelines, and the potential Harbor Boulevard site for the AWPf, are located within the coastal zone (see Section 3.10.2 and Figure 3.10-2); development of these components would require a

CDP. There are three LCP jurisdictions of relevance to the proposed projects: City of Ventura, City of Oxnard, and County of Ventura (that covers the unincorporated areas of Ventura County), all of which have a certified and adopted LCP and therefore have jurisdiction to issue a CDP. Additionally, because the CCC retains CDP jurisdiction over development proposed on the immediate shoreline, tidelands, submerged lands, and public trust lands (Coastal Act Section 30601), construction of the proposed ocean intake and concentrate discharge facilities would require a CDP from the CCC.

The Coastal Act includes specific policies for management of natural resources and public access within the coastal zone. Of primary relevance to surface water hydrology and water quality are Coastal Act policies concerning protection of the biological productivity and quality of coastal waters. The CCC applies the Coastal Act's water quality policies when reviewing applications for CDPs in state waters. The CCC also applies the water quality policies when reviewing federally licensed and permitted activities to ensure they are consistent with the state's coastal management program in accordance with the CZMA federal consistency provision. In addition to these Coastal Act policies and the Coastal Commission's August 2015 Sea Level Rise Policy Guidance document (CCC 2015) setting forth the means by which new development may be subject to sea-level rise, and the Ocean Protection Council's April 2017 *Rising Seas in California: An Update of Sea-Level Rise Science* and its 2018 *State Sea-Level Rise Guidance*, should be analyzed.

Urban Water Management Act

Water Code Section 10620(a) of the Urban Water Management Planning Act requires urban water suppliers to prepare and adopt an Urban Water Management Plan (UWMP) and sets forth parameters for doing so. Each UWMP is to assess current and projected water supplies; evaluate demand and customer type; evaluate reliability of water supplies; describe conservation measures implemented by the water supplier; provide a response plan for times of water shortage; and compare supply and demand projections. UWMPs must be updated every 5 years and the most recent update occurred in June 2016.

The Water Conservation Act of 2009, Senate Bill 7x-7 set a requirement for water agencies to reduce their per capita water use by the year 2020. The overall goal is to reach a statewide reduction of per capita urban water use of 20 percent by December 31, 2020, with an intermediate goal of 10 percent reduction by December 31, 2015. In the 2010 UWMPs, urban suppliers were required to set targets and supply a plan to reduce per capita water consumption. Demand reduction can be achieved through both conservation and the use of recycled water as a potable demand offset.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014, effective January 1, 2015, gives local agencies the authority to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources. The SGMA establishes a definition of sustainable groundwater management, establishes a framework for local agencies to develop plans and implement strategies to sustainably manage groundwater resources, prioritizes basins with the greatest problems (ranked as high and medium priority) and sets a 20-year timeline for implementation. The initial basin prioritization under SGMA uses the

prioritization conducted by the California Department of Water Resources (DWR) in 2014 under the California Statewide Groundwater Elevation Monitoring program. The Mound Basin is ranked as medium priority. The City of Ventura has created a Groundwater Sustainability Agency (GSA) pursuant to SGMA. SGMA requires the creation of a GSA to develop and implement a Groundwater Sustainability Plan (GSP) that would manage and use groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results, defined as follows:

1. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply
2. Significant and unreasonable reduction of groundwater storage
3. Significant and unreasonable seawater intrusion
4. Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies
5. Significant and unreasonable land subsidence that substantially interferes with surface land uses
6. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

Regional

Ventura County General Plan

The Ventura County General Plan, which is mandated by State law, sets forth the goals, policies, and programs the County will implement to manage future growth and land uses. The General Plan, adopted by the Board of Supervisors, embodies the vision for the future of unincorporated Ventura County. The Ventura County General Plan includes a biological resources element, which details plant and animal species and their habitats, plant communities and ecosystems. The following goals and policies related to hydrology and water quality are applicable to the proposed projects.

Chapter 1.3 Water Resources

Goal 1.3.1.1. Inventory and monitor the quantity and quality of the County's water resources.

Goal 1.3.1.2. Effectively manage the water resources of the County by adequately planning for the development, conservation and protection of water resources for present and future generations.

Goal 1.3.1.3. Maintain and, where feasible, restore the chemical, physical and biological integrity of surface and groundwater resources.

Goal 1.3.1.4. Ensure that the demand for water does not exceed available water resources.

Goal 1.3.1.5. Protect and, where feasible, enhance watersheds and aquifer recharge areas.

Goal 1.3.1.6. Promote reclamation and reuse of wastewater for recreation, irrigation and to recharge aquifers.

Goal 1.3.1.7. Promote efficient use of water resources through water conservation. Preserve and protect significant biological resources in Ventura County from incompatible land uses and development. Significant biological resources include endangered, threatened or rare species and their habitats, wetland habitats, coastal habitats, wildlife migration corridors and locally important species/communities.

Policy 1.3.2.1. Discretionary development which is inconsistent with the goals and policies of the County's Water Management Plan (WMP) shall be prohibited, unless overriding considerations are cited by the decision-making body.

Policy 1.3.2.2. Discretionary development shall comply with all applicable County and State water regulations.

Policy 1.3.2.4. Discretionary development shall not significantly impact the quantity or quality of water resources within watersheds, groundwater recharge areas or groundwater basins.

Policy 1.3.2.6. The use of the Santa Clara River as a multiple resource (i.e., source of supply for water, concrete aggregates and biological habitat) shall be permitted to continue; with the use of the River as a water resource having priority over all other uses.

Policy 1.3.2.8. All discretionary development shall be conditioned for the proper drilling and construction of new oil, gas and water wells and destruction of all abandoned wells on-site.

Program 1.3.3.1. The Public Works Agency and the United Water Conservation District will continue to support the Seawater Intrusion Abatement Project.

Program 1.3.3.2. The County Public Works Agency will continue to enforce Chapter 70 (Excavation and Grading) of the Uniform Building Code, as incorporated by reference in and amended by the Ventura County Building Code, to ensure that any proposed grading in a waterway or wetland is adequately investigated and that any development incorporates appropriate design provisions to protect waterways or wetlands.

Program 1.3.3.3. The County will continue to support the Fox Canyon Groundwater Management Agency Plan for both the Upper and Lower Aquifer Systems.

Program 1.3.3.7. The Public Works Agency, in cooperation with the Environmental Health Division, will continue to pursue the use of reclaimed water for agricultural irrigation.

Chapter 2.6 Tsunami

Goal 2.6.1. Minimize the risk of loss of life, injury, and collapse of habitable structures, and economic and social dislocations resulting from a tsunami.

Policy 2.6.2. Essential facilities, special occupancy structures and hazardous materials storage facilities should not be located in tsunami hazard areas.

Chapter 2.10 Flood Hazards

Goal 2.10.1.1 Minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.

Goal 2.10.1.2. Design and construct appropriate surface drainage and flood control facilities as funding permits.

Goal 2.10.1.3. Prevent incompatible land uses and development within floodplains.

Policy 2.10.2.1 Land use in the regulatory floodway should be limited to open space, agriculture, or passive to low intensity recreational uses, subject to the approval of the County Public Works Agency. The floodway's principal use is for safely conveying floodwater away from people and property.

Policy 2.10.2.2. Within areas subject to flooding as determined by the Federal Emergency Management Agency on the latest available Digital Flood Insurance Rate Maps (DFIRMs), the County shall require the recordation of a Notice of Flood Hazard or dedication of a flowage easement with the County Recorder for all divisions of land and discretionary permits.

Policy 2.10.2.3. Development proposed within the floodplain shall be designed and built to standards intended to mitigate to the extent possible the impacts from the one percent annual chance storm.

Policy 2.10.2.4. The design of any structures which are constructed in floodplain areas as depicted on the Hazards Protection Maps, shall be governed by Federal regulations, specifically Title 44 Code of Federal Regulations Sections 59 through 70, as well as the County Floodplain Management Ordinance and shall incorporate measures to reduce flood damage to the structure and to eliminate any increased potential flood hazard in the general area due to such construction.

Program 2.10.3.5. All new habitable and non-habitable structures proposed within the one percent annual chance floodplain as well as all interior and exterior renovations, additions, and remodeling projects proposed to existing structures within a one percent annual chance floodplain shall be reviewed by the Public Works Agency, and the developer must obtain a Floodplain Development Permit from the Public Works Agency prior to the issuance of a Building Permit and/or a Grading Permit.

Local

City of San Buenaventura General Plan

Adopted in 2005, the City of Ventura General Plan sets long-range goals based on a shared vision to guide Ventura's future. The City Council, advisory boards, commissions, city departments and staff rely on the General Plan to guide certain functions, responsibilities, and services the City provides to residents, and the protection of natural and cultural resources in the community. The General Plan includes policies and actions for water supply, wastewater treatment, and storm drainage (City of Ventura 2005a). The following goals and policies related to hydrology and water quality are applicable to the proposed projects.

Policy 5A. Follow an approach that contributes to resource conservation.

Action 5.2. Use natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment when feasible.

Action 5.12. Apply new technologies to increase the efficiency of the wastewater treatment system.

Action 5.17. Require stormwater treatment measures within new development to reduce the amount of urban pollutant runoff in the Ventura and Santa Clara Rivers and other watercourses.

Policy 7B. Minimize risks from geologic and flood hazards.

Action 7.6. Adopt updated editions of the California Construction Codes and International Codes as published by the State of California and the International Code Council respectively.

Action 7.7. Require project proponents to perform geotechnical evaluations and implement mitigation prior to development of any site:

- along bluffs, dunes, beaches
- other coastal features and in areas within 100-year flood zones, in conformance with all Federal Emergency Management Agency regulations.

Action 7.10: Require proponents of any new developments within the 100-year floodplain to implement measures, as identified in the Flood Plain Ordinance, to protect structures from 100-year flood hazards (e.g., by raising the finished floor elevation outside the floodplain).

Action 5.17. Require stormwater treatment measures within new development to reduce the amount of urban pollutant runoff in the Ventura and Santa Clara Rivers and other watercourses.

City of Oxnard 2030 General Plan

The City of Oxnard 2030 General Plan was adopted in 2011, and amended in 2016. The General Plan contains goals and policies that are intended to guide a wide range of public and private development decisions through 2030 (City of Oxnard 2011). The General Plan includes the following goals and policies related to hydrology and water quality that are applicable to the proposed projects' brine disposal pipeline that would pass through the City of Oxnard.

Goal SC-2: Sea level rise is routinely considered relative to coastal areas and other City decisions, as relevant.

Policy SC-2.3: 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.

3.9.3 Significance Thresholds and Criteria

Significance Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to hydrology and water quality. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant adverse environmental impact if they would:

- Violate any water quality standards or waste discharge requirements (refer to Impact HYDRO 3.9-1).
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted) (refer to Impact HYDRO 3.9-2).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site (refer to Impact HYDRO 3.9-3).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site (refer to Impact HYDRO 3.9-3).
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (refer to Impact HYDRO 3.9-4).
- Otherwise substantially degrade water quality (refer to Impact HYDRO 3.9-4).
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam (refer to Impact HYDRO 3.9-5).
- Inundation by seiche, tsunami, or mudflow (refer to Impact HYDRO 3.9-5).
- A summary of the findings for each impact is presented in **Table 3.9-6**. The analyses below support these findings.

**TABLE 3.9-6
SUMMARY OF HYDROLOGY AND WATER QUALITY IMPACT DETERMINATIONS**

Impacts	3.9-1 Water Quality	3.9-2 Groundwater Supplies	3.9-3 Cause Erosion, Flooding or Exceed Drainage System Capacity	3.9-4 Levee or Dam Failure	3.9-5 Seiche, Tsunami or Mudflow
Phase 1					
Advanced Water Purification Facility	LTS	NI	LTS	LTS	NI
Water Conveyance System	LTS	NI	NI	NI	NI
Groundwater Wells	LTSM	LTSM	LTS	NI	NI
Wildlife/Treatment Wetlands	LTS	LTS	LTS	LTS	LTS
VWRF Treatment Upgrade	LTS	LTS	LTS	LTS	LTS
Concentrate Discharge Facility	LTS	LTS	NI	NI	LTS
Phase 2					
AWPF Expansion	LTS	LTS	LTS	LTS	NI
Ocean Desalination	LTS	LTS	NI	LTS	NI

Issues Not Discussed in Impacts

Due to the nature of the proposed projects, there would be no impact related to the following topics for the reasons described below:

- ***Housing in flood zone:*** The proposed projects do not involve construction of any housing within a 100-year flood hazard area. There would be no impact relative to residential units. This issue is not discussed further as there would be no impact.

3.9.4 Impacts and Mitigation Measures

Water Quality

Impact HYDRO 3.9-1: The proposed projects could have a significant impact if they would violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.

Phase 1

Advanced Water Purification Facility

Stormwater Runoff

The proposed projects would include construction of the AWPf at one of the three proposed locations (see Figure 2-2). All three proposed sites are unpaved. One site includes part of a golf course; the remaining sites are undeveloped.

During the construction phase, construction equipment and materials would include fuels, oils, lubricants, solvents, cleaners, cements, adhesives, paints, thinners, degreasers, cement and concrete, which are all commonly used in construction. The routine use or an accidental spill of

hazardous materials could result in inadvertent releases, which could adversely affect the water quality of stormwater and/or surface water bodies (e.g. Santa Clara River). In addition, construction of the proposed projects would have the potential to result in local soil erosion during excavation, grading, trenching, and soil stockpiling. Erosion could result in sediment and other pollutants entering surface water bodies and adversely affecting water quality.

As discussed in Impact 3.8-1 in Section 3.8 Hazards and Hazardous Materials, construction activities would be required to comply with numerous hazardous materials regulations designed to ensure that hazardous materials are transported, used, stored and disposed of in a safe manner to protect worker safety, and to reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and nearby surface water bodies. Contractors would be required to prepare and implement HMBPs that would require that hazardous materials used for construction would be properly used and stored in appropriate containers, that spill prevention measures are implemented, and that spill response procedures are in place to respond to accidental releases. The California Fire Code would also require measures for the safe storage and handling of hazardous materials.

The proposed projects would be required to comply with the Construction General Permit requiring preparation and implementation of a SWPPP to control runoff from construction work sites. Implementation of BMPs including physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods during storm events, use of infiltration swales, protection of stockpiled materials, and a variety of other measures would substantially reduce the potential for impacts to surface water quality from occurring during construction. Construction impacts would be less than significant.

During its operation, as part of the treatment process, the AWPf would use the chemicals listed on Table 2-9. Accidental spills of these chemicals could adversely affect the water quality of nearby surface water bodies (e.g. Santa Clara River). Rainfall falling on the AWPf could result in polluted stormwater runoff that could adversely affect water quality.

As a wastewater treatment facility, the City would be required to obtain coverage under the NPDES General Industrial Stormwater Permit for the AWPf by preparing and implementing a SWPPP. The SWPPP would include BMPs to manage rainwater falling on the AWPf by treating stormwater prior to discharge to the municipal stormwater system. The AWPf also would be required to comply with the Municipal Stormwater Permit and its local MS4 permit development standards, which would require reducing pollutants and runoff flows from new development using BMPs and Low Impact Development (LID)/post-construction standards such as bioswales, infiltration galleries, and other pre-treatment measures. The required compliance with the numerous laws and regulations discussed above that would govern the operations of the AWPf would limit the potential for adverse impacts to water quality, and would render this impact less than significant.

SCRE Water Quality

Reduction of discharge to the SCRE would reduce the loading of nutrients, metals, CECs, and TDS into the SCRE (Stillwater Sciences 2018). As discussed above in the setting section, the Phase 3 Report included a detailed assessment of water quality in the SCRE and evaluated the

contribution of contaminants found in the water body from groundwater, dry-weather surface flows, storm flows, ocean overtopping, and VWRf discharges. The Phase 3 Report concludes that water quality of the SCRE is affected by each source. As summarized in **Table 3.9-7**, the Phase 3 Study concludes that the proposed projects would result in slightly reduced salinity and nutrient concentrations. Reduction of VWRf input into the system would contribute to reduced water depth and extent of open water, which could increase water temperatures slightly and would reduce the potential for temperature stratification. The Phase 3 Study concludes¹⁴ the shallower lagoon would slightly lower metals and CEC concentrations, and significant reduced nutrient loading with implementation of the proposed flow reductions. The reduced nutrient loading to the SCRE would subsequently reduce the probability (or duration) of hypoxia events that occur in the SCRE (SRP 2018). The SRP (2018) reviewed the Phase 3 Study and concluded that the reduced discharges and reduced water depth associated with the proposed 90 percent MEPDV would reduce artificial breaches of the lagoon mouth, which is detrimental to aquatic habitat and species, during dry periods as water levels would stabilize and be maintained at approximately 5.3-foot elevation (artificial breaching occurs when water levels reach 7.4-foot elevation). Impacts would be less than significant.

TABLE 3.9-7
WATER QUALITY ESTIMATES, DRY-WEATHER CLOSED-MOUTH CONDITIONS

Scenario (% VWRf discharge reduction)	SCRE conductivity (mS/cm)	SCRE salinity (ppt)	TIN (mg-N/L) at assumed algae uptake/denitrification rates ¹	PO ₄ (mg-P/L) at assumed algae uptake rates ²
Existing Condition Scenario 1 (0%)	2.8	1.4	8.0	1.7
Proposed Project Scenario 10 (90%)	2.3	1.2	7.4	1.4

¹ Assumed unmeasured flow dominated by wave overwash following breached berm closure

² Unmeasured base flows within the Santa Clara River channel not represented by other groundwater sources.

SOURCE: Stillwater 2018: Phase 3, Assessment of the Physical and Biological Conditions of the Santa Clara Estuary, Ventura County, California; pp. 240, 242

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would construct a product conveyance system that transports tertiary-treated water from the VWRf to the AWPf, raw groundwater to the AWPf from the proposed extraction wells, advanced treated water from the AWPf to ASR wells and/or the Bailey WCF or Saticoy WCF, and conveying extracted groundwater from the ASR wells to the Bailey WCF or Saticoy WCF. The conveyance pipelines are shown on Figure 2-9. Compliance with hazardous materials (see Section 3.8) and stormwater (see Regulatory Framework in this section) regulations that govern the transportation, use, handling, and disposal of hazardous materials, and

¹⁴ Stillwater, 2018; p. 238-243.

controlling runoff from construction activities would reduce the potential for adverse effects to water quality to less than significant.

Once operational, the conveyance systems would be underground and would not affect water quality. Impacts to water quality would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed projects include construction of groundwater wells in the Oxnard Plain shown on Figure 2-10. As discussed above in Section 3.9.2, compliance with hazardous materials, Construction General Permit requirements and stormwater regulations that govern the transportation, use, handling and disposal of hazardous materials, and controlling runoff from construction activities, would reduce the potential for adverse effects to water quality during construction to less than significant.

Once operational, the injection wells would pump advanced treated water into the a confined layer of the groundwater basins which are designated with a MUN beneficial use. An NPDES permit approved by the SWRCB pursuant to Title 22 regulations for indirect potable reuse (IPR) would be required. As outlined above, the regulations require that an Engineering Report be prepared to ensure that the IPR project is designed and installed sufficiently to protect groundwater quality and public health. This includes a treatment process that effectively removes CECs and pathogens.

In 2017, the City conducted a MODFLOW screening exercise to test the feasibility of injecting between 4,000 AFY and 7,600 AFY into the Oxnard Plain Basin (Bondy 2018). The screening found that water level fluctuations at the closest neighboring wells (approximately 1,000 feet) would be only a few feet. Screening level particle tracking results suggest that injected water would not reach the neighboring wells during normal operations where the injected water was extracted after the minimal retention times. Therefore, the screening level analysis suggests that neighboring wells would not likely experience changes in water quality under normal operations. If the injected water remains for periods longer than 6 months, neighboring wells may entrain some of that water which would result in improved water quality relative to native groundwater. The analysis concludes that preferential pathways may exist that could shorten the time required to reach neighboring wells and that additional detailed modeling should be conducted to verify the preliminary findings.

For wells near the coast, groundwater extraction could promote seawater intrusion under certain operating scenarios. Avoiding seawater intrusion would be accomplished through extraction of the injected water within a short time frame to avoid excessive subsurface migration. Similarly, long-term storage of injected water in the Oxnard Plain could displace naturally recharged groundwater. As part of the Title 22 Engineering Report, the City would be required to identify and report the proximity of local wells that could be within the proposed projects' zone of influence. To ensure that groundwater quality at these wells is not adversely affected, **Mitigation Measures HYDRO-1** would require that the City conduct groundwater modeling or tracer tests

to ensure sufficient distance from existing groundwater extraction wells. Groundwater monitoring would be required to ensure injected water remains underground for a minimum of 2 months before being extracted through the ASR wells. These mitigation measures would ensure that the project is compliant with Title 22 regulations and permit conditions issued by the SWRCB.

The injection of advanced treated water would improve the quality of groundwater and would be a beneficial impact. In addition, the proposed projects would remove TDS from the basin through treatment of lower quality groundwater from existing groundwater extraction wells. Removed salts would be discharged to the ocean via the concentrate discharge system. Water extracted through the ASR wells would consist primarily of the injected water, with potential for some minimal mixing with existing groundwater. Consequently, the extracted water would achieve drinking water standards and could be blended with other sources of groundwater to improve overall delivered water quality. Therefore, the ASR wells would result in a beneficial impact.

Injection operations into the confined aquifer would not result in groundwater mounding since the injected water would be within a pressurized water-bearing zone. Similarly, the injection wells would not affect subsurface infrastructure, perched groundwater, or surficial soils that may contain contaminated soils. Impacts would be reduced to less than significant.

Mitigation Measures:

HYDRO-1: Prior to construction of the proposed projects, the City shall conduct groundwater modeling within the potentially affected portions of the Oxnard Plain Basin to estimate the radius of influence for injected water within the minimum retention time required to comply with Title 22. The City shall conduct a well survey within the radius of influence indicated by the results of the groundwater modeling to identify nearby active water supply wells that could be affected by the proposed ASR wells.

Based on the groundwater modeling or tracer test results, in compliance with Title 22, the City shall demonstrate that no existing drinking water well or agricultural well would be adversely affected by injection and extraction of highly treated water. The City shall notify all well owners that could be affected by the operation of the ASR program as determined by the groundwater modeling. As required by Title 22, the City shall conduct groundwater monitoring to ensure injected water remains underground for a minimum of 2 months before being extracted.

If existing potable wells are found to be potentially adversely affected by the ASR operations through a reduction in water quality or through impeding access to groundwater, the City shall conduct one, or a combination, of the following actions:

- Coordinate with the well owner to arrange for an interim or long term replacement water supply.
- Repair or deepen the existing adversely affected well.
- Improve well efficiency of existing extraction wells.
- Construct a new well.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

The wildlife/treatment wetlands component of the proposed projects could include reconfiguration of the existing wildlife/treatment ponds by adding fill to raise the ponds floor to approximately 3 feet from the surface and adding new vegetation throughout the ponds. In addition, the proposed projects may include an approximately 20 to 30-acre new wildlife/treatment wetland, shown on Figure 2-17. Construction of the wildlife/treatment wetland would consist of site clearing, grading, excavation, building access roads, constructing basins, berm construction, fine grading, hydric soils placement and wetlands plantings. Grading to a depth of 3 to 5 feet would be conducted along with creation of side berms to impound water. As discussed above, the required compliance with the existing hazardous materials, Construction General Permit requirements and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities would reduce the potential for adverse effects to water quality to less than significant.

As discussed in the Natural Treatment Wetlands Project subsection in Section 2.5.2 *The Ventura Water Supply Projects – Phase 1 Components*, once operational, the ponds and wetlands would receive tertiary-treated water, as the existing ponds do now. Tertiary-treated water flows to the ponds and wetlands would support their intended dual use as for final water treatment ponds that support habitat.

Both the existing and new wildlife/treatment wetlands would be designed to accommodate wet-weather storage during wet-weather events when the SCRE sand berm was not breached. The storage capacity would be defined within the NPDES permit. The wetlands would be designed to accommodate temporary elevated water levels without losing long-term water quality treatment functions.

Operation of the wetlands would likely result in a long-term, incremental improvement of water quality in SCRE. The tertiary-treated water flow conveyed through the Natural Treatment Wetlands would reduce bacteria, metals, and nutrients concentrations through natural processes. Overall, the ponds would reduce nutrient concentrations prior to being discharged into the SCRE. Therefore, the proposed projects would benefit water quality of the lagoon and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Expansion

Treatment upgrades to the VWRF would be installed to reduce nitrate concentrations to 4 mg/L as N (nitrogen) in effluent discharged from the natural treatment wetlands to the SCRE as outlined in the Consent Decree. The upgrades would include replacing the aeration blowers, existing gravity thickener, and a new anoxic tank within the existing VWRF. As previously discussed above, the required compliance with the existing hazardous materials and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities would reduce the potential for adverse effects to water quality to less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

Concentrate discharge would occur through either of two options: construction of an ocean outfall or connection to the existing Calleguas Salinity Management Pipeline outfall. Both options are described below.

New Outfall: Construction

If selected, a proposed new concentrate outfall would be constructed north of Ventura Harbor via a pipeline within public right-of-way where possible and would discharge offshore into the ocean (see Figure 2-2). As discussed above in Section 3.9.2, the construction of the land-side components of the new outfall would be required to comply with the existing hazardous materials, Construction General NPDES Permit requirements and stormwater regulations that govern the transportation, use, handling and disposal of hazardous materials, and controlling runoff from construction activities.

Offshore vessels used for construction would be required to comply with the NPDES General Permit for Vessel Incidental Discharges, which requires controlling incidental discharges from vessels such as construction barges. The required compliance with these existing regulations would reduce the potential for adverse effects to water quality to less than significant.

Offshore construction of the proposed outfall structure would involve activities on the ocean surface (such as the assembly of components and staging equipment on anchored barges) as well as underwater and on the ocean floor (in-water construction). In-water construction activities would include dredging of the ocean bottom, the placement of foundation materials prior to placement of outfall components, diver-assisted placement and connection of precast structures, attaching and sealing new structures, and towing or transporting precast concrete elements into place via barge and either sinking them into position or lowering via a barge-mounted crane.

In-water construction activities would extend over a 6 to 12-month period. Direct construction impacts (i.e. physical footprint) would be localized near the new outfall location (see Figure 2-19). Dredging activities would involve the collection, removal, reuse/replacement, and/or the transport and disposal of dredge-material via barge. Diver-assisted construction activities on the seafloor would involve the physical installation of project components, such as pipeline risers and multi-port diffusers. Additionally, the use of support craft at the water surface, such as barges and cranes, would require anchoring to the seafloor.

Impacts on water quality could occur from dredging, installation of pipelines, diver-assisted installation of pre-fabricated structures, anchoring, and potential construction-related spills. Water quality impacts would primarily result from the resuspension¹⁵ of sediments and/or the introduction of contaminants associated with sediment to the water column. As such, the

¹⁵ Resuspension is the dislodgement and dispersal of sediment into the water column (where finer sediments are subject to transport and dispersion by currents). Sediment resuspension can also result in the short-term release of contaminants in the water column through release of pore water (water between individual sediment particles) and by separation from suspended particles.

following potential impacts to water quality associated with in-water construction activities (direct effects) and in the larger offshore study area (indirect effects) from construction activities could occur:

- Increased turbidity (sediment resuspension resulting in reduced water clarity and light transmittance)
- Increased dissolved or particulate contaminants (that were previously bound to dredged sediments or contained in pore water)
- Reduced dissolved oxygen (from suspension of sediments with low oxygen)
- Water quality degradation from dredge material stockpiling, transport, and disposal
- Accidental release of hazardous materials associated with standard construction activities (such as fuels, oils, solvents, etc.)

Prior to implementing the proposed projects, the City would be required to obtain a Section 10 permit from the USACE and RWQCB water quality certification for the in-water construction, as well as a Section 404 permit from USACE for disposal of dredge material. In addition, offshore vessels used for construction would be required to comply with the NPDES General Permit for Vessel Incidental Discharges that would require controlling incidental discharges from vessels such as construction barges. The potential water quality effects from in-water construction activities are described below for each of these issues. The biological effects on marine biota from potential water quality impacts are discussed in Section 3.11, Marine Biology.

Turbidity

Dredging during excavation of the exit pit at the offshore Horizontal Directional Drill (HDD) exiting point would resuspend some bottom sediments and create temporary turbidity plumes near the dredge operations. The extent of increased turbidity from dredging depends on the composition of the sediments, method of dredging, and duration of operations. During dredging operations, elevated turbidity would occur in the immediate vicinity of the dredge and would generally be confined to within a few hundred yards of the activity. After initially increased turbidity levels, sediments would settle and disperse rapidly once dredging ceases, due to ocean mixing from tides and currents, and background levels would be restored. As part of the proposed projects and as required by the USACE Section 10 permit conditions, dredge BMPs such as silt curtains,¹⁶ gunderbooms,¹⁷ operational controls, and in-water work-windows would be employed to minimize turbidity and suspended sediment. Silt curtains and gunderbooms reduce dispersal of suspended sediment and increased turbidity beyond the dredge site. Operational controls would be specific to the dredging method and would represent protocols that minimize bottom disturbance and the potential for resuspending sediment. Work windows are periods of time when special-status or listed species are not present in the area (see Section 3.11, Marine Biology). The BMPs would be incorporated into Section 10 permit conditions.

¹⁶ Floating impermeable barrier intended to allow suspended sediment at a dredging site to settle out of the water column in a controlled area, minimizing the area that is affected by the increased suspended sediment.

¹⁷ Similar to silt curtains but constructed of permeable geotextile fabrics. Designed to extend from the water surface to the project bottom and allow water to flow through the curtain while filtering suspended dredged sediment from the flow.

The inadvertent release of drilling fluid from HDD drilling operations could result in increased turbidity and water quality degradation. However, as described in Section 2.7.2, to avoid discharging drilling fluids into the ocean, the pilot bore would not penetrate the ocean floor and the bore hole would be enlarged by forward reaming. Access to the newly installed pipeline would be made from the barge using dredging techniques, described above. Once the HDD pipeline is pulled back through the hole, the new ocean pipeline and diffuser components would be conjoined and installed on the ocean floor.

The anchoring of support craft could also produce a temporary and highly localized disturbance to the seafloor. As described above, resuspended sediments would settle rapidly and water quality would rapidly return to ambient conditions. Installation of project components via diver activity would not result in substantial increases in turbidity and any increases would be of short duration and highly localized. Compliance with Section 10 permit conditions during construction and the implementation of BMPs and proposed construction techniques to avoid the release of drilling fluids would ensure that impacts to water quality from temporary turbidity would be less than significant.

Sediment Contaminants and Mobilization into the Water Column

Suspended sediments could release contaminants such as metals and organics into the water column during the dredging, anchoring, and diver-assisted pipeline installation. The transport of suspended particles by tides and currents could redistribute contaminants beyond the active in-water disturbance area. The potential for contaminant release and transport is primarily related to the sediment particle sizes,¹⁸ sediment organic content, and contaminant concentrations associated with the disturbed sediments. Any increase in contaminant levels in the water is expected to be localized and of short duration. The amount of contaminants redistributed in this manner would be small, and the distribution would be limited to the work area. Sediment would be analyzed in advance of the dredging to ensure that disruption of the materials does not impact water quality. The process would be covered in a permit from the USACE Section 10 permit that would outline sediment handling best practices to minimize suspended sediment. Operational controls would be specific to the dredging method and would represent protocols that minimize bottom disturbance and the potential for resuspending sediment. Therefore, contaminant concentrations associated with resuspended sediments are not expected to result in degraded water quality near the outfall site. Impacts to water quality due to the suspension or redistribution of sediment contaminants would be less than significant.

Dissolved Oxygen

Within areas of dredging, dissolved oxygen may be reduced as a result of anoxic sediment becoming resuspended into the overlying water column. Substantially depressed oxygen levels (i.e. below 5 milligrams per liter [mg/L]) can cause respiratory stress to aquatic life, and levels below 3 mg/L can cause mortality. If anoxic (oxygen-poor) sediments are resuspended, reduced dissolved oxygen would likely persist for relatively short periods in a highly localized manner because of the rapid settling of suspended sediment (described for turbidity, above). As such, should dissolved oxygen be reduced, such conditions are not expected to persist or cause detrimental effects to biological resources. In addition, tidal flushing and dynamic mixing from

¹⁸ Sediment grain size affects the binding capacity of contaminants.

wind and wave action would improve depressed oxygen levels by introducing oxygenated water into the project area. The potential for reduced dissolved oxygen levels during construction would be of short duration and highly localized within the work area. Construction activities would be subject to the water quality objectives in the Ocean Plan and approved through the LARWQCB 401 Certification. Impacts to water quality due to reduced dissolved oxygen would be less than significant.

Dredge-Material Stockpiling, Transport, and Disposal

Excavated dredge materials would be either temporarily stockpiled beside the excavation on the seafloor and reused as fill or collected and disposed of via barges at an open ocean disposal site or at an onshore facility. Side-casting of the dredge spoils would result in temporary turbidity, as described above. Reusing the dredge material to cover the installed pipelines on the ocean floor would also create temporary turbidity. These episodes of turbidity would be of short duration and as discussed above would result in less than significant water quality impacts. Effects from dredge material transport and disposal at designated offshore disposal sites such as LA-2 (see Section 3.9.2) were evaluated during the site designation process (USEPA 1988) and subsequently evaluated in consideration of higher maximum annual disposal volumes (USEPA and USACE 2005). Approval to dispose of dredge material at LA-2 would require testing of the material to ensure compliance with the LA-2 requirements. Sediments from the proposed dredging area would be tested using standard USEPA protocols (according to an approved sampling and analysis plan) prior to dredging to determine the suitability of the material for unconfined, aquatic disposal or other disposal alternatives. If determined to be suitable for open ocean disposal, the dredged material could be disposed of at a designated ocean disposal site. Mandatory compliance with Section 10 permit requirements, RWQCB water quality certification, and Waste Discharge Requirements as well as disposal of dredged materials would ensure the proposed projects are consistent with relevant regulations, plans, and policies. Water quality impacts relating to dredge-material transport and disposal would be less than significant.

Accidental Spills

Accidental spills of fuel, lubricants or hydraulic fluid from equipment used during offshore construction could occur. Section 10 permit conditions would include the use of BMPs to minimize the potential for spills including the provision of spill containment and cleanup equipment to control potential accidental spills. Compliance with regulatory requirements would ensure impacts to water quality from the accidental release of hazardous materials during offshore construction would be less than significant.

New Outfall: Operation

Based on the RO recovery rate, the AWPf treatment process would produce approximately 1.2 MGD of waste residuals (RO concentrate). One option for the discharge of concentrate is through a new ocean outfall offshore north of Ventura Harbor (Figure 2-19).

Under wet-weather conditions or during critical down times for the AWPf, tertiary-treated water from the VWRf may bypass the AWPf and be sent to the outfall. The diversion of a portion of the tertiary-treated VWRf wastewater for RO treatment would result in the concentrations of some constituents that are currently associated with the VWRf discharge to increase in the RO

concentrate. Increased concentrations of water quality constituents in operational discharges, if high enough, could degrade water quality and adversely affect the beneficial uses of the receiving ocean waters and/or violate water quality standards or waste discharge requirements. To assess water quality impacts, the predicted concentrations of water quality constituents present in the operational discharges were analyzed and assessed by Carollo Engineers (2016) for compliance with relevant water quality standards, such as NPDES effluent limitations and Ocean Plan water quality objectives.

When released from an outfall, operational discharges undergo dilution with ocean water. The mixing of the discharge with receiving ocean waters is affected by the buoyancy and momentum of the discharge plume, a process referred to as initial dilution. Compliance with the Ocean Plan water quality objectives, summarized in Table 3.9-5, is required after the initial dilution of the discharge into the ocean is completed. The initial dilution occurs in an area known as the “zone of initial dilution” (ZID) and the edge of the ZID depends, in part, on the discharge plume density. Initial dilution is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

As prescribed in the Ocean Plan, the discharge must meet the water quality objectives at the outer boundary of the ZID. Discharge effluent limitations for an NPDES permit (i.e., the permitted in-pipe concentration of water quality constituents) are obtained by quantifying the degree of dilution that occurs within the ZID, referred to as the minimum probable initial dilution (D_m). The water quality objectives established in the Ocean Plan are adjusted by the project-specific D_m to derive the NPDES permit limits on in-pipe constituent concentrations for a wastewater discharge prior to ocean dilution.

To determine the minimum initial dilution for the proposed operational discharges, a plume mixing model that is consistent with the method approved by the SWRCB was utilized to assess the dilution of the RO concentrate (Roberts 2018). The mixing model assessed two different diffuser depths, representing diffuser locations at approximately 1 mile offshore (12 meters or ~40 foot depth) and 2 miles offshore (16 meters or ~50 foot depth). Additionally, the mixing model assessed dilution for offshore receiving water densities associated with summer and winter seasons. **Table 3.9-8** summarizes the properties of the effluent constituents modeled for the proposed Phase 1 discharge scenario. **Table 3.9-9** summarizes the model results.

The model results were used to determine the optimum number of diffuser ports and port diameters for efficient mixing that also minimizes shear stress on planktonic species (discussed in Section 3.11, Marine Biology). Further, the model analysis conservatively assumed an ambient ocean current of zero (i.e. assumes no mixing of the discharge plume occurs because of ocean currents; although additional mixing and dilution of the discharge plume would actually occur as a result of dynamic movement from currents, tides, and waves.). A detailed description of the mixing model methodology and results are included in **Appendix D**.

Carollo (2016) compiled water quality monitoring data from the VenturaWaterPure Demonstration Facility to determine the water quality characteristics of the proposed RO concentrate. The assessment determined the in-pipe concentration of water quality constituents

from the proposed RO concentrate and compared these concentrations to Calleguas SMP NPDES (ORDER NO. R4-2014-0033, NPDES NO. CA0064521) effluent limitations to identify potential exceedances. The results of this data and testing analysis are presented in Carollo's (2016) report and the major findings are summarized in **Table 3.9-10**. Note that these concentrations represent in-pipe constituent concentrations (i.e., prior to discharge and dilution at the outfall). The concentrations would be substantially reduced following discharge from the diffuser and rapid dilution with ambient seawater. As described above, the calculated minimum dilution of at least 128:1 is predicted for the proposed outfall diffuser for summer receiving water conditions at the shallower diffuser depth.

The modeling determined that the diffuser would achieve a Dm of at least 128:1 (parts seawater to effluent) depending on outfall depth and season (seasonal water temperature influences receiving water density and mixing dynamics) (Table 3.9-9). Therefore, the effluent leaving the diffuser system would effectively mix with ocean water. Phase 1 of the proposed projects would be required to comply with relevant water quality standards, such as NPDES effluent limitations and Ocean Plan water quality objectives.

TABLE 3.9-8
PROPERTIES OF CONCENTRATE CONSTITUENTS FOR PROPOSED PHASE 1 DISCHARGE
SECOND-STAGE (90 PERCENT DIVERSION) RO CONCENTRATE SCENARIO

	Ventura RO Conc. From Water Purification			Ventura GW Conc. From Groundwater Treatment			Total Concentrate			
	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Density (kg/m ³)
Phase 1	0.9	21	8.23	0.3	21	5.51	1.2	21	7.6	1003.7

SOURCE: Roberts 2018.

TABLE 3.9-9
MIXING MODEL MINIMUM DILUTION RESULTS FOR PROPOSED DISCHARGE SCENARIO

	Seasonal Density Profile	Water Depth (meters)	Concentrate			Port Conditions					
			Flow (MGD)	Salinity (ppt)	Density (kg/m ³)	No.	Diam. (in)	Angle (deg)	Spacing (ft)	Depth (ft)	Dilution (Dm)
Phase 1	Summer	12	1.2	7.6	1003.7	12	4	0	12	39	128
	Winter	12	1.2	7.6	1003.7	12	4	0	12	39	138
	Summer	16	1.2	7.6	1003.7	8	5	0	16	52	131
	Winter	16	1.2	7.6	1003.7	8	5	0	16	52	139

SOURCE: Roberts 2018.

TABLE 3.9-10
PROPOSED OPERATIONAL DISCHARGE EFFLUENT WATER QUALITY
VS. CALLEGUAS SMP NPDES PERMIT EFFLUENT LIMITATIONS

Water Quality Constituent	Units	Calleguas SMP Ocean Discharge NPDES Daily Max Effluent Limitations ¹	VWRF Effluent discharged to SCRE	RO Concentrate
Copper	µg/L	730	6.1	9
Selenium	µg/L	4400	2.9	18.2
Lead	µg/L	580	7	0.7
Nickel	µg/L	1500	7.2	7.6
Ammonia (May to October)	µg/L	180	-	2
Ammonia (November to April)	µg/L	180	-	2

¹ The parameters listed within this table do not have average monthly limits for the Calleguas Salinity Management Pipeline NPDES Permit. Daily Max. limits are used for comparison.

SOURCE: Carollo 2016

The Carollo (2016) assessment of operational discharge water quality determined that the RO concentrate would not exceed NPDES effluent limitations defined in the current Calleguas SMP NPDES permit. The proposed outfall would achieve a Dm of at least 128:1, greater (more dilute) than the Dm of 72:1 defined in the Calleguas SMP Permit, and therefore would not exceed Ocean Plan water quality objectives and would not degrade water quality relative to baseline conditions. Furthermore, there may be instances where wet-weather inflow to the VWRF would cause the flow of tertiary-treated effluent to exceed the Continued Discharge Level of 0.5 MGD, and the City may be required by the LARWCB to discharge excess flows directly to the ocean through the outfall. In these rare cases, the additional tertiary-treated effluent would further dilute the effluent from the AWPf, resulting in a higher level of dilution at the edge of the ZID, than without.

Operational discharges would be subject to the permit requirements prescribed by the LARWQCB as part of the permit process. Such requirements would be designed to ensure that operation of the proposed projects would not violate waste discharge requirements defined in the NPDES permit, which incorporate the Ocean Plan and Basin Plan water quality objectives, upon discharge via the outfall diffuser.

Prior to implementing operational discharges, the process for acquiring NPDES permit coverage would require a water quality assessment (Report of Waste Discharge) that thoroughly characterizes the discharge (and is signed and certified by a registered civil engineer). The City (as the discharger) would be required to perform testing and monitoring of the water quality of the discharges as part of a waste disposal study to demonstrate compliance with NPDES effluent limitations / Ocean Plan water quality objectives and minimum initial dilution requirements. A complete characterization of proposed discharge includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any Best Management Practices (BMPs) used, and a description of

disposal methods. Such an assessment would be conducted in accordance with protocols approved by the RWQCB.

Additionally, as part of the NPDES permit, Whole Effluent Toxicity (WET) testing would be required for the facility point of discharge, representing an integrated approach for assessing the potential for acute and/or chronic toxicity of proposed discharges. The primary objective of WET testing is to ensure that effluent released from industrial and municipal facilities into the nation's waters does not cause unacceptable levels of toxicity to aquatic life. As described above, the point of compliance for water quality standards relating to operational discharges is the edge of the ZID. Such an approach for water quality standards acknowledges the concept of a regulatory mixing zone where water quality constituent concentrations contained in discharges undergo rapid and substantial reduction via dilution. Within the mixing zone, water quality criteria may be exceeded as long as toxic conditions are prevented (USEPA 1991). To determine whether an effluent has the potential to be toxic, WET tests are performed on various aquatic test species.

In testing the RO concentrate from the Ventura WaterPure Demonstration Facility, Carollo (2016) determined that, where the RO concentrate was pH adjusted (to raise the pH), the aquatic test species had close to a 100 percent survival rate, surpassing the target of 25 percent reduction or less. The pH of the RO concentrate will be adjusted, as necessary, although it is anticipated that such adjustment will not be required to meet toxicity standards since the proposed projects includes ozone BAF treatment, which will reduce the toxicity of the RO concentrate as compared to that assessed by Carollo (2016) for the Pilot Project.

Further, pursuant to Water Code sections 13267 and 13383, the City would be required to comply with the Monitoring and Reporting Program (MRP) requirements of the NPDES permit program. Implementation of an MRP ensures technical and monitoring data is provided to the LARWQCB to determine the Discharger's compliance with NPDES effluent limitations and other requirements to assess the need for further investigation or enforcement action, and to protect public health and safety and the environment. Reports submitted under the MRP would contain a description of any noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. All monitoring would be conducted according to 40 C.F.R. part 136, Guidelines Establishing Test Procedures for Analysis of Pollutants.

Adherence to regulatory requirements would ensure that operational discharges do not degrade the quality of receiving waters or impair designated beneficial uses. Ocean water quality impacts associated with the discharge of RO concentrate would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed pipeline to the Calleguas SMP alignment would be constructed within the public right-of-way, where feasible, and would connect to the existing Calleguas SMP ocean outfall (Figure 2-14). As discussed above in Section 3.9.2, the required compliance with the existing Construction General NPDES Permit requirements and regulations that govern the transportation, use, handling and disposal of hazardous materials, and controlling runoff from construction

activities would reduce the potential for adverse effects from pipeline construction to water quality to less than significant.

During operations under this Concentrate Discharge Facility option, the proposed projects would produce 1.2 MGD of RO concentrate that would be discharged into ocean waters via the existing Calleguas SMP ocean outfall. Therefore, the discharge scenario involving use of the Calleguas SMP outfall could include combinations of RO concentrate from Phase 1 of the proposed projects with existing Calleguas SMP discharges. The Calleguas outfall was designed to accommodate a flow of 19.4 MGD of combined effluent from a combination of tertiary-treated wastewater effluent (recycled water) and concentrates from desalting of brackish groundwater. The NPDES permit for Calleguas SMP ocean outfall authorizes up to 17.52 MGD of treated effluent from wastewater treatment plants and concentrate generated at brackish groundwater desalter plants or wastewater treatment facilities. Currently, the Calleguas SMP operates at an annual average discharge rate of <1 MGD. As such, there is sufficient capacity in the Calleguas SMP to accommodate the proposed 1.2 MGD of RO concentrate. Also, based on projected future discharger volumes detailed in the ROWD / NPDES permit application prepared for the Calleguas SMP Outfall, the proposed 1.2 MGD of RO concentrate would not displace potential planned future dischargers from use of the SMP due to capacity issues, especially due to the various discharger effluent flows being intermittent based on seasonal variations, reuse volumes, and desalting operational fluctuations (CMWD 2007b). Further, the RO concentrate proposed under Phase 1, being a composite of effluents from brackish groundwater desalting and AWPf concentrate, is consistent with the NPDES permit waste discharge coverage as well as Calleguas Municipal Water District Ordinance No. 19, which stipulates the rules and regulations for use of the SMP and associated ocean outfall.

Under the rules and regulations governing use of the Calleguas SMP outfall (Ordinance No. 19), dischargers must achieve and maintain compliance with the effluent limitations in the NPDES permit for the outfall at point of connection to the SMP system. The addition of potential discharges up to 17.52 MGD to the SMP that meet the existing NPDES effluent limitations¹⁹ have been modeled and impacts comprehensively assessed and documented in Section 5.4.3 in the Final EIR for the CMWD Regional SMP Hueneme Outfall Replacement Project (CMWD 2007a; p. 5.4-4 *et seq.*). The analysis and conclusions are incorporated here by reference and summarized as follows. Numerical modeling of the effluent under differing volume and receiving water scenarios was completed using Visual Plumes software. The results of the effluent dilution modeling under different scenarios indicate that there are no constituents that would be expected to exceed the Ocean Plan water quality objectives and demonstrated that the diffuser design provides sufficient mixing and dispersion of the discharge to protect water quality. Detailed discussions and summary tables on the results of the modeling are provided in the Final Application for NPDES permit: Report of Waste Discharge (CWMD 2007b). Additionally, bioassay testing of Ocean Plan-specified organisms indicated that there is no chronic toxicity in the composite discharge (blend of effluent sources) and that the individual chronic toxicity levels

¹⁹ As discussed below and in the text accompanying Table 3.9-13, the Project RO concentrate would meet the NPDES effluent limitations defined in the current Calleguas SMP NPDES permit.

are below the calculated Toxic Units chronic (TUC) limit in the Ocean Plan once the outfall specific dilution factor of 72:1 (parts seawater to parts effluent) is applied.

As discussed under the assessment for the proposed new outfall structure, above, the Phase 1 RO concentrate would not exceed NPDES effluent limitations defined in the current Calleguas SMP NPDES permit (Table 3.9-13) and therefore would not exceed Ocean Plan water quality objectives and would not degrade water quality relative to baseline conditions. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

Phase 2 would provide additional reliable water to meet the City's water needs. Phase 2 would include one of two options: either additional diversion from the SCRE, resulting in a consistent CDEL of 0 (100 percent discharge), or, if additional diversion is not permitted or does not provide enough water, construction of a desalination facility on the AWPf site. Both options are discussed below.

AWPF Expansion

In the future, if additional VWRf tertiary-treated effluent becomes available, or is mandated for diversion to reuse by the responsible agencies with jurisdiction, then the AWPf capacity would be expanded to produce up to an additional 2 MGD (2,400 AFY) of product water. Under Phase 2, up to 100 percent of the VWRf current and future dry-weather discharge would be treated (100 percent MEPDV) along with additional groundwater treatment to meet potable water production targets.

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes, infrastructure, pipelines, or related infrastructure would be needed or added. As discussed above in Section 3.9.2, the required compliance with the existing hazardous materials Construction General Permit requirements and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities would reduce the potential for adverse effects to water quality to less than significant.

The following impact assessment analyzes the potential water quality impacts related to operational discharges under Phase 2 of the proposed projects. Discharges associated with increased treatment of VWRf effluent (i.e. no desalination facility) are assessed first. Operational discharges would either be conveyed to a new outfall or to the Hueneme Outfall structure via the Calleguas SMP, as described in detail under Phase 1, above. The following assessment addresses the impact of increased discharges under Phase 2.

New Outfall: Operation of 100 Percent MEPDV (no desalination)

Based on the target RO recovery rate, the treatment process under Phase 2 would produce a total of approximately 1.7 MGD of waste residuals (a 0.5 MGD increase in RO concentrate over Phase 1 of the proposed projects) for discharge through a new ocean outfall located offshore and south of Ventura Harbor (Figure 2-19). As described in detail under Phase 1, above, discharge effluent limitations for an NPDES permit (i.e. the permitted in-pipe concentration of water quality constituents) are obtained by quantifying the degree of dilution that occurs within the ZID, referred to as the minimum probable initial dilution (Dm). The water quality objectives established in the Ocean Plan are adjusted by the project-specific Dm to derive the NPDES permit limits on in-pipe constituent concentrations for a wastewater discharge prior to ocean dilution.

To determine the minimum initial dilution for the proposed Phase 2 operational discharges, Roberts 2018 (Appendix D) modeled the constituent parameters summarized in **Table 3.9-11** to determine the optimum number of diffuser ports and port diameters for efficient mixing of the Phase 2 discharge that also minimizes shear stress on planktonic species (discussed in Section 3.11, Marine Biology). The modeling determined that no alterations to the proposed new outfall assessed under Phase 1 would be required; no additional Phase 2 off shore construction impacts would occur.

The plume mixing model analysis determined that the new outfall diffuser would achieve a Phase 2 minimum Dm of 109:1 (parts seawater to effluent) depending on outfall depth and season. Therefore, the Phase 2 effluent leaving the diffuser system developed for Phase 1, would effectively mix and adequately dilute with ocean water (Table 3.9-11). As discussed for Phase 1, the Dm for the existing Calleguas SMP outfall defined in the Hueneme Outfall NPDES discharge permit, proposed as an alternate discharge location, is 72:1. Therefore, because the constituent concentrations in the proposed RO concentrate would be less than those in the effluent currently discharged via the Calleguas SMP outfall (Carollo 2016; described in detail under Phase 1), the Phase 2 of the proposed projects would comply with relevant water quality standards, such as NPDES effluent limitations and Ocean Plan water quality objectives since the NPDES permit for the Calleguas SMP is assumed to be representative of a typical ocean discharge permit (Carollo 2016).

TABLE 3.9-11
MIXING MODEL RESULTS FOR MINIMUM DILUTION FOR PROPOSED DISCHARGE SCENARIOS

	Seasonal Density Profile	Water Depth (Meters)	Concentrate			Port conditions					
			Flow (MGD)	Salinity (ppt)	Density (kg/m ³)	No.	Diam. (in)	Angle (deg)	Spacing (ft)	Depth (ft)	Dilution (Dm)
Phase 2	Summer	12	1.7	7.6	1003.6	12	4	0	12	39	109
	Winter	12	1.7	7.6	1003.6	12	4	0	12	39	113
	Summer	16	1.7	7.6	1003.6	8	5	0	16	52	110
	Winter	16	1.7	7.6	1003.6	8	5	0	16	52	114

SOURCE: Roberts 2018.

Adherence to regulatory requirements would ensure that operational discharges do not degrade the quality of receiving waters or impair designated beneficial uses. Given that the Phase 2 discharges would meet or exceed the dilution requirements of the Calleguas SMP NPDES permit, would have constituent concentrations that meet the permit effluent limitations defined for the Calleguas NPDES permit, and would not substantially increase the concentration of constituents in ocean receiving waters as compared to baseline conditions, the water quality impact associated with the discharge of RO concentrate via a new outfall under Phase 2 would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline: Operation of 100 Percent MEPDV (no desalination)

This option would produce 1.7 MGD of RO concentrate that would be discharged into ocean waters via the existing Calleguas SMP ocean outfall. As discussed under the Phase 1 assessment, above, the proposed projects RO concentrate²⁰ would not exceed NPDES effluent limitations defined in the current Calleguas SMP NPDES permit (see Table 3.9-13) and therefore, would not exceed Ocean Plan water quality objectives and would not degrade water quality relative to baseline conditions. Impacts would be less than significant. Additionally, bioassay testing of Ocean Plan-specified organisms indicated that there is no chronic toxicity in the composite discharge (blend of effluent sources) and that the individual chronic toxicity levels would be below the calculated Toxic Units chronic (TUC) limit in the Ocean Plan once the outfall specific dilution factor of 72:1 (parts seawater to parts effluent) is applied. The proposed Phase 2 1.7 MGD of RO concentrate would not displace potential planned future dischargers from use of the SMP due to capacity issues, especially due to the various discharger effluent flows being intermittent based on seasonal variations, reuse volumes, and desalting operational fluctuations (CMWD 2007b). Water quality impacts associated with the discharge of RO concentrate via the SMP outfall under Phase 2 would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

In the event that recycled water is insufficient to meet future water demands because increasing the MEPDV from 90 percent to 100 percent is not authorized, one option for meeting the City's water supply needs could be expanding the AWPf would be expanded to desalinate ocean water for potable use in conjunction with ongoing AWPf potable water production based on 90 percent MEPDV (assessed in detail above under Phase 1).

Desalination Facility

The potential ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. As discussed above in Section 3.9.2, the required compliance with the existing hazardous materials general Construction Permit and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from

²⁰ Note: under Phase 2, although the volume of RO concentrate would increase from 1.2 MGD to 1.7 MGD, the concentrations of constituents within the RO concentrate would not increase but would remain as described under Phase 1.

construction activities would reduce the potential for adverse effects to water quality to less than significant.

During operation, the potential ocean desalination treatment facilities would treat seawater to drinking water standards and would use the same chemicals as the AWPf. As with the IPR Facilities discussed above, the required compliance with the existing hazardous materials Construction General Permit requirements and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities would reduce the potential for adverse effects to water quality to less than significant.

New Outfall Operation: Combined RO Concentrate and Desalination Brine Discharge

Under Phase 2, the ocean desalination process would produce 1.5 MGD of desalination brine that would be discharged to the ocean via the proposed new outfall diffuser along with the 1.2 MGD of RO Concentrate assessed for Phase 1. The concentrate would be discharged through the proposed new outfall since the Calleguas SMP does not accept contributions of concentrate from ocean water desalination. Calleguas Municipal Water District Ordinance No. 19, which stipulates the rules and regulations for use of the SMP and associated ocean outfall, specifies the types of discharges authorized for conveyance and discharge at the SMP outfall. Such effluents covered under Ordinance 19 include those associated with brackish groundwater desalting and AWPf concentrates, which must achieve and maintain compliance with the effluent limitations in the NPDES permit for the outfall at point of connection to the SMP system. Desalination brine is not currently authorized under Ordinance No. 19.

The combined desalination brine and RO concentrate effluent quality would be significantly more saline than the RO concentrate described under Phase 1, averaging 41.6 ppt (as compared to 7.6 ppt under Phase 1). As described for Phase 1, the diffuser, representing the brine discharge point, is designed to disperse the brine stream rapidly, thereby minimizing differences in the concentrations of salinity and other water quality constituents between the discharged brine and the surrounding seawater. Phase 2 operational discharges that include desalination brine would increase salinity levels near the diffuser that could exceed Ocean Plan salinity requirements. The impact analysis presented below first assesses salinity increases from Phase 2 operational discharges that include brine, and determines whether such increases comply with Ocean Plan numeric salinity standards. Second, an assessment is presented for other regulated water quality constituents. The assessment methodology incorporates the consideration of offshore baseline conditions as well as the Ocean Plan's receiving water salinity limitations and numeric water quality objectives as significance thresholds, and uses the methods prescribed in the Ocean Plan for assessing discharges from the operation of desalination plants.

Salinity

As described in Section 3.9.2, the Ocean Plan limits the increase of salinity of receiving water from desalination plant discharges to a daily maximum of 2 ppt above natural background salinity at the boundary of the BMZ (Brine Mixing Zone), the maximum extent of which may be no farther than the horizontal distance of 100 meters (328 feet) from the point of discharge. A significant impact related to water quality, water quality standards or Waste Discharge

Requirements would occur if operational discharges under Phase 2 resulted in a salinity level of 2 ppt above ambient salinity levels beyond 100 meters.

To determine whether the proposed discharge would comply with the Ocean Plan BMZ salinity requirements, Roberts 2018 (Appendix X) modeled the operation of Phase 2 with the constituent parameters summarized in **Table 3.9-12**. As with Phase 1, the model results were used to determine the optimum number of diffuser ports, port angles, and port diameters for efficient mixing that also minimizes shear stress on planktonic species (discussed in Section 3.11, Marine Biology). As described for Phase 1, the model analysis assumes an ambient ocean current of zero (i.e. conservatively assumes no mixing of the discharge plume occurs because of ocean currents).

TABLE 3.9-12
PROPERTIES OF CONCENTRATE CONSTITUENTS FOR PHASE 2 DESALINATION DISCHARGE SCENARIOS

	Ventura RO Conc. From Water Purification			Ventura GW Conc. From Groundwater Treatment			Ventura Desal Brine			Total Concentrate		
	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Flow (MGD)	Temp. (°C)	Salinity (ppt)	Flow (MGD)	Salinity (ppt)	Density (kg/m3)
Phase 2 (desal)	0.9	21	8.23	0.3	21	5.51	1.5	21	68.8	2.7	41.6	1029.7

SOURCE: Roberts 2018.

The size of a discharge plume and the extent of dilution depends, in part, on whether the plume is positively buoyant (rising), as occurs with typical wastewater discharges that have very low salinity such as the Phase 1 plume, or negatively buoyant (dense or sinking), as occurs for this Phase 2 operational scenario that includes desalination brine. Discharges that are denser than the receiving seawater are typically discharged via an inclined jet which results in a plume that is directed upward and then sinks down, making contact with the seafloor at some distance from the diffuser nozzles (**Figure 3.9-7**). As the discharge plume ascends, the jet entrains ambient water, and the brine becomes diluted. Because the plume is denser than the receiving water, it reaches a terminal rise height and then falls back to the seafloor. Entrainment of seawater into the plume continues in the descending plume phase, promoting mixing and dilution. After contacting the seafloor, the brine plume continues traveling horizontally and further entrains ambient seawater resulting in greater dilution. The brine discharge model analysis estimated dilution ratios where the plume momentum from the nozzle becomes zero, representing the end of near field dilution (**Figure 3.9-7**). Given that the model conservatively assumes no additional mixing or dilution from ocean currents, the model would not be able to predict additional dilution beyond where the plume momentum reaches zero.

The model analysis (Appendix D) demonstrates that the Phase 2 operational discharges that include desalination brine would be negatively buoyant, and it would not exceed 2 ppt above ambient conditions at the edge of the near field. At a maximum distance of 29.1 feet from the diffuser, the discharge plume would entrain sufficient receiving ocean waters such that the incremental salinity would be 0.6 ppt above ambient receiving salinity (**Table 3.9-13**). Such a distance is well within the maximum BMZ of 328 feet (100 meters) from the point of discharge as prescribed in the Ocean Plan. The total seafloor area from the diffuser to the edge of the near

field that could exceed 2 ppt above ambient salinity would be a maximum of approximately 0.11 acre. Thus, brine discharges under Phase 2 would not exceed or violate the Ocean Plan salinity standards or degrade water quality in terms of salinity; impacts related to salinity would be less than significant.

TABLE 3.9-13
MIXING MODEL RESULTS FOR PROPOSED PHASE 2 DISCHARGE SCENARIOS WITH BRINE

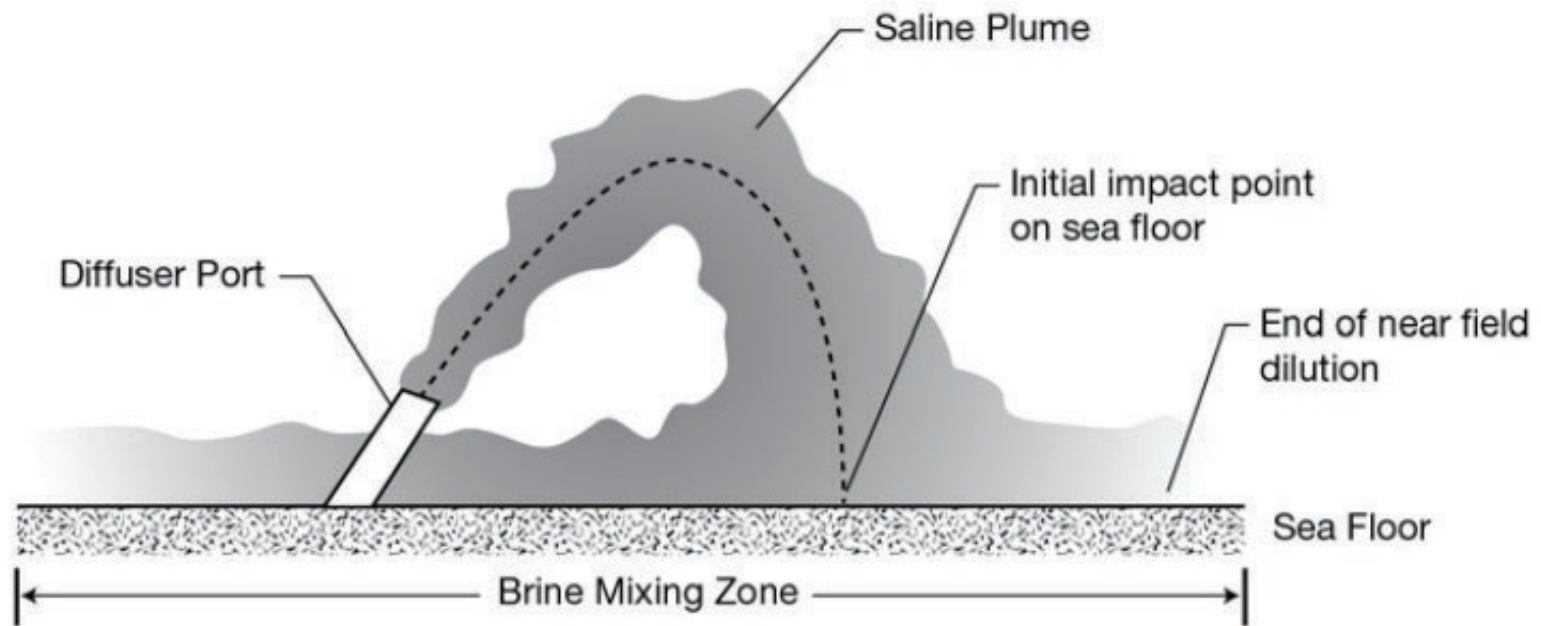
	Ports						Near field			BMZ Area	
	Diffuser length (ft)	Number	Depth (ft)	Spacing (ft)	Diam (in)	Velocity (ft/s)	Dilution (Dm)	Salinity incr. (ppt)	Length (ft)	Ft ²	Acre
Phase 2	60.0	12	39	12	6.9	1.3	12.4	0.6	24.6	4,864	0.11
(Desal)	48.0	8	52	16	8.1	1.5	12.4	0.6	29.1	4,745	0.11

SOURCE: Roberts 2018.

Other Water Quality Constituents

As described in detail under Phase 1, above, operational discharges composed of combined RO concentrate and desalination brine would be regulated through a project-specific NPDES permit (see Section 3.9.2) and would be subject to the permit requirements prescribed by the LARWQCB. Such requirements, defined in the NPDES permit, would be designed to ensure that operation of the proposed projects would not violate water quality standards or Waste Discharge Requirements, which incorporate the Ocean Plan and Basin Plan water quality objectives as effluent limitations. Effluent limitations are determined by the Regional Water Board using a statistical method that accounts for the averaging period of the water quality objective, and also accounts for and captures the long-term variability of the pollutant in the effluent. Such an assessment enables the Regional Water Board to determine if a discharge could cause, or has the reasonable potential to cause, or contribute to an exceedance of the water quality objectives summarized in Table 3.9-5.

Discharge limitations for the NPDES permit are based on and obtained by quantifying the degree of dilution (Dm) that would occur within the ZID and adjusted to derive the NPDES permit limits on in-pipe constituent concentrations prior to ocean dilution.



SOURCE: ESA, 2018

Ventura Water Supply Projects

Figure 3.9-7
Characteristics of an Inclined Dense Jet

Prior to implementing operational discharges that involve a combined effluent of RO concentrate and desalination brine, the City would be required to complete a water quality assessment (a Report of Waste Discharge, or ROWD) that thoroughly characterizes the discharge using protocols defined in Appendix II “Minimum Levels” of the 2015 California Ocean Plan and approved by the LARWQCB, to demonstrate compliance with the Ocean Plan water quality objectives. A complete characterization of the proposed discharge would include, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, and a description of disposal methods (via diffuser) and diffuser design. Additionally, as described for proposed discharges under Phase 1, discharges under Phase 2 would not be allowed if they do not conform to NPDES effluent limitations, acute/chronic toxicity requirements, and MRP requirements that are prescribed for the protection of receiving water quality and beneficial uses.

New Outfall: Phase 2 Construction

Using the model analysis to predict the characteristics of dense jets, the outfall diffuser design assumptions were modified as compared to that described under Phase 1. To ensure discharges that include desalination brine meet regulatory requirements and water quality standards, the outfall diffuser was assumed to have discharge ports inclined upwards at 60° and the port diameters were increased. For the 12 m depth the port diameters are increased from 4.0 to 6.9 inches, and for the 16 m depth the port diameters are increased from 5.0 to 8.1 inches. Offshore construction activities associated with retrofitting the Phase 1 diffuser to achieve the larger port diameter and to incline the discharge ports upwards at 60° could degrade water quality.

Offshore construction would involve activities on the ocean surface, such as the assembly of components and staging equipment on anchored barges, and diver-assisted placement and connection of precast structures at the ocean floor. Potential impacts to water quality from all proposed in-water construction activities located offshore are described in detail for the construction of the Phase 1 outfall. Potential offshore impacts on water quality from alteration of the Phase 1 diffuser to accommodate desalination brine would be substantially reduced in terms of magnitude, duration, and intensity as compared to those described under Phase 1, above since no additional dredging or dredge-material disposal would be required and no additional HDD drilling would be conducted. Additionally, offshore construction would be subject to the regulatory requirements described for Phase 1 (with the exception of those involving dredging and dredge-material disposal); therefore, impacts to water quality from in-water construction activities associated with the Phase 2 outfall would be less than significant.

Ocean Intake

A new ocean water intake system would be constructed to convey ocean water to the new treatment facility at the same location as the AWPf. A subsurface intake system would be constructed and would be sized to intake approximately 3.5 to 6.9 MGD (3,900 to 7,730 AFY) of ocean water through slant wells, beach wells, or infiltration galleries.

As discussed above in Section 3.2.9, the construction of the landside components of the new intake system would be required to comply with the existing hazardous materials Construction General Permit requirements and stormwater regulations that govern the transportation, use,

handling, and disposal of hazardous materials, and controlling runoff from construction activities. The required compliance with these existing regulations would reduce the potential for adverse effects to water quality to less than significant.

The subsurface ocean intake system would draw in seawater for treatment at the Desalination Facility. No chemicals would be used in this process and there would be no impact to onshore or offshore water quality during operations; impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Supplies

Impact HYDRO 3.9-2: The proposed projects could have a significant impact if they would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

Phase 1

Advanced Water Purification Facility

The construction of the AWPf would require the use of water for concrete, dust suppression, and equipment cleaning. Construction would not affect groundwater supplies because the quantity of water used would be small. Once operational, the AWPf would produce 5,400 AFY (Phase 1) that would be injected back into the aquifer. Therefore, the proposed projects would result in a net increase in water supply and would be a beneficial impact.

Once constructed, the AWPf would result in an increase in new impervious surface at the plant location. However, rainwater falling on the AWPf would be captured and treated on-site pursuant to the General Industrial Stormwater Permit. Once treated in compliance with the General Industrial Stormwater Permit, the rainwater would be routed to on-site infiltration systems (e.g. infiltration swales) or to the storm drain system and returned to the environment, as it is now, resulting in no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Water Conveyance System

Once operational, the conveyance pipelines would transport water. The system would be underground with no change to the amount of overlying impervious surface and recharge. Therefore, the conveyance system would have no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

Once operational, the ASR wells would pump advanced treated water into the aquifer, which would increase water supplies. After the injected water remained in the aquifer for the minimum 2-month retention time, the water would then be extracted. The proposed projects would increase groundwater supplies and improve groundwater quality.

The proposed projects would result in a more dynamic management of the groundwater basin. The ASR wells would require constant operation, pressuring water into the underground formations. The formations need to exhibit sufficient capacity to accommodate the 5,400 AFY.

As discussed in the regulatory requirements for IPR, the Groundwater Recharge Reuse Regulation requires a 2-month minimum retention time between the injection wells and the supply wells.

During the injection phase, groundwater elevations would rise within the mounding radius. During the extraction phase at a later time, groundwater elevations would be expected to decrease.

The Bondy 2018 analysis concludes that injection into the Oxnard Plain could increase upward pressure on the aquifer that may result in elevated groundwater levels. The analysis recommends that appropriate injection pressures would alleviate this potential condition, while maintaining lateral movement of injected water. If the injected water remains for periods longer than 6 months, resulting in long-term storage of injected water in the Oxnard Plain naturally recharged groundwater could be displaced. As part of the Title 22 Engineering Report, the City would be required to identify and report the proximity of local wells that could be within the proposed projects' zone of influence. To ensure that access to groundwater is maintained for existing and future groundwater pumpers, Mitigation Measures HYDRO-1 would require that the City operate the ASR wells in a manner that prevented excessive lateral spreading that could limit access to groundwater. This mitigation measure would ensure that the project does not impede local access to groundwater in quantities similar to existing conditions.

Furthermore, as the GSA for the Oxnard Plain groundwater basin develops a GSs, the access to groundwater for existing potable and agricultural demands will be maintained to the extent feasible as a central goal of the sustainable management practices. The proposed projects develop new water supplies meant to augment existing water supplies to meet overlying existing and future demands. This water supply augmentation will benefit the entire region including the existing pumpers.

Depending on well construction details, the groundwater elevations in nearby water supply wells located within the radius of influence²¹ could decrease to below their usual operating range. At a minimum, the result could be an increase in operating costs due to the increased depth to groundwater. At a maximum, the result could be potentially exposing well screens and/or pumps,

²¹ The radial extent of the area affected by an extraction well—that is, the area within which water levels are anticipated to decrease—is called the radius of influence. The anticipated affected area is depicted using groundwater elevation contour maps. Similar to topographic elevation contours, groundwater contours show the shape and elevations of the groundwater surface. The maximum radius of influence is typically defined as the distance by which the water levels are anticipated to decrease by some amount, such as 1 foot.

which would damage the water supply wells. Mitigation Measure HYDRO-1 would ensure that neighboring groundwater pumpers were not significantly affected from excessive drawdown.

Mitigation Measures: Mitigation Measures HYDRO-1.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

The proposed projects would include reconfiguration of the existing treatment ponds by adding fill to raise the ponds floor to approximately 3 feet from the surface and adding new vegetation throughout the ponds. In addition, the proposed projects may include an approximately 35-acre new treatment wetland, shown on Figure 2-17. Construction and operation of the wetlands would not affect groundwater supplies substantially. Some infiltration would continue from the VWRf tertiary-treated discharges. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRf Treatment Upgrade

The VWRf Treatment Upgrade would require the use of water for concrete, dust suppression, and equipment cleaning during construction. The overall volume of water needed for construction and operation would be small. Similarly, although the VWRf would increase impervious surfaces, the proposed sites are not currently significant recharge areas. Therefore, the impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

Construction and operation of the new concentrate outfall would not affect groundwater supplies substantially. If construction requires dewatering, it would have to follow the requirements of a dewatering permit issued by the RWQCB. However, once installed, groundwater would not be affected. Impacts would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

Construction and operation of the discharge pipeline to the Calleguas SMP would not affect groundwater supplies substantially. If construction requires dewatering, it would have to follow the requirements of a dewatering permit issued by the RWQCB. However, once installed, groundwater would not be affected. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

Similar to the Phase 1 facilities, the AWPf expansion would require the use of water for concrete, dust suppression, and equipment cleaning during construction. The overall volume of water needed for construction and operation would be small. Similarly, although the AWPf would increase impervious surfaces, the proposed sites are not currently significant recharge areas. Therefore, the impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Similar to the Phase 1 facilities, the ocean desalination facilities, if pursued and constructed as an option for water supply, would require the use of water for concrete, dust suppression, and equipment cleaning during construction. The overall volume of water needed for construction and operation would be very small. Therefore, the impact to groundwater supplies would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Alter Drainage to Cause Erosion or Flooding, Exceed Capacity of Drainage System

Impact HYDRO 3.9-3: The proposed projects could have a significant impact if they would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Also, the proposed projects could have a significant impact if they would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Construction of the proposed projects would not alter existing drainages that could result in erosion or flooding or exceed the capacity of a drainage system. Potential stormwater quality impacts during construction are evaluated in Impact 3.9-1, above. Operational impacts to drainages are discussed below.

Phase 1

Advanced Water Purification Facility

Once constructed, the AWPf would result in an alteration of the drainage pattern of the existing land surface. Because the proposed AWPf sites are all flat, the impact would be the addition of hardscape that would concentrate the flow of surface water runoff. This concentrated flow could result in substantial drainage issues related to erosion, siltation, flooding, drainage system capacity, or additional sources of polluted runoff. Compliance with MS4 development design would ensure that the new facility does not channelize runoff in a manner that could cause scouring and erosion, and captures and treats water prior to runoff from the facility. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

Once constructed, the conveyance pipelines would be located underground and the overlying land use restored to its original condition with no change to the pre-existing drainage pattern. Therefore, relative to drainage issues related to erosion, siltation, flooding, or drainage system capacity, the conveyance pipelines would have no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

Once constructed, the ASR wells would be housed with an approximately 20 by 30 square feet building. Given the relatively flat locations of the well buildings, the small footprint would have a negligible effect on the surrounding drainage pattern and would not exceed the capacity of existing stormwater drainage systems. Rainwater would not be concentrated in a manner that would result in erosion, flooding, or the generation of additional pollutants. Therefore, relative to drainage issues related to erosion, siltation, flooding, or drainage system capacity, the impact of the ASR wells would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than significant.

Wildlife/Treatment Wetlands

Construction of the wildlife/treatment wetlands would provide additional permanently wetted area near the SCRE. Tertiary-treated water would be pumped into the wetlands, where it would flow by gravity to the SCRE. A discharge structure would be constructed to connect the wetlands with the SCRE. The wetlands would not substantially alter the drainage in the area. Currently, the proposed location for the new constructed treatment wetlands is outside of the 100-year floodplain. Furthermore, the new treatment wetlands and reconfigured wildlife ponds would provide additional wet-weather storage capacity compared to existing conditions. Impacts to drainage would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

Once constructed, the treatment upgrade would result in an alteration of the drainage pattern of existing land surface. Because the VWRF site is flat, the impact would be the addition of hardscape that would concentrate the flow of surface water runoff. This concentrated flow could result in erosion or siltation on- or off-site. However, compliance with the MS4 permit would limit the potential for adverse impacts caused by drainage issues related to erosion, siltation, flooding, or drainage system capacity. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

Once constructed, the New Outfall would be offshore within the ocean and would not affect drainage patterns. No impact would occur.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

Once constructed, the pipeline would be underground and the overlying ground surface would be restored to existing conditions. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

Impacts from alterations to drainage patterns would not occur since the AWPf Expansion would occur within the footprint of the previously built AWPf (Phase1).

See the discussion above for the impacts associated with the operation of the AWPf (Phase 1). The expansion would be in compliance with the numerous laws and regulations discussed above. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

Impacts from alterations to drainage patterns would not occur since the desalination facility, if pursued and constructed as an option for water supply, would occur within the footprint of the

previously built AWPf (Phase 1) and would not add additional impervious surfaces. See the discussion above for the impacts associated with the operation of the AWPf (Phase 1). The desalination facility would be in compliance with the numerous laws and regulations discussed above. Impact less than significant.

Ocean Intake

Once constructed, the Ocean Intake would be offshore within the ocean and would not affect drainage patterns. Any above ground structures would be designed to minimize effects to surface drainage. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No impact.

Levee or Dam Failure

Impact HYDRO 3.9-4: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Phase 1

Advanced Water Purification Facility

The nearest dam that could experience a failure would be the Santa Felicia Dam at Lake Piru, located 36 miles to the east; the dams for Bouquet Canyon Reservoir and Castaic Lake are even farther away. In the event of a dam failure, county emergency services would provide emergency notifications to all occupied structures within the inundation zone. At this distance, the AWPf would receive sufficient advance notice for workers to shut the AWPf down and vacate the AWPf. In addition, as part of the HMBP requirements, chemicals used to treat water would be secured in their secondary containment, which would prevent their release. The inundation could cause some damage to the AWPf but such damage could be repaired and the AWPf put back into service. With notification from county emergency services and compliance with the HMBP requirements for secondary containment, the impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

Once constructed, the conveyance pipelines would be located underground. Therefore, inundation of the conveyance pipelines by a dam failure would have no impact.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

None of the groundwater wells would be located in a dam inundation zone. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetland

The existing wildlife ponds and new treatment wetland would be located in the dam inundation zone. However, in the event of inundation due to a dam failure, the result would be a short-term addition of freshwater into the ponds and wetlands, which would have a negligible effect. This impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

The existing VWRF is located in the dam inundation zone. In the event of a dam failure, the VWRF could be flooded, workers could be at risk, and water treatment chemicals stored at the VWRF could be released. However, in the event of a dam failure, county emergency services would provide emergency notifications to all occupied structures within the inundation zone. At this distance, the VWRF would receive sufficient advance notice for workers to shut the VWRF down and vacate the VWRF. In addition, as part of the HMBP requirements, chemicals used to treat water would be secured in their secondary containment, which would prevent their release. The inundation could cause some damage to the VWRF but such damage could be repaired and the VWRF put back into service. With notification from county emergency services and compliance with the HMBP requirements for secondary containment, the impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall and Discharge Pipeline to the Calleguas Salinity Management Pipeline

The New Outfall and Discharge Pipeline to the Calleguas Salinity Management Pipeline would not be located in a dam inundation zone. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

See the discussion of the Phase 1 AWPf above. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

The Ocean Desalination Facility, if pursued and constructed as an option for water supply, would be located on the AWPf site. As discussed in the Environmental Setting, the proposed Golf Course AWPf site would be located within the dam inundation zone. In the event of a dam failure, these sites could be flooded, workers could be at risk, and water treatment chemicals stored at the AWPf and Ocean Desalination Facility could be released. As discussed above, with notification from county emergency services and compliance with the HMBP requirements for secondary containment, the impact would be less than significant.

The ocean intake would not be located in a dam inundation zone. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Seiche, Tsunami, or Mudflow

Impact HYDRO 3.9-5: The proposed projects could result in a significant impact if they would expose people or structures to a significant risk of loss, injury or death from inundation by seiche, tsunami, or mudflow.

The Santa Clara River watershed has a few reservoirs including Piru Reservoir, but they are each designed and managed to avoid risk of seiche waves overtopping the dams. The proposed projects would not increase the risk of seiche waves or increase impacts of flooding. None of the project components is located next to hilly areas that would be subject to mudflows. Potential impacts from tsunamis are discussed below.

Phase 1

Advanced Water Purification Facility, Water Conveyance System, Groundwater Wells, and VWRf Treatment Upgrade

None of the above-listed project components would be located in a tsunami area.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The existing ponds are located along the coast and could be subject to a tsunami in the event of an earthquake. However, in the event of a tsunami, the result would be a short-term inundation of the ponds with seawater. At most, the sides of the ponds might require repair, but the impact from this short-term event would be similar to existing conditions and less than significant.

New Treatment Wetland

The new treatment wetland would be located just inland and outside of the tsunami hazard zone. Therefore, there would be no impact.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrades

As discussed in the Environmental Setting, the VWRF is located outside of the tsunami hazard zone. Therefore, the proposed projects would not increase the risk of impacts from tsunami.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall and Discharge Pipeline to the Calleguas Salinity Management Pipeline

The New Outfall and Discharge Pipeline to the Calleguas Salinity Management Pipeline would be located underground and not be subject to tsunamis. Impact would be less than significant.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion and Ocean Desalination

The components of the AWPf Expansion and Ocean Desalination facility would not be located in the tsunami hazard zone and there would be no impact. However, although most of the intake facilities would be underground, there may be ground-level facilities that could be affected by tsunami since they would be close to the coast. If a tsunami occurred, the above ground structures may be damaged but the system would remain functional since it is largely underground. Final designs of the above-ground structures would accommodate the potential for inundation.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.10 Land Use and Planning

This section addresses the potential impacts of the proposed Ventura Water Supply Projects on land use and planning. The section includes a description of the environmental setting to establish baseline conditions for land use and planning, a summary of the regulations related to land use and planning, and an evaluation of the proposed projects' potential effects on land use and planning.

3.10.1 Existing Environmental Setting

The proposed projects are located within Ventura County, specifically in the cities of Ventura, Oxnard, and areas of unincorporated Ventura County. Ventura County encompasses approximately 2,208 square miles of land from the Pacific Ocean and Santa Barbara County to the west, Kern County to the north, and Los Angeles County to the east and south.

City of Ventura General Plan Land Use Designations

The project area within the City of Ventura encompasses a variety of land uses, including Agriculture, Parks and Open Space, Public and Institutional, Commercial, Industrial, Residential-Low, Residential-Medium, Residential-High, and Coastal Zone-Park and Open Space.

Figures 3.10-1a through 3.10-1d show the land use designations for all of the proposed project facilities, including the City of Ventura, unincorporated Ventura County, and surrounding municipalities.

- Figure 3.10-1a shows that the Transport Street site, one of the three proposed Advanced Water Purification Facility (AWPF) sites, is located in the city of Ventura within the land use designation of Industry. The Harbor Boulevard and Portola Road sites are located in unincorporated Ventura County and are designated as Open Space-Urban Reserve and Agriculture, respectively.
- Figure 3.10-1b shows that the proposed groundwater well sites would be located in the city of Ventura within Parks and Open Space (Well Site 1) and Agriculture (Wells Sites 2 and 3) land use designations.
- Figure 3.10-1c shows the proposed treatment wetlands are located within the city of Ventura in an area designated as Parks and Open Space.
- Figure 3.10-1d shows possible routes for the conveyance system pipelines. Most of the proposed conveyance system pipelines would also be situated within the city of Ventura, though some of the pipeline alignments are in unincorporated Ventura County. The proposed pump stations would be constructed at the proposed AWPF and Ventura Wastewater Reclamation Facility (VWRF) sites. The proposed conveyance pipelines would be located within existing public rights-of-way where feasible and would traverse adjacent and through land designated as Public and Institutional, Parks and Open Space, Agriculture, Commercial, Residential-Low, Residential-Medium, and Industrial.
- A concentrate discharge facility, needed to dispose safely of the concentrate produced by the AWPF, would be constructed in one of two ways.
 - A new outfall would be located within the city of Ventura within the Parks and Open Space land use designation. The concentrate pipeline from the AWPF to the proposed

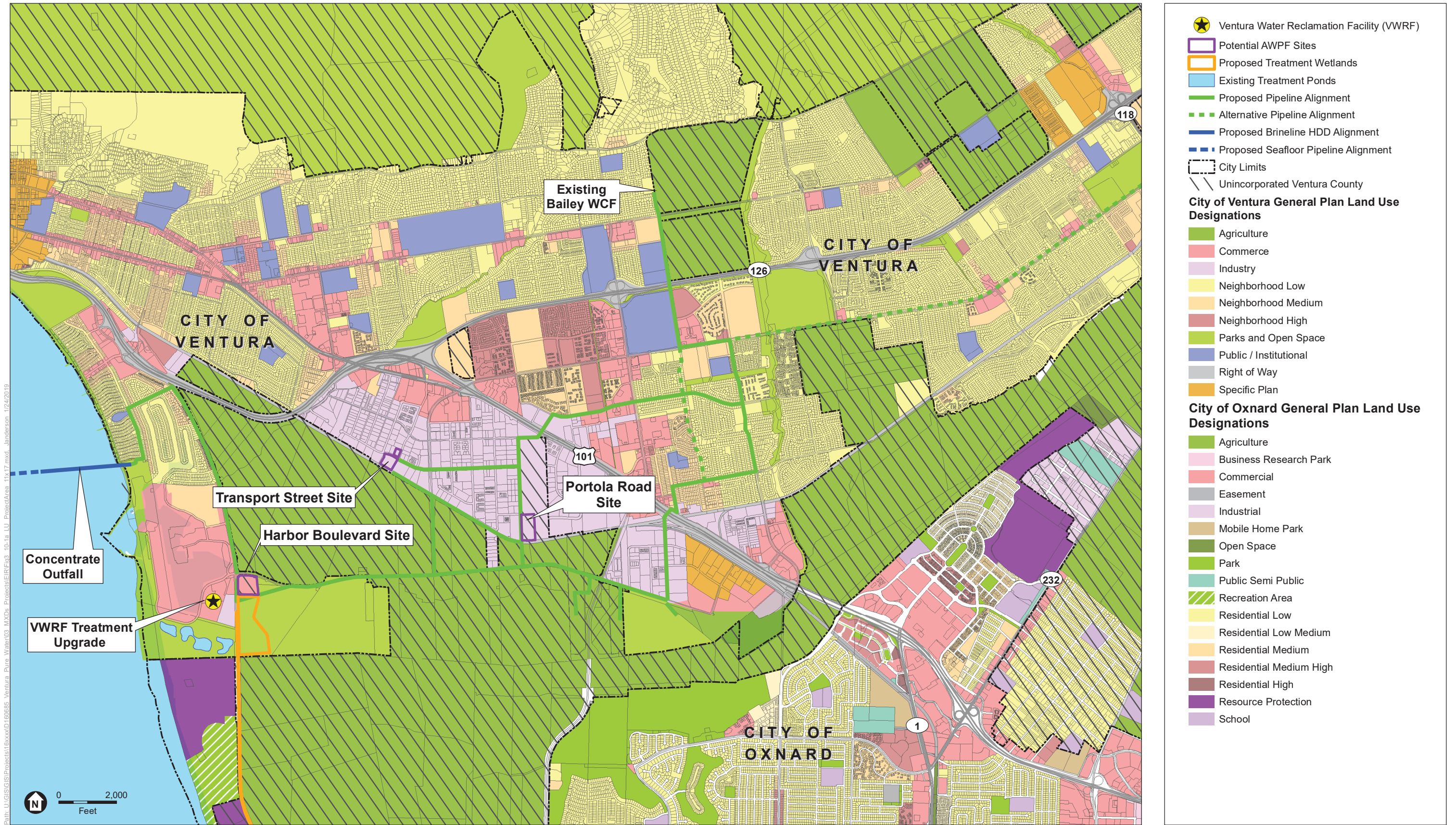
outfall would be installed in existing rights-of-way adjacent to land designated as Agriculture, Parks and Open Space, Commerce, and Residential land uses (see Figure 3.10-1a).

- The concentrate may be transferred through pipeline to the Calleguas Salinity Management Pipeline (SMP), for ultimate disposal through the SMP. The pipeline to the SMP would be constructed underground within the rights-of-way and would traverse through the cities of Ventura, Oxnard, and Port Hueneme (Figure 3.10-1d). Land uses adjacent to the route of the proposed discharge pipeline to the Calleguas SMP include:
 - City of Ventura
 - Parks and Open Space
 - Agriculture
 - City of Oxnard
 - Coastal Zone-Park and Open Space
 - Public and Institutional
 - Residential-Low
 - Residential-Medium
 - Airport Compatible
 - Agriculture
 - Commercial
 - City of Port Hueneme
 - Public Facilities
 - Residential-Low
 - Residential-Medium
 - Commercial
 - Park and Open Space

Phase 2 facilities would consist of either an expansion of the AWPf on the AWPf site, or the construction of desalination facilities on the AWPf site. If a desalination plant is constructed, it would require a subsurface ocean water intake system constructed on the shoreline west of the VWRf to convey ocean water to the new desalination facility. Land uses that encompass the area where the proposed ocean water intake system would be potentially located include Parks and Open Space.

County of Ventura General Plan Land Use Designations

The project components within the County of Ventura includes the Harbor Boulevard AWPf and the Portola Road AWPf sites and conveyance pipelines. The Harbor Boulevard and Portola Road sites are located in unincorporated Ventura County and are designated as Coastal Open Space and Agriculture, respectively. The proposed conveyance pipelines would be located within existing public rights-of-way where feasible and would traverse adjacent and through Agriculture land use designations.

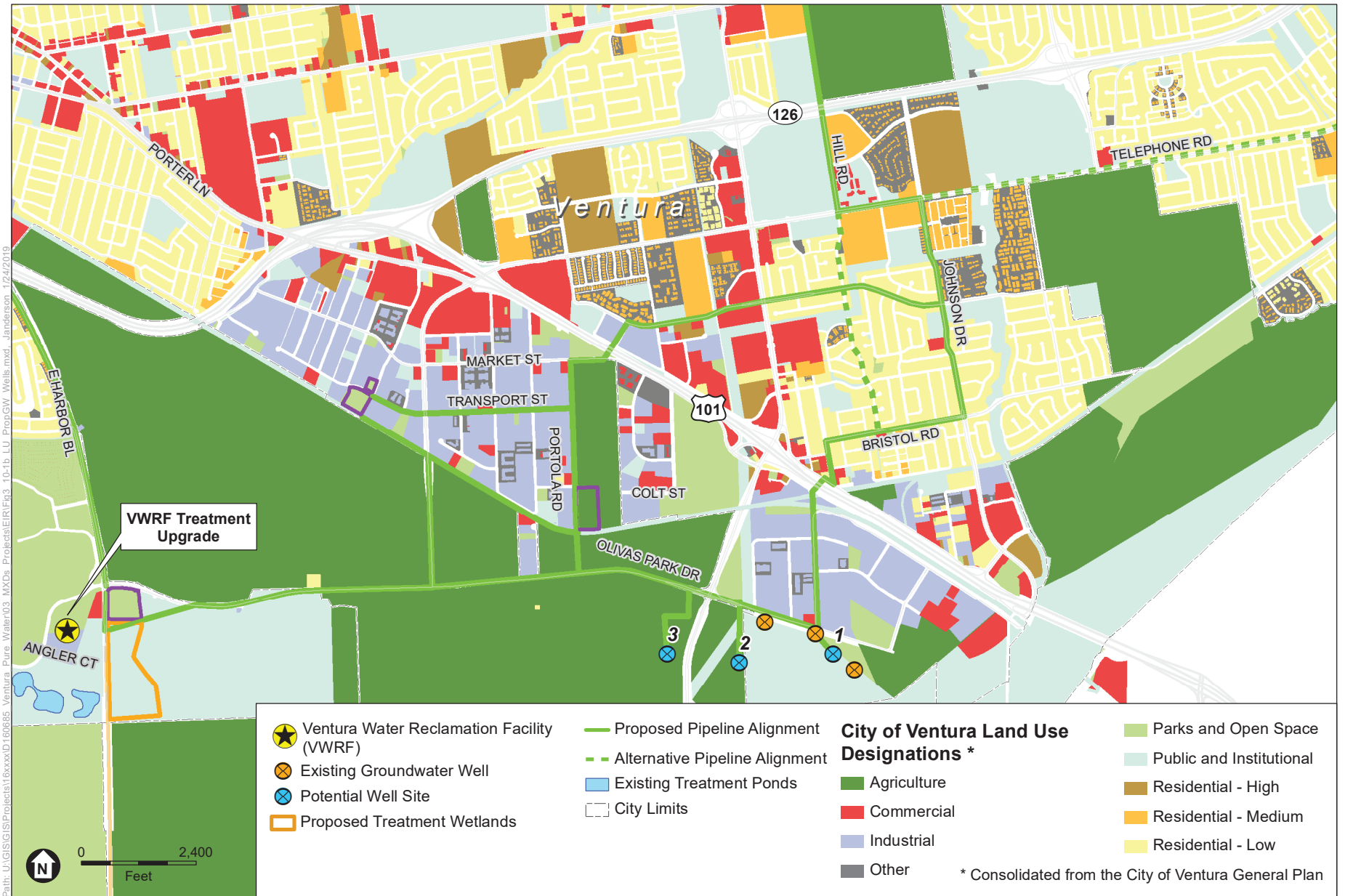


SOURCE: ESRI; City of Ventura; City of Oxnard

Ventura Water Supply Projects

Figure 3.10-1a
Land Use Designations in the Project Area

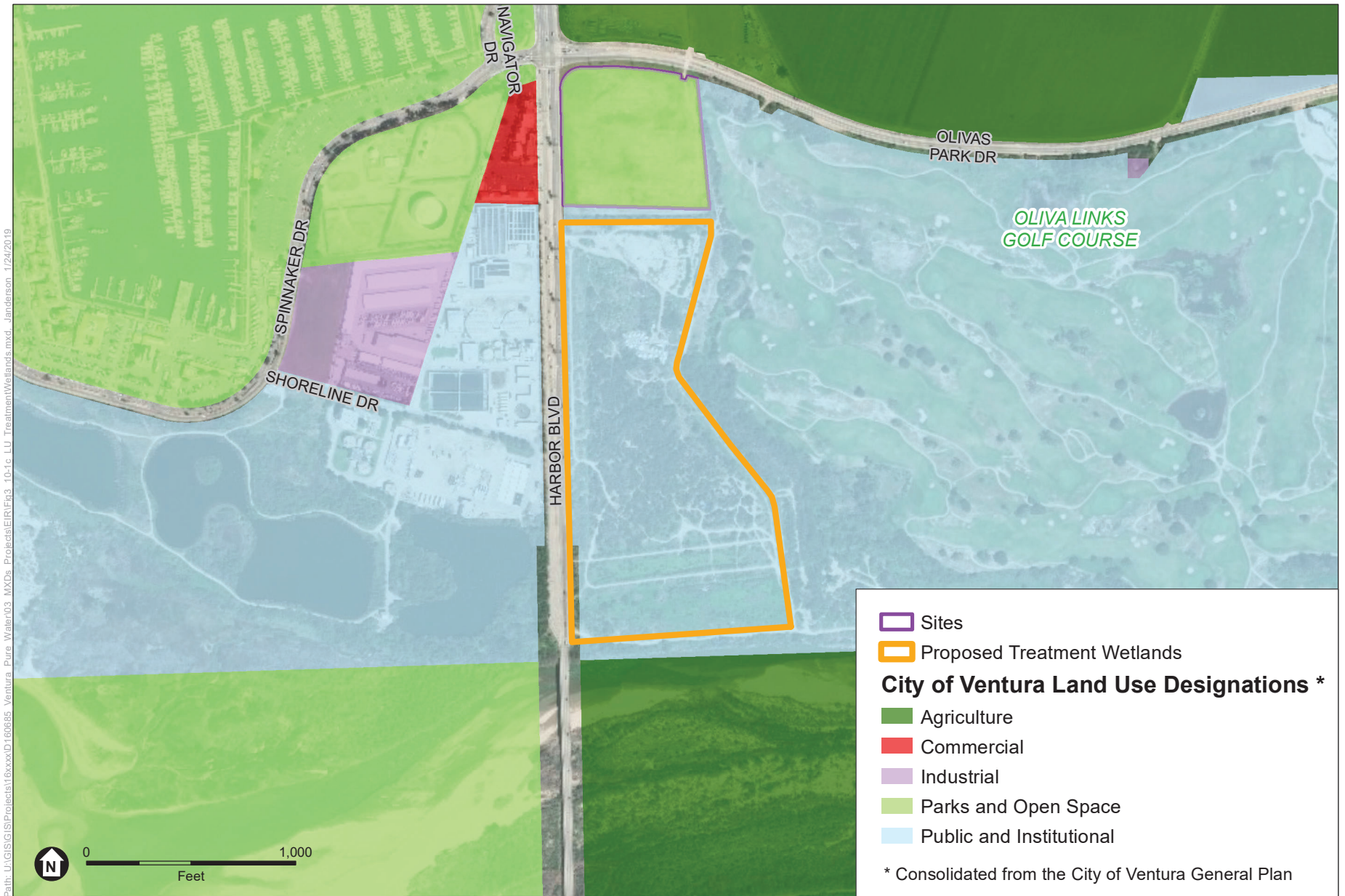
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SOURCE: ESRI; FMMP 2016

Ventura Water Supply Projects

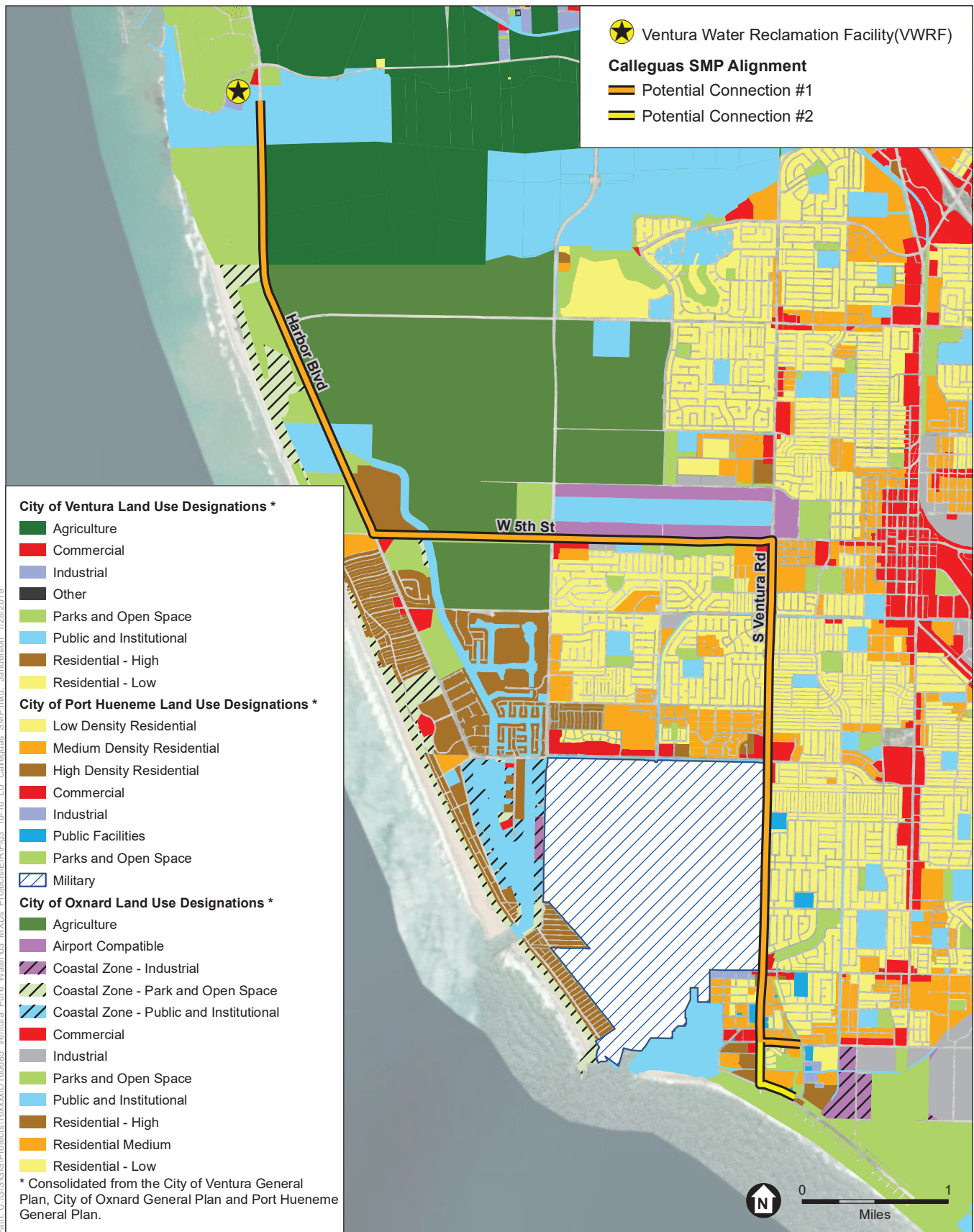
Figure 3.10-1b
Land Use Designation Pertaining to Groundwater Wells Sites and Pipelines



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.10-1c
Land Use Designation for Potential New Treatment Wetlands



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.10-1d
Land Use Designations along the
Concentrate Pipeline to the Calleguas Salinity Management Pipeline

Existing Zoning Designations

The proposed project components that fall within the city of Ventura include the Transport Street AWPf site, the product water conveyance system, the potential new wildlife/treatment wetlands, the groundwater wells, the concentrate discharge facility (unless the discharge is piped to the Calleguas SMP, which would result in pipelines in the cities of Oxnard and Port of Hueneme), and the groundwater treatment pipelines. The Harbor Boulevard and Portola Road AWPf sites are located in unincorporated Ventura County. Conveyance system pipelines may be located in unincorporated Ventura County. A concentrate discharge pipeline would be located in the cities of Oxnard and Port Hueneme if concentrate is discharged through the Calleguas SMP. In Phase 2, either the AWPf would be expanded or a desalination facility would be constructed; in either case, development would occur on the AWPf site.

- The Harbor Boulevard site is zoned under the County Local Coastal Plan (LCP) as Coastal Open Space-10 acre minimum (COS-10). The other three sites are not located in the coastal zone, and the zoning designations are Manufacturing Planned Development (MPD) for the Transport Street site and Agricultural Exclusive-40 acre minimum (AE-40) for the Portola Road site. In addition, the Harbor Boulevard and Portola Road sites are further subject to additional protection under the County's Save Open Space and Agricultural Resources (SOAR) initiative, discussed below.
- Zoning designations for the proposed product water conveyance system include the aforementioned zoning for the potential AWPf sites, since the pump station would be located on site. Conveyance pipelines would be constructed within City rights-of-way and may be constructed in unincorporated Ventura County rights-of-way.
- The proposed treatment wetlands and the proposed concentrate discharge outfall are located within land zoned for Parks (P).
- If a concentrate discharge outfall is constructed, it would be located under lands zoned for Parks (P). If concentrate discharge is piped to the Calleguas SMP, the pipeline route would be located within the cities of Ventura, Oxnard, and Port Hueneme rights-of-way.
- Zoning designations for the proposed groundwater wells include Agriculture (A), and Parks (P). Well Sites 2 and 3 are subject to the SOAR initiative.
- The zoning designation for the Phase 2 desalination intake would be zoned Parks (P)

Portions of the proposed discharge pipeline to the Calleguas SMP also fall within the City of Oxnard and Port Hueneme's jurisdiction and would be located in existing road rights-of-way.

Airports

There are no airports located within the project area. The Oxnard Airport, located 2.5 miles south of the Buenaventura Golf Course, is the public airport located nearest to the proposed projects, and the Point Mugu Naval Air Station is the nearest private airstrip to the proposed projects.

3.10.2 Regulatory Framework

State

California Coastal Commission

The California Coastal Commission (CCC) is a state agency that plans and regulates the use of land and water in the coastal zone, in partnership with coastal cities and counties. The CCC was established by the California Coastal Act of 1976. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the CCC or the local government. The coastal zone covers the entire shoreline of California and varies in width depending on the region. Local Coastal Programs (LCPs) are approved by the CCC to allow local jurisdictions to guide development in the coastal zone. LCPs require a Coastal Development Permit for development in the coastal zone. **Figures 3.10-2 and 3.10-3** identify the coastal zone within the project vicinity.

California Government Code – Local Agency Regulation

Government Code Section 53091(d–e) exempts “the location or construction of facilities for the production, generation, storage, treatment, or transmission of water” by local governments from city or county building and zoning ordinances, as follows

53091(d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.

53091 (e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water.

Local

Ventura County General Plan

The Land Use Chapter governs the land use of the county and the proposed projects area. This chapter presents goals, policies, and programs that guide future growth and development in the unincorporated area of Ventura County.

Goal 4. Agricultural:

- 1) Recognize the farmlands within the County that are critical to the maintenance of the local agricultural economy and which are important to the State and Nation for the production of food, fiber, and ornamentals.
- 2) Preserve and protect agricultural lands as a nonrenewable resource to assure their continued availability for the production of food, fiber, and ornamentals.
- 4) Maintain agricultural lands in parcel sizes which will assure that viable farming units are retained.
- 6) Restrict the introduction of conflicting uses into farming areas.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.10-2
Coastal Zone



SOURCE: California Coastal Commission

Ventura Water Supply Projects

Figure 3.10-3
Local Coastal Program Areas

Policy 3. Agricultural land shall be utilized for the production of food, fiber and ornamentals; animal husbandry and care; uses accessory to agriculture and limited temporary or public uses which are consistent with agricultural or agriculturally related uses.

Goal 5. Open Space:

- 3) Retain open space lands in a non-urbanized state so as to preserve the maximum number of future land use options.

Policy 3. Open Space should also include areas within which recreational activities can be pursued, including, but not limited to, use and enjoyment of recreational trails and areas for hunting and fishing. Preservation of open space also serves to protect areas of outstanding scenic, historic, and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

Goal 7. Urban Reserve:

Acknowledge the interests of cities and recognize the LAFCO adopted Spheres of Influence as areas in which urbanization will occur under the cities' authority.

Ventura County General Plan: Coastal Area Plan

The Ventura County Coastal Area Plan and Coastal Zoning Ordinance constitute the LCP for the unincorporated portions of Ventura County's coastal zone. The main goal of the Coastal Area Plan is to ensure that the local government's land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of and implement the provisions and policies of the Coastal Act. The LCP specifically applies to development in the unincorporated portions of the Coastal Zone of Ventura County. The existing wildlife treatment ponds and the proposed Harbor Boulevard AWP site, the wildlife/treatment wetlands, and concentrate outfall are located in the Coastal Zone boundary (Ventura County 2018).

Chapter 2: Summary of Coastal Act Policies

2.3 Archaeological and Paleontological Resources

Section 30244 Archaeological and Paleontological Resources

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

2.12 Public Works

Section 30254 Public Works Facilities

New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new

development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.

4.3.7 Public Works

Policy 1: New or expanded public works facilities (including roads, flood control measures, water and sanitation) will be designed to serve the potential population of the unincorporated and incorporated areas within the Coastal Zone, and designed to eliminate impacts on agriculture, open space lands, and environmentally sensitive habitats.

Chapter 4: Goals, Policies and Programs

Archaeological Resource Goal 1

To recognize archaeological sites in the County's coastal zone as important to an understanding of human history and prehistoric societies and to protect archaeological resources from disturbance by human activities.

Policies

1. Discretionary development shall be reviewed to identify potential locations for sensitive archaeological resources.
2. New development shall be sited and designed to avoid adverse impacts to archaeological resources to the maximum extent feasible. If there is no feasible alternative that can eliminate all impacts to archaeological resources, then the alternative that would result in the fewest or least significant impacts to resources shall be selected. Impacts to archaeological resources that cannot be avoided through siting and design alternatives shall be mitigated. When impacts to archaeological resources cannot be avoided, mitigation shall be required and shall be designed in accordance with established federal, state and/or County standards and shall be consistent with the policies and provisions of the LCP.
3. Archaeological, historical and ethnographic interpretation of native peoples in Ventura County should be incorporated into existing interpretive programs at public recreation facilities as feasible and into future interpretive programs as funds become available.
4. The location of all coastal zone archaeological sites shall be kept confidential to avert disturbance or destruction of the resource.
5. Native American tribal groups approved by the Native American Heritage Commission for the area shall be consulted when development has the potential to adversely impact archaeological resources.
6. Protect and preserve archaeological resources from destruction, and avoid impacts to such resources where feasible.
7. The unauthorized collection of archaeological artifacts is prohibited.

Paleontology Goal 1

To recognize the importance of coastal fossils and prehistoric organism evolution, to protect important paleontological resources from human activities, to preserve significant paleontological sites to the fullest extent possible, and to take steps to preserve the information a site may yield.

Policies

1. Discretionary development shall be reviewed to determine the geologic unit(s) to be impacted and paleontological significance of the geologic rock units containing them.
2. New development shall be sited and designed to avoid adverse impacts to paleontological resources to the maximum extent feasible. If there is no feasible alternative that can eliminate all impacts to paleontological resources, then the alternative that would result in the fewest or least significant impacts to resources shall be selected. Impacts to paleontological resources that cannot be avoided through siting and design alternatives shall be mitigated. When impacts to paleontological resources cannot be avoided, mitigation shall be required that includes procedures for monitoring grading and handling fossil discoveries that may occur during development.
3. Protect and preserve paleontological resources from destruction, and avoid impacts to such resources where feasible.
4. The unauthorized collection of paleontological artifacts is prohibited.

Ventura Local Agency Formation Commission

A Local Agency Formation Commission's purposes are to: 1) discourage urban sprawl, 2) preserve open space and prime agricultural land, 3) ensure efficient provision of government services, and 4) encourage the orderly formation and development of local agencies, such as cities (California Government Code Section 56301). The Ventura Local Agency Formation Commission (Ventura LAFCo) is responsible for coordinating orderly reorganization to local jurisdictional boundaries, including annexations. The Ventura LAFCo has adopted local policies that it must consider when making decisions on reorganization proposals. Specifically, the policies found in Division 3 of the Commissioner's Handbook, Policies of the Ventura LAFCo, are applicable to the proposed project. Relevant policies from the Commissioner's Handbook are cited below.

Chapter 2 – Specific Policies

Section 3.2.1 – Annexation of Streets To Cities

Except in extraordinary circumstances, cities shall annex entire roadway sections adjacent to territory proposed to be annexed and shall include complete intersections. City annexations shall reflect logical allocations of existing and proposed roads and rights-of-way. Illogical allocations are divisions of roads in the middle, short sections of roads situated between the boundaries of other agencies, and other divisions that require a road service provider to duplicate or provide services in an inefficient manner.

Section 3.2.3 – Annexation of Unincorporated Island Areas by Cities

Any approval of a proposal for a change of organization or reorganization will be conditioned to provide that proceedings will not be completed until and unless a subsequent proposal is filed with LAFCo initiating proceedings for the change of organization or reorganization of all unincorporated island areas that meet the provisions of Government Code Section 56375.3, provided all of the following criteria are applicable:

- (a) The approved proposal was initiated by resolution of a city that surrounds or substantially surrounds one or more unincorporated island areas that meet the requirements of Section 56375.3.
- (b) The territory in the approved proposal consists of one or more areas that are each 40 acres or more in area.
- (c) The territory in the approved proposal will not be used exclusively for agriculture or open space purposes after the completion of proceedings.
- (d) The territory in the approved proposal is not owned by a public agency or used for public purposes.

Section 3.2.4 – Conformance With Local Plans And Policies

3.2.4.1 Consistency with General and Specific Plans:

- (a) In its review of a proposal, LAFCo shall consider consistency with city and/or county general and specific plans.
- (b) Unless exceptional circumstances are shown, LAFCo will not approve a proposal unless it is consistent with the applicable general plan and any applicable specific plan. For purposes of this policy, the applicable general plan is as follows:
 - i. For proposals by a city, the general plan of the city.
 - ii. For proposals by a district, where the affected territory lies within an adopted sphere of influence of a city, the general plan of the city.
 - iii. For proposals by a district, where the affected territory lies outside an adopted city sphere of influence, the Ventura County General Plan.

3.2.4.3 – Guidelines for Orderly Development: LAFCo encourages proposals that involve urban development or that result in urban development to include annexation to a city wherever possible. In support of this policy LAFCo has adopted Guidelines for Orderly Development, the policies of which are incorporated by reference.

Chapter 3 – Standards

Section 3.3.1 – General Standards For Annexation To Cities And Districts

3.3.1.1 – Factors Favorable To Approval:

- (a) The proposal would eliminate islands, corridors, or other distortion of existing boundaries.
- (b) The affected territory is urban in character or urban development is imminent, requiring municipal or urban-type services.
- (c) The affected territory can be provided all urban services by the city or district as shown by the city's or district's service plans and the proposal would enhance the efficient provision of urban services.

- (d) The proposal is consistent with state law, adopted spheres of influence, applicable general and specific plans, and these policies.
- (e) The proposal is for the annexation of city or district owned property, used or to be used for public purposes.

City of San Buenaventura General Plan

Chapter 2: Our Prosperous Community

Goal: To attract and retain enterprises that provide high-value, high wage jobs; to diversify the local economy; to increase the local tax base; and to anticipate our economic future in order to strengthen our economy and help fund vital public services.

Policy 2D: Expand tourism opportunities

- Action 2.19: Partner with hotels and the Chamber of Commerce to promote city golf courses.

Chapter 3: Our Well Planned & Designed Community

Land in the City's planning area is divided into eight Planning Designations. The proposed projects are located within Agriculture, Residential-Low, Residential-Medium, Public and Institutional, Commercial, and Parks and Open Space land uses, which are described below:

Agriculture: Predominantly commercial cultivation of food and plants and raising of animals.

Commerce: Encourages a wide range of building types of anywhere from two to six stories (depending on neighborhood characteristics) that house a mix of functions, including commercial, entertainment, office, and housing.

Industry: Encourages intensive manufacturing, processing, warehousing and similar uses, as well as light, clean industries and support offices; also encourages workplace-serving retail functions and work-live residences where such secondary functions would complement and be compatible with industrial uses. Primarily large-scale buildings. Also can be developed as Transit Oriented Development, employment center or working village with a mix of uses.

Neighborhood (Residential) Low: Emphasizes detached houses with some attached units in small mix of building types from 0 up to 8 dwelling units per acre. Predominantly residential, with opportunity for limited home occupation and neighborhood series sensitively located along corridors and at intersections.

Neighborhood (Residential) Medium: Anticipates a mixture of detached and attached dwellings and higher building types at approximately 9 to 20 dwelling units per acre. Predominately residential with small scale commercial at key locations, primarily at intersections and adjacent to corridors.

Neighborhood (Residential) High: Accommodates a broader mix of building types, primarily attached, from 21 to 54 dwelling units per acre; A mix of residential, commercial, office, and entertainment that includes mixed-use buildings.

Parks and Open Space: Designate lands to public recreation and leisure and visual resources, and can range from neighborhood to lots and pocket parks to urban squares and plazas and playgrounds to large regional parks and natural preserves.

Public and Institutional: Accommodates civic functions such as government offices, hospitals, libraries, schools, and public green space.

- **Policy 3D: Continue to preserve agricultural and other open space lands within the City's Planning Area.**
 - Action 3.20: Pursuant to SOAR, adopt development code provisions to “preserve agricultural and open space lands as a desirable means of shaping the City’s internal and external form and size, and of serving the needs of the residents.
 - Action 3.21: Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all appropriate buffers as determined by the Agriculture Commissioner’s Office.

Chapter 5: Our Sustainable Infrastructure

Goal: Safeguard public health, well-being and prosperity by providing and maintaining facilities that enable the community to live in balance with natural systems.

- **Policy 5B: Improve services in ways that respect and even benefit the environment**
 - Action 5.2: Use natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment when feasible.
 - Action 5.11: Increase emergency water supply capacity through cooperative tie-in with neighboring suppliers.
 - Action 5.12: Apply new technologies to increase the efficiency of the wastewater treatment system.

Chapter 6: Our Active Community

Goal: To add to and enhance parks and open spaces to provide enriching recreation options for the entire community.

- **Policy 6A: Expand the park and trail network to link shoreline, hillside, and watershed areas.**
 - Action 6.1: Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development.
 - Action 6.3: Work with the County to plan and develop trails that link the City with surrounding open space and natural areas, and require development projects to include trails when appropriate.
 - Action 6.6: Update plans for and complete the linear park system as resources allow.

Chapter 9: Our Creative Community

Goal: Become a vibrant cultural center by weaving the arts and local heritage into everyday life.

- **Policy 9D: Ensure proper treatment of archeological and historic resources.**
 - Action 9.14: Require archaeological assessments for projects proposed in the Coastal Zone and other areas where cultural resources are likely to be located.
 - Action 9.15: Suspend development activity when archaeological resources are discovered, and require the developer to retain a qualified archaeologist to oversee

handling of the resources in coordination with the Ventura County Archaeological Society and local Native American organizations as appropriate.

City of San Buenaventura Local Coastal Program

The City of Ventura General Plan satisfies the State requirements for the City's Local Coastal Program in accordance with the California Coastal Act. (*Public Resources Code Section 30000 et seq.*). As stated in the City of Buenaventura General Plan Update to the Year 2010 (p. iii):

The Comprehensive Plan includes the City's Local Coastal Program policies.

Italicized type is used to identify text which is part of the Local Coastal Program.

The Land Use Plan Map shows the coastal area boundary.

The policies for the coastal zone are:

Policy 15.5 Flood Plain Policy

All new development, including construction, excavation and grading, except for flood control projects and nonstructural agricultural uses, shall be prohibited in the floodway unless offsetting improvements are provided, such as minor reshaping of topography as further delimited below. The net effect of any offsetting improvements shall be minor, and shall not reduce the cross-sectional area of the main channel and adjoining overbank areas in accordance with Federal Emergency Management Agency (FEMA), Ventura County Flood Control, and City regulations. If the proposed development falls within the floodway fridge, it must meet the requirements of the Flood Plain Overlay Zone. Permitted development shall not cause or contribute to flood or lead to expenditure of public funds for flood control work, i.e., dams, stream channelization, etc.

Policy 15.8 Coastal Conservancy

The City shall continue to request California Coastal Conservancy assistance in possible coastal projects such as agricultural preservation, coastal resource enhancement, public access and coastal restoration

The Local Coastal Plan contained in this Comprehensive Plan represents the commitment of the City to provide continuing protection and enhancement of its coastal resources. It is recognized that certain resource areas under the City's jurisdiction may require further public attention to ensure their protection and enhancement. Such resource area includes:

- Degraded or less than pristine wetlands of any size such as the Alessandro Lagoon and the Ventura and Santa Clara River mouth areas; and,
- Lands that have a history or potential for production agricultural uses, such as the Ventura River area.

Policy 15.11 Public Services:

New or expanded public works facilities shall be designed and limited to accommodate needs generated by development for uses permitted consistent with provisions of the California Coastal Act. Special districts shall not be formed or expanded except where assessments for, and provision of, the service would not induce development inconsistent with the California Coastal

Act or this Comprehensive Plan. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to: coastal depended land uses; essential public services and basic industries vital to the economic health of the region, state or nation; public and commercial recreation; and visitors-serving land uses shall not be precluded by other development.

The VWRP, existing wildlife/treatment ponds, potential new wildlife/treatment wetlands, and proposed new discharge outfall are located within the City's LCP jurisdiction. The VWRP and proposed discharge outfall are also in the coastal zone.

City of Ventura Municipal Code

Chapter 24.242 C-P-D Commercial Planned Development Zone

Chapter 24.242 establishes the Commercial Planned Development Zone, also known as the "C-P-D" Zone, and prescribes use types and other regulations for this zone. The following use type is permitted:

- Utility or Equipment Substations

Sec. 24.242.070 Same-Height.

- C) Maximum height. Regardless of the number of stories comprising a building or structure, no portion of a building or other structure in the M-P-D zone shall exceed 75 feet in height except as provided in section 24.405.030.

Chapter 24.264 – M-P-D Manufacturing Planned Development Zone

The M-P-D Manufacturing Planned Development ("M-P-D") Zone and prescribes use types and other regulations for this zone. The following use types are permitted:

- Light Industrial
- Utility or Equipment Substations

Sec. 24.264.070 Same-Height.

- C) Maximum height. Regardless of the number of stories comprising a building or structure, no portion of a building or other structure in the M-P-D zone shall exceed 75 feet in height except as provided in section 24.405.030.

Chapter 24.290 – P Parks Zone

The Parks ("P") Zone and prescribes use types and other regulations for this zone. The following use type is permitted, subject to a use permit:

- Utility or Equipment Substations

Sec. 24.290.070 – Same – Height

- B. Maximum height. Regardless of the number of stories comprising a building or structure, no portion of a building or other structure in the P zone shall exceed 30 feet in height except as provided in section 24.405.030.

City of Oxnard 2030 General Plan

Chapter 3.5 Land Use Designations and Standards

Policy ER-1.2 Protect Surrounding Agriculture and Open Space Protect open space and agricultural uses around Oxnard through continued adherence to the Guidelines for Orderly Development, Ventura County Greenbelt programs, the Save Open Space and Agricultural Resources Ordinance, and other programs or policies that may subsequently be adopted such as the SB 375 Sustainable Communities Strategy.

Policy ER-12.12 Rerouting Roads and Utilities around Agricultural Areas Develop new roads and utilities around prime agricultural areas rather than through them, where feasible.

City of Oxnard Local Coastal Plan

The city of Oxnard's LCP was adopted in 1982 in accordance with Chapter 3 of the Coastal Act. The Oxnard LCP applies to developments between the sea and the first public road paralleling the ocean or within 300 feet of the inland extent of any beach or of the mean high tide line of the sea where there is no beach, whichever is the greater distance. The Oxnard LCP includes policies that are mandated for preserving coastal resources, including maximum public access; recreational uses; preservation of marine resources, sensitive habitats, prime agricultural land and archeological resources; and guidelines for new residential, commercial, and industrial developments. It should be noted that in Oxnard the "sea" is defined to include the Channel Islands Harbor, the Edison Canal, and channels associated with the inland waterway development that creates a significant inland bulge of the coastal zone boundary.

The potential discharge pipeline to the Calleguas SMP would travel through the City of Oxnard, and a portion would fall within the coastal zone.

City of Port Hueneme 2015 General Plan and Local Coastal Program.

Conservation/Open Space Element Goal 1 - Protect the remaining native and non-native plant and animal species in the city.

Conservation/Open Space Element Goal 2 - Preserve remaining open space areas and maintain recreational facilities.

City of Port Hueneme Local Coastal Program.

The City of Port Hueneme adopted its LCP in February 1983 and certified it in 1984. Prior to the adoption of the LCP, the CCC had primary responsibility in the jurisdiction over issues of development permits for projects which are consistent with the Coastal Act policies. Once the LCP was approved, approval of development within the coastal zone reverted to the City of Port Hueneme. Although the City of Port Hueneme has primary responsibility to issue building permits, the CCC retains discretionary review on appealed projects within the coastal zone.

The potential discharge pipeline to the Calleguas SMP would travel through the City of Port Hueneme, and a portion would fall within the coastal zone.

Save Open Space and Agricultural Resources

In 1995, the first Save Open Space and Agricultural Resources (SOAR) initiative was approved by voters in the city of Ventura. SOAR is a series of initiatives that require a vote of the public before agricultural land or open space areas can be rezoned for development. Eight city SOAR initiatives require the city councils to obtain the approval of their citizens before urban development can occur beyond a City Urban Restriction Boundary (CURB) or before rezoning agricultural land within the city's sphere of influence (SOAR 2018). The proposed Harbor Boulevard and Portola Road sites are located in SOAR-protected areas.

3.10.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to land use and planning resources. The issues presented in the environmental checklist have been used as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Physically divide an established community (refer to Impact LU 3.10-1).
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, Specific Plan, LCP, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect (refer to Impact LU 3.10-2).
- Conflict with any applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP) (refer to Impact LU 3.10-3).

A summary of the findings for each impact is presented in **Table 3.10-1**. The analyses below support these findings.

**TABLE 3.10-1
SUMMARY OF LAND USE AND PLANNING IMPACT DETERMINATIONS**

Impacts	3.10-1 Divide Established Community	3.10-2 Land Use Plan, Policies, Regulations	3.10-3 HCP or NCCP
Phase 1			
Advanced Water Purification Facility	NI	LTSM	NI
Water Conveyance System	NI	LTSM	NI
Groundwater Wells	NI	LTSM	NI
Wildlife/Treatment Wetlands	LTSM	LTSM	NI
VWRF Treatment Upgrades	NI	NI	NI
Concentrate Discharge Facility	NI	LTSM	NI
Phase 2			
AWPF Expansion	NI	LTS	NI
Ocean Desalination	NI	LTSM	NI

LTS = Less than Significant, no mitigation proposed
LTSM = Less than Significant impact with mitigation
NI = No Impact
SU = Significant and Unavoidable impact, even after implementation of mitigation

3.10.4 Impacts and Mitigation Measures

Divide Established Community

Impact LU 3.10-1: The proposed projects could result in a significant impact if they would physically divide an established community.

Phase 1

Advanced Water Purification Facility

The proposed AWPf would be constructed at one of three sites, as shown in Figure 2-2. The AWPf sites are not located in residential areas. The Harbor Boulevard site would be located on a 10-acre vacant lot surrounded by commercial uses to the west, agricultural to the north, golf course to the east, and open space to the south. The proposed Transport Street site would be located on 5 to 6 acres of vacant land surrounded by the Union Pacific Railroad tracks and agricultural lands to the south and commercial uses to the north, west, and east. The proposed Portola Road site would be located on 9.3 acres of agricultural land that is surrounded by agricultural fields to the north, east, and south, and commercial uses to the west.

The construction and operation of the proposed AWPf would not create a barrier or physically divide an established community. All of the potential AWPf sites are located in areas adjacent to

commercial, parks/open space and agricultural land uses. No physical division of existing communities would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Product Water Conveyance System

The proposed projects include the construction of conveyance pipelines that would convey tertiary effluent from VWRP to AWP, purified water from the AWP to ASR wells or Bailey Water Conditioning Facility (WCF), extracted groundwater from the ASR wells to the Bailey WCF, and raw groundwater from extraction wells to the AWP. All of the pipelines would be built underground within public rights-of-way. On average, 100–200 feet of pipeline would be installed per day. The impacts during construction would be temporarily and would not divide a community. Once the pipelines are constructed, they would be located entirely underground and would not create a barrier or physically divide an established community. Therefore, no impact would occur.

A pump station would be constructed at the VWRP and at the proposed AWP to convey tertiary effluent from VWRP to AWP and to the injection wells or WCF. As described above, the VWRP is an existing facility and proposed AWP sites would be surrounded by agriculture, industrial, public and institutional, and parks and open space uses. Thus, construction and operation of the proposed pump station would not create a barrier or physically divide an established community. No physical division to existing communities would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). The proposed wells would be housed within single-story buildings, approximately 10 to 15 feet in height, and 64 feet by 30 feet wide (approximately 1,920 square feet), surrounded by a 5- to 6-foot-tall chain-link or metal fence for security. The aboveground facilities would be integrated into the existing urban character of the surrounding community using landscaping and would not create a barrier or physically divide an established community. No physical division to existing communities would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The existing ponds are located within land designated as Park and Open Space and surrounded by Parks and Open Space to the south and east, Commerce to the north, and the coastal shore to the west. The reconfiguration of the existing ponds would preserve the existing discharge channel and existing connections to the ponds and construct vegetated benches. It would not create a barrier or physically divide an established community.

New Wildlife/Treatment Wetland

The potential new wildlife/treatment wetland would be constructed on an approximately 35-acre lot. The construction would include a treatment wetland, pipeline, pump station, and new point of discharge to the Santa Clara River Estuary (SCRE). The surrounding land use designations include Park and Open Space to the east, Agriculture to the north and south, and Commerce and Industry to the west. The proposed treatment wetlands would be constructed on currently vacant and undeveloped land and would not create a barrier or physically divide an established community.

On March 21, 2006, the City Planning Commission adopted Resolution No. 8216, including Categorical Use Permit (CUP)-1202 and Coastal Development Permit (CDP)-510. This action allowed the City Community Services Department to issue a Facility Use Permit to the Turning Point Foundation to operate a temporary shelter campground (RiverHaven community) for a maximum of 25 homeless persons to assist residents in finding long-term housing and employment on an approximately 0.75-acre portion of a 104-acre City-owned parcel. The RiverHaven community is currently located in the area proposed for the potential new wildlife/treatment wetland. The implementation of a new wildlife/treatment wetland would displace the RiverHaven community. With the implementation of **Mitigation Measure LU-1** requiring the City to coordinate with Turning Point Foundation to relocate the community, impacts would be less than significant.

Mitigation Measures:

LU-1: Prior to the grading the new treatment wetlands property, the City shall coordinate with Turning Point Foundation to identify an appropriate area for the relocation or reconfiguration of the RiverHaven community. The new area shall provide enough area to accommodate a maximum of 25 individuals accommodated with temporary campground, bathrooms, showers, laundry facilities, and a community building which can accommodate recreational vehicles and tents. The new area shall also be in a location where it would be feasible to obtain any necessary permits and entitlements.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrades

The upgrades would include replacing the aeration blowers, filters and existing gravity thickener, and constructing a new anoxic tank within the existing VWRF. The upgrades would not include any facility outside of the existing VWRF. Therefore, the upgrades would not create a barrier or physically divide an established community.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

A proposed outfall would be constructed at Marina Park surrounded by Parks and Open Space land use. A conveyance pipeline would be constructed from the AWPf to the ocean outfall along public rights-of-way and the outfall would extend along the ocean floor approximately 1 to 2 miles offshore. The facilities would be underground and would not create a barrier or physically divide an established community.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

A proposed concentrate pipeline would be constructed from the proposed AWPf to the existing Calleguas SMP ocean outfall located in the city of Oxnard. The pipeline would be built within existing public rights-of-way where feasible. Once the pipeline is constructed, it would be located entirely underground and would not create a barrier or physically divide an established community.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

AWPF expansion would occur within the proposed AWPf site. For the reasons explained in the analysis of the AWPf, the AWPf expansion would not create a barrier or physically divide an established community.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

If an ocean desalination facility is constructed, it would be located at the same site as the proposed AWPf. It would be located on either vacant land, agricultural land, or a golf course and would be integrated into the immediate surrounding landscapes of commercial, agricultural, or vacant uses. The ocean desalination facility would not create a barrier or have the potential to physically divide an established community.

Ocean Intake

The proposed ocean intake system would be constructed underground, and would not create a barrier or physically divide an established community. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Land Use Plan, Policies, and Regulations

Impact LU 3.10-2: The proposed projects could result in a significant impact if they would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

State law provides that city and county building and zoning ordinances do not apply to the location or construction by local agencies of facilities for the production, generation, storage, treatment, or transmission of water (Gov. Code Section 53091(d)-(e)). For CEQA purposes, the following analysis will address any potential conflicts with land use plans and programs that have the “purpose of avoiding or mitigating environmental effects.”

Phase 1

Advanced Water Purification Facility

The proposed projects include the construction and operation of a AWPf on one of three potential sites. The Transport Street site is located in the City of Ventura, while the Harbor Boulevard and Portola Road sites are located in the County of Ventura.

Sites Located in the City of Ventura-Transport Street Site

The General Plan designation for the Transport Street site is Industry. The zoning designation is Manufacturing Planned Development. This site is not subject to the City’s Local Coastal Program. The following General Plan policies are applicable to the Transport Street site:

Policy 3D: Continue to preserve agricultural and other open space lands within the City’s Planning Area.

- Action 3.20: Pursuant to SOAR, adopt development code provisions to “preserve agricultural and open space lands as a desirable means of shaping the City’s internal and external form and size, and of serving the needs of the residents.
- Action 3.21: Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all appropriate buffers as determined by the Agriculture Commissioner’s Office.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: The zoning designations for the Transport Street site is Manufacturing Planned Development (MPD). The Transport Street AWPf site is not located within agricultural land or within a SOARs designated land. The proposed projects would be consistent with the Policy 3D of the General Plan.

Policy 5B: Improve services in ways that respect and even benefit the environment

- Action 5.2: Use natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment when feasible.
- Action 5.11: Increase emergency water supply capacity through cooperative tie-in with neighboring suppliers.
- Action 5.12: Apply new technologies to increase the efficiency of the wastewater treatment system.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: The AWPf would be designed to improve the water quality of the VWRf discharge and groundwater. The purpose of the proposed projects is to enhance ecological values in the SCRE and create a sustainable long-term water supply for the City. The proposed projects would be consistent with the General Plan.

Policy 6A: Expand the park and trail network to link shoreline, hillside, and watershed areas.

- Action 6.1: Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development.
- Action 6.3: Work with the County to plan and develop trails that link the City with surrounding open space and natural areas, and require development projects to include trails when appropriate.
- Action 6.6: Update plans for and complete the linear park system as resources allow.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: The implementation of the Transport Street AWPf site would not impact any parks, trails, or hillsides. As a result, the Transport Street AWPf would not conflict with the General Plan.

Policy 9D: Ensure proper treatment of archeological and historic resources.

- Action 9.14: Require archaeological assessments for projects proposed in the Coastal Zone and other areas where cultural resources are likely to be located.
- Action 9.15: Suspend development activity when archaeological resources are discovered, and require the developer to retain a qualified archaeologist to oversee handling of the resources in coordination with the Ventura County Archaeological Society and local Native American organizations as appropriate.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: The Transport Street AWPf site would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required. Impacts associated with archeological resources are analyzed in Section 3.5, Cultural Resources. The proposed projects would be consistent with Policy 9D of the General Plan with the implementation of mitigation.

Sites Located in the County of Ventura-Harbor Boulevard and Portola Road Sites

Harbor Boulevard Site:

The County General Plan designation is Open Space, and the site is zoned Coastal Open Space-10-acre minimum. The Harbor Boulevard Site is located with the coastal zone and within the County Local Coastal Program. The City of Ventura's Comprehensive Plan designates the Harbor Boulevard Site as Commercial Planned-Tourist Oriented. The following General Plan policies are applicable:

Policy 3.2.2.5. Open Space:

- Open Space should also include undeveloped natural areas surrounding urban-designated areas which have been set aside to define the boundaries of the urban-designated areas, to prevent urban sprawl, and to promote efficient municipal services and facilities by confining the areas of urban development.

Ventura County Zoning Ordinance 8173-1 - Coastal Open Space (COS) Zone.

- The purpose of this zone is to provide for the preservation, maintenance, and enhancement of natural and recreational resources in the coastal areas of the County while allowing reasonable and compatible uses of the land.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: The construction of the Harbor Boulevard AWPf site would occur within the local coastal zone and is subject to Open Space and COS. Development at this site would require a coastal development permit and annexation to the City of Ventura. In addition, use of the site may require a LCP amendment since it is zoned Open Space (COS) in the LCP.

Annexation of the Harbor Boulevard site to the City of Ventura is subject to LAFCo approval, and LAFCo would review the proposed annexation for consistency with LAFCo's Annexation Policies and Procedures. Development of the AWPf on this site would promote efficient municipal services and facilities by locating the AWPf near the existing VWRf, and would not promote sprawl. It is a reasonable and compatible use of the land. Therefore, the construction of the AWPf does not conflict with any policy or zoning provision adopted for the purpose of avoiding or mitigating an environmental effect.

This site is also subject to the County SOAR policies and to General Plan Policy 3D. Mitigation Measure AG-1, requiring a conservation easement to mitigate for the loss of open space on the proposed Harbor Boulevard site, would ensure consistency with the SOAR program and General Plan policies intended to avoid or mitigate an environmental effect.

Portola Road Site:

The General Plan designation of this site is Agriculture-Urban Reserve, and it is zoned Agricultural Exclusive-40 acre minimum (AE-40) and Residential-Agriculture-1 acre minimum (R-A-1). The following General Plan policies are applicable to the Portola Road site:

Ventura County General Plan

Goal 4. Agricultural:

- 1) Recognize the farmlands within the County that are critical to the maintenance of the local agricultural economy and which are important to the State and Nation for the production of food, fiber, and ornamentals.
- 2) Preserve and protect agricultural lands as a nonrenewable resource to assure their continued availability for the production of food, fiber, and ornamentals.
- 4) Maintain agricultural lands in parcel sizes which will assure that viable farming units are retained.
- 6) Restrict the introduction of conflicting uses into farming areas.

Policy 3. Agricultural land shall be utilized for the production of food, fiber and ornamentals; animal husbandry and care; uses accessory to agriculture and limited temporary or public uses which are consistent with agricultural or agriculturally related uses.

City of San Buenaventura General Plan

Policy 3D: Continue to preserve agricultural and other open space lands within the City's Planning Area.

- Action 3.20: Pursuant to SOAR, adopt development code provisions to “preserve agricultural and open space lands as a desirable means of shaping the City’s internal and external form and size, and of serving the needs of the residents.
- Action 3.21: Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all appropriate buffers as determined by the Agriculture Commissioner’s Office.

Consistency with Plans and Policies Adopted for the Purpose of Avoiding or Mitigating an Environmental Effect: Development of the Portola Road AWPf would convert land designated for agriculture to a non-agricultural use and would conflict with the above goals and policies. Mitigation Measure AG-1, requiring an agricultural conservation easement to mitigate for the loss of Prime Farmland on the proposed Portola Road site, would ensure consistency with the SOAR program. Further, development at this site would require the annexation to the City of Ventura. Annexation of the Portola Road site to the City of Ventura is subject to LAFCo approval, and LAFCo would review the proposed annexation for consistency with LAFCo’s Annexation Policies and Procedures. Development of the AWPf on this site would promote efficient municipal services and facilities by locating the AWPf near the existing VWRF, and would not promote sprawl. It is a reasonable and compatible use of the land. Therefore, the construction of the AWPf does not conflict with any policy or zoning provision adopted for the purpose of avoiding or mitigating an environmental effect.

All three proposed AWPf sites would comply with Policy 5B: Improve services in ways that respect and even benefit the environment, Action 5.11: Increase emergency water supply capacity

through cooperative tie-in with neighboring suppliers and Action 5.12: Apply new technologies to increase the efficiency of the wastewater treatment system.

Mitigation measures applicable to AWPf sites:

The AWPf would be designed and constructed to be compatible with the surrounding development (Mitigation Measure AES-1 and AES-2). All new light sources would be shielded and oriented downward to minimize light spillover on adjacent uses, as required by Mitigation Measure AES-3. The construction the AWPf on the Harbor Boulevard and Portola Road sites would conflict with the SOAR program and the Portola Road AWPf would displace agricultural land, requiring the implementation of Mitigation Measure AG-1. The construction of the AWPf sites would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required for all potential sites. The AWPf would not generate noise beyond the property boundaries or create a substantially increase in traffic trips, within the surrounding area. Impacts would be less than significant with mitigation.

Mitigation Measures:

Transport Street Site: Implement Mitigation Measures AES-1 through AES-3, and CUL-1 through CUL-5.

Harbor Boulevard: Implement Mitigation Measures AES-1 through AES-3, and CUL-1 through CUL-5--

Portola Road: Implement Mitigation Measures AES-1 through AES-3, AG-1, and CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The product water conveyance system conveyance pipelines would be installed within existing public road rights-of-way, where feasible, and would be located underground. Impacts associated with archeological and historic resources are analyzed in Section 3.6, Cultural Resources. Implementation of Mitigation Measures CUL-1 through CUL-5 would ensure consistency with Policy 9D of the General Plan: Ensure proper treatment of archeological and historic resources.

Pump stations would be constructed within the existing VWRf and at one of the three potential AWPf sites. Development on these sites would not conflict with applicable land use policies, plans, or regulations, for the reasons discussed above in the section on the VWRf. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

The proposed groundwater wells would be constructed in areas designated either for park and open space or for agriculture land uses. All of the proposed groundwater wells would be constructed underground with an aboveground portion consisting of a vertical pipe or pump

standing about 2 to 3 feet above the ground surface. The proposed wells would be housed within single-story buildings, approximately 10 to 15 feet in height, and 64 feet by 30 feet wide (approximately 1,920 square feet), surrounded by a 5- to 6-foot-tall chain-link or metal fence for security. The wells would be housed within single-story block-wall pump buildings that would be compatible with surrounding development and would not generate noise beyond the property line or increased traffic trips.

The construction of the wells and pump building would require excavation, with the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required for all potential well sites. Impacts would be less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The reconfiguration of the ponds would occur within the existing wildlife/treatment ponds. The reconfiguration of the ponds would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required. No change to land use would occur, and impacts would be less than significant with implementation of mitigation.

New Wildlife/Treatment Wetland

The proposed new wildlife/treatment wetlands would be located in land designated as Public and Institutional on City-owned property adjacent to the existing VWRP. The land is zoned for Parks. Currently, the land is vegetated open space. The construction of the wetland would occur within the coastal zone and would require a coastal development permit. The new treatment wetland would be consistent with City of Buenaventura LCP policies 15.5, Flood Plain; 15.8, Coastal Conservancy; and 15.11, Public Services. The wetland would not include habitable structures in the floodplain and would enhance the local coastal area by adding a new wetland. Once constructed, the treatment wetlands would be visually and functionally compatible with all surrounding land uses, including the Santa Clara River, just south of the proposed site. The construction of the wetlands would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required.

As mentioned above, the RiverHaven community is currently located within an area proposed for the potential new wildlife/treatment wetland. The implementation of the wildlife/treatment wetland would displace the RiverHaven community. However, the implementation of **Mitigation Measure LU-1** requiring the City to coordinate with Turning Point Foundation to identify a satisfactory relocation site for the community, would reduce impacts to less than significant.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-5 and LU-1.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrades

The upgrades would take place completely within the existing VWRF. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed new outfall consists of a conveyance pipeline that would be built within existing roadways, and the outfall itself would extend along the ocean floor. The construction of the outfall would occur within the coastal zone and would require a coastal development permit prior to construction. The construction of the outfall would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-6 are required. Impacts would be less than significant with mitigation.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed discharge pipeline to the Calleguas SMP would be constructed within existing rights-of-way, where feasible, through the cities of Ventura, Oxnard, and Port Hueneme. The construction of the pipeline would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measures CUL-1 through CUL-5 are required. Once in operation, the pipeline would be located entirely underground. Therefore, the pipeline would not conflict with applicable land use designations or be incompatible with surrounding land uses. Impacts would be less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-6.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion Project

AWPF Expansion would occur entirely within the proposed AWPf site. As mentioned above in the Phase 1 analysis, the proposed AWPf would not conflict with applicable land use designations or be incompatible with surrounding land uses. No additional ground disturbance would occur. Impacts would be less than significant.

Ocean Desalination

Desalination Facility

The potential ocean desalination facility would be located at the AWPf site. The proposed AWPf has been sized to accommodate the future desalination treatment trains. As described above, the proposed AWPf would not conflict with existing land use designations or be incompatible with surrounding land uses. No additional ground disturbance would occur. Impacts would be less than significant.

Ocean Intake

As part of the ocean desalination facility, a proposed ocean intake would be constructed within the ocean to convey ocean water to the new desalination facility. While the exact location is undetermined, construction of the proposed ocean intake system would be located subsurface and entirely underground. The construction of the intake would require excavation and has the potential to affect archeological resources. As a result, Mitigation Measure CUL-6 is required. In addition, the construction would occur within the local coastal zone and would require a coastal development permit prior to the construction of the intake. Compliance with the coastal development permit, and the City's LCP policies would result in less than significant impacts to land uses with mitigation.

Mitigation Measures: Implement Mitigation Measure CUL-6.

Significance Determination: Less than Significant with Mitigation.

HCP or NCCP

Impact LU 3.10-3: The proposed projects could result in a significant impact if they would conflict with any applicable HCP or NCCP.

There is no applicable Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP) within the Ventura Water Supply Projects area (CDFW 2017). Construction, or operation and maintenance, of the proposed projects would not conflict with the provisions of any regional or local HCPs or NCCPs. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

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- City of San Buenaventura, 2005. Ventura General Plan, Published August, 8 2005.
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- County of Ventura, 2018. Ventura County General Plan Land Use Map, Revised January 22, 2018.
- SOAR, 2018. What is SOAR, Available online at: <http://www.soarvc.org/what-is-soar/>, Accessed on March 28, 2018.

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3.11 Marine Biology

This section addresses the potential impacts of the proposed projects on marine biological resources, and includes a description of the environmental setting to establish baseline conditions within the marine study area, a summary of the relevant regulations, and an evaluation of the potential impacts. The marine study area is sited within the nearshore coastal region of the Southern California Bight (SCB) and includes the coastal waters and intertidal and subtidal habitats occurring immediately offshore of Ventura County and extending approximately 3 nautical miles offshore from the shoreline, ending in less than 100 feet water depth.

3.11.1 Existing Environmental Setting

Marine Habitats and Communities

The SCB coastal environment extends more than 600 km from Point Conception (USA) to Punta Banda (Mexico) and represents a unique ecological resource (Schiff et al. 2015). The SCB coastal region is physically affected by the cold, southward-flowing California current mixing with the warm, northward-flowing Davidson Counter current (Hickey 1993). The SCB is home to over one dozen threatened or endangered marine mammals and birds, several estuaries that provide fish nurseries and over-wintering stops for birds along the Pacific Flyway, and highly productive reefs that include the giant kelp *Macrocystis* (Dailey et al. 1993). More than 350 fish and 5,000 invertebrate species are endemic to the SCB, approximately 80 percent of which are at the range limits of their distribution.

Intertidal and Nearshore Habitats

The intertidal zone is located between the highest and lowest tide elevations. Intertidal zones along the Southern California coast include rocky shores, sandy beaches, coastal wetlands, and tidal flats/marshes located within estuaries and lagoons.

Wetlands

Coastal wetlands within Ventura County are located at the Ventura River mouth, Ormond Beach, the Santa Clara River mouth (Santa Clara River Estuary National Preserve and McGrath Lake), and the Mugu Lagoon. These wetlands provide critical and essential habitat for shorebirds, including the light-footed clapper rail (*Rallus longirostris levipes*), Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), California black rail (*Laterallus jamaicensis coturniculus*), waterfowl, and wetland and salt marsh plants, including cordgrass, saltwort (*Batis maritima*), pickleweed (*Silicornia bigelovii*), and eelgrass (*Zostera* spp.). Coastal wetlands and estuaries also provide important habitat for a variety of fish species, including California killfish (*Fundulus parvipinnis*), bay goby (*Eucyclogobius* spp.), topsmelt (*Atherinops affinis*), starry flounder (*Platichthys stellatus*), and the tidewater goby (*Eucyclogobius newberryi*).

Sandy Beach Habitats

Approximately 38 miles (93 percent) of the Ventura County shoreline is identified as sandy beach habitat. Of these 38 miles, 28 are in public ownership. Sandy beach ecosystems account for 36 percent of the shoreline habitat in Southern California and about 70 percent of the shoreline of

the entire California coastline (Dugan et al. 2015). Generally, beaches are highly dynamic environments exposed to air and sun during low tides, subject to intense wave energy and constant reworking, as well as large-scale seasonal substrate variations (Thompson et al. 1993). The distribution of organisms within the sand is subject to large-scale seasonal variations as well as daily fluctuations in temperature, salinity, and moisture content of the sand (Staughan 1978). Individual animals that live in the sand tend to be mobile and frequently shift position. For example, sand crabs (*Emerita analoga*) move up and down the tidal zone with the tide and are also observed to move laterally along the beach with the wave direction (Dillery and Knapp 1970).

One survey of biological communities of Southern California beaches found that species richness, organism abundance, and biomass are all higher than similar beaches in other regions around the world. The intertidal community of most SCB sandy beach habitats consists largely of organisms that live in the sand (infauna) such as polychaetes, or on the sand (epifauna) such as bivalves and crustaceans. These communities are typified by patchy distributions, temporal variations, and sparse individual abundances (Thompson et al. 1993). Dominant taxa include the sand crab, the bloodworm (*Hemipodus borealis*), Gould bean clams (*Donax gouldi*), and the pismo clam (*Tivela stultorum*) (Thompson et al. 1993; Dugan et al. 2015). A survey of marine biota inhabiting Mandalay Beach in 2001 reported collecting a total of 12 organisms from 55 core samples (Padre Associates 2007). Only two species were reported collected, the sand crab and the bloodworm. Sand crabs are important as a prey source for local fish and bird species and are taken by recreational fisherman for use as bait. In addition to the above-mentioned invertebrate species, Pismo clams and bean clams have the potential to occur within the sandy intertidal habitat of the region. Pismo clams and bean clams are important prey sources for local fish and bird species, have been reported in intertidal areas at Mandalay Beach (Padre Associates 2007), and are also fished by recreational fisherman.

Two endangered shore birds, the California Least Tern and the Western Snowy Plover, nest and feed along these sandy beaches (Coastal Resilience 2018).

Rocky Intertidal

Less than 3 miles of the Ventura County shoreline is identified as rocky beach or rocky intertidal habitat area. Some of these rocky intertidal areas include the rocky bluffs and rock outcroppings at Point Mugu and Bass Rock, and some consist of patches of rocky cobble beach. In addition to natural rocky intertidal hard substrate habitat, artificial rocky intertidal hard substrate habitat also occurs along the Ventura coast in the form of rock groins and jetties, rock riprap, pier pilings, and floating docks. Artificial rocky intertidal habitat occurs at the Ventura Pier, San Buenaventura State Beach, Ventura Harbor, Channel Islands Harbor, Port Hueneme, Hueneme Beach Park, Point Mugu, and adjacent to the Pacific Coast Highway in southern Ventura County.

The splash zone (highest rocky intertidal zone, above all but the highest tides) is typically dominated by lichens and shelled invertebrate species capable of tolerating exposure to the air for long periods of time. These species typically include periwinkles (*Littorina* spp.), barnacles (*Balanus* and *Chthamalus* spp.), limpets (*Acmaeidae*) and rock lice (*Ligia* spp.) (MBC 2017; Tway 1991; Murray and Bray 1993; Thompson et al. 1993). The biological community in the

upper intertidal zone, below the splash zone and regularly inundated during high tides, may consist of a number of organisms, including sea felt (*Enteromorpha spp.*), sea lettuce (*Ulva spp.*), brown algae (*Phaeophyta*), various red algae (*Rhodophyta*), turban snails (*Tegula spp.*), mussels (*Mytilus spp.*), chitons (*Polyplacophora*), owl limpets (*Lottia gigantea*) and other limpets, hermit crabs (*Pagurus spp.*), and striped shore crabs (*Pachygrapsus crassipes*) (MBC 2017; Tway 1991; Murray and Bray 1993; Thompson et al. 1993).

The middle intertidal zone biological community consists of both red and brown algae such as rockweed (*Pelvetia spp.*) and the green alga sea bubble (*Colpomenia sinuosa*) (Tway 1991; Murray and Bray 1993). Mussel mats, typically interspersed with gooseneck barnacles (*Pollicipes polymerus*), both of which are filter feeders, are often widespread in the middle intertidal zone. Additionally, a variety of sea anemones (*Anthopleura spp.*), snails, polychaetes (Class *Polychaeta*), barnacles, isopods, crabs and shrimp (Order Decapoda), brittle stars (Class *Ophiuroidea*), sea slugs (Order *Opisthobranchia*), sea hares (*Aplysia californica*), and octopus (*Octopus spp.*) also occur in this zone (Tway 1991; Thompson et al. 1993).

The lower intertidal community is typified by red algae such as the turf weed (*Endocladia*, *Mastocarpus*), a variety of coralline algae (*Corallina spp.*, *Pseudolithophyllum spp.* and *Lithothamnion spp.*), and brown algae including wireweed (*Sargassum spp.*) and feather boa kelp (*Egregia menziesii*) (Tway 1991; Murray and Bray 1993). Surfgrass (*Phyllospadix spp.*), a marine flowering plant, can occasionally form extensive meadows through the lower intertidal and subtidal zones. Sponges (Demospongiae), sea anemones, sand castle worms (*Phragmatopoma californica*) and other polychaetes, snails, sea slugs, attached bivalves, octopus, bryozoans (*Ectoprocta*), amphipods (Order *Amphipoda*), isopods, shrimps, hermit crabs, crabs, sea stars (*Pisaster spp.*), bat stars (*Pateria miniata*), brittle stars, sea cucumbers (*Parastichopus spp.*), sea urchins (*Strongylocentrotus spp.*), and tunicates (*Urochordata*) are abundant in the low intertidal zone as well (MBC 2017; Tway 1991; Thompson et al. 1993).

Shallow Subtidal Habitats

Two subtidal (submerged) types of benthic habitats occur along the Ventura County coastline: soft substrate (sandy) and hard substrate (rocky). Benthic habitats and biota are physically complex marine habitats. As a result, the organisms inhabiting these environments have made a number of adaptations. These adaptations include burrowing, scavenging, suspension-feeding, predation, and parasitism. Benthic communities along the Pacific Coast are also distributed according to water temperature, water depth, substrate type, physical disturbance and energy (currents), distance from shore, food availability, and water and sediment quality (concentration levels of natural and anthropogenic organic and inorganic compounds).

Sandy Subtidal

Benthic invertebrate infauna are an important part of the marine ecosystem. The organisms are a food source for fish and other larger invertebrates and contribute to nutrient recycling and detoxification of pollutants (MBC 2017). Some species are highly sensitive to effects of human activities, while others thrive under altered conditions. Depth is a strong influence on community abundance and composition through the availability of oxygen, food, and sediment compaction.

The organisms living in the different depth zones affect their environment through burrowing, exclusion of other species, and predation.

The benthic infaunal communities inhabiting the nearshore sandy sediment habitats in the SCB, including Ventura County, are typically dominated by mollusks (clams and snails), small filter-feeding annelid worms, arthropods (primarily amphipods and other small crustaceans), nemertean, and nematode worms. Further offshore, where silt and clay mud sediments dominate due to decreased influence of wave energy, polychaete worms and other detrital feeding worms, along with mollusks, arthropods, and brittle stars dominate the infaunal community. For example, the infaunal community near the Hueneme outfall was reported to be dominated by polychaete worms (*Armandia bioculata* and *Apoprionospio pygmaea*), a brachiopod (*Goniada littorea*), and mollusks (*Tellina modesta* and *Nassarius perpinguis*) in water depths less than 40 feet, and by the polychaete worms (*Spiophanes bombyx* and *Dipolydora bidentata*), a sipunculid (*Apionsoma misakiarum*), and a gastropod mollusk (*Caecum crebricinctum*) in water depths greater than 40 feet (Padre Associates 2007).

The SCB epifaunal community (organisms living above the seafloor surface) typically associated with soft substrate subtidal habitats in water depths less than 100 feet include the ornate tube worm (*Diopatra ornata*), assorted cancer crabs (*Cancer sp.*), the masking crab (*Loxorhynchus crispatus*), octopi (*Octopus rubescens* and *O. bimaculatus/bimaculoides*), assorted species of shrimp, the white sea pen (*Stylatula elongata*), the sea cucumber (*Parastichopus californicus*), the sunflower star (*Pycnopodia helianthoides*) occasional polychaete tube worms, *Pachycerianthus* anemones, the spiny sand star (*Astropecten armatus*), the short-spined seastar (*Pisaster brevispinus*), and the seastar *Petalster* (*Luidia foliolata*), the sea pansy (*Renilla kollikeri*), swimming crabs (*Portunus xantusii*), an occasional hermit crab, Kellet's whelk (*Kelletia undosum*), and sand dollars (*Dendraster excentricus*) (AMS 2016, Padre Associates 2007).

Rocky Subtidal

Subtidal hard-bottom substrate in the SCB includes naturally occurring hard substrate and artificial structures. Whether natural or artificial, hard-bottom substrate is important in that it provides additional vertical habitat for attachment of a variety of invertebrates and plants, and shelter for motile organisms such as crabs and fishes. Natural hard substrate offshore Ventura County is limited to areas adjacent to rocky headlands (Point Mugu), submarine canyon edges, and giant kelp (*Macrocystis pyrifera*) beds. Artificial structures include outfall pipes, artificial reefs, jetties, groins, and piers.

Invertebrates common on shallow rocky structures in Southern California include sessile (anchored or immobile) and motile forms. Sessile species include mussels, barnacles, and sea anemones in shallower depths, and rock scallops (*Crassadoma gigantea*), sponges, sea fans (*Muricea spp.*), feather duster worms (a polychaete, Family *Serpulidae*), wormsnails (*Vermetidae*), and sea squirts (*Ascidacea*) at the bottom at the rock/sand interface (MBC 2017; Thompson et al. 1993). These sessile species are generally dominant in the shallow subtidal unless macroalgae are very abundant. Most of these sessile invertebrates feed by filtering plankton and detritus from the water column. Motile species either hide in crevices or are

protectively colored. Large motile species include seastars, octopus, California spiny lobster, and red and purple sea urchins (*Strongylocentrotus franciscanus* and *S. purpuratus*, respectively). Smaller motile species include rock crabs (*Cancer* spp.), polychaetes, bivalves, snails, amphipods, and isopods. California spiny lobster is fished recreationally on hard structure throughout the SCB. Extensive giant kelp (*Macrocystis pyrifera*) beds are located throughout offshore Ventura County (**Figure 3.11-1**) and provide critical nursery and foraging habitat for fish and invertebrates. Giant kelp attach their holdfasts to small- to medium-sized rocks and are normally associated with low-relief mixed-hard-substrate habitat.

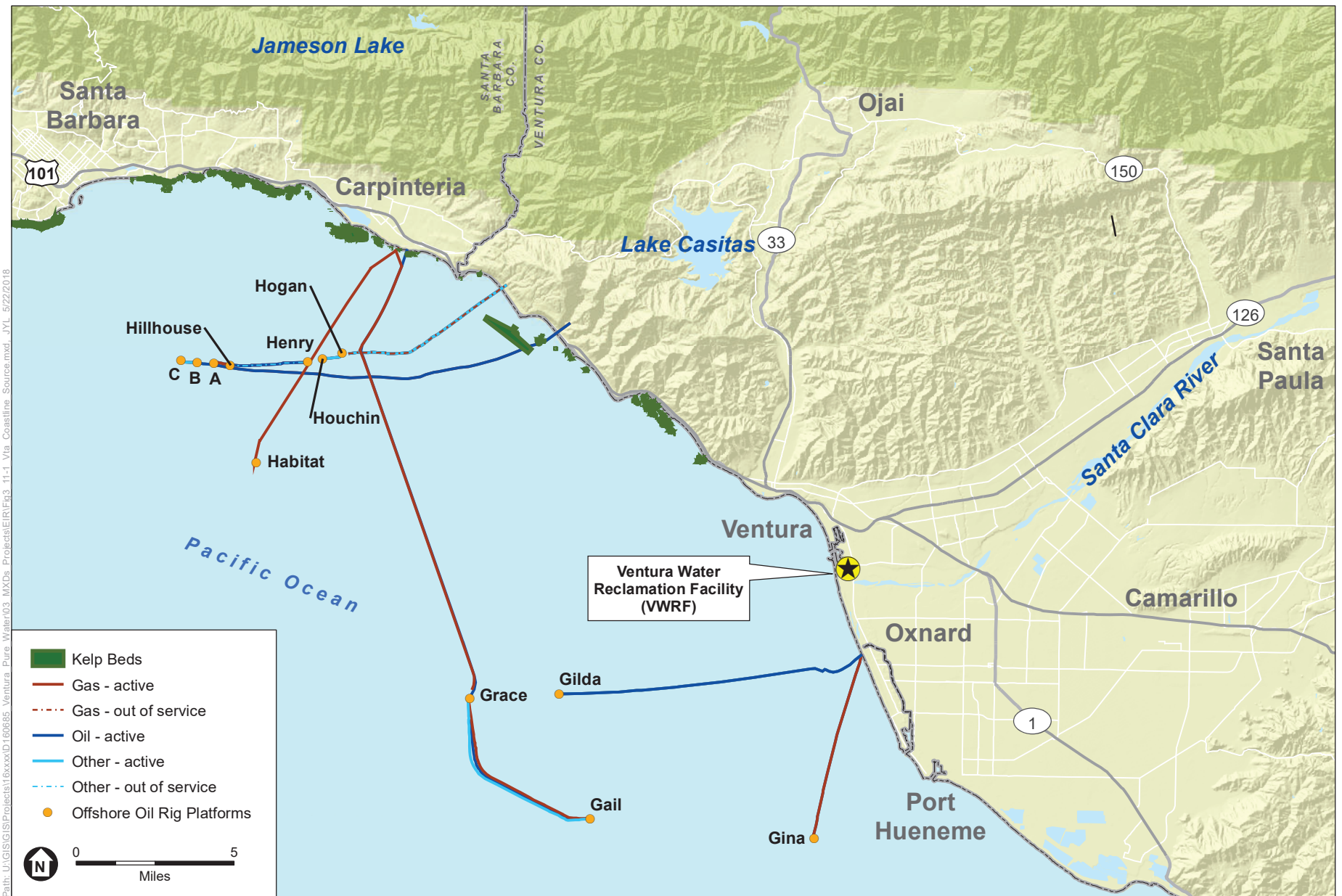
Diver and video survey data obtained of the Hueneme outfall in 1972 and 2005 reported that the concrete pipeline and discharge risers provided suitable artificial hard substrate for extensive colonization by the strawberry anemone (*Corynactis californica*), the white plume anemone (*Metridium dianthus* (previously known as *Meridium senile*)), the bryozoan (*Victorella argilla*), the hydroid (*Aglaophenia struthionides*), three species of barnacles (*Balanus* spp.), a solitary coral (*Coenocyathus bowersi*), and an unidentified brown algae. The gorgonian corals (*Lophogorgia chilensis* and *Muricea californica*) were also reported as being present, but not abundant (Padre Associates 2007).

Demersal Fish

In the SCB's shallow coastal areas, the most commonly encountered demersal (bottom-dwelling) fish include both juvenile and adult flatfish such as speckled sanddab (*Citharichthys stigmaeus*), spotted turbot (*Pleuronichthys ritteri*), and California halibut (*Paralichthys californicus*). Regional demersal fish studies conducted in the SCB in 1994, 1998, 2003, and 2008 found that speckled sanddab was the most frequently taken fish species at shallow, inner shelf stations. Other frequently occurring species included hornyhead turbot (*Pleuronichthys verticalis*), California halibut, California lizardfish (*Synodus lucioceps*), and English sole (*Parophrys vetulus*) (Padre Associates 2007).

California lizardfish are generally found near depths of 18 to 46 meters but can be found well inshore or offshore of this range. This warm-temperate species responds to warm-water conditions, and during the 1998 regional sampling, which occurred during El Niño conditions, was found in 74 percent of surveyed locations throughout the SCB.

Even though the project area is predominately composed of sandy soft substrate, subtidal hard substrate associated with artificial rock groins, harbor jetties, shoreline armoring rock, and pier pilings occur throughout the Ventura County shoreline. Additionally, natural hard substrate occurs as exposed shelf near Point Mugu and other exposed headlands, and as low-relief and mixed-relief substrate wherever giant kelp beds occur. Fish species associated with hard substrate habitats in the SCB typically include kelp bass (*Paralabrax clathratus*), pile perch (*Rhacochilus vacca*), black perch (*Embiotoca jacksoni*), white seaperch (*Phanerodon furcatus*), rubberlip seaperch (*Rhacochilus toxotes*), brown rockfish (*Sebastes auriculatus*), black croaker (*Cheilotrema saturnum*), opaleye, and California sheephead (*Semicossyphus pulcher*) as well as species attracted to the rock/sand interface such as barred sand bass, walleye surfperch (*Hyperprosopon argenteum*), and white croaker (*Genyonomus lineatus*) (Cross and Allen 1993).



SOURCE: Ventura Coastline Source Applied Marine Science, 2018

Ventura Water Supply Projects

Figure 3.11-1
Ventura Coastline

Pelagic Habitat

The pelagic¹ zone supports a number of planktonic organisms (phytoplankton, zooplankton, and ichthyoplankton) that have little or no swimming ability and float with the currents, as well as nektonic organisms, such as fishes, sharks, and marine mammals, that move freely against local and oceanic currents.

Plankton

Phytoplankton, the primary producers in the marine pelagic food web, are consumed by many species of zooplankton. In turn, the zooplankton support a variety of species, including small schooling fish (e.g., sardine, herring) and baleen whales (*Mysticeti*).

Organisms that complete their entire life cycle as planktonic forms are called holoplankton and include phytoplankton such as diatoms, and zooplankton such as *Acartia tonsa*. The abundance and composition of both phytoplankton and zooplankton changes seasonally and is related to temperature, light availability, and nutrient inputs. Phytoplankton may respond to increased nutrient inputs near coastlines and form blooms known as red tides dominated by genera such as *Pseudonitzschia* and *Lingulodinium* (*Gonyaulax*) (McGaraghan et. al. 2018). Holoplankton have short generation times (hours to weeks), have the capability to reproduce continually (i.e., are not dependent on a certain season), and are not restricted to specific geographic zones.

Plankton that only spend part of their life cycle as planktonic forms are called meroplankton. Relative to the holoplankton, meroplankton such as eggs or larvae make up a small fraction of the total number of planktonic organisms in seawater, have much shorter spawning seasons, are restricted to a narrow region of the coast, and have a much greater likelihood of impacts on their populations from mortality due to entrainment. A subset of the meroplankton composed of fish larvae and eggs is called the ichthyoplankton. In the nearshore waters of the SCB, frequently observed ichthyoplankton include larvae of jacksmelt (*A. californiensis*), white croaker (*Genyonemus lineatus*), herrings and anchovies (*Clupeiformes*), combtooth blennies (*Hypsoblennius spp.*), garibaldi (*Hypsypops rubicundus*), and unidentified larval/post larval fishes.

Fish

Pelagic fish communities tend to be similar throughout the SCB, characterized by small schooling species such as northern anchovy (*Engraulis mordax*) and Pacific sardine (*Sardinops sagax*), schooling predators such as Pacific bonito (*Sarda chiliensis*) and yellowtail (*Seriola lalandei*), and large solitary predators such as blue shark (*Prionace glauca*) and swordfish (*Xiphias gladius*) (MBC 2017). Other species that may be common in the nearshore water column are white croaker (*G. lineatus*), shiner perch (*Cymatogaster aggregata*), queenfish (*Seriphus politus*) which aggregate near the bottom during the day, and California scorpionfish (*Scorpaena guttata*) which aggregate in the water column during the day (MBC 2017). The latter species disperse to feed at night.

¹ Living in the open water

White croaker is a schooling species that is generally observed in the sandy nearshore coastal areas of the SCB. Northern anchovy is also a schooling species that maintains tight schools during the day, and feeds in the water column. It is common in the SCB and is one of the species most frequently captured in sampling conducted, indicating that it is rather evenly distributed over the mainland shelf of Southern California. Northern anchovy is also an important component of Southern California's ecosystem. Anchovy eggs and larvae are prey for vertebrate and invertebrate planktivores. Juveniles in nearshore areas support a variety of predators, including birds and other fishes. Northern anchovy is also important commercially, as it is used in conversion to meal, oil, and protein products, and as live bait.

Squid

Although pelagic as larvae and adults, California market squid (*Doryteuthis opalescens*) are an important commercial species that spawn and deposit egg masses over shallow, sandy bottoms, most often at depths between 18 and 55 meters (59 and 180 feet), and occasionally deeper (CDFG 2005). During spawning, each female may produce 20 egg capsules, each with about 200 eggs, which are individually attached to the sea floor. Spawning squid form dense aggregations that deposit extensive egg masses of up to 100 meters² (1,077 feet²) in size. Squid eggs are commonly deposited in areas with water temperatures between 10°C and 14°C (50°F and 57°F), and they have an incubation period of 34 to 52 days. While squid may spawn anywhere along the coast that meets the habitat and temperature requirements, major California grounds are found in Monterey Bay and near the Channel Islands in Southern California. Spawning in Southern California occurs from October to May, with differences attributable to ocean temperatures rather than biological differences (CDFG 2005).

Marine Mammals and Sea Turtles

Of the marine mammals that occur in the SCB and offshore Ventura County, some are year-round residents, while others are only seasonal visitors. Two pinnipeds, the California sea lion (*Zalophus californianus*) and the harbor seal (*Phoca vitulina richardii*), are abundant throughout the Southern California coast. The California sea lion is a more common inhabitant, whereas the harbor seal is considered to be a frequent visitor. Sea lions are commonly seen "hauling out" on hard substrates, such as piers and buoys. A third pinniped species, northern elephant seal (*Mirounga angustirostris*), could potentially occur in the area (Reliant Energy 2001). While stock estimates for California sea lion are considerably higher than in past decades, current population trends are still being evaluated. Current population estimates for harbor seals in California are lower than a peak number reported in 2004, but appear stable, while elephant seal populations appear to be growing in California (MBC 2017).

Cetaceans observed commonly in the coastal nearshore waters of the SCB include common long-beaked and short-beaked dolphins (*Delphinus capensis* and *Delphinus delphis*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and Pacific bottlenose dolphin (*Tursiops truncatus*). Further offshore, toothed whales including sperm whale (*Physeter macrocephalus*) and killer whale (*Orcinus orca*) may occasionally occur. Several baleen whale species, including humpback whale (*Megaptera novaeangliae*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), and sei whale (*Balaenoptera borealis*) migrate annually offshore of Southern

California. Historically, most are more commonly found near the Channel Islands. However, nearshore sightings of large whales have become more common in recent years, with occasional observations of minke whales (*Balaenoptera acutorostrata scammoni*) and humpback whales in Santa Monica Bay, and annual summer observations of feeding blue and fin whales along the Orange County coast and offshore of Santa Monica Bay and the Palos Verdes Peninsula (MBC 2017).

Of the whale species that occur in the SCB, the California gray whale (*Eschrichtius robustus*) is the most frequently observed. This species passes offshore of Southern California annually during its southbound migration between the Bering Sea and birthing lagoons in Baja California. Traditional southbound paths during the winter months are well offshore of the Ventura County coastline. Northward migration through the SCB occurs February through May, with peak occurrence in March (MBC 2017). Northbound migration paths, although still offshore, may run closer to shore than the southbound migration paths due to the fact that mother-calf pairs tend to use a more nearshore route. All marine mammals are protected under the Marine Mammal Protection Act of 1972.

Sea turtles are air-breathing reptiles with streamlined bodies and large flippers. These reptiles inhabit tropical and subtropical ocean waters. Of the seven species of sea turtles, six are found in U.S. waters, and all six species are afforded protection under the federal Endangered Species Act (FESA). Five species of sea turtle are known to occur in the nearshore waters off Southern California: the green turtle (*Chelonia mydas*), the loggerhead turtle (*Caretta caretta*), the leatherback turtle (*Dermochelys coriacea*), the hawksbill turtle (*Eretmochelys imbricata*), and the olive ridley sea turtle (*Lepidochelys olivacea*). These five species have broad geographic ranges and are highly migratory. The green and loggerhead turtles are the most commonly encountered nearshore in the SCB and have been known to occur off the Ventura County coastline, while the olive ridley sea turtle has been observed offshore of San Diego (MBC 2017).

3.11.2 Special-Status Plants and Animals

The SCB supports numerous special-status plants, birds, turtles, fish and mammals. Special-status species include those species that are listed as federal or state endangered, threatened, proposed, and candidate species. In addition, there can be state or local species of concern. For the purposes of this analysis, special-status marine species include:

- Marine and anadromous species that are listed, proposed or are candidate species for listing as threatened or endangered by the National Marine Fisheries Service or U.S. Fish and Wildlife Service (USFWS) pursuant to FESA.
- Marine species listed as Rare, Threatened, or Endangered by California Department of Fish and Wildlife (CDFW) pursuant to the California Endangered Species Act (CESA).
- Marine species managed and regulated under the Magnuson-Stevens Fishery Conservation and Management Act of 1976, known as the Magnuson-Stevens Act (MSA).
- Marine species protected under the Marine Mammal Protection Act (MMPA) of 1972.

- Marine species managed and regulated by CDFW under the Nearshore Fisheries Management Plan and the Market Squid Fisheries Management Plan.
- Marine species designated by CDFW as California Species of Concern.
- Marine species not currently protected by statute or regulation but considered rare, threatened, or endangered under CEQA (Guidelines Section 15380).

Table 3.11-1 presents the FESA, CESA, and MMPA marine species in the SCB and their potential to occur in the nearshore waters of Ventura County; a similar presentation of special-status terrestrial species is provided in Section 3.4.2 and Table 3.4-3. The special-status marine species that have the highest risk of being adversely affected by the proposed projects because of their presence in offshore Ventura County are discussed below. **Table 3.11-2** presents marine fish and invertebrate species that are managed and regulated under the MSA.

Marine Mammals

Of the approximately 40 marine mammals known to occur within the SCB, 8 have a probability of occurring in the nearshore waters of Ventura County (Table 3.11-1). Of these species, those with a moderate or high probability to occur in the marine study area are the California sea lion, the harbor seal, the common long-beaked and short-beaked dolphins, the bottlenose dolphin, the humpback whale, the blue whale, and the gray whale (Table 3.11-1).

These species of marine mammals can be expected to be present in the nearshore waters of Ventura County seasonally, when migrating along the coast, or opportunistically when forage is present. There are no established haul-outs or pupping or birthing sites known to occur along the Ventura County shoreline.

Sea Turtles

Five species of sea turtles are known to occur in the nearshore waters off Southern California: green turtle, loggerhead turtle, leatherback turtle, hawksbill turtle, and olive ridley. Of the five turtle species known to occur in the nearshore waters of the SCB, only the green and loggerhead turtles have a potential of occurring in the nearshore waters of Ventura County (Table 3.11-1). The green turtle is the most commonly encountered nearshore in the SCB and individuals are known to reside in the San Gabriel River, downcoast of Ventura County (MBC 2017).

TABLE 3.11-1
SPECIAL-STATUS MARINE SPECIES AND THEIR POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Marine Mammals					
Baird's Beaked Whale	<i>Berardius bairdii</i>	FD	Inhabit deep offshore waters in the North Pacific and are common along steep underwater geologic structures, like submarine canyons, seamounts, and continental slopes.	Seasonal-sightings from late spring to early fall Very Rare	Not Expected. Sightings mostly in deeper waters than the study area.
Blainville's Beaked Whale	<i>Mesoplodon densirostris</i>	P	Found mainly over the continental shelf and into open ocean waters. Occupy tropical to temperate waters worldwide.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Blue Whale	<i>Balaenoptera musculus</i>	FE, FD	Blue whales are found worldwide but often occur near the edges of physical features where krill tend to concentrate. These whales begin to migrate south during November.	Seasonal from June through November Common	Moderate.
Bottlenose Dolphin	<i>Tursiops truncatus</i>	FD	Found in temperate and tropical waters around the world. Have both coastal and offshore populations.	Year-round Common	High. The most common dolphins in the Southern CA Bight, including nearshore.
Bryde's Whale	<i>Balaenoptera edeni</i>	P	Found highly productive tropical, subtropical, and warm temperate waters worldwide. More commonly found further from shore.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
California Sea Lion	<i>Zalophus californianus</i>	P	Reside in the Eastern North Pacific Ocean in coastal waters. Commonly observed in the Southern Californian Bight	Seasonal Common	High. Commonly observed in the nearshore waters of the study area.
Common Dolphin – Long-beaked	<i>Delphinus capensis</i>	P	Found from Baja California northward to central CA. Found in shallow, warmer temperate waters relatively close to shore.	Year-round Common	High. The common dolphin is the most abundant cetacean found in the coastal waters of California.
Common Dolphin – Short-beaked	<i>Delphinus delphis</i>	P	A more pelagic species than the long-beaked common dolphin, can be found up to 300 nm from shore. Majority of populations are observed off California coast, especially in the warm water months.	Year-round Common	Moderate. Generally found farther offshore and in deeper waters than occur in the study area.
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>	P	Found in temperate, tropical, and subtropical waters. Associated in deep pelagic waters (usually greater than 1,000 m deep) of the continental shelf and slope, and near underwater geologic features. Seasonality and migration patterns are unknown.	Sightings in fall and winter Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Dall's Porpoise	<i>Phocoenoides dalli</i>	P	Distributed throughout the North Pacific Ocean. Mainly in pelagic waters deeper than 180 meters but can be found both offshore and inshore.	Winter and early spring Rare	Not Expected – low. Most frequently seen offshore north of the study area.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Dwarf Sperm Whale	<i>Kogia simus</i>	P	Occur over the continental slope and open ocean. Prefer warm tropical, subtropical, and temperate waters worldwide.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
False Killer Whale	<i>Pseudorca crassidens</i>	P	Occur over the continental slope and into open ocean waters of tropical and warm temperate waters worldwide.	Sightings in summer and early fall Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Fin Whale	<i>Balaenoptera physalus</i>	FE, FD	Fin whales occupy the deep, offshore waters of all major oceans, but are less common in the tropics.	Seasonal	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Ginkgo-toothed Whale	<i>Mesoplodon ginkgodens</i>	P	Found mainly over the continental shelf and into open ocean waters of the Pacific Ocean.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Gray Whale	<i>Eschrichtus robustus</i>	FDL, P	Predominantly occur within the nearshore coastal waters of the North Pacific Ocean.	Seasonal December through May Common	High. Occurring in coastal waters during late fall-winter southward migration and again late winter to early summer during their northward migration.
Guadalupe (Southern) Fur Seal	<i>Arctocephalus townsendi</i>	CT, FT, FD	Reside in tropical waters of Southern California and Mexico. Breed in rocky coastal habitats and caves mainly along the eastern coast of Guadalupe Island, approximately 200 kilometers west of Baja California. There is a small population on San Miguel Island in the Channel Islands.	Seasonal Very Rare	Not Expected. Unlikely to occur along the Ventura coastline.
Harbor Porpoise	<i>Phocoena phocoena</i>	P	Continental slope to oceanic waters, mainly in northern temperate, subarctic coastal, and offshore waters. Commonly found in bays, estuaries, harbors, and fjords less than 200 meters deep.	Year-round Uncommon	Not Expected. No known populations of harbor porpoise occur in the study area.
Harbor Seal	<i>Phoca vitulina</i>	P	Found as far north as British Columbia, Canada and as far south as Baja California, Mexico. Most commonly observed pinniped along CA coastline. Use the offshore waters for foraging and beaches for resting. Occur on offshore rocks, on sand and mudflats in estuaries and bays, and on some isolated beaches.	Year-round Common	High. Commonly observed.
Hubb's Beaked Whale	<i>Mesoplodon carlhubbsi</i>	P	Endemic to the North Pacific Ocean. Specific is not well known but assumed to occur mainly over the continental shelf and into open ocean waters.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Humpback Whale	<i>Megaptera novaeangliae</i>	FE, FD	Found in all major oceans. Central California population of humpback whales migrates from their winter calving and mating areas off Mexico to their summer and fall feeding areas off coastal California. Humpback whales occur from late April to early December.	Seasonal- May through November Common	Moderate. Occasionally occurring in coastal waters during annual migration.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Killer Whale	<i>Orcinus orca</i>	P	Found throughout all oceans. Most abundant in colder waters but can be somewhat abundant in temperate water. Presence and occurrence can be common but unpredictable in coastal California.	Seasonal Uncommon	Not Expected. Most common during April, May, and June as they feed on northbound migrating gray whales. Generally observed in the deeper waters offshore of the study area.
Long-snouted Spinner Dolphin	<i>Stenella longirostris</i>	P	Found in all tropical and subtropical oceans. Continental shelf to open ocean waters, but most commonly in the deep ocean where they track prey.	Sightings in summer and early fall Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Minke Whale	<i>Balaenoptera acutorostrata</i>	P	Distributed worldwide and can be in coastal/inshore and over the continental shelf in temperate (preferred), boreal, or polar waters.	Year-round Uncommon	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
North Pacific Right Whale	<i>Eubalaena japonica</i>	FE, FD	Found in the North Pacific Ocean. Seasonally migratory; inhabit colder waters for feeding, and then migrate to warmer waters for breeding and calving. Although they may move far out to sea during their feeding seasons, right whales give birth in coastal areas.	Very Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Northern Elephant Seal	<i>Mirounga angustirostris</i>	P	Found from Alaska to Mexico. They are sighted regularly over shelf, shelf-break, and slope habitats and they are also present in deep ocean habitats seaward of the 2,000-meter isobaths. Rookeries are located to the north the study area.	Year-round Uncommon	Not Expected. Northern elephant seals are widely distributed in Monterey Bay National Marine Sanctuary but have a low probability of occurring in the study area.
Northern Fur Seal	<i>Callorhinus ursinus</i>	FD	Spend 300 or more days per year foraging in the open ocean of the North Pacific. Use rocky beaches for reproduction. Usually come ashore in California only when debilitated; however, few individuals observed on Ano Nuevo Island.	Year-round Very Rare	Not Expected. Usually 18–28 km from shore in California; however, they have been observed within 5 km of Point Pinos to the north of the study area.
Northern Right Whale Dolphin	<i>Lissodelphis borealis</i>	P	Endemic to deep, cold temperate of the North Pacific Ocean. Also occur over the continental shelf and slope where waters are less than 66°F.	Year-round Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Pacific White-sided Dolphin	<i>Lagenorhynchus obliquidens</i>	P	Occupy temperate waters of the North Pacific. Most abundant in the Southern California Bight during winter. Prefer off shore deep waters.	Year-round Common	Not Expected to Low. Generally found farther offshore and in deeper waters than occur in the study area.
Perrin's Beaked Whale	<i>Mesoplodon perrini</i>	P	Believed to occupy continental shelves and open ocean waters, but not well documented.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Pygmy Sperm Whale	<i>Kogia breviceps</i>	P	Occur over the continental slope and open ocean. Prefer tropical, subtropical, and temperate waters worldwide. Are considered more oceanic and anti-tropical than dwarf sperm whales.	Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Risso's Dolphin	<i>Grampus griseus</i>	P	Distributed throughout all major oceans. Generally found in waters greater than 1,000 meters in depth and seaward of the continental shelf and slopes.	Year-round Rare	Not Expected – low. Generally found farther offshore and in deeper waters than occur in the study area.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Rough-toothed Dolphin	<i>Steno bredanensis</i>	P	Found in all tropical and subtropical oceans. Continental shelf to open ocean waters. Prefer the depths of tropical and warmer temperate waters.	Sighting in summer and early fall. Rare	Not Expected. Prefer warmer tropical and sub-tropical waters and deeper waters than occur in the study areas.
Sei Whale	<i>Balaenoptera borealis</i>	FE, FD	Cosmopolitan distribution and occur in subtropical, temperature, and subpolar waters around the world. Usually observed in deeper waters of oceanic areas far from the coastline.	Seasonal- spring and summer Very Rare	Not Expected. Given population density, there is a low potential for occurrence within the project area.
Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>	P	Found primarily in deep waters in warmer tropical and temperate waters. Forage in areas with high densities of squid.	Year-round Very Rare	Not Expected. Generally found in deeper water than that in the study area and near the offshore islands.
Southern Sea Otter	<i>Enhydra lutris nereis</i>	FT, P	A top carnivore in its coastal range and a keystone species of the nearshore coastal zone. Frequent inhabitator in kelp forests.	Year-round Uncommon	Not Expected. Occurrence in the Southern California Bight is primarily limited to San Nicolas Island, although juvenile males can range over a large area of the coastline. The population on San Nicolas has been annually increasing.
Sperm Whale	<i>Physeter macrocephalus</i>	FE, FD	Occur in the open ocean far from land and are uncommon in waters less than 300 meters deep. Live at the surface of the ocean but dive deeply to catch giant squid.	Most probable spring through fall Rare	Not Expected. Generally found farther offshore and in deeper waters than occur in the study area.
Spotted Dolphin	<i>Stenella attenuata</i>	P	Typically found far away from the coast in tropical and subtropical waters worldwide but can also occupy waters over the continental shelf. Spend majority of day in waters 90–300 meters deep then dive to depth at night to search for prey.	Sightings in summer and early fall Rare	Not Expected. The eastern Pacific Ocean population is typically observed far from the coast.
Stejneger's Beaked Whale	<i>Mesoplodon stejnegeri</i>	P	Found in cold temperate and subarctic waters of the North Pacific Ocean. Typically occupy deep, offshore waters.	Year-round Rare	Not Expected. Typically found in deep, offshore waters on or beyond the continental shelf.
Steller (Northern) Sea Lion	<i>Eumetopias jubatus</i>	FT, P	Distributed around the coasts along the North Pacific Ocean rim. Common in coastal waters and onshore for resting. A small population breeds on Año Nuevo Island, north of Monterey Bay.	Seasonal Occasional	Not Expected. No sightings within the study area have been reported. Steller Sea Lions prefer the colder temperate to sub-arctic waters.
Striped Dolphin	<i>Stenella coeruleoalba</i>	P	Continental shelf to open ocean waters worldwide, often found in areas of upwelling and around convergence zones.	Seasonal Rare	Not Expected. Sightings in summer and early fall. Generally found farther offshore and in deeper waters than occur in the study area.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Marine Turtles					
Green Sea Turtle	<i>Chelonia mydas</i>	FE	Distributed globally. Primarily use three types of habitat: oceanic beaches (for nesting), convergence zones in the open ocean, and benthic feeding grounds in coastal areas.	Seasonal Rare	Low. In the eastern Pacific, green turtles have been sighted from Baja California to southern Alaska but most commonly occur from San Diego south.
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	FE	Distributed globally. Regularly seen off the western coast of the United States in the pelagic with the greatest densities found off central California. In the waters of Southern California nearly all sightings occur in deeper waters seaward of the Channel Islands.	Seasonal Occasional	Not Expected. Given population density and lack of known nesting sites on Southern California beaches. Leatherback sea turtles are most commonly seen between July and October, when the surface water temperature warms to 15°C–16°C and large jellyfish, the primary prey of the turtles, are seasonally abundant offshore.
Loggerhead Sea Turtle	<i>Caretta caretta</i>	FT	Distributed throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. Occupy three different ecosystems during their lives: the terrestrial zone, the oceanic zone, and the neritic or nearshore coastal area.	Seasonal Very Rare	Low. In the United States, most recorded sightings are of juveniles off the coast of California but occasional sightings are reported along the coasts of Washington and Oregon.
Olive Ridley Sea Turtle	<i>Lepidochelys olivacea</i>	FT	Mainly a pelagic sea turtle in tropical/temperate regions of the Pacific, South Atlantic, and Indian Oceans but has been known to inhabit coastal areas, including bays and estuaries.	Seasonal Very Rare	Not Expected. In the eastern Pacific, the range of the Olive Ridley turtle extends from Southern California to northern Chile.
Sharks and Fish					
Basking Shark	<i>Cetorhinus maximus</i>	CSC	This species movements and migrations are poorly understood. Usually sighted from British Columbia to Baja California in the winter and spring months; where they go once they leave coastal areas is unknown.	Seasonal Very Rare	Not Expected – Low. Basking shark populations were severely depleted by commercial fisheries of the 1950s, and they have never fully recovered due to slow growth and low fecundity.
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	CE, FE	Found from the Bering Strait to Southern California. Freshwater streams up to the first 2 years of life, then they migrate to estuarine areas as smolts and eventually the ocean to mature and feed.	Seasonal Rare	Not Expected. Historically, these salmon ranged as far south as the Ventura River, but populations have drastically declined and individuals that do reach the ocean do not appear to extend very far south of San Francisco Bay.
Cowcod	<i>Sebastes levis</i>	CSC	Found from central Oregon to Baja California, Mexico. Juveniles recruit to fine sediment habitat. They have been observed at depths between 40 and 100 meters. Young cowcod move to deeper habitat within their first year.	Seasonal Common	Not Expected – Low. Documented catch has declined drastically since the mid-1980s. Cowcod conservation areas are located in waters farther offshore than the study area.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Steelhead Trout	<i>Onchorhynchus mykiss</i>	FT, CSC	Can be found along the entire Pacific Coast. Resident forms are usually called rainbow, or redband, trout. Those that are anadromous can spend up to 7 years in fresh water prior to smoltification, and then spend up to 3 years in salt water prior to first spawning.	Seasonal Rare	Moderate-Low. More common in Northern California but can be present in Southern California coastal waters and streams. Suitable habitat is not present within the onshore project area. Landlocked steelhead may be present in the Santa Clara River estuary but existing sandbar currently blocking Santa Clara River from Pacific Ocean preventing migration of the species in and out of the river.
Tidewater Goby	<i>Eucycloglobius newberryi</i>	FE	Despite the common name, this goby inhabits lagoons formed by streams running into the sea. The lagoons are blocked from the Pacific Ocean by sandbars, admitting salt water only during particular seasons, and so their water is brackish and cool. The tidewater goby prefers salinities of less than 10 parts per thousand (ppt) (less than a third of the salinity found in the ocean) and is thus more often found in the upper parts of the lagoons, near their inflow.	Seasonal Rare	High -Low. Numerous observations of species in the Santa Clara River Estuary and nearby lagoons in Ventura County. Suitable habitat present in the onshore coastal lagoons and estuaries in and around the Santa Clara River and Ventura County. Santa Clara River Estuary identified as critical habitat. Offshore occurrence and presence is highly restricted and minimal.
Garibaldi Damselfish	<i>Hypsypops rubicundus</i>	State Marine Fish	Garibaldi damselfish are found in water from a depth of up to 30 meters (98 feet) depth, usually in association with rock reefs and typically over rocky sea-bottoms associated with giant kelp beds. This species is native to the north-eastern subtropical parts of the Pacific Ocean, ranging from Monterey Bay, California, to Guadalupe Island, Baja California. It is the official State of California Marine Fish and is protected in California coastal waters.	Year-round Common	High. Expected to be present within all coastal giant kelp beds and subtidal rocky habitat.
White Sharks	<i>Carcharodon carcharias</i>	CSC	In California, important white shark habitat occurs around Monterey Bay and Greater Farallones, national marine sanctuaries. White shark populations are impacted by purposeful and incidental capture by fisheries, marine pollution, and coastal habitat degradation.	Year-round Common	Moderate – high. Present in coastal waters throughout the state.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
Gastropods					
Black Abalone	<i>Haliotis cracherodii</i>	FE	Coastal and offshore island intertidal habitats on exposed rocky shores where bedrock provides deep, protective crevices for shelter.	Year-round Very Rare	Not Expected – Low. Study area is not designated as critical habitat due to the lack of rocky intertidal and very shallow subtidal habitat. Could be present at some hard substrate areas within the Southern CA Bight.
Green Abalone	<i>Haliotis fulgens</i>	FSC	Coastal and offshore island intertidal habitats on exposed rocky shores where bedrock provides deep, protective crevices for shelter.	Year-round Very Rare	Low. Known to occur in the Channel Islands. Can occur in subtidal hard substrate habitat area, including kelp beds throughout Southern California to depths of 30 feet.
Pink Abalone	<i>Haliotis corrugate</i>	FSC	Coastal and offshore island intertidal habitats on exposed rocky shores where bedrock provides deep, protective crevices for shelter.	Year-round Very Rare	Low. Known to occur in the Channel Islands. Can occur in subtidal hard substrate habitat area, including kelp beds throughout Southern California.
White Abalone	<i>Haliotis sorenseni</i>	FE	Coastal and offshore island intertidal habitats on exposed rocky shores where bedrock provides deep, protective crevices for shelter.	Year-round Very Rare	Not Expected – Low. Study area is not designated as critical habitat due to the lack of preferred habitat (rocky intertidal) Could be present on hard substrate areas within the Southern California Bight.
Marine Birds					
Western Snowy Plover	<i>(Charadrius alexandrinus nivosus)</i> .	FT, CSC	Historically bred on San Buenaventura Beach and recently observed at Ormand Beach, Pt. Mugu Naval Base, and in southern Ventura County on Santa Monica State Beach. Breeding occurs between March and September.	Year-round Rare-Common	Moderate – Low. Many of the sandy beaches of Ventura County are identified as Critical Habitat for the Western snowy plover because they provide suitable habitat for nesting. Occurrences observed at Ormond State Beach and McGrath State Beach; however, are not known to nest within the onshore Project area beaches. Not effected by offshore Project activities.
California Least Tern	<i>Sterna antillarum browni</i>	CE, FE	California least terns live along the coast. They nest on open beaches kept free of vegetation by the tide. The typical colony size is 25 pair. Breeding begins in April and typically ends by June and occurs on sandy beaches. Foraging typically occurs in estuaries and lagoons.	Year-round Common	Moderate – Low. Many of the sandy beaches of Ventura County are identified as Critical Habitat for California Least Tern because they provide suitable foraging habitat. Not expected to nest within the proposed Project areas. Not effected by offshore Project activities.
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	CSC	Breeds on coastal cliffs and offshore islands. Southern California Bight population has been declining.	Year-round Common	High- Frequent inhabitant of the nearshore coastal waters of Ventura County.
California Brown Pelican	<i>Pelicanus occidentalis</i>	FD, CSC	Common along the Southern California Bight coastline. Forages within estuarine, subtidal and pelagic waters. Breeding sites located in the Channel Islands.	Year-round Common	Moderate – High. Frequent inhabitants of the coastal waters of Ventura County.

Common Name	Scientific Name	Listing Status	Habitat	Regional Occurrence	Potential to Occur in Marine Study Area
California Gull	<i>Larus californicus</i>	CSC	Abundant along the California coastline during nonbreeding season (Aug–April).	Year-round Common	High. Frequent inhabitants of coastal waters of Ventura County during non-breeding season.
Ashy Storm Petrel	<i>Oceanodroma melania</i>	CSC	Located only on the islands offshore California and the adjacent waters of the continental shelf. Individuals do not travel far from their island colonies.	Year-round Common	Not Expected Colonies and foraging habitat located farther offshore than the nearshore coastal waters of Ventura County.
NOTES: FESA = Federal Endangered Species Act MMPA = Marine Mammal Protection Act CESA = California Endangered Species Act		Potential for Species Occurrence Rankings: Not Expected - Suitable foraging or spawning habitat is not known to be present or rare, and the species has not been or is rarely documented to occur Low - Suitable foraging or spawning habitat is present, but the species has either not been documented to be present or if present, the presence is uncommon and infrequent Moderate - Suitable foraging or spawning habitat is present and the species is somewhat common or common for part of the year High - Suitable foraging or spawning habitat is present and the species is common throughout the year and/or in substantial numbers			
STATUS CODES: Federal: National Oceanographic and Atmospheric Administration (NOAA); MMPA FD = Depleted Population P = Federally Protected		Federal: U.S. Fish and Wildlife Service (USFWS), NOAA National Marine Fisheries Service (NMFS); FESA FDL = Delisted FE = Listed as “endangered” (in danger of extinction) under FESA FT = Listed as “threatened” (likely to become Endangered within the foreseeable future) under FESA FC = Candidate to become a proposed species FSC = Former “federal species of concern”. The USFWS no longer lists Species of Concern but recommends that species considered to be at potential risk by a number of organizations and agencies be addressed during project environmental review. *NMFS still lists “Species of Concern”.			
		State: California Department of Fish and Game (CDFG); CESA CE = Listed as “endangered” under the CESA CT = Listed as “threatened” under the CESA CSC = CDFW designated “species of special concern”			

**TABLE 3.11-2
MAGNUSON-STEVENS ACT MANAGED FISH AND INVERTEBRATE SPECIES**

Fisheries Management Plan	Species, Common Name	Species, Scientific Name	Life Stage	Probability of Occurrence at Site
Coastal Pelagic	Jack Smelt	<i>Atherinopsis californiensis</i>	E, L, J, A	Common ¹
	Northern anchovy	<i>Engraulis mordax</i>	E, L, J, A	Common ¹
	Pacific sardine	<i>Sardinops sagax</i>	E, L, J, A	Common ¹
	Pacific mackerel	<i>Scomber japonicus</i>	E, L, J, A	Common ¹
	Jack mackerel	<i>Trachurus symmetricus</i>	E, L, J, A	Common ¹
	Market squid	<i>Loligo opalescens</i>	E, L, J, A	Common ¹
	Euphausiid	<i>Eastern pacific sp.</i>	E, F, J, A	Uncommon ¹
Pacific Groundfish	Cabezon	<i>Scorpaenichthys marmoratus</i>	E, L, J, A	Common ²
	Kelp greenling	<i>Hexagrammos decagrammus</i>	E, L, J, A	Common ²
	Lingcod	<i>Ophiodon elongatus</i>	E, L, J, A	Common ²
	Pacific Cod	<i>Gadus macrocephalus</i>	E, L, J, A	Common ²
	Pacific Whiting (Hake)	<i>Merluccius productus</i>	E, L, J, A	Uncommon ²
	Sablefish	<i>Anoplopoma fimbria</i>	E, L, J, A	Not Present ³
	Aurora rockfish	<i>Sebastes aurora</i>	E, L, J, A	Not Present ²
	Bank rockfish	<i>Sebastes rufus</i>	E, L, J, A	Common ²
	Black rockfish	<i>Sebastes melanops</i>	E, L, J, A	Not Present ²
	Black-and-yellow rockfish	<i>Sebastes chrysomelas</i>	E, L, J, A	Common ²
	Blackgill rockfish	<i>Sebastes melanostomus</i>	E, L, J, A	Not Present ²
	Blue rockfish	<i>Sebastes melanostomus</i>	E, L, J, A	Common ²
	Bocaccio rockfish	<i>Sebastes paucispinis</i>	E, L, J, A	Common ²
	Bronze spotted rockfish	<i>Sebastes gilli</i>	E, L, J, A	Common ²
	Brown rockfish	<i>Sebastes auriculatus</i>	E, L, J, A	Common ²
	Calico rockfish	<i>Sebastes dalli</i>	E, I, J, A	Uncommon ²
	California scorpionfish	<i>Scorpaena gutatta</i>	E, L, J, A	Common ²
	Canary rockfish	<i>Sebastes pinniger</i>	E, I, J, A	Uncommon ²
	Chameleon rockfish	<i>Sebastes phillipsi</i>	E, I, J, A	Not Present ²
	Chilipepper rockfish	<i>Sebastes goodei</i>	E, L, J, A	Common ²
	China rockfish	<i>Sebastes nebulosus</i>	E, L, J, A	Common ²
	Copper rockfish	<i>Sebastes caurinus</i>	E, L, J, A	Common ²
	Cowcod	<i>Sebastes levis</i>	E, L, J, A	Uncommon ²
	Darkblotched rockfish	<i>Sebastes crameri</i>	E, L, J, A	Common ²
	Deacon rockfish	<i>Sebastes diaconus</i>	E, L, J, A	Not Present ²
	Dusky rockfish	<i>Sebastes variabilis</i>	E, L, J, A	Common ²
	Dark rockfish	<i>Sebastes ciliatus</i>	E, L, J, A	Common ²
	Dwarf-red rockfish	<i>Sebastes rufinanus</i>	E, L, J, A	Rare ²
	Flag rockfish	<i>Sebastes rubrivinctus</i>	E, L, J, A	Common ²
	Freckled rockfish	<i>Sebastes lentiginosus</i>	E, L, J, A	Uncommon ²
	Gopher rockfish	<i>Sebastes carnatus</i>	E, L, J, A	Common ²

Fisheries Management Plan	Species, Common Name	Species, Scientific Name	Life Stage	Probability of Occurrence at Site
	Grass rockfish	<i>Sebastes rastrelliger</i>	E, L, J, A	Common ²
	Greenblotched rockfish	<i>Sebastes rosenblatti</i>	E, L, J, A	Uncommon ²
	Greenspotted rockfish	<i>Sebastes chlorostictus</i>	E, L, J, A	Uncommon ²
	Greenstriped rockfish	<i>Sebastes elongatus</i>	E, L, J, A	Common ²
	Harlequin rockfish	<i>Sebastes variegatus</i>	E, L, J, A	Not Present ²
	Halfbanded rockfish	<i>Sebastes semicinctus</i>	E, L, J, A	Not Present ²
	Honeycomb rockfish	<i>Sebastes umbrosus</i>	E, L, J, A	Common ²
	Kelp rockfish	<i>Sebastes atrovirens</i>	E, L, J, A	Common ²
	Longspine thornyhead	<i>Sebastolobus altivelis</i>	E, L, J, A	Not Present ²
	Mexican rockfish	<i>Sebastes macdonaldi</i>	E, L, J, A	Not Present ²
	Olive rockfish	<i>Sebastes serranoides</i>	E, L, J, A	Common ²
	Pacific ocean perch	<i>Sebastes alutus</i>	E, L, J, A	Rare ²
	Pink rockfish	<i>Sebastes eos</i>	E, L, J, A	Uncommon ²
	Pinkrose rockfish	<i>Sebastes simulator</i>	E, L, J, A	Not Present ²
	Quillback rockfish	<i>Sebastes maliger</i>	E, L, J, A	Common ²
	Redbanded rockfish	<i>Sebastes babcocki</i>	E, L, J, A	Rare ²
	Redstripe rockfish	<i>Sebastes proriger</i>	E, L, J, A	Rare ²
	Rosethorn rockfish	<i>Sebastes helvomaculatus</i>	E, L, J, A	Common ²
	Rosy rockfish	<i>Sebastes rosaceus</i>	E, L, J, A	Common ²
	Rougheye rockfish	<i>Sebastes aleutianus</i>	E, L, J, A	Rare ²
	Sharpchin rockfish	<i>Sebastes zacentrus</i>	E, L, J, A	Rare ²
	Shortbelly rockfish	<i>Sebastes jordani</i>	E, L, J, A	Rare ²
	Shortraker rockfish	<i>Sebastes borealis</i>	E, L, J, A	Not Present ²
	Shortspine thornyhead	<i>Sebastolobus alascanus</i>	E, L, J, A	Rare ²
	Silvergray rockfish	<i>Sebastes brevispinis</i>	E, L, J, A	Rare ²
	Speckled rockfish	<i>Sebastes ovalis</i>	E, L, J, A	Common ²
	Splitnose rockfish	<i>Sebastes diploproa</i>	E, L, J, A	Not Present ²
	Squarespot rockfish	<i>Sebastes hopkinsi</i>	E, L, J, A	Common ²
	Starry rockfish	<i>Sebastes constellatus</i>	E, L, J, A	Uncommon ²
	Stripetail rockfish	<i>Sebastes saxicola</i>	E, L, J, A	Rare ²
	Swordspine rockfish	<i>Sebastes ensifer</i>	E, L, J, A	Not Present ²
	Tiger rockfish	<i>Sebastes nigrocinctus</i>	E, L, J, A	Uncommon ²
	Treefish rockfish	<i>Sebastes serripes</i>	E, L, J, A	Common ²
	Vermillion rockfish	<i>Sebastes miniatus</i>	E, L, J, A	Uncommon ²
	Widow rockfish	<i>Sebastes entomelas</i>	E, L, J, A	Uncommon ²
	Yelloweye rockfish	<i>Sebastes ruberrimus</i>	E, L, J, A	Uncommon ²
	Yellowmouth rockfish	<i>Sebastes reedi</i>	E, L, J, A	Not Present ²
	Yellowtail rockfish	<i>Sebastes flavidus</i>	E, L, J, A	Rare ²
	Big skate	<i>Raja binoculata</i>	E, L, J, A	Uncommon ²
	Leopard shark	<i>Triakis semifasciata</i>	E, L, J, A	Common ²

Fisheries Management Plan	Species, Common Name	Species, Scientific Name	Life Stage	Probability of Occurrence at Site
	Longnose skate	<i>Raja rhina</i>	E, L, J, A	Uncommon ²
	Spiny dogfish	<i>Squalus suckleyi</i>	E, L, J, A	Common ²
	Arrowtooth flounder (turbot)	<i>Atheresthes stomias</i>	E, L, J, A	Common ²
	Butter sole	<i>Isopsetta isolepis</i>	E, L, J, A	Common ²
	Curlfin sole	<i>Pleuronichthys decurrens</i>	E, L, J, A	Common ²
	Dover sole	<i>Microstomus pacificus</i>	E, L, J, A	Common ²
	English sole	<i>Parophrys vetulus</i>	E, L, J, A	Common ²
	Flathead sole	<i>Hippoglossoides elassodon</i>	E, L, J, A	Not Present ²
	Pacific sanddab	<i>Citharichthys sordidus</i>	E, L, J, A	Common ²
	Petrale sole	<i>Eopsetta jordani</i>	E, L, J, A	Common ²
	Rex sole	<i>Glyptocephalus zachirus</i>	E, L, J, A	Common ²
	Rock sole	<i>Lepidopsetta bilineata</i>	E, L, J, A	Uncommon ²
	Sand sole	<i>Psettichthys melanostictus</i>	E, L, J, A	Common ²
	Starry flounder	<i>Platichthys stellatus</i>	E, L, J, A	Not Present ²
Salmon	Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	A	Rare ³
	Coho Salmon	<i>Oncorhynchus kisutch</i>	A	Rare ³
Highly Migratory	North Pacific Albacore	<i>Thunnus alalunga</i>	A	Not Present ⁴
	Bigeye tuna	<i>Thunnus obesus</i>	A	Not Present ³
	Yellowfin tuna	<i>Thunnus albacares</i>	A	Not Present ³
	Skipjack tuna	<i>Katsuwonus pelamis</i>	A	Not Present ³
	Northern bluefin tuna	<i>Thunnus thynnus</i>	A	Not Present ³
	Common thresher shark	<i>Alopias vulpinus</i>	A	Common ³
	Bigeye thresher	<i>Alopias superciliosus</i>	A	Common ³
	Pelagic thresher	<i>Alopias pelagicus</i>	A	Not Present ³
	Shortfin mako shark	<i>Isurus oxyrinchus</i>	A	Not Present ³
	Blue Shark	<i>Prionace glauca</i>	A	Not Present ³
	Swordfish	<i>Xiphias gladius</i>	A	Not Present ³
	Striped marlin	<i>Kajikia audax</i>	A	Not Present ³
	Dorado	<i>Coryphaena hippurus</i>	A	Not Present ³

A = Adult J = Juvenile L = Larvae E = Egg

SOURCES: CDFW 2015, PFMC 2006, PFMC 2015a, PFMC 2015b, PFMC 2015c, Froese, R. and D. Pauly. 2017, Wells *et. al.* 2013.

Marine and Shore Birds

The most common marine bird species that inhabit or migrate through the Santa Barbara Channel include loons, grebes, shearwaters, petrels, cormorants, ducks, gulls, terns, and murrelets. In addition, there are several species of birds that have been afforded protected status by the state and/or federal regulations due to declining populations and habitats. These include:

- Western snowy plover (*Charadrius alexandrinus nivosus*) (FT, CSC)
- California Least Tern (*Sterna antillarum browni*) (FE, CE)
- Double-crested cormorant (*Phalacrocorax auritus*) (CSC)
- California gull (*Larus californicus*) (CSC)
- California brown pelican (*Pelicanus occidentalis*) (Protected)
- Ashy storm petrel (*Oceanodroma melania*) (CSC)

Fish

Two species of FESA-protected fish and four species of California fish species of special concern have the potential to occur within the nearshore coastal waters of Ventura County and the marine project area (Table 3.11-1). Of these, only two species, the South Central Coast ESU² Steelhead trout (*Onchorhynchus mykiss*) and Cowcod (*Sebastes levis*) have any probability of occurring in the nearshore coastal waters of Ventura County.

California fish species of special concern with the potential to occur within the nearshore waters of Ventura County include Garibaldi damselfish (*Hypsypops rubicundus*), Giant seabass (*Stereolepis gigas*), and white sharks (*Carcharodon carcharias*) (Table 3.11-1).

Invertebrates

Four species of marine invertebrates, all abalone, are listed as either endangered or a Federal Species of Concern. Black (*Haliotis cracherodii*) and white (*H. sorenseni*) abalone are listed as endangered, while green (*H. fulgens*) and pink (*H. corrugate*) abalone are listed as species of special concern. While black abalones were historically found in the intertidal and shallow subtidal of rocky shores throughout Southern California, including Ventura County, commercial and sport harvesting and diseases (e.g., withering abalone syndrome) have drastically reduced the black abalone populations. In 1997, a moratorium was placed on recreational and commercial harvesting of black and all other abalone in California south of San Francisco. In 2011, the National Marine Fisheries Service (NMFS) designated critical habitats of black abalone along the coast of California. Today, no critical habitat for black abalone occurs along the Ventura County coastline (50 CFR 226.221).

No known occurrences of white abalone have been reported in the coastal waters of Ventura County, although it is within the historical range for the species (NOAA 2018). Additionally, the

² Evolutionary Significant Unit

National Oceanic and Atmospheric Agency (NOAA) has not designated any critical habitat for white abalone (NOAA 2018).

Managed Fish Species

The proposed projects are located within an area designated as Essential Fish Habitat (EFH) for both the Coastal Pelagic and Pacific Groundfish Fisheries Management Plans (FMPs) (PFMC 2016a, 2016b). One hundred and seven fish species, eight fish species groups, one invertebrate species and two invertebrate groups are listed as managed or as ecosystem component species in the FMPs (Table 3.11-2). Of these 107 species, only 50 have the potential to occur in the nearshore coastal waters of Ventura County. Most of these are rockfish (*Sebastes*) that are predominantly associated with hard substrate habitat, although juveniles of some of these species can be observed over soft substrate habitat. Northern anchovy, Pacific sardines, and mackerels are common fish species inhabiting the water column, while sandabs and soles, both flatfish, commonly inhabit the sandy and silty sand soft substrate areas of the nearshore coastal waters of Ventura County (Table 3.11-2).

3.11.3 Significant Ecological Areas

As mentioned above, the beach and coastal habitats along the Ventura County coastline include sections highly modified for human and recreation use, as well as sections that have limited public access or have special protections.

Areas of Special Biological Significance

The State Water Resources Control Board (SWRCB) designates Areas of Special Biological Significance (ASBS) as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. There are 34 ocean areas monitored and maintained for water quality by SWRCB. ASBS cover much of the length of California's coastal waters and support an unusual variety of aquatic life, and often host unique individual species.

In Ventura and Los Angeles counties, the coastline from Laguna Point in Los Angeles County to Latigo Point in Ventura County, is included in the Laguna Point-Latigo Point ASBS (SWRCP 2018). The portion of this ASBS that occurs within Ventura County begins at the Point Mugu Naval Base and continues southward to the Southern Ventura County border. Other ASBSs in the region include the northern Channel Islands, comprising the Channel Islands National Marine Sanctuary, which is located approximately 9.55 nautical miles offshore of the coastal waters of Ventura County.

Parks, Sanctuaries, and Significant Ecological Areas

Areas of ecological importance, such as parks, sanctuaries or Significant Ecological Areas (SEAs) may be designated by state or local agencies with the intent to enhance public awareness and provide a level of protection to local resources. The California Department of Parks and Recreation (California State Parks) includes preservation and protection of natural resources as part of its management responsibilities. At a local level, counties or cities may also designate status to local resources. Along the Ventura County shoreline multiple State and county parks and beaches are located, including:

- Faria Beach Park
- Emma Woods State Beach
- San Buenaventura State Beach
- McGrath State Beach
- Mandalay State Beach
- Oxnard State Beach Park
- Santa Monica Mountains National Recreation Area
- Point Mugu State Park and Beach

Marine Protected Areas

The California Marine Life Protection Act is intended to protect the natural diversity and abundance of marine life and marine ecosystems in California. There are three types of Marine Protected Areas (MPAs) designated (or recognized): State Marine Reserves (SMRs), State Marine Parks (SMPs), and State Marine Conservation Areas (SMCAs). There are no MPAs located along the shoreline or within the nearshore coastal waters of Ventura County. The closest MPAs are located at Point Vicente to the south in Los Angeles County and in the northern Channel Islands located 9.55 miles offshore of the Ventura County coastline.

Environmentally Sensitive Habitat Areas

Under the California Coastal Act, Environmentally Sensitive Habitat Areas (ESHAs) are defined as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” Along the Ventura County coastline ESHAs include the Ventura River mouth, Ormond Beach, the Santa Clara River mouth (Santa Clara Estuary National Preserve and McGrath Lake), and Mugu Lagoon. Other ESHAs occurring within the nearshore coastal waters of Ventura County include giant kelp beds and sea grass beds.

National Estuary Program

The closest estuary to Ventura County included in the National Estuary Program is the Santa Monica Bay National Estuary Program, established under the 1987 CWA Section 320, which is intended to protect and restore Santa Monica Bay’s resources. At present, the Santa Clara River mouth estuary, which includes McGrath Lake, is not included in the National Estuary Program.

Critical Habitat in Marine Study Area

The beaches and shoreline of most of Ventura County are designated as Federal Critical Habitat for the Western snowy plover (*Charadrius alexandrinus nivosus*) and the California Least Tern (*Sterna antillarum browni*). Additionally, the Ventura River and Santa Clara River mouths are designated critical habitats for the Southern California Steelhead (*Oncorhynchus mykiss*) distinct population segment (DPS), and the tidewater goby (*Eucyclogobius newberryi*). The tidewater goby is not generally a "marine" species and is further discussed in Section 3.4, Biological Resources. See Figure 3.4-4, Designated Critical Habitat in the Project Area.

Essential Fish Habitat

EFH encompasses all types of aquatic habitat, including wetlands, coral reefs, seagrasses, and rivers, where fish breed, spawn, feed, and grow to maturity. NOAA and the regional Fishery Management Councils identify EFH for all life stages of every federally managed fish species. Under the provisions of MSA Section 305(b), consultation with NMFS for impacts to EFH is only required for projects with a federal nexus. Of the eight designated U.S. fisheries regions, the Ventura County coastline is located within the Pacific Region. As such, the nearshore coast waters of Ventura County are located within EFH for both the Coastal Pelagics and Pacific Groundfish³ FMPs. A total of 107 fish species, eight fish species groups, one invertebrate species, and two invertebrate groups are listed as managed or as ecosystem component species in the FMPs.

3.11.4 Commercial and Recreational Fisheries

Tables 3.11-3 and 3.11-4 identify the predominant fish and invertebrate taxa commercially or recreationally caught in the nearshore waters of Ventura County. As such, these species would be expected to be present in the project areas.

3.11.5 Non-Native Invasive Aquatic Species

The introduction of non-native invasive aquatic species is one of the greatest threats to subtidal and intertidal habitats within the nearshore coastal waters and estuaries of California. The introduction of non-native species can result in large-scale changes to aquatic communities. California's estuaries, in particular, have become home to many non-native or introduced species that have dominated local intertidal and subtidal marine communities.

Although the effects of introduced aquatic species on habitats they colonize is often unknown, some clearly have had serious negative influences. Impacts include decreasing abundance and even local extinction of native species, alteration of habitat structure, and extensive economic costs due to heavy organism and algal growth on vessel bottoms and navigation, scientific, and weather buoys. Historically, the principal mechanism of introduction to California coastal waters and estuaries has been fouling, boring, and release of ballast-dwelling organisms. Introduced species typically include snails, shrimp, plankton, crabs, and algae.

The one documented invasive non-native species occurring within coastal waters and harbors of Ventura County is the seaweed *Undaria pinnatifida* (NPS 2018). It has been reported occurring in both Ventura and Channel Islands harbors. The Southern California Coastal Water Research Project reported in 2005 the occurrence of more than 29 invertebrate organisms that have taken hold in marine habitats in Southern California (SCCWRP 2005).

³ The groundfish covered by the Pacific Council's groundfish fishery management plan (FMP) include over 90 different species that, with a few exceptions, live on or near the bottom of the ocean. These are made up of the following species: **Rockfish.** The plan covers over 64 different species of rockfish, including widow, yellowtail, canary, and vermilion rockfish; bocaccio, chilipepper, cowcod, yelloweye, thornyheads, and Pacific Ocean perch. **Flatfish.** The plan covers 12 species of flatfish, including petrale sole, Dover sole, starry flounder, arrowtooth flounder, and Pacific sanddab. **Roundfish.** The six species of roundfish included in the fishery management plan are lingcod, cabezon, kelp greenling, Pacific cod, Pacific whiting (hake), and sablefish. **Sharks and skates.** The six species of sharks and skates are leopard shark, soupfin shark, spiny dogfish, big skate, California skate, and longnose skate. **Other species.** These include ratfish, finescale codling, and Pacific rattail grenadier. Source: Pacific Fishery Management Council Website, Groundfish: Background, <http://www.pcouncil.org/groundfish/background>, Accessed March 20, 2018.

TABLE 3.11-3
PRIMARY FISH AND INVERTEBRATE TAXA COMMERCIALY HARVESTED IN THE NEARSHORE WATERS OF VENTURA AND SANTA BARBARA COUNTIES

Species		Commercial (1,000 pounds)				
Common Name	Genus Species	2016	2015	2014	2013	2012
Fish						
Anchovy, northern	<i>Engraulis mordax</i>	147.83	170.64	146.14	443.66	131.25
Barracuda, California	<i>Sphryaena argentea</i>	7.81	1.05	1.38	2.11	3.61
Bass, giant sea	<i>Stereolepis gigas</i>	2.10	1.94	1.67	1.30	1.61
Butterfish (Pacific pompano)	<i>Peprilus simillimus</i>	1.19	1.06	2.99	3.76	1.97
Cabazon	<i>Scorpaenichthys marmoratus</i>	5.68	7.05	10.83	12.99	11.82
Croaker, white	<i>Genyonemus lineatus</i>	16.99	5.01	7.08	2.80	4.55
Grenadier	<i>Macrouridae</i>	2.37	2.25	2.24	3.32	8.16
Hagfishes	<i>Myxini</i>	62.46	7.91	0.00	10.25	3.27
Halibut, California	<i>Paralichthys californicus</i>	125.68	99.98	77.60	94.59	111.50
Lingcod	<i>Ophiodon elongatus</i>	8.75	0.04	9.69	4.74	3.46
Lizardfish, California	<i>Synodus lucioceps</i>	15.42	25.80	49.69	6.11	9.93
Mackerel, Pacific	<i>Trachurus symmetricus</i>	748.83	4,779.54	411.43	0.77	117.27
Mackerel, jack	<i>Trachurus symmetricus</i>	40.79	108.98	7.62	0.08	16.07
Mackerel, unspecified	<i>Scombridae</i>	0.35	171.58	0.48	0.01	0.07
Opah	<i>Lampris</i>	6.18	8.47	5.50	8.42	1.36
Rockfish, blackgill	<i>Sebastes melanostomus</i>	4.84	6.90	14.70	9.34	18.24
Rockfish, blue	<i>Sebastes mystinus</i>	1.53	1.85	1.00	0.39	0.13
Rockfish, bocaccio	<i>Sebastes paucispinis</i>	2.98	5.57	3.86	0.49	3.29
Rockfish, copper	<i>Sebastes caurinus</i>	11.18	11.75	0.75	7.68	5.29
Rockfish, grass	<i>Sebastes rastrelliger</i>	7.72	8.91	9.68	12.73	12.80
Rockfish, greenspotted	<i>Sebastes chlorostictus</i>	0.89	1.84	1.52	2.04	1.45
Rockfish, group red	<i>Sebastes</i>	0.00	2.67	3.79	3.59	2.92
Rockfish, vermilion	<i>Sebastes miniatus</i>	24.53	24.57	16.22	14.66	15.49
Sablefish	<i>Anoplopoma fimbria</i>	376.66	387.32	343.60	364.91	370.91

Species		Commercial (1,000 pounds)				
Common Name	Genus Species	2016	2015	2014	2013	2012
Sanddab	<i>Citharichthys Spp.</i>	2.64	1.16	0.80	1.11	1.29
Sardine, Pacific	<i>Sardinops sagax caerulea</i>	89.33	227.04	211.86	488.41	2,121.26
Seabass, white	<i>Atractoscion nobilis</i>	122.48	138.00	0.66	198.35	207.03
Shark, Pacific angel	<i>Squatina californica</i>	18.00	13.69	8.21	11.08	10.27
Shark, leopard	<i>Triakis semifasciata</i>	2.18	1.40	0.83	0.48	1.53
Shark, shortfin mako	<i>Isurus oxyrinchus</i>	5.69	4.64	4.81	9.05	4.86
Shark, soupfin	<i>Galeorhinus galeus</i>	3.85	3.60	1.10	1.50	0.71
Shark, thresher	<i>Alopias vulpinus</i>	18.10	22.15	12.16	12.48	21.63
Sheephead, California	<i>Semicossyphus pulcher</i>	19.29	30.51	30.31	22.32	17.46
Sole, English	<i>Parophrys vetulus</i>	2.18	2.17	2.85	2.43	1.22
Sole, Petrale	<i>Eopsetta jordani</i>	2.22	1.65	0.63	0.63	0.50
Sole, rex	<i>Glyptocephalus zachirus</i>	4.04	2.25	0.16	0.00	0.44
Sole, rock	<i>Lepidopsetta bilineata</i>	0.67	0.93	1.11	3.16	1.49
Sole, unspecified	<i>Pleuronectidae</i>	19.22	37.58	17.20	5.31	16.04
Surfperch, barred	<i>Amphistichus argenteus</i>	1.97	1.58	2.97	1.30	0.64
Thornyhead, longspine	<i>Sebastolobus altivelis</i>	13.09	4.10	4.12	4.53	2.50
Thornyhead, shortspine	<i>Sebastolobus alascanus</i>	213.43	115.82	84.93	78.61	75.09
Thornyheads	Sebastidae	3.44	5.72	1.67	0.00	0.05
Whitefish, ocean	<i>Caulolatilus princeps</i>	4.95	4.18	3.39	1.84	2.57
Invertebrates						
Crab, box	<i>Lopholithodes foraminatus</i>	0.32	1.61	0.58	0.64	1.00
Crab, brown rock	<i>Romaleon antennarium</i>	160.27	214.67	289.17	78.68	52.46
Crab, king	Lithodidae	12.06	13.37	11.85	0.01	0.19
Crab, red rock	<i>Cancer productus</i>	668.77	1,102.14	952.87	563.24	420.17
Crab, rock unspecified	-	82.85	213.77	204.22	482.30	584.44
Crab, spider	<i>Loxorhynchus grandis</i>	77.59	33.91	46.61	29.60	38.75
Crab, yellow rock	<i>Metacarcinus anthonyi</i>	167.50	274.40	390.42	1.02	386.73

Species		Commercial (1,000 pounds)				
Common Name	Genus Species	2016	2015	2014	2013	2012
Lobster, California spiny	<i>Panulirus interruptus</i>	325.13	367.85	399.26	277.89	298.08
Prawn, spot	<i>Pandalus platyceros</i>	149.64	120.12	117.77	114.21	109.84
Sea cucumber, giant red	<i>Parastichopus californicus</i>	57.33	100.75	97.01	151.27	218.42
Sea cucumber, unspecified	Holothuriidae	4.92	1.69	1.29	1.10	10.68
Sea cucumber, warty	<i>Parastichopus parvimensis</i>	47.68	98.59	126.60	131.89	122.42
Sea urchin, purple	<i>Strongylocentrotus purpuratus</i>	1.47	0.03	2.05	1.35	3.09
Sea urchin, red	<i>Mesocentrotus franciscanus</i>	4,468.38	5,261.77	6,480.02	7,051.24	6,784.54
Squid, market	<i>Doryteuthis opalescens</i>	34,122.63	34,286.19	70,625.93	99,653.38	63,583.20
Whelk, Kellet's	<i>Kelletia kelletii</i>	42.53	54.08	63.59	32.79	27.52

TABLE 3.11-4
PRIMARY FISH AND INVERTEBRATE TAXA RECREATIONALLY CAUGHT IN THE NEARSHORE WATERS OF VENTURA AND SANTA BARBARA COUNTIES

Species		Recreational (1,000 pounds)					
Common Name	Genus Species	2017	2016	2015	2014	2013	2012
Fish							
Guitarfish, banded	<i>Guitarfish, banded</i>	1.18	1.50	5.47	0.78	0.47	0.14
Barracuda, California	<i>Sphryaena argentea</i>	36.42	38.69	44.61	109.94	37.68	128.11
Bass, kelp	<i>Paralabrax clathratus</i>	153.59	187.50	125.10	177.31	86.48	157.06
Blacksmith	<i>Chromis punctipinnis</i>	2.03	2.98	9.08	18.93	6.41	7.86
Cabazon	<i>Scorpaenichthys marmoratus</i>	1.08	8.25	3.97	7.27	15.69	14.09
Corbina, California	<i>Menticirrhus undulatus</i>	9.78	24.06	11.80	8.49	7.86	3.57
Croaker, spotfin	<i>Cheilotrema saturnum</i>	23.30	45.44	51.24	21.25	12.37	41.84
Croaker, yellowfin	<i>Umbrina roncadore</i>	5.92	16.31	6.27	10.41	13.41	11.31
Croaker, white	<i>Genyonemus lineatus</i>	2.11	4.19	1.77	4.52	5.26	11.90
Drum family	<i>Sciaenidae</i>	0.00	0.00	0.00	2.12	1.50	21.14
Fish, unspecified	NA	0.00	0.00	0.00	20.47	12.60	1.86
Guitarfish, shovelnose	<i>Rhinobatos productus</i>	0.00	0.00	1.80	19.93	2.22	15.54
Halfmoon	<i>Medialuna californiensis</i>	8.90	20.86	11.16	21.30	21.54	26.48
Halibut, California	<i>Paralichthys californicus</i>	50.56	45.66	33.68	53.98	75.47	119.43
Jacksmelt	<i>Atherinopsis californiensis</i>	11.08	27.13	28.85	27.11	35.90	52.26
Lingcod	<i>Ophiodon elongatus</i>	135.83	285.94	66.31	90.96	107.08	65.27
Lizardfish, California	<i>Synodus lucioceps</i>	0.10	1.18	0.29	3.00	17.68	7.97
Mackerel, Pacific	<i>Trachurus symmetricus</i>	400.62	246.10	386.57	247.28	146.14	247.78
Mackerel, jack	<i>Trachurus symmetricus</i>	6.69	4.30	6.57	6.71	7.37	8.12
Opaleye	<i>Girella nigricans</i>	30.62	14.29	13.71	27.99	21.30	21.51
Queenfish	<i>Seriphus politus</i>	0.08	0.63	1.14	3.72	4.93	8.58
Ray, bat	<i>Myliobatis californica</i>	3.71	5.09	0.00	0.69	2.45	7.54
Rockfish, bank	<i>Sebastes rufus</i>	1.18	1.50	5.47	0.78	0.47	0.14
Rockfish, blue	<i>Sebastes mystinus</i>	72.88	35.79	34.41	35.92	6.05	5.51

Species		Recreational (1,000 pounds)					
Common Name	Genus Species	2017	2016	2015	2014	2013	2012
Rockfish, bocaccio	<i>Sebastes paucispinis</i>	86.33	77.89	99.83	107.03	171.55	97.46
Rockfish, brown	<i>Sebastes auriculatus</i>	10.05	7.37	12.34	30.26	23.12	25.47
Rockfish, chillipepper	<i>Sebastes goodei</i>	2.16	2.71	4.56	9.89	9.49	3.46
Rockfish, copper	<i>Sebastes caurinus</i>	153.28	169.04	149.46	123.06	151.64	89.80
Rockfish, flag	<i>Sebastes rubrivinctus</i>	10.62	9.05	9.93	12.00	16.10	14.15
Rockfish, gopher	<i>Sebastes carnatus</i>	15.37	12.50	9.56	16.32	17.63	18.79
Rockfish, grass	<i>Sebastes rastrelliger</i>	4.31	3.35	1.79	8.94	4.62	5.60
Rockfish Genus	<i>Sebastes</i>	0.00	0.00	14.56	54.26	58.72	22.29
Rockfish, greenspotted	<i>Sebastes chlorostictus</i>	8.37	7.52	9.06	8.43	14.70	14.51
Rockfish, greenstriped	<i>Sebastes elongatus</i>	0.48	1.22	0.51	1.10	1.45	0.61
Rockfish, honeycomb	<i>Sebastes umbrosus</i>	7.71	5.89	4.60	5.93	10.05	6.59
Rockfish, kelp	<i>Sebastes atrovirens</i>	15.87	11.92	10.17	18.22	21.63	28.79
Rockfish, olive	<i>Sebastes serranoides</i>	16.16	29.87	19.64	24.43	22.93	10.75
Rockfish, rosy	<i>Sebastes rosaceus</i>	8.27	5.95	6.56	4.14	6.04	4.93
Rockfish, squarespot	<i>Sebastes hopkinsi</i>	8.84	10.28	8.09	10.60	9.95	1.98
Rockfish, starry	<i>Sebastes constellatus</i>	35.21	25.38	18.17	13.15	27.58	19.15
Rockfish, vermilion	<i>Sebastes miniatus</i>	157.75	192.54	206.96	186.86	207.26	193.04
Rockfish, widow	<i>Sebastes entomelas</i>	3.13	1.58	1.89	23.57	14.74	4.86
Rockfish, yellowtail	<i>Sebastes flavidus</i>	3.93	3.40	8.10	2.65	2.65	2.25
Sanddab, Pacific	<i>Citharichthys sordidus</i>	9.35	7.09	12.92	42.56	59.51	34.33
Sardine, Pacific	<i>Sardinops sagax caerulea</i>	17.67	5.68	8.36	13.18	135.56	127.80
Sargo	<i>Diplodus sargus</i>	2.91	3.33	10.08	6.07	6.83	6.23
Scorpionfish, California	<i>Scorpaena guttata</i>	44.54	22.15	25.92	67.79	65.61	74.38
Sandbass, barred	<i>Paralabrax nebulifer</i>	50.84	27.15	94.80	111.34	76.89	167.84
Seabass, white	<i>Atractoscion nobilis</i>	57.56	40.50	51.97	83.43	185.89	79.71
Shark, leopard	<i>Triakis semifasciata</i>	4.16	23.10	6.79	2.15	2.30	49.42
Shark, soupfin	<i>Galeorhinus galeus</i>	9.87	10.63	18.10	8.04	16.47	10.97

Species		Recreational (1,000 pounds)					
Common Name	Genus Species	2017	2016	2015	2014	2013	2012
Sheephead, California	<i>Semicossyphus pulcher</i>	79.25	72.50	64.89	88.16	107.26	66.68
Surfperch, barred	<i>Amphistichus argenteus</i>	132.15	116.18	300.43	231.09	130.63	231.63
Surfperch, black	<i>Embiotoca jacksoni</i>	4.94	5.33	3.17	10.27	16.90	15.94
Surfperch, calico	<i>Amphistichus koelzi</i>	0.95	1.14	10.84	11.31	4.94	14.42
Surfperch, pile	<i>Rhacochilus vacca</i>	5.18	0.37	0.56	0.19	4.91	5.10
Surfperch, rubberlip	<i>Rhacochilus toxotes</i>	4.58	3.64	1.16	3.32	9.15	5.90
Surfperch, shiner	<i>Cymatogaster aggregata</i>	0.06	0.54	0.74	5.46	1.36	1.78
Surfperch, silver	<i>Hyperprosopon ellipticum</i>	3.39	6.18	19.34	3.97	0.30	1.78
Surfperch, striped	<i>Embiotoca lateralis</i>	0.00	1.70	10.44	3.50	1.16	1.28
Surfperch, walleye	<i>Hyperprosopon argenteum</i>	4.04	5.81	2.86	7.49	20.80	24.56
Topsmelt	<i>Atherinops affinis</i>	5.88	0.22	1.34	5.69	4.83	3.59
Treefish	<i>Sebastes serriceps</i>	20.67	20.89	15.85	14.14	21.53	19.32
Whitefish, ocean	<i>Caulolatilus princeps</i>	136.49	78.99	40.79	41.61	39.26	43.45
Invertebrates							
Lobster, California spiny	<i>Panulirus interruptus</i>	0.00	0.00	0.00	0.00	85.07	24.03

SOURCE: RecFin 2018

3.11.6 Regulatory Framework

Federal

Federal Endangered Species Act

Under FESA, the Secretary of the Interior (for terrestrial and freshwater species) and the Secretary of Commerce (for marine and anadromous species) have the authority to list plant, fish, or animal species at risk of extinction, as endangered or threatened (16 United States Code [U.S.C.] 1533(c)). Multiple species of marine fish and marine mammals are listed under FESA. Other species are addressed under this law as candidates for listing, and although these are not afforded legal protection under FESA, they typically receive special attention from federal and state agencies during the environmental review process.

FESA Section 9 regulates the “take” (i.e., harassment, harm, perusal, hunting, shooting, wounding, killing, trapping, capturing, collecting, or the attempt to engage in any of these activities) of federally listed species. The USFWS or NMFS may authorize take when it is incidental to, but not the purpose of, an otherwise lawful act. Under FESA Section 7, if a project has a federal nexus (i.e., occurs on federal land, is issued federal permits, or receives any other federal oversight or funding), the federal agency responsible for the project or for issuing a permit for the project must enter into an informal/formal consultation with USFWS to obtain, if possible, a Biological Opinion (BO) allowing for incidental take of the species in question. A BO identifies project changes and measures to avoid/reduce impacts. If a project is on private land and will not require any federal permits, the proponent must prepare a Habitat Conservation Plan (HCP) to obtain an incidental take permit, pursuant to FESA Section 10.

Under FESA, “Critical Habitat” is designated at the time of listing of a species or within 1 year of listing. “Critical Habitat” refers to habitat or a specific geographic area comprising features essential for the survival and recovery of the species in question. In the event that a project results in take or adverse effects to a species’ designated Critical Habitat, USFWS may require the project proponent to implement suitable mitigation to avoid/reduce such impacts. However, consultation for impacts to Critical Habitat is only required when a project has a requirement to obtain a permit or authorization from a federal agency, or receives any other federal oversight or funding. If a project does not have a federal nexus, Critical Habitat consultations are not required.

Magnuson-Stevens Fishery Conservation and Management Act

The MSA, of 1976 (16 U.S.C Sections 1801–1884), as amended in 1996 and reauthorized in 2007, is intended to protect, conserve and manage U.S. fisheries resources, develop domestic fisheries, and phase out foreign fishing activities within the U.S. coastal zone. The MSA provided NOAA’s NMFS with legislative authority to regulate U.S. fisheries in the area known as “exclusive economic zone” between 3 miles and 200 miles offshore by establishing eight regional Fishery Management Councils that manage the harvest of fish and shellfish resources in these waters. Through MSA Section 303, the NMFS is required to work with regional Fishery Management Councils to develop and implement FMPs for the protection of fisheries under their jurisdiction. One of the required FMP provisions is to delineate EFH, and management goals for all managed fish species including some fish species that are not protected under the MSA.

Federal agency actions that fund, permit, or carry out activities that may adversely affect EFH are required under MSA Section 305(b), in conjunction with Section 7 under FESA, to consult with NMFS regarding potential adverse effect of their actions on EFH and to respond in writing to NOAA NMFS recommendations. The U.S. Army Corps of Engineers (USACE) will require an EFH assessment for any dredging project prior to issuance of any permit.

Rivers and Harbors Act Section 10 (33 U.S.C. 403)

The Rivers and Harbors Appropriations Act of 1899 (30 Stat. 1151, codified at 33 U.S.C. Sections 401, 403) prohibit the unauthorized obstruction or alteration of any navigable water. Navigable waters are tidally influenced waters that are presently used, have been used in the past, or could be used in the future to transport interstate or foreign commerce (33 C. F. R. Section 3294). The Rivers and Harbors Act was intended for the protection of navigation and navigable capacity and was later amended to include protection of the environment. The act authorizes the USACE to exercise control over all construction projects (Section 10) and the discharge of refuse (Section 13) that occur within navigable waters of the U.S. Activities that commonly require Section 10 permits include construction of piers, wharves, bulkheads, marinas, ramps, floats, intake structures, cable and pipeline crossings, as well as dredging and excavation.

Marine Mammal Protection Act (16 U.S.C. 1361-1421H)

The MMPA, as amended in 1981, 1982, 1984, and 1995, establishes a federal responsibility for the protection and conservation of marine mammal species by prohibiting their take. The MMPA defines “take” as the act of hunting, killing, capture, harassment or death of any marine mammal. The MMPA also imposes a moratorium on the import, export, or sale of any marine mammals, parts, or products within the United States. These prohibitions apply to any person in U.S. waters and to any U.S. citizen in international waters. All project-related construction activities are prohibited from disturbing marine mammals or disrupting their activities or behavior in known migration routes, feeding areas, or breeding areas.

The primary authority for implementing the MMPA belongs to the USFWS and the NMFS. The USFWS is responsible for the protection of sea otters, marine otters, walruses, polar bears, manatees and dugongs. The NMFS is responsible for protecting pinnipeds (seals and sea lions) and cetaceans (whales and dolphins). As amended, the MMPA provides for the incidental take of marine mammals during marine activities, such as dredging, construction, boating, and transport, as long as the NMFS finds the take would only affect a small number of individuals, would negligibly impact marine mammal species not listed under FESA, would not result in the regional depletion of a population protected by the MMPA, and would not have an unmitigable adverse impact of subsistence harvest of these species. For example, no permitted subsistence harvesting of whales or marine mammals occurs offshore of California. Additionally, if any marine mammals might be “harassed” by underwater noise generated from pile driving or marine construction activities and associated work vessels, an Incidental Harassment Authorization (IHA) is required.

Marine Protection, Research, and Sanctuaries Act (16 U.S.C. Section 1431 et seq. and 33 U.S.C. Section 1401 et seq.)

The Marine Protection, Research, and Sanctuaries Act (MPRSA), also known as the Ocean Dumping Act, generally prohibits (1) transportation of material from the United States for the purpose of ocean dumping, (2) transportation of material from anywhere for the purpose of ocean dumping by U.S. agencies or U.S.-flagged vessels, and (3) dumping of material transported from outside the United States into U.S. territorial seas. Ocean dumping cannot occur unless a permit is issued under the MPRSA. Under MPRSA, the standard for permit issuance is whether the dumping will "unreasonably degrade or endanger" human health, welfare, or the marine environment. In the case of dredged material, the decision to issue a permit is made by the USACE, using the U.S. Environmental Protection Agency's (USEPA's) environmental criteria and subject to USEPA's concurrence.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), enacted by the U.S. Congress in 1972 to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone", amended in 1990, is administered by NOAA's Office of Ocean and Coastal Resource Management. The CZMA provides for management of the nation's coastal resources, including the Great Lakes, and balances economic development with environmental conservation. The CZMA outlines two national programs: the National Coastal Zone Management Program and the National Estuarine Research Reserve System. Thirty-four states have approved coastal management programs. The 34 coastal management programs aim to balance competing land and water issues in the coastal zone, while estuarine reserves serve as field laboratories to provide a greater understanding of estuaries and how humans impact them.

Under Section 307 of the CZMA (16 U.S.C. Section 1456), activities that may affect coastal uses or resources that are undertaken by federal agencies, require a federal license or permit, or receive federal funding must be consistent with a state's federally approved coastal management program. California's federally approved coastal management programs consist of the California Coastal Act, the McAteer-Petris Act, and the Suisun Marsh Protection Act. The California Coastal Commission (CCC) implements the California Coastal Act and the federal consistency provisions of the CZMA for activities affecting coastal resources outside of San Francisco Bay.

For any coastal marine construction project as well as for any ocean intake or discharge operations, the CCC will need to issue a Coastal Development Permit (CDP) for the activity. The CDP will include additional mitigation actions deemed necessary by the CCC to prevent or reduce impacts to marine resources.

Clean Water Act

Under the Clean Water Act (CWA), the USEPA seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations. The SWRCB has primacy for administration of the CWA within the state. The CWA primarily applies to marine biological resources when a discharge of some sort, either directly or indirectly from an onshore activity results in an impairment of the receiving water body and

therein pose a risk to beneficial use of the water body, which includes marine habitat and associated biological resources.

Section 401 of the CWA requires that applicants obtain a USACE permit to obtain state certification that the activity associated with the permit will comply with applicable state effluent limits and water quality standards. In California, a water quality certification (or waiver) must be obtained from the Regional Water Quality Control Board (RWQCB) for both Individual and Nationwide Permits. The certification must be based on a finding that the proposed discharge will comply with water quality standards that are defined as numeric and narrative objectives in each RWQCB's Basin Plan. The SWRCB administers CWA compliance primarily through its Regional Boards, extending its jurisdiction to all waters of the state and all waters of the U.S., including wetlands.

Section 402(p) of the CWA requires National Pollutant Discharge Elimination System (NPDES) permits to control discharges of waste into waters of the United States and to prevent the impairment of the receiving water for beneficial uses, which includes harm to marine biota. Section 316(a) specifically addresses thermal discharges, which could potentially apply to some desalination facilities, particularly those that commingle brine discharges with cooling water effluent. Thus, a facility that collects source water through an existing, operational cooling water intake associated with a power plant, or certain other types of industrial facilities, may be required to comply with technology-based standards for minimizing impingement and entrainment impacts.

Section 404 of the CWA requires that a permit be obtained from the USACE prior to the discharge of dredged or fill materials into any "waters of the United States or wetlands." Waters of the U.S. are broadly defined to include navigable waterways, their tributaries, lakes, ponds, and wetlands.⁴ Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas".⁵ Some classes of fill activities may be authorized under General or Nationwide Section 404 Permits if specific conditions are met. Nationwide permits do not authorize activities that are likely to jeopardize the existence of a threatened or endangered species listed or proposed for listing under FESA. In addition to conditions outlined under each Nationwide Permit, project-specific conditions can be required by the USACE as part of the Section 404 permitting process. When a project's activities do not meet the conditions for a Nationwide Permit, an Individual Permit may be issued.

Section 303(d) of the CWA requires states to identify impaired water bodies (i.e., 303(d) List of Impaired Water Bodies).

⁴ 33 C.F.R. Sec. 328.3

⁵ U.S. Environmental Protection Agency Website, Section 404 of the Clean Water Act: How Wetlands are Defined and Identified, <https://www.epa.gov/cwa-404/section-404-clean-water-act-how-wetlands-are-defined-and-identified>, Accessed June 1, 2017.

National Invasive Species Act

Under the National Invasive Species Act of 1996, the United States Coast Guard (USCG) established national voluntary ballast water guidelines. The USCG published regulations on June 14, 2004, establishing a national ballast water management program with mandatory requirements for all vessels equipped with ballast water tanks that enter or operate in U.S. waters. The regulations carry mandatory reporting requirements to aid in the USCG's responsibility, under the National Invasive Species Act, to determine patterns of ballast water movement. The regulations also require ships to maintain and implement vessel-specific ballast water management plans.

State

California Endangered Species Act (California Fish and Game Code 2050 et seq.)

The California ESA (CESA) establishes the state's policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. For projects that affect both a state- and federally listed species, compliance with the FESA will satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under California Fish and Game Code Section 2080.¹ For projects that will result in a take of a state-only listed species, the project proponent must apply for a take permit under Section 2081(b). Under CESA, CDFW maintains lists of threatened and endangered species, candidate species, and species of special concern. If any state listed protected species are affected by the project, CDFW will require the issuance of a Section 2081 (b) take permit.

California Fish and Wildlife Code Sections 3511, 4700, 5050, and 5515

The Fully Protected classification was the state's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. The CDFW has created lists for fish, amphibians, reptiles, birds, and mammals that are fully protected. Most of the species on these lists have subsequently been listed under CESA or FESA. CESA listed endangered and threatened species may not be taken or possessed at any time without a permit from the CDFW (Section 3511 Birds, Section 4700 Mammals, Section 5050 Reptiles and Amphibians, and Section 5515 Fish), except for the collection of these species for necessary scientific research, and relocation of the bird species for the protection of livestock.

Marine Life Protection Act

The Marine Life Protection Act (MLPA) was adopted in 1999 to protect ecosystem structure and function. Specific mandates of the MLPA are to sustain, conserve, and rebuild depleted populations. The MLPA works in concert with the Marine Life Management Act. Within California, most of the legislative authority over fisheries management is enacted within the MLPA. This law directs CDFW and the Fish and Game Commission to issue sport and commercial harvesting licenses, as well as license aquaculture operations. The CDFW, through the commission, is the state's lead biological resource agency and is responsible for enforcement of the state endangered species regulations and the protection and management of all state biological resources.

An important part of MLPA enactment has been the establishment of MPAs along the California coast. Fishing and other consumptive activities are strictly regulated in MPAs in order to provide refuges within which healthy stocks can be maintained to ensure propagation along the entire coast. Three types of designated (or recognized) MPAs occur in California: SMRs, SMPs and SMCAs. The area between Point Conception and the U.S./Baja California border includes 35 South Coast Region MPAs. Additionally, an SMCA and SMR are located at Point Dume in the Malibu region, and an SMCA and SMR are located at the Palos Verdes Peninsula.

Marine Life Management Act

The Marine Life Management Act works in concert with the MLPA by advancing fishery management as an important element of ecosystem integrity and sustainability. Under the MLMA, implementation of the California Nearshore Fisheries Management Plan (NFMP) and the California Market Squid Fisheries Management Plan (MSFMP) affect fish species found in the Ventura coast.

Nearshore Fisheries Management Plan

The five goals of the NFMP are to ensure long-term resource conservation and sustainability, to employ science-based decision-making, to increase constituent involvement in management, to balance and enhance socio-economic benefits, and to identify implementation costs and sources of funding. The following measures are employed to meet the primary goal of sustainability: a fishery control rule including size limits, time/area closures, or gear restrictions, regional management tailored to conditions specific to each of four regions, marine protected areas, restricted fishery access, and allocation of total allowable catch (CDFG 2001). The species regulated by the NFMP are primarily associated with rocky substrate.

California Coastal Act Section 30000 et seq.

California Coastal Act Chapter 3 contains policies to (1) protect water quality and the biological productivity of coastal waters (Public Resources Code [PRC] Section 30231), (2) avoid and minimize dredging, diking, and filling sediments (PRC Section 30233), and (3) mitigate wetland impacts (PRC Section 30607.1). Under the California Coastal Act “environmentally sensitive area means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (PRC Section 30107.5).

The California Coastal Act requires jurisdictions to protect environmentally sensitive habitat areas, or ESHAs. Specifically, PRC Section 30240 states that:

- ESHAs shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.
- Development in areas adjacent to ESHAs and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

The Coastal Act generally protects ESHAs where they exist and also protects “against any significant disruption of habitat values.” Coastal Act Section 30007.5 states that where there is a conflict between policies that it:

... be resolved in a manner, which on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (CWC 2013) provides statewide coordination for protection of Waters of the State. It established the SWRCB as the state agency with primary responsibility for the control of water quality, and nine Regional Boards to oversee water quality at the regional level.

California Ocean Plan

The California Ocean Plan (OP) establishes water quality objectives and beneficial uses for waters of the Pacific Ocean adjacent to the California Coast (SWRCB 2012). The OP is a key tool employed by the SWRCB to ensure CWA and Porter-Cologne Act compliance for waters of the State and US. NPDES waste discharge permits set discharge limits that are required to prevent exceedances of the water quality objectives in the OP. The most relevant OP objectives include:

- Marine communities, including vertebrate, invertebrate, and plant species shall not be degraded;
- Waste management systems that discharge into the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community; and
- Waste discharged to the ocean must be essentially free of substances that will accumulate to toxic levels in marine waters, sediments or organisms.

The basis for water quality objectives established in the OP is the protection of beneficial uses designated for each section of coastline by Regional Water Boards. The designated beneficial uses relevant to marine resources are as follows:

- Marine Habitat – Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
- Shellfish Harvesting – Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes. This includes waters that have in the past, or may in the future, contain significant shellfisheries.
- Commercial and Sport Fishing – Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Another relevant beneficial use is as follows:

- Rare, Threatened, or Endangered Species – Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

On May 6, 2015, SWRCB approved an amendment to the OP (Ocean Plan Amendment, or OPA) to address effects associated with the construction and operation of seawater desalination facilities (i.e., intake and discharge of brine waters) along the California coastline. The OPA supports the use of ocean water as a reliable supplement to traditional water supplies while protecting marine life and water quality, and is aimed at establishing a uniform statewide approach for the protection of beneficial uses of ocean waters. OPA requirements which would be relevant only to ocean desalination projects include, but are not limited to the following:

- Use of subsurface intakes (intake structures located beneath the seafloor), unless subsurface intakes are determined to be infeasible by the RWQCB based upon a comparative analysis of the following factors: geotechnical data, hydrogeology, benthic topography, oceanographic conditions, presence of sensitive habitats, presence of sensitive species, energy use for the entire facility; design constraints (engineering, constructability), and project life cycle cost. If subsurface intakes are not feasible, then screened ocean intakes may be considered. The intake screens must have slot sizes ≤ 1.0 -millimeter (mm) (0.04 in.), and the intake velocity must be ≤ 0.015 meters per second (m/s) (0.5 feet per second (fps)).
- Alternatives to subsurface intakes and screened intakes can be considered, but the alternative(s) must achieve the same level of entrainment reduction as a screened intake.
- Commingling brine discharge with an existing wastewater discharge (e.g., agricultural, municipal, industrial, power plant cooling water, etc.) that would otherwise be discharged to the ocean is the preferred technology for brine discharge to minimize intake and mortality. Multiport diffusers are the next best method for disposing of brine when the brine cannot be diluted by wastewater and when there are no live organisms in the discharge.
- Alternatives to wastewater commingling and multiport diffusers can be considered, but the alternative(s) must achieve a comparable level of entrainment/discharge impacts as wastewater commingling or multiport diffusers.
- Discharges shall not exceed a daily maximum of 2.0 parts per thousand (ppt) above natural background salinity measured no farther than 100 meters (328 feet) horizontally from each discharge point. There is no vertical limit to this zone.

The owner or operator of a facility is required to submit a Marine Life Mortality Report to the Regional Board estimating the marine life mortality resulting from the facility's construction and operation after implementation of the facility's required site, design, and technology measures.

Mitigation is required for the replacement of all forms of marine life or habitat that are lost due to the construction and operation of a desalination facility after minimizing intake and mortality of all forms of marine life through best available site, design, and technology.

According to the OPA, the owner or operator shall mitigate for the mortality of all forms of marine life determined in the Marine Life Mortality Report by choosing to either complete a mitigation project or, if an appropriate fee-based mitigation program is available, provide funding

for the program. The mitigation project or the use of a fee-based mitigation program and the fee amount that the owner or operator must pay is subject to Regional Board approval.

The proposed projects will need to adhere to the requirements of OPA 2015 for the intake and outfall designs and operations.

Marine Invasive Species Act

All shipping operations that involve major marine vessels are subject to the Marine Invasive Species Act (MISA) of 2003 (Public Resources Code Sections 71200 through 71271), which revised and expanded the California Ballast Water Management for Control of Non-indigenous Species Act of 1999 (AB 703). The California State Lands Commission (CSLC) administers this act. The MISA regulates the handling of ballast water from marine vessels arriving at California ports in order to prevent or minimize the introduction of invasive species from other regions.

Depending on the source of project marine construction equipment, a plan to prevent the introduction and/or spread of non-native invasive species will be required to adhere to CSLC regulations.

3.11.7 Significance Thresholds and Criteria

The criteria used to determine the significance of impacts related to marine resources are based on Appendix G of the CEQA Guidelines, Environmental Checklist form. The issues presented in the environmental checklist for biological resources have been considered and tailored as applicable for use as thresholds of significance in this section. In addition to the CEQA Guidelines Appendix G thresholds, the following project thresholds are also taken into consideration: the Office of Planning and Research's CEQA Guidelines Preliminary Discussion Draft (released August 11, 2015); California Ocean Plan Final Amendment (May 2015); and the provisions regarding Native American consultation set forth in Assembly Bill 52 (2013–14), which amended and added sections to the CEQA statute in the state Public Resources Code. Based on these statutory, regulatory, and guidance provisions, the proposed projects would have a significant impact if they would:

- Have a substantial adverse effect on any species, natural community, or habitat, including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans (including protected wetlands or waters, critical habitat, EFH) or as identified by the CDFW, USFWS, or NMFS (refer to Impact MARINE 3.11-1). Substantial adverse effects include direct effects and habitat modifications, including direct disturbance, removal, filling, hydrological interruption, and discharge.
- Threaten to eliminate a marine plant or animal wildlife community or cause a fish or marine wildlife population to drop below self-sustaining levels (refer to Impact MARINE 3.11-2).
- Interfere substantially with the movement of any native resident or migratory fish or marine wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native marine wildlife nursery sites (refer to Impact MARINE 3.11-3).
- Introduce or spread an invasive non-native species (refer to Impact MARINE 3.11-4).

A summary of the findings for each impact is presented in **Table 3.11-5**. The analyses below support these findings.

**TABLE 3.11-5
SUMMARY OF MARINE IMPACT DETERMINATIONS**

Impacts	Special- Status Marine Species 3.11-1	Potential Loss of Marine Communities 3.11-2	Movement of Marine Organisms 3.11-3	Non-Native Invasive Species 3.11-4
Phase 1				
(Offshore Facilities Construction and Operation)	LTSM	LTS	LTS	LTSM
Phase 2				
Offshore Facilities Construction and Operation)	LTSM	LTSM	LTS	LTSM
LTS = Less than Significant, no mitigation proposed LTSM = Less than Significant impact with mitigation NI = No Impact SU = Significant and Unavoidable impact, even after implementation of mitigation				

3.11.8 Impacts and Mitigation Measures

Impacts to upland components of the proposed projects, including the Water Conveyance System, Groundwater Aquifer Storage and Recovery Wells, Natural Treatment Wetlands, VWRP Treatment Upgrade, and the Phase 2 Desalination Facility and AWP Expansion Projects, will not be addressed in this section. See Section 3.4, Biological Resources, for impacts to the upland project components. This section will evaluate the marine impacts associated with the Phase 1 Concentrate Discharge Facility (New Outfall) and the Phase 2 Desalination Ocean Intake Facility and concentrate discharge. Section 3.9.4, Hydrology and Water Quality, assesses the potential effects to marine water quality from both the Phase 1 and 2 concentrate discharges.

Special-Status Marine Species

Impact MARINE 3.11-1: The proposed projects could have a significant impact, either directly or through habitat modifications, if they would cause direct disturbance, removal, filling, hydrological interruption, or discharge, on any species, natural community, or habitat, including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans (including protected wetlands or waters, critical habitat, EFH) or as identified by the CDFW, USFWS, or NMFS.

Phase 1

Discharge Facility Construction

The predominant subtidal habitat along the Ventura County coast is soft substrate sand and mud habitat, which is resilient to temporary disturbance from marine construction activities. This type of shallow subtidal habitat predominates most of the Southern California Bight.

The exceptions are the giant (*Macrocystis*) kelp beds that occur along stretches of the coastline. As discussed above, giant kelp attach to rocky subtidal habitat in areas of mixed hard bottom. They provide critical nursery and foraging areas for many fish and invertebrate species as well as prevent coastal erosion from wave action. As shown in Figure 3.11-1, most of the giant kelp beds are located along the northern portion of Ventura County coast, north of the Santa Clara River. Most kelp beds along the Ventura coast cease occurring at water depths of 15 meters (50 feet). Locating the concentrate outfall near giant kelp beds would be expected to result in substantive negative impacts to this sensitive resource and its associated biological communities and ecological role in the marine environment.

The proposed outfall would be located north of the Ventura Harbor, either at the end of New Bedford Court or within Marina Park (see Figure 2-19). As shown in Figure 3.11-1, there are no giant kelp beds in the vicinity of the outfall. Therefore, the project outfall would not result in a significant impact to the giant kelp. The following analysis of potential impacts on marine biological resources relies in part, on the discussion of hydrology and water quality impacts and mitigation for the proposed offshore components, which is presented in Section 3.9.4.

Horizontal Directional Drilling

The shoreline crossing and offshore outfall pipeline components would be constructed using horizontal directional drilling (HDD) methods to bore a hole from the coast to a location approximately 1 to 2 miles offshore in a water depth of approximately 40 to 50 feet. The HDD bore length would pass underneath the beach at a maximum below-surface depth of approximately 10 to 15 feet. Following the completion of the HDD borehole, the subsurface pipe would be pulled through the borehole and tied into the outfall seafloor and diffuser sections.

Using HDD drilling technology to bore through the intertidal zone and under the ocean always poses some risk of accidental drilling fluid releases. However, adequate planning and the implementation of environmental protective procedures and best management practices (BMPs), such as leak detection monitoring, spill prevention and stormwater control measures, would minimize the risks of HDD to marine resources. As discussed in Section 3.9.2, the construction of the land-side components of the new outfall would be required to comply with the existing hazardous materials, Construction General Permit requirements, and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities. Offshore vessels used for construction would be required to comply with the NPDES General Permit for Vessel Incidental Discharges, which requires controlling incidental discharges from vessels such as construction barges. Offshore construction activities for the discharge facility could take up to 1 year to complete.

Dredging

Construction of the receiving pit for the concentrate pipeline would result in the dredging of an approximately 100-by-200-foot area (0.5 acre) of seafloor to accommodate the installation of the outfall to the concentrate pipeline. The dredged material would be set aside and left on the sea floor. Due to the shallow water depth of this excavation location (approximately 50 feet), it is expected that the spoils would naturally refill the excavation depression as a result of wave and surge action. Turbidity would be minimal, as the spoils would not be brought to the surface but would be set aside on the sea floor. All dredging activities would comply with USACE, USEPA, CCC, and RWQCB regulations and provisions as listed in issued permits (e.g., Section 10 Permit), including BMPs for avoiding or reducing potential impacts related to suspended sediments.

Chapter 3.9, Hydrology and Water Quality, Section 3.9.4, discusses potential dredging effects on water quality. Any actions that would reduce the resuspension and distribution of dredged material into the water column would additionally reduce potential effects to marine biological resources.

If the dredged seafloor sediments contain any organic or inorganic contaminants, the potential for resuspension of these contaminants and concurrent effects on marine taxa may occur. Contaminated sediments, depending on the levels of contamination, may require appropriate upland disposal.

Although the altering of benthic habitat and associated infaunal and epifaunal communities can be expected to result in the temporary loss or reduction of habitat suitable for fish foraging, including any special-status fish species utilizing the project marine area, the infaunal community inhabiting the coarse to fine sand-mud sediment in the project marine study area is common throughout most of the SCB and the approximate 0.5 acre disturbed by project dredging would be minimal in comparison to the nearshore soft substrate subtidal habitat along the Ventura County coastline. Once installation is completed, over time, the seafloor surface sediments and associated marine biological community is anticipated to return to pre-disturbance condition and the marine infaunal and epifaunal communities would begin to recolonize the disturbed sediments almost immediately due to migration from adjacent, undisturbed sediments and recolonization from new larvae. While recovering, the dredged area would be temporarily lost or reduced in suitability as foraging habitat for fish and invertebrate taxa. Depending on the extent of the dredged area and the timing of the actual dredging, the benthic community inhabiting those sediments would be expected to recover to pre-dredging composition and abundances within a few months to less than 2 years, depending on when dredging occurs and other ecological factors affecting recolonization (Newel et al. 1998; Blake et al. 1996).

Because of the limited area of soft sediment habitat impacted and associated marine community that would be affected by dredging activities, the abundance of comparable habitat and suitable foraging habitat within the project marine area, and the anticipated quick recovery to pre-dredging conditions and productivity, the impact from dredging is determined to be less than significant.

Dredging sediments by clamshell dredging equipment has the potential to entrain (directly remove) fish, and mobile epibenthic (on the sediment surface) invertebrates, such as crabs (Reine and Clark 1998). Mechanical clamshell dredging has been documented to carry a lower risk of fish entrainment (compared to other techniques such as suction or hydraulic dredging) since most fish can sense the pressure wave generated by the clamshell bucket. As a result, fish can avoid the bucket and entrainment. Additionally, most fish have been observed to avoid active dredging locations because of the underwater noise and increased turbidity (Reine and Clark 1998). Since all dredged sediments would be temporarily side-cast and stored on the seafloor immediately adjacent to the dredged area, any entrained fish would be able to swim free, once the dredged sediment is redeposited on the seafloor.

Therefore, with the employment of mechanical clamshell dredging equipment for project dredging activities, the potential risk to fish and any special-status species that might be present in the project site during dredging activities would be less than significant.

Turbidity

During dredging, a temporary increase in water column turbidity and light attenuation can be expected to occur. Depending on time spent dredging and the dredging methodology, the turbidity plume can result in the temporary avoidance of the area by marine biota, burying sessile marine biota, and/or clog the gills and disrupt filter-feeding organisms. Any increased turbidity resulting from dredging would be expected to be confined to within a few hundred yards of the activity and occur only during those days dredging takes place. Therefore, the affected area would be relatively small compared to the surrounding available habitat, and due to the sandy nature of the surficial natural sediments, short-term and local with the sand material expected to settle onto the seafloor quickly.

Wind, waves, and tidal currents can be expected to quickly disperse and dilute the turbidity generated from dredging operations. Also, the coarse sediment composition of dredged sediments would result in limiting areal extent of turbidity plumes, since the material would be expected to quickly settle to the seafloor. After initial increases in turbidity levels, normal localized background ocean water turbidity levels would be restored within hours once dredging ceased. Finally, strict adherence to standard BMPs for avoiding or reducing suspended sediments that would be associated with permits under the CWA Sections 401 and 404, discussed in Section 3.11.6, such as the use of environmental dredging buckets, bucket size and type, silt curtains and gunderbooms, and operational controls such as eliminating multiple bites of seafloor sediments, bottom stockpiling, avoiding sweeping with the bucket, restricting scow washing and overflow of dredged sediments sediment, avoiding tidal current extremes, and using an experienced operator, would ensure that the impact from contaminant exposure from resuspension of sediments would be less than significant.

Mooring Anchors

Installation of the outfall diffuser to the piping would require assorted crane barges, diver support vessels, supply barges, and other work vessels. The placement of the mooring anchors on the seafloor would result in the smothering and temporary loss of any benthic infauna or epifauna, as well as some unconsolidated sediment foraging habitat immediately under the anchors while the

anchors are in use. In the case of the mooring anchors, recovery of the habitat to pre-construction conditions is expected to be quick since the habitat would not be lost and recolonization from adjacent sediments has been shown to be very rapid (Newel et al. 1998; Blake et al. 1996). The proposed projects would include ocean floor reconnaissance to determine the location best suited for the anchoring the vessels. This would ensure avoidance of any sensitive habitat, such as giant kelp beds, hard substrate, or rocky intertidal habitats. Additionally, based on the small size of the project marine area, the period over which the habitat would be unavailable for use by marine taxa, and the overall temporary nature of the loss, the potential loss of seafloor habitat from the local project mooring and anchoring activities would be less than significant.

Increase in Vessels Activities

The increased presence of vessels and their movements can also be expected to pose additional risk to marine mammals from unplanned accidental releases or spills of fuel or oil, surface and underwater noise, potential for collisions with marine mammals or sea turtles and the preclusion of commercial fishing activities.

The concentrate discharge construction vessel traffic to and from the project site would represent a small increase in the normal vessel traffic present in the nearshore coastal waters of Ventura County. However, the minimal increase of new vessels in the area and the vessel movements required for the offshore construction activities of the discharge facility would not be expected to significantly increase the risk of vessel collisions and any resultant accidental fuel spills. Additionally, **Mitigation Measures** HAZ-1 and **MARINE-1** require the preparation and implementation of a Marine Safety Plan and a Marine Oil Spill Response Plan, which would further assist in preventing vessel collisions and accidental releases to ocean waters and subsequent potential impacts to marine habitats and associated biota.

Marine construction activities could also be expected to result in some limited potential for increased collisions between project work and support vessels and marine mammals. However, these vessels and their movements would be expected to have a low probability for encountering migrating whales during their transit to and from the project site, as such species are generally sparsely distributed in nearshore waters through which these vessels would be operating and transiting. California gray whale migration and movements are generally limited to the months of December through April and occur further offshore than the proposed project area. Therefore, the likelihood of such migrating species to be present in the project marine area would be very small. Other species of whales that frequent the coastal waters of California, such as humpback whales, normally occupy deeper coastal water areas than present in the project area.

In addition, all of the operators of these types of vessels which routinely work in the coastal waters of Ventura, Santa Barbara, and Los Angeles, undergo regular training and familiarization on avoiding marine mammals and sea turtles while transiting from the harbor to the worksite. The likelihood of offshore construction vessels interfering substantially with the movement of any native, resident, or migratory fish, or, with established, native, resident, or migratory wildlife would be negligible. As a result, the potential for impact to area marine resources, including marine mammals, fish, sea turtles from project work, and support vessels engaged in construction would be less than significant.

Accidental Spills

The potential for accidental releases of hydrocarbon-containing materials (fuel, lubricating oil, hydraulic fluid) and other pollutants from work vessels possess increased risk to marine biological resources, including special-status species. Implementation of **Mitigation Measure MARINE-1** and compliance with the NPDES General Permit for Vessel Incidental Discharges, which requires controlling incidental discharges from vessels such as construction barges would include BMPs for preventing the accidental release of these materials, such as restricting offshore fueling of work vessels, secondary containment for all deck-stored hydrocarbon-containing materials and equipment, prohibiting bilge water discharges, effective personnel training. Compliance with these BMPs and establishing spill response and recovery plans, would reduce these effects to less than significant.

Underwater Noise

Underwater noise would be produced by marine vessels and in-water construction activities, especially pile-driving and demolition of any offshore structures resulting in short-term elevated underwater noise levels. If anchor pilings are required to secure portions of the outfall to the seafloor prior to reburial, the use of either impact or vibratory pile drivers to install the anchor pilings would result in the generation of underwater noise that could be harmful or disturbing to fish, marine mammals, and sea turtles.

Depending on the amplitude and frequency of the underwater noise generated, there could be an effect on marine mammals, sea turtles, and fishes utilizing the coastal waters within the vicinity of the discharge facility. High-intensity noise can result in acute damage to soft tissues, such as gas bladders or eyes (barotraumas), and/or harassment of fish and marine mammals such that they alter swimming, sleeping, or foraging behavior, or such that they temporarily abandon forage habitat. Underwater noise, or sound waves, is a physical phenomenon consisting of minute vibrations that travel through the water. Sound is generally characterized by several variables, including frequency and intensity. Frequency describes the pitch of a sound and is measured in hertz (Hz), while intensity describes the loudness of a sound and is measured in decibels (dB). Decibels are measured using a logarithmic scale (e.g., a 10-dB increase represents a tenfold increase in sound intensity).

The striking of a piling by a pile-driving hammer creates a pulse of sound that propagates through the pile, radiating out through the water column, seafloor, and air. Sound pressure pulses as a function of time are referred to as a waveform. Peak waveform pressure underwater is typically expressed in dB referenced to 1 microPascal (μPa). Sound may be measured as either an instantaneous value as peak level (sound pressure level, SPL) or as the total sound energy present in a sound event (i.e., sound exposure level, SEL, a common unit of total sound energy used in acoustics to describe short-duration events). The SEL is the total sound energy in an impulse that accumulates over the duration of that pulse normalized to 1 second, thus the unit for SEL is dB referenced to 1 $\mu\text{Pa/s}$. Low-frequency sounds are typically capable of traveling over greater distances with less reduction in the pressure waveform than high-frequency sounds. Resource agencies use peak SPL and SEL to assess effects of underwater noise on marine species.

Potential impacts to marine species are dependent on sound source levels and frequencies, animal hearing sensitivities, proximity to the sound source, noise duration, and time of operation. Hearing sensitivities of marine species vary depending upon their anatomy and physiology. Scientific investigations on the potential effect of noise on fish indicate that sound levels below 183–187 dB do not appear to result in any acute physical damage (barotrauma) or mortality to fish depending on their size (Allen and Knutsen 1986; Caltrans 2015). Smaller fish experience acute effects at sound levels >183 dB and larger fish at 187 dB (Caltrans 2015). Noise levels that result in startle responses in steelhead trout and salmon have been documented to occur at sound levels as low as 140 dB at a frequency of 100 Hz and between 180–186 dB in Pacific herring (San Luis and Delta Mendota Water Authority and C.H. Hanson 1986). Any disturbance to FESA-listed fish species that results in altered swimming, foraging, movement along a migration corridor, or any other altered normal behavior would be considered harassment and a potential significant impact.

Comparable to the NMFS efforts to determine underwater noise levels that result in acute or startle responses in fish (Caltrans 2015), NOAA adopted Technical Guidance to assess noise impacts on marine mammals with a new method to calculate the onset of permanent threshold shift (PTS), or Level A harassment (NOAA 2016). Underwater sound thresholds for Level A harassment for marine mammals for both impulsive (i.e., impact pile-driving) and non-impulsive (i.e., vibratory pile-driving) sounds, established by NOAA range between 150 and 219 dB, depending on the marine mammal group. Because of the differences in hearing ability and sensitivity to different frequencies of sound, NOAA established underwater noise thresholds for marine mammals based on their sensitivity to low-, mid- and high-frequency sounds. Low-frequency sensitive cetaceans include all baleen whales; mid-frequency cetaceans include dolphins, toothed and beaked whales; high-frequency cetaceans include true porpoises, river dolphins, Phocid pinnipeds (true seals), and Otariid pinnipeds (sea lions and fur seals). The NOAA Technical Guidance did not make any changes with respect to the Level B harassment thresholds; therefore, the previous acoustic threshold for impulsive noise sources (160 dBrms) for impact pile driving and non-impulsive noise sources (120 dBrms) for vibratory pile-driving established by NOAA are used.

Finally, the diameter and composition of the pilings, type of pile driving hammer employed, and application of BMPs determine the potential magnitude of underwater noise generated and the distance the it might travel. In general, vibratory hammers generate lower-magnitude underwater noise than impact hammers. Also, smaller diameter pilings generate lower-magnitude underwater noise than larger-diameter pilings. Likewise, composite and fiberglass pilings generate lower-magnitude underwater noise than wood, steel or concrete pilings (Caltrans 2015). The careful design and implementation of a pile driving plan, which includes the selection of low-noise-generating pilings (piling diameter and composition), pile driving equipment, application of applicable or appropriate BMPs, and effective operational actions, including use of on-site marine mammal observers and operation cessation thresholds, can reduce the potential effects of pile driving underwater noise impacts on marine biological resources, including special-status species, to less than significant.

Since it is unknown at this time whether anchor piles will be required for the construction of the outfall nor what kind of anchor piling design would be required (i.e. the quantity of anchor piles needed, the diameter and composition of the anchor piles, pile spacing, or the type of pile driving equipment that will be used), the potential effects, if any, of underwater noise generated from project related pile driving activities cannot be estimated. Additionally, the specific effects to marine biological resources cannot be determined. However, based on similar projects, potential effects to fish, marine mammals, and sea turtles can be estimated and maximum underwater noise thresholds at which no impacts occur can be determined (Caltrans 2015).

It is typical for only a few fish to be present in the water column within several meters of pile driving activity or at the seafloor, as a result of physical activity, disturbances within the water column, low-level noise transmitted from the work vessels, and the initial placement of the anchor piles on the seafloor prior to pile driving commencement. Disturbance of fish, including special-status fish that may be foraging within several hundred meters of the offshore construction operations could however occur. Threshold underwater noise levels at which both acute and chronic impacts to fish are presented in the paragraphs above. If pile-driving activities exceeded these underwater noise thresholds, fish, potentially including special-status fish species, would be harmed and this impact would be considered significant. Similarly, marine mammals, particularly dolphins, porpoises, sea lions, or seals, may be present within distances from the operations at which Level B harassment may occur, which would be considered significant.

Concerning marine turtles, only a limited number of hearing studies have been conducted (Popper et al. 2014). Sea turtles appear to be sensitive to low-frequency sounds with a functional hearing range of about 100 Hz to 1.1 kHz (Ridgway et al. 1969; Bartol et al. 1999; Ketten and Bartol 2006 et al. 2012). As a result, some study authors suggest that sea turtle hearing thresholds should be considered equivalent to Level B harassment thresholds for low-frequency cetaceans (Southall et al. 2007; Finneran and Jenkins 2012); however, the Acoustical Society of America standards committee suggests that turtle hearing is probably more like fish than marine mammals (Popper et al. 2014). Consequently, for this analysis, sea turtle mortality and mortal injury would be expected at pile-driving sound levels greater than a cumulative SEL threshold of 210 dB. In the absence of behavioral impact thresholds, NMFS's Level B harassment thresholds for impulsive (160 dBrms) and non-impulsive (120 dBrms) are typically used.

Sound levels and duration of exposure are likely important factors for impacts to sea turtles, which are slow swimmers and take longer to leave an area (CSLC 2017). As a result, the potential impact of pile-driving activities on turtles could be significant if not mitigated. Leatherback and loggerhead sea turtles are endangered species, and green and olive ridley sea turtles are threatened species, so extra precautions would be warranted if they enter the area. However, the likelihood of these species being in the project marine area is very low.

However, because of the uncertainty concerning whether anchor piles will be required and the potential for the construction of the discharge facility to generate underwater noise from requisite pile driving activities sufficiently high enough to result in impacts to marine biological resources, it must be assumed that if pile driving activities are required, they could result in significant impact to marine resources, including special-status marine taxa. These include

Magnusson-Stevens Act–managed fish species; protected species such as salmon and steelhead; sea turtles; and multiple marine mammal species, including harbor seals, California sea lions, porpoises, and dolphins. With the implementation of **Mitigation Measure MARINE-2**, underwater noise impacts would be reduced to less than significant.

Outfall Armoring

The placement of armor/anchor rock would be required to secure the outfall diffuser to the ocean floor. The armor/anchoring rock would prevent movement of the outfall line during storm events. The placement of this armor rock would result in the permanent loss of soft substrate habitat and associated marine biota and its habitat value and use. It would be replaced with artificial hard substrate habitat that would provide substrate for a different invertebrate and fish community which would be considered to be ecologically valuable as well. Impacts would be less than significant.

Outfall Operations

Following construction, the operation of the outfall pipeline, including the discharge of the reverse osmosis (RO) treated effluent could potentially result in localized impacts from toxicological impacts of effluent constituents to marine biota, depending on the concentration of the constituent in the wastewater discharge.

As required by the SWRCB, any contaminants contained within an ocean discharge, regardless of origin, must meet OP Objective limits at the edge of a zone of initial dilution (ZID) surrounding the diffusers. As discussed in detail in Section 3.9.4, the effluent discharge under Phase 1 is not expected to result in any increases in organic or inorganic constituents that result in violation of OP water quality objectives, and therefore would be considered a less than significant impact relative to water quality. OP objectives for inorganic and organic compounds are set at concentrations below identified thresholds for any acute or chronic effects or impacts on marine biota. Consequently, any potential effects of the effluent discharge from the Phase 2 operations on marine biological resources are also determined to be less than significant.

Mitigation Measures: Implement Mitigation Measure HAZ-1, MARINE-1, and MARINE-2.

MARINE-1: The City of Ventura shall prepare a Marine Oil Spill Response Plan that would apply to all powered vessels used in support of the concentrate discharge construction activities. The purpose would be to provide a precise set of procedures and protocols that would be utilized in the event of an offshore fuel, oil, or hazardous materials spill resulting from construction activities (e.g., marine fuel and oil). The Marine Oil Spill Response Plan shall include but not be limited to the following elements:

- A brief overview of the project objectives.
- Definition of major and minor spills.
- Description of spill sources.
- Description of spill response team and equipment.
- Agreements with Spill Response Organizations.

- Notification requirements, including names and phone numbers of agencies to be notified, along with an information checklist of the incident.
- Description of marine spill scenarios and response procedures.

All elements of the Oil Spill Response Plan shall be in compliance with U.S. Coast Guard regulations, and the City shall implement the Oil Spill Response Plan through the required NPDES General Permit for Vessel Incidental Discharges discussed in Section 3.9.2.

MARINE-2: Prior to the initiation of any offshore pile driving activities for the project, the City of Ventura shall prepare a Construction Plan that outlines the details of the piling installation approach. The information provided in this plan shall include, but not be limited to:

- The type of piling and piling size to be used.
- The method of pile installation to be used.
- Noise levels for the type of piling to be used and the method of pile driving (vibratory or impact).
- Calculation of potential underwater noise levels that could be generated during pile driving using methodologies outlined in Caltrans 2015 and NOAA 2016b.
- A schedule of when pile-driving would occur.

If the results of the calculations provided in the detailed Construction Plan for pile-driving indicate that underwater noise levels are < 183 dB for fish at a distance of ≤ 10 meters and 120 dB for marine mammals for a distance ≤ 500 meters, then no further measures are required to mitigate underwater noise. If calculated noise levels are > 183 dB at ≤ 10 meters or 120 dB at a distance of ≤ 500 meters, then City of Ventura shall develop a NMFS-approved sound attenuation reduction and monitoring plan. This plan shall detail the sound attenuation system, detail methods used to monitor and verify sound levels during pile-placement activities, and describe all BMPs undertaken to reduce impact hammer pile-driving sound in the marine environment to an intensity level of less than 183 and 120 dB. The sound-monitoring results shall be made available to NMFS.

The plan shall incorporate, but not be limited to the following BMPs, which have been shown to reduce underwater noise levels and possible impacts to fish and marine mammals:

- Pile -driving shall be conducted only between June and November to avoid gray whale migration, unless NMFS in their Section 7 consultation with the USACE determines that the potential effect to marine mammals is less than significant.
- A 1,600-foot (500-meter) safety zone shall be established and maintained around the sound source for the protection of marine mammals and sea turtles in the event that sound levels are unknown or cannot be adequately predicted.
- Work activities shall be halted when a marine mammal or sea turtle enters the 1,600-foot (500-meter) safety zone and shall cease until the mammal has been gone from the area for a minimum of 15 minutes.

- A “soft start” technique shall be used in all impact hammer sourced pile driving, giving marine mammals an opportunity to vacate the area.
- A NMFS-approved biological monitor will conduct daily surveys before and during impact hammer pile driving to inspect the work zone and adjacent Santa Monica Bay waters for marine mammals. The monitor will be present as specified by NMFS Fisheries during the pile-driving phases of construction.

Other BMPs will be implemented as necessary, such as bubble curtains or an air barrier, to reduce underwater noise levels to NMFS established acute and chronic levels within a distance of 500 meters (1,600 feet), if feasible.

Alternatively, to meet these noise criteria, the City of Ventura may consult with NMFS directly and submit evidence to the satisfaction of the Environmental Review Officer. In such case, City of Ventura shall comply with NMFS recommendations and/or requirements to meet the noise criteria. The BMPs listed above provide examples of measures that are normally used to reduce noise impacts to below the noise criteria.

Significance Determination: Less than Significant with Mitigation.

Phase 2

Ocean Desalination Intake

Construction and operation of a subsurface ocean water intake systems, such as horizontal or slant wells, if terminated sufficiently deep enough below the seafloor will avoid impingement of planktonic organisms, including larval fish, and pose little to no risk to marine resources, either during construction or operation. Potential impacts to marine resources would only be posed by the construction of an infiltration gallery in the nearshore coastal waters of Ventura County.

Horizontal Directional Drilling

As discussed above for Phase 1 construction activities, using HDD drilling technology to bore through the intertidal zone and under the ocean floor always poses some risk of accidental drilling fluid releases. As discussed in Section 3.9.2, the construction of the land-side components of the new intake would be required to comply with the existing hazardous materials, Construction General Permit requirements and stormwater regulations that govern the transportation, use, handling, and disposal of hazardous materials, and controlling runoff from construction activities. Offshore vessels used for construction would be required to comply with the NPDES General Permit for Vessel Incidental Discharges, which requires controlling incidental discharges from vessels such as construction barges. In addition, the implementation of **Mitigation Measure MARINE-1** and strict adherence to standard BMPs for avoiding or reducing suspended sediments that would be associated with permits under the CWA Sections 401 and 404, discussed in Section 3.11.6, such as leak detection monitoring, spill prevention and stormwater control measures, would minimize the risks of HDD to marine resources and result in less than significant impact.

Dredging

Construction of ocean infiltration galleries would result in the dredging of large areas of seafloor to accommodate the installation of the infiltration gallery itself. The dredged materials would be stockpiled and replaced over the infiltration gallery or disposed of properly either onshore or offshore, in accordance with state and federal regulations for dredged material disposal, and new sediment deposited on top of the infiltration gallery piping. Once installation is completed, over time, the seafloor surface sediments and associated marine biological community is anticipated to return to pre-disturbance condition. Depending on the extent of the dredged area and the timing of the actual dredging, recovery of the marine habitat and biota can be expected to require months to several years. While recovering, the dredged area would be temporarily lost or reduced in suitability as foraging habitat for fish and invertebrate taxa. Potential impacts from dredging activities on marine resources would be less than significant.

Turbidity

During dredging and replacement of sediments over the infiltration gallery, a temporary increase in water column turbidity and light attenuation can be expected to occur. Depending on time spent dredging and the dredging methodology, the turbidity plume can result in decreased fish foraging behavior, affect submerged aquatic vegetation such as surfgrass and giant kelp, and can bury hard substrate biota. If the dredged seafloor sediments contain any organic or inorganic contaminants, the potential for resuspension of these contaminants and concurrent effects on marine taxa may occur. Contaminated sediments, depending on the levels of contamination, may require appropriate upland disposal in accordance with state and federal dredge material disposal regulations.

Locating the infiltration beds away from hard substrate habitat and kelp beds is key to reducing potential environmental impacts of the intake. Fish foraging would only be impaired during the dredging activity, which includes the duration of the associated dredging plume. Implementation of dredging BMPs, as discussed above for Phase 1 dredging activities, to reduce the extent of the dredging plume therefore would further reduce potential impacts to marine resources.

Consequently, as discussed above for Phase 1 construction activities, potential impacts from increased turbidity from dredging and sediment replacement activities would be of short duration, affect a small region of the nearshore ocean waters of Ventura County, and have a negligible if detectable effect on fish and marine invertebrates. Therefore, impacts from dredging-induced turbidity increases on marine resources would be less than significant.

Increase in Vessel Activities

Installation of the intake piping for the infiltration gallery would require assorted crane barges, diver support vessels, supply barges, and other work vessels. Many of these work vessels would require multi-point anchor moorings that can be expected to cause temporary disturbances or loss of seafloor habitat function, such as foraging habitat for special-status species. As required in Mitigation Measure HAZ-1, mooring anchors and mooring lines need to avoid any hard substrate seafloor habitat and sensitive habitats. Generating potential anchor pattern plots to ensure avoidance of any sensitive habitat, such as giant kelp beds, hard substrate, or rocky intertidal habitats would be beneficial during project planning. Avoidance of sensitive marine habitats will

be required as part of any coastal zone use permit issued by the California Coastal Commission for the project.

The increased presence of the vessels and their movements can also be expected to pose additional risk to marine mammals and sea turtles as a result of accidental collisions, as discussed above for Phase 1 construction activities. Implementation of normal BMPs, including scheduling of offshore construction work to avoid whale migration periods, onboard observers, transit avoidance requirements, and the development and implementation of a marine safety plan (Mitigation Measure HAZ-1), would reduce the potential of such collisions to less than significant levels, as discussed in detail above for Phase 1 construction activities.

Accidental Spills

The potential for accidental releases of hydrocarbon-containing materials (fuel, lubricating oil, hydraulic fluid) and other pollutants from work vessels possess increased risk to marine biological resources, including special-status species. Implementation of **Mitigation Measure MARINE-1** and BMPs for preventing the accidental release of these materials, as discussed above for Phase 1 construction activities, along with establishing spill response and recovery plans, would reduce these effects to less than significant.

Underwater Noise

The desalination intake structure, if employing infiltration galleries, would have similar noise impacts as the construction of the outfall, discussed above. As a result, underwater noise generated from vibratory or impact hammer installation of anchor piles would have the potential to significantly impact marine resources, including special-status marine taxa. These include Magnusson-Stevens Act–managed fish species, protected species such as salmon and steelhead, sea turtles, as well as multiple marine mammal species, including harbor seals, California sea lions, porpoises and dolphins. Implementation of **Mitigation Measure MARINE-2** would reduce the potential impact to less than significant.

Outfall Operations

As discussed in detail in Section 2, Project Description, and Section 3.9, Hydrology and Water Quality, under certain alternative scenarios of the Phase 2 operations, the outfall pipeline, may discharge not only RO discharge and treated effluent but also some ocean desalination brine. As discussed for the operation of the Phase 1 outfall, the outfall discharge water of the Phase 2 operations could also result in localized impacts to marine biota and habitats. The potential for increased contaminants in the RO discharge and treated effluent, if greater than OP objectives for organic and inorganic compounds, could pose a risk to marine biota, including special-status fish and invertebrate species.

As required by the SWRCB, any contaminants contained within an ocean discharge, regardless of origin, must meet OP objective limits at the edge of a zone of initial dilution (ZID) surrounding the diffusers. For contaminants already present in ocean source water used in desalination projects, the goal is to achieve ambient conditions at the edge of the ZID. This is typically achieved by increased mixing by outfall diffuser jets. Also, the SWRCB (2015) requires implementation of a monitoring program to monitor salinity as well as other key contaminants to

ensure that operational actions ensure that contaminant concentrations match ambient concentrations at the edge of the ZID.

As discussed in detail in Section 3.9, Hydrology and Water Quality, the effluent discharge under the Phase 2 Scenario is not expected to result in any increases in organic or inorganic constituents that result in violation of the OP objectives, and therefore are considered less than significant relative to water quality. OP objectives for inorganic and organic compounds are set at concentrations below identified thresholds for any acute or chronic effects or impacts to marine biota. Consequently, any potential effect of the effluent discharge from the Phase 2 operations would be less than significant.

Under those Phase 2 scenarios in which desalination brine is included as a constituent of the outfall discharge, increased salinity and toxicological effects on marine taxa could occur, depending on the salinity concentration of the concentrate discharge. The SWRCB (2015) has defined the allowable increased salinity concentration within the brine mixing zone (BMZ) to be <2 ppt above ambient conditions. Once the brine discharge has reached the BMZ, defined as a not to exceed 100-meter zone around the brine diffusers, the discharge must be <2 ppt above ambient. Only marine organism potentially occurring within the BMZ would be subject to elevated salinity concentrations that might be potentially harmful. Plume modeling for the outfall indicates that the 2 ppt BMZ is achieved within 29.1 feet of each diffuser (Roberts 2018).

A review of marine fish and invertebrate species potentially expected to occur in the nearshore waters of Ventura County and for which salinity tolerance studies have been conducted (**Table 3.11-6**), indicate that concentrations must range between 36.8 and 61.9 ppt to be considered harmful. Additionally, mesocosm experiments with fish demonstrated no adverse effects at salinities up to 47 ppt (Weston 2013). Depending on the ambient salinity concentrations occurring offshore of Ventura County, winter salinity ocean water concentrations in the SCB average 33 ppt. An increase of 2 ppt would result in salinity concentrations within the BMZ below any known toxic levels for salinity. Most large and mobile marine organisms, including fish, marine mammals, and sea turtles, move away from regions with elevated salinity, if they are negatively impacted. Finally, the area of ocean waters within the BMZ is estimated at less than 0.1 acre and represents a very small portion of the coastal waters offshore Ventura County.

Consequently, the potential impact of increased salinity in the discharge waters would be less than significant.

**TABLE 3.11-6
TOXICITY TEST RESULTS AND MEAN EFFECTIVE CONCENTRATIONS OF SALINITY TOXICITY**

Protocol	Endpoint	Test	Measured Test Solution Salinities (ppt)	Mean Salinity EC (ppt)
Red Abalone	Development	1	34, 35, 36, 37, 38, 39, 40	36.8
		2	34, 35, 36, 37, 38, 39, 40	
Purple Urchin	Fertilization	1	34, 36, 38, 39, 41, 43, 45, 46, 48	44.2
		2	34, 38, 41, 42, 43, 44, 45, 46, 47	
Purple Urchin	Development	1	34, 35, 36, 37, 38, 39, 40, 41, 42	38.1
		2	34, 35, 36, 37, 38, 39, 40, 41, 42	
Sand Dollar	Fertilization	1	35, 38, 39, 41, 43, 45, 47, 48, 50	40.3
		2	34, 36, 38, 40, 41, 43, 45, 46, 48	
Sand Dollar	Development	1	34, 35, 36, 37, 38, 39, 40, 41, 42	39.6
		2	34, 35, 36, 37, 38, 39, 40, 41, 42	
Mussel	Development	1	34, 40, 41, 42, 43, 44, 45, 46, 47	43.3
		2	35, 40, 41, 42, 44, 45, 46, 47, 48	
Mysid Shrimp	Survival	1	35, 41, 45, 50, 56, 61	47.8
		2	37, 42, 45, 49, 53, 56	
Mysid Shrimp	Growth	1	35, 41, 45, 50, 56, 61	> 49.7
		2	37, 42, 45, 49, 53, 56	
Giant Kelp	Germination	1	34, 45, 49, 54, 59, 64	55.5
		2	35, 44, 49, 54, 59, 65	
Giant Kelp	Growth	1	34, 45, 49, 54, 59, 64	47.3
		2	35, 44, 49, 54, 59, 65	
Topsmelt	Survival	1	35, 45, 50, 55, 60, 65, 70	61.9
		2	35, 44, 50, 54, 60, 65, 70	
Topsmelt	Biomass	1	35, 45, 50, 55, 60, 65, 70	59.3
		2	35, 44, 50, 54, 60, 65, 70	

SOURCE: Phillips et al 2012

Discharge Diffuser Shear Stress

Potential mortality due to turbulence-induced shearing stress from the discharge of brine through diffuser jets can have an impact on plankton, particularly thin-shelled bivalve and gastropod veligers (Jessopp 2007; Zhang et al. 2017). Shearing stress from the discharge of water through multiport diffusers has been modeled in a number of scientific studies and has been found to vary depending on a variety of factors, including the tilt angle of the diffusers and water discharge velocities (Foster et al. 2013; West Basin Municipal Water District 2018). The discharge of the brine entrains ambient seawater into a turbulent discharge plume wherein marine organisms face a greater risk of shear-induced damage and mortality. At present, there is great scientific uncertainty associated with the extent of this type of mortality. Recent studies of turbulence-induced shearing mortalities on invertebrate organisms demonstrate that a number of taxa, including polychaetes, barnacles, cyprids and bryozoans show no effects from turbulent transport at velocities as high as 3 m/s (Jessopp 2007).

Plume modeling of the Ventura outfall, when desalinization brine is included as a constituent of the effluent, (Roberts 2018) indicates that the volume of entrained ocean water ranges between 16.5 and 16.6 mgd for the 12-meter and 16-meter water depth terminations of the outfall, respectively. It is assumed that within this entrained water that there are some plankton, including larval fish that are <1 mm in size that may result in some effect to the local ocean ecosystem and marine food web offshore Ventura County. This loss of marine habitat value and its potential effects on marine biota, including special-status marine species, would be considered a significant impact if not mitigated.

The SWRCB OPA (2015) requires compensatory mitigation to account for the potential ecosystem effects due to planktonic organism loss. Based on ambient plankton studies and utilization of empirical modeling, an estimate of Area of Habitat Production Foregone (APF) can be estimated (OPA 2015). This calculation estimates the potential marine ecosystem loss or effect on the food web in the area of a project as a result of lost planktonic organisms. The lost habitat function must then be replaced either in-kind in the ocean or in special onshore habitats, such as estuaries and marine wetlands, that would improve overall marine production and quality.

Since no applicable plankton studies have been performed in the area of the proposed ocean outfall, it is not possible at this time to calculate the potential APF for the Phase 2 outfall discharge when it includes desalination brine. Review of comparable desalinization projects in Southern California (West Basin Municipal Water District 2018) indicates that when proportioned for the 16.5–16.6 mgd of entrained ocean water by the ocean outfall discharge, the potential APF for the Phase 2 outfall operation could range between 1 and 6 acres. **Mitigation Measure MARINE-3** would require the City to replace the habitat value for the losses associated with discharge entrainment and would reduce the impact to less than significant.

At the time in the future in which the need for desalination is required and the inclusion of desalination brine in the Phase 2 outfall discharge is determined, plankton data will need to be collected, empirical transport models run, and APF calculations conducted to determine the extent of potential impact to marine ecosystems is caused by the Phase 2 ocean discharge and the acreage required to be restored or replaced in compliance with SWRCB requirements (OPA 2015).

Mitigation Measures: Implement Mitigation Measures HAZ-1 and MARINE-1, MARINE-2, and MARINE-3.

MARINE-3 –Entrainment of fish and invertebrate larvae resulting from outfall discharge turbulence, regardless of magnitude, will result in some loss of marine ecosystem productivity, species diversity, and trophic level energy transfer. As part of, and in support of, the Water Code Section 13142.5(b) determination process with the RWQCB, the City will work with the RWQCB to calculate APF estimates for the Phase 2 discharge if it includes ocean desalination. This loss will be compensated for by either direct or indirect habitat restoration consistent with California Ocean Plan Chapter III.M.2.e.(3) or by providing monetary payments to an appropriate State-approved fee-based mitigation program consistent with California Ocean Plan Chapter III.M.2.e.(4), or a combination of the two. Habitat restoration will occur at a location of sufficient marine acreage or alternative coastal lagoon/estuary acreage, and in a manner acceptable to the RWQCB as

part of the permitting process. Final determination of the appropriate mitigation shall be determined by the RWQCB with consideration for: (1) existing level of wetland function at the site prior to mitigation; (2) resulting level of wetland function expected at the mitigation site after the habitat restoration is fully successful; (3) length of time before the mitigation is expected to be fully successful; (4) risk that mitigation may not succeed; and (5) differences in the location of the lost wetland and the mitigation wetland that affect the services and values they have the capacity and opportunity to generate, consistent with the OPA. If the RWQCB determines that an appropriate fee-based mitigation program has been established by a public agency, however, and if that payment of a fee to the mitigation program will result in the creation and ongoing implementation of a mitigation project that meets the requirements of California Ocean Plan Chapter III.M.2.e.(3), the City shall pay a fee to the mitigation program in lieu of completing a mitigation project as an alternative.

Significance Determination: Less than Significant with Mitigation.

Potential Loss of a Marine Plant or Animal Community

Impact MARINE 3.11-2: The proposed projects could have a significant impact if they would threaten to eliminate a marine plant or animal wildlife community or cause a fish or marine wildlife population to drop below self-sustaining levels.

Phase 1

Discharge Facility

New outfall pipeline construction-related activities are not expected to result in a loss or substantial decrease in population numbers of marine fish, mammals, invertebrates, or sea turtles which are all mobile organisms; see Impact MARINE 3.11-1. Therefore, populations of these organisms are not expected to fall below self-sustaining levels. The organisms and species inhabiting the new outfall pipeline area are common throughout the Ventura County coastline and would be expected to reestablish themselves and return to pre-disturbance distributions and species compositions shortly after restoration of the habitats. As dredging is an expected part of this construction process, the projects would result in a temporary loss of the invertebrates inhabiting in and on the seafloor sediments, but, as noted in the dredging discussion above, they are not expected to fall below self-sustaining levels.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

Ocean Desalination

Ocean intake construction-related activities for slant intake wells, beach wells or infiltration galleries are not expected to result in a loss or substantial decrease in population numbers of marine fish, mammals, invertebrates, or sea turtles, which are all mobile organisms; see Impact MARINE 3.11-1. Therefore, populations of these organisms are not expected to fall below self-sustaining levels. The organisms and species inhabiting the new outfall pipeline area are equally common throughout the Ventura County coastline, and as discussed above, would be expected to reestablish themselves and return to pre-disturbance distributions and species compositions shortly after restoration of the habitats. As dredging is an expected part of this construction process, the invertebrates inhabiting in and on the seafloor sediments would result in temporary loss but, as noted above, are not expected to fall below self-sustaining levels.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Movement of Marine Organisms

Impact MARINE 3.11-3: The proposed projects could have a significant impact if they would interfere substantially with the movement of any native resident or migratory fish or marine wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native marine wildlife nursery sites.

Phase 1

Discharge Facility

As discussed above under Impact MARINE 3.11-1, seafloor alteration impacts could occur from the HDD excavation and the anchoring of support vessels. Although the natural sandy sediments in the HDD excavation area are expected to be redistributed following HDD activities, these altered areas are expected to return to pre-construction conditions through natural sedimentation processes from the surrounding area and recolonization within months to a few years, depending on the area dredged and timing of dredging. Because the impact to the seafloor is restricted to short-term, localized impacts, and recolonization of the disturbed habitat is expected to occur shortly after construction is completed, the impacts to the sedimentary habitat is considered less than significant and any resultant loss of fish or marine mammal foraging habitat will also be less than significant.

As discussed above under Impact MARINE 3.11-1, the concentrations of effluent constituents in the outfall discharge are insufficient to result in acute or chronic effects to marine taxa, including special-status species such as marine mammals, sea turtles, or protected invertebrates. Additionally, the amount of time a swimming fish, fish larvae, marine mammal, or sea turtle might spend transiting either the ZID is relatively short. As such, exposure to increased contaminants would not be expected to pose any restriction or limitation to their movement and would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

Ocean Desalination

As discussed for Impacts MARINE 3.11-1 and MARINE 3.11-2, there is little to no potential for the proposed projects' ocean intake operation or maintenance activities to interfere substantially with the movement of any native marine resident or migratory fish, or marine wildlife species. Long-term maintenance of the intake would require replacement or repair of certain components only on an as-needed basis. Therefore, the operation of the ocean water intake system or the outfall would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Non-Native Invasive Species

Impact MARINE 5.11-4: The proposed projects could have a significant impact if they would introduce or spread an invasive non-native species.

Phase 1

Concentrate Discharge Facility

Construction of the new ocean outfall pipeline would most likely require the use of derrick barges, tugboats, dredge barges, diver support boats, utility vessels and barges, and monitoring boats.

As previously discussed, many non-native and invasive species are introduced by vessels and boats, either as encrusting organisms on the hulls, on other submerged parts of the vessels, or when ballast water is discharged from the vessels. The introduction of such species could cause permanent alterations of communities including changes in species composition or relationships among species that are recognized for scientific, recreational, ecological, or commercial importance. Ultimately, changes in these communities could prevent re-establishment of native biological populations.

Ports, harbors, and adjacent areas are typically most vulnerable to invasive species as the bulk of marine traffic is concentrated at these sites. If invasive species reside within harbor facilities, they could be transported to the offshore construction site. Use of work barges or other vessels from

outside of Southern California could be potential vectors for introducing non-native, invasive species to the Ventura County coastal waters.

The risk of transfer to the project site may be limited since (1) the daily vessels are not expected to remain within the harbor for a sufficient length of time for invasive species to establish on the hulls, and (2) ballast water discharge and recharge are strictly controlled within major harbors for large vessels. All shipping operations that involve major marine vessels are subject to the Marine Invasive Species Act (MISA) of 2003 (Public Resources Code Sections 71200 through 71271), which revised and expanded the California Ballast Water Management for Control of Non-Indigenous Species Act of 1999 (AB 703). The CSLC administers this act. The MISA regulates the handling of ballast water from marine vessels arriving at California ports in order to prevent or minimize the introduction of invasive species from other regions.

Despite these limitations, barges and utility vessels could spread invasive non-native marine species through ballast water and biofouling, posing a risk to marine habitats and marine biota, including special-status species, and therein pose a significant impact. Implementation of **Mitigation Measure MARINE-4** would minimize the proposed projects' potential contribution to the spread of invasive non-native species and any resulting adverse impact on marine biological resources to less than significant with mitigation.

Mitigation Measure: Implement Mitigation Measure MARINE-4.

MARINE-4: All project barges shall have underwater surfaces cleaned before entering Southern California waters and immediately prior to transiting to the offshore construction area. Additionally, and regardless of vessel size, ballast water for all project vessels must be managed consistent with California State Lands Commission (CSLC) ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff.

Significance Determination: Less than Significant with Mitigation.

Phase 2

Ocean Desalination

Construction of the ocean intake would use the same construction methods as discussed above for the ocean outfall. Implementation of **Mitigation Measure MARINE-4** would minimize the proposed projects' potential contribution to the spread of invasive non-native species and any resulting adverse impact on marine biological resources to less than significant with mitigation.

Mitigation Measures: Implement Mitigation Measure MARINE-4.

Significance Determination: Less than Significant with Mitigation.

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3.12 Mineral Resources

This section addresses the impacts to mineral resources associated with implementation of the Ventura Water Supply Projects. This section includes a description of existing mineral resources within the project area and evaluates potential effects to valued mineral resource zones and mineral resource recovery sites.

3.12.1 Existing Environmental Setting

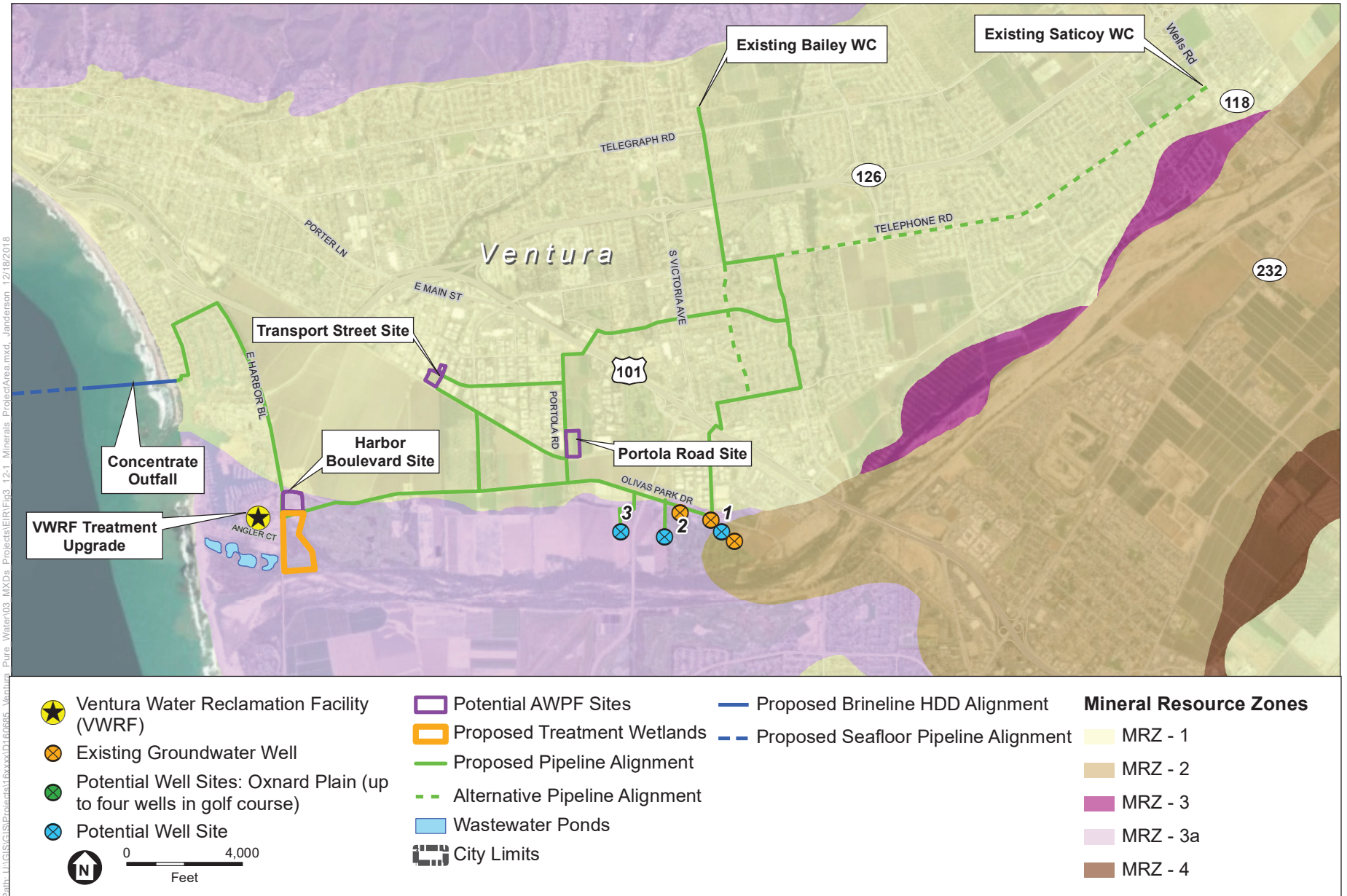
County of Ventura

Minerals are naturally occurring chemical elements or compounds, or groups of elements or compounds that were not formed by organisms. Naturally occurring concentrations of minerals in the earth's crust are known as mineral deposits. Mineral resources are mineral deposits from which the economic extraction of a commodity (such as gold or copper) is currently potentially feasible. In addition to metallic minerals, materials used for construction (e.g., sand and aggregate), industrial and chemical processes (e.g., salt), and fuel (e.g., crude oil) are considered mineral resources in California.

The primary mineral resources located within the county of Ventura are aggregates used for sand and gravel, and petroleum used for oil and gas. These primary mineral resources are important for the physical and economic development of the county (County of Ventura 2005). Aggregates include sand, gravel, and rock, which are used for fill, construction-grade concrete, and riprap among other things. Although many sand and gravel sites exist throughout the county, most of the extraction sites are located in and along the Santa Clara River bed. According to the County of Ventura's (County's) Mineral Resource Management Program of 1983, the county has sufficient aggregate resources to last until at least the year 2033 (County of Ventura 2005). Other minerals of commercial value within Ventura County are asphalt, clay, expansible shale, gypsum, limestone and phosphate; however, these other minerals do not contribute significantly to the physical development or economy of the county (County of Ventura 2016).

In accordance with the Surface Mining and Reclamation Act of 1975 (discussed below), the California Geological Survey (CGS) has mapped nonfuel mineral resources of the state to show where economically significant mineral deposits are either present or likely to occur based on the best available scientific data. These resources have been mapped using the California Mineral Land Classification System's Mineral Resource Zones (MRZs). **Figures 3.12-1 and 3.12-2** display the various MRZs within the project area.

The Harbor Boulevard and Portola Road Advanced Water Purification Facility (AWPF) site is located within the County's jurisdiction and would be located within MRZ-3a and MRZ-1, respectively (see Figure 3.12-1). A portion of the proposed product water conveyance system (pipeline travelling from the Ventura Wastewater Reclamation Facility (VWRF) along Olivas Park Drive) would be located within a MRZ-3a area, which means there are known minerals within this area. Additionally, a portion of the proposed Calleguas Salinity Management Pipeline (SMP) travels through unincorporated Ventura County, primarily within MRZ-1 areas with a small portion through MRZ-3a near the Santa Clara River (see Figure 3.12-2).



SOURCE: ESRI; County of Ventura, 2018

Ventura Water Supply Projects

Figure 3.12-1
Mineral Resource Zones in Project Area

City of Ventura

The City of Ventura is located in the western Ventura production-consumption region, as designated by the CGS. Aggregate mining sites located within the city of Ventura previously existed along the Santa Clara River, and consisted primarily of the extraction of Portland cement concrete-grade aggregate (which has a high enough quality for use in Portland cement concrete). However, there are currently no active aggregate mining activities within this area and the portion of the Santa Clara River downstream of Highway 118 was removed as any area of possible future mining activities. Additionally, the only remaining petroleum fields near the city of Ventura are in the foothills and the Ventura Avenue Corridor, within the County of Ventura's jurisdiction (City of Ventura 2005).

The Transport Street AWP site; most portions of the proposed pipelines, the proposed groundwater wells; the freshwater treatment wetlands; VWRP Treatment Upgrade; concentrate discharge facility; and a portion of the Calleguas SMP are located within the jurisdiction of the City of Ventura (City). These facilities are located in the following MRZs:

- Transport Street AWP site: MRZ-1
- Conveyance Pipelines: MRZ-2 and MRZ-3a
- Aquifer Storage and Recovery (ASR) Wells: MRZ-1
- Wildlife/Treatment Wetlands: MRZ-3a
- Concentrate Discharge Facility: MRZ-3a
- Calleguas SMP: MRZ-1 and MRZ-3a

City of Oxnard

Similar to conditions within the city of Ventura, sand gravel deposits within the city of Oxnard are located along the Santa Clara River Channel, along the Route 101 corridor, and along the eastern edge of the city extended to Oxnard Boulevard (City of Oxnard 2011). The southernmost portion of the proposed Calleguas SMP travels through the city of Oxnard as is located within an MRZ-1 area (see Figure 3.12-2).

City of Port Hueneme

No mineral deposits or resources are known to exist in the City of Port Hueneme (City of Port Hueneme 2015).

3.12.2 Regulatory Framework

Federal

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision-makers and considered before land-use decisions are made that could preclude mining.

California Geological Survey

Based on guidelines adopted by the CGS, MRZs are classified according to the presence or absence of significant nonfuel mineral resources deposits. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate, including sand, gravel, and crushed stone. These classifications indicate the potential for a specific area to contain significant mineral resources.

The classification process involves the determination of Production-Consumption (P-C) Region boundaries, based on identification of active aggregate operations (Production) and the market area served (Consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four MRZs or as an SZ (i.e., a Scientific Zone):

MRZ-1: Areas where available geologic information indicates there is little or no likelihood for presence of significant mineral resources.

MRZ-2: Areas where available geologic information indicates that significant measured or indicated resources are present or where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.

MRZ-3: Areas where available geologic information indicates known or inferred mineral occurrences of undetermined mineral resource significance.

MRZ-4: Areas of no known mineral occurrences where geologic information does not rule out the presence or absence of significant mineral resources.

SZ: Areas containing unique or rare occurrence of rocks, minerals, or fossils that are of outstanding scientific significance.

Regional

County of Ventura General Plan

Chapter 1, Resources

The Resources Chapter (Chapter 1) of the County of Ventura General Plan identifies goals, policies, and programs relating to the preservation, conservation, production, and utilization of resources in Ventura County. The goals, policies, and programs that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2016).

1.4 Mineral Resources

1.4.1 Goals

1. Manage mineral resources in a manner which effectively plans for the access to, development and conservation of mineral resources for existing and future generations.

2. Identify and manage mineral resources in order to:
 - Safeguard future access to the resource.
 - Facilitate a long-term supply of mineral resources within the County.
 - Minimize incompatibility between the extraction and production of the resource and neighboring land uses and the environment.
 - Provide notice to landowners and the general public of the presence of significant mineral resource deposits.
3. Promote the utilization of mineral resources located close to urbanized areas before their extraction is precluded by urbanization.

1.4.2 Policies

1. Applications for mineral resource development shall be reviewed to assure minimal disturbance to the environment and to assure that lands are reclaimed for appropriate uses which provide for and protect the public health, safety and welfare.
6. All General Plan amendments, zone changes, and discretionary developments shall be evaluated for their individual and cumulative impacts on access to and extraction of recognized mineral resources, in compliance with the California Environmental Quality Act.
7. Mineral Resource Areas may be established, in whole or part, in accordance with the following criteria:
 - Any area designated by the State Board of Mines and Geology as an area of statewide or regional significance pursuant to the provisions of the Surface Mining and Reclamation Act of 1975.
 - Any area covered by a discretionary permit (e.g., CUP) for mining of aggregate minerals determined to be of Statewide or regional significance.
8. Discretionary development within a Mineral Resource Area shall be subject to the provisions of the Mineral Resource Protection (MRP) Overlay Zone, and is prohibited if the use will significantly hamper or preclude access to or the extraction of mineral resources.

County of Ventura Municipal Code

Chapter 1, Zoning, Article 9, Standards for Specific Zones and Zone Types, contains the Mineral Resources Protection (MRP) overlay zone. MRP definitions and regulations that are applicable to the proposed projects are below (County of Ventura 2018).

8104-7.2 –Mineral Resource Protection overlay zone

The purposes of this zone are:

- a. To safeguard future access to an important resource.
- b. To facilitate a long term supply of mineral resources within the County.
- c. To minimize land use conflicts.

- d. To provide notice to landowners and the general public of the presence of the resource.
- e. The purpose is not to obligate the County to approve use permits for the development of the resources subject to the MRP Overlay Zone.

8109-4.4.2 - Permit standards.

Discretionary permits shall not be granted within areas with a "MRP" overlay zone designation if the use will significantly hamper or preclude access to, or the extraction of, a mineral resource, except where one or more of the following findings can be made:

- a. Such use is primarily intended to protect life or property.
- b. Such use provides a significant public benefit.
- c. The resource is not present at the site.
- d. Extraction of the resource is not technically or economically feasible.
- e. Extraction of the resource is not feasible due to limitations imposed by the County.

Local

City of Ventura General Plan

The City of Ventura General Plan provides a set of goals, policies, and actions to guide future decision making in the city of Ventura to reflect the planning objectives for the city, including community vision and smart growth principles. There are no relevant goals or policies regarding the use, extraction, or preservation of the city's mineral resources (City of Ventura 2005).

City of Oxnard General Plan

Chapter 5, Environmental Resources

Chapter 5 of the City of Oxnard General Plan addresses the conservation, development, and use of natural resources, and also explores the managed production of resources, significant buildings and historic sites, water resources, biological, and agricultural resources. The goals, policies, and programs that may be applicable to the proposed Ventura Water Supply projects regarding minerals are listed below (City of Oxnard 2011).

Goal ER-13: Well managed extraction of mineral resources that protects the environment and surrounding land uses from adverse effects of extraction operations.

ER-13.2: Reclamation of Mineral Resources Promote the efficient reclamation of mineral resources areas.

3.12.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to mineral resources. The issues presented in the environmental checklist have been used as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state (refer to Impact MIN 3.12-1).
- Result in the loss of availability of a locally important mineral resources recovery site delineated on a local General Plan, Specific Plan, or other land use plan (refer to Impact MIN 3.12-2).

A summary of the findings for each impact is presented in **Table 3.12-1**. The analyses below support these findings.

**TABLE 3.12-1
SUMMARY OF MINERAL RESOURCE IMPACT DETERMINATIONS**

Impacts	3.12-1 Loss of Known Mineral Resources	3.12-2 Loss of Mineral Resources Recovery Site
Phase 1		
Advanced Water Purification Facility	LTS	LTS
Water Conveyance System	LTS	LTS
Groundwater Wells	LTS	NI
Wildlife/Treatment Wetlands	LTS	NI
VWRF Treatment Upgrade	LTS	NI
Concentrate Discharge Facility	LTS	NI
Phase 2		
AWPF Expansion	LTS	LTS
Ocean Desalination	LTS	LTS
LTS = Less than Significant, no mitigation proposed LTSM = Less than Significant impact with mitigation NI = No Impact SU = Significant and Unavoidable impact, even after implementation of mitigation		

3.12.4 Impacts and Mitigation Measures

Loss of Known Mineral Resources

Impact MIN 3.12-1: The proposed projects could have a significant impact if they would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Phase 1

Advanced Water Purification Facility

The proposed AWPf would be located within the city of Ventura or in nearby unincorporated Ventura County within a 5- to 20-acre site. Three alternative AWPf locations have been identified, referred to as the Harbor Boulevard site, Transport Street site, and the Portola Road site. As shown in Figure 3.12-1, the Transport Street site and Portola Road site are located within an MRZ-1 area, which contains little or no significant mineral resources. Therefore, regionally

significant mineral resources are not known to occur within either of those sites, and the construction of the proposed AWPf would not prevent the future availability of a known regionally significant mineral resource to be obtained in other portions of the county. No impact would occur.

The Harbor Boulevard site would be located within an MRZ-3a designation, which has areas where available geologic information indicated known or inferred mineral occurrences. Therefore, the construction of the proposed AWPf may be implemented within an area containing mineral resources. However, if the proposed AWPf were to be implemented within this site, and mineral resources do exist in the area, the facilities would not prohibit the future extraction of mineral resources after the life span of the AWPf.

Further, according to the County of Ventura Municipal Code, Chapter 1, Article, 9, development within a MRP overlay zone (described above in the Regulatory Framework) is permitted if such uses provide a significant public benefit. The proposed AWPf would produce highly purified water for groundwater augmentation or potable reuse, providing a drought-resilient water supply source to the city of Ventura and, therefore, benefit the public. Implementation of the proposed Harbor Boulevard AWPf site would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed project would construct a product conveyance system that includes a proposed pipeline alignment conveying tertiary discharge from the existing VWRF to the new AWPf site, raw groundwater to the AWPf from the existing extraction wells, purified water from the AWPf to ASR wells and/or the Bailey Water Conditioning Facility (WCF), and conveying extracted groundwater from the ASR wells to the Bailey WCF. The proposed conveyance pipelines would be constructed throughout the city of Ventura starting at the existing VWRF site in western Ventura then travelling east to each of the potential AWPf sites then northeast to the existing Bailey WCF or existing Saticoy WCF (see Figure 3.12-1 for the proposed pipeline alignments). The conveyance pipelines would primarily travel through areas designated as MRZ-1 and would not interfere with mineral resources. Portions of pipelines near the VWRF, including the concentrate pipeline to the ocean outfall and Calleguas SMP. MRZ-3s are areas where available geologic information indicates known or inferred mineral occurrences of undetermined mineral resource significance. However, the pipelines would primarily be located within existing rights-of-way that would not include areas actively being excavated or prevent areas from being accessed for future extraction of mineral resources. Therefore, implementation of the proposed conveyance pipelines would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state. Impacts would be less than significant.

The proposed pump station associated with the product water and concentrate conveyance systems would be constructed within one of the three potential AWPf sites. The pump stations

would be located with the footprint of the AWP site and would not interfere with the exploitation of mineral resources or prevent areas from being assessed for future access of minerals, as discussed above. Therefore, impacts to mineral resources would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

. The proposed groundwater wells located in the Oxnard Plain Basin would be located within the mineral resource designated of MRZ 2 and MRZ-3a. Regionally significant mineral resources are known to occur within the MRZ 2 and MRZ-3a designation. The proposed well sites, which would be housed within a single-story structure 64 by 30 feet in size), would not be large enough to interfere with the exploitation of mineral resources. Therefore, implementation of the proposed wells would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetlands

The proposed projects would include reconfiguration of the existing wildlife/treatment ponds by adding soil and adding vegetation throughout the ponds. As shown on Figure 3.12-1, the wildlife/treatment ponds are located within MRZ-3a; however, these are existing ponds and the proposed reconfiguration would not significantly alter the ponds in such a way that mineral resources could not be explored in the future. Therefore, impacts would be less than significant.

Depending on the discharge volume, the new 35-acre treatment wetlands would be constructed on City-owned property adjacent to the VWRP. The existing wildlife/treatment ponds would remain in place. As shown in Figure 3.12-1, the proposed treatment would be located within an MRZ-3a, which has areas where available geologic information indicates known or inferred mineral occurrences. Therefore, the proposed new treatment wetlands may be implemented within an area containing mineral resources. However, if the proposed wetlands were to be implemented and mineral resources do exist in the area, the facilities would not prohibit the future extraction of mineral resources after the life span of the wetlands.

Further, as described above, development within a MRP overlay zone is permitted if such uses provide a significant public benefit. Implementation of the constructed treatment wetlands would help to reduce nutrients in the VWRP discharge to the Santa Clarita River Estuary (SCRE), which would benefit the water quality and habitat for wildlife within the SCRE. Therefore, implementation of the proposed treatment wetlands would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state, and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

The upgrades would include replacing the aeration blowers and existing gravity thickener and installation of a new anoxic tank within the existing VWRF. As shown in Figure 3.12-1, the proposed treatment upgrades would be located within an MRZ-3a designation, which has areas where available geologic information indicated known or inferred mineral occurrences. However, the upgrades would be with existing the VWRF and would not result in the loss of availability of mineral resources that would be of value to the region and residents of the state. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public rights-of-way. As shown in Figure 3.12-1, the concentrate discharge facility would be located within an MRZ-3a area. This facility would be installed underground and would not interfere with the future exploitation of mineral resources in the coastal zone. The outfall would be constructed within the ocean and the conveyance pipeline would be located within the public right-of-way and would not interfere with mineral extraction. Therefore, impacts would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The discharge pipeline to the Calleguas SMP would primarily be located within areas designated as MRZ-1 with some areas designated as MRZ-3a near the Santa Clara River; however, the discharge pipeline to the Calleguas SMP would be located within the public right-of-way and would not interfere with mineral extraction. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed AWP expansion would occur within the same location as the proposed AWP. Refer to the Phase 1 analysis for the proposed AWP above for the potential impacts related to the loss of availability of mineral resource that would be of value to the region and residents of the state. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. Refer to the Phase 1 analysis for the proposed AWPf above for the potential impacts related to the loss of availability of mineral resource that would be of value to the region and residents of the state. Impacts for construction and operation of desalination facilities at the proposed AWPf would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries. The location of the ocean intake system is currently undetermined; however, temporary construction impacts near or within the ocean floor would not interfere with mineral extraction. Once in operation, the proposed ocean intake system would be subsurface in the Pacific Ocean. Minerals would not be extracted from the ocean; therefore, no impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Loss of Mineral Resource Recovery Site

Impact MIN 3.12-2: The proposed projects could have a significant impact if they would result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan.

Phase 1

Advanced Water Purification Facility

Under the County of Ventura's Mineral Resource Management Program, MRP Zones were developed to ensure access to important mineral resources. This designation and zone covers all MRZ-2 areas. Based on the review of the County of Ventura General Plan, the Transport Street and Portola Road AWPf sites would not be located within a mineral resource overlay zone or recovery site. Therefore, those facilities would have no impacts related to the loss of locally important mineral resources.

The Harbor Boulevard AWPf site would be located within an MRZ-3a area. As a result, the construction of the AWPf has the potential to result in the interim loss of locally important mineral resources in the city of Ventura. However, the interim loss of locally important mineral resources would not prohibit the future extraction of mineral resources after the life span of the AWPf. Therefore, implementation of the proposed facilities would not result in the long-term loss of availability of locally important mineral resources. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed project would construct a product conveyance system that includes raw groundwater to the AWPf from the proposed extraction wells, purified water from the AWPf to ASR wells and/or the Bailey WCF and/or Saticoy WCF, and extracted groundwater from the ASR wells to the Bailey WCF and/or Saticoy WCF. The proposed pump stations would be located within the existing VWRf and at the proposed AWPf. The pipelines would run within and along public rights-of-way and would not interfere with areas of land containing locally important mineral resource recovery sites. Impacts would be less than significant.

The proposed pump stations associated with the water and concentrate conveyance system would be constructed within one of the three potential AWPf sites. As described previously, the Harbor Boulevard site would be located within an area designated as an MRP overlay zone by the County General Plan. However, as mentioned above, the interim loss of locally important mineral resources would not prohibit the future extraction of mineral resources after the life span of the AWPf. Therefore, implementation of the proposed pump stations within the AWPf would result in less than significant impacts to a mineral resource recovery site.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

The proposed groundwater wells located in the Oxnard Plain Basin would be located on lands designated MRZ-2 or MRZ-3a. Neither of these areas are protected under the mineral resource recovery zone. Therefore, implementation of the proposed groundwater wells would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

The wildlife/treatment ponds are located within an MRZ-3a designation. This designation is not protected under the mineral resource recovery zone. Therefore, reconfiguring the wildlife/treatment ponds would not result in the loss of availability of a locally-important mineral resource recovery site. No impact would occur.

New Treatment Wetlands

The new treatment wetlands would be constructed on City-owned property adjacent to the VWRf. As shown on Figure 3.12-1, the proposed treatment would be located within a MRZ-3a zone. This designation is not protected under the mineral resource recovery zone. Therefore,

reconfiguring the wildlife/treatment ponds would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

The VWRF treatment upgrade would occur within the existing VWRF. As shown in Figure 3.12-1, the proposed treatment upgrade would be located within an MRZ-3a designation, which is not protected under the mineral resource recovery zone. Therefore, the VWRF treatment upgrade project would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public rights-of-way, within an MRZ-3a area. The new outfall would not be located within a City- or County-designated mineral resource recovery site. Therefore, construction of the new outfall would not result in the loss of availability of a locally important mineral resource recovery site. No impact would occur.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

As shown in Figure 3.12-2, the discharge pipeline to the Calleguas SMP would primarily be located within areas designated as MRZ-1 with some areas designated as MRZ-3a near the Santa Clara River. Neither of these areas is delineated on the County's General Plan as a mineral resource recovery site. Further, the pipeline would be located within the public right-of-way and would not interfere with mineral extraction. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

The proposed AWPf expansion would occur at the same location as the proposed AWPf. Refer to the above Phase 1 analysis for the proposed AWPf for the potential impacts related to the loss of mineral resources within a mineral resource recovery zone. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facilities would be constructed at the same location as the proposed AWPf. Refer to the above Phase 1 analysis for the proposed AWPf for the potential impacts related to the loss of mineral resources within a mineral resource recovery zone. Impacts for construction and operation of desalination facilities at the proposed AWPf would be less than significant.

Ocean Intake

The location of the ocean intake system is currently undetermined; however, temporary construction impacts near or within the ocean floor would not interfere with mineral extraction within a local mineral resource recovery site. Once in operation, the proposed ocean intake system would be subsurface in the Pacific Ocean. Minerals would not be extracted from the ocean; therefore, no impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

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3.13 Noise

This section addresses the potential noise impacts of the Ventura Water Supply Projects. The section includes a description of the environmental setting to establish baseline conditions for noise; a summary of the regulations related to noise; and an evaluation of the proposed projects' potential noise effects.

3.13.1 Existing Environmental Setting

Noise Fundamentals

Noise Principals and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted (i.e., loud, unexpected, or annoying) sound. Acoustics is defined as the physics of sound and addresses its propagation and control (Caltrans 2013). In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound (Caltrans 2013).

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum (Caltrans 2013).

The typical human ear is not equally sensitive to the frequency range from 20 to 20,000 Hz. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to these extremely low and extremely high frequencies. This method of frequency filtering or weighting is referred to as A-weighting, expressed in units of A-weighted decibels (dBA), which is typically applied to community noise measurements (Caltrans 2013). Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in **Figure 3.13-1, Decibel Scale and Common Noise Sources**.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time; a noise level is a measure of noise at a given instant in time, as presented in Figure 3.13-1. However, noise levels rarely persist at that level over a long period of time. Rather, community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many unidentifiable individual contributors. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources, such as slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual (Caltrans 2013).

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors are used to characterize environmental noise levels over time, which are applicable to the proposed Project (Caltrans 2013).

L_{eq}: The equivalent sound level over a specified period of time, typically, 1 hour (L_{eq}). The L_{eq} may also be referred to as the average sound level.

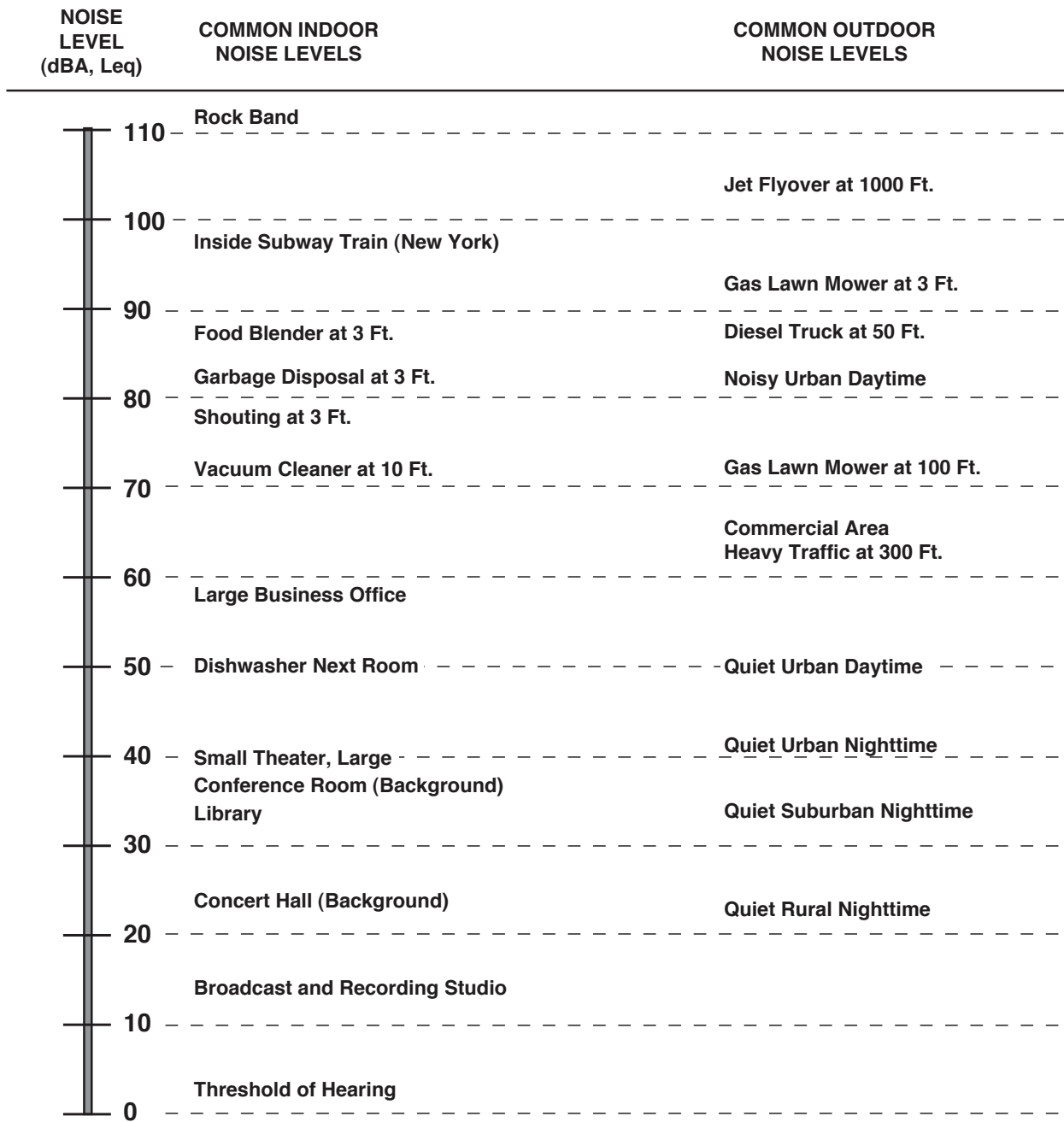
L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_x: The noise level exceeded a percentage of a specified time period. For instance, L₅₀ and L₉₀ represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

L_{dn}: The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).

CNEL: The Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day that includes an addition of 5 dB to measured noise levels between the hours of 7:00 a.m. to 10:00 p.m. and an addition of 10 dB to noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.



SOURCE: State of California, Department of Transportation (Caltrans), Technical Noise Supplement (TeNS). October 1998. Available: [http://www.dot.ca.gov/hq/env/noise/pub/Technical Noise Supplement.pdf](http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf)

Ventura Water Supply Projects

Figure 3.13-1
Decibel Scale and Common Noise Sources

Sensitive Receptors

Some land uses are more sensitive to noise levels than others due to the types of activities typically associated with the uses. Noise-sensitive land uses generally include, but are not necessarily limited to, schools, hospitals, rest homes, long-term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. These sensitive land uses, when compared to non-sensitive uses such as commercial and industrial land uses, depend on a low-level noise environment to promote the well-being of their occupants and visitors.

Effects of Noise on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and
- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep (Caltrans 2013).

With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur (Caltrans 2013):

- Except in carefully controlled laboratory experiments, a change of 1 dBA in ambient noise levels cannot be perceived;
- Outside of the laboratory, a 3 dBA change in ambient noise levels is considered to be a barely perceivable difference;

- A change in ambient noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in ambient noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion; therefore, the dBA scale was developed. Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. Under the dBA scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source (Caltrans 2013).

Noise Attenuation

When noise propagates over a distance, the noise level reduces with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as “spherical spreading.”

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (i.e., reduce) at a rate between 6 dBA for acoustically “hard” sites and 7.5 dBA for “soft” sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 at 100 feet, 68 dBA at 200 feet, etc.). Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which in addition to geometric spreading, provides an excess ground attenuation value of 1.5 dBA (per doubling distance) (Caltrans 2013).

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as “line” sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as “cylindrical spreading.”

Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 2013). Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels.

Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase

sound levels at long distances (e.g., more than 500 feet). Other factors such as air temperature, humidity, and turbulence can also have significant effects on noise levels (Caltrans 2013).

Fundamentals of Vibration

Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures, which generally dissipate with distance from the vibration source. Because energy is lost during the transfer of energy from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As discussed in the California Department of Transportation's (Caltrans) *Transportation and Construction Vibration Guidance Manual*, operation of construction equipment generates ground vibration. Maintenance operations and traffic traveling on roadways can also be a source of such vibration. If its amplitudes are high enough, ground vibration has the potential to damage structures, cause cosmetic damage or disrupt the operation of vibration-sensitive equipment such as electron microscopes and advanced technology production and research equipment. Ground vibration and groundborne noise can also be a source of annoyance to individuals who live or work close to vibration-generating activities (Caltrans 2013).

In describing vibration in the ground and in structures, the motion of a particle (i.e., a point in or on the ground or structure) is used. The concepts of particle displacement, velocity, and acceleration are used to describe how the ground or structure responds to excitation. Although displacement is generally easier to understand than velocity or acceleration, it is rarely used to describe ground and structure borne vibration because most transducers used to measure vibration directly measure velocity or acceleration, not displacement. Accordingly, vibratory motion is commonly described by identifying the peak particle velocity (PPV) (Caltrans 2013).

3.13.2 Regulatory Framework

Federal

Noise Control Act of 1972

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the USEPA issued guidance levels for the protection of public health and welfare in residential areas of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA (USEPA 1974). These guidance levels are not considered as standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the Project.

Occupational Safety and Health Act of 1970

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. Sections 1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to

protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

Groundborne Vibration

Structural Damage

Groundborne vibration levels resulting from construction activities on the Project Site were estimated using data published by the Federal Transit Administration (FTA) in its 2006 Transit Noise and Vibration Impact Assessment. The potential vibration levels at off-site sensitive locations resulting from implementation of the Project are analyzed against the vibration thresholds established by the FTA to determine whether an exceedance of allowable vibration levels would occur. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities, which are shown in **Table 3.13-1**. Category IV buildings include historic buildings structures that are extremely susceptible to vibration damage.

**TABLE 3.13-1
CONSTRUCTION VIBRATION DAMAGE CRITERIA**

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage (historic interest)	0.12

SOURCE: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

Human Annoyance

The FTA has developed criteria for evaluating human annoyance for groundborne vibration impacts for the following three land use categories: Vibration Category 1 – High Sensitivity, Vibration Category 2 – Residential, and Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration thresholds associated with human annoyance for these three land use categories are shown in **Table 3.13-2**. No thresholds have been adopted or recommended for commercial and office uses by the FTA.

**TABLE 3.13-2
GROUNDBORNE VIBRATION IMPACT CRITERIA FOR HUMAN ANNOYANCE**

Land Use Category	Frequent Events ^a	Occasional Events ^b	Infrequent Events ^c
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB ^d	65 VdB ^d	65 VdB ^d
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

^a "Frequent Events" is defined as more than 70 vibration events of the same source per day.

^b "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

^c "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.

^d This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE: FTA, Transit Noise and Vibration Impact Assessment, Table 8-1, May 2006.

State

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land use types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable." In addition, California Government Code Section 65302(f) requires each county and city in the state to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(g) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Regional

Ventura County General Plan

2.16.1 Goal

To protect the health, safety and general welfare of County residents by elimination or avoidance of adverse noise impacts on existing and future noise sensitive uses.

2.16.2 Policies

1. All discretionary development shall be reviewed for noise compatibility with surrounding uses. Noise compatibility shall be determined from a consistent set of criteria based on the standards listed below. An acoustical analysis by a qualified acoustical engineer shall be required of discretionary developments involving noise exposure or noise generation in excess of the established standards. The analysis shall provide documentation of existing and projected noise levels at on-site and off-site receptors, and shall recommend noise control measures for mitigating adverse impacts.
 - 1) Noise sensitive uses proposed to be located near highways, truck routes, heavy industrial activities and other relatively continuous noise sources shall incorporate noise control measures so that:
 - a. Indoor noise levels in habitable rooms do not exceed CNEL 45.
 - b. Outdoor noise levels do not exceed CNEL 60 or L_{eq1H} of 65 dB(A) during any hour.
 - 2) Noise sensitive uses proposed to be located near railroads shall incorporate noise control measures so that:
 - a. Guidelines 1) a. and 1) b. above are adhered to.
 - b. Outdoor noise levels do not exceed L_{10} of 60 dB(A).
 - 3) Noise sensitive uses proposed to be located near airports:
 - a. Shall be prohibited if they are in a CNEL 65 or greater, noise contour.
 - b. Shall be permitted in the CNEL 60 to CNEL 65 noise contour area only if means will be taken to ensure interior noise levels of CNEL 45 or less.
 - 4) Noise generators, proposed to be located near any noise sensitive use, shall incorporate noise control measures so that ongoing outdoor noise levels received by the noise sensitive receptor, measured at the exterior wall of the building, does not exceed any of the following standards:
 - a. L_{eq1H} of 55dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 6:00 a.m. to 7:00 p.m.
 - b. L_{eq1H} of 50dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 7:00 p.m. to 10:00 p.m.
 - c. L_{eq1H} of 45dB(A) or ambient noise level plus 3dB(A), whichever is greater, during any hour from 10:00 p.m. to 6:00 a.m.
 - 5) Construction noise shall be evaluated and, if necessary, mitigated in accordance with the County Construction Noise Threshold Criteria and Control Plan.

2. Discretionary development which would be impacted by noise, or generate project related noise which cannot be reduced to meet the standards prescribed in Policy 2.16.2-1., shall be prohibited. This policy does not apply to noise generated during the construction phase of a project.
3. The priorities for noise control shall be as follows:
 - 1) Reduction of noise emissions at the source.
 - 2) Attenuation of sound transmission along its path, using barriers, landforms modification, dense plantings, and the like.
 - 3) Rejection of noise at the reception

Local

City of San Buenaventura General Plan

The General Plan outlines those Policies and Actions that serve to protect Our Healthy and Safe Community as follows:

Policy 7E: Minimize the harmful effects of noise.

Action 7.32: Require acoustical analyses for new residential developments within the mapped 60 decibel (dBA) CNEL contour, or within any area designated for commercial or industrial use, and require mitigation necessary to ensure that:

- Exterior noise in exterior spaces of new residences and other noise sensitive uses that are used for recreation (such as patios and gardens) does not exceed 65 dBA CNEL, and
- Interior noise in habitable rooms of new residences does not exceed 45 dBA CNEL with all windows closed.

Action 7.33: As funding becomes available, construct sound walls along U.S. 101, SR 126, and SR 33 in areas where existing residences are exposed to exterior noise exceeding 65 dBA CNEL.

Action 7.34: Request that sound levels associated with concerts at the County Fairgrounds be limited to 70 dBA at the eastern edge of that property.

Action 7.35: Request the termination of auto racing at the County fairgrounds.

Action 7.36: Amend the noise ordinance to restrict leaf blowing, amplified music, trash collection, and other activities that generate complaints.

Action 7.37: Use rubberized asphalt or other sound reducing material for paving and re-paving of City streets.

Action 7.38: Update the Noise Ordinance to provide standards for residential projects and residential components of mixed-use projects.

City of San Buenaventura Noise Ordinance

The City Noise Ordinance provides exterior noise standards within the City. The following references are those portions of the Noise Ordinance that may be applicable to the project.

The City Municipal Code has issued standards in regard to noise levels at receiving properties within a City-designated noise zone, as shown in **Table 3.13-3** below. Section 10.650.130 of the Municipal Code prohibits unnecessary, excessive, or annoying noise in the City. The ordinance does not control traffic noise but applies to all noise sources located on private property including traffic noise. As part of this ordinance, properties within the City are assigned a noise zone based on their corresponding land use. “Noise-sensitive” properties are designated as Noise Zone I; residential properties are designated Noise Zone II; commercial properties are included in Noise Zone III, and industrial/agricultural districts are designated as Noise Zone IV. The Ordinance also limits the amount of noise generated by uses during normal operation that may affect the surrounding areas.

The noise standards shown in Table 3.13-3, City of Ventura Exterior Noise Levels, apply to any noise-generating activity that exceeds the applicable level for a cumulative period of more than 30 minutes in any hour. Section 10.650.150 designates hours of construction between the hours of 7:00 a.m. and 8:00 p.m. and exempts construction from the noise levels listed in Table 3.13-3.

**TABLE 3.13-3
CITY OF VENTURA EXTERIOR NOISE LEVELS**

Time Interval	Noise Sensitive Properties (Zone I)	Noise Sensitive Properties (Zone II)	Commercial Properties (Zone I)	Industrial and Agricultural Properties (Zone IV)
7:00 a.m. to 10:00 p.m.	50 dBA	50 dBA	60 dBA	70 dBA
10:00 p.m. to 7:00 a.m.	45 dBA	45 dBA	55 dBA	70 dBA

SOURCE: City of Ventura, Designated Noise Zones, Section 10.650.130(B).

For noise levels that last less than 30 minutes, the following standards apply: maximum noise levels equal to the value of the noise standard plus 5 dB(A) for a cumulative period of no more than 15 minutes in any hour; 10 dB(A) for a cumulative period of no more than 5 minutes in any hour; 15 dB(A) for a cumulative period of no more than 1 minute in any hour; or 20 dB(A) for any period of time. If the ambient sound level exceeds the allowable exterior standard, the ambient levels become the standard.

Multifamily residential interior noise standards are 45 dB(A) from 7:00 a.m. to 10:00 p.m. and 40 dB(A) from 10:00 p.m. to 7:00 a.m.

Section 10.650.170 exempts newly constructed or modified public utility facilities constructed in an industrial zone in a mixed industrial/residential area from the requirements of the Chapter 10.650 if the facilities result in a lessening of pre-existing noise levels emanating from the public utility site, and if the total noise level emanating from the site does not exceed 60 dBA as measured at any receiving property. Where a project is installed or constructed in stages, the “pre-existing noise levels emanating from the public utility site,” as used herein, shall mean the noise level existing prior to the commencement of the first stage of such project.

City of Oxnard 2030 General Plan

Noise Consideration in Development Review

Goal SH-6: Consideration of noise levels and impacts in the land use planning and development process.

SH-6.1: Construction Noise Control – Provide best practices guidelines to developers for reducing potential noise impacts on surrounding land uses.

SH-6.2: Limiting Construction Activities – Continue to limit construction activities to the hours of 7 a.m. to 7 p.m., Monday through Saturday. No construction shall occur hours, on Sundays, or national holidays without permission from the City.

SH-6.3: Buffering of Sensitive Receptors – Require noise buffering and/or other construction treatments in development located near major streets, highways, the airport, railroad tracks, or other significant noise sources as recommended by a noise analysis.

SH-6.4: New Development Noise Compatibility – Require that proposed development projects not generate more noise than that classified as “satisfactory” based on CEQA Thresholds of significance on nearby property.

SH-6.5: Land Use Compatibility with Noise – Encourage non-noise sensitive land uses to located in areas that are permanently committed to noise producing land uses, such as transportation corridors and industrial zones.

SH-6.9: Minimize Noise Exposure to Sensitive Receptors – Prohibit the development of new commercial, industrial, or other noise generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, child and daycare facilities, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA.

SH-6.11: Exceptions to Noise Standards – Grant exceptions to the noise standards for commercial and industrial uses only if a recorded noise easement is conveyed by the affected property owners.

3.13.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to noise. The issues presented in the environmental checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (refer to Impact NOISE 3.13-1).
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (refer to Impact NOISE 3.13-2).
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (refer to Impact NOISE 3.13-3).

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels (refer to Impact NOISE 3.13-4).
- For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels (refer to Impact NOISE 3.13-5).

A summary of the findings for each impact is presented in **Table 3.13-4**. The analyses below support these findings.

TABLE 3.13-4
SUMMARY OF NOISE IMPACT DETERMINATIONS

Impacts	3.13-1 Noise Level Standards	3.13-2 Groundborne Vibration	3.13-3 Permanent Ambient Noise Levels	3.13-4 Temporary Ambient Noise Levels	3.13-5 Airport Land Use Plan and Airstrips
Phase 1					
Advanced Water Purification Facility	LTSM	LTSM	LTS	LTS	NI
Water Conveyance System	LTSM	LTSM	LTS	LTS	NI
Groundwater Wells	LTS	LTSM	LTS	LTS	NI
Wildlife/Treatment Wetlands	LTS	LTSM	LTS	LTS	NI
VWRF Treatment Upgrade	LTS	LTSM	LTS	LTS	NI
Concentrate Discharge Facility	SU	LTSM	LTS	SU	NI
Phase 2					
AWPF Expansion	LTS	LTS	LTS	LTS	NI
Ocean Desalination	SU	LTSM	LTS	SU	NI

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

Construction-Related Background

Construction of Ventura WaterPure Phase 1 would take approximately 3–5 years, with a tentative start date in mid-June 2020. The Phase 2 Expanded AWPf and/or Ocean Desalination Projects would take approximately 10 to 15 years starting in 2024. **Table 3.13-5** contains a tentative work schedule by component. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. In addition, there may be a need for occasional nighttime and weekend work. The City will obtain a noise variance for any work occurring outside the hours of 7:00 a.m. and 8:00 p.m., and for any holiday or weekend work, in compliance with local regulations.

**TABLE 3.13-5
VENTURA WATER SUPPLY CONSTRUCTION SCHEDULE**

Project Component	Proposed Construction Timeframe
Ventura Water Supply Projects Phase 1	
AWPF	June 2020 - December 2023
Water Conveyance System	June 2020- March 2023
Groundwater Wells	January 2021 - December 2023
Wildlife Treatment Pond Reconfiguration/Treatment Wetland	June 2021 - February 2025
VWRF Treatment Upgrade	June 2021 - April 2022
Concentrate Discharge Facility	January 2021 - March 2023
Ventura Water Supply Projects Phase 2	
Ocean Desalination	May 2024 – December 2025
AWPF Expansion	May 2024 – December 2035

Construction of the new facilities would involve the use of a variety of heavy construction equipment within the sites identified for construction of each Ventura Water Supply Projects component. The majority of the equipment and vehicles would be associated with the intensive earthwork, and the structural and paving phases of construction. Large construction equipment including backhoes, bulldozers, compactors, cranes, excavators, haul trucks, pavers, and rollers would be used during the construction phase of the proposed projects. A summary of proposed construction areas, earthwork, construction equipment types, vehicle and truck trips, and construction duration for each primary project component is presented in **Table 2-6**.

Construction of the project would require the use of heavy equipment during the demolition, grading, and excavation activities associated with the complete street improvements. During each stage of development, there would be a different mix of equipment. As such, construction activity noise levels at and near the project would fluctuate depending on the particular type, number, and duration of use of the various pieces of construction equipment.

Individual pieces of construction equipment anticipated during project construction could produce maximum noise levels of 77 dBA to 90 dBA L_{max} at a reference distance of 50 feet from the noise source, as shown in **Table 3.13-6**. These maximum noise levels would occur when equipment is operating at full power. The estimated usage factors for the equipment are also shown in Table 3.13-5, which is based on FHWA's RCNM User's Guide.

**TABLE 3.13-6
CONSTRUCTION EQUIPMENT NOISE LEVELS**

Construction Equipment	Estimated Usage Factor, %	Noise Level at 50 Feet (dBA, Lmax)
Air Compressor	50%	78
Backhoe/Track Hoe	40%	80
Concrete Mixer Truck	40%	79
Concrete Saw	20%	90
Crane	40%	81
Drill Rig Truck	20%	79
Dump/Haul Truck	20%	76
Excavator	40%	81
Forklift	10%	75
Generator Set	50%	81
Grader	40%	85
Pavement Scarifier	20%	90
Paver	50%	77
Roller	20%	80
Rubber Tired Dozer	40%	82
Scissor Lift	20%	75
Scraper	40%	84
Skip Loader	50%	79
Tractor/Loader/Backhoe	25%	80
Welder	40%	74
Wiring Pulling Machine	50%	78

SOURCE: FHWA 2006

3.13.4 Impacts and Mitigation Measures

Noise Level Standards

Impact NOISE 3.13-1: The proposed projects could result in a significant impact if they would expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Phase 1

Advanced Water Purification Facility

Construction of the AWPf would consist of site clearing and grading, excavation, building construction, equipment installation, and site completion activities. Construction equipment could include the following: excavators, graders, backhoe, bulldozer, loader, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck.

Construction equipment used on construction sites often operate under less than full power conditions, or partial power. To more accurately characterize construction-period noise levels, the

average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-7**. These average noise levels are based on the quantity, type, and usage factors for each type of equipment that would likely be used during each construction stage and are typically attributable to multiple pieces of equipment operating simultaneously.

**TABLE 3.13-7
AWPF CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY DISTANCE AND CONSTRUCTION STAGE**

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	50 feet	500 feet	1,000 feet	1,300 feet	2,500 feet
Site Preparation	80	75	58	56	50
Grading	83	78	61	59	53
Trenching	81	76	58	56	50
Construction	78	74	57	55	49
Paving	84	79	60	58	53
Architectural Coating	77	71	54	52	46

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - $20\text{LOG}(x/50)$), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

The nearest noise-sensitive uses would be located beyond 1,300 feet from any of the proposed AWPf sites. As shown in Table 3.13-7, the average temporary construction-period (i.e., various construction stage) noise levels would range from approximately 52 to 59 dBA at 1,300 feet from construction activities. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. Therefore, construction noise impacts would be less than significant.

Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to and from the AWPf site. Construction trucks and vehicles would use the regional circulation system as well as the main roadways within Ventura. Traffic entering and leaving the site would include workers' daily arrival and departure, equipment deliveries, hauling of excavation spoil, concrete deliveries, and other construction related traffic. While construction of the proposed AWPf would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, traffic levels would not substantially increase and would be temporary in nature, as traffic levels would return to pre-construction conditions once construction is complete.

Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. However, if occasional nighttime and weekend work is needed, the City will obtain a noise variance for any work occurring outside the hours of 7:00 a.m. and 8:00 p.m., and for any holiday or weekend work, in compliance with local regulations. Construction noise could impact sensitive receptors during construction resulting in noise impacts to sensitive receptors.

Implementation of **Mitigation Measures NOISE-1** and **NOISE-2** would lessen construction noise and ensure that impacts at sensitive receptors would be minimized. Mitigation Measure NOISE-1 requires that construction equipment be equipped with properly operating and maintained mufflers and other state-required noise attenuation devices. Mitigation Measure NOISE-2 requires that the City provide a qualified “Noise Disturbance Coordinator” to respond to local complaints, should they arise. Therefore, off-site construction traffic noise impacts would be less than significant.

The proposed AWPf would operate 24 hours a day, 365 days a year and would be staffed around the clock. Routine deliveries of chemicals to the site and hauling of residual materials from the site would be conducted during normal day-shift working hours throughout the traditional work week. It is anticipated that the AWPf would require approximately 20 new full-time employees to operate the facility. While these operational activities would generate additional truck trips on the surrounding local and regional circulation system, the number of truck trips during operation would be minimal. Since operation of the proposed AWPf would not substantially generate new trips, the effects on the surrounding circulation system would be negligible and would not cause existing roadway levels of service to decrease. Therefore, impacts to the existing noise environment during operation of the proposed AWPf would be less than significant.

The operation of mechanical equipment typical for developments like the AWPf, such as air conditioners, fans, and related equipment, may generate audible noise levels. Mechanical equipment for the facility would be located on rooftops or within buildings and would be shielded from nearby land uses to attenuate noise and avoid conflicts with adjacent uses. In addition, all mechanical equipment would be designed with appropriate noise control devices, such as sound attenuators, acoustics louvers, or sound screen/parapet walls, to comply with noise limitation requirements provided in Section 10.650.130 of the City of Ventura. The City would comply with the requirement to install mechanical equipment that would generate noise levels below this threshold, consistent with applicable regulatory requirements. As a result of these design criteria, noise impacts from operations would be less than significant.

Mitigation Measures:

NOISE-1: Prior to construction, the City of Ventura shall ensure that the contractor specifications stipulate that:

- All construction equipment, fixed or mobile, is equipped with properly operating and maintained mufflers and other state-required noise attenuation devices.
- When feasible, construction haul routes shall avoid noise-sensitive uses (e.g., residences, convalescent homes).
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from the nearest noise-sensitive receptors.
- The project shall provide noise blanket/temporary noise barriers between the active areas and residential buildings.

NOISE-2: Throughout project construction and operation, the City of Ventura shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints as soon as possible.

- The City shall establish and disseminate a 24/7 hotline telephone number for use by the public to report any undesirable project noise conditions. If the telephone number is not staffed 24 hours per day, the City shall include an automatic answering feature with date and time stamp recording to answer calls when the phone is unattended.
- The City shall designate a Noise Disturbance Coordinator during construction and permanently once the facility is operational. The Noise Disturbance Coordinator shall assist in resolving noise complaints to minimize impacts while maintaining the objectives of the construction and operation of the facility. The Noise Disturbance Coordinator shall report all noise complaints to the City program manager.
- For construction noise complaints received outside of the construction hours and days allowed (Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m.), the Noise Disturbance Coordinator shall take immediate steps to determine whether project construction is causing the noise and, if so, to reduce the noise level of that activity or take other appropriate action to remedy the complaint as quickly as possible.
- For construction activities near local residences, the Noise Disturbance Coordinator shall have the authority to require the installation of a temporary noise barrier to reduce noise impacts to the closest sensitive receptors. The noise barriers shall be tall enough to effectively block sight-lines of the construction to the closest residences. The contractor shall install noise barriers as directed by the Noise Disturbance Coordinator to minimize construction noise and resolve noise complaints.

Deliveries to the site normally shall not occur before 7:00 a.m. or after 10:00 p.m. on weekdays or between 9:00 a.m. and 6:00 p.m. on Saturdays, and are not allowed on Sundays. Oversized loads and other heavy-duty vehicles would primarily get to and from the site using main traffic conduits. If for reasons of critical operational needs these hours must be violated, the City shall notify adjacent residences of the unusual circumstance at least 2 days in advance.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed project would install a system of conveyance pipelines and a pump station to transfer water through the service area. The system would include pipelines from the extraction wells to the AWPf, tertiary water from the VWRf to the AWPf, product water from the AWPf to the injection wells for indirect potable reuse (IPR), and product water from the AWPf to the Bailey Water Conditioning Facility (WCF) and Saticoy WCF. Construction would involve trenching using a conventional cut and cover technique. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. Open trenches would range from approximately 4 to 6 feet wide and 6 to 8 feet deep. Excavation depths would vary depending on location of existing utilities. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Where pipelines run parallel to each other, installation would occur within the same trench at the same time. The average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-8**.

TABLE 3.13-8
WATER CONVEYANCE SYSTEM CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY DISTANCE AND CONSTRUCTION STAGE

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	25 feet	50 feet	100 feet	200 feet	500 feet
Demolition	87	82	77	72	66
Excavating/Trenching	87	82	77	72	66
Paving	90	84	79	73	66
Extraction Well Construction	81	76	72	67	61

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - $20\text{LOG}(x/50)$), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

The nearest noise-sensitive receptors would be located along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue approximately 25 feet from the water conveyance system pipeline construction, because the pipelines would be constructed within public rights-of-way where feasible. As shown in Table 3.13-8, the average temporary construction-period (i.e., various construction stages) noise level would range from 81 to 90 dBA L_{eq} at 25 feet, and from 67 to 73 dBA L_{eq} at 200 feet from construction activities. The pipeline would be installed at a rate of approximately 100 feet of pipe per day and would not be adjacent to any one location for long periods of time. As discussed above, the construction period would be approximately 42 months. However, each noise-sensitive receptor would be exposed to these levels of noise for a much shorter period. As discussed in Section 3.13.1, noise levels attenuate at a rate of 6 dBA L_{eq} . Construction noise levels up to 90 dBA L_{eq} would be reduced to 78 dBA at 100 feet, 72 dBA at 200 feet, and 66 dBA at 400 feet. Therefore, a noise-sensitive receptor would not be exposed to noise levels of up to 72 dBA more than 3 days. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. Section 10.650.150 of the municipal code exempts construction noise that occurs between 7:00 a.m. and 8:00 p.m. from noise standards. Nevertheless, construction noise could impact sensitive receptors during construction resulting in noise impacts to sensitive receptors. However, implementation of **Mitigation Measures NOISE-1** and **NOISE-2** would lessen construction noise and ensure that impacts at sensitive receptors would be minimized. Therefore, construction noise impacts would be less than significant.

The majority of the pipeline would be located underground with valves and minor piping being located above ground for maintenance purposes. Pipeline and pump station inspection, maintenance, and/or repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and/or maintenance of valves. It is anticipated that required maintenance and inspection activities would not result in any substantial change in noise sources at the pipeline sites. The pump station would be designed to attenuate noise using acoustic designs and enclosures to comply with the local noise ordinance. As such, the maintenance and inspection

activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures Noise-1 and Noise-2.

Significance Determination: Less than Significant with Mitigation.

Groundwater Wells

Depending on the chosen well site, construction of the proposed wells would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, well drilling, installation of well casing, gravel packing and finishing with a cement seal. Construction equipment would likely include an auger rig, drill rig, small crane, welder, pipe trailer, forklift, generator, circulation pits, Baker tanks and backhoe. The proposed wells would be constructed of High-Strength Low-Alloy steel. Drilling depth to the aquifer would be approximately 250 feet below ground surface for wells within the Oxnard Plain Basin. Construction of a well would take approximately four months. The average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-9**.

TABLE 3.13-9
GROUNDWATER AQUIFER STORAGE AND RECOVERY WELL CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY
DISTANCE AND CONSTRUCTION STAGE

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	25 feet	50 feet	100 feet	200 feet	500 feet
Demolition	87	82	77	72	66
Excavating/Trenching	87	82	77	72	66
Paving	90	84	79	73	66
Extraction Well Construction	81	76	72	67	61

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - 20LOG (x/50)), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

There are no noise-sensitive receptors in the vicinity of the wells located in the Oxnard Plain Basin. The wells are either located within an existing golf course or within active agricultural land. As shown in Table 3.13-9, the average temporary construction-period (i.e., various construction stages) noise level would range from 81 to 90 dBA L_{eq} at 25 feet, and from 67 to 73 dBA L_{eq} at 200 feet from construction activities. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. and is therefore exempt from City noise standards. In addition, there may be a need for occasional nighttime and weekend work. The City will obtain a noise variance for any work occurring outside the hours of 7:00 a.m. and 8:00 p.m., and for any holiday or weekend work, in compliance with local regulations. Therefore, construction noise impacts would be less than significant.

Construction of the groundwater wells would temporarily generate additional truck and vehicle trips on the local and regional circulation systems within the vicinity of the groundwater wells, traffic levels would not substantially increase and would be temporary in nature as traffic levels would return to pre-construction conditions once construction is complete. Therefore, construction traffic noise impacts would be less than significant.

The groundwater well sites would be housed within block building and would not produce excessive noise during operation. The wells would be accessed by maintenance personnel approximately two times per week. The maintenance activities would typically include equipment inspections and minor repairs. It is anticipated that required maintenance and inspection activities would not result in any substantial change in noise sources at the well sites. As such, the maintenance and inspection activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Noise from operation of the wells would be less than significant due to acoustic design criteria of the pump house enclosures.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Wildlife/treatment wetlands would be constructed to provide additional treatment to the remaining tertiary treated water prior to its discharge to the SCRE. This component may also require reconfiguration and repurposing of some or all of the existing wildlife ponds. The average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-10**.

TABLE 3.13-10
WILDLIFE/TREATMENT WETLANDS CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY DISTANCE AND CONSTRUCTION STAGE

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	50 feet	100 feet	300 feet	500 feet	1,000 feet
Demolition	83	78	69	65	59
Site Preparation	80	75	67	63	57
Excavation/Grading	83	78	70	66	61
Planting	72	68	62	58	53

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - $20\text{LOG}(x/50)$), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

The nearest noise-sensitive receptors would be located approximately 300 feet from the wildlife/treatment wetlands construction. As shown in Table 3.13-10, the average temporary construction-period (i.e., various construction stages) noise level would range from 72 to 83 dBA L_{eq} at 25 feet, and from 62 to 70 dBA L_{eq} at 300 feet from construction activities.

Construction of the wildlife/treatment wetlands and improvements to the wildlife ponds would temporarily generate additional truck and vehicle trips on Harbor Boulevard, Spinnaker Drive and the local and regional circulation systems. Traffic levels would not substantially increase and would be temporary in nature as traffic levels would return to pre-construction conditions once construction is complete. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. Therefore, off-site construction traffic noise impacts would be less than significant. For impacts of construction noise on coastal wildlife, see the Section 3.4, Biological Resources.

The wetland would require regular monitoring and maintenance for the first 2 to 3 years as the wetland vegetation becomes established. The wetlands would require monitoring for growth of species not in the planting plan (invasive species) and would require eliminating invasive plants species as the wetlands establishes. In addition, vegetation maintenance/removal projects would be required at regular intervals (3–5 years) to ensure that water flows through system as design and does not get hydraulically constricted causing elevated water levels or limited capacity. Regular water quality testing would occur to ensure that the wetland is operating properly for reducing nutrients in the VWRf treated discharge. It is anticipated that 3 to 5 new employees would be required to monitor and maintain the wetlands. It is anticipated that required maintenance activities would not result in any substantial change in noise sources at the Wildlife/Treatment Wetlands. Thus, the maintenance activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRf Treatment Upgrade

The VWRf treatment plant upgrade would include the replacement of existing blowers, replacement and upgrade of existing filters, disinfection improvements, equalization basin and the construction of a new anoxic tank. The equalization basin, pump station and new anoxic tank would be located in a disturbed unpaved area of the VWRf that is currently compacted dirt. Approximately 1,000 cubic yards of construction debris would be hauled off-site. This debris would primarily be composed of dirt. Construction would include site grading and excavation to a depth of 6 feet. A total of approximately 1,350 truck trips would be required to haul off and import materials and for worker-related travel. This component would take approximately 8 months to construct. A total of approximately 10 workers would be required daily during construction activities. The average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-11**.

TABLE 3.13-11
VWRF TREATMENT UPGRADE CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY DISTANCE AND CONSTRUCTION STAGE

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	50 feet	100 feet	300 feet	500 feet	1,000 feet
Excavation/Grading	82	76	67	62	56
Construction	78	74	66	62	57

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - $20\text{LOG}(x/50)$), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

The nearest noise-sensitive receptors would be located approximately 1,000 feet from the VWRF treatment upgrade construction. As shown in Table 3.13-11, the average temporary construction-period (i.e., various construction stages) noise level would range from 78 to 82 dBA L_{eq} at 25 feet, and from 56 to 57 dBA L_{eq} at 1,000 feet from construction activities. Construction would mainly occur Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. and is therefore exempt from City noise standards. Therefore, construction noise impacts would be less than significant.

The upgrades would include replacing the aeration blowers, filters, existing gravity thickener, and a new anoxic tank within the existing VWRF. The operational noise from the treatment upgrade components would not differ from the existing ambient noise occurring at the VWRF. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

Construction of a new ocean outfall includes a pipeline from the AWPF to the ocean where the concentrate would be discharged through an offshore outfall. The pipeline would be constructed utilizing trenchless technology to bore under the beach and avoid impacts to sensitive biological areas. The outfall into the ocean would be installed pursuant to Ocean Plan requirements to maximize dilution rates. For impacts of construction noise on marine wildlife, see Section 3.11, Marine Biology. For impacts of construction noise on coastal wildlife, see the Section 3.4, Biological Resources.

Trenchless construction would be used to install the new outfall from the coast. The pullback of the pipe from the shore to the diffuser location on the ocean floor, would potentially require operating 24 hours per day within the parking area near the coast north of the marina for several weeks. The pullback is the final stage of the HDD process. Pullback operation starts after the bore-hole is completed and has been enlarged to the required diameter. After this, a pipe is inserted into the enlarged bore hole. 24-hour operations may be required because once the pipe

pullback begins, the operation must be continuous until it is complete in order to avoid a potential collapse in the previously bored hole. A collapse would require the contractor to excavate at the point of collapse and would likely result in significant delays. The closest sensitive receptors to construction of the proposed outfall location would be single family residences on Greenock Lane. Construction would occur at a minimum of approximately 25 feet from the closest sensitive receptor.

Discharge Pipeline to the Calleguas SMP

Construction of the pipeline to the discharge pipeline to the Calleguas SMP would involve trenching using a conventional cut and cover technique or directional drilling techniques where necessary to avoid impacts to heavy traveled roadways and/or sensitive biological areas. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. Open trenches would range from approximately 4 to 6 feet wide and 6 to 8 feet deep. Excavation depths would vary depending on location of existing utilities. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Trenches would be backfilled at the end of each work day or temporarily closed by covering with steel trench plates.

Trenchless construction methods would be employed to install pipelines under the Santa Clara River, sensitive drainages, and large intersections. Trenchless installation could include either directional drilling or jack and bore methods. All trenchless installations would require an approximately 50-foot by 100-foot temporary construction area on each side of the crossing for installation shafts (pits), materials, and equipment. Complete road closures are not anticipated for installation of the conveyance pipeline.

Connecting to the Salinity Management Pipeline ocean outfall would require approximately 11 miles of 8- to 14-inch diameter pipe, which would be constructed in public right-of-way to the maximum extent practicable. Conveyance of the brine over approximately 11 miles would require up to two pumping stations: one at the VWRP, and a booster pump station located off site. The average (L_{eq}) noise levels associated with each construction stage is provided in **Table 3.13-12**.

TABLE 3.13-12
CONCENTRATE DISCHARGE FACILITY COMPONENT CONSTRUCTION AVERAGE L_{eq} NOISE LEVELS BY DISTANCE AND CONSTRUCTION STAGE

Construction Stage	Sound Level in dBA (L_{eq}) at Doubled Distance				
	25 feet	50 feet	100 feet	200 feet	500 feet
Demolition	87	82	77	72	66
Outfall	85	79	73	67	59
Excavation/Trenching	87	82	77	72	66
Paving	90	84	79	73	66

Assumes a hard surface propagation path drop-off rate of 6 dB per doubling of distance (sound level at distance X = sound level at 50 feet - $20\text{LOG}(x/50)$), which is appropriate for use in characterizing point-source (such as construction equipment) sound attenuation.

SOURCE: ESA 2018.

The nearest noise-sensitive receptors would be located along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue approximately 25 feet from construction of the pipeline to the Calleguas SMP since the pipeline would be constructed in public right-of-way to the maximum extent practicable. The closest sensitive receptors to the ocean outfall construction would be approximately 25 feet away at single family residences along Greenock Lane. As shown in Table 3.13-12, the average temporary construction-period (i.e., various construction stages) noise level would range from 85 to 90 dBA L_{eq} at 25 feet, and from 72 to 73 dBA L_{eq} at 200 feet from construction activities. However, all construction besides the HDD for the outfall and the crossing of the Santa Clara River, sensitive drainages, and large intersections would occur primarily on Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. and is therefore exempt from City noise standards. The HDD operations may require 24-hour construction for several weeks and would result in noise levels up to 85 dBA at 25 feet. 24-hour operations may be required because once the pipe pullback begins, the operation must be continuous until it is complete in order to avoid a potential collapse in the previously bored hole. Construction of the new outfall pipelines would therefore exceed City nighttime noise standards of 45 dBA. Implementation of **Mitigation Measures NOISE-1, NOISE-2, NOISE-3, and NOISE-4** would lessen the impacts of construction. Effective noise barriers, generator housings, and mufflers could reduce noise levels by up to a combined 16 dBA and reducing outfall construction noise levels to 69 dBA. However, since noise levels are still greater than 45 dBA during nighttime hours and relocation of affected residents is voluntary, the impact would be considered significant and unavoidable.

Pipeline inspection, maintenance, and/or repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and/or maintenance of valves and corrosion control. It is anticipated that required maintenance and inspection activities would not result in any substantial change in noise sources at the Concentrate Discharge Facility. As such, the maintenance activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures NOISE-1 through NOISE-4.

NOISE-3: Residents of properties shall be offered noise mitigation measures (e.g., hearing protection, sound proofing, white noise machines, etc.) acceptable to the residents or relocation for the duration of nearby HDD drilling for new outfall construction, which would generate construction noise levels at their property in excess of 45 dBA, L_{eq} during nighttime hours, for the duration of time that 24-hour activity occurs. Based on the analyses presented in this EIR, this shall apply to residences located within the first two rows of homes to the north and within approximately 200 feet of the outfall drilling activity (i.e. homes along Greenock Lane and Nathan Lane).

NOISE-4: The project shall provide noise attenuation housings rated for up to a 10 dBA reduction for generator sets operating near sensitive receptors during new outfall HDD drilling operations.

Significance Determination: Significant and Unavoidable.

Phase 2

AWPF Expansion

The AWPf expansion would be within the footprint of the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion would not create excess noise. Impacts would be less than significant.

The operation of the expansion project would be located within the same footprint as the AWPf. As result, the maintenance and inspection activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Impacts would be less than significant impact

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

The desalination treatment components would be within same footprint of AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPf facility. Co-location of these two facilities increases efficiencies in operations and maintenance. Planning, permitting, design and construction of the ocean intake and modification of the concentrate discharge system would require approximately 10 to 15 years, and may occur in parallel with ocean water desalination facility. The construction of the intake would be very similar to the Phase 1 ocean outfall construction. The noise level would range from 85 to 90 dBA L_{eq} at 25 feet from construction activities. However, all construction besides the HDD for the intake would occur primarily on Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m and is therefore exempt from City noise standards. The HDD operations may require 24-hour construction for up to a several weeks and would result in noise levels up to 85 dBA at 25 feet. 24-hour operations may be required because once the pipe pullback begins, the operation must be continuous until it is complete in order to avoid a potential collapse in the previously bored hole. Construction of the new intake would therefore exceed City nighttime noise standards of 45 dBA. Implementation of **Mitigation Measures NOISE-1, NOISE-2, NOISE-3, and NOISE-4** would lessen the impacts of construction. Installation of the intake screens (i.e., if a subsurface intake is determined not feasible) and discharge diffusers requires that barges, support vessels, equipment and crew be mobilized offshore of the VWRf. Construction operations include anchoring, dredging, erosion control measures, and pile driving. Both the intake and the outfall would be constructed in accordance with Ocean Plan requirements.

As the desalination treatment components would be located within same footprint of AWPf site and the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the AWPf facility, the average (L_{eq}) noise levels associated with each construction stage for the desalination treatment components would be similar with construction related noise levels in Table 3.13-8. As stated previously, the nearest noise-sensitive uses would be located beyond 2,500 feet from the proposed desalination

treatment components. As shown in Table 3.13-8, the average temporary construction-period (i.e., various construction stage) noise levels would range from approximately 46 to 53 dBA at 2,500 feet from construction activities. Construction would occur primarily on Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. However, as discussed above, since the HDD operations may require 24-hour construction for up to a several weeks and would exceed the City nighttime noise standards of 45 dBA, construction noise impacts associated with the intake would be significant and unavoidable.

In addition, similar to the AWPf, construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to and from the treatment facility site. Construction trucks and vehicles would use the regional circulation system as well as the main roadways within Ventura. Traffic entering and leaving the site would include workers' daily arrival and departure, equipment deliveries, hauling of excavation spoil, concrete deliveries, and other construction related traffic.

While construction of the proposed desalination facility and subsurface ocean intake system would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, traffic levels would not substantially increase and would be temporary in nature as traffic levels would return to pre-construction conditions once construction is complete. Construction would occur mainly on Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m. Therefore, off-site construction traffic noise impacts would be less than significant.

The operation of the ocean desalination project would be similar to the AWPf. The desalination equipment would be located within the same footprint as the AWPf and would require approximately two new employees that specialize in desalination plant operations and maintenance beyond what is already needed for the AWPf. Typical maintenance would entail the inspection and/or maintenance of valves and corrosion inspections. It is anticipated that required maintenance and inspection activities would not result in any substantial change in noise sources at the ocean desalination project. As a result, the maintenance and inspection activities would not substantially increase in ambient noise levels above those noise levels existing without the project. Operational impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measures NOISE-1 through NOISE-4.

Significance Determination: Significant and Unavoidable.

Groundborne Vibration

Impact NOISE 3.13-2: The proposed projects could result in a significant impact if they would expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Phase 1

Structural Damage

Construction of the proposed project would include activities such as demolition, site preparation, grading and paving, which would have the potential to generate low levels of groundborne vibration. Persons residing and working in areas near the construction sites could be exposed to some degree of groundborne vibration or groundborne noise levels related to construction activities. Ground vibrations from construction activities only rarely reach the levels that can damage structures, but they can be perceived in the audible range and be felt in buildings very close to a construction site.

The various PPV and RMS velocity (in VdB) levels for the types of construction equipment that could operate during the construction of the proposed project are identified in **Table 3.13-13**. Construction activities would occur within 25 feet of nearby noise-sensitive land uses along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue for pipeline construction since pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. All other construction sites would be located at least 300 feet from sensitive receptors and would be exposed to vibration levels below the significance threshold as shown in Table 3.13-13.

Based on the information presented in Table 3.13-13, vibration velocities could reach as high as approximately 0.089-inch-per-second PPV at 25 feet from the operation of a large bulldozer. This corresponds to an RMS velocity level of 87 VdB at 25 feet from the large bulldozer. Residential buildings most susceptible to vibration damage is Building Category IV with a PPV of 0.2 in/sec at 25 feet (see Table 3.13-1). This is 0.111 higher than the highest construction PPV of 0.089-inch-per-second at 25 feet produced from a large bulldozer. Therefore, although some vibration may be experienced locally, vibration-related impacts from subsequent phases of the proposed project would be less than significant.

**TABLE 3.13-13
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT**

Equipment	Approximate PPV (in/sec)					Approximate RMS (VdB)				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Hoe Ram	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

SOURCE: FTA 2006.

Human Annoyance

As discussed above, the nearest residential uses along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue would be exposed to vibration velocity of 87 VdB at 25 feet from the large bulldozer, which would exceed the 72 VdB threshold for human annoyance at a residential structure as shown in Table 3.13-2. Therefore, the impact of human annoyance could be potentially significant during pipeline construction.

To reduce the potential human annoyance impact, the implementation of Mitigation Measure NOISE-1 would be required. This measure requires that operation of large construction equipment, such as a large bulldozer, shall be prohibited within 45 feet of the existing residential structures. Instead, small rubber tired construction equipment not exceeding 150 horsepower shall be used within this area during demolition, grading, and excavation operations. The use of smaller construction equipment would result in vibration levels of 71 VdB at the residential buildings along the pipeline construction. This vibration level would not exceed the vibration impact threshold for human annoyance of 72 VdB. Therefore, with implementation of **Mitigation Measure NOISE-5**, construction vibration impacts that could cause human annoyance would be reduced to a less than significant level.

Project operations that would produce vibration include the proposed mechanical system. In addition, the primary sources of transient vibration would include vehicle operation. Both of these activities would occur at varying distances from residential structures; however, as a worst-case evaluation, it is assumed that these activities could occur within 25 feet of the structures. Under this assumption, ground-borne vibration generated by each of the above-mentioned activities could generate approximately 0.001 inches per second PPV, which corresponds to an RMS velocity level of 53 VdB at any residential structures. This potential vibration level at the nearest existing residential structure would not exceed 0.2 inch per second PPV significance threshold for potential residential building damage or the 72 VdB vibration impact threshold for human annoyance. As such, vibration impacts associated with Project operation would be less than significant.

Mitigation Measures:

NOISE-5: The operation of construction equipment that generates high levels of vibration, such as large bulldozers and loaded trucks, shall be prohibited within 45 feet of existing residential structures. Instead, small construction equipment such as small rubber tired bulldozers, small rubber tired excavator, etc., not exceeding 150 horsepower shall be used within this area during demolition, grading, and excavation operations.

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

The AWPf expansion would be within the footprint of the AWPf site. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion would not generate ground-borne vibration levels above levels that could damage structures or result in a nuisance or cause human annoyance. No impact would occur.

Similar to the Phase 1 analysis above, the AWPf expansion would include mechanical systems capable of generating vibration. The proposed locations of the AWPf expansion would all be greater than 2,500 feet from any sensitive receptors. The vibration levels at this distance would be indiscernible from ambient vibration levels and impacts would be less than significant.

Ocean Desalination

Structural Damage

Construction of the ocean desalination treatment facilities would be within the same footprint of the AWPf facilities and occur beyond 2,500 feet from sensitive receptors at any of the proposed AWPf locations. Vibration levels from typical construction methods that would not include pile driving would range between 0.003 and 0.089 in/sec PPV at a distance of 25 feet. At a distance of 2,500 feet, vibration levels would be indiscernible from ambient vibration levels. Therefore, installation of the facilities would not generate ground-borne vibration levels above levels that could damage structures or result in a nuisance. Impacts would be less than significant.

As discussed above, the desalination conveyance system would include construction of pipelines within public rights-of-way. Construction activities would occur within 25 feet of nearby noise-sensitive land uses along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue for pipeline construction since pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. All other construction sites would be located at least 300 feet from sensitive receptors and would be exposed to vibration levels below the significance threshold as shown in Table 3.13-12.

Based on the information presented in Table 3.13-13, vibration velocities could reach as high as approximately 0.089-inch-per-second PPV at 25 feet from the operation of a large bulldozer. This corresponds to an RMS velocity level of 87 VdB at 25 feet from the large bulldozer. The building category most susceptible to vibration damage is Building Category IV with a PPV of 0.2 in/sec at 25 feet (see Table 3.13-1). This is 0.111 higher than the highest construction PPV of 0.089-inch-per-second at 25 feet from a large bulldozer. Therefore, although some vibration may be experienced locally, vibration-related impacts from subsequent phases of the proposed project would be less than significant.

Human Annoyance

Construction of the ocean desalination treatment facilities would be within the same footprint of the AWPf facilities and occur beyond 2,500 feet from sensitive receptors at any of the proposed AWPf locations. Vibration levels from typical construction methods that would not include pile driving would reach a maximum level of 87 VdB at a distance of 25 feet. At a distance of 2,500

feet, vibration levels would be 27 VdB and would be indiscernible from ambient vibration levels. Therefore, installation of the facilities would not generate ground-borne vibration levels above levels that could cause human annoyance. Impacts would be less than significant.

As discussed above, desalination conveyance system would include construction of pipelines within public rights-of-way. The nearest residential uses would be exposed to vibration velocity of 87 VdB at 25 feet from the large bulldozer, which would exceed the 72 VdB threshold for human annoyance at a residential structure as shown in Table 3.13-2. Therefore, the impact of human annoyance could be potentially significant during pipeline construction.

To reduce the potential human annoyance impact, the implementation of Mitigation Measure NOISE-1 would be required. This measure requires that operation of large construction equipment, such as a large bulldozer, shall be prohibited within 45 feet of the existing residential structures. Instead, small rubber tired construction equipment not exceeding 150 horsepower shall be used within this area during demolition, grading, and excavation operations. The use of smaller construction equipment would result in vibration levels of 71 VdB at the residential buildings along the pipeline construction. This vibration level would not exceed the vibration impact threshold for human annoyance of 72 VdB. Therefore, with implementation of **Mitigation Measure NOISE-5**, construction vibration impacts that could cause human annoyance would be reduced to a less than significant level.

Mitigation Measures: Implement Mitigation Measure NOISE-5.

Significance Determination: Less than Significant with Mitigation

Permanent Ambient Noise Levels

Impact NOISE 3.13-3: The proposed projects could result in a significant impact if they would create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Maintenance of the proposed project would generate noise from operation of equipment as well as from vehicular traffic to and from the related facilities. However, as discussed under Impact NOISE 3.13-1, maintenance and inspection activities would not substantially increase in ambient noise levels in the project vicinity above levels existing without the project. Specifically, maintenance and inspection activities would occur during permitted hours for residential or industrial zones of each municipality as listed in Section 10.650.130. As such, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Temporary Ambient Noise Levels

Impact NOISE 3.13-4: The proposed projects could result in a significant impact if they would create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Temporary or periodic increases in noise levels would occur in the immediate vicinity during construction activities associated with the proposed projects. As discussed under Impact NOISE 3.13-1 above, the construction activities would expose nearby existing land uses along Bristol Road, Johnson Drive, Ralston Street, and Victoria Avenue to increased noise levels as high as 90 dBA at 25 feet, which would be a substantial noise increase over existing ambient noise levels but would be temporary and typical of day-time construction activities.

Sensitive receptors adjacent to the pipeline construction would experience a periodic increase in ambient noise levels above existing levels. The pipeline would be installed at a rate of approximately 100 feet of pipe per day and would not be adjacent to any one location for long periods of time. Therefore, this temporary impact would be intermittent and short in duration at each receptor given the constantly moving construction activity associated with a pipeline. As discussed above, the construction period would be approximately 42 months. However, each noise-sensitive receptor would be exposed to these levels of noise for a much shorter period. As discussed in Section 3.13.1, noise levels attenuate at a rate of 6 dBA L_{eq} . Construction noise levels up to 90 dBA L_{eq} would be reduced to 78 dBA at 100 feet, 72 dBA at 200 feet, and 66 dBA at 400 feet. Therefore, a noise-sensitive receptor would not be exposed to noise levels of up to 72 dBA for more than 3 days.

New outfall construction may require 24-hour activity for several weeks and would therefore exceed the nighttime ambient noise threshold of 45 dBA. Implementation of **Mitigation Measures NOISE-1, NOISE-2, NOISE-3, and NOISE-4** would lessen construction noise and ensure that impacts at sensitive receptors would be minimized. However, noise levels would be 69 dBA with mitigation implemented and would still exceed the nighttime noise threshold at noise-sensitive uses and impacts would be significant and unavoidable.

Mitigation Measures: Implement Mitigation Measures NOISE 1 through NOISE 4.

Significance Determination: Significant and Unavoidable.

Airport Land Use Plan and Airstrips

Impact NOISE 3.13-5: The proposed project could result in a significant impact if it would be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and would expose people residing or working in the project area to excessive noise levels. The proposed project could result in a significant impact if it would be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

The project site is not located within an airport land use plan and it is not within two miles of a public airport or public use airport. In addition, the project site is not located within the vicinity of a private airstrip. The nearest airport is the Oxnard Airport, located approximately a mile east of the SMP alignment which would be completely underground. Therefore, the project would not expose people residing or working in the project area to excessive noise levels. No impact would occur in this regard.

Mitigation Measures: None required.

Significance Determination: No Impact.

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3.14 Population, Housing, and Environmental Justice

The proposed project includes components within the jurisdictions of County of Ventura, the City of Ventura, the City of Port Hueneme, and the City of Oxnard. This section provides the regulatory framework related to population and housing, an overview of current population estimates, projected population growth, current housing, and the potential impacts associated with these resources.

An environmental justice analysis is performed to meet the criteria to fulfill the CEQA-Plus (State Revolving Fund) guidelines and address the federal standards and orders. Specifically, this section also discusses the potential for the proposed project to disproportionately affect minority and low-income populations.

The analysis presented below focuses on the aboveground components of the proposed projects, including the Advanced Water Purification Facility (AWPF), the proposed treatment wetlands, and the proposed groundwater wells. The proposed conveyance pipelines would run underground throughout various communities in Ventura County and would not have long-term effects on any one community. The concentrate outfall would be extended along the ocean floor, and the reconfiguration of the existing ponds would be within an existing site, so they would not cause any long-term effects on the surrounding communities. Data presented was obtained from the U.S. Census Bureau 2016 census files and 2012–2016 American Community Survey (ACS) 5-year estimates.

3.14.1 Existing Environmental Setting

Population

The proposed project facilities are located in the city of Ventura, city of Oxnard, city of Port Hueneme, and unincorporated census-designated places (CDPs) within Ventura County. The county of Ventura has a population of 857,386. The city of Ventura has a population of 109,275. Between 2016 and 2017, Ventura County's and the city of Ventura's populations each grew approximately 0.4 percent (CDOF 2017). The proposed facilities could be located in 20 different census tracts within Ventura County. However, this analysis focuses on the aboveground components and the eight tracts on which they could be located: tracts 14.02, 15.02, 15.03, 15.06, 18, 25, 27, and 28. The total population of individuals within these census tracts is 45,009 (Figure 3.14-1). **Table 3.14-1** lists all of the census tracts potentially affected by the proposed project facilities using data from the 2012–2016 Census and ACS 5-year estimates.

Demographics

The demographic characteristics of the census tracts potentially affected by proposed projects - have been reviewed and summarized (see Table 3.14-1). The demographic ethnicity data provided by the U.S. Census has been organized into four categories: Black (individuals identifying primarily with a Black ethnicity), Hispanic (individuals identifying primarily with a Hispanic ethnicity), White (individuals identifying primarily with a non-Hispanic, White ethnicity), and Other (individuals identifying primarily with all other ethnicities not

aforementioned, as well as those identifying with more than one ethnicity). According to the U.S. Census, “minorities” are defined as all individuals that are not non-Hispanic, single-race Whites.

For purposes of this analysis, an area is considered to have a significantly greater minority population if the affected census tract or group of tracts has a minority population at least 10 percent greater on average than the overall city or CDP. Table 3.14-1 includes the demographic data for all cities and census tracts affected by the proposed project.

The tracts affected by the proposed project within the city of Ventura have smaller minority populations on average than the overall city. The AWPf sites would be located within tract 28 and the outfall would be located in track 25 (see Figure 3.14-1). The city of Ventura’s affected tracts have a 5.4 percent lower Hispanic population (29.1 percent, compared to 34.5 percent in the city as a whole) and a 0.2 percent lower Black population (1.2 percent, compared to 1.4 percent in the city as a whole).

**TABLE 3.14-1
DEMOGRAPHIC DISTRIBUTION BY CITY AND CENSUS TRACT**

<i>City/Census Tract</i>	Hispanic	White	Black	Other
City of Ventura	34.5%	57.2%	1.4%	6.9%
Tract 14.02	31.9%	62.1%	0%	6.0%
Tract 15.02	39.8%	50.4%	1.9%	7.9%
Tract 15.03	40.7%	47.3%	2.9%	9.1%
Tract 15.06	33.2%	59.6%	0.4%	6.8%
Tract 18	13.8%	73.4%	2.6%	10.2%
Tract 25	10.9%	82.4%	0.6%	6.1%
Tract 27	27.8%	66.5%	0%	5.7%
Tract 28	34.9%	59.2%	1.4%	4.5%
<i>Average</i>	<i>29.1%</i>	<i>62.6%</i>	<i>1.2%</i>	<i>7.0%</i>
City of Oxnard	74.3%	14.1%	2.4%	9.2%
City of Port Hueneme	56.4%	26.9%	5.0%	11.7%
Ventura County	41.9%	46.6%	1.6%	9.9%

SOURCE: Data obtained from US Census Survey, ACS 2012–2016 5-Year Estimates.

Income

Low income is classified by the California Department of Housing and Community Development (DHCD) using population and income distribution within each county. For the purposes of this project, the affected census tracts must have an average median household income of at least \$10,000 below that of the overall city or CDP to be considered significantly lower income. Furthermore, as household income classification is dependent on household size, the income amount must be equal to or below the low-income threshold designated for the average family size within the city or CDP. **Table 3.14-2** shows the Ventura County median household income

level classifications for two-, three- and four-person households. **Table 3.14.-3** shows the income data and poverty status within all affected cities and census tract sets.

TABLE 3.14-2
VENTURA COUNTY AREA MEDIAN HOUSEHOLD INCOME CLASSIFICATION IN U.S. DOLLARS

	2 persons in household	3 persons in household	4 persons in household
Extremely low income	\$24,000	\$27,000	\$29,950
Very low income	\$40,000	\$45,000	\$49,950
Low income	\$63,950	\$71,950	\$79,900
Median income	\$71,450	\$80,350	\$89,300
Moderate income	\$85,700	\$96,450	\$107,150

SOURCE: Data obtained from California Department of Community Development 2017 State Income Limits

TABLE 3.14-3
MEDIAN HOUSEHOLD INCOME AND POVERTY STATUS BY CITY AND CENSUS TRACT

City/Census Tract	Median Household Income	Percent Below Poverty Level (Individuals)
City of Ventura	\$70,541	10.7%
Tract 14.02	\$75,321	7.8%
Tract 15.02	\$58,529	11.6%
Tract 15.03	\$64,514	9.5%
Tract 15.06	\$76,836	7.0%
Tract 18	\$112,973	1.4%
Tract 25	\$80,685	8.9%
Tract 27	\$67,875	6.4%
Tract 28	\$61,466	13.7%
<i>Average</i>	<i>\$74,304</i>	<i>8.3%</i>
City of Oxnard	\$61,709	16.3%
City of Port Hueneme	\$59,592	14.4%
Ventura County	\$78,593	10.6%

Source: U.S. Census Bureau, 2018b; U.S. Census Bureau, 2018c.

The affected tracts within the city of Ventura show a higher average median household income level compared to the respective overall city median income of \$70,541. The city of Ventura's potentially affected tracts' average median household income of \$74,304 is approximately \$3,763 higher than the median income of the city. However, Tract 15.02 (\$58,529), Tract 15.03 (\$64,514), Tract 27 (\$67,875), and Tract 28 (\$61,466) are all below the median income for the city. At the average household size of three persons in the city of Ventura, \$74,304 is considered "low income." The individual tracts mentioned above are classified, on average, as "very low income" (DHCD 2017).

The tracts mentioned above do not have a significantly higher percent of population living below poverty level than their respective city. The national poverty level or threshold is determined every year by the U.S. Census Bureau.

Housing

The city of Ventura is known for various housing types with relatively high housing costs, as is typical for a coastal community (City of San Buenaventura 2013). There are approximately 42,977 housing units in the city of Ventura; **Table 3.14-4** shows the breakdown. The average household size is 2.61 for owner-occupied units and 2.67 for renter-occupied units (U.S. Census Bureau 2018d). As for housing tenure, 54.1 percent of the city's units are owner-occupied, while 45.9 percent of units are renter-occupied.

**TABLE 3.14-4
2016 HOUSING UNITS PER CITY**

City	Single-unit detached		Single-unit attached		Multi-unit (2-4 units)		Multi-unit (5+ units)		Mobile homes, Boats, RVs		Total	
	Number (Num.)	Percent (%)	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
City of Ventura	23,810	55.4%	3,826	8.9%	4,243	9.9%	8,925	20.8%	2,173	5.0%	42,977	100%
City of Oxnard	30,327	55.8%	5,119	9.4%	4,239	7.8%	11,752	21.6%	2,872	5.3%	54,309	100%
City of Port Hueneme	2,830	35.4%	2,279	28.5%	772	9.7%	2,063	25.8%	41	0.5%	7,985	100%

Source: U.S. Census Bureau, 2018d

3.14.2 Regulatory Setting

Federal

No federal regulation related to population and housing are applicable to the proposed projects.

National Environmental Policy Act (NEPA) and CEQA-Plus procedures outlined in the State Revolving Fund financing guidelines include compliance with Executive Order 12898, which outlines federal actions to address environmental justice in minority populations and low-income populations.

Executive Order 12898 states that agencies shall identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations. A new working group was created to develop strategies for programs and policies regarding minority and low-income populations to: promote enforcement of all health and environmental statutes, improve research and data collection in relation to health and environment, identify different patterns of consumption of natural resources, and ensure greater public participation.

State

California Government Code

State law mandates local communities to plan for enough housing to meet projected growth in California. Article 10.6 of the California Government Code (Sections 655801–65590) requires each County and City to prepare a Housing Element of its General Plan. The housing element is one of seven state-mandated elements that every General Plan must contain, and is required to be updated every 5 years and to be determined legally adequate by the state. The purpose of the housing element is to identify the community’s housing needs; state the community’s goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs; and define the policies and programs that the community will implement to achieve the stated goals and objectives. The Housing Element identifies and establishes policies with respect to meeting the needs of existing and future residents. It also establishes policies that will guide decision makers and sets forth an action plan to implement its housing goals.

SCAG Regional Comprehensive Plan

The rSouthern California Association of Governments (SCAG) Regional Comprehensive Plan (RCP) serves as a comprehensive planning guide, focusing on growth through the year 2035. The primary goals of the RCP are to improve the standard of living, enhance the quality of life, and promote social and economic equity. Issues related to housing availability and growth within the RCP are addressed primarily in the Land Use and Housing chapter.

SCAG Regional Transportation Plan

SCAG’s Regional Transportation Plan (RTP) provides forecasts of population, households, and employment levels for counties, subregions, cities, and census tracts within SCAG’s jurisdiction. The primary goal of the 2012–2035 RTP/Sustainable Communities Strategy is to increase mobility for the region’s residents and includes a “strong commitment to reduce emissions from transportation sources to comply with Senate Bill (SB) 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act” (SCAG 2012a).

SCAG Regional Housing Needs Assessment

State law requires that jurisdictions provide their fair share of regional housing needs. The DHCD is mandated to determine the statewide housing need. In cooperation with DHCD, local governments and councils of government are charged with determining the cities’ or region’s existing and projected housing needs as a share of the statewide housing needs. The fifth-cycle Regional Housing Needs Assessment (RHNA) allocation plan covers the planning period from October 2013 to October 2021 and identifies housing needs in each SCAG jurisdiction and allocates a fair share of that need to every community. The RHNA indicates that the county of Ventura needs to supply a total of 19,628 housing units for the planning period between 2014 and 2021 (SCAG 2012b). This total is distributed by income category, as shown in **Table 3.14-5**.

TABLE 3.14-5
COUNTY OF VENTURA REGIONAL HOUSING NEEDS ASSESSMENT ALLOCATION

Very Low	Low	Moderate	Above Moderate	Total
4,516	3,095	3,544	8,003	19,158
23.5%	16.5%	18.6%	41.4%	100%

SOURCE: Southern California Association of Governments, 2012.

Regional

County of Ventura Housing Element

Goal 3.3.1.1: Consistency with Public Facilities and Services Capacity: Ensure that the rate and distribution of growth within the County does not exceed the capacity of public facilities and services to meet the needs of the County's population and to protect the public health, safety, and welfare.

County of Ventura Public Facilities and Services Element

Goal 4.1.1.1: Plan for public facilities and services which will adequately serve the existing and future residents of the County.

Goal 4.5.1: Promote the efficient distribution of public utility facilities and transmission lines to assure that public utilities are adequate to service existing and projected land uses, avoid hazards and are compatible with the natural and human resources.

Local

City of San Buenaventura Housing Element

Goal 3 Provide adequate housing sites through appropriate land use and zoning designations to accommodate the City's share of regional housing needs.

City of Oxnard Housing Element

Policy H.2-3 Adequate Infrastructure. Ensure that residential development sites have appropriate and adequate public and private services and facilities, including wastewater collection and treatment, potable and recycled water supply, utilities, parks, schools, and other neighborhood infrastructure.

3.14.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to population and housing resources. The issues presented in the environmental checklist have been used as thresholds of significance in this section. Accordingly, the projects would have a significant adverse environmental impact if they would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure) (refer to Impact POP 3.10-1 and Section 5.0, Growth Inducement).
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere (refer to Impact POP 3.10-2).

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere (refer to Impact POP 3.10-3).

For consistency with CEQA-Plus Guidelines, applicable local plans, and agency and professional standards, the projects would be considered to have a significant effect on environmental justice if they would:

- Affect the health or environment of minority or low income populations disproportionately (refer to Impact EJ 3.10-4).

A summary of the findings for each impact is presented in **Table 3.14-6**. The analyses below support these findings.

TABLE 3.14-6
SUMMARY OF POPULATION AND HOUSING IMPACT DETERMINATIONS

Impacts	3.14-1 Induce Population Growth	3.14-2 Displace Existing Housing	3.14-3 Displace People	3.14-4 Affect Minority or Low-Income Populations
Phase 1				
Advanced Water Purification Facility	LTS	LTS	NI	LTS
Water Conveyance System	LTS	LTS	NI	LTS
Groundwater Wells	LTS	LTS	NI	LTS
Wildlife/Treatment Wetlands	LTS	LTS	NI	LTS
VWRF Treatment Upgrade	LTS	LTS	NI	LTS
Concentrate Discharge Facility	LTS	LTS	NI	LTS
Phase 2				
AWPF Expansion	LTS	LTS	NI	LTS
Ocean Desalination	LTS	LTS	NI	LTS

LTS = Less than Significant, no mitigation proposed
 LTSM = Less than Significant impact with mitigation
 NI = No Impact
 SU = Significant and Unavoidable impact, even after implementation of mitigation

3.14.4 Impacts and Mitigation Measures

Induce Population Growth

Impact POP 3.14-1: The proposed projects could result in a significant impact if they would induce substantial population growth in an area, either directly or indirectly.

The potential adverse effects of population growth are discussed in Chapter 5, Growth Inducement, of this Draft EIR. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Displace Existing Housing

Impact POP 3.14-2: The proposed projects could result in a significant impact if they would displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

The proposed Ventura Water Supply Projects are water infrastructure projects. None of the projects include the demolition but would require relocation of housing. The proposed projects would result in a temporary increase in construction workers and approximately 20 new full-time employees, and would not create a significant demand for new housing.

On March 21, 2006 the City Planning Commission adopted Resolution No. 8216, including Categorical Use Permit (CUP)-1202 and Coastal Development Permit (CDP)-510. This action allowed the City Community Services Department to issue a Facility Use Permit to the Turning Point Foundation to operate a temporary shelter campground (RiverHaven community) for a maximum of 25 homeless persons to assist residents in finding long-term housing and employment on an approximate $\frac{3}{4}$ -acre portion of a 104-acre City-owned parcel. The RiverHaven community is currently located within an area proposed for the new treatment wetland. As a result, the community would be relocated as a result of the project. The displacement of the RiverHaven community would result in a significant impact. However, with the implementation of Mitigation Measure LU-1 requiring the City to coordinate with Turning Point Foundation to identifying a satisfactory relocation site for the community would reduce impacts to less than significant (see Section 3.10 Land Use). Therefore, with the implementation of the mitigation there would be a less than significant impact related to displacement of existing housing necessitating the construction of replacement housing.

Mitigation Measures: Implement Mitigation Measure LU-1.

Significance Determination: Less than Significant with Mitigation.

Displace People

Impact POP 3.14-3: The proposed projects could result in a significant impact if they would displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The proposed Ventura Water Supply Projects are water infrastructure projects that would be located on vacant land. In addition, the proposed pipeline alignments would be constructed within existing roadway and public rights-of-way. Once in operation, the pipelines would be located entirely underground and would not impact any housing or displace people.

The proposed new treatment wetlands site is currently occupied by the RiverHaven community an authorized community that would be removed as part of the project. As a result, the community would be relocated to another city sanctioned shelter as part of the project. The mitigation measure for this impact is described above, under Impact POP 3.14-2.

Mitigation Measures: Implement Mitigation Measure LU-1.

Significance Determination: Less than Significant with Mitigation.

Affect Minority or Low-Income Populations Disproportionately

Impact EJ 3.14-4: The proposed projects could result in a significant impact if they would affect the health or environment of minority or low income populations disproportionately.

The aboveground components of the proposed project would be located within eight tracts in the City of Ventura. Tract 15.03 has a larger minority population than the average for the City, with 6.2 percent larger Hispanic population and 1.5 percent larger Black population (**Figure 3.14-1**). However, there would be no aboveground component within Tract 15.03. The only component within this tract would be the conveyance pipeline. The conveyance pipeline would require temporary construction within the public rights-of-way, but once the pipeline is installed the area would be restored to preconstruction conditions. Generally, implementation of the proposed project would not disproportionately affect the health or environment of a minority or low-income population.

The proposed locations of the groundwater wells, pump stations, AWPf, pipelines, concentrate discharge facilities and freshwater wetlands have been based on criteria such as elevation and proximity and connectivity to existing facilities. The proposed pipeline routes have been determined based on preliminary screening criteria to minimize the distance between the facilities themselves and locate facilities within existing utility easements or rights-of-way. These proposed locations allow for the efficient transport of water throughout densely-populated and urbanized areas

Viewed as specific proposed project components, the conveyance system, discharge pipeline to the Calleguas Salinity Management Pipeline, and groundwater treatment pipelines would traverse residential, commercial, agricultural, and open space areas throughout the cities of Ventura, city of Oxnard, city of Port Hueneme, and unincorporated county areas. Impacts from the construction of those components would be short-term and temporary, and would not cause any permanent impacts to the residents. Once constructed, the pipelines would be below ground, with the surface disturbance restored to pre-construction conditions. As such, the land value of the surrounding neighborhoods would not be affected, regardless of demographics or socioeconomic status.

The permanent aboveground facilities include the proposed AWPf, pump stations, groundwater wells, wildlife/treatment wetlands, and ocean desalination facility. Construction activity for the facilities would occur on site and at adjacent staging areas. The specific activities, equipment, and materials required for the construction of each type of facility are described in the Project

Description (Chapter 2). Any construction-related impacts would be short term and temporary. Therefore, there would be no permanent impacts associated with construction that would disproportionately affect the health or environment of minority and low-income populations.

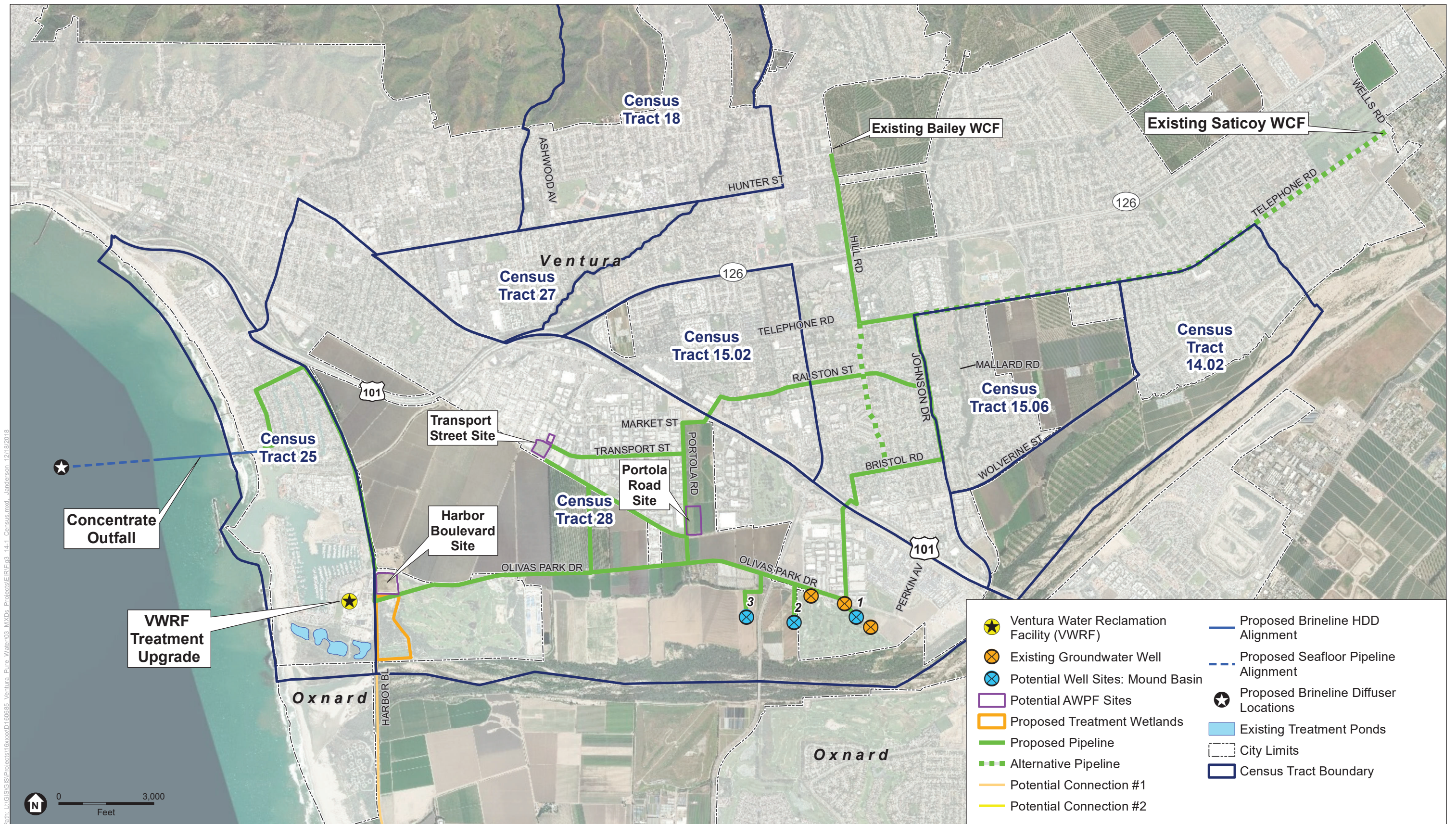
During operation of the proposed facilities, residential areas would not be significantly impacted as the location of the proposed AWPf and the proposed groundwater wells would be adjacent to residential areas but on vacant and disturbed land. The land uses surrounding the proposed AWPf sites are not characterized by low-income or minority populations. The construction and operation of the proposed AWPf would not have any significant impacts to the environment and as such would not have adverse impacts to the health of neighboring residents. The neighboring land uses would be minimally impacted from the implementation of the proposed AWPf. Operation of proposed facilities, such as pipelines, pump stations, and wells, would not create localized impacts that would negatively affect the surrounding environment or community public health (as evidenced in the analyses provided in other sections of this EIR). Additionally, the census data shows that the location of the proposed projects would not be within areas significantly characterized by low-income or minority populations. Nonetheless, the location of such facilities in areas characterized by minority or low-income populations would not adversely affect the environment or public health of such communities. Impacts are considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

References

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- Southern California Association of Governments (SCAG), 2012a. Regional Transportation Plan 2012-2035 Sustainable Communities Strategy, Adopted April 2012.
- SCAG, 2012b. 5th Cycle Regional Housing Needs Assessment Final Allocation Plan 1/1/2014-10/1/2021, August 2012.
- U.S. Census Bureau, 2018a. 2012-2016 American Community Survey 5- Year Estimates: ACS Demographic and Housing Estimates, Available online at: <https://factfinder.census.gov/>, Accessed on April 3, 2018.



SOURCE: ESRI, 2018; County of Ventura, 2018.

Ventura Water Supply Projects

Figure 3.14-1
Census Tracts

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- U.S. Census Bureau, 2018b. 2012-2016 American Community Survey 5-Year Estimates: Median Household Income in the Past 12 Months (in 2016 Inflation-Adjusted Dollars), Available online at <https://factfinder.census.gov/>, Accessed on April 3, 2018.
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- Ventura County, 2016. Ventura County General Plan Goals, Policies, and Programs, Chapter 3.3 Population and Housing, December 2016.

3.15 Public Services

This section addresses the potential impacts of the proposed projects to public services. The section includes a description of the environmental setting to establish baseline conditions for public services, a summary of the regulations related to public services, and an evaluation of the proposed projects' potential effects on public services.

3.15.1 Existing Environmental Setting

Fire Protection

County of Ventura

The Ventura County Fire Department (VCFD) provides fire protection, medical aid, hazardous material response, and other services to approximately 400,000 people in unincorporated areas of the county, including Port Hueneme, Camarillo, Moorpark, Simi Valley, and Thousand Oaks (VCFD 2018a). The VCFD operates out of 32 fire stations. Two of those stations are within or near the project area and are described below (VCFD 2018b). **Figure 3.15-1** and **Figure 3.15-2** show all of the public services throughout the project area.

City of Ventura

The Ventura Fire Department (VFD) responds to medical and disaster calls within the city of Ventura and provides disaster preparedness for the city. The VFD operates out of six stations throughout the city of Ventura. The VFD has a goal to reach any scene within 4 minutes 90 percent of the time (City of Ventura 2005).

City of Oxnard

The Oxnard Fire Department (OFD) serves the approximately 208,000 people in the city of Oxnard and operates out of eight fire stations located throughout Oxnard (City of Oxnard 2018).

City of Port Hueneme

The VCFD provides fire protection, medical aid, hazardous materials response, and other services to the city of Port Hueneme. The VCFD operates out of Fire Station 53 to serve the city of Port Hueneme. The VCFD also provides ocean rescue services at this station. The station is staffed by three firefighters (VCFD 2018c).

Police Protection

City of Ventura

The Ventura Police Department (VPD) provides law enforcement services for the city of Ventura. The VPD currently employs 177 people, of whom 134 are sworn officers, and handles on average over 90,000 calls a year (City of Ventura 2018). The VPD has a goal of response to crimes in progress in less than 6 minutes, and less than 16 for most other calls (City of Ventura 2018).

City of Oxnard

The Oxnard Police Department (OPD) currently employs 238 sworn officers. The OPD goal response time to emergency situations is 5 minutes or less and 20–45 minutes to non-emergency situations (City of Oxnard 2006).

City of Port Hueneme

The Port Hueneme Police Department (PHPD) acts as the initial responder to 10,000-plus service calls a year in Port Hueneme. The PHPD is composed of a patrol division and investigative services division. The PHPD employs 24 sworn officers and 8 full-time support staff. Response time is generally within 5 minutes (Port Hueneme 2018a).

Schools

County of Ventura

Ventura County serves approximately 140,000 students in kindergarten through twelfth grade (K–12) via its 20 school districts. Some of these districts are recognized as “unified,” meaning the school district serves both the elementary and high school students. Non-unified school districts in the area generally serve elementary (kindergarten through eighth grade) and high school (ninth grade through twelfth grade) separately.

City of Ventura

The Ventura Unified School District (VUSD) is composed of 28 schools that serve approximately 17,000 students (EDP 2018a). VUSD currently employs approximately 1,300 certificated employees (teacher, counselor, speech therapist, etc.) and 850 classified personnel (clerical roles, custodians, accounting, information processing etc.).

City of Oxnard

The city of Oxnard is served by the Oxnard Union High School District, the Oxnard School District, and the Ocean View School District. The Oxnard School District serves approximately 17,000 students, Ocean View 2,600, and Oxnard Union High 17,000. The three districts have a combined total of approximately 1,700 certificated employees and 1,300 classified employees (EDP 2018b; 2018c; 2018d).

Schools within the Project Area

The schools within the project area are shown in Figures 3.15-1 and 3.15-2.

Parks

Ventura County Parks Department

The County of Ventura Parks Department provides recreation services through the General Services Agency. The Ventura County Parks Department manages and maintains parks within the county of Ventura. See Section 3.16, Recreation, of this Draft Environmental Impact Report (EIR) for more details regarding recreational facilities and parks within the project area.

City Parks and Recreation Departments

Ventura

The City of Ventura Parks, Recreation, and Community Partnerships Department manages and maintains various facilities, historic sites, and nearly 600 acres of developed park facilities within the city of Ventura. See Section 3.16, Recreation, of this Draft EIR for more details regarding recreational facilities and parks within the project area.

Oxnard

The City of Oxnard Recreation and Community Services Department manages and maintains 55 local parks and community centers within the city of Oxnard. See Section 3.16, Recreation, of this Draft EIR for more details regarding recreational facilities and parks within the project area.

Port Hueneme

The City of Port Hueneme Department of Recreation and Community Services manages seven local parks and community centers within the City (Port Hueneme 2018b). See Section 3.16, Recreation, of this Draft EIR for more details regarding recreational facilities and parks within the project area.

Other Public Facilities

Hospitals

Table 3.15-1 lists the five hospitals that are within the vicinity of the proposed projects.

**TABLE 3.15-1
HOSPITALS WITHIN THE VICINITY OF THE VENTURA WATER SUPPLY PROJECTS**

No.	Name	Address
1	Aurora Vista Del Mar Hospital	801 Seneca St Ventura, CA 93001
2	Community Memorial Hospital	147 N Brent St Ventura, CA 93003
3	Pacific Shores Hospital	2130 N Ventura Rd Oxnard, CA 93036
4	St. John's Regional Medical Center	1600 N Rose Ave Oxnard, CA 93030
5	Ventura County Medical Center	3291 Loma Vista Rd Ventura, CA 93003

Source: Health Care Atlas 2018

Libraries

Table 3.15-2 lists the two public libraries within the vicinity of the Ventura Water Supply Projects.

TABLE 3.15-2
LIBRARIES WITHIN THE VICINITY OF THE VENTURA WATER SUPPLY PROJECTS

No.	Library Name	Address
1	Ray D. Prueter Library	510 Park Avenue Port Hueneme, CA 93041
2	Saticoy Library	1292 Los Angeles Avenue Ventura, CA 93004

Source: Ventura County Library 2018

3.15.2 Regulatory Framework

State

California Fire Code and California Building Code

The California Fire Code and various building trades codes, as adopted by the state legislature, prescribe performance characteristics and materials to be used to achieve acceptable levels of fire protection. The County of Ventura and Cities of Ventura and Oxnard have also adopted those codes are required by state law.

California Occupational Safety and Health Administration

In accordance with 8 California Code of Regulations Sections 1270 “Fire Prevention” and 6773 “Fire Protection and Fire Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include guidelines on the handling of highly combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

California Health and Safety Code

State fire regulations are set forth in Section 13000 et seq. of the California Health and Safety Code, which include regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire-suppression training.

Leroy F. Greene School Facilities Act of 1998

The California State Legislature enacted the Leroy F. Green School Facilities Act of 1998 (Senate Bill 50), which made significant amendments to existing state law governing school fees. Senate Bill 50 prohibited state or local agencies from imposing school impact mitigation fees, dedications, or other requirements in excess of those provided in the statute. The legislation also prohibited local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any project.

Regional

County of Ventura General Plan

Chapter 4, Public Facilities and Services

The Public Facilities and Services Chapter (Chapter 4) of the County of Ventura General Plan identifies goals, policies, and programs relating to public facilities and services throughout Ventura County at both a local and regional level. The goals, policies, and programs that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2016).

4.7 Law Enforcement and Emergency Services

4.7.1 Goals

1. Provide for the protection of the public through effective law enforcement and emergency services.
2. Ensure that discretionary development provides adequate private security for the prevention of local crime.

4.7.2 Policies

1. The Sheriff's Department shall continue to review discretionary permits to ensure that an adequate level of law enforcement can be provided.
2. Discretionary development shall be conditioned to provide adequate site security during the construction phase (e.g., licensed security guard and/or fencing around the construction site, and all construction equipment, tools, and appliances to be properly secured and serial numbers recorded for identification purposes).
3. Discretionary development shall be conditioned to provide adequate security lighting (e.g., parking lots to be well lighted with a minimum 1 footcandle of light at ground level, lighting devices to be protected from the elements and constructed of vandal resistant materials and located high enough to discourage anyone on the ground from tampering with them).
4. Discretionary development shall be conditioned to avoid landscaping which interferes with police surveillance (e.g., landscaping must not cover any exterior door or window, landscaping at entrances and exits or at any parking lot intersection must not block or screen the view of a seated driver from another moving vehicle or pedestrian, trees must not be placed underneath any overhead light fixture which would cause a loss of light at ground level).
5. The County Sheriff's Department shall maintain mutual aid agreements with incorporated cities to assure efficient service delivery and law protection to all areas of the County.

4.8 Fire Protection

4.8.1 Goal: Strive to reduce the loss of life and property by providing effective fire prevention, suppression and rescue services and facilities

4.8.2 Policies

1. Discretionary development shall be permitted only if adequate water supply, access and response time for fire protection can be made available.

4.8.3 Programs

1. The Fire Protection District Bureau of Fire Prevention will continue to review all new development to ensure that an adequate level of fire protection can be provided.
2. The Fire Protection District will continue to retain mutual aid-agreements with all adjacent cities, and counties, incorporated cities within the County, military installations and other appropriate Federal agencies such as the U.S. Forest Service. The Ventura County Fire Protection District is a partner in the California Master Mutual Aid system.
3. The Fire Protection District will continue to participate in coordinating efforts of other Federal, State and local agencies to accomplish joint arson investigation and resource sharing.

4.9 Education and Library Facilities and Services

4.9.1 Goals

1. Promote quality public education services and educational facilities in order to achieve maximum opportunity for the education of residents of all ages and socioeconomic levels.
5. The goal of the Ventura County Library is to provide to all individual's free access to books, other materials, and services to support their informational, recreational, cultural and self-education needs.

4.9.3 Programs

3. The Building and Safety Division will continue to collect the duly authorized development fees for school district projects prior to issuance of building permits.
5. The Library Services Agency will continue to work with cities served in the development of financial partnerships to expand or replace existing facilities.

4.10 Parks and Recreation

4.10.1 Goals

1. Acquire, develop and operate a system of recreation facilities to meet the recreation needs of County residents.
4. Promote the multi-use of existing physical resources through coordination with other public and quasi-public agencies (i.e., utility easements, flood control easements, school district facilities, etc.) and private non-profit entities.
7. Ensure compatibility between recreation facilities and adjoining land uses.

4.10.2 Policies

1. The County shall maintain and enforce the local parkland dedication requirements (Quimby Ordinance), to acquire and develop neighborhood and community recreation facilities. Parkland dedication shall be based on a standard of five acres of local parkland per thousand population, including neighborhood and community parks.
2. Discretionary development which would obstruct or adversely impact access to a publicly-used recreation resource shall be conditioned to provide public access as appropriate.
3. Developers shall be encouraged to make unused open space available for recreation.
4. The County shall require reservation of land for public purchase, pursuant to the County Subdivision Ordinance, where requested by a recreation agency.
5. County facilities (e.g., flood control channels and easements) shall be made available for recreational use as appropriate.

Local

City of Ventura General Plan

The “Our Healthy and Safe Community” Section of the City of Ventura General Plan identifies policies and actions to provide adequate shelter, sufficient medical services, walkable neighborhoods, and proper nutrition for the city. The policies and actions that may be applicable to the proposed Ventura Water Supply Projects are listed below (City of Ventura, 2005).

Policy 7C: Optimize firefighting and emergency response capabilities.

Action 7.12: Refer development plans to the Fire Department to assure adequacy of structural fire protection, access for firefighting, water supply, and vegetation clearance/

Action 7.14: Educate and reinforce City staff understanding of the Standardized Emergency Management System for the State of California.

Policy 7D: Improve community safety through enhanced police service.

Action 7.15: Increase public access to police services by:

- increasing police staffing to coincide with increasing population, development, and calls for service,
- require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.

Action: 7.17: Establish a nexus between police department resources and increased demands associated with new development.

3.15.3 Significance Thresholds and Criteria

The California Environmental Quality Act (CEQA) Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to public services. The issues presented in the Environmental Checklist have been used as thresholds of significance in this section.

Accordingly, the proposed projects would have a significant impact if they would:

- Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
 - Fire protection (refer to Impact PS 3.15-1)
 - Police protection (refer to Impact PS 3.15-1)
 - Schools (refer to Impact PS 3.15-2)
 - Parks and other public facilities (refer to Impact PS 3.15-3)

A summary of the findings for each impact is presented in **Table 3.15-3**. The analyses below support these findings.

**TABLE 3.15-3
SUMMARY OF PUBLIC SERVICES IMPACT DETERMINATIONS**

Impacts	3.15-1 Fire and Police Protection	3.15-2 Schools	3.15-3 Parks and Other Public Facilities
Phase 1			
Advanced Water Purification Facility	LTS	LTS	LTSM
Water Conveyance System	LTS	LTS	LTS
Groundwater Wells	LTS	LTS	LTS
Wildlife/Treatment Wetlands	LTS	LTS	LTS
VWRF Treatment Upgrade	LTS	LTS	LTS
Concentrate Discharge Facility	LTS	LTS	LTS
Phase 2			
AWPF Expansion	LTS	LTS	LTS
Ocean Desalination	LTS	LTS	LTS
LTS = Less than Significant, no mitigation proposed LTSM = Less than Significant impact with mitigation NI = No Impact SU = Significant and Unavoidable impact, even after implementation of mitigation			

3.15.4 Impacts and Mitigation Measures

Fire protection, police, schools, parks, and other public facility requirements are based on the number of residents and workers in the project area. Service demand is primarily tied to population, not building size or construction footprint. For example, because emergency calls typically make up the majority of responses provided by the police and fire departments, as the number of residents and workers increases, so does the number of emergency calls. Further, population growth could directly affect student generation rates for local schools and adequate park acreage to meet City parkland ratio goals. If there is an increased need for services, a determination of whether the increased need requires the construction of a facility to provide the services is made. If the construction of a facility is required, a determination of whether the construction of the new or altered facility could cause a significant effect is evaluated.

Fire and Police Protection

Impact PS 3.15-1: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire or police protection.

The proposed projects do not include any new fire departments, police stations, or expansion of existing fire and police protection facilities. The proposed projects would not significantly increase the need for public services such as fire and police protection. As discussed in greater detail in Chapter 5, Growth Inducement, the facilities would not induce substantial population growth in the county or cities that would require expanded fire or police protection facilities.

Operation of the proposed projects would require approximately 27 new employees. This increase would be minimal; however, as a worst-case assumption, the 27 new employees could result in the demand for 27 new housing units. An increased demand of 27 new housing units is within the amount of new housing that would be needed to accommodate the population growth expected to occur within the project area. Further, employment opportunities associated with the construction and operation are assumed to be filled by the local workforce, and would not result in increased housing demand. Therefore, implementation of the proposed projects would not require new fire or police facilities to maintain response ratios, service ratios, or other measures of performance.

Operational activities associated with the proposed Advanced Water Purification Facility (AWPF) could require fire department service in the unlikely event of a hazardous materials emergency. However, prior to the operation of new facilities, a Hazardous Materials Business Plan (HMBP) would be required (see Section 3.8, Hazards and Hazardous Materials, of this Draft EIR for more details). Updates to existing and new plans would be required and would be submitted and kept on file at the VCFD or VFD. The implementation of the HMBP would result in a nominal increase in service.

The closest police and fire stations are within 1 mile of proposed facilities. In the event of a fire or other emergency at a project facility, existing fire protection and police services within the city and county would be able to sufficiently respond to emergency events with existing equipment and staffing capacities. Because the proposed project components would not result in the permanent increase in residences or population, no increase in the need for new fire or police protection facilities would occur. As a result, impacts would be considered less than significant to fire and police services.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Schools

Impact PS 3.15-2: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools.

As mentioned above under Impact 3.15-1, the construction and operation of proposed facilities would not result in population growth within the cities or county. No new schools would need to be constructed in order to maintain acceptable performance objectives. As a result, the proposed projects would not require the construction of new schools, and no impacts would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Parks and Other Public Facilities

Impact PS 3.15-3: The proposed projects could have a significant impact if they would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks or other public facilities.

The proposed projects would not induce population growth, as discussed in Chapter 5, and would not necessitate the construction of additional libraries or hospitals within the county or cities of Ventura and Oxnard in order to meet performance objectives. Therefore, the proposed projects would have no impacts associated libraries or hospitals.

The proposed AWPf sites, pump station, various conveyance systems, wildlife/treatment wetlands, and reconfiguration of existing ponds would not be located within parks.

The concentrate discharge outfall would be within Marina Park. As a result, the partial closure of a park or recreational facility during construction could result in significant impact to the local community. However, the construction of the outfall would be approximately 6 months and would not include any long-term aboveground structures. Once the construction is completed, the park would be restored to pre-construction conditions. As a result, the temporary construction activities would not alter the visitor experience. Impacts would be less than significant.

The Oxnard Plain Basin wells would be located within active agricultural fields or within the Buenaventura Golf Course. The removal of a park or recreational facility could result in significant impact to the local community. However, the construction of the wells within existing golf course would not alter the visitor experience. The well would be housed within a building that would resemble the surrounding structures within and/or surrounding the park. The well building footprint would be approximately 2,000 square-feet. The removal of approximately 5,000 square-feet from the recreational facility for the construction of a city-owned well would be considered a minimal loss in comparison to the number of community parks/recreational facilities within the vicinity of the proposed projects (see Figure 3.16-1). Therefore, the implementation of the well sites would result in a minimal loss to recreational facilities and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

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3.16 Recreation

This section addresses the potential impacts of the proposed Ventura Water Supply projects on recreation. The section includes a summary of the regulations related to recreation facilities, a description of the environmental setting to establish baseline conditions for recreation facilities within the project area, and an evaluation of the proposed projects' potential effects on recreation.

3.16.1 Existing Environmental Setting

Regional and Project Setting

The proposed projects are located within the County of Ventura and incorporated Cities of Ventura, Oxnard, and Camarillo. The County of Ventura General Plan describes recreational facilities as facilities and services related to providing recreation on a countywide basis and defines the following terms (County of Ventura 2005).

Regional Parks and Facilities: A regional park/facility is an extent of land that, by its unique, natural character or unusual or extensive development, offers recreation opportunities that attract patronage from beyond the local vicinity without regard to physical, political, or municipal boundaries. There is no defined service radius. Regional park/facilities are divided into four major classes: regional park, recreation park preserve, regional open space, and specialized facility.

Local Parks and Facilities: A local park/facility serves the daily needs of a defined neighborhood or group of neighborhoods within an unincorporated urbanized area of the county. Local park acreage should provide for three primary types of recreation: open areas for passive recreation and relaxation; active sports areas for sports fields and court games; and neighborhood or community centers which accommodate a wide variety of community-serving activities catering to all age groups. Local parks are divided into three major classes: neighborhood park, community park facilities and playfields, and local trails/corridors.

Regional Trails and Corridors: Regional trails/corridors include facilities that are intended to accommodate non-motorized recreational travel. Regional trails/corridors are intended to link major park and recreation facilities. They may be designated as single purpose and/or multipurpose by design (e.g., pedestrian, bicycle, equestrian) and major access points are served by a trailhead.

Within Ventura County, multiple agencies provide recreation facilities (County of Ventura 2015):

- Federal, state, and quasi-public agencies primarily provide regional facilities.
- The County of Ventura provides regional facilities countywide and local facilities in unincorporated urban areas.
- The local cities and Recreation and Park Districts focus on providing local park facilities. Three special Recreation and Park Districts provide local recreation services to urban residents. The Pleasant Valley Recreation and Park District, the Conejo Recreation and Park District, and the Rancho Simi Recreation and Park District serve the incorporated

municipalities of Camarillo, Thousand Oaks, and Simi Valley, and unincorporated areas located adjacent to their primary cities. The Pleasant Valley Recreation and Park District serves the City of Camarillo, which is located within the project area.

In addition to the federal and state lands, the County, local cities, and Recreation and Park Districts, two independent political jurisdictions provide facilities for recreation use: the Casitas Municipal Water District which manages operation at Lake Casitas and the United Water Conservation District operating facilities at Lake Piru. In addition, the private non-profit Santa Rosa Valley Trails, Inc., maintains a system of equestrian and pedestrian trails for use by the public within the Santa Rosa Valley (County of Ventura 2015).

Recreational facilities and services provided by each of these agencies is further discussed below.

Federal Lands

U.S Forest Service

The U.S. Forest Service affords recreational resources of statewide significance within its holdings in the Los Padres National Forest (LPNF). The LPNF covers the majority of the northern half of Ventura County and offers various recreation including hiking, equestrian, and off-road vehicle trails and camping areas accessible by road and trail. There are 57 dispersed trail camps, 19 developed family campgrounds, and one developed group campground. There are many miles of recreation roads utilized by visitors as scenic drives and by off-highway vehicle enthusiasts. The LPNF has inventoried 373.7 total miles of trails (County of Ventura 2015).

Other special recreational areas include wilderness and shooting areas. Approximately 9,500 acres of the Dick Smith Wilderness is located in Ventura County. Additional wilderness areas within Ventura County are: Matilija - 29,600 acres, Chumash - 32,000 acres, and Sespe - 212,000 acres. Major areas in the north half are closed to shooting. The largest area includes the Sespe Condor Sanctuary (County of Ventura 2015).

The LPNF and Dick Smith Wilderness are not located within the boundaries of the project area.

National Park Service

The National Park Service manages the Santa Monica Mountains National Recreation Area and Channel Islands National Park within the County (County of Ventura 2015). However, these national parks are not located within the boundaries of the project area.

Santa Monica Mountains National Recreation Area

The California Department of Parks and Recreation, the Santa Monica Mountains Conservancy, the Mountains and Recreation and Conservation Authority and other public agencies also manage recreational open space within the Santa Monica Mountains National Recreation Area (SMMNRA). SMMNRA encompasses approximately 150,000 acres in the Santa Monica Mountain range that extends east-west for 47 miles from Griffith Park to Point Mugu State Park and averages 7 miles across. The recreation area includes a mixture of private and public lands. The federal lands within the Santa Monica Mountains National Recreation Area located within Ventura County include:

- Cheeseboro Canyon, an approximately 2,000-acre area located north of the 101 Freeway, which stretches across the Los Angeles County Line. Between 1,700-1,800 acres are located in Ventura County.
- Rancho Sierra Vista/Satwiwa is located south of Potrero Road and north of Point Mugu State Park.
- Malibu Springs, located north of the Leo Carrillo State Beach on the Ventura County side. (A portion of Leo Carrillo State Beach is located in Ventura County.)
- Circle X Ranch, an approximately 2,000-acre area, stretching from the Ventura County Line, northwest into the Boney Mountain State Wilderness Area.

Channel Islands National Park

Channel Islands National Park (CINP) is located at 1901 Spinnaker Drive in Ventura. CINP contains a visitor center that includes photo displays, a lookout tower, exhibits, Chumash Indian artifacts, simulated Caliche ghost forest, an indoor tidepool, and a native plants display. Visitors can purchase publications, maps, and nautical charts at the bookstore, and view films that introduce the national park. Five of the eight Channel Islands and surrounding 6 miles of ocean off of the Southern California coast comprise the Channel Islands National Park and National Marine Sanctuary. Anacapa Island is the only Channel Island considered a part of Ventura County.

Anacapa Island

Anacapa Island is located 11 miles southwest of Oxnard and 14 miles southwest of Ventura. Anacapa Island is composed of three small islets accessible by boat. The “island” is nearly 5 miles long and about 1 square mile in area. The island contains historical structures, a visitor center, picnicking, and overnight camping within the eastern portion of the island. Most of western Anacapa Island is closed to the public to protect the largest breeding colony of the endangered California brown pelicans.

California State Parks and Recreation Department

The California State Parks and Recreation Department helps to preserve the state’s biological diversity, protect its natural and cultural resources, and create opportunities for outdoor recreation. The department manages several public parks within Ventura County, with the following two parks located within the project area.

San Buenaventura State Beach

This state beach is located in the City of Ventura with the entrance on San Pedro Street off Highway 101. The beach provides swimming, surfing, and picnicking. The beach has 2 miles of sandy beach, sand dunes, picnic sites, and ample parking with easy freeway access. The Promenade, a long walking and biking trail along the coastline, connects the park to other nearby beaches. The park is the site of many festivals and special events, such as triathlons and volleyball tournaments. A 1,700-foot pier in the park has a snack bar, restaurant, and bait shop (CA Department of Parks and Recreation 2018a).

McGrath State Beach

This state beach is located in the City of Ventura and offers overnight camping, hiking and bike facilities, RV stations and access, day-use activities and facilities. McGrath State Beach is located on the south bank of the mouth of Santa Clara River in the City of Ventura. McGrath State Beach is known for its bird-watching areas, with the lush riverbanks of the Santa Clara River and sand dunes along the shore. Hiking is available in the area as a nature trail leads to the Santa Clara Estuary Natural Preserve. Two miles of beach provide fishing opportunities, swimming, nature and wildlife viewing, windsurfing/surfing, family programs, parking, restrooms, outdoor showers, and drinking water (CA Department of Parks and Recreation 2018b).

Ventura County Parks Department

The County of Ventura Parks Department provides recreation services through the General Services Agency. The primary goal of the County Parks Department is to provide regional facilities that serve all residents of the County, and secondarily, to provide local recreation facilities in unincorporated urban communities (County of Ventura 2005). The Ventura County Parks Department manages and maintains 27 separate regional recreational facilities including: three beachfront parks, 13 “inland parks,” five community centers, three golf courses, three County trails, and one dog park. Recreational opportunities found at these regional parks include but are not limited to fishing, sheltered group picnic facilities, RV and tent camping, swim complexes with water slides, community centers, athletic playing fields, playgrounds, public restrooms, water play parks, and playgrounds (County of Ventura 2018).

City Parks and Recreation Departments

City of Ventura

The City of Ventura Parks, Recreation and Community Partnerships Department manages and maintains various facilities, historic sites, and nearly 600 acres of developed park facilities. The City operates four neighborhood centers where recreation programs and senior services are available: the Ventura Avenue Adult Center, Senior Recreation Center, Barranca Vista Center, and Westpark Community Center. The City also offers a wide range of sports programs, including youth and adult sports programs, classes, aquatics, and corporate games. The city contains five historic sites: Albinger Archaeological Museum, Olivas Adobe, Ortego Adobe, the Ventura City Hall, and Ventura Pier (City of Ventura 2018).

City of Oxnard

The City of Oxnard Recreation and Community Services Department manages and maintains 55 local parks and community centers that offer a variety of amenities such as baseball diamonds, basketball courts, drinking fountains, exercise stations, horseshoes, jogging paths, parking lots, picnic areas, playgrounds, recreational buildings, restrooms, games, soccer fields, tennis courts, volleyball courts, dog parks, and walking paths (City of Oxnard 2018).

City of Port Hueneme

The City of port Hueneme Department of Recreation and Community services operates five park sites, a recreation corridor, a community center, an athletic club, and a cultural center. These facilities offer diverse recreation opportunities throughout the community. (Port of Hueneme 2015)

Parks and Recreational Facilities within the Project Area

Figures 3.16-1 and 3.16-2 show the proximity of project facilities to existing recreational facilities. The proposed Portola Road and Transport Street Advanced Water Purification Facility (AWPF) sites and groundwater well site 2 and 3 would not be located on or immediately adjacent to a recreational facility. Additionally, the proposed concentrate discharge facility would not be located within a recreational facility.

AWPF Sites: The City's Comprehensive Plan designates the Harbor Boulevard site as Commercial Planned-Tourist Oriented. The County Local Coastal Plan land use designation is Coastal Open Space.

Wildlife/Treatment Wetlands: The proposed freshwater treatment wetlands would be located in an undeveloped area of land use designated as Parks and Open Space adjacent to the Olivas Links Golf Course.

Groundwater Wells:

- Well 1 – This well would be located on an area of land designated as Park and Open Space, within the Buenaventura Golf Course.
- Wells 2 and 3 – These wells would be located on an area of land designated as Agriculture.

3.16.2 Regulatory Framework

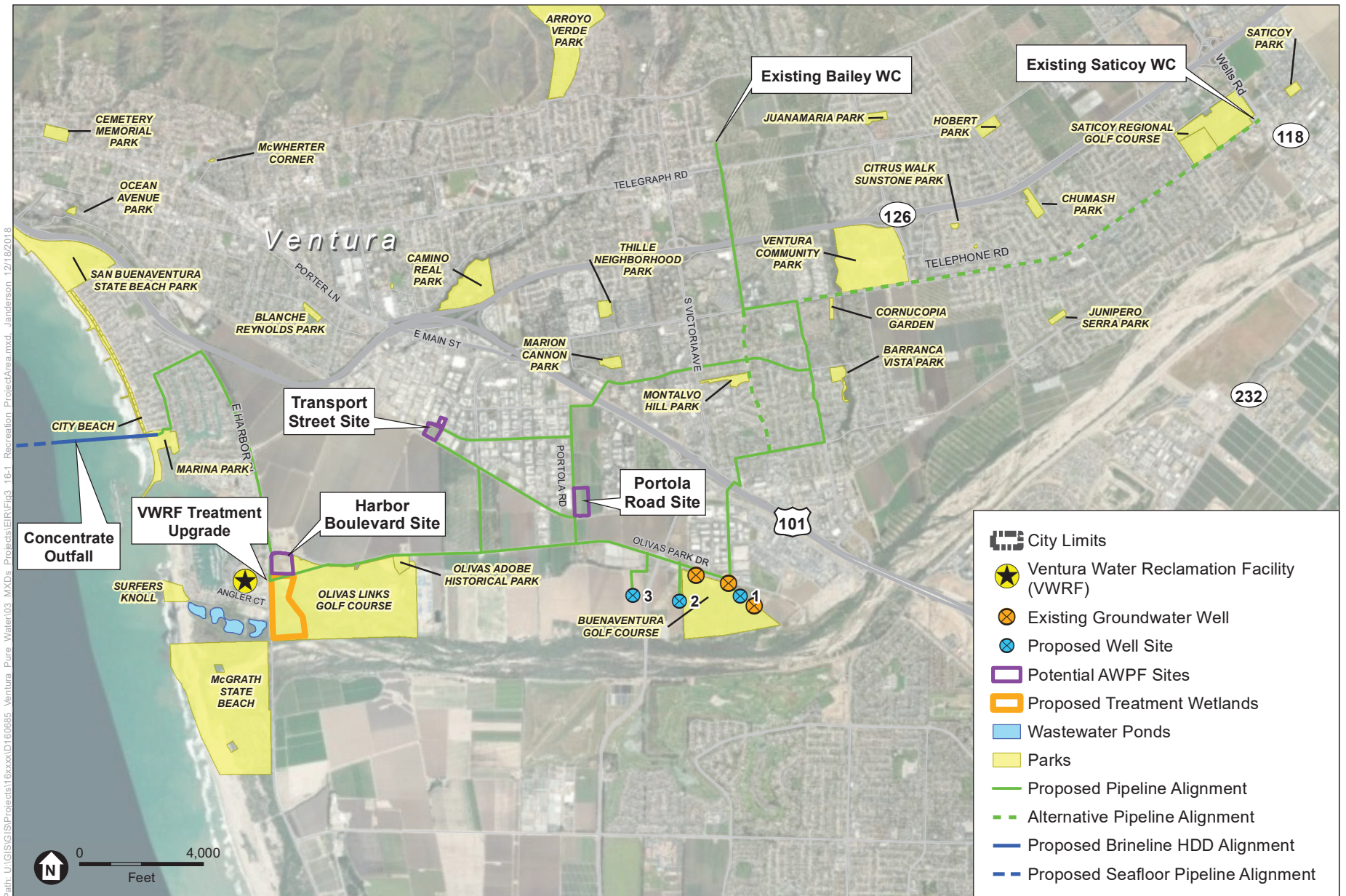
Federal

There are no federal policies or regulations pertaining to recreation that would be applicable to the proposed Ventura Water Supply Projects.

State

California Coastal Commission

The California Coastal Commission (CCC) is a state agency with land use jurisdiction authorities within the coastal zone. The coastal zone covers the entire shoreline of California and varies in width depending on the region. The CCC regulates development activities in the coastal zone. The CCC was established by the California Coastal Act of 1976. Local Coastal Programs (LCPs) are approved by the CCC to allow local jurisdictions to guide development in the coastal zone. LCPs require a Coastal Development Permit for development in the coastal zone. The following section applies to recreation.



SOURCE: ESRI; City of Ventura, 2017

Ventura Water Supply Projects

Figure 3.16-1
Recreational Facilities in Project Area



SOURCE: ESRI; City of Ventura, 2017

Ventura Water Supply Projects

Figure 3.16-2
Recreational Facilities near Discharge Pipeline to the Calleguas SMP

California Coastal Act, Section 30001.5:

“The legislature further finds and declares that the basic goals of the state for the coastal zone are to:

- (c) Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners.

Regional

The proposed Ventura Water Supply Projects encompass multiple jurisdictions including unincorporated areas of Ventura County and two incorporated cities. Each of these cities has its own General Plan that identifies goals and policies regarding recreation.

County of Ventura General Plan

Chapter 4, Public Facilities and Services

The Public Facilities and Services Chapter (Chapter 4) of the County of Ventura General Plan identifies goals, policies, and programs relating to public facilities and services throughout Ventura County at both a local and regional level. The goals, policies, and programs that may be applicable to the proposed Ventura Water Supply Projects are listed below (County of Ventura 2016).

4.10 Parks and Recreation

4.10.1 Goals

1. Acquire, develop and operate a system of recreation facilities to meet the recreation needs of County residents.
4. Promote the multi-use of existing physical resources through coordination with other public and quasi-public agencies (i.e., utility easements, flood control easements, school district facilities, etc.) and private non-profit entities.
7. Ensure compatibility between recreation facilities and adjoining land uses.

4.10.2 Policies

1. The County shall maintain and enforce the local parkland dedication requirements (Quimby Ordinance), to acquire and develop neighborhood and community recreation facilities. Parkland dedication shall be based on a standard of five acres of local parkland per thousand population, including neighborhood and community parks.
2. Discretionary development which would obstruct or adversely impact access to a publicly-used recreation resource shall be conditioned to provide public access as appropriate.
3. Developers shall be encouraged to make unused open space available for recreation.
4. The County shall require reservation of land for public purchase, pursuant to the County Subdivision Ordinance, where requested by a recreation agency.
5. County facilities (e.g., flood control channels and easements) shall be made available for recreational use as appropriate.

Local

City of San Buenaventura General Plan

The “Our Active Community” Section of the City of Ventura General Plan identifies policies and actions to enhance parks and open spaces to provide recreation options for the City. The policy and action that may be applicable to the proposed Ventura Water Supply Projects is listed below (City of Ventura 2005).

Policy 6A: Expand the park and trail network to link shoreline, hillside, and watershed areas.

Action 6.1: Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development

Action 6.9: Require dedication of land identified as part of the City’s Linear Park System in conjunction with new development.

Policy 6C: Provide additional gathering spaces and recreation opportunities.

City of San Buenaventura Local Coastal Plan

City of San Buenaventura Local Coastal Program

The City of Ventura General Plan satisfies the State requirements for the City’s Local Coastal Program in accordance with the California Coastal Act (Public Resources Code Section 30000 et seq.). As stated in the City of Buenaventura General Plan Update to the Year 2010 (p. iii):

The Comprehensive Plan includes the City’s Local Coastal Program policies. Italicized type is used to identify text which is part of the Local Coastal Program. The Land Use Plan Map shows the coastal area boundary.

The policies for the coastal zone are:

Policy 15.5 Flood Plain Policy

All new development, including construction, excavation and grading, except for flood control projects and nonstructural agricultural uses, shall be prohibited in the floodway unless offsetting improvements are provided, such as minor reshaping of topography as further delimited below. The net effect of any offsetting improvements shall be minor, and shall not reduce the cross-sectional area of the main channel and adjoining overbank areas in accordance with Federal Emergency Management Agency (FEMA), Ventura County Flood Control, and City regulations. If the proposed development falls within the floodway fringed, it must meet the requirements of the Flood Plain Overlay Zone. Permitted development shall not cause or contribute to flood or lead to expenditure of public funds for flood control work, i.e., dams, stream channelization, etc.

Policy 15.8 Coastal Conservancy

The City shall continue to request California Coastal Conservancy assistance in possible coastal projects such as agricultural preservation, coastal resource enhancement, public access and coastal restoration

The Local Coastal Plan contained in this Comprehensive Plan represents the commitment of the City to provide continuing protection and enhancement of its coastal resources. It is recognized that certain resource areas under the City's jurisdiction may require further public attention to ensure their protection and enhancement. Such resource area includes:

- Degraded or less than pristine wetlands of any size such as the Alessandro Lagoon and the Ventura and Santa Clara River mouth areas; and,
- Lands that have a history or potential for production agricultural uses, such as the Ventura River area.

Policy 15.11 Public Services:

New or expanded public works facilities shall be designed and limited to accommodate needs generated by development for uses permitted consistent with provisions of the California Coastal Act. Special districts shall not be formed or expanded except where assessments for, and provision of, the service would not induce development inconsistent with the California Coastal Act or this Comprehensive Plan. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to: coastal depended land uses; essential public services and basic industries vital to the economic health of the region, state or nation; public and commercial recreation; and visitors-serving land uses shall not be precluded by other development.

The VWRF, existing wildlife/treatment ponds, wildlife/treatment wetlands, and proposed new discharge outfall are located within the City's LCP jurisdiction. The VWRF and proposed discharge outfall are also in the coastal zone.

City of Oxnard General Plan

The City of Oxnard's General Plan contains two operative documents: 1) a Background Report with detailed descriptions of the conditions and trends that existed within the City during the development of the 2030 General Plan; and 2) a Goals and Policies Document, which contains goals and policies that guide future decisions within the City. Many goals and policies are continued from the 2020 General Plan (City of Oxnard 2011). Goals and policies that may be applicable to the proposed Ventura Water Supply Projects are listed below.

Infrastructure and Community Services Element

Chapter 4, the Infrastructure and Community Services element of the City of Oxnard General Plan sets goals and policies for traffic and circulation, long-term water supply, parks, public safety, schools, and other public and semi-public facilities and services.

Goal ICS-23: A full range of recreational facilities and services accessible to all Oxnard residents, workers, and visitors.

ICS-23.1 City Park and Recreation Standards Provide park and recreation facilities at a level that meets the standards for neighborhood and community parks as follows:

Type of Park	Net acres/1,000 Residents	Min. Net Acres/Park	Service Radius
Mini Pocket	no standard	no standard	1/3 mile
Neighborhood	1.5	5	1/2 - 1 mile
Community	1.5	20	1-1/2 miles
TOTAL	3	N/A	N/A

ICS-24.2 Park Operations Fiscal Efficiency Evaluate coordinated recreation programming with other public agencies and create service links to avoid duplication of services and budgetary expenditures.

ICS-25.2 Coordinate Recreation Programs with Other Agencies Coordinate recreation programs with those of other public agencies and private non-profit organizations.

City of Oxnard Local Coastal Plan

The city of Oxnard's LCP was adopted in 1982 in accordance with Chapter 3 of the Coastal Act. The Oxnard LCP applies to developments between the sea and the first public road paralleling the ocean or within 300 feet of the inland extent of any beach or of the mean high tide line of the sea where there is no beach, whichever is the greater distance. The Oxnard LCP includes policies that are mandated for preserving coastal resources, including maximum public access, recreational uses, preservation of marine resources, sensitive habitats, prime agricultural land and archeological resources; and, guidelines for new residential, commercial and industrial developments. It should be noted that in Oxnard, the "sea" is defined to include the Channel Island Harbor, the Edison Canal and channels associated with the inland waterway development that creates a significant inland bulge of the coastal zone boundary.

The discharge pipeline to the Calleguas salinity management pipeline (SMP) travels through the City of Oxnard, a portion of which falls within the coastal zone.

City of Port Hueneme General Plan

Port Hueneme's open space and recreation resources include the beach strand, parks, schools, and community facilities (City of Port Hueneme 2015). The following goals and policies are relevant to the proposed project.

Goal 2: Preserve remaining open space areas and maintain recreational facilities.

Policy 2-2: Continue to provide public access to the Hueneme Beach Park.

Goal 3: Plan for, develop, and maintain a system of local parks and recreation facilities, and parks-related community service facilities which meet the needs of the residents of Port Hueneme.

Policy 3-10: Ensure adequate access for handicapped persons to parks and recreation facilities as specified by the American Disabilities Act.

City of Port Hueneme Local Coastal Program

The City of Port Hueneme adopted the LCP in February 1983 and certified it in 1984. Prior to the adoption of the LCP, the CCC had primary responsibility in the jurisdiction over issues of development permits for projects which are consistent with the Coastal Act policies. Once the LCP was approved, approval of development within the coastal zone reverted to the City of Port Hueneme. Although the City of Port Hueneme has primary responsibility to issue building permits, the CCC retains discretionary review on appealed projects within the coastal zone.

The proposed discharge pipeline to the Calleguas SMP travels through the City of Port Hueneme, a portion of which falls within the coastal zone.

3.16.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to recreational resources. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated (refer to Impact REC 3.16-1).
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment (refer to Impact REC 3.16-2).

A summary of the findings for each impact is presented in **Table 3.16-1**. The analyses below support these findings.

**TABLE 3.16-1
SUMMARY OF RECREATION IMPACT DETERMINATIONS**

Impacts	3.16-1 Increase Use of Existing Recreational Facilities	3.16.2 Require Construction or Expansion of Recreational Facilities
Phase 1		
Advanced Water Purification Facility	LTS	LTS
Water Conveyance System	LTS	NI
Groundwater Wells	LTS	LTS
Wildlife/Treatment Wetlands	LTS	LTS
VWRF Treatment Upgrade Project	LTS	NI
Concentrate Discharge Facility	LTS	LTS
Phase 2		
AWPF Expansion	LTS	LTS
Ocean Desalination	LTS	LTS

LTS = Less than Significant, no mitigation proposed
LTSM = Less than Significant impact with mitigation
NI = No Impact
SU = Significant and Unavoidable impact, even after implementation of mitigation

3.16.4 Impacts and Mitigation Measures

Increase Use of Existing Recreational Facilities

Impact REC 3.16-1: The proposed projects could have a significant impact if they would have a substantial adverse effect on or increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

As described above, the wildlife/treatment wetlands and the Groundwater Well1 would be located within or just adjacent to recreational facilities (parks and golf courses). Construction and staging areas for these facilities may result in the temporary closure of a recreational facility or portions of the recreational facility. However, other recreational facilities in the project area would be available for use. This increased use of other recreational facilities would be temporary. Once construction is completed, parks would return to their normal visitor ship. Construction of the proposed facilities would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Impacts would be less than significant.

As discussed in Chapter 5, Growth Inducement, the projects would accommodate planned future growth, but would not induce growth. Planned population growth is accompanied by planned recreational facilities, pursuant to the General Plan policies discussed above. As a result, the proposed project would not increase the use of existing parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, the implementation of the proposed facilities would minimally increase use of existing park and recreational facilities.

The construction of the new outfall would have a temporary construction impact to Marina Park (**Figure 3.16-3**). It is estimated that the HDD operation would take approximately 6 months. Construction and staging areas for the outfall may result in the temporary closure of a recreational facility or portions of the recreational facility. However, other recreational facilities in the project area would be available for use. This increased use of other recreational facilities would be temporary. Once construction is completed, the park would return to its normal visitorship. Construction of the proposed outfall would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Impacts would be less than significant.

The construction of the new outfall would require marine vessels to connect and secure the outfall to the ocean floor. Tugboats would guide a barge to the offshore work area, where it would be anchored to the seafloor. The construction zone would be approximately 1 to 2 miles from the entrance of the Ventura Marina and could delay or require alternative routes for marine vessels, including sail boats to maneuver around the construction zone. Impacts to the marina and recreational sailboats would be temporary, during the construction period of approximately 26 months for the concentrate outfall component and would not have a substantial adverse effect or create a substantial physical deterioration of the marina facilities. Once the new outfall is constructed, all activities within the marina would return to pre-project conditions. Impacts would be considered less than significant.



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.16-3
Temporary Outfall Construction Footprint

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Require Construction or Expansion of Recreational Facilities

Impact REC 3.16-2: The proposed projects could have a significant impact if they would have a substantial adverse effect on recreational facilities, which could require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Phase 1

Advanced Water Purification Facility

The proposed AWPf sites would not be located within or would not impact any existing or future recreational opportunity. Impacts would be less than significant.

Construction of the projects could have a beneficial effect on camping opportunities in the projects area. Large portions of the McGrath State Beach campground have been closed in recent years due to the inundation from the Santa Clara River Estuary (SCRE) lagoon. A protective berm that had been constructed to protect the campground from inundation was washed out during high flows in 2005. In addition, in the past the sand berm on the beach was routinely breached when water levels threatened to flood the campground. This is no longer an accepted practice due to the adverse biological impacts of unseasonal breaching. As a result, the water levels in the lagoon have risen, periodically flooding the campground and closing the entire state park facility. The consistent discharge from the Ventura Wastewater Reclamation Facility (VWRF) contributes substantially to the elevated water levels. The proposed projects would reduce the volume of VWRF discharge from existing levels of approximately 4.8 million gallons per day (MGD) to the proposed 0.5 MGD, resulting in lower water levels in the lagoon during dry weather. The potential for the lagoon to flood the McGrath State Beach campground would be substantially lessened as a result of the projects. As a result, the projects would allow for the renewed use of the state beach campground.

The Phase 3 Study (Stillwater 2018) evaluated impacts of reduced discharge to the SCRE to beneficial uses that included water contact recreational uses and non-contact recreational uses. The study concludes that the projects would reduce open water, which would reduce water-contact uses. However, the lagoon is not commonly used as a public swimming area and there are no improvements to promote swimming. The proximity of the Pacific Ocean beach just to the west of the lagoon provides substantial swimming opportunities. Reducing water-contact opportunities in the SCRE is not a significant impact since open water would remain available in the SCRE. The Phase 3 Assessment also notes that reduced discharge would prevent the inundation of the McGrath State Beach campground. This would increase the non-contact beneficial use opportunities. Impacts to recreation would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed projects would construct a conveyance system that moves raw groundwater to the AWPf from the proposed extraction wells, purified water from the AWPf to aquifer storage and recovery (ASR) wells and/or the Bailey Water Conditioning Facility (WCF) and/or Saticoy WCF, and extracted groundwater from the ASR wells to the Bailey WCF and/or Saticoy WCF. The proposed pump stations would be located within the existing VWRf and at the proposed AWPf site. The pipelines would run within and along public rights-of-way, where feasible. The pipelines from the VWRf would transverse recreational-designated areas north of the proposed treatment wetland (see Figure 3.16-1); however, once constructed, the pipelines would be underground and would not interfere with recreational activities. Therefore, implementation of the proposed pipelines would not impact existing parks and recreational facilities and would not require new or expansion of park or recreational facilities. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

Groundwater Well 1 would be located within an active golf course. As a result, the removal of a park or recreational facility could result in significant impacts to the local community. The construction of the well within the golf course would not alter the visitor experience. The well would be housed within a building that would resemble the surrounding structures within and/or surrounding the golf course. The well building footprint would be approximately 2,000 square-feet. The removal of approximately 5,000 square-feet from the recreational facility for the construction of a city-owned municipal well would be a minimal loss in comparison to the number of community parks within the vicinity of the proposed projects (see Figure 3.16-1). Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds

Reconfiguration of the existing ponds does not include the construction or operation of recreational facilities. The wildlife/treatment ponds are located just south of the VWRf, north of McGrath State Beach. The existing ponds are accessible to the public and includes trails around the ponds that are used by recreational visitors, such as birders. Reconfiguration of the ponds would not expand the ponds to McGrath State Beach. Impacts during construction would temporarily reduce the accessibility of the area. However, once the reconfiguration of the ponds is completed the area would continue to be accessible to the public. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetland

The proposed wildlife/treatment wetlands would be located in an undeveloped area of land designated as Parks and Open Space. Implementation of this wetland would not adversely affect recreational uses of the golf course, as the wildlife/treatment wetlands would be located west of the riparian vegetation boundary separating the golf course and the proposed treatment wetland area. The proposed wetland would not restrict future access to the area or reduce recreational facilities in the project area. Rather, the wetlands would include surrounding trails that would be accessible to the public. Therefore, implementation of the treatment wetland would result in less than significant impacts to existing parks and recreational facilities and would not require new or expanded park or recreational facilities.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

VWRF Treatment Upgrade

The VWRF upgrades would occur entirely within the existing VWRF. The VWRF is not located within a recreational facility. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed concentrate outfall would be constructed within Marina Park and would discharge into the ocean north of Ventura Harbor via a pipeline within public rights-of-way. The outfall would cross under the beach. However, there would not be any surface disturbance to the beach, as the pipeline would be directionally drilled under the beach and into the ocean 1 to 2 miles offshore. During construction, the staging area could be located within Marina Park, temporarily closing a portion of the park. Construction and staging areas for the outfall may result in the temporary closure of a recreational facility or portions of the recreational facility. However, other recreational facilities in the project area would be available for use. This increased use of other recreational facilities would be temporary. Once construction is completed, the park would be returned to preconstruction conditions. Construction of the proposed outfall would not require new or expanded park or recreational facilities. Impacts would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The discharge pipeline to Calleguas SMP would be constructed with the existing road rights-of-way, where feasible. The pipeline would run parallel with several parks on the way to the connection point in Oxnard (see Figure 3.16-2). Once constructed, the pipeline would be underground and would not interfere with recreational activities. Therefore, implementation of

the proposed pipeline would not impact existing parks and recreational facilities and would not require new or expansion of park or recreational facilities. No impacts would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

The proposed AWPf expansion would occur at the same location as the proposed AWPf. Refer to the project-level analysis for the proposed AWPf above for the potential impacts related to impacts to existing parks and recreational facilities. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

The proposed ocean desalination treatment facility would be constructed at the same location as the proposed AWPf. Refer to the project-level analysis for the proposed AWPf above for the potential impacts related to impacts to existing parks and recreational facilities. Impacts would be less than significant.

Ocean Intake

The location of the ocean intake system is currently undetermined; however, temporary construction impacts near or within the ocean floor would not interfere with existing parks and recreational facilities. Once in operation, the proposed ocean intake system would be subsurface in the Pacific Ocean. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

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3.17 Transportation and Traffic

This section addresses the potential impacts of the proposed projects to transportation and traffic. The section includes a summary of the regulations related to transportation and traffic, a description of the environmental setting to establish baseline conditions for transportation and traffic, and an evaluation of the proposed projects' potential effects on transportation and traffic.

3.17.1 Existing Environmental Setting

Regional Circulation System

The proposed projects are located within Ventura County, where regional access is provided via State Route (SR) 101, SR 1, SR 126, SR 33, and SR 118. The following provides a brief description of each of these state highways that traverse Ventura County in the vicinity of the proposed projects:

SR 101 – This highway is the longest highway in the state, as it extends north-south from the California-Oregon border to Los Angeles. The proposed water conveyance pipeline alignments would cross SR 101 (as shown on Figure 2-2). In addition, this major roadway would be used to transport building materials during construction and during maintenance trips during operation.

SR 1 – This highway is a major north-south highway that extends from its terminus with SR 101 in Leggett in Mendocino County south to Interstate 5 in Dana Point and at times runs concurrently with SR 101.

SR 126 – This highway is an east-west highway that runs from SR 101 in Ventura County to Interstate 5 in Los Angeles County and generally follows the Santa Clarita River. SR 126 is also known locally as the Santa Paula Freeway. The proposed water conveyance pipeline alignment to the existing Bailey Water Conditioning Facility (WCF) would cross SR 126 (as shown in Figure 2-2).

SR 33 – This highway runs north to south and traverses from Ventura County north to a point east of Tracy. SR 33 is commonly referred to as Ojai Freeway within Ventura County.

SR 118 – This highway runs west to east originating from the eastern edge of Ventura County, immediately northwest of Saticoy, and extending to Lake View Terrace in Los Angeles County.

Local Circulation Systems

City of Ventura

Ventura's circulation system is organized into the three classifications: local thoroughfares, collectors, and arterials. Local thoroughfares provide mobility within neighborhoods, while collectors serve as the links between local thoroughfares (City of San Buenaventura 2005). Arterials are the primary mechanism for crosstown travel and serve the major centers of activity in the city. Furthermore, arterials usually carry a high proportion of the total urban area travel and include streets, avenues, and boulevards (City of San Buenaventura 2005).

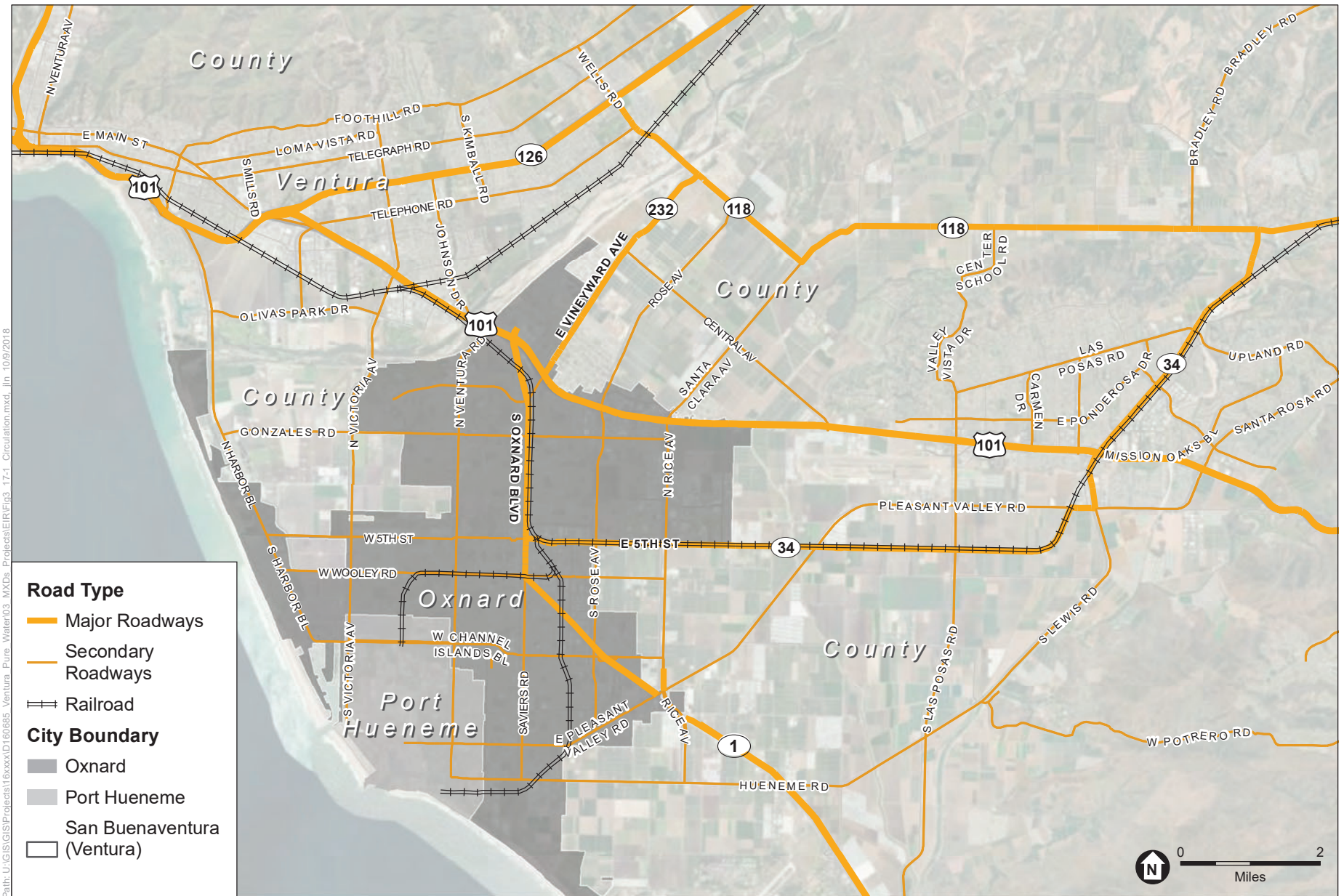
As shown in **Figure 3.17-1**, in the vicinity of the proposed projects, the arterials in the city include SR 101, SR 126, Victoria Avenue, Kimball Avenue, Johnson Drive, Bank Drive, Telephone Road, Telegraph Road, and Harbor Boulevard. These arterials would typically be used during construction to transport materials throughout the city. In addition, the following collectors and local thoroughfares may be used during construction: Olivas Park Drive, Bristol Road, Angler Court, Transport Street, Portola Road, Main Street, Donlon Street, and Hill Road.

The proposed Advanced Water Purification Facility (AWPF), which also includes potable reuse facilities, pump stations, conveyance system, and the potential desalination plant, would be located on one of the three alternative locations, referred to as the Harbor Boulevard, Transport Street, and Portola Road AWPF sites, as shown in Figure 2-2. The following roadways serve each of the alternative locations:

- Harbor Boulevard site: Access to the site would be provided via Olivas Park Drive or Harbor Boulevard.
- Transport Street site: Access to this site would be provided via Transport Street, which connects to the major collector Telephone Road, and Donlon Street, which connects to the secondary arterial Main Street.
- Portola Road site: Access to this site would be provided via Portola Road, which connects to which connects to the secondary arterial Main Street.

City of Oxnard

Oxnard's circulation system provides standards for facilities described in four functional categories: freeways, arterials, collectors, and local roads. Freeways are intended to serve both intraregional and inter-regional travel; arterials provide for mobility within Oxnard and adjacent areas; collectors provide for internal traffic movement within Oxnard and connect local roads to arterials; and local roads provide direct access to adjacent property and connect with collectors and arterials (City of Oxnard 2006). The major traffic corridors within Oxnard consist of Ventura Road, Victoria Avenue, Harbor Boulevard, Bahia Drive, Fifth Street, Gonzales Road, Wooley Road, Channel Islands Boulevard, Oxnard Boulevard, Pleasant Valley Road, and Hueneme Road (City of Oxnard 2006). In addition, the Oxnard has designated truck routes along arterial streets with few or no adjacent residential properties to help minimize noise and vibration impacts to residents (City of Oxnard 2006). The main roadways within Oxnard that would be utilized during the construction of the proposed discharge pipeline to the Calleguas SMP alignment include SR 101, Ventura Road, Fifth Street, Harbor Boulevard, and Gonzales Road (refer to Figure 2-14).



SOURCE: ESRI, 2016; City of Ventura, 2018; County of Ventura, 2017

Ventura Water Supply Projects

Figure 3.17-1
Existing Circulation System

City of Port Hueneme

Port Hueneme's circulation system is defined using a hierarchy of roadway types, which includes three classifications ranging from "Major" highway with the highest capacity through "Local Street" with the lowest capacity (City of Port Hueneme 2015). Major highways are the primary roadways which distribute and collect freeway-bound traffic, accommodate intracity trips, and serve other medium distance trips. Major highways in the city include Hueneme Road, Ventura Road, and Channel Islands Boulevard. Secondary highways are streets that distribute and collect traffic generated in the area circumscribed by major highways, while local streets provide local access and comprise the remainder of the streets in the city. Pleasant Valley Road is the only secondary highway in the city, although Surfside Drive acts as a secondary highway for beach-related traffic during busy weekends and holidays (City of Port Hueneme 2015). During construction of the proposed discharge pipeline to the Calleguas SMP alignment, construction trucks and vehicles would travel along Ventura Road, Port Hueneme Road, and Surfside Drive (refer to Figure 2-14).

Unincorporated Ventura County

In the vicinity of the proposed projects, the main roadways located in areas of unincorporated County include portions of Telephone Road and Olivas Park Drive (as shown in Figure 2-2).

Public Transportation

City of Ventura

Public transportation in Ventura includes bus and rail services. Gold Coast Transit District (GCTD, previously known as SCAT) provides local bus service, while Ventura Intercity Transit Authority (VISTA) runs regional routes, and Greyhound offers statewide and national connections (City of San Buenaventura 2005). As shown in the Bus and Rail Routes Map in the City's General Plan, GCTD bus routes run along North Ventura Avenue, Main Street, Telephone Road, Harbor Boulevard, Johnson Drive, Bristol Road, and Telegraph Road (City of San Buenaventura 2005). VISTA bus routes run along SR 101 and SR 126 and connect with various SCAT routes within the city (City of San Buenaventura, 2005).

Metrolink provides limited rail service from the City of Ventura to and from Los Angeles, while Amtrak runs a train route between San Luis Obispo and San Diego, which stops in the City of Ventura. As shown in the Bus and Rail Routes Map in the City's General Plan, the railroad runs along the coastline in the western edge of the city (City of San Buenaventura 2005).

City of Oxnard

Public transportation in Oxnard includes bus and rail services centered around public transportation transfer centers, which allows for convenient transfers between bus and rail services. GCTD provides local bus service throughout Oxnard with bus routes 2 through 9, 15, and 18A/18B (City of Oxnard 2006). VISTA also provides bus services to connect all municipal transit operators in the County and operates 6 days a week along SR 101 to connect Ventura, Oxnard, Camarillo, and Thousand Oaks (City of Oxnard 2006). In addition to GCTD bus services, the County in conjunction with Oxnard and Port Hueneme operates the Oxnard Harbors and Beaches Dial-a-Ride service, which provides circulation within the beach communities and

serves as a feeder service to GCTD and Amtrak (City of Oxnard 2006). Greyhound connections are also available in Oxnard, which allow for inter-regional travel as well.

In addition to bus service, Amtrak and Metrolink provide passenger rail services to Oxnard. Amtrak provides two services in Oxnard. The Coast Starlight provides a daily long-distance train from San Diego to Seattle with north- and southbound stops at Simi Valley and Oxnard, in Ventura County. The Pacific Surfliner Route connects Ventura County to San Diego, Los Angeles, Santa Barbara, and San Luis Obispo (City of Oxnard 2006). In addition, Metrolink currently operates service from the Oxnard Transportation Center east to Los Angeles. Oxnard is served by three eastbound trains in the morning and three westbound trains in the early evening (City of Oxnard 2006).

City of Port Hueneme

Due to the relatively small size of the City of Port Hueneme, GCTD also provides bus services throughout the city. Bus route 1A/1B provides public transportation around the downtown and beach areas of the city and connects north with the City of Oxnard (GCTD 2018). While Port Hueneme has a single-track railroad line, this rail line serves the Port of Hueneme Harbor, where use of this line is sporadic and totally dependent on harbor-related activities and does not serve the general public (City of Port Hueneme 2015).

Bicycles and Pedestrian Facilities

City of Ventura

Ventura provides bicycle facilities, which consists of Class I, II, and III facilities, throughout the city on all thoroughfares (City of San Buenaventura 2005). Class I bike paths are separated from roads by distance or barriers to ensure cross-traffic by motor vehicles is minimized. Class II bike lanes are roadway lanes reserved for bicycles, which are painted with pavement lines and markings and include bicycle signage for other motorists. Class III bike routes share existing roadways with vehicles and provide continuity to other bikeways or designated preferred routes through high-traffic areas and include signs that direct cyclists and warn drivers of the presence of bicyclists. In the vicinity of the proposed projects, there are Class I bike paths along SR 126, South Victoria Avenue, Petit Avenue, Bank Drive, and South Kimball Road; Class II bike lanes along Telephone Road, Telegraph Road, North Victoria Avenue, South Kimball Road, Petit Avenue, Bank Drive, Bristol Road and Olivas Park Drive; and Class III bike routes along East Main Street, Telegraph Road, and Kimball Road (City of San Buenaventura 2005).

In addition to bicycle facilities, Ventura also includes an extensive pedestrian system consisting of sidewalks, access ramps, crosswalks, linear park paths, and overpasses and tunnels. The Beachfront Promenade, California Plaza, and Figueroa Plaza have been designated especially for pedestrians. In addition, the city's pedestrian system also includes neighborhood and park path systems, and dedicated trail facilities that are shared with bicyclists and other users.

City of Oxnard

Pedestrian facilities are provided within and between residential neighborhoods along with commercial and industrial areas (City of Oxnard 2006). Oxnard has identified the need to increase the amount of sidewalks and paths in the city as the population continues to increase in the foreseeable future.

Oxnard is served by approximately 15 miles of designated bicycle paths, lanes, and routes. Similar to Ventura, Oxnard provides Class I, II, and III bicycle facilities throughout the city. Major bicycle routes are located along Gonzales Road, Fifth Street, Wooley Road, Victoria Avenue, G Street, and Bard Road (City of Oxnard 2006). In addition, the Pacific Coast Bikeway Route also runs through the city along Hueneme Road, G Street, Channel Islands Boulevard, and Harbor Boulevard. Joint pedestrian and bicycle routes are provided along Ocean Drive near the harbor in the vicinity of the proposed discharge pipeline to the Calleguas SMP alignment.

City of Port Hueneme

Port Hueneme's pedestrian and bicycle facilities are limited to the beach area and the Bubbling Springs Recreation Corridor. Major pedestrian activity is limited to the usage of the Beach Park. There are no designated bicycle routes located along the beach area (City of Port Hueneme, 2015). In addition to the Beach Park, the Bubbling Springs Recreation Corridor serves as the primary pedestrian and bicycle pathway through the city. This corridor includes one marked bicycle path and a lane system which provides connectivity between Bubbling Spring Park and the beach (City of Port Hueneme 2015).

3.17.2 Regulatory Framework

Federal

Highway Capacity Manual

The Highway Capacity Manual (HCM), prepared by the Transportation Research Board, is the result of a collaborative multi-agency effort between the Transportation Research Board, Federal Highway Administration, and American Association of State Highway and Transportation Officials. The HCM contains concepts, guidelines, and procedures for computing the capacity and level of service (LOS) of various transportation facilities, including freeways, signalized and unsignalized intersections, and rural highways, and the effects of transit, pedestrians, and bicycles on the performance of these systems.

Moving Ahead for Progress in the 21st Century Act

The Moving Ahead for Progress in the 21st Century Act (MAP-21) revised the policy and programmatic framework for investments meant to guide the nation's surface transportation system's growth and development. MAP-21 establishes a streamlined and performance-based surface transportation program, which builds upon many of the highway, transit, bike, and pedestrian programs and policies established by the Intermodal Surface Transportation Efficiency Act of 1991.

State

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, building, operating, and maintaining California's transportation system. Caltrans sets standards, policies, and strategic plans that aim to do the following: (1) provide the safest transportation system for users and workers, (2) maximize transportation system performance and accessibility, (3) efficiently deliver quality transportation projects and services, (4) preserve and enhance California's resources and assets, and (5) promote quality service. Caltrans has the discretionary authority to issue special permits for the use of state highways for other than normal transportation purposes. Caltrans also reviews all requests from utility companies, developers, volunteers, nonprofit organizations, and others desiring to conduct various activities within the state highway right-of-way.

The following California regulations apply to potential transportation and traffic impacts.

California Vehicle Code (CVC), division 15, chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code (S&HC) sections 660–711. Caltrans encroachment regulations would apply to construction of the proposed pipelines within and immediately adjacent to roadways, as well as the transportation of construction crews and construction equipment throughout the proposed project area. Caltrans requires permits be obtained for transportation of oversized loads, certain materials, and construction-related traffic disturbance.

Statewide Transportation Improvement Program

The California Statewide Transportation Improvement Plan (STIP) is a multiyear, intermodal program of transportation projects that is consistent with the statewide transportation planning processes, metropolitan plans, and Title 23 of the Code of Federal Regulations (CFR). The STIP is prepared by Caltrans in cooperation with the Metropolitan Planning Organizations (MPOs) and the Regional Transportation Planning Agencies. In San Luis Obispo County, the MPO and Regional Transportation Planning Agency is the Southern California Association of Governments (SCAG). The STIP contains all capital and non-capital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and Title 23 of the CFR, including federally funded projects.

Regional

2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

The most recent Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted by SCAG's Regional Council on April 7, 2016, and is known as the 2016–2040 RTP/SCS. The RTP/SCS is a long-range transportation plan that is developed and updated by SCAG every 4 years. As the planning authority for six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) as well as 189 cities, SCAG is the lead agency in facilitating the development of the RTP/SCS to provide a vision for transportation investments

throughout the region. Using growth forecasts and economic trends that project out over a 20-year period, the RTP/SCS considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the future, identifying regional transportation strategies to address our mobility needs. Compared to previous RTPs, the 2016–2040 RTP/SCS places a greater emphasis on sustainability and integrated planning and includes a strong commitment to reduce emissions from transportation sources to comply with California Senate Bill 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act.

Ventura County Congestion Management Plan

Ventura County Transportation Commission (VCTC) most recently updated the Ventura County Congestion Management Plan (CMP) in 2009. The CMP is intended to meet the requirements of the federal congestion management process described under Title 23 of the Code of Federal Regulations (CFR) Part 450.320. While the CMP include additional performance measures to help improve monitoring and improving the multimodal transportation system, the CMP also creates a framework and structure within which counties establish their own specific policies and programs. Trips associated with construction, rehabilitation, and maintenance activities are an excluded when determining the level of operations for all CMP roadways.

Ventura County General Plan

The Ventura County Board of Supervisors adopted the County’s General Plan in 1988 and most recently amended it in 2016. The Public Facilities and Services Element of the County’s General Plan includes the goals, policies, and programs related to transportation and circulation. The transportation and circulation goals and policies applicable to the proposed projects include the following:

Policy 4.2-3. The minimum acceptable LOS for road segments and intersections within the Regional Road Network and Local Road Network shall be as follows:

- a) LOS D for all County thoroughfares and Federal highways and State highways in the unincorporated area of the County, except as otherwise provided in subparagraph (b);
- b) LOS E for State Route 33 between the northerly end of the Ojai Freeway and the City of Ojai, Santa Rosa Road, Moorpark Road north of Santa Rosa Road, State Route 34 north of the City of Camarillo and State Route 118 between Santa Clara Avenue and the City of Moorpark;
- c) LOS C for all County-maintained local roads; and,
- d) The LOS prescribed by the applicable city for all Federal highways, State highways, city thoroughfares and city-maintained local roads located within that city, if the city has formally adopted General Plan policies, ordinances, or a reciprocal agreement with the County respecting development in the city that would individually or cumulatively affect the LOS of Federal highways, State highways, County thoroughfares and County-maintained local roads in the unincorporated area of the County. At any intersection between two roads, each of which has a prescribed minimum acceptable LOS, the lower LOS of the two shall be the minimum acceptable LOS for that intersection.

Local

City of San Buenaventura General Plan

The City of San Buenaventura's (Ventura or City) General Plan was adopted on August 8, 2005. The City's General Plan sets the long-range goals based on a shared vision to guide Ventura's future. The Circulation Element of the General Plan describes the existing circulation system for all modes of transportation and provides the long-range vision for improvements and new facilities. There are no goals or policies related to circulation and transportation that are applicable to the proposed projects.

City of Oxnard General Plan

The City of Oxnard's General Plan was adopted in October 2011 and was most recently amended in 2016. The Infrastructure and Community Services Chapter of Oxnard's General Plan describes the progressive projects and programs that Oxnard will implement to ensure that its infrastructure and community services, including circulation and transportation, keep pace with the public's needs and quality expectations. The following circulation and transportation goals and policies are applicable to the proposed projects:

Goal ICS-2. A transportation system that supports existing, approved, and planned land uses throughout the City while maintaining a LOS "C" at designated intersections unless excepted.

Policy ICS-2.6 Reduction of Construction Impacts. Minimize and monitor traffic and parking issues associated with construction activities, require additional traffic lanes and/or other traffic improvements for ingress and egress for new developments for traffic and safety reason, where appropriate.

Goal ICS-3. LOS C at designated intersections, unless otherwise reduced by City Council direction.

Policy ICS-3.1 CEQA Level of Service Threshold. Require LOS "C" as the threshold of significance for intersections during environmental review.

Policy ICS-3.2 Minimum Level of Service C and Exceptions. Maintain LOS "C" for all intersections incorporated in the Oxnard Traffic Model. The City Council allows as an exception LOS "D" either in the AM or PM periods, or both, at these five intersections (1. C Street and Wooley Road; 2. Oxnard Boulevard and Vineyard Avenue; 3. Oxnard Boulevard and Gonzales Road; 4. Gonzales Road and Rose Avenue; 5. Five Points (Oxnard Boulevard/Saviers Road/Wooley Road)) and LOS "F" at Five Points in order to avoid adversely impacting private homes and/or businesses resulting from additional mitigations, or preserve or enhance aesthetic integrity.

City of Port Hueneme

The City of Port Hueneme General Plan was adopted in 2015. The Circulation Element is intended to guide the development of the city's transportation system in a manner that is compatible with the Land Use Element of the General Plan and will meet the future needs of the city. The following circulation goals and policies are applicable to the proposed projects:

Goal 1. Provide a comprehensive transportation system for the movement of persons and goods with maximum safety, efficiency, and convenience, and with a minimum of delay and cost.

Policy 1-1. Reduce existing congestion at critical intersections, including Channel Islands Boulevard and Ventura Road, and Ventura Boulevard and Bard Road.

3.17.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to transportation and traffic. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the projects would have a significant impact if they would:

- Conflict with an applicable plan, ordinances or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit (refer to Impact TRAF 3.17-1).
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways (refer to Impact TRAF 3.17-2).
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (refer to Impact TRAF 3.17-3).
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (refer to Impact TRAF 3.17-4).
- Result in inadequate emergency access (refer to Impact TRAF 3.17-5).
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities (refer to Impact TRAF 3.17-6).

A summary of the findings for each impact is presented in **Table 3.17-1**. The analyses below support these findings.

TABLE 3.17-1
SUMMARY OF TRANSPORTATION AND TRAFFIC IMPACT DETERMINATIONS

Impacts	3.17-1 Traffic Circulation	3.17-2 Level of Service Standards	3.17-3 Air Traffic Patterns	3.17-4 Hazard Design Features	3.17-5 Emergency Access	3.17-6 Alternative Transportation Policies
Phase 1						
Advanced Water Purification Facility	LTSM	LTS	LTS	NI	LTSM	LTSM
Water Conveyance System	LTSM	LTS	LTS	NI	LTSM	LTSM
Groundwater Wells	LTSM	LTS	LTS	NI	LTSM	LTSM
Wildlife/Treatment Wetlands	LTSM	LTS	LTS	NI	LTSM	LTSM
VWRF Treatment Upgrades	LTS	LTS	LTS	NI	LTSM	LTSM
Concentrate Discharge Facility	LTSM	LTS	LTS	NI	LTSM	LTSM
Phase 2						
AWPF Expansion	LTS	LTS	LTS	LTS	LTSM	LTSM
Ocean Desalination	LTSM	LTS	LTS	LTS	LTSM	LTSM
LTS = Less than Significant, no mitigation proposed LTSM = Less than Significant impact with mitigation NI = No Impact SU = Significant and Unavoidable impact, even after implementation of mitigation						

3.17.4 Impacts and Mitigation Measures

Traffic Circulation

Impact TRAF 3.17-1: The proposed projects could result in a significant impact if they would conflict with an applicable plan, ordinances or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Phase 1

The construction of Phase 1 of the Ventura Water Supply Projects would take approximately 3 to 5 years, with a tentative start date in mid-June 2020. The Phase 2 construction would take approximately 10 to 15 years, starting in 2024. **Table 3.17-2** contains a tentative work schedule by component. Construction would occur mainly Monday through Friday, between the hours of 7:00 a.m. and 8:00 p.m., in accordance with City construction requirements. In addition, there may be a need for occasional nighttime and weekend work. The City would obtain a noise variance for any work occurring outside the hours of 7:00 a.m. and 8:00 p.m., and for any holiday or weekend work, in compliance with local regulations.

**TABLE 3.17-2
VENTURA WATER SUPPLY CONSTRUCTION SCHEDULE**

Project Component	Proposed Construction Timeframe
Ventura Water Supply Projects Phase 1	
Advanced Water Purification Facility	June 2020 – December 2023
Water Conveyance System	June 2020 – March 2023
Groundwater Wells	January 2021 – December 2023
Wildlife/Treatment Wetlands	June 2021 – February 2025
VWRF Treatment Upgrades	June 2021 – April 2022
Concentrate Discharge Facility	January 2021 – March 2023
Ventura Water Supply Projects Phase 2	
AWPF Expansion	May 2024 – December 2035
Ocean Desalination Facility	May 2024 – December 2035

Advanced Water Purification Facility

The proposed project would construct a new AWPf within one of the four potential sites in Ventura. Construction of the AWPf is anticipated to occur from June 2020 to December 2023 and is expected to generate an average of 148 worker trips and 43 vendor trips a day over the 3.5-year period. Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites and by trucks hauling materials and equipment to

and from the AWPf site. Construction trucks and vehicles would use the regional circulation system as well as the main roadways within Ventura. Traffic entering and leaving the site would include workers' daily arrival and departure, equipment deliveries, hauling of excavation spoil, concrete deliveries, and other construction-related traffic. As described above, the main roadways which would provide access to the Harbor Boulevard site are Harbor Boulevard and Olivas Park Drive; to the Transport Street site are Transport Street, Donlon Street, Telephone Road, and Main Street; to the Portola Road site are Portola Road and Main Street (refer to Figures 2-6 through 2-8). In addition to the immediate roadways that provide access to each site, SR 101, SR 1, and SR 126 along with local roadways would also be utilized during construction.

While construction of the proposed AWPf would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, the increase in traffic volumes would be minimal and return to pre-construction conditions once construction is complete. Construction access to the AWPf site would occur primarily on residential and arterial roadways, which are not heavily traveled on a daily basis. Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would be scheduled outside of peak traffic hours, as feasible. Further, all construction trucks traveling on Caltrans facilities would be required to comply with CVC, Division 15, Chapters 1 through 5 and California Street and Highway Code Sections 660–711, as applicable, to minimize impacts to roadway operations. However, since the construction of the Phase 1 facilities would overlap, construction could impact the existing performance of the surrounding circulation system. Nevertheless, the implementation of **Mitigation Measure TRAF-1**, which would require the preparation and implementation of a Traffic Control Plan, would reduce impacts to the local and regional circulation systems to less than significant levels.

After construction is completed, it is anticipated that the AWPf would require approximately 20 new full-time employees to operate the facility. Operational traffic would be generated by worker commutes and supply/chemical deliveries, which would generate approximately 40 worker trip and 7 truck trips daily. The number of vehicle and truck trips generated during operation would be minimal and would not cause existing roadway levels of operation to decrease. Therefore, impacts to the existing performance of the surrounding circulation system during operation of the proposed AWPf would be less than significant.

Mitigation Measures:

TRAF-1: Prior to the start of construction facilities that would occur within a roadway right-of-way, the City of Ventura shall require the construction contractor to prepare a Traffic Control Plan. The Traffic Control Plan will show all signage, striping, delineated detours, flagging operations, and any other devices that will be used during construction to guide motorists, bicyclists, and pedestrians safely through the construction area and allow for adequate access and circulation to the satisfaction of the City's Public Works Director and Fire and Police Chiefs. When construction activities disrupt travel on major collectors or arterials, electronic signs shall be used to provide the public, on all transportation modes, with current construction information and the availability of alternate travel routes.

The Traffic Control Plan shall be prepared in accordance with the City of Ventura's traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties and that emergency access will not be restricted. Additionally, the Traffic Control Plan shall also include a scheduling plan showing the hours of operation to minimize congestion during the peak hours and special events. The scheduling plan will ensure that congestion and traffic delay are not substantially increased as a result of the construction activities. Further, the Traffic Control Plan will include detours or alternative routes for bicyclists using on-street bicycle lanes as well as for pedestrians using adjacent sidewalks.

In addition, the City shall provide written notice at least 2 weeks prior to the start of construction to owners/occupants along streets to be affected during construction. During construction, the City will maintain continuous vehicular and pedestrian access to any affected residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, the City shall notify the owner or occupant of the closure of the driveway at least 5 working days prior to the closure. The Traffic Control Plan shall include provisions to ensure that the construction of the proposed projects do not interfere unnecessarily with the work of other agencies such as mail delivery, school buses, and municipal waste services.

The City shall also notify local emergency responders of any planned partial or full lane closures or blocked access to roadways or driveways required for construction of the proposed project facilities. Emergency responders include fire departments, police departments, and ambulances that have jurisdiction within the proposed project area. Written notification and disclosure of lane closure location must be provided at least 30 days prior to the planned closure to allow for emergency response providers adequate time to prepare for lane closures.

Significance Determination: Less than Significant with Mitigation.

Water Conveyance System

The proposed project would construct a product conveyance system that moves tertiary-treated effluent from the existing Ventura Wastewater Reclamation Facility (VWRF) to the new AWPf, raw groundwater to the AWPf from the existing extraction wells, purified water from the AWPf to aquifer storage and recovery (ASR) wells and/or the Bailey WCF or Saticoy WCF, and would convey extracted groundwater from the ASR wells to the Bailey WCF or Saticoy WCF.

Construction of the water conveyance system is anticipated to occur from June 2020 to March 2023 and is expected to generate approximately an average of 15 worker trips and two haul trips per day over the construction period. Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to and from the pipeline alignments. The local circulation system in Ventura, specifically Olivas Park Drive, Bristol Road, Johnson Drive, Hill Road, and Telephone Road, and the regional circulation system would be used during construction.

Construction of the product water conveyance system would not substantially increase traffic levels or travel times on the surrounding local and regional circulation systems. However, construction activities within roadways would require partial closure of traffic lanes, which would

increase delays on affected roadways. In order to reduce delay times during partial lane closures, the City of Ventura would be required to implement Mitigation Measure TRAF-1, which would require the preparation and implementation of a Traffic Control Plan. The Traffic Control Plan would identify signage, striping, delineated detours, flagging operations, changeable message signs, delineators, arrow boards, and K-Rails needed to reduce impacts to motorists, bicyclists, and pedestrians. Approximately two to four construction workers would be required to implement the traffic control plan during construction. The City of Ventura would be required to coordinate with the County during preparation of the Traffic Control Plan since the conveyance system could extend through its jurisdiction. With implementation of Mitigation Measure TRAF-1, impacts to the local and regional circulation systems during construction of the conveyance facilities would be reduced to less than significant levels.

Once constructed, all conveyance pipelines would be entirely underground and would require minimal maintenance and would not result in a significant increase in traffic volumes on surrounding roadways. Thus, operation of the product water conveyance system would not affect the performance of the local or regional circulation systems and impacts would be less than significant.

In addition, the proposed pump stations associated with the conveyance systems would be constructed within the VWRP and within one of the four potential AWP sites. Construction of the pump station and conveyance system would occur simultaneously with construction of the AWP and has been accounted for in the construction period and required number of construction workers stated above for the AWP. Once construction is complete, the pump station would require occasional maintenance, which could generate a few vehicle trips annually, but would not significantly increase traffic volumes on surrounding roadways. Thus, operation of the pump station would not affect the performance of the local or regional circulation systems and impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Groundwater Aquifer Storage and Recovery Wells

The proposed projects include construction of up to six wells within the Oxnard Plain Basin. Up to three wells would be located at Well Site 1 and up to three wells would be located at either Well Site 2 or Well Site 3 (final configuration to be determined by detailed groundwater modeling). As part of this system, monitoring wells would be installed to comply with potable reuse permitting requirements and to monitor water quality in the groundwater basin.

Construction of the groundwater wells is anticipated to occur from January 2021 through December 2023 and is expected to generate an average of 20 worker trips a day and a total of 9 haul trucks trips for exported soil over the construction period. Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to and from the groundwater well sites. As shown on Figure 2-10, the major roadways that construction trucks and vehicles would use include SR 101, SR 126, Harbor Boulevard, Telephone Road, Victoria Avenue and Olivas Park Drive.

While construction of the ASR wells would generate additional trips on the local and regional circulation systems within the vicinity of the groundwater wells, the number of trips would be minimal over the 36-month construction period and would not substantially increase travel times on these roadways. The primary roadways that would be used during construction currently support large traffic volumes, where the addition of approximately 20 worker trips and 9 haul trucks a day would not affect the existing levels of operation. Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would be schedule outside of peak hours, as feasible. Furthermore, all construction trucks traveling on Caltrans facilities would be required to comply with CVC, Division 15, Chapters 1 through 5 and California Street and Highway Code Sections 660–711, as applicable, to minimize impacts to roadway operations. However, since the construction of the Phase 1 facilities would overlap, construction could impact the existing performance of the surrounding circulation system. Nevertheless, the implementation of Mitigation Measure TRAF-1, which would require the preparation and implementation of a Traffic Control Plan, would reduce impacts to the local and regional circulation systems to less than significant levels. Therefore, construction of the groundwater well facilities would not decrease the performance level of any of the roadways in the local or regional circulation systems. Impacts would be less than significant with mitigation.

Once constructed and operational, the groundwater well sites would be accessed by maintenance personnel approximately twice a month. Maintenance activities would typically include equipment inspections and minor repairs, as necessary. On occasion, unscheduled maintenance or repair of facilities may be required; replacement or repair of the pump, motor or other appurtenances of the well would be conducted as needed. Operation and maintenance activities would generate a limited amount of truck and vehicle trips annually and would not affect the performance level of the surrounding roadways in Ventura in the vicinity of the groundwater well sites. Therefore, impacts to the local and regional circulation systems during operation of the groundwater wells would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetland

The proposed projects would include reconfiguration of the existing wildlife ponds by adding soil and adding vegetation throughout the ponds. In addition, the proposed projects would include an approximately 35-acre new treatment wetland to the east of the VWRP. Construction of the treatment wetlands is anticipated to occur from January 2021 through February 2025 and is expected to generate an average of 10 worker trips and 14 haul trips a day during the construction period. Access to the treatment wetlands site would be provided via Harbor Boulevard (refer to Figure 2-13). Construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to the sites. Specifically, the excavation/grading phase of construction would be the most intensive

phase and would require approximately 17,122 haul trucks over a 39-month period, which roughly equates to 15 haul trips a day.

While implementation of this project component would generate additional trips on the Harbor Boulevard and the surrounding local and regional circulation systems, the number of trips would not substantially increase travel times on these roadways and would cease once construction is complete. Harbor Drive is designated as an arterial and currently serves major traffic-generating land uses; as such, Harbor Drive would be able to accommodate the additional construction trips associated with this project component (City of San Buenaventura 2005). Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would be scheduled outside of peak hours, as feasible. Furthermore, all construction trucks traveling on Caltrans facilities would be required to comply with CVC, Division 15, Chapters 1 through 5 and California Street and Highway Code Sections 660–711, as applicable, to minimize impacts to roadway operations. However, since the construction of the Phase 1 facilities would overlap, construction could impact the existing performance of the surrounding circulation system. Nevertheless, the implementation of Mitigation Measure TRAF-1, which would require the preparation and implementation of a Traffic Control Plan, would reduce impacts to the local and regional circulation systems to less than significant levels. Therefore, reconfiguration and construction of the treatment wetlands would not decrease the performance level of any of the roadways in the local or regional circulation systems. Impacts would be less than significant with mitigation.

Once construction is completed, the natural treatment wetlands would require regular monitoring and maintenance for the first 2 to 3 years as the wetland vegetation becomes established. In addition, vegetation maintenance/removal projects would be required at regular intervals, approximately every 3–5 years, to ensure that water flows through the system as designed and does not get hydraulically constricted causing elevated water levels or limited capacity. Regular water quality testing would also occur to ensure that the wetland is operating properly for reducing nutrients in the VWRf treated discharge. It is anticipated that 3 to 5 new employees would be required to monitor and maintain the wetlands. Operation and maintenance activities would generate a limited amount of truck and employee vehicle trips annually and would not affect the performance level of Harbor Boulevard or the surrounding local and regional roadways. Therefore, operational impacts would be less than significant.

In support of the reconfiguration and expansion of the freshwater treatment wetlands, the proposed project would construct a pump station at the existing VWRf as well as a new conveyance pipeline to convey the VWRf effluent to the new treatment wetland, which would cross under Harbor Boulevard (refer to Figure 2-17). In addition, a new point of discharge would be constructed from the natural treatment wetland as an outlet to the Santa Clara River Estuary (SCRE). Construction of the pump station and the conveyance pipelines are included in the construction timeframe stated above for the reconfiguration and expansion of the freshwater treatment wetlands. Construction of the effluent pipeline from the VWRf to the wetland would involve trenching using a conventional cut and cover technique or directional drilling techniques where necessary to avoid impacts to heavily traveled roadways and/or sensitive biological areas.

Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. Construction trips would be generated by trucks bringing materials to and from the existing VWRF and daily construction worker vehicle trips.

Construction activities within Harbor Boulevard to install the conveyance pipelines would require partial closure of traffic lanes, which could significantly impact the performance of this roadway. In order to reduce impacts to roadway performance during construction of the conveyance pipelines, the City of Ventura would be required to implement Mitigation Measure TRAF-1. Approximately two to four construction workers would be required to implement the traffic control plan during pipeline installation. Therefore, with implementation of Mitigation Measure TRAF- 1, impacts to the Harbor Boulevard during construction of the conveyance pipelines would be reduced to a less than significant level.

Once constructed, the conveyance pipelines would be contained entirely underground and would require minimal maintenance. The pump station would require occasional maintenance, which could generate a few vehicle trips annually, but would not substantially increase traffic volumes on Harbor Boulevard or the surrounding local and regional circulation systems. Thus, operation of the pump station and the conveyance pipelines would not affect the performance of the local or regional circulation systems. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

VWRF Treatment Upgrade

The upgrades would include replacing the aeration blowers, existing gravity thickener, and a new anoxic tank within the existing VWRF. The proposed upgrades are anticipated to an average of 10 daily worker trips and a total of 50 truck trips during construction. While construction of the proposed upgrades would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, traffic levels would not substantially increase and would return to pre-construction conditions once construction is complete. Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would cease once construction activities are completed. Furthermore, all construction trucks traveling on Caltrans facilities would be required to comply with CVC, Division 15, Chapters 1 through 5 and California Street and Highway Code Sections 660–711, as applicable, to minimize impacts to roadway operations. Therefore, impacts to the existing performance of the surrounding circulation system during construction of the AWPf treatment upgrades would be less than significant.

The proposed AWPf upgrades would not create any new vehicle trip above and beyond what is current occurring at the VWRF. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

The proposed project could construct a new ocean outfall that would discharge concentrate to the ocean north of Ventura Harbor (see Figure 2-19). The ocean outfall would be installed with directional drilling techniques from within Marina Park, emerging on the ocean floor 1 to 2 miles offshore. Additionally, a conveyance pipeline would be constructed from the AWPf to the ocean outfall within public rights-of-way where feasible, as shown in Figure 2-9. Construction of the new outfall is anticipated to occur from January 2021 through March 2023 and is expected to require approximately 15 daily worker trips and a total of approximately 1,900 truck trips to dispose of pavement and excavated soil over the 26-month period, or approximately four truck trips a day. Construction trips would be generated by trucks bring materials to and from the construction sites and daily construction worker vehicle trips.

Construction of the new outfall would not substantially increase traffic levels or travel times on the Harbor Boulevard or the surrounding local and regional circulation systems. However, construction activities within roadways would require partial closure of traffic lanes, which would increase delays on affected roadways. Implementation of Mitigation Measure TRAF-1 would require the preparation and implementation of a Traffic Control Plan to reduce delays during construction. The Traffic Control Plan would identify different construction practices to minimize the effects on roadway operations. The City of Ventura would also be required to coordinate with the County during preparation of the Traffic Control Plan since the conveyance pipeline could extend through its jurisdiction. Therefore, with implementation of Mitigation Measure TRAF-1, impacts to Harbor Boulevard and the local and regional circulation systems during construction of the new outfall would be reduced to a less than significant level.

Once constructed, the outfall and conveyance pipeline would be contained entirely underground and would require minimal maintenance. Operation and maintenance would not result in a significant increase in traffic volumes on surrounding roadways which would decrease the existing roadways' levels of operation. Thus, impacts would be less than significant.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

If the Ventura concentrate outfall option is not selected, the proposed project would construct two pump stations, one at the VWRf, and a booster pump station located off-site, and concentrate pipeline (collectively referred to as the discharge pipeline to the Calleguas SMP) to convey concentrate from the proposed AWPf to the existing Calleguas SMP ocean outfall in Port Hueneme. Pipelines would be installed primarily within existing roadway rights-of-way to the extent feasible. As shown in Figure 2-14, the proposed discharge pipeline to the Calleguas SMP would extend through the cities of Ventura, Oxnard, and Port Hueneme as well as through areas of unincorporated Ventura County. Similar to the new outfall option, construction of the discharge pipeline to the Calleguas SMP option is anticipated to occur from January 2021 through March 2023 and is expected to generate approximately 15 daily worker trips and would require approximately 1,900 haul truck trips.

Construction of the new discharge pipeline to the Calleguas SMP within roadways would require partial closure of traffic lanes, which would increase delays on affected roadways. Mitigation Measure TRAF-1 would require the preparation and implementation of a Traffic Control Plan to manage traffic during construction to minimize delays. The Traffic Control Plan would identify signage, striping, delineated detours, flagging operations, changeable message signs, delineators, arrow boards, and K-Rails needed to reduce impacts to motorists, bicyclists, and pedestrians. The City of Ventura would also be required to coordinate with the Cities of Oxnard and Port Hueneme and Ventura County during preparation of the Traffic Control Plan since the pipeline would extend through their jurisdictions. With implementation of Mitigation Measure TRAF-1, impacts to Harbor Boulevard, Fifth Street, Ventura Road, Port Hueneme Road, and Surfside Drive and the local and regional circulation systems during construction of the discharge pipeline to the Calleguas SMP would be reduced to a less than significant level.

Once constructed, the concentrate pipeline would be contained entirely underground and would require minimal maintenance. Maintenance activities of the pipelines would not result in a significant increase in traffic volumes on surrounding roadways which would decrease the existing roadways' levels of operation. The booster stations would require occasional maintenance, which could generate a few vehicle trips annually, but would not substantially increase traffic volumes on the surrounding local and regional circulation systems. Therefore, operation of the discharge pipeline to the Calleguas SMP would not affect the performance of the local or regional circulation systems. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1

Significance Determination: Less than Significant with Mitigation.

Phase 2

AWPF Expansion

In the future, if additional VWRP tertiary-treated effluent in excess of the maximum ecologically protective diversion volume (MEPDV) becomes available or is mandated for diversion to reuse by the responsible agencies with jurisdiction, then the AWPf would be expanded to produce up to an additional 1.2 million gallons per day (1,400 acre-feet per year) of product water. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes or added. However, the additional treatment may require more chemical deliveries. The addition of one or two additional truck trips a month would not substantially increase traffic volumes or the surrounding local and regional circulation systems. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility

While construction of the proposed desalination facility at the AWPf site would temporarily generate additional truck and vehicle trips within Ventura and the regional circulation system, traffic levels would not substantially increase and would return to pre-construction conditions once construction is complete. Similar to traffic generated by the AWPf, construction trips associated with the proposed desalination facility would primarily use roadways which currently support large traffic volumes, where the addition of the construction trips would not decrease existing operation levels. Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would cease once construction activities are completed. Further, all construction trucks traveling on Caltrans facilities would be required to comply with CVC, Division 15, Chapters 1 through 5 and California Street and Highway Code Sections 660–711, as applicable, to minimize impacts to roadway operations. Therefore, impacts to the existing performance of the surrounding circulation system during construction of the desalination facility at the AWPf site would be less than significant.

However, construction activities within roadways related to the installation of the pipeline from the ocean to the AWPf site would require partial closure of traffic lanes, which could significantly impact the performance of the applicable roadways. In order to reduce impacts to roadway performance during construction of the water intake pipeline, the City of Ventura would be required to implement Mitigation Measure TRAF-1, which would require the preparation and implementation of a Traffic Control Plan. The implementation of a Traffic Control Plan as mitigation for roadways which require partial closures during construction would minimize the effects on roadway operations. Therefore, with implementation of Mitigation Measure TRAF-1, impacts to the local and regional circulation systems during construction of the water intake pipeline would be reduced to a less than significant level.

The operation of the ocean desalination project would be similar to the AWPf. The desalination equipment would be located within the same footprint as the AWPf and would require approximately two new employees that specialize in desalination plant operations and maintenance beyond what is already needed for the AWPf. Typical maintenance would entail the inspection and/or maintenance of valves and corrosion inspections. Once constructed, the water intake pipeline would be contained entirely underground and would require minimal maintenance. While these operational activities would generate additional truck trips on the surrounding local and regional circulation system, the number of truck trips during operation would be minimal. Therefore, impacts to the existing performance of the surrounding circulation system during operation of the desalination facility, including the water intake pipeline, would be less than significant.

Ocean Intake

The proposed subsurface ocean intake system would be constructed to intake ocean water through slant wells, beach wells, or infiltration galleries; however, the location of the ocean intake system is undetermined. While construction of the proposed subsurface ocean intake system would temporarily generate additional truck and vehicle trips near the beach within Ventura and the regional circulation system, traffic levels would not substantially increase and would be temporary in nature as traffic levels would return to pre-construction conditions once construction is complete. Additionally, while local drivers could experience increased travel times if they were traveling behind a heavy truck due to slower movement and turning radii compared to passenger vehicles, these delays would be intermittent throughout the day and would cease once construction activities are completed. Therefore, impacts to the existing performance of the surrounding circulation system during construction of the subsurface ocean intake system would be less than significant.

Once constructed, the subsurface ocean intake system would be contained entirely underground and would require minimal maintenance, and would not result in a significant increase in traffic volumes on surrounding roadways which would decrease the existing roadways' levels of operation. Thus, operation of subsurface ocean intake system would not affect the performance of the local or regional circulation systems. Impacts would be less than significant.

Mitigation Measures: Implement Mitigation TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Congestion Management Program

Impact TRAF 3.17-2: The proposed projects could result in a significant impact if they would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

The VCTC prepares and implements the CMP for Ventura County, which provides congestion management strategies for Caltrans facilities within the County. Caltrans facilities within the Program area include SR 101, SR 1, SR 126, SR 33, and SR 118. According to the CMP, trips associated with construction, rehabilitation, and maintenance activities are excluded when determining the level of operations for all CMP roadways (VCTC 2009). Therefore, all traffic generated during the construction and operation of the proposed projects would be consistent with the CMP and would not decrease the performance of SR 101, SR 1, SR 126, SR 33, and SR 118 in the vicinity of the proposed projects. Impacts during construction and operation of the proposed projects would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Air Traffic Patterns

Impact TRAF 3.17-3: The proposed projects could result in a significant impact if they would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

As stated in Section 3.8, Hazards and Hazardous Materials, the Oxnard Airport is the public airport located nearest to the proposed projects, and the Point Mugu Naval Air Station is the nearest private airstrip to the proposed projects. According to the Ventura County Airport Land Use Commission (ALUC) Airport Comprehensive Land Use Plan (ACLUP), the proposed projects are not located within a safety zone or height restriction zone for the Point Mugu Naval Air Station (Ventura County ALUC 2000). Therefore, due to distance from these airports, construction and operation of the proposed projects would not have the potential to affect air traffic patterns at these airports.

While the majority of the proposed projects are not in the vicinity of the Oxnard Airport, a segment of the proposed discharge pipeline to the Calleguas SMP alignment would be located approximately 500 feet south of the Oxnard Airport, and would be located within a portion of the Oxnard Airport Outer Safety Zone and Height Restriction Zone. However, construction of the discharge pipeline to the Calleguas SMP would not include any tall or large construction equipment, such as a crane, which could physically interfere with the air traffic patterns of the Oxnard Airport. Additionally, while there is the potential for construction to occur at nighttime, this segment of the discharge pipeline to the Calleguas SMP would be constructed in a highly urban area, where construction lights would not result in a substantial new light source. Furthermore, all light sources would be shielded and orientated away from the Oxnard Airport to ensure construction activities would not have the potential to distract pilots from new nighttime light sources. Therefore, impacts related to air traffic patterns during construction of the discharge pipeline to the Calleguas SMP would be less than significant.

Once operational, the discharge pipeline to the Calleguas SMP would be underground and would not have any features which would interfere with the Oxnard Airport. All other facilities associated with the proposed projects would be located outside of the airport influence area of the Oxnard Airport and would be located too far away to affect air traffic patterns during operation. Thus, implementation of the proposed projects would not affect air traffic patterns. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Hazardous Design Features

Impact TRAF 3.17-4: The proposed projects could result in a significant impact if they would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Phase 1

Construction of the Ventura Water Supply Projects components would not include the construction of a new roadway or intersection, which could be determined to be a hazardous design feature. All pipelines would be constructed within the existing road rights-of-way, where feasible. The aboveground component would not include any new entrance driveways that would create a design hazard to the local circulation system. No impact would occur.

Operation of the proposed projects would operate water infrastructure within the cities of Ventura, Oxnard, and Port Hueneme and in areas of unincorporated Ventura County, where the type of water infrastructure would be similar in nature to existing water infrastructure within these jurisdictions and would not be considered an incompatible use. Further, operation of the proposed projects would not operate any new intersections or roadways and as such would not result in a hazardous design feature. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

Similar to the Phase 1 components, construction of the AWPf expansion project and desalination treatment facilities would not include the construction of a new roadway or intersection, which could be determined to be a hazardous design feature. All pipelines would be constructed within the existing road rights-of-way, where feasible. The aboveground component would be located within the AWPf and would not create a design hazard to the local circulation system. No impact would occur.

Operation of the program-level components would not create any new intersections or roadways and as such would not result in a hazardous design feature. Impacts during operation of the program-level components would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Emergency Access

Impact TRAF 3.17-5: The proposed projects could have a significant impact if they would result in inadequate emergency access.

Phase 1

As described in Impact HAZ 3.8-6, construction of the AWPf, groundwater wells, and treatment wetlands would not require construction within road rights-of-way, and therefore would not impair an emergency response plan. However, construction of the conveyance facilities, including the product water conveyance system, the concentrate discharge options (new outfall or discharge pipeline to the Calleguas SMP), and all other conveyance pipelines associated with the AWPf, groundwater ASR wells, and freshwater treatment wetlands, would require partial lane closures, which could result in inadequate emergency access in the vicinity of the roadway closures. Implementation of Mitigation Measure TRAF-1 would require the preparation and implementation of a Traffic Control Plan to assure that access is maintained during construction. The Traffic Control Plan would be coordinated with emergency responders, which include the fire department, police department, and ambulance first responders that have jurisdiction within the vicinity of the proposed projects. Therefore, with implementation of Mitigation Measure TRAF-1, impacts to emergency access during construction of the proposed projects would be reduced to less than significant.

Once constructed, the project facilities would be accessible to emergency providers and would not interfere with emergency access. No impact would occur.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Phase 2

Similar to the Phase 1 components, construction of the ocean intake pipeline would require partial lane closures, which could result in inadequate emergency access in the vicinity of the roadway closures. Nevertheless, implementation of Mitigation Measure TRAF-1 would require ensure that emergency access is maintained during construction. Therefore, impacts to emergency access during construction would be reduced to less than significant.

Once constructed, the project facilities would be accessible to emergency providers and would not interfere with emergency access. No impact would occur.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

Alternative Transportation Policies

Impact TRAF 3.17-6: The proposed projects could result in a significant impact if they would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Phase 1

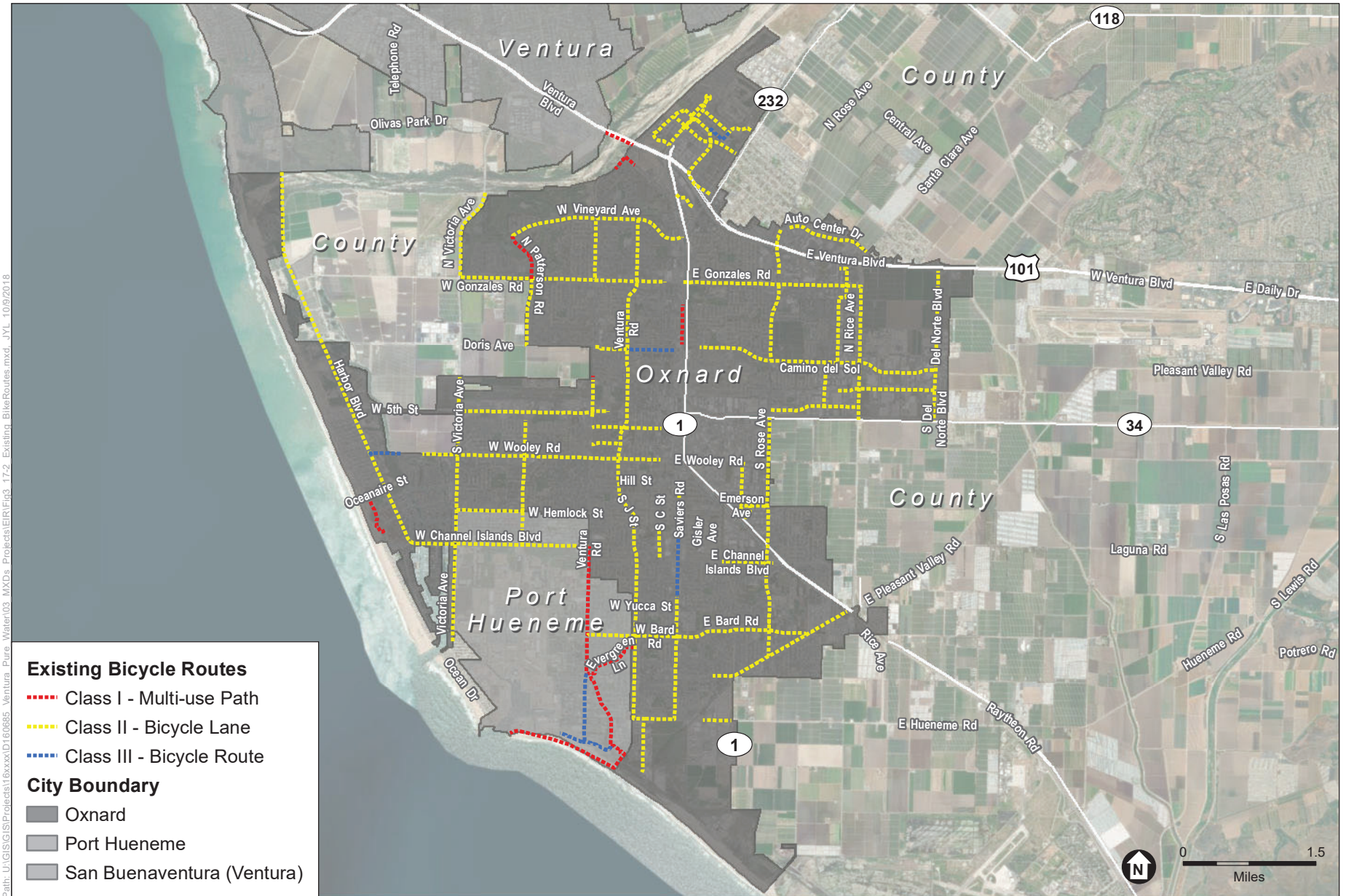
Figure 3.17-2 shows the bicycle and pedestrian facilities in the vicinity of the proposed projects. While construction of the proposed projects would require heavy trucks and passenger vehicles to utilize the local and regional circulation systems, the presence of these heavy trucks and passenger vehicles would not interfere with the existing operation of the surrounding bicycle lanes and sidewalks. The construction of the conveyance pipeline would cross the railroad tracks at three potential locations (**Figure 3.17-3**). However, at each of these crossing, construction would use trenchless technology to trench under the tracks and would avoid any potential interruption of rail transit. Furthermore, construction of the proposed projects would not inhibit existing transit routes or block bus stops as all trucks and vehicles would be parked on-site or within designated loading or parking areas.

Construction of the conveyance facilities would require partial lane closures which would significantly impact bicycle lanes within the right-of-way, sidewalks, and transit routes and bus stops. Implementation of Mitigation Measure TRAF-1 would require the preparation and implementation of a Traffic Control Plan to minimize impacts to public transit and bike paths in conformance with local jurisdiction encroachment permit requirements. Construction would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, with implementation of the Traffic Control Plan, as required by Mitigation Measure TRAF-1 would be reduced impacts to less than significant.

Once construction is complete, alternative transportation facilities would return to pre-construction conditions, as the conveyance facilities would be underground and no project components would be located within road rights-of-way. Operation and maintenance of the proposed projects' facilities would be minimal and would not interfere with alternative transportation facilities. Therefore, impacts to alternative transportation facilities during operation of the proposed projects would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

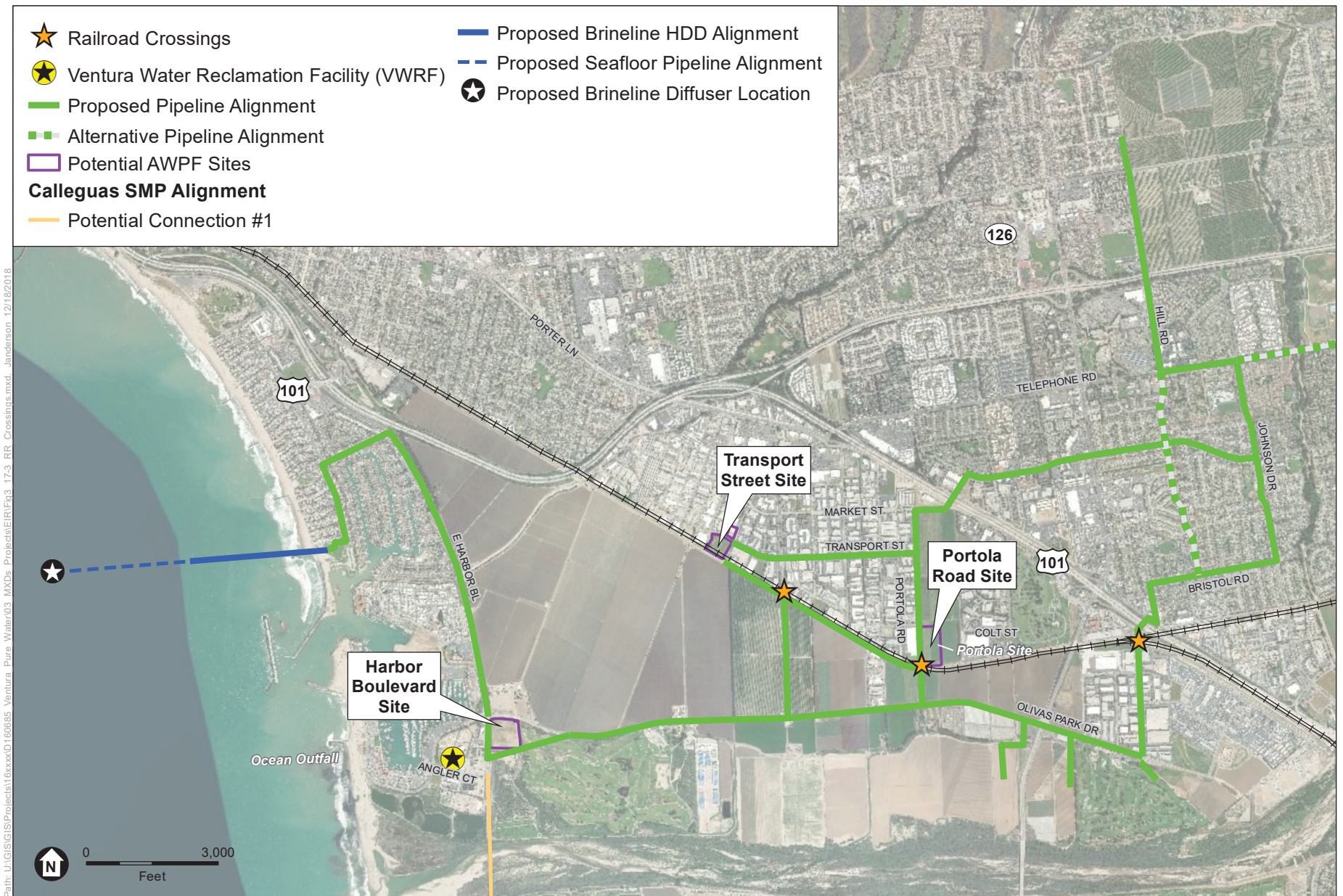
Significance Determination: Less than Significant with Mitigation.



SOURCE: ESRI, 2016; City of Ventura, 2018; County of Ventura, 2017

Ventura Water Supply Projects

Figure 3.17-2
Existing Bicycle Facilities



SOURCE: ESRI

Ventura Water Supply Projects

Figure 3.17-3
Railroad Crossings

Phase 2

Similar to the Phase 1 components, construction of the ocean intake pipeline associated with the desalination treatment facilities would require partial lane closures which would significantly impact bicycle lanes within the right-of-way, sidewalks, and transit routes and bus stops. However, implementation of Mitigation Measure TRAF-1 would require the preparation and implementation of a Traffic Control Plan for roadways which require partial closures during construction to minimize the effects on emergency access. The Traffic Control Plan would identify signage, striping, delineated detours, flagging operations, changeable message signs, delineators, arrow boards, and K-Rails to guide bicyclists and pedestrians safely through the construction area. In addition, the Traffic Control Plan would include detours or alternative routes for bicyclists using on-street and off-street bicycle lanes as well as for pedestrians using adjacent sidewalks. Therefore, implementation of the Traffic Control Plan, as required by Mitigation Measure TRAF-1, would reduce impacts to less than significant.

Once construction is complete, alternative transportation facilities would return to pre-construction conditions as the ocean intake pipeline would be underground and no project components would be located within road rights-of-way. Operation and maintenance of the AWP expansion and/or desalination treatment facilities would be minimal and would not interfere with alternative transportation facilities. Therefore, impacts to alternative transportation facilities during operation would be less than significant.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Less than Significant with Mitigation.

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3.18 Tribal Cultural Resources

This section provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed projects. The analysis in this section is based, in part, on consultation with the Native American Heritage Commission (NAHC) and Native American tribes.

3.18.1 Existing Setting

As noted in Section 3.5, *Cultural Resources*, the proposed projects encompass the ethnographic territory of the Chumash. A detailed description of the Chumash can be found in Section 3.5, *Cultural Resources*.

3.18.2 Regulatory Framework

State

Assembly Bill 52 and Related Public Resources Code Sections

Assembly Bill (AB) 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California Public Resources Code (PRC) Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under the California Environmental Quality Act (CEQA), known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA Guidelines, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency’s formal notification and the lead agency must begin consultation within 30 days of receiving the tribe’s request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an Environmental Impact Report or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

3.18.3 Consultation

The NAHC maintains a confidential Sacred Lands File (SLF), which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on January 29, 2018, to request a search of the SLF. The NAHC responded to the request in a letter dated February 6, 2018. The results of the SLF search conducted by the NAHC indicate that no Native American cultural resources are known to be located within the proposed project area.

The City has conducted consultation with California Native American tribes to identify the potential for the Project to impact tribal cultural resources pursuant to AB 52 and its implementing regulations. As part of AB 52 consultation, the City sent letters to California Native American tribes that are traditionally and culturally affiliated with the geographic area of the projects and who have requested in writing to be informed of proposed projects. All of the tribal groups indicated by the NAHC as having affiliation with the project area were among the groups contacted via certified mail as part of the AB 52 consultation notification process. **Table 3.18-1** provides a summary of the Native American contact efforts for the proposed project.

**TABLE 3.18-1
NATIVE AMERICAN CONTACT SUMMARY**

Contact	Tribe/Organization	Date Letter Mailed	Response
Antonia Flores, Chairperson	Santa Ynez Tribal Elders of Council	1/17/2018	-
Beverly Salazar Folkes	Chumash, Tataviam, Fernandefio	1/17/2018	Declined consultation – offer monitoring services
Carol A. Pulido	Chumash	1/17/2018	-
Charles S. Parra	Chumash	1/17/2018	-
Crystal Baker	Coastal Band of the Chumash Nation	1/17/2018	-
Eleanor Arrelanes	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Fred Collins, Spokesperson	Northern Chumash Tribal Council	1/17/2018	-
Freddie Romero	Santa Ynez Tribal Elders Council	1/17/2018	Deferred to local tribe
Janet Darlene Garcia	Coastal Band of the Chumash Nation	1/17/2018	-
Julie Lynn Tumamait-Stenslie, Chair	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	Requested consultation
Kathleen Pappo	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Kenneth Kahn, Chairperson	Santa Ynez Band of Chumash Indians	1/17/2018	-
Melissa M. Parra-Hernandez	Chumash	1/17/2018	-
Mia Lopez	Coastal Band of the Chumash Nation	No address included	-
Michael Cordero, Chairperson	Coastal Band of the Chumash Nation	1/17/2018	-
Patrick Tumamait	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	Requested consultation
PeuYoko Perez	Chumash	1/17/2018	-
Randy Guzman-Folkes	Chumash, Fernandefio, Tataviam, Shoshone, Paiute, Yaqui	1/17/2018	-
Raudel Jone Banuelos, Jr.	Barbarefio/Venturefio Band of Mission Indians	1/17/2018	-
Richard Angulo	Chumash	1/17/2018	-
Sam Cohen	Santa Ynez Band of Chumash Indians	1/17/2018	-
Stephen William Miller	Chumash	1/17/2018	-

On February 8, 2018, and March 23, 2018, the City met with tribal representatives Julie Lynn Tumamait-Stenslie and Patrick Tumamait of the Barbarefio/Venturefio Band of Mission Indians as part of the AB 52 consultation process. At the February 8, 2018, meeting the City provided an overview of the proposed project objectives and components. Mrs. Tumamait-Stenslie and Mr. Tumamait described their knowledge of archaeological resources in the general area and

requested to continue to be involved in the proposed projects. At the March 23, 2018, meeting, the City met with Patrick Tumamait to discuss the records search results for the proposed projects obtained from the South Central Coastal Information Center. Mr. Tumamait indicated the possible presence of prehistoric archaeological resources in the vicinity of Saticoy, as well as in the vicinity of the parcel in which Groundwater Well 1 would be located.

No tribal cultural resources were identified as part of the AB 52 consultation.

3.18.4 Impacts and Mitigation Measures

Significance Thresholds and Criteria

According to Appendix G of the State CEQA Guidelines, the proposed project could have a potentially significant impact with respect to aesthetics if it would:

cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(l).*
- *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe. (refer to Impact CUL 3.18-1).*

A summary of the findings for each impact is presented in **Table 3.18-1**. The analyses below support these findings.

**TABLE 3.18-1
SUMMARY TRIBAL CULTURAL RESOURCE IMPACT DETERMINATIONS**

Impacts	3.18-1 Historical Resource	3.18-2 Significant to Native American Tribe
Phase 1		
Advanced Water Purification Facility	NI	NI
Water Conveyance System	NI	NI
Groundwater Wells	NI	NI
Wildlife/Treatment Wetlands	NI	NI
VWRF Treatment Upgrade	NI	NI
Concentrate Discharge Facility	NI	NI
Phase 2		
AWPF Expansion	NI	NI
Ocean Desalination	NI	NI
LTS = Less than Significant, no mitigation proposed LTSM = Less than Significant impact with mitigation NI = No Impact SU = Significant and Unavoidable impact, even after implementation of mitigation		

Impacts Discussion

Impact CUL 3.18-1: The proposed projects could result in a significant impact if they would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Section 5020.1(k)
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Phase 1

The SLF search conducted by the (NAHC indicates that no Native American cultural resources are known to be located within the proposed project. The AB 52 meetings held on February 8 and March 23, 2018, between the City and tribal representatives Julie Lynn Tumamait-Stenslie and Patrick Tumamait of the Barbareño/Ventureño Band of Mission Indians involved discussions about the archaeological sensitivity of the proposed project vicinity; however, did not result in the identification of the presence of tribal cultural resources as defined in PRC Section 21074 within the proposed project.

Advanced Water Purification Facility

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the construction of the Advanced Water Purification Facility (AWPF) would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Water Conveyance System

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the construction of the water conveyance system would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the construction of the aquifer storage and recovery wells would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the reconfiguration of the existing ponds or the construction of the new treatment wetlands would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRF Treatment Upgrade

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the construction of the treatment upgrade would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

No tribal cultural resources have been identified within the project area. Therefore, ground-disturbing activities associated with the construction of the new outfall or the discharge pipeline to the Calleguas Salinity Management Pipeline would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2**AWPF Expansion**

No tribal cultural resources have been identified within the project area. Therefore, activities associated with the expansion project would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination**Desalination Facility**

No tribal cultural resources have been identified within the project area. Therefore, activities associated with the desalination facility operations would not cause a substantial adverse change in the significance of a tribal cultural resource.

Mitigation Measures: None required.

Significance Determination: No Impact.

3.19 Utilities, Service Systems, and Energy

This section addresses the potential impacts of the proposed projects to utilities, service systems, and energy. The section includes a description of the environmental setting to establish baseline conditions for utilities, service systems, and energy; a summary of the regulations related to utilities, service systems, and energy; and an evaluation of the proposed projects' potential effects on utilities, service systems, and energy.

3.19.1 Existing Environmental Setting

Water Supply

The proposed projects are located within Ventura Water service area. The City's water system serves approximately 32,000 water service connections and is provided to all residential, commercial, and industrial, including fire protection users (City of Ventura 2016). It comprises 380 miles of pipelines, three water treatment plants, 23 pump stations, 31 reservoirs, and a total storage capacity of approximately 52 million gallons. Water sources for the city include surface water from Ventura River Foster Park area (consists of Ventura River surface water intake and Upper Ventura River Groundwater Basin/Subsurface intake and wells), Casitas Municipal Water District, recycled water from Ventura Water Reclamation Facility, and groundwater from the Mound Groundwater Basin, Oxnard Plain Groundwater Basin, and Santa Paula Groundwater Basin (Ventura Water 2017; City of Ventura 2016). According to the 2018 Comprehensive Water Resources Report (CWRR), the City's current water supply is 21,381 acre-feet per year (AFY). Table 2-2 shows the normal-year (i.e., non-drought) water supplies and demands from 2020 through 2040.

Table 3.19-1 shows the existing and projected water supply and demand. Recycled water from the Ventura Water Reclamation Facility (VWRF) is used for general irrigation of golf courses (Olivas Links Golf Course and Buenaventura Golf Course), parks, and other landscape irrigation near the existing distribution system along Olivas Park Drive and in the Harbor area. Assuming the existing drought conditions continue, the projected water supplies could be less than the projected demand.

**TABLE 3.19-1
EXISTING AND PROJECTED WATER SUPPLY AND DEMAND**

Projected	2018 Drought (AFY)	2019 Drought (AFY)	2020 (AFY)	2025 (AFY)	2030 (AFY)
Supply	15,321	13,030 – 14,889	13,992 – 15,851	21,441 – 27,870	21,778 – 28,207
Demand*	16,676	16,837	16,998	17,802	18,293
Available Supply	(1,355)	(3,807) – (1,948)	(3,006) – (1,147)	3,639 – 10,068	3,485 – 9,914

* Demand equals baseline 10-year average (16,515 AF) plus the estimated demand from 350 units built annually from the approved projects list for future years fully vested in 2026 and using a 0.54% growth rate to 2030. Assumes a new supply source (VenturaWaterPure) starting in 2025.

SOURCE: Ventura Water 2018

Wastewater Treatment

Ventura Water provides treatment services to a total population of over 109,000, which is approximately 98 percent of the city residents. The VWRf treats most of the wastewater for the city of Ventura. The VWRf is permitted to provide tertiary treatment, filtration, and chlorination/dechlorination discharge for 14 million gallons per day (MGD) and discharge 8 to 9 MGD (City of Ventura 2016). Approximately 7 percent of the treated discharge is reused as recycled water and the rest is discharged to the Santa Clara River Estuary. The VWRf also includes 300 miles of sewer mains and 14 lift stations (Ventura Water 2018).

Stormwater

The proposed projects are located within the jurisdiction of the Ventura County Watershed Protection District (formerly known as the Ventura County Flood Control District). Specifically, the proposed projects are located within Zone 2 which follows the boundaries of the Santa Clara River watershed and local coastal drainages of the cities of Ventura and Oxnard. The Ventura County Watershed Protection District has authority over any channel containing runoff with a peak flow rate of more than 500 cubic feet per second (cfs) during a 100-year storm. Any lateral or side drain that contributes to runoff to the jurisdictional channels is under jurisdiction of the appropriate local agencies (CVPWA 2018).

Solid Waste Management

The nearest solid waste landfill is Toland Road Landfill located at 3500 North Toland Road in Santa Paula, approximately 5 miles northeast of the proposed projects. The Toland Road Landfill accepts a maximum permitted throughput of 1,500 tons per day and has a remaining capacity of 10,571,820 cubic yards (CalRecycle 2018). The Environmental Sustainability Division in the City of Ventura's Public Works Department manages collection and disposal of solid waste, including construction and demolition debris.

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services are provided to the project region by Southern California Edison (SCE). SCE provides electricity to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area (SCE 2018). SCE produces and purchases their energy from a mix of conventional and renewable generating sources. **Table 3.19-2** shows the electric power mix that was delivered to retail customers for SCE in 2016 compared to the statewide 2016 power mix.

In 2016, electricity consumption attributable to the county of Ventura was approximately 5,505 million kWh from residential and non-residential sectors.¹

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas usage is typically measured in units of cubic feet (cf) and sometimes in units of British thermal units (Btu).

TABLE 3.19-2
ELECTRIC POWER MIX DELIVERED TO SCE RETAIL CUSTOMERS IN 2016

Energy Resources	2016 SCE Power Mix ^a	2016 CA Power Mix ^a
Eligible Renewable	28%	25%
• Biomass & waste	1%	2%
• Geothermal	7%	4%
• Small hydroelectric	0%	2%
• Solar	10%	8%
• Wind	10%	9%
Coal	0%	4%
Large Hydroelectric	6%	10%
Natural Gas	19%	37%
Nuclear	6%	9%
Other	0%	0%
Unspecified sources of power ^b	41%	15%
TOTAL	100%	100%

^a California Energy Commission, Utility Annual Power Content Labels for 2016, 2016 Power Content Table, Southern California Edison – Default, September 2017, http://www.energy.ca.gov/pcl/labels/2016_labels/Southern_California_Edison-Default.pdf. Accessed May 21, 2018. Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

^b "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

SOURCE: CEC 2017

¹ California Energy Commission, Electricity Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed May 22, 2018.

Natural gas is provided to the project region by the Southern California Gas Company (SoCalGas). SoCalGas is the principal distributor of natural gas in Southern California, serving residential, commercial, and industrial markets. SoCalGas serves approximately 21.6 million customers in more than 500 communities encompassing approximately 20,000 square miles throughout Central and Southern California, from the city of Visalia to the Mexican border.²

SoCalGas receives gas supplies from several sedimentary basins in the western United States and Canada, including supply basins located in New Mexico (San Juan Basin), West Texas (Permian Basin), the Rocky Mountains, and Western Canada as well as local California supplies.³ The traditional, southwestern United States sources of natural gas will continue to supply most of SoCalGas' natural gas demand. The Rocky Mountain supply is available but is used as an alternative supplementary supply source, and the use of Canadian sources provide only a small share of SoCalGas supplies due to the high cost of transport.⁴ Gas supply available to SoCalGas from California and out-of-state sources averaged 2,511 million cf per day in 2016.⁵

In 2016, natural gas consumption attributable to the county of Ventura was approximately 173.2 million therms from residential and non-residential sectors,⁶ which is equivalent to approximately 16,734 million cf.⁷

Transportation Energy

In 2016, California consumed approximately 15.5 billion gallons of gasoline and 3.7 billion gallons of diesel fuel.⁸ Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use.⁹ However, the state is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas emissions (GHGs) from the transportation sector, and reduce vehicle-miles of travel (VMT). Accordingly, gasoline consumption in California has declined. The California Energy Commission (CEC) predicts that

² SoCalGas, Company Profile, 2018, <http://www.socalgas.com/about-us/company-info.shtml>. Accessed May 21, 2018.

³ California Gas and Electric Utilities, 2016 California Gas Report, p. 79, 2016, <https://www.socalgas.com/regulatory/documents/cgr/2016-cgr.pdf>. Accessed May 21, 2018.

⁴ California Gas and Electric Utilities, 2016 California Gas Report, p. 79, 2016.

⁵ California Gas and Electric Utilities, 2017 California Gas Report Supplement, p. 26, 2017, https://www.socalgas.com/regulatory/documents/cgr/2017_California_Gas_Report_Supplement_63017.pdf. Accessed May 21, 2018.

⁶ California Energy Commission, Gas Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed May 22, 2018.

⁷ United States Energy Information Administration, Heat Content of Natural Gas Consumed, April 30, 2018, https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm. Accessed May 22, 2018. Based on a conversion rate of 100,000 Btu/therm and 1,035 Btu/cf in 2016 for California.

⁸ California Energy Commission, 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, October 10, 2017, http://energy.ca.gov/almanac/transportation_data/gasoline/2016_A15_Results.xlsx. Accessed May 21, 2018. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

⁹ California Energy Commission, 2016–2017 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program, May 2016, <http://www.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-CMF.pdf>. Accessed May 21, 2018.

the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels.¹⁰ According to fuel sales data from the CEC, fuel consumption in Ventura County was approximately 330 million gallons of gasoline and 61.54 million gallons of diesel fuel in 2016.¹¹

3.19.2 Regulatory Framework

Federal

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the United States. SDWA focuses on all waters actually or potentially designed for drinking uses, whether from above ground or underground sources. The principal federal agency involved in drinking water regulation is the United States Environmental Protection Agency (USEPA). USEPA is responsible for implementing federal drinking water law, setting national drinking water requirements, and overseeing the SWRCB enforcement of the federal law. The proposed projects would store water in potable aquifers in the Mound Groundwater Basin and/or the Oxnard Plain Groundwater Basin, which are a source for drinking water in the city, for later use by Ventura Water. The proposed projects would be regulated and permitted by the SWRCB's Division of Drinking Water (DDW), which has the primary responsibility for regulating drinking water in California. Refer to Section 3.9, Hydrology and Water Quality, for a discussion on project impacts to groundwater and regulatory requirements of SWRCB DDW that ensure compliance with SDWA.

SDWA also regulates sole source aquifers, which are aquifers that supply at least 50 percent of the drinking water for its services area and has no reasonably available alternative drinking water sources should the aquifer become contaminated. The aquifers in the project area are not designated as sole source aquifers by the USEPA (USEPA 2018).

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (40 CFR, Part 258 Subtitle D) established minimum location standards for siting municipal solid waste landfills. In addition, because California laws and regulations governing the approval of solid waste landfills meet the requirements of Subtitle D, the USEPA has delegated the enforcement responsibility to the State of California.

¹⁰ California Energy Commission, 2015 Integrated Energy Policy Report, docketed June 29, 2016, p. 113, http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-01/TN212017_20160629T154354_2015_Integrated_Energy_Policy_Report_Small_File_Size.pdf. Accessed May 21, 2018.

¹¹ California Energy Commission, 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, Ventura County, October 10, 2017. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 (Public Law 109-58) into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure.
- Remove outdated obstacles to investment in electricity transmission lines.
- Make electric reliability standards mandatory instead of optional.
- Give federal officials the authority to site new power lines in Department of Energy-designated national corridors in certain limited circumstances.

The Renewable Fuel Standard (RFS) program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. The program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. As required under Energy Policy Act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (42 USC 17001) includes several key provisions to increase energy efficiency and the availability of renewable energy to reduce greenhouse gas emissions. First, the Energy Independence and Security Act sets a Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel by 2022. Second, it increased Corporate Average Fuel Economy (CAFE) Standards to require a minimum average fuel economy of 35 miles per gallon for the coed fleet of cars and light trucks by 2020. Third, the Energy Independence and Security Act includes a variety of new standards for lighting, residential, and commercial appliance equipment (USEPA 2007).

President Obama's Climate Action Plan¹²

On June 25, 2013, President Obama issued a Climate Action Plan. The three main goals are to cut carbon pollution, prepare the U.S. for the impacts of climate change, and lead international efforts to combat global climate change and prepare for its impacts. President Obama plans to cut carbon pollution by directing the USEPA to complete carbon pollution standards in the power sector. This will reduce emissions from power plants and encourage renewable energy development. Other strategies to combat climate change are increasing energy efficiency, stricter vehicle and fuel standards, preserving forests as climate sinks, reducing energy waste, combating short-lived climate pollutants, mobilizing climate finance, and leading international negotiations on climate change (White House 2013).

Executive Order on Energy Independence

On March 28, 2017, President Donald Trump signed the Executive Order on Energy Independence, which calls for:

¹² Note that federal GHG laws and policies may change with the Trump administration. See Executive Order on Energy Independence below.

- Review of the Clean Power Plan
- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources
- Review of the Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units
- Withdrawal of Proposed Rules: Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations; and Clean Energy Incentive Program Design Details (USEPA 2017b)

Given this executive order, President Trump’s decision to withdraw from the Paris Accord, and the Trump Administration’s comments concerning climate change, the federal regulations on greenhouse gas emissions are currently uncertain.

Mobile Source Fuel Efficiency Standards

First established by the U.S. Congress in 1975, the CAFE standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and USEPA jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the “maximum feasible level” with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.¹³

Fuel efficiency standards for medium- and heavy-duty trucks have also been jointly developed by the USEPA and the NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type.¹⁴ The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.¹⁵

State

Regulations Related to Recycled Water

Titles 17 and 22 of the California Code of Regulations (CCR) include regulations specific to recycled water. Those regulations detail the approved uses of recycled water, treatment requirements, and water system protection (SWRCB 2014).

¹³ For more information on the CAFE standards, refer to <https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy>. Accessed March 2018.

¹⁴ United States Environmental Protection Agency, Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF>. Accessed May 22, 2018.

¹⁵ United States Environmental Protection Agency, Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25, 2016, <https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf>. Accessed May 22, 2018.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) redefined solid waste management in terms of both objectives and planning responsibilities for local jurisdictions and the state. AB 939 was adopted in an effort to reduce the volume and toxicity of solid waste that is transported to a landfill and incinerated by requiring local governments to prepare and implement plans to improve the management of waste resources. AB 939 required each of the cities and unincorporated portions of the counties to divert a minimum of 25 percent of the solid waste sent to landfills by 1995 and 50 percent by the year 2000. To attain goals for reductions in disposal, AB 939 established a planning hierarchy utilizing new integrated solid waste management practices. These practices include source reduction, recycling and composting, and environmentally safe landfill disposal and transformation. Other state statutes pertaining to solid waste include compliance with the California Solid Waste Reuse and Recycling Act of 1991 (AB 1327), which requires adequate areas for collecting and loading recyclable materials within a project site.

California Green Building Standards Code Construction Waste Management Requirements

California's Green Building Standards Code (CALGreen) requires the diversion of at least 65 percent of the construction waste generated during most permitted non-residential new construction projects. Submittal of a construction waste management plan or utilization of a waste management company may be required (CalRecycle 2017).

California State Assembly Bill 341

With the passage of AB 341, the Governor and the Legislature established a policy goal for the State that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. Since the passage of AB 939 in 1989, State diversion rates are now equivalent to 65 percent. The Statewide recycling rate is 50 percent, and the beverage container recycling rate is 80 percent. The State provided strategies to achieve its new 75 percent goal, including moving organics out of the landfill and expanding recycling/ manufacturing infrastructure. To achieve State strategies, the State recommended legislative and regulatory changes including mandatory organics recycling, solid waste facility inspections, and revising packaging. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost or anaerobic digestion before residual wastes are considered for energy recovery (CalRecycle 2017c).

California Building Standards Code (Title 24)

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2016 Title 24 standards, which became effective on January 1, 2017.¹⁶ The 2016 Title 24

¹⁶ California Energy Commission, 2016 Building Energy Efficiency Standards, <http://www.energy.ca.gov/title24/2016standards/>. Accessed May 22, 2018.

standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting, and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards.¹⁷

In May 2018, the CEC adopted the 2019 Title 24, Part 6 standards. Final approval from the California Building Standards Commission (CBSC) is anticipated later in 2018. The major updated provisions of the 2019 Title 24 standards require new residences and major home renovations on buildings under three stories to install rooftop solar. In the event a building is not suitable for rooftop solar, the standards require homes to have access to community solar or offset energy usage through additional efficiency gains, while some homes may be exempt. For nonresidential buildings, the 2019 Title 24 standards require energy efficient indoor and outdoor lighting (e.g., light emitting diode [LED]) and installation of high-efficiency indoor air filters. The 2019 Title 24 standards are expected to take effect starting on January 1, 2020.

California Green Building Standards (Title 24, Part 11)

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, most recently went into effect on January 1, 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.¹⁸ Most mandatory measure changes, when compared to the previously applicable 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for additional details regarding these standards.

As part of the update to the Title 24 standards, adoption of the 2019 CALGreen Code is expected after the CBSC Code Advisory Committee Meeting for CALGreen takes place later in 2018. Updates to the 2019 CALGreen Code are anticipated to include new requirements for the Tier 1 and Tier 2 voluntary requirements with respect to insulation and lighting efficiency.

California's Renewables Portfolio Standard

First established in 2002 under Senate Bill (SB) 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030.¹⁹ In 2018, SB 100 further increased California's Renewables Portfolio Standard and requires retail sellers and local publicly-owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and

¹⁷ California Energy Commission, 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, June 2015, <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>. Accessed May 22, 2018.

¹⁸ California Building Standards Commission, Guide to the 2016 California Green Building Standards Code Nonresidential, January 2017, <https://www.documents.dgs.ca.gov/bsc/CALGreen/CALGreen-Guide-2016-FINAL.pdf>. Accessed May 22, 2018.

¹⁹ California Public Utilities Commission, California Renewables Portfolio Standard (RPS), 2018, http://www.cpuc.ca.gov/RPS_Homepage/. Accessed March 2018.

requires that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.²⁰ Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for details regarding this regulation.

Assembly Bills 2514 and 2868

In order to improve power grid reliability and greater integration of renewables²¹ into the energy system, California has introduced AB 2514 and AB 2868 to increase the energy storage infrastructure. Under AB 2514, California's landmark energy storage law passed in 2013, California's three Investor-Owned Utilities (IOUs), SCE, Pacific Gas & Electric (PG&E), and San Diego Gas & Electric (SDG&E), are required to install 1,325 MW of energy storage by 2024. Additionally, AB 2868, signed by California Governor Jerry Brown in 2016, requires PG&E, SCE, and SDG&E to propose programs and investments for up to 500 MW of distributed energy storage systems (defined as distribution-connected or behind-the-meter energy storage resources with a useful life of at least 10 years).

Assembly Bill 32 /California Global Warming Solutions Act

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code (HSC), Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the State's GHG emissions, however, it also tasked the CEC and the California Public Utilities Commission (CPUC) with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, the California State Legislature adopted SB 32 and its companion bill AB 197; both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for details regarding these regulations.

²⁰ California Public Utilities Commission, RPS Program Overview, 2018, http://www.cpuc.ca.gov/RPS_Overview/. Accessed March 2018.

²¹ The integration of renewables, such as solar and wind, into California's energy system has been a challenge as they are generated intermittently. For example, during mid-days in the summary, the amount of solar energy produced surpasses the demands. Due to the limited energy storage available across the state, there has been times when the state is required to pay other neighboring states to take the surplus to prevent overloading the grid.

2017 Update to Climate Change Scoping Plan (November 2017)

CARB's Climate Change Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 and SB 32 through subsequently enacted regulations, is discussed in detail in Section 3.7, Greenhouse Gas Emissions, of this Draft EIR. On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving California's new SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.²² The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low-carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. The Scoping Plan references a 2013 study by the CEC that shows 12 percent of the total energy used in the state is related to water, with 10 percent associated with water-related end uses (e.g., heating, cooling, pressurizing, and industrial processes) and 2 percent associated with energy used by water and wastewater systems (e.g., pump, convey, treat). These figures indicate that the greatest potential for water-related energy savings resides with water end users, while water agencies have a role in improving end-user water conservation and in reducing the energy intensity of their portfolios. The Renewables Portfolio Standard and other regulations are expected to decarbonize the electricity sector over time, which will in turn reduce the consumption of fossil-fuel-based energy to produce water.

Assembly Bill 1493/Pavley Regulations

AB 1493 (commonly referred to as CARB's Pavley regulations) was the first legislation to regulate GHG emissions from new passenger vehicles. Under this legislation, CARB adopted regulations to reduce GHG emissions from non-commercial passenger vehicles (cars and light-duty trucks) for model years 2009–2016 and model years 2017–2025.^{23,24} Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for details regarding this regulation.

California Air Resources Board

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, the CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the

²² California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed May 22, 2018.

²³ California Air Resources Board, Clean Car Standards—Pavley, Assembly Bill 1493, January 11, 2017, <http://www.arb.ca.gov/cc/ccms/ccms.htm>. Accessed May 22, 2018.

²⁴ United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017–2025 Cars and Light Trucks, August 2012, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF>. Accessed May 22, 2018.

regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Senate Bill 375 (SB 375, Steinberg) (Chapter 728, Statutes of 2008)

SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions and was adopted by the State on September 30, 2008. Under SB 375, the target must be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., General Plan) are not required to be consistent with either the RTP or SCS. Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for details regarding these standards.

Senate Bill 1389

Senate Bill 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301[a]). The 2015 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.

California Environmental Quality Act

In accordance with California Environmental Quality Act (CEQA) and Appendix F, Energy Conservation, of the CEQA Guidelines, in order to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines provides a list of energy-related topics that should be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics that the lead agency may consider in the discussion of energy use in an EIR, where topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.
- The degree to which the project design and/or operations incorporate energy-conservation measures, particularly those that go beyond City requirements.
- Whether the Project conflicts with adopted energy conservation plans.

Regional

General Waste Discharge Requirements for Non-Irrigation Uses over the Groundwater Basins underlying the Coastal Watersheds of Los Angeles and Ventura Counties

The General Waste Discharge and Water Recycling Requirements for Title 22 Recycled Water for Non-Irrigation Uses over the Groundwater Basins underlying the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2009-0049) was issued by the Los Angeles Regional Water Quality Control Board for the authorized municipal wastewater reuse of non-potable recycled wastewater throughout the Los Angeles Region. This serves as a region-wide general permit for non-irrigation uses of recycled water for publicly owned wastewater and water agencies that recycle treated municipal wastewater and apply to producers of disinfected secondary- and tertiary-treated recycled water that meet CCR Title 22 water recycling criteria and is reused for a direct beneficial use. The permit addresses regulatory management of incidental runoff, state health regulations, and specified uses of recycled water, recycled/reuse water quality limitations, reuse program provisions such as the producer and distributor responsibilities,

The WDR requires all responsible entities (Producers or Distributors) to submit a Notice of Intent (NOI) that notifies the intent to be regulated under the provisions of the WDR and receive program authorization from the Regional Water Quality Control Board (RWQCB) (LARWQCB 2009).

General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watershed of Los Angeles and Ventura Counties

The General NPDES Permit No. CAG994004 Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (“General Permit”, Order No. R4-2008-0032) was issued by the Los Angeles Regional Water Quality Control Board for discharges of treated or untreated groundwater generated from permanent, temporary dewatering operations or other applicable wastewater discharges not specifically covered in other general NPDES permits. Discharges from facilities to waters of the United States that do not cause, have the reasonable potential to cause, or contribute to an in-stream excursion above any applicable state or federal water quality objectives/criteria or cause acute or chronic toxicity in the receiving water are authorized discharges in accordance with the conditions set forth in the General Permit (LARWQCB 2013).

The General Permit requires submittal of a NOI to the LARWQCB at least 45 days before commencement of discharge. A Notice of Termination must also be submitted by discharger when coverage under this General Permit is no longer required.

Electricity Forecasts

The CEC released the California Energy Demand 2018–2030 Revised Forecast, which describes the CEC’s revised 12-year forecasts for electricity consumption, retail sales, and peak demand for each of five major electricity planning areas and for the state as a whole. For the SCE planning area, the forecasts predict annual growth in electricity demand due in part to higher electric vehicle (EV), residential (excluding EVs), and manufacturing forecasts.²⁵

Natural Gas Forecasts

SoCalGas, along with five other California utility providers released the *2016 California Gas Report*, presenting a forecast of natural gas supplies and requirements for California through the year 2035. This report predicts gas demand for all sectors (residential, commercial, industrial, energy generation and wholesale exports) and presents best estimates, as well as scenarios for hot and cold years. Overall, SoCalGas predicts a decrease in natural gas demand in future years due to a decrease in per capita usage, energy efficiency policies, and the State’s transition to renewable energy displacing fossil fuels including natural gas.²⁶

²⁵ California Energy Commission, The California Energy Demand 2018-2030 Revised Forecast, p. 97, January 22, 2018, http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-03/TN222287_20180120T141708_The_California_Energy_Demand_20182030_Revised_Forecast.pdf. Accessed May 21, 2018.

²⁶ California Gas and Electric Utilities, 2016 California Gas Report, 2016.

Local

Comprehensive Water Resources Report

In June 2013, the City Council approved the 2013 CWRR which was a comprehensive evaluation of the current and projected water supply needs for the city of Ventura and directed staff to provide an annual update on the city's projected water supply and demand. The 2018 CWRR is the most recent updated which details the city's water supply and demand to plan and manage a stable and reliable water system to support the community and economic growth. The results of the 2018 CWRR update indicated that if the drought persists, the water supply could be less than the demand.

City of Ventura Municipal Code

Chapter 22 Public Utilities describe the regulations for water and sewer service including sewer connection permits and fees such as fees for new connections to the sewer system. These fees are established by City Council resolution.

The City of Ventura Construction and Demolition Debris Program

The Construction and Demolition Debris Program ensures that all projects within the City of Ventura complies with state and local laws. To comply with the California Green (CAL Green) Building Standards Code, all new residential, commercial, and mixed-use construction projects in the city are required to divert a minimum of 65 percent of construction and demolition (C&D) waste from landfill disposal. To assist the City with its goal of zero waste by 2020, building permit applicants must submit a Waste Management Plan (WMP) for approval before receiving a permit and a Final Report at the time of Final Inspection of their project. The WMP describes waste management per project while the Final Report provides documentation that shows the applicant carried out the WMP as described and achieved the required diversion rate for the project (City of Ventura 2018).

3.19.3 Significance Thresholds and Criteria

CEQA Guidelines Appendix G, Environmental Checklist Form, includes questions pertaining to utilities and service systems resources. The issues presented in the Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, the proposed projects would have a significant impact if they would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (refer to Impact UTIL 3.19-1).
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects (refer to Impact UTIL 3.19-2).
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effect (refer to Impact UTIL 3.19-3).
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed (refer to Impact UTIL 3.19-4).

- Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments (refer to Impact UTIL 3.19-5).
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs (refer to Impact UTIL 3.19-6).
- Comply with federal, state, and local statutes and regulations related to solid waste (refer to Impact UTIL 3.19-7).
- Conflict with adopted energy conservation plans (refer to Impact UTIL 3.19-8).

A summary of the findings for each impact is presented in **Table 3.19-3**. The analyses below support these findings.

TABLE 3.19-3
SUMMARY OF UTILITIES AND SERVICE SYSTEMS IMPACT DETERMINATIONS

Impacts	3.19-1 Exceed Wastewater requirement s	3.19-2 New water or wastewater facilities	3.19-3New stormwater drainage facilities	3.19-4 Sufficient water supplies	3.19-5 Adequate wastewater capacity	3.19-6 Landfill Capacity	3.19-7 Solid Waste	3.19-8 Energy
Phase 1								
Advanced Water Purification Facility	LTS	LTS	LTS	LTS	LTS	LTS	NI	LTS
Water Conveyance System	NI	LTS	LTS	LTS	NI	LTS	NI	LTS
Groundwater Wells	NI	LTS	LTS	LTS	NI	LTS	NI	LTS
Wildlife/Treatment Wetlands	NI	LTS	NI	LTS	NI	LTS	NI	LTS
VWRF Treatment Upgrades	LTS	LTS	NI	LTS	NI	LTS	NI	LTS
Concentrate Discharge Facility	NI	LTS	NI	LTS	NI	LTS	NI	LTS
Phase 2								
AWPF Expansion	NI	NI	NI	LTS	NI	NI	NI	LTS
Ocean Desalination	NI	NI	LTS	LTS	NI	LTS	NI	LTS

LTS = Less than Significant, no mitigation proposed

LTSM = Less than Significant impact with mitigation

NI = No Impact

SU = Significant and Unavoidable impact, even after implementation of mitigation

3.19.4 Impacts and Mitigation Measures

Exceed Wastewater Requirements

Impact UTIL 3.19-1: The proposed projects could result in a significant impact if they would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Phase 1

Advanced Water Purification Facility

During construction of the Advanced Water Purification Facility (AWPF), a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed of at a liquid waste disposal stations appropriately permitted by the RWQCB.

Operation of the AWPF would generate wastewater from approximately 20 full-time employees in a new 8,500 square foot office/administration building at the AWPF site. The small volume of wastewater from the addition of the office/administration building would be accommodated by the existing treatment plant currently serving the City of Ventura and would not increase the need for municipal wastewater treatment substantially beyond existing conditions. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed conveyance system consists of pipelines and pump stations to convey raw groundwater from existing extraction wells to the proposed AWPF, purified water from the AWPF to injection wells, and extracted groundwater from the ASR wells to the Bailey WCF and/or Saticoy WCF. During construction of the proposed pipelines and pump stations a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impact would occur.

Once constructed, operation of the proposed water conveyance system would not generate wastewater. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Aquifer Storage and Recovery Wells

The proposed ASR wells would be utilized to inject and to extract groundwater for conveying groundwater to the proposed AWPF for treatment or to extract purified water injected into the groundwater basin. During construction of the well facilities, a minimal amount of wastewater

would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impact would occur.

Operation of the proposed groundwater wells would not generate wastewater. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

As part of the proposed project, the existing wildlife/treatment ponds would be reconfigured and a new treatment wetland would be constructed east of the VWRf. Construction and operation of the existing ponds and new treatment wetlands would not generate wastewater. Once in operation, the proposed treatment wetlands would help reduce the nutrients in the VWRf discharge to the SCRE. There would be no impact related to the exceedance of wastewater treatment requirements.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRf Treatment Upgrade

During construction, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impact would occur.

The VWRf upgrades would occur entirely within the existing facility and would include replacement of aeration blowers, existing gravity thickeners, and a new anoxic tank. These upgrades would improve the efficiency of wastewater treatment within the plant, but would not increase the amount of wastewater produced at the VWRf. The VWRf is a wastewater treatment plant that produces tertiary-treated wastewater and is required to comply with RWQCB standards. Therefore, the proposed project would not exceed wastewater treatment requirements of the RWQCB, and impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Concentrate Discharge Facility

New Outfall

During construction of the proposed concentrate pipeline and outfall, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet

facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed of at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impact would occur.

Once constructed, operation of the proposed product water conveyance system would not generate wastewater. There would be no impact related to the exceedance of wastewater treatment requirements.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

During construction of the discharge pipeline to the Calleguas SMP, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impacts would occur.

Operation of the discharge pipeline would convey the concentrate from the proposed AWPf to the existing Calleguas SMP ocean outfall and discharge to the ocean. The discharge would be conducted in compliance with the existing outfall facilities NPDES permit and processes. Implementation of the discharge pipeline would not generate wastewater. Therefore, no impact related to exceeding wastewater treatment requirements would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion project would not produce wastewater; therefore, would not exceed wastewater treatment requirements.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

During construction of the proposed desalination facility, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impacts would occur.

Operation of the proposed desalination facility would include similar processes as the proposed AWPf. However, the desalination facility would treat ocean water and would not include the treatment of wastewater. The concentrate created at the facility from the desalination process would be conveyed to either the new ocean outfall or the discharge pipeline to the Calleguas SMP. No impact would occur.

Ocean Intake

During construction of the ocean intake, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed at a liquid waste disposal station appropriately permitted by the RWQCB. No construction-related impacts would occur.

Once in operation, the proposed ocean intake would collect ocean water in compliance with the Ocean Plan requirements and would not generate wastewater. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

New Water or Wastewater Facilities

Impact UTIL 3.19-2: The proposed projects could result in a significant impact if they would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Phase 1

Advanced Water Purification Facility

The proposed AWPf would be a new treatment facility created to treat tertiary-treated water from the VWRf to exceed Title 22 compliance criteria. The advanced treated product water would be blended with and distributed throughout the city's drinking water system. The concentrate generated during the treatment process would be conveyed to either the ocean outfall or the discharge pipeline to the Calleguas SMP. As a result, the proposed AWPf would not require the expansion or construction of a new wastewater treatment facility; impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System, Groundwater Aquifer Storage and Recovery Wells, Wildlife/Treatment Wetlands, and Concentrate Discharge Facility

The proposed water conveyance system, groundwater aquifer storage and extraction wells, natural treatment wetlands, and concentrate discharge facility would each be a component of the water supply project. The proposed project is an expansion of an existing wastewater treatment

facility, the VWRf. The proposed project would assist Ventura Water in meeting projected water demands for its service area through advance treatment of tertiary flows from the VWRf. The proposed project components would not generate additional wastewater requiring additional facilities or expansion of existing facilities. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

Similar to the proposed project-level facilities, the AWPf expansion are each a component of a water treatment facilities. The environmental effects of which are evaluated throughout the Draft EIR. No other water or wastewater treatment facilities would be required.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

The ocean desalination project would create an ocean water treatment facility within the AWPf. Therefore, this component would not require the construction or expansion of existing water or wastewater treatment facilities. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

New Stormwater Drainage Facilities

Impact UTIL 3.19-3: The proposed projects could result in a significant impact if they would require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Phase 1

Advanced Water Purification Facility

Construction of the proposed AWPf would occur on an undeveloped site in any of the three potential locations. As a result, construction of the facility would reduce the amount of existing pervious surfaces on-site. To prevent runoff being generated on-site and overflowing the local stormwater drainages, the proposed AWPf would be designed to comply with the Ventura County MS4 Permit. In addition, a SWPPP and BMPs would be implemented during construction to alleviate construction-related stormwater runoff. Therefore, the construction and operation of

the AWPf would not require construction of new stormwater drainage facilities or expansion of existing facilities. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

The proposed conveyance system consists of pipelines and pump stations to convey raw groundwater from existing extraction wells to the proposed AWPf, purified water from the AWPf to injection wells, and extracted groundwater from the ASR wells to the Bailey WCF and/or Saticoy WCP. The construction of the pipelines would not directly or indirectly impact the stormwater system. During construction, the implementation of a SWPPP and BMPs would ensure that construction dirt, runoff or materials would not impact the existing stormwater drainage facilities. Pipelines would be constructed within public rights-of-way, where feasible and impact areas would be returned to pre-project conditions, and would not result in the creation of new impervious surfaces. No impact would occur.

Construction and operation of the proposed pump stations would add impervious surfaces within the VWRf and AWPf site. The pump station within the VWRf would be designed so runoff would be captured by the existing stormwater system. The proposed AWPf would be designed to comply with the Ventura County MS4 Permit to prevent runoff from being generated on the AWPf site and overflowing the local stormwater drainages. Therefore, operation of the water conveyance system would not require construction of new stormwater drainage facilities or expansion of existing facilities. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Groundwater Wells

All of the proposed groundwater well sites would be constructed within undeveloped sites so the construction of the proposed project would add impervious surfaces. The well pads and building would be designed to convey runoff to the existing stormwater system. These wells would be designed to comply with the County MS4 Permit to ensure the runoff sourced from the well sites would not overflow the local stormwater drainages. Therefore, construction and operation of the proposed wells would not require construction of new stormwater drainage facilities or expansion of existing facilities. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetlands

Construction and operation of the reconfiguration of existing ponds and new treatment wetlands would not add impervious surfaces to the existing sites. During construction, the implementation

of a SWPPP and BMPs would ensure that construction dirt, runoff or materials do not impact the existing stormwater drainage facilities. Therefore, the proposed project would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall

The proposed outfall would be constructed within the Pacific Ocean. The construction of the outfall pipeline would not directly or indirectly impact the stormwater system. During construction, the implementation of a SWPPP and BMPs would ensure that construction dirt, runoff or materials would not impact the existing stormwater drainage facilities. Therefore, the construction and operation of the proposed outfall would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impact would occur.

Discharge Pipeline to the Calleguas Salinity Management Pipeline

The proposed discharge pipeline to the Calleguas SMP would be constructed underground within the public rights-of-way, were feasible, and impact areas would be returned to pre-project conditions. As a result, the pipeline would not alter existing runoff patterns that could exceed existing stormwater drainage capacity and would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No impact.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. Therefore, the operation of the expansion project would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility

The proposed ocean desalination facility would be constructed on the AWPf site, which would already be developed as part of Phase 1. Construction of the new facility could result in minor changes from pervious to impervious surfaces within the plant. However, the proposed

desalination facility would be constructed in compliance with the Ventura County MS4 Permit to ensure any runoff would not overflow local stormwater drainage facilities. Overall, the proposed construction of the desalination facility would not greatly increase surface runoff requiring additional stormwater facilities. Impacts would be considered less than significant

Ocean Intake

The proposed subsurface ocean intake would be completely underground. Impact areas would be returned to pre-project conditions and would not create any new impervious surfaces that could increase stormwater runoff. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Sufficient Water Supplies

Impact UTIL 3.19-4: The proposed projects could result in a significant impact if they would not have sufficient water supplies available to serve the project from existing entitlements and resources, or if new or expanded entitlements were needed.

Phase 1

The construction of the Ventura Water Supply Projects would require minimal amounts of water for activities such as dust control, concrete mixing, well drilling, and sanitary purposes. Construction water would either be accessed via a local water line or trucked in from another local area supplied by the city. The construction demand would be minimal and accommodated by existing supplies. Therefore, impacts related to sufficient water supplies during construction would be considered less than significant.

Operation of the proposed AWPf would require a minimal amount of water for landscaping and onsite sanitation for workers. The proposed AWPf is a new treatment facility that would treat tertiary-treated water from the VWRf to exceed Title 22 compliance criteria. The advanced treated product water would then be distributed in the city's drinking water system. The project is a water supply project and would have sufficient water supplies available to serve the proposed project and no new or expanded entitlements would be required. No impact would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. The expansion

project would allow for more water to be treated to Title 22 compliance criteria and ultimately increase the city's water supply. The project is a water supply project and would have sufficient water supplies available to serve the proposed project and no new or expanded entitlements would be required. No impact would occur.

Ocean Desalination

Similar to the project-level facilities, construction of the proposed ocean desalination facility would require minimal water amounts for purposes including, dust control, well drilling, concrete-mixing, and sanitary purposes. New or expanded water supply entitlements would not be required during facility construction. Impacts would be considered less than significant.

Similar to the project-level facilities, operation of the proposed ocean desalination facility would require minimal water amounts for purposes including landscaping and on-site sanitation. The desalination project would be design to supplement the city's future water supply. The proposed project is a water supply project design to increase the water supply in the future. In addition, no new or expanded entitlements would be required. Impacts would be considered less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Adequate Wastewater Capacity

Impact UTIL 3.19-5: The proposed projects could have a significant impact if they would result in a determination by the wastewater treatment provider that serves the projects that that they do not have adequate capacity to serve the projects' projected demand in addition to the provider's existing commitments.

Phase 1

Advanced Water Purification Facility

During construction of the AWPf, a minimal amount of wastewater would be generated by construction workers and would be collected by portable toilet facilities. All waste generated in portable toilets would be collected by a permitted portable toilet waste hauler and appropriately disposed of at one of the identified liquid waste disposal stations that have been appropriately permitted by the RWQCB.

Operation of the AWPf would generate wastewater from typical domestic, human-related wastewater. The AWPf would employ approximately 20 people in a new 8,500 square foot office/administration building at the AWPf site. The small volume of wastewater from the addition of the office/administration building would be accommodated by the existing treatment plant currently serving the city of Ventura and would not increase the need for municipal wastewater treatment substantially from existing conditions. Impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System

Similar to construction impacts for the proposed AWP, the proposed conveyance pipelines and pump stations would generate a minimal amount of wastewater from construction workers and portable toilet facilities that it would not result in an adverse impact to the treatment capacity of the VWRP. The proposed product water conveyance system would not generate any wastewater during their operation. Therefore, impacts related to available wastewater treatment capacity would not occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Groundwater Wells

As discussed under Impact UTIL 3.19-1, the proposed wells would generate minimal wastewater during construction from portable toilet facilities, which would be properly collected and disposed of off-site. Once operational, none of the proposed wells would generate wastewater. Therefore, there would be no additional wastewater demand for treatment at the VWRP and no impact related to wastewater treatment capacity would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetland

A minimal amount of wastewater would be generated during the construction of the wetland from construction workers and collected in portable toilet facilities, which would be properly collected and disposed of off-site. During operation, the proposed reconfiguration of the existing ponds and the new treatment wetlands would not generate wastewater. Therefore, there would be no impact related to available wastewater treatment capacity.

Mitigation Measures: None required.

Significance Determination: No Impact.

VWRP Treatment Upgrades

The upgrades would include replacing the aeration blowers, filters, existing gravity thickener, and a new anoxic tank within the existing VWRP. The upgrades would occur within the existing VWRP and would not produce wastewater. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Concentrate Discharge Facility

New Outfall and Discharge Pipeline to the Calleguas Salinity Management Pipeline

Construction of the new outfall and discharge pipeline to the Calleguas SMP would generate minimal amounts of wastewater from construction workers. All construction wastewater generated would be collected in portable toilet facilities and properly disposed off-site. The proposed outfall and discharge pipeline would not generate any wastewater once in operation. Therefore, there would be no impact related to available wastewater treatment capacity.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

AWPF Expansion Project

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. Therefore, there would be no impact related to available wastewater treatment capacity.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility and Ocean Intake

As discussed under Impact UTIL 3.19-1, the construction of the proposed ocean desalination facility and ocean intake would generate a minimal amount of wastewater from construction workers and the portable toilet facilities. Operation of the proposed desalination facility and ocean intake would not generate wastewater; thus it would not create an additional wastewater demand for treatment at the VWRf. No impact related to wastewater treatment capacity would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Landfill Capacity

Impact UTIL 3.19-6: The proposed projects could result in a significant impact if they would not be serviced by a landfill with sufficient permitted capacity to accommodate the projects' solid waste disposal needs.

Phase 1

Advanced Water Purification Facility

The waste generated during construction of the proposed AWPf and its facilities would mainly consist of general construction debris, building material wrapping and worker personal waste. This construction waste generated would require disposal at nearby landfill. Pursuant to the City's Construction and Demolition Debris Program, the proposed project would develop a WMP that describes the project's waste management and ensures it is carried out. The WMP would also demonstrate a minimum of 65 percent diversion of construction building materials and demolition debris from landfills through reuse or recycling per CAL Green requirements. Information provided in the WMP would include how the waste would be managed, hauler identification, and anticipated material wastes. Construction waste would likely be disposed of at the Toland Road Landfill, located approximately 5 miles northeast of the project area. This landfill can handle 1,500 tons of solid waste per day, which is beyond the expected amount of waste that would be generated by the project during construction. Furthermore, the landfill has substantial remaining capacity of 10,571,820 cubic yards. Therefore, construction-related impacts to the landfill would be considered less than significant.

Operation of the proposed AWPf would generate concentrate that would be either conveyed to the ocean outfall or to the Calleguas SMP. The proposed AWPf would not increase the amount of debris or trash generated in the region. The project would not exceed landfill capacity or change regional reuse opportunities. The impact to landfills would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Water Conveyance System, Groundwater Wells, VWRf Treatment Upgrade and Concentrate Discharge Facility

The solid waste generated during the construction of the proposed product water conveyance pipelines and pump stations, groundwater wells, VWRf treatment upgrade, new concentrate discharge facility, and discharge pipeline to the Calleguas SMP would require disposal at a landfill. Pursuant to the City's Construction and Demolition Debris Program, the proposed project would develop a WMP that describes the project's waste management. The WMP would also demonstrate a minimum of 65 percent diversion of construction building materials and demolition debris from landfills through reuse or recycling per CAL Green requirements. Furthermore, the Toland Road Landfill has a remaining capacity of 10,571,820 cubic yards. As such, the landfill has room to accommodate waste generated during groundwater wells construction. Therefore, substantial remaining landfill capacity combined with mandatory construction waste diversion requirements would result in less than significant impacts related to sufficient landfill capacity.

during construction of the proposed product water conveyance system, groundwater injection and extraction system, and concentrate discharge facility.

Once constructed the project components would not generate solid waste while in operation. Therefore, there would be no impact related to landfill capacity.

Mitigation Measures: None Required.

Wildlife/Treatment Wetlands

Reconfigure Existing Ponds and New Treatment Wetlands

Construction of the reconfiguration of the existing ponds and new treatment wetlands would generate minimal solid waste that would require disposal at a landfill. As discussed above, the Toland Road Landfill has sufficient capacity to accommodate the solid waste generated. Therefore, there would be a less than significant impact related to sufficient landfill capacity during construction.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

AWPF Expansion

To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. Similar to the proposed AWPf, the construction waste generated for the proposed expansion project would consist of primarily general construction debris, building material wrapping and worker personal waste. The nearest landfill for solid waste disposal would be the Toland Road Landfill. In addition, the preparation of a WMP would also be required which would ensure waste management, proper hauler information, and a minimum of 65 percent diversion of construction building materials through recycling or reuse. Since the Toland Road Landfill has sufficient capacity, the impacts related to the landfill capacity would be considered less than significant.

The expansion of the AWPf would not generate additional solid waste beyond the existing conditions at the time of implementation. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Ocean Desalination

Desalination Facility and Ocean Intake

Similar to the proposed AWPf, the construction waste generated for the proposed ocean desalination facility and ocean intake would consist of primarily general construction debris, building material wrapping and worker personal waste. The proposed ocean desalination facility would be located at the same site as the AWPf so the nearest landfill for solid waste disposal

would be the Toland Road Landfill. In addition, the preparation of a WMP would also be required which would ensure waste management, proper hauler information, and a minimum of 65 percent diversion of construction building materials through recycling or reuse. Since the Toland Road Landfill has sufficient capacity, the impacts related to the landfill capacity would be considered less than significant.

The proposed ocean desalination facility would not generate solid waste once in operation. No impact would occur.

The proposed ocean intake system would not generate any solid waste once in operation. No impacts related to sufficient landfill capacity would occur.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Solid Waste

Impact UTIL 3.19-7: The proposed projects could result in a significant impact if they would not comply with federal, state, and local statutes and regulations related to solid waste.

Phase 1

The proposed project would comply with all City's Construction and Demolition Debris Program during construction of the proposed structures as described above. In addition, the proposed projects would be required to comply with the California Integrated Waste Management Act of 1989, requiring diversion of solid waste from landfills through reuse and recycling. The proposed projects would comply with all local, state and federal regulations related to solids waste. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Phase 2

The construction of the proposed ocean desalination facility and ocean intake would comply with the City's Construction and Demolition Debris Program during construction of the proposed structures as described above. In addition, the proposed project would be required to comply with the California Integrated Waste Management Act of 1989, requiring diversion of solid waste from landfills through recycling and reuse. The proposed projects would comply with all local, state and federal regulations related to solids waste. No impact would occur.

Mitigation Measures: None required.

Significance Determination: No Impact.

Energy Conservation Plans

Impact UTIL 3.19-8: The proposed projects could result in a significant impact if they would conflict with adopted energy conservation plans.

Phase 1

Construction-Related Impacts

Construction of the project would include the following components:

Advanced Water Purification Facility

Construction of the AWPf would consist of site clearing and grading, excavation, building construction, equipment installation, and site completion activities. Construction equipment could include the following: excavators, graders, backhoe, bulldozer, loader, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck.

Water Conveyance System

The project would include a system of conveyance pipelines to transfer treated water through the service area. The system would include pipelines from the extraction wells to the AWPf, from the VWRf to the AWPf, from the AWPf to the injection wells for IPR, and from the AWPf to the Bailey WCF and Saticoy WCF for DPR. Construction would involve trenching using a conventional cut and cover technique. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition.

Groundwater Wells

Depending on the chosen well site, construction of the proposed wells would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, well drilling, installation of well casing, gravel packing and finishing with a cement seal. Construction equipment would likely include an auger rig, drill rig, small crane, welder, pipe trailer, forklift, generator, circulation pits, Baker tanks and backhoe.

Wildlife/Treatment Wetlands

Wildlife/treatment wetlands would be constructed to provide additional treatment to the remaining tertiary discharge prior to its discharge to the SCRE. The new wetlands are a requirement of the Consent Decree and will improve the quality of discharged water. This component may also require reconfiguration and repurposing of some or all of the existing wildlife/treatment ponds. Construction of the wetlands would include site preparation and clearing, excavation, trenching, mobilization of equipment, grading, planting and site completion activities. Construction equipment could include the following: excavators, graders, backhoe, bulldozer, loader, dump trucks, crew trucks, concrete trucks, personal vehicles, compactor, delivery trucks, and a water truck.

VWRF Treatment Upgrade

The VWRF Treatment Plant Upgrade would include the replacement of existing blowers and the construction of a new anoxic tank. Approximately 1,000 cubic yards of construction debris would be hauled off-site. This debris would primarily be composed of dirt. Construction would include site grading and excavation to a depth of 6 feet. A total of approximately 1,350 truck trips would be required to haul off and import materials.

Concentrate Discharge Facility

A facility to safely dispose of the concentrate produced by the AWPf would be constructed in one of two ways: (1) New Ventura Concentrate Outfall or (2) Discharge Pipeline to the Calleguas Salinity Management Pipeline. Construction of a new ocean outfall includes a pipeline from the AWPf to the ocean where the concentrate would be discharged through an outfall. The pipeline would be constructed utilizing trenchless technology to bore under the beach. Construction of the discharge pipeline to the Calleguas SMP would involve trenching using a conventional cut and cover technique or directional drilling techniques. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, pipe installation, backfill operations, and re-surfacing to the original condition. Trenchless construction methods would be employed to install pipelines under the Santa Clara River, sensitive drainages, and large intersections. Trenchless installation could include either directional drilling or jack and bore methods.

Marine vessels would be used transport workers and materials for the offshore construction activities. Annual operation operating hours for the use of these marine vessels is assumed to be 10 to 12 hours per day for 9 months (100 days in year 1 and 100 days in year 2).

The following impact analysis focuses on the three sources of energy that are potentially relevant to the project: electricity, natural gas, and transportation fuel for equipment and vehicle trips associated with construction of the above components of the project.

Electricity

During construction of the project, a minimal amount of electricity would be consumed to supply and convey water for dust control and to power lighting, electronic equipment, and other construction tools necessitating electrical power. Electricity would be supplied to the project by Southern California Edison and would be obtained from the existing electrical infrastructure or temporary connections to the existing electrical infrastructure. The electricity demand at any given time would vary throughout the construction period based on the construction activities being performed and would cease upon completion of construction. When not in use, electric equipment would be powered off to avoid unnecessary energy consumption. As electricity demand during project construction activities would be relatively minimal, construction of the project would not likely affect regional energy consumption in years during the construction period.

Natural Gas

Construction activities typically do not involve the consumption of natural gas. Accordingly, natural gas would not be anticipated to be used for project construction activities; thus, there would be no expected demand generated by construction of the project.

Transportation Energy

Project construction would require transportation energy in the form of fuel consumed by construction vehicles and equipment. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, and construction. Fuel consumption from on-site heavy-duty construction equipment was calculated based on the equipment mix and usage factors provided in the California Emissions Estimator Model (CalEEMod) construction output files used for the project's GHG analysis (refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR). The total horsepower was then multiplied by fuel usage estimates per horsepower-hour from the CARB's OFFROAD model. Fuel consumption from construction worker, vendor, and delivery/haul trucks was calculated using the trip rates and distances provided in the CalEEMod construction output files. Total VMT was then calculated for each type of construction-related trip and divided by the corresponding county-specific miles per gallon factor using CARB's EMFAC2017 model. EMFAC provides the total annual VMT and fuel consumed for each vehicle type. Consistent with CalEEMod, construction worker trips were assumed to include a mix of light duty gasoline automobiles and light duty gasoline trucks. Construction vendor and delivery/haul trucks were assumed to be heavy-duty diesel trucks. Marine vessels were all assumed to be diesel and calculated using emission factors and equations from CARB's harbor craft emissions inventory tool.²⁷ Refer to Appendix # of this Draft EIR for detailed energy calculations. Fuel consumption by on-road and off-road construction vehicles is summarized in **Table 3.19-4**. Fuel energy consumed during construction would be temporary and would not represent a substantial long-term demand on energy resources.

TABLE 3.19-4
SUMMARY OF ENERGY USE DURING PROJECT CONSTRUCTION ^a

Energy Type	Project Total Quantity (gallons)	Project Annual Average Quantity During Construction (gallons)	2016 Ventura County Annual Quantity ^b (gallons)	Project Annual Average Percent of 2016 Ventura County Annual Quantity (gallons)
Gasoline				
Phase 1 Total Gasoline	207,367	43,656	330,000,000	0.013%
Diesel				
Phase 1 Total Diesel	2,257,222	475,205	61,540,000	0.772%

^a Detailed calculations are provided in Appendix # of this Draft EIR. Totals may not add up due to rounding of decimals.

^b California Energy Commission 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, Ventura County, October 10, 2017. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

SOURCE: ESA 2018

²⁷ CARB, Appendix B: Emissions Estimation Methodology for Commercial Harbor Craft Operating in California to the Technical Support Document for Rulemaking to Consider the Adoption of Proposed Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline. Available online at: <https://www.arb.ca.gov/msei/chc-appendix-b-emission-estimates-ver02-27-2012.pdf>, Accessed June 2018.

Some incidental energy conservation would occur during construction through compliance with State requirements (13 CCR Section 2485) that prohibit diesel-fueled commercial vehicles from unnecessary idling for more than 5 minutes at any given location. Additional energy conservation would occur from construction contractors complying with the federal fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type.²⁸ The Phase 2 heavy-duty truck standards cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.²⁹ State regulations also require that construction contractors phase-in newer emission-controlled models of heavy-duty off-road equipment, such as equipment meeting the stringent USEPA and CARB Tier 4 emissions standards (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. Compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. For example, a field testing program by an engine manufacturer that included a wide range of equipment types has shown that a Tier 4 engine results in up to 10 percent lower fuel consumption than an equivalent Tier 3 engine based on the overall results of the program.³⁰ Compliance with these regulations require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Because of increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

As described above, construction of the project would be consistent with applicable State and federal energy standards, including the use of construction contractors with equipment and vehicle fleets that are in compliance with State anti-idling requirements (13 CCR Section 2485), State regulations that require construction contractors to phase-in newer emission-controlled models of heavy-duty off-road equipment (13 CCR Section 2449), and federal fuel efficiency standards for medium- and heavy-duty trucks. As indicated in Table 3.19-4, the project's average annual fuel consumption associated with construction would represent approximately 0.013 percent for gasoline and 0.67 percent for diesel compared to the annual total fuel consumption in Ventura County. As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during construction and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption in years during the construction period, existing or reasonably foreseeable fuels supplies would be expected to meet the project's construction energy demand, and project construction would not result in the

²⁸ United States Environmental Protection Agency, Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF>. Accessed May 22, 2018.

²⁹ United States Environmental Protection Agency, Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25, 2016, <https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf>. Accessed May 22, 2018.

³⁰ Cummins, Cummins Tier 4 Final Field-Test Program Exceeds 140,000 Hours, Gaining Valuable Experience with Operators On-Site, March 5, 2014, <https://cumminsengines.com/cummins-tier-4-final-field-test-program>. Accessed May 22, 2018.

need to construct new energy facilities or expand existing facilities. As a result, project construction impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Operational-Related Impacts

Operation of the proposed projects would include the following components:

Advanced Water Purification Facility: The proposed AWPf would operate 24 hours a day, 365 days a year and would be staffed around the clock. Routine deliveries of chemicals to the site and hauling of residual materials from the site would be conducted during normal day-shift working hours throughout the traditional work week. It is anticipated that the AWPf would require approximately 20 new full-time employees to operate the facility.

Water Conveyance System: The majority of the pipeline would be located underground with valves and minor piping being located above ground for maintenance purposes. Pipeline inspection, maintenance, and/or repairs would occur infrequently. Therefore, operation of this component of the project would not substantially contribute to operational energy demand.

Groundwater Wells: The well sites would be housed within block building and would not produce excessive noise during operation. The wells would be accessed by maintenance personnel approximately two times per week. Well pumps would require energy.

Wildlife/Treatment Wetlands: The wetland would require regular monitoring and maintenance for the first 2 to 3 years as the wetland vegetation becomes established. In addition, vegetation maintenance/removal projects would be required at regular intervals (3-5 years) to ensure that water flows through system as design and does not get hydraulically constricted causing elevated water levels or limited capacity. It is anticipated that 3 to 5 new employees would be required to monitor and maintain the wetlands.

VWRF Treatment Upgrade: The VWRF Treatment Plant Upgrade would include the replacement of existing blowers and the construction of a new anoxic tank.

Concentrate Discharge Facility: Pipeline inspection, maintenance, and/or repairs would occur infrequently. Typical pipeline maintenance would entail the inspection and/or maintenance of valves and corrosion control.

The following impact analysis focuses on the three sources of energy that are potentially relevant to the project: electricity, natural gas, and transportation fuel for equipment and vehicle trips associated with operation of the above components of the project.

Electricity

The project would increase the demand for electricity resources in order to operate the water purification, outfall systems, well pumps, and distribute treated water. The project's estimated energy consumption is summarized in **Table 3.19-5**. As shown in Table 3.19-5, Phase 1 would

result in an average electricity consumption within the project site of approximately 21.3 million kWh per year.

**TABLE 3.19-5
PROJECT OPERATIONAL ENERGY USAGE**

Source	2016 Ventura County Electricity Per Year (Million kWh)	2016 Ventura County Natural Gas Per Year (Million kBtu)	2016 Ventura County Diesel Fuel Per Year (gallons)	2016 Ventura County Gasoline Fuel Per Year (gallons)
SCE-Ventura County (2016) ^a / SoCalGas-Ventura County (2022-2023) ^b	5,505	17,320	—	—
County of Ventura (Transportation Sector) (2016) ^c	—	—	61,540,000	330,000,000
Operations:				
Phase 1				
Building Electricity and Transportation	21.3	1.69	1,195	8,503
Percent of SCE/SoCalGas (Ventura County)	0.39%	0.001%		
Percent of County (Transportation Sector)			0.002%	0.003%

NOTES:

^a California Energy Commission, Electricity Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed May 22, 2018.

^b California Energy Commission, Gas Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed May 22, 2018.

^c California Energy Commission, 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, Ventura County, October 10, 2017. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

SOURCE: ESA 2018

The project building facilities would comply with or exceed the applicable provisions of Title 24 and the CALGreen Code. According to the CEC, Title 24's 2016 standards use 28 percent and 5 percent less energy for lighting, heating, cooling, ventilation, and water heating than Title 24's prior 2013 standards for residential and nonresidential uses, respectively (CEC 2016a). The project would comply with Title 24 energy efficiency requirements for fixtures within the facilities to maximize energy efficiency, including lighting, air conditioning, and appliance uses. The desalination process would include energy recovery devices and energy efficient pumps to maximize energy efficient in the treatment process.

The electricity demands of the Phase 1 facilities would be supplied by SCE, which is subject to the California Renewables Portfolio Standard Program. Over time, the electricity available to the proposed project will include greater contributions from renewable energy supplies of 33 percent by 2020 and 50 percent by 2030. As shown in Table 3.19-5, the Phase 1 facilities would represent approximately 0.39 percent of the county's annual electricity use. As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during operation and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption, existing or reasonably foreseeable electricity supplies would be expected to meet the project's electricity demand, and project operation would not result in the need to

construct new energy facilities or expand existing facilities. As a result, project operational electricity impacts would be less than significant.

Natural Gas

As shown in Table 3.19-5, the project's natural gas demand is estimated at approximately 1.69 million kBtu per year for Phase 1 operations. Demand is a result of general building consumption and not related to process operation.

As indicated in Table 3.19-5, operational energy consumption would represent a negligible increase in natural gas consumption over the current countywide usage. SoCalGas is the natural gas provider for Ventura County. The project would result in an increased demand for energy and would represent approximately 0.001 percent of county demand. However, the project would not result in the need for new or expanded sources of energy supply or new or expanded energy delivery systems or infrastructure other than as noted above.

As would be the case with electricity, the project would comply with the applicable provisions of Title 24 and the CALGreen Code in effect at the time of building permit issuance to minimize natural gas demand. Therefore, operation of the project would not result in the wasteful, inefficient, and unnecessary consumption of natural gas and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption, existing or reasonably foreseeable natural gas supplies would be expected to meet the project's natural gas demand, and project operation would not result in the need to construct new energy facilities or expand existing facilities. As a result, project operational natural gas impacts would be less than significant.

Transportation Energy

The project's estimated operational transportation fuel demand is provided in Table 3.19-5. Fuel use from project operations would come mainly from worker trips performing routine maintenance at the Phase 1 facilities. As such, the fuel use would be minimal when compared to the county's overall fuel use (0.003 percent of county gasoline use and 0.002 percent of county diesel use).

As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during operations and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption on an annual operational basis, existing or reasonably foreseeable fuels supplies would be expected to meet the project's operational energy demand, and project operation would not result in the need to construct new energy facilities or expand existing facilities. As a result, project operation impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Phase 2

Phase 2 of the proposed projects would augment water supplies to meet future water needs, including the accommodation of planned growth, either through increasing the amount of recycled water produced, increasing the amount of treated groundwater, or construction of an ocean desalination facility. This would be accomplished through either the expansion of the AWPf or construction of an ocean desalination facility.

AWPF Expansion

The expansion project would be located within the same footprint as the AWPf. To expand the AWPf, the individual advanced treatment processes facilities within the plant would be expanded, but no new treatment processes would be needed or added. Therefore, Phase 2 AWPf Expansion project would require little construction energy demand. As such, the AWPf Expansion project would not cause wasteful, inefficient, and unnecessary consumption of energy during construction and would not conflict with energy conservation plans. The AWPf Expansion project would not result in the need to construct new energy facilities or expand existing facilities. As a result, AWPf Expansion project construction impacts would be less than significant.

Operation of the proposed expansion project would include similar processes as the proposed AWPf but would treat more water annually. The expansion would be within the same footprint as the AWPf and would not require any new employees.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Ocean Desalination

Desalination Facility and Ocean Intake

The desalination treatment components would be within same footprint of AWPf site. Therefore, the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction requirements discussed above for the Phase 1 AWPf. Co-location of these two facilities increases efficiencies in operations and maintenance. Planning, permitting, design and construction of the ocean intake and concentrate discharge system would require approximately 10 to 15 years, and may occur in parallel with ocean water desalination facility. Installation of the intake screens (i.e., if a subsurface intake is determined not feasible) and discharge diffusers requires that barges, support vessels, equipment and crew be mobilized offshore of the VWRf. Construction operations include anchoring, dredging, erosion control measures, and pile driving.

As the desalination treatment components would be located within same footprint of AWPf site and the construction methods for the ocean desalination treatment facility would be similar to the anticipated construction energy demands as discussed above for the Phase 1 AWPf. In addition, similar to the Phase 1 AWPf, construction truck and vehicle trips would be generated primarily by construction workers commuting to and from the work sites, and by trucks hauling materials and equipment to and from the treatment facility site. Thus, the construction energy demand for

the desalination treatment components would be similar with the construction energy demands for the Phase 1 AWPf as shown above in Table 3.19-4.

Construction of the desalination facility and ocean intake would be consistent with applicable State and federal energy standards, including the use of construction contractors with equipment and vehicle fleets that are in compliance with State anti-idling requirements (13 CCR Section 2485), State regulations that require construction contractors to phase-in newer emission-controlled models of heavy-duty off-road equipment (13 CCR Section 2449), and federal fuel efficiency standards for medium- and heavy-duty trucks. As indicated above in Table 3.19-4, the desalination facility and ocean intake average annual fuel consumption associated with construction would be similar to the Phase 1 AWPf and would represent approximately 0.013 percent for gasoline and 0.67 percent for diesel compared to the annual total fuel consumption in Ventura County. As such, construction of the desalination facility and ocean intake would not cause wasteful, inefficient, and unnecessary consumption of energy during construction and would not conflict with energy conservation plans. Construction of the desalination facility and ocean intake would have a nominal effect on regional energy consumption in years during the construction period, existing or reasonably foreseeable fuels supplies would be expected to meet the project's construction energy demand, and project construction would not result in the need to construct new energy facilities or expand existing facilities. As a result, construction impacts for the desalination facility and ocean intake would be less than significant.

Operation of the proposed desalination facility would include similar processes as the proposed AWPf. The desalination equipment would be located within the same footprint as the AWPf and would require approximately two new employees that specialize in desalination plant operations and maintenance beyond what is already needed for the AWPf. Typical maintenance would entail the inspection and/or maintenance of valves and corrosion inspections.

Electricity

Phase 2 would increase the demand for electricity resources in order to operate the AWPf expansion and ocean desalination facility in addition to the demand already created by Phase 1. Both of Phase 2's options estimated energy consumption are summarized in **Table 3.19-6**. As shown in Table 3.19-6, Phase 2 would result in an average electricity consumption within the project site of approximately 4.6 million kWh per year with the AWPf expansion and 7.6 million kWh per year with the desalination plant.

**TABLE 3.19-6
PHASE 2 OPERATIONAL ENERGY USAGE**

Source	2016 Ventura County Electricity Per Year (Million kWh)	2016 Ventura County Natural Gas Per Year (Million kBtu)	2016 Ventura County Diesel Fuel Per Year (gallons)	2016 Ventura County Gasoline Fuel Per Year (gallons)
SCE-Ventura County (2016) ^a / SoCalGas-Ventura County (2022-2023) ^b	5,505	17,320	—	—
County of Ventura (Transportation Sector) (2016) ^c	—	—	61,540,000	330,000,000

Source	2016 Ventura County Electricity Per Year (Million kWh)	2016 Ventura County Natural Gas Per Year (Million kBtu)	2016 Ventura County Diesel Fuel Per Year (gallons)	2016 Ventura County Gasoline Fuel Per Year (gallons)
Operations:				
Phase 2: Option 1 – AWPf Expansion				
Building Electricity and Transportation	4.6	—	52	370
Percent of SCE/SoCalGas (Ventura County)	0.08%	—		
Percent of County (Transportation Sector)			0.00008%	0.0001%
Phase 2: Option 2 – Ocean Desalination Plant				
Building Electricity and Transportation	7.6	—	52	370
Percent of SCE/SoCalGas (Ventura County)	0.14%	—		
Percent of County (Transportation Sector)			0.00008%	0.0001%

NOTES:

- ^a California Energy Commission, Electricity Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed May 22, 2018.
- ^b California Energy Commission, Gas Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed May 22, 2018.
- ^c California Energy Commission, 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, Ventura County, October 10, 2017. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

SOURCE: ESA 2018

The project facilities would comply with or exceed the applicable provisions of Title 24 and the CALGreen Code. According to the CEC, Title 24's 2016 standards use 28 percent and 5 percent less energy for lighting, heating, cooling, ventilation, and water heating than Title 24's prior 2013 standards for residential and nonresidential uses, respectively (CEC 2016a). The project would comply with Title 24 energy efficiency requirements for fixtures within the facilities to maximize energy efficiency, including lighting, air conditioning, and appliance uses. The desalination process would include energy recovery devices and energy efficient pumps to maximize energy efficient in the treatment process.

The electricity demands of the Phase 2 facilities would be supplied by SCE, which is subject to the California Renewables Portfolio Standard Program. Over time, the electricity available to the proposed project will include greater contributions from renewable energy supplies of 33 percent by 2020 and 50 percent by 2030. As shown in Table 3.19-6, the Phase 2 facilities would represent up to approximately 0.14 percent of the county's annual electricity use. As such, the Phase 2 facilities would not cause wasteful, inefficient, and unnecessary consumption of energy during operation and would not conflict with energy conservation plans. The Phase 2 facilities would have a nominal effect on regional energy consumption, existing or reasonably foreseeable electricity supplies would be expected to meet the project's electricity demand, and operation of the facilities would not result in the need to construct new energy facilities or expand existing facilities. As a result, Phase 2 operational electricity impacts would be less than significant.

Natural Gas

Phase 2 consumption is a result of general building consumption and not related to process operation. Phase 2 facilities would not require any more natural gas than previously analyzed for Phase 1 operations. The AWPf expansion and ocean desalination facility would be housed within the same footprint of the AWPf and would not require any new structures. Therefore, operation of the project would not result in the wasteful, inefficient, and unnecessary consumption of natural gas and impacts would be less than significant.

Transportation Energy

As stated above, Phase 2 facilities would be within the footprint of the AWPf and would not require additional trips for the expansion. However, the ocean desalination facility would require an additional two employees. Table 3.19-6 shows the increased fuel demand from the additional employees travelling to and from the site. Phase 2 fuel use would represent approximately 0.0001 percent of county gasoline use and 0.00008 percent of county diesel use.

As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during operations and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption on an annual operational basis, existing or reasonably foreseeable fuels supplies would be expected to meet the project's operational energy demand, and project operation would not result in the need to construct new energy facilities or expand existing facilities. As a result, project operation impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

Combined Phases Impacts

Construction-Related Impacts

As stated above, Phase 2 facilities would be constructed within the same footprint of Phase 1 facilities and would not require construction of any additional buildings. As such, the combined construction energy use is equal to the use described in the Phase 1 Construction-Related Impacts discussion.

The construction of the project (Phase 1 and Phase 2) would be consistent with applicable State and federal energy standards, including the use of construction contractors with equipment and vehicle fleets that are in compliance with State anti-idling requirements (13 CCR Section 2485), State regulations that require construction contractors to phase-in newer emission-controlled models of heavy-duty off-road equipment (13 CCR Section 2449), and federal fuel efficiency standards for medium- and heavy-duty trucks. As indicated in Table 3.19-4, the project's average annual fuel consumption associated with construction would represent approximately 0.013 percent for gasoline and 0.77 percent for diesel compared to the annual total fuel consumption in Ventura County. As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during construction and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption in years during the construction period, existing or reasonably foreseeable fuels supplies would be expected to

meet the project's construction energy demand, and project construction would not result in the need to construct new energy facilities or expand existing facilities. As a result, project construction impacts would be less than significant.

Operational-Related Impacts

Electricity

The project would increase the demand for electricity resources in order to operate the Phase 1 and Phase 2 facilities. As stated above, Phase 1 has two options: expansion of the AWPf or the addition of an ocean desalination plant. The total estimated energy consumption for both options are summarized in **Table 3.19-7**. As shown in Table 3.19-7, the combined phases would result in an average electricity consumption within the project site of approximately 25.9 million kWh per year with the AWPf expansion or 28.9 million kWh per year with the ocean desalination plant.

**TABLE 3.19-7
COMBINED PHASES OPERATIONAL ENERGY USAGE**

Source	2016 Ventura County Electricity Per Year (Million kWh)	2016 Ventura County Natural Gas Per Year (Million kBtu)	2016 Ventura County Diesel Fuel Per Year (gallons)	2016 Ventura County Gasoline Fuel Per Year (gallons)
SCE-Ventura County (2016) ^a / SoCalGas-Ventura County (2022-2023) ^b	5,505	17,320	—	—
County of Ventura (Transportation Sector) (2016) ^c	—	—	61,540,000	330,000,000
Operations:				
Option 1: Phase 1 + Phase 2 AWPf Expansion				
Building Electricity and Transportation	25.9	1.69	1,247	8,873
Percent of SCE/SoCalGas (Ventura County)	0.47%	0.001%		
Percent of County (Transportation Sector)			0.002%	0.003%
Option 2: Phase 1 + Phase 2 Ocean Desalination Plant				
Building Electricity and Transportation	28.9	1.69	1,247	8,873
Percent of SCE/SoCalGas (Ventura County)	0.53%	0.001%		
Percent of County (Transportation Sector)			0.002%	0.003%

NOTES:

^a California Energy Commission, Electricity Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed May 22, 2018.

^b California Energy Commission, Gas Consumption by County, Ventura, 2016, <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>. Accessed May 22, 2018.

^c California Energy Commission, 2016 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessments Division, Ventura County, October 10, 2017. Diesel is adjusted to account for retail (52%) and non-retail (48%) diesel sales.

SOURCE: ESA 2018

As stated above, the project facilities would comply with or exceed the applicable provisions of Title 24 and the CALGreen Code. The project would comply with Title 24 energy efficiency requirements for fixtures within the facilities to maximize energy efficiency, including lighting, air conditioning, and appliance uses.

The electricity demands of the combined facilities would be supplied by SCE, which is subject to the California Renewables Portfolio Standard Program. Over time, the electricity available to the proposed project will include greater contributions from renewable energy supplies of 33 percent by 2020 and 50 percent by 2030. As shown in Table 3.19-7, operation of the Phase 1 and Phase 2 facilities would represent up to a maximum of approximately 0.53 percent of the county's annual electricity use. As such, the facilities would not cause wasteful, inefficient, and unnecessary consumption of energy during operation and would not conflict with energy conservation plans. The facilities would have a nominal effect on regional energy consumption, existing or reasonably foreseeable electricity supplies would be expected to meet the project's electricity demand, and operation of the facilities would not result in the need to construct new energy facilities or expand existing facilities. As a result, Phase 2 operational electricity impacts would be less than significant.

Natural Gas

As stated above, Phase 1 natural gas demand does not change with the addition of Phase 2 since the Phase 2 facilities will be within the same footprint as the Phase 1 buildings. The project would comply with applicable Title 24 energy standards.

As indicated in Table 3.19-7, operational energy consumption would represent a negligible increase in natural gas consumption over the current countywide usage. SoCalGas is the natural gas provider for Ventura County. The project would result in an increased demand for energy and would represent approximately 0.001 percent of county demand. However, the project would not result in the need for new or expanded sources of energy supply or new or expanded energy delivery systems or infrastructure other than as noted above.

Transportation Energy

The project's estimated operational transportation fuel demand is provided in Table 3.19-7. Fuel use from project operations would come mainly from worker trips performing routine maintenance at the facilities. Phase 2 would require an additional two employees for the ocean desalination facility, and the increase in fuel demand from the added trips is included in Table 3.19-7. As such, the fuel use would be minimal when compared to the county's overall fuel use (0.003 percent of county gasoline use and 0.002 percent of county diesel use).

As such, the project would not cause wasteful, inefficient, and unnecessary consumption of energy during operations and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption on an annual operational basis, existing or reasonably foreseeable fuels supplies would be expected to meet the project's operational energy demand, and project operation would not result in the need to construct new energy facilities or expand existing facilities. As a result, project operation impacts would be less than significant.

Mitigation Measures: None required.

Significance Determination: Less than Significant.

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CHAPTER 4

Cumulative Impacts

4.1 Introduction

The California Environmental Quality Act (CEQA) requires that a Draft Environmental Impact Report (EIR) assess the cumulative impacts of a project with respect to past, current, and probable future projects within the region. CEQA Guidelines Section 15355, *Cumulative Impacts*, provides the following definition of cumulative impacts:

“Cumulative impacts” refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.

- (a) The individual effects may be changes resulting from a single project or a number of separate projects.*
- (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.*

CEQA Guidelines Section 15130, *Discussion of Cumulative Impacts*, further addresses the discussion of cumulative impacts, as follows:

- (1) An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.
- (2) If the combined cumulative impact associated with the project’s incremental effect and the effects of other projects is not significant, the EIR should briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR.
- (3) If the combined cumulative impact associated with the project’s incremental effect and the effects of other projects is significant, the EIR must determine whether the project’s contribution is cumulatively considerable.
- (4) The EIR may conclude the project’s contribution to a significant cumulative impact is less than cumulatively considerable and thus is not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The California Coastal Act (Public Resources Code Division 20) notes the following regarding cumulative effects (Sections 30105.5 and 30250(a), respectively):

Cumulatively; cumulative effect, "Cumulatively" or "cumulative effect" means the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located [...] where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

Section 4.3, *Impacts and Mitigations*, below, assesses the cumulative impacts of each applicable environmental issue, and does so to a degree that reflects each impact's severity and likelihood of occurrence.

Pursuant to CEQA Guidelines Section 15130(b), the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness, and should include the following elements:

1. *Either:*
 - A. *A list of past, present and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency, or*
 - B. *A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projects may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.*
2. *When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.*
3. *Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.*
4. *A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and*

5. *A reasonable analysis of the cumulative impacts of the relevant projects, including examination of reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.*

Where the analysis of cumulative impacts focuses on the effects of concurrent construction of the proposed project with other spatially and temporally proximate projects, the analysis relies on a list of projects that have the potential to contribute to cumulative impacts in the proposed project area. Jurisdictions contacted for related project information include the County of Ventura and the Cities of Ventura, Oxnard, and Port of Hueneme. **Table 4-1** identifies projects located within the planning area of the proposed project based on consultation with respective agencies.

Project construction-related effects are primarily associated with temporary construction activities in the immediate site vicinity, or along local arterials for construction traffic and staging areas. The local planned development projects in the city of Ventura and surrounding communities are included in Table 4-1 and are considered in this cumulative impacts analysis.

4.2 Related Projects

4.2.1 Geographic Scope

Cumulative impacts are assessed for related projects within a relevant geographic area. This geographic area may vary, depending upon the issue area discussed and the geographic extent of the potential impact. For example, construction noise impacts would be limited to areas directly affected by construction, whereas the area affected by the proposed project's construction-related air emissions generally includes the entire air basin. Construction impacts associated with increased noise, dust, erosion, and access limitations tend to be localized and could be exacerbated if other development or improvement projects are occurring within the same or adjacent locations as the proposed project. Table 4-1 summarizes the geographic scope of the analyses for cumulative impacts for each environmental resource area discussed in Chapter 3 of this Draft EIR.

TABLE 4-1
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS

Environmental Issue	Geographic Scope of Cumulative Impact Analyses
Aesthetics	Foreground views immediately surrounding proposed project components.
Agriculture and Forestry Resources	All agricultural lands adjacent to the proposed project components and any nearby agricultural lands which share the same water sources.
Air Quality	Ventura County Pollution Control District.
Biological Resources	Areas within the cities of Ventura, Oxnard, and Port of Hueneme and portions of unincorporated Ventura County and surrounding environments that support native habitats and plant and wildlife species. In addition, the surrounding SCRE habitat.
Cultural Resources	Cities of Ventura, Oxnard, and Port of Hueneme and portions of unincorporated Ventura County.
Geology, Soils, and Seismicity	Project specific footprints.
Greenhouse Gas Emissions	Global.

Environmental Issue	Geographic Scope of Cumulative Impact Analyses
Hazards and Hazardous Materials	The proposed project facility locations, the immediate area surrounding these locations, and the area within 0.25 mile of a school that would also be within 0.25 mile of the proposed project facilities.
Hydrology and Water Quality	Proposed project sites, downstream receiving waters of the proposed project sites, and the entire Ventura Basin.
Land Use and Planning	Cities of Ventura, Oxnard, Port of Hueneme, and portions of unincorporated Ventura County (specifically Ventura County Coastal Area Plan and the general plans for the cities of Ventura, Oxnard and Port of Hueneme).
Marine Biology	Ventura County coastline.
Mineral Resources	Ventura County.
Noise	Land adjacent to the proposed project components and any adjacent or nearby noise sensitive receptors.
Population and Housing	Cities of Ventura, Oxnard, and Port of Hueneme; Ventura County.
Public Services	Cities of Ventura, Oxnard, and Port of Hueneme and portions of unincorporated Ventura County.
Recreation	Cities of Ventura, Oxnard, and Port of Hueneme and portions of unincorporated Ventura County.
Traffic and Transportation	Cities of Ventura, Oxnard, and Port of Hueneme and portions of unincorporated Ventura County.
Utilities, Service Systems, and Energy	Service areas of the proposed projects' utility providers: Ventura Water, Ventura Water Reclamation Facility, the Ventura County Watershed Protection District, and Toland Road Landfill. This also includes service areas for energy providers within the proposed project areas, including Southern California Edison and Southern California Gas Company).

4.2.2 Type of Projects Considered

As described in Section 3, the majority of potentially significant impacts associated with implementation of the proposed projects are short-term and related to construction, rather than long-term operational impacts. Therefore, the analysis below determines whether the proposed projects could contribute to cumulative effects when considered in combination with impacts of other construction projects in the proposed project areas. For this analysis, other past, present, and reasonably foreseeable future construction projects—particularly other infrastructure and industrial projects in the area—are identified. Long-term cumulative impacts of the proposed projects in conjunction with the other projects in the area are assessed as well.

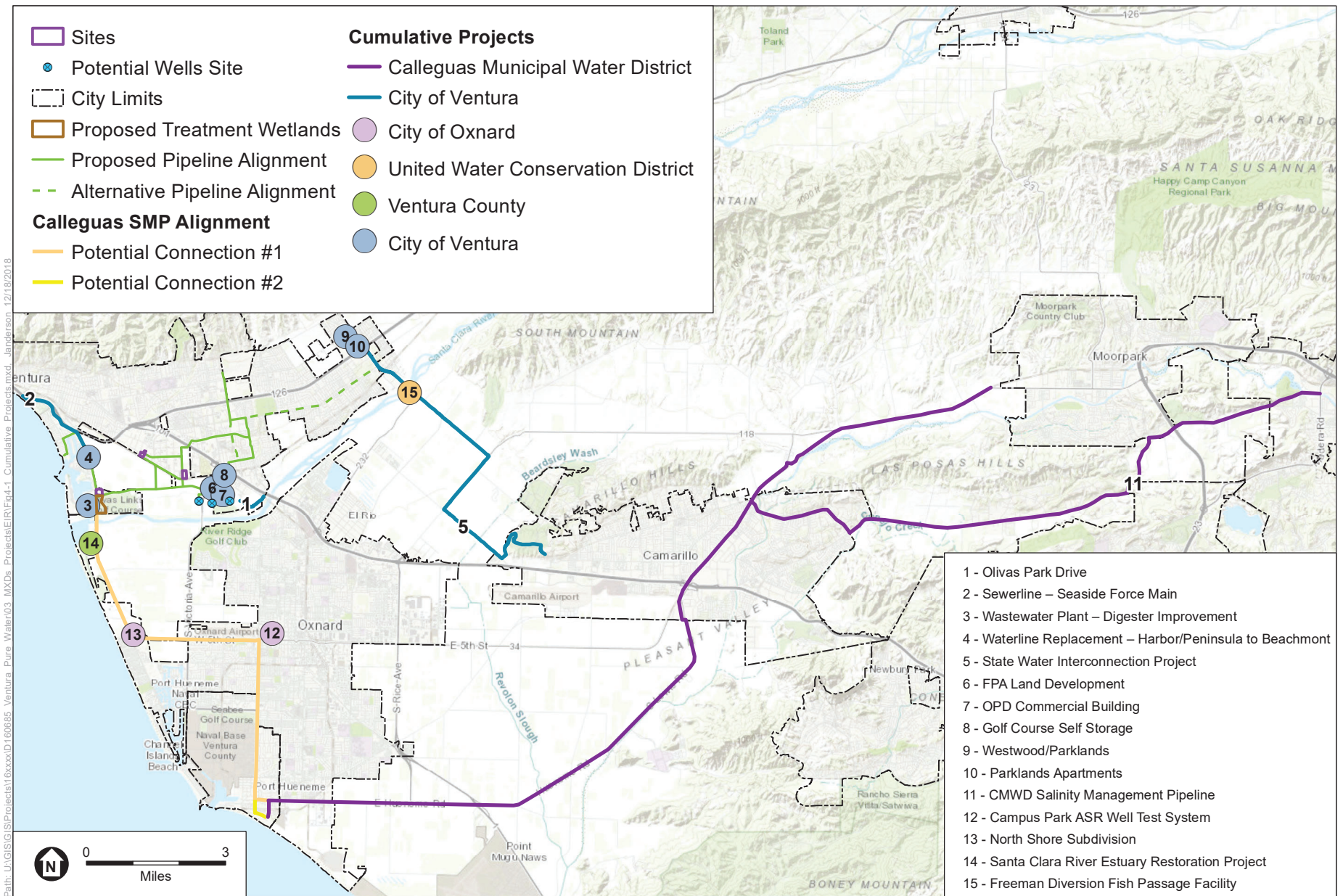
4.2.3 Description of Cumulative Projects

Table 4-2 lists anticipated future projects that could contribute to cumulative impacts within the proposed project areas. Some projects, such as the Calleguas Salinity Management Regional Pipelines, will be implemented as long as there is capacity within the system (no specific timeline), while others may be completed before or after the proposed projects. In addition to the projects listed in Table 4-2 and shown in Figure 4-1, other development projects that have not been identified at this time could occur within the proposed project areas.

**TABLE 4-2
RELATED PROJECTS FOR CUMULATIVE ANALYSIS**

Lead Agency	Name	Location	Project Type	Project Description	Status
City of Ventura					
City of Ventura	Harbor/Olivas Park Drive Drainage Improvements	Harbor and Olivas Park Drive	Municipal	Rehabilitation of manholes and storm drain lines along Harbor and Olivas Park Drive	In design phase
City of Ventura	Olivas Park Drive Extension and Levee	Olivas Park Drive near Johnson Drive	Municipal	Extension of Olivas Park Drive to Johnson Drive and construction of a levee to remove land out of the floodplain	In design phase
City of Ventura	Wastewater Plant – Maintenance Storage Building	Ventura Water Reclamation Facility	Municipal	Construction of a new maintenance vehicle and equipment storage area to protect expensive equipment used for sewer pipeline repairs and emergencies	In design phase
City of Ventura	Sewerline – Seaside Force Main (Arundell Barranca to Sanjon)	Arundell Barranca to Sanjon	Municipal	Construction of a second force main to provide redundancy and back up line to the 45-year-old existing force main	In design phase
City of Ventura	Wastewater Plant – Digester Improvement	Ventura Water Reclamation Facility	Municipal	Replacement of the existing digester heating and mixing systems for each of the City's three 0.5 MG anaerobic digesters, including replacement of two existing boilers, at the City's wastewater treatment plant	In design phase
City of Ventura	Waterline Replacement – Harbor/Peninsula to Beachmont	Harbor Blvd from Peninsula to Beachmont	Municipal	Replacement of an existing non-functioning valve and installation of a new isolation valves in preparation of potentially abandoning 3,000 feet of existing a 16-inch water pipeline that lies in the bluff area above Harbor Boulevard, a potentially hazardous location.	In design phase
City of Ventura	State Water Interconnection Project	From Henderson Road between S Saticoy Ave and S Wells Road to the intersection of Camino Tierra Santa and Via Zamora	Municipal	Construction of a water pipeline connection to allow transport of water between Calluegas Municipal Water District and the city	Pending (in environmental documentation process)
City of Ventura	FPA Land Development	Northeast corner of Victoria Avenue and Olivas Park Drive	Industrial	Construction of 7 industrial office buildings totaling 158,984 square feet	All planning approvals
City of Ventura	OPD Commercial Building	5811 Olivas Park Drive	Industrial	Construction of an industrial and commercial building totaling 23,501 square feet	In plan check
City of Ventura	Golf Course Self Storage	Golf Course Drive and Leland Street	Industrial	Construction of a 73,728 square foot self-storage facility	In planning process
City of Ventura	Westwood/Parklands	Southwest corner of Wells and Telegraph Road	Residential	Construction of 216 detached homes and 110 attached homes for a total of 326 units	All planning approvals

Lead Agency	Name	Location	Project Type	Project Description	Status
City of Oxnard					
City of Oxnard	Campus Park ASR Well Test System	Campus Park (between K and H Streets and Second and Fifth Streets)	Municipal	Construction of a recycled water aquifer, storage, and recovery (ASR) well test system that stores recycled water underground when demand is low, then pumps it out when demand is high	Construction complete May 2017
City of Oxnard	North Shore Subdivision	Fifth St and Harbor Blvd	Residential	Construction of 184 single-family homes and 109 condominiums	Approved
City of Port Hueneme					
City of Port Hueneme	Bikeway Upgrades	Ventura Road	Transportation	Upgrade the existing pedestrian/bikeway along Ventura Road adjacent to Naval Base Ventura County from Park Avenue northward.	In the design phase
City of Port Hueneme	Water Distribution System Master Plan	Throughout City	Municipal	Replacement of aging infrastructure; the project will provide the design and construction of the system to alleviate pressure and volume restrictions within the water distribution system	In the design phase
Ventura County					
Ventura County	Santa Clara River Estuary Restoration Project	McGrath State Beach and Campground and surrounding areas	Restoration	Restoration of 42 acres of estuary habitat needed for the survival and recovery of the endangered southern California steelhead and other native fish and birds	Under design
United Water Conservation District	Freeman Diversion Fish Passage Facility	Santa Clara River near the intersection of Vineyard and Highway 118	Industrial	Construction of a fish ladder and other facilities to aid in fish passage across the existing Freeman Diversion	Completed
Calleguas Municipal Water District	CMWD Salinity Management Pipeline	Throughout the City of Camarillo/Moorpark	Municipal	Construction of a regional pipeline that will collect salty water generated by groundwater desalting facilities and excess recycled water and convey that water for reuse elsewhere. Any unused salty water will be safely discharged to the ocean through an existing outfall.	In the design phase



SOURCE: ESRI.

Ventura Water Supply Projects

Figure 4-1

Approximate Locations of Cumulative Projects

Due to the large amount of development projects that are approved, planned, or under construction within and around the proposed project areas, the following types of projects were excluded from this analysis: (1) projects that are relatively small in size (i.e., a residential project consisting of one dwelling unit or a commercial project consisting of one store); (2) projects that include a large number of units and the majority of those units have already been constructed; and (3) projects that were originally approved at least 10 years ago and have not been constructed.

4.3 Impacts and Mitigation Measures

Aesthetics

Impact 4-1: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts to aesthetics.

As discussed in Section 3.1, Aesthetics, construction of the proposed projects would result in a less than significant impact on scenic vistas, scenic highways, and a less than significant impact with mitigation on visual character.

Aesthetics impacts of the proposed projects, if any, would be addressed on a project-by-project basis and reviewed by the appropriate planning jurisdiction. There would be three commercial developments adjacent to Groundwater Well 1, a new subdivision and aquifer, storage, and recovery (ASR) well test system along the Calleguas alignment, and waterline replacement projects along the outfall pipeline within Harbor Boulevard (see Figure 4-1). Each cumulative project would be subject to planning and zoning requirements, as well as to design review by the planning jurisdiction to ensure that each project design is consistent with established standards. Where potential impacts could occur, the planning jurisdiction would require appropriate environmental review and analysis, and, if required, mitigation as appropriate. The new groundwater well, Calleguas pipeline, and outfall pipeline would not have a significant aesthetic impacts after mitigation, nor would any of the proposed project components combined with other projects result in significant aesthetic impacts.

Mitigation Measures: Implement Mitigation Measures AES-1 and AES-2.

Significance Determination: Not Cumulatively Considerable.

Agriculture and Forestry Resources

Impact 4-2: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts to agriculture and forestry resources.

The proposed projects cover a large area within the cities of Ventura and Oxnard and in unincorporated Ventura County. The area comprises of Urban and Built-up Land, Prime Farmland, Grazing Land, and Farmland of Statewide Importance. As described in Section 3.2, Agriculture and Forestry Resources, no project component would be located on Williamson Act land or forest land. The Portola Road Advanced Water Purification Facility (AWPF) site and Groundwater Wells 2 and 3 would be located within Prime Farmland.

Mitigation Measure AG-1 requires the purchase of irreversible agricultural easements or contribution of funds toward the acquisition and stewardship of agricultural easements to off-site this loss of farmland.

There are no cumulative projects that would impact agricultural lands in the vicinity of the proposed projects (see Figure 4-1). Therefore, the proposed projects, when considered in addition to the anticipated impacts of other projects in the cumulative scenario, would not contribute to cumulatively considerable impacts to agricultural resources.

Mitigation Measures: Implement Mitigation Measure AG-1.

Significance Determination: Not Cumulatively Considerable.

Air Quality

Impact 4-3: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on air quality. Under the Ventura County Air Quality Assessment Guidelines, a project with estimated emissions of two pounds per day or greater of reactive organic compounds (ROC), or two pounds per day or greater of nitrogen oxides (NO_x) that is inconsistent with the AQMP will have a significant cumulative adverse air quality impact.

Construction

The geographic scope of cumulative air quality impacts is Ventura County Pollution Control District. Without mitigation, construction of the proposed projects would generate significant NO_x emissions. Concurrent construction of the proposed projects with other projects in the air basin would generate short-term emissions of criteria pollutants and toxic air contaminants, including suspended and inhalable particulate matter and equipment exhaust emissions. Therefore, similar to the proposed projects, the related projects shown in Table 4-2 would be required to comply with the Ventura County Air Pollution Control District's Assessment Guidelines. Implementation of Mitigation Measures AQ-1 and AQ-2 and compliance with the Ventura County Air Pollution Control District's Assessment Guidelines would control fugitive dust at construction sites, limit construction dust, and minimize both vehicle and equipment emissions.

Operation

The Ventura County Air Basin is currently a non-attainment area for both the federal and state standards for ozone and the state standards for PM₁₀ and PM_{2.5}. Exceedance of air quality standards is the result of past and ongoing urban and rural development that has caused emissions to exceed the air basin's capacity for dispersal and removal of the air pollutants. However, the Ventura County Air Quality Management Plan (VCAQMP) predicts attainment of state and federal standards through imposition of various control mechanisms such as the requirements identified in Mitigation Measure AQ-1 and AQ-2. In addition, the proposed project would not cause an increase in population that would exceed Southern California Association of Governments projections, and would not conflict with the AQMP. The minimal emissions

associated with operation of the project is not expected to delay attainment of air quality standards in the Basin. Cumulative impacts would therefore be less than significant and, with mitigation, the proposed project's contribution to cumulative air quality impacts would not be cumulatively considerable.

Mitigation Measures: Implement Mitigation Measure AQ-1 and AQ-2.

Significance Determination: Not Cumulatively Considerable.

Biological Resources

Impact 4-4: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on biological resources.

Upland Habitat

The majority of all upland habitat associated with the AWP, product water conveyance system, and the groundwater wells is previously disturbed. Special-status species are not expected to inhabit these areas, so impacts are not expected. In addition, it is also anticipated that the other related projects would implement similar mitigation measures on a case-by-case basis as determined by project-specific environmental review to reduce individual project impacts, if any. The cumulative project identified on Figure 4-1 in the vicinity of the upland project components would also be located either on disturbed or developed land. During the survey, no special-status species or habitats were observed either on the project sites or within the immediate vicinity. Impacts during construction and operation at these locations are expected to be less than significant as much of the area is in either disturbed lots, farm land, or public right-of-way (streets, public parks, neighborhoods, etc.). The cumulative projects within close proximity of the upland facilities would not contribute to a cumulatively considerable impact to special-status species.

Santa Clara River Estuary

The Santa Clara River Estuary (SCRE) supports many aquatic and terrestrial species, including the tidewater goby, steelhead, western snowy plover, and California least tern. As previously stated, the most critical issue regarding effects to the aquatic species is artificial berm breaching. Reduced discharge will reduce water surface levels in the estuary and limit artificial breaching of the lagoon mouth. Maintaining the 90 percent diversion at 0.5 million gallons a day (MGD) will stabilize water levels during wet years, yet reduce the water surface elevation associated with existing discharge levels, which should reduce the risk for unseasonal breaching.

Upstream barriers in the Santa Clara River contribute to the cumulative condition of the river for steelhead migration. The Freeman Diversion Facility, located in Saticoy, was constructed in 1991 to divert Santa Clara River flow to enhance recharge of local groundwater supplies to underground pools that have been breached by seawater. The facility is composed of a concrete dam, fish ladder, screened fishbay, downstream migrant trap, various canals and spreading grounds. The fish ladder was constructed to allow unimpeded migration through the facility. The screened fishbay is located directly downstream of where flow enters the facility and its function is to keep fish out of the canals and spreading grounds and to direct fish to the downstream

migrant trap or back to the river. Located at the end of the fishbay is a fish bypass pipe that can be used to direct fish back to the river when there is sufficient flow to allow for migration to the estuary (United 2010). United Water Conservation District (United), operator of the Freeman Diversion Facility, is under a federal District Court order¹ to implement measures to reduce surface water diversion from the Santa Clara River during steelhead migration seasons (January through May for adults and March through May for juveniles). United has also submitted a draft Habitat Conservation Plan (HCP) to National Marine Fisheries Service, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife for incidental take permits to address and reduce potential impacts on steelhead and tidewater goby, among other species.² The cumulative impacts of these actions, in conjunction with the proposed projects, is positive. The United actions would improve habitat for steelhead and tidewater goby, by reducing surface water discharge, thereby helping to promote more natural streamflow conditions, and by implementing measures to reduce take as directed by the resource agencies with jurisdiction over the potential HCP.

The proposed projects would reduce depth and acreage of the open water of the lagoon during dry weather and reduce the duration of time when open mouth conditions occur. However, the proposed project would result in lagoon conditions that more closely resemble natural conditions, would reduce conditions that promote predation by nonnative species, and would maintain migratory habitat for steelhead. In addition, the improved water quality of the lagoon would reduce eutrophication and periods of low dissolved oxygen, resulting in enhanced conditions compared to existing conditions for goby and subadult steelhead rearing habitat. In addition, both the western snowy plover and the California least tern would also benefit from reduced Ventura Water Reclamation Facility (VWRF) discharge since artificial breaches during the summer may impact existing nesting and foraging habitat for the plover. Minimizing disturbance to the estuary and beach after nesting is initiated in spring would benefit both species. The incremental effect on cumulative biological resources during construction and operation of the proposed project would be less than significant. Therefore, the contribution is not cumulatively considerable and would not result in a cumulative impact.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

¹ Order re: Findings of Fact and Conclusions of Law Holding that Plaintiffs Are Entitled to Declaratory and Injunctive Relief on Their Claim for Take of Southern California Steelhead, but not on Their Claim for Take of Southwestern Willow Flycatcher, *Wishtoyo Found. et al., v. United Water Conservation District*, CV 16-3869-DOC (PLAx) (C.D. Cal. Sept. 23, 2018).

² United Water Conservation District, *Administrative Draft Multiple Species Habitat Conservation Plan* (Sept. 7, 2018), available at <https://www.unitedwater.org/images/stories/Resource-Conservation/MSHCP%202018/UWCD%20Multiple%20Species%20Habitat%20Conservation%20Plan%202018-09-07.pdf>.

Cultural Resources

Impact 4-5: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on cultural resources.

As discussed in Section 3.5, Cultural Resources, ground-disturbing activities associated with Phase 1 and Phase 2 may uncover cultural resources in the proposed project areas. Implementation of Mitigation Measures CUL-1 through CUL-11 would reduce the proposed project impacts to a less than significant level. It is also anticipated that the other related projects would implement similar mitigation measures on a case-by-case basis as determined by project-specific environmental review.

The incremental effect on cumulative cultural resources during construction and operation of the proposed project would be less than significant. Therefore, the contribution is not cumulatively considerable and would not result in a cumulative impact on cultural resources.

Mitigation Measures: Implement Mitigation Measures CUL-1 through CUL-11.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Geology, Soils, and Seismicity

Impact 4-6: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on geology, soils, and seismicity.

The Phase 1 and Phase 2 facilities would result in less than significant impacts related to fault rupture, ground shaking, landslides, and unstable geologic units, as discussed in Section 3.6, Geology, Soils, and Seismicity. Compliance with California Building Code and Federal Emergency Management Agency American Lifelines Alliance requirements would reduce potential fault rupture and ground shaking impacts. Landslide and subsidence potential are low in the proposed project areas. The proposed projects would not involve the use of septic tanks and would result in no impacts.

Impacts to seismic-related ground failure, including liquefaction and expansive soils, would be less than significant with implementation of Mitigation Measure GEO-1. The Harbor Boulevard AWP, treatment wetlands, and well sites were determined to be at risk of liquefaction due to the potential to encounter shallow groundwater. The project areas also include highly expansive soils, especially along the Santa Clara River. Mitigation Measure GEO-1 would require preparation of a soils report and geotechnical investigation that would provide facility design recommendations in areas with a high potential for liquefaction and/or where expansive soils are present.

Impacts related to erosion and topsoil loss would be less than significant with mitigation. Construction of the ocean intake system would require minor grading and drilling and would not likely disturb greater than 1 acre to achieve coverage under the Construction General Permit and associated best management practices (BMPs). Mitigation Measure GEO-2 would require

implementation of minimum BMPs to prevent erosion and topsoil loss from occurring. If material stockpiling would be required for construction of the ocean intake system, Mitigation Measure GEO-3 would require implementation of a stockpile management BMP to prevent stockpile erosion from occurring by wind or storm events.

The proposed projects' impacts associated with geology, soils, and seismicity are site specific and would neither increase nor be magnified by potential impacts from impacts associated with geology, soils, and seismicity for related projects as listed on Table 4-2.

Mitigation Measures: Implement Mitigation Measures GEO-1 through GEO-3.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Greenhouse Gas Emissions

Impact 4-7: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on GHG emissions.

As discussed in Section 3.7, Greenhouse Gas Emission, the primary source of greenhouse gas (GHG) emissions generated by implementation of the proposed projects would occur during construction, which would be temporary in nature. The proposed projects' total construction and operational GHG emissions would not exceed the 10,000 MTCO₂e/year threshold discussed in Section 3.7. In addition, through required implementation of the 2013 Title 24 standards, the proposed projects would be consistent with local and State-wide goals and policies aimed at reducing the generation of GHGs, including the California Air Resources Board's Assembly Bill 32 Scoping Plan aimed at achieving 1990 GHG emission levels by 2020.

Thus, the proposed projects' generation of GHG emissions would not be considered cumulatively considerable because of the scope of the emissions (i.e., the project would not exceed the 100,000 MT of CO₂e per year threshold) and because the project would not conflict with an applicable plan, policy, or regulation for the purposes of reducing the emissions of GHGs. Therefore, even when considered in conjunction with the projects listed on Table 4-2, the proposed projects' impact would not be considered cumulatively significant.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

Hazards and Hazardous Materials

Impact 4-8: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative impacts from hazards and hazardous materials.

As discussed in Chapter 3.8, Hazards and Hazardous Materials, the proposed projects would not result in potentially significant hazardous material impacts from construction or operational

activities. Hazardous material impacts typically occur in a local or site-specific context versus a cumulative context combined with other development projects.

With the implementation of Mitigation Measures HAZ-1, HAZ-2, and TRAF-1, the construction activities would not significantly increase the hazardous materials risk in the proposed project area. Moreover, the proposed projects, with the other past, present, and reasonably foreseeable future projects, would not cause cumulatively considerable impacts related to hazards or hazardous materials. Operation of the proposed project may, on occasion, require larger quantities of materials to be delivered than are in use at the VWRP and/or AWP; however, as discussed in Chapter 3.8, continued compliance with regulations and requirements concerning the use and storage of hazardous materials would reduce potential impacts from use of hazardous materials to a less than significant level. Related projects in Table 4-2 may also require transport and use of hazardous materials. However, these projects would be required to meet applicable local, state, and federal laws intended to limit the extent and severity of impacts related to hazardous materials. This includes compliance with federal and state regulatory requirements for transporting hazardous materials (including fuel and other materials used in all motor vehicles) on public roads and disposing of hazardous materials. Compliance with state and federal hazardous materials management regulations would ensure that the proposed projects would not contribute to construction or operational hazards. With proper adherence to these regulations and proper construction site management using BMPs, construction and operation of the projects listed in Table 4-2 in conjunction with the proposed projects would not result in cumulative hazards or hazardous materials impacts and would not be considered cumulatively considerable.

Mitigation Measures: Implement Mitigation Measures HAZ-1, HAZ-2, and TRAF-1.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Hydrology and Water Quality

Impact 4-9: Concurrent construction and operation of the proposed projects and related projects in the geographic scope would not result in cumulative impacts on hydrology and water quality.

The geographic scope of potential cumulative hydrological and water quality impacts encompasses the watershed and local water resources.

The proposed projects would include injection and extraction wells in the Oxnard Plain Basins, which in combination with other extraction well operation could result in a cumulative water quality impact to the Basin. Once operational, the injection wells would pump advanced treated water into the groundwater basin, which is designated with a Municipal and Domestic Supply (MUN) beneficial use. The regulations require that a Title 22 Engineering Report be prepared to include a treatment process that effectively removes constituents of emerging concern and pathogens. In addition, as part of the Title 22 Engineering Report, the City would be required to identify local wells that could be within the proposed projects' zone of influence. To ensure that groundwater quality at these wells is not adversely affected, Mitigation Measures HYDRO-1

would require that the City conduct groundwater modeling to ensure sufficient distance from existing groundwater extraction wells. Groundwater monitoring would be required to ensure injected water remains underground for a minimum of 2 months before being extracted through the ASR wells. These mitigation measures would ensure that the project is compliant with Title 22 regulations and permit conditions issued by the State Water Resources Control Board.

Injection operations could result in groundwater mounding that could elevate groundwater levels into previously contaminated soils or could affect subterranean infrastructure. Implementation of Mitigation Measure HYDRO-1 would ensure that groundwater mounding does not adversely affect shallow soils, existing contamination plumes, and buried infrastructure. As a result, the proposed projects would have a less than significant impact on hydrology and water quality with the implementation of mitigation and compliance with regulations.

Other projects that could affect groundwater are the campus park ASR well system, construction of the seaside force main, state water interconnection project, and salinity management pipeline. The proposed projects will ensure that cumulative impacts will not be significant by implementing Mitigation Measure HYDRO-1. In addition, the other projects will be required to meet regulatory requirements, including the Clean Water Act, State Porter-Cologne Water Quality Control Act, and local regulations that protect water quality and water resources. These regulations include implementation of stormwater construction pollution prevention plans and post-development stormwater quality and quantity requirements. All of these regulations are designed to address the incremental effects of individual projects such that they do not cause a cumulatively considerable impact. In addition, adherence to the aforementioned requirements would also ensure that they do not result in cumulatively considerable impacts related to sedimentation, flooding, water quality, drainage system capacity, flood hazard areas, or failure of a levee or dam, seiche, tsunami, or mudflows.

Therefore, when considered in combination with other developments similarly bound by the same regulations, particularly construction of other ASR wells, the proposed projects' incremental contribution to water quality and quantity impacts would not be cumulatively considerable.

Cumulative Impacts on Offshore Water Quality

The geographic area associated with the assessment of cumulative water quality impacts from operational discharges into the offshore marine environment encompasses the nearshore waters out to a depth of 40 meters (132 feet) from the Ventura River mouth north of the proposed project to Point Mugu State Park to the south. As discussed under Impact 3.9-1, assessment of the operational discharges from the proposed new outfall shows that operational discharges will conform to National Pollutant Discharge Elimination System (NPDES) effluent limitations, which incorporate Ocean Plan water quality objectives and salinity requirements for desalination brine.

The potential for cumulative impacts to occur as a result of discharges up to 17.52 MGD via the Calleguas SMP have been comprehensively assessed and documented in Section 6.2.4 in the Final EIR for the Calleguas Municipal Water District (CMWD) Regional Salinity Management Pipeline (SMP) Hueneme Outfall Replacement Project (CMWD 2007a; p. 6-4 et seq.). The

analysis and conclusions are incorporated here by reference and summarized as follows. Offshore discharges from the Calleguas SMP outfall will result in local changes to water quality; however, the outfall discharge will be in compliance with California Ocean Plan objectives and NPDES permit conditions and would not contribute to a cumulative impact to water resources. All existing and proposed outfalls associated with the cumulative projects are located at sufficient distances such that the likelihood of discharge plumes from different outfalls intersecting or merging and resulting in exceedances of established water quality objectives or adversely affecting beneficial uses of receiving waters is very low.

Further, the discharge from the operation of the proposed new outfall would be subject to water quality requirements under an operational NPDES Permit. Similarly, the operational discharges salinity management pipeline is subject to the water quality requirements of the NPDES permit system, administered by the LARWQCB. Mandatory water quality testing and analysis, required as part of the NPDES permit process, would ensure operational discharges comply with Basin Plan and Ocean Plan water quality objectives and NPDES Permit effluent limitations. Thus, operation of the cumulative projects that would result in waste discharges would be subject to, and would be required to comply with, the regulatory requirements for the protection of the beneficial uses of receiving ocean waters offshore of Ventura County. With mandatory compliance with the regulatory requirements and the NPDES effluent limitations, there would be no cumulative impact from the discharges resulting from the proposed new outfall. The proposed project therefore would not result in a cumulatively considerable contribution to a cumulative impact related to operational discharges.

Mitigation Measures: Implement Mitigation Measure HYDRO-1.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Land Use and Planning

Impact 4-10: Concurrent construction and operation of the proposed projects and related projects in the geographic scope would not result in cumulative impacts on land use and planning.

The geographic scope for potential cumulative impacts to land use and planning includes the cities of Ventura and Oxnard and portions of unincorporated Ventura County. Land uses within the proposed project areas include various types and densities of agricultural, public and institutional, commercial, industrial, residential, and parks and open space. Zoning designations within the geographic scope include residential, commercial, manufacturing planned development, and parks. As discussed in Section 3.10, Land Use and Planning, none of the proposed projects' facilities would physically divide an established community. The proposed project areas do not include an applicable habitat conservation plan or natural community conservation plan; therefore, no impact to these plans would occur.

Construction and operation of the AWPf would occur on disturbed undeveloped lots or within agricultural land. Mitigation measures would ensure consistency with existing land uses. Per

Mitigation Measure AES-1, the proposed AWPf would be designed and constructed to be compatible with the surrounding development. Mitigation Measure AES-2 would require all new light sources to be shielded and oriented downward to minimize light spillover on adjacent uses. The Portola Road site would require conversion of agricultural land, which would be mitigated by Mitigation Measure AG-1, which requires compensation for the loss of agricultural lands (see Section 3.2, Agriculture and Forestry Resources). The Harbor Boulevard site and the treatment wetlands are located in the coastal zone and would require an amendment to the Local Coastal Program and a Coastal Development Permit. Several cumulative project would also be in the coastal zone including the Santa Clara River Estuary Restoration project and seaside sewer line, and the VWRf digester improvements. State law provides that city and county building and zoning ordinances do not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water (Gov. Code Section 53091(d)–(e)). Nevertheless, Section 3.10, Land Use, analyzed any potential conflicts with zoning ordinances even though the zoning designation would not apply to the proposed projects under state law.

The AWPf would be designed and constructed to be compatible with the surrounding development (Mitigation Measures AES-1 and AES-2). All new light sources would be shielded and oriented downward to minimize light spillover on adjacent uses, as required by Mitigation Measure AES-3. The construction the AWPf on the Harbor Boulevard and Portola Road sites would conflict with the Save Open Space and Agricultural Resources program requiring the implementation of Mitigation Measure AG-1. The construction of the AWPf sites would require excavation and has the potential to unearth unknown archeological resources. As a result, Mitigation Measures CUL 1 through CUL 5 is required for all potential sites. The AWPf would not generate noise beyond the property boundaries or create a substantially increase in traffic trips, within the surrounding area. As a result, the proposed AWPf would not conflict with existing land use designations or be incompatible with surrounding land uses.

None of the project components would significantly impact land uses after mitigation. The incremental effect on cumulative land use and planning during construction and operation of the proposed projects would be less than significant. Therefore, when considered in conjunction with other projects listed above, the contribution would not be cumulatively considerable and would not result in cumulative impacts related to land use and planning.

Mitigation Measures: Implement Mitigation Measures AES-1 through AES-3, AG-1, and CUL-1 through CUL-56.

Significance Determination: Not Cumulatively Considerable after Mitigation.

Marine Biology

Impact 4-11: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative impacts on marine biology.

As described in Section 3.11, Marine Biology, the ocean components (construction of the Concentrate Discharge Facility outfall and intake) have the potential to result in significant impacts to special-status marine species, natural communities, and habitats. Altering benthic habitat and associated infaunal and epifaunal communities can be expected to result in the temporary loss or reduction of habitat suitable for fish foraging, including any special-status fish species using the project marine area. However, following dredging and construction of the outfall and intake, the marine infaunal and epifaunal communities would begin to recolonize the disturbed sediments almost immediately due to migration from adjacent, undisturbed sediments and recolonization from new larvae.

The increased presence of vessels and their movements can also be expected to pose additional risk to marine mammals from unplanned accidental releases or spills of fuel or oil, surface and underwater noise, potential for collisions with marine mammals or sea turtles, and the preclusion of commercial fishing activities. However, vessel movements required for the proposed offshore construction activities would not be expected to substantially increase vessel collision risk and any resultant accidental fuel spills. Mitigation Measures HAZ-1, MARINE-1, and MARINE-2 require the preparation and implementation of a Marine Safety Plan, Marine Oil Spill Response Plan, and a Construction Plan. These mitigation measures would reduce impacts to special-status marine species, natural communities, and habitats to a less than significant level. Use of work barges or other vessels from outside of Southern California for the offshore construction activities could be potential vectors for introducing non-native, invasive species to the Ventura coastline. However, Mitigation Measure MARINE-4 would reduce impacts related to the introduction of invasive species to marine waters.

The screened ocean intake would result in the loss of limited amounts of planktonic organisms, including eggs and larval stages of some marine fishes, due to entrainment-related mortality. Entrainment of plankton and invertebrate and fish larvae smaller than 1 mm in size would affect marine resources because of losses in forage organisms, population recruitment, and other elements of the overall productivity of the marine ecosystem of the project marine area. This loss in productivity would be considered a potentially significant impact unless mitigated. Mitigation Measure MARINE-3 would require an assessment of larval entrainment of its ocean water intake, such that the magnitude of the projects' effect on the marine ecosystem can be more accurately determined and mitigated.

Species temporarily disturbed by ocean construction are expected to recover relatively quickly; therefore, the proposed projects would result in less than significant impacts related to loss of a marine organism community. As alteration of the seafloor topography and salinity from the proposed outfall would not be substantial, impacts to movement of marine species within wildlife corridors or marine nursery sites would be less than significant. Implementation of project mitigation measures would ensure that marine resources are not cumulatively impacted from construction or operation of the intake. Therefore, when considered with the Calleguas Municipal Water District's salinity management pipeline use of an existing outfall, the incremental effect on cumulative marine resources of the proposed projects would not be cumulatively considerable and would not result in a significant cumulative impact on marine resources.

Mitigation Measures: Implement Mitigation Measures MARINE-1 through MARINE-4 and HAZ-1.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Mineral Resources

Impact 4-11: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative impacts on mineral resources.

As described in Section 3.12, Mineral Resources, the proposed projects would not result in significant impacts to mineral resources. Although Well Site 1 would be constructed in an MRZ-2 area with significance mineral resources, the facility would not prohibit the future extraction of mineral resources and would not result in the loss of availability of mineral resources valuable to the region.

None of the project components would significantly impact mineral resources. The incremental effect on cumulative mineral resources during construction and operation of the proposed projects would be less than significant. Therefore, even in combination with other projects that may interfere with mineral resources listed on Table 4-2, the proposed projects' contribution would not be cumulatively considerable and would not result in a cumulative impact as the proposed projects would not interfere with or obstruct access to mineral resources in the area.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

Noise

Impact 4-11: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative short-term impacts on noise.

As described in Section 3.13, Noise, the proposed projects would not result in a substantial permanent increase in ambient noise levels and impacts would be less than significant. Impacts associated with temporary ambient noise levels would also be less than significant; temporary noise impacts would be intermittent and short in duration given the constant mobility of construction activities. Further, there would be no impact related to airports since the proposed project is not located within an airport land use plan, private airstrip, or public airport.

Construction of the outfall would require 24-hour drilling to establish the underground tunnel. The proposed projects' construction would generate temporary noise to the surrounding areas. Implementation of Mitigation Measures NOISE-1 through NOISE-4 would require noise-reducing techniques applied toward construction equipment and haul routes. Mitigation Measure NOISE-2 would require all project-related noise complaints to be documented and attempts be made to resolve them. These mitigation measures would lessen construction noise impacts but would not lessen nighttime noise to below the nighttime noise threshold of 45 dBA. As a result, nighttime construction noise would be considered cumulatively significant.

With regard to groundborne vibration, Mitigation Measure NOISE-5 prohibits the operation of construction equipment that generates high levels of vibration within 45 feet of existing residential structures. Mitigation Measure NOISE-1 also would help reduce impacts related to groundborne vibration to less than significant levels and would not be considered cumulatively significant.

Mitigation Measures: Implement Mitigation Measures NOISE-1 through NOISE-5.

Significance Determination: Cumulatively Considerable with Mitigation.

Population, Housing and Environmental Justice

Impact 4-14: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on population, housing, and environmental justice.

As described in Section 3.14, Population, Housing, and Environmental Justice, the proposed projects would result in less than significant impacts related to inducing population growth, displacing housing, displacing people, and disproportionality affecting the health of minority or low-income populations. As discussed in Chapter 6, *Growth Inducement*, the proposed projects have been sized to accommodate the needs of planned growth and would not induce substantial population growth directly or indirectly. The proposed projects do not include new housing or development that would increase population in the project area and the proposed projects would not induce growth planned in City and County General Plans. However, the RiverHaven community is currently located within an area proposed for the new treatment wetland. As a result, the community would be relocated as a result of the project. Without mitigation, the

relocation of the community would result in a significant impact as a result of displacing housing. However, with the implementation of Mitigation Measure LU-1, which requires the City to coordinate with Turning Point Foundation to identify a satisfactory relocation site for the community, impacts would be reduced to less than significant.

When added to the cumulative scenario, the proposed projects would not contribute incrementally to cumulative impacts related to population and housing. Because the proposed projects would not involve construction or operation of new residences, the proposed projects' contribution to cumulative impacts to population and housing would not be cumulatively considerable. Since the proposed projects would not disproportionately impact minority or low-income populations, the proposed projects would not result in significant impacts related to environmental justice, and significant cumulative impacts would not occur.

Mitigation Measures: Implement Mitigation Measure LU-1.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Public Services

Impact 4-15: Concurrent construction and operation of the proposed projects and related projects in the geographic scope would not result in cumulative impacts on public services.

As described in Section 3.15, Public Services, implementation of the proposed projects would not include development of new housing. As stated in Chapter 6, *Growth Inducement*, the proposed projects would provide future water system infrastructure within the city that would support planned population growth that has been identified for the service area. Therefore, the proposed projects would not directly or indirectly generate population growth within the proposed project area. As such, the proposed projects would not significantly increase the need for fire or police protection services, or increase the usage of schools, libraries, or hospitals, beyond the planned growth identified in the relevant General Plans.

When added to the cumulative scenario, the proposed projects would not contribute incrementally to significant cumulative impacts related to public services. Because the proposed projects would not involve construction or operation of new residences and would not increase the need or usage of public services, the proposed projects' contribution to cumulative impacts related to public services would not be cumulatively considerable.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

Recreation

Impact 4-16: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative impacts on recreation.

As described in Section 3.16, Recreation, the proposed projects would result in a less than significant impact on recreational facilities. The proposed projects would provide future water system infrastructure within the city that would support the future water demand of the city. The project does not include development of new housing and would not require the construction or expansion of recreational facilities. Although the proposed Well Site 1 would be located within the Buenaventura Golf Course, the minor loss of a portion of the golf course would not significantly reduce golfing options in the city. The well site would not interfere with the existing golf course layout. The cumulative projects listed in Table 4-2 would not impact or remove recreational facilities. Therefore, the proposed projects' contribution to cumulative impacts to recreation would not be cumulatively considerable.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

Traffic and Transportation

Impact 4-17: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative short-term impacts on traffic and transportation.

The geographic scope of potential cumulative impacts to traffic and transportation is the regional circulation system and local roadways within the cities of Ventura and Oxnard, and within some unincorporated areas of Ventura County. This includes public rights-of-way and bike paths. The geographic scope includes regional roadways, consisting of State Route (SR) 101, SR 1, SR 126, SR 33, and SR 118, as well as the local roadways within the aforementioned cities that pass through the proposed project areas.

As discussed in Section 3.17, Traffic and Transportation, construction activities would generate additional truck and vehicle trips on the regional and local roadways, which could result in slightly increased delay times on roadways. With required lane closures, construction of the proposed project facilities could delay emergency vehicle response times or otherwise disrupt delivery of emergency services that use the regional and local roadways within the proposed projects' impact areas. Furthermore, construction of the proposed project facilities could also disrupt the existing public transit routes and could result in bicycle lane closures. Mitigation Measure TRAF-1 would reduce all impacts to the regional and local circulation system, including existing transit routes, bicycle lanes, and emergency response access, during lane closures to the lowest extent feasible.

Construction and operation of the proposed projects would not substantially increase traffic volumes within the proposed projects' geographic scope. While the proposed projects would temporarily generate additional truck and vehicle trips within the regional and local circulation systems during construction of the proposed project facilities, and traffic levels would not substantially increase and would be temporary in nature, as traffic levels would return to pre-construction conditions once construction is complete. Although operational activities would generate additional truck trips on the surrounding local and regional circulation system, the number of truck trips during operation would be minimal and would occur on a limited number of days throughout the year. Since the number of truck trips would be minimal during operation of the proposed project, the effects on the surrounding circulation system would be negligible and would not cause existing roadway levels of operation to decrease. Therefore, the proposed projects' contribution to cumulative impacts to traffic and transportation would not be cumulatively considerable with mitigation.

Mitigation Measures: Implement Mitigation Measure TRAF-1.

Significance Determination: Not Cumulatively Considerable with Mitigation.

Tribal Cultural Resources

Impact 4-18: Concurrent construction of the proposed projects and related projects in the geographic scope could result in cumulative impacts on tribal cultural resources.

As discussed in Section 3.18, Tribal Cultural Resources, no tribal cultural resources have been identified within the project area. The Sacred Lands File search conducted by the (NAHC indicates that no Native American cultural resources are known to be located within the proposed project. The AB 52 meetings held on February 8 and March 23, 2018, between the City and tribal representatives Julie Lynn Tumamait-Stenslie and Patrick Tumamait of the Barbareño/Ventureño Band of Mission Indians involved discussions about the archaeological sensitivity of the proposed project vicinity; however, did not result in the identification of the presence of tribal cultural resources as defined in PRC Section 21074 within the proposed project.

The incremental effect on cumulative tribal cultural resources during construction and operation of the proposed project would be less than significant. Therefore, the contribution is not cumulatively considerable and would not result in a cumulative impact on tribal cultural resources.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

Utilities, Service Systems, and Energy

Impact 4-19: Concurrent construction and operation of the proposed projects and related projects in the geographic scope could result in cumulative short-term and long-term impacts on utilities, service systems, and energy.

As discussed in Section 3.19, Utilities and Service Systems, the proposed projects would not require treatment of wastewater, and would not result in significant impacts related to an exceedance of wastewater treatment requirements or wastewater treatment facility capacity. The proposed AWPf would be a new treatment facility that would treat tertiary-treated water from the VWRf to exceed Title 22 compliance criteria. The advanced treated product water would then be distributed in the city's drinking water system. The proposed projects are a water supply project and would not require new or expanded entitlements. The proposed projects would not involve construction of wastewater treatment or stormwater drainage facilities and would have no related impacts. The proposed projects would help to increase existing groundwater supplies and, as water supply infrastructure projects, would not generate water demand. The proposed projects would generate some solid waste during operation, but surrounding landfills have sufficient remaining capacities to accommodate the proposed projects' solid waste requirements. Therefore, no significant impacts would occur to public utilities and services.

The AWPf would represent approximately 0.39 percent of the county's annual electricity use and the desalination facility would approximately 0.14 percent of the county's annual electricity use. As such, the projects would not cause wasteful, inefficient, and unnecessary consumption of energy during operation and would not conflict with energy conservation plans. The project would have a nominal effect on regional energy consumption, existing or reasonably foreseeable electricity supplies would be expected to meet the project's electricity demand, and project operation would not result in the need to construct new energy facilities or expand existing facilities. As a result, the projects' operational electricity impacts would be less than significant.

When added to the cumulative scenario, the effects of the proposed projects would not contribute incrementally to the cumulative impacts on utilities. The proposed projects would result in less than significant or no impact to utilities without requiring mitigation. Therefore, when considered in addition to the anticipated impacts of other projects in the cumulative scenario, the proposed projects' incremental contribution to utilities, service systems, and energy impacts would not be cumulatively considerable.

Mitigation Measures: None required.

Significance Determination: Not Cumulatively Considerable.

4.4 References – Cumulative Impacts

Ventura County Air Pollution Control District (VCAPCD)

2016 Ventura County Air Quality Management Plan (February 2017).

Ventura County Air Quality Assessment Guidelines (October 2003).

Ventura County: <https://www.ventura.org/county-executive-office/community-development/projects-past-and-present/>.

<https://www.ventura.org/airports/airport-projects/>.

https://docs.vcrma.org/images/pdf/planning/pending/2018-05-01_Approved_Projects.pdf.

<http://pwa.vcpublishworks.org/tsd/projects/>.

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<http://pwa.vcpublishworks.org/wp-content/uploads/2018/03/2017-08-09-Capital-Projects-Monthly-Report-Active-Only.pdf>.

City of Ventura:

<https://www.cityofventura.ca.gov/1142/Capital-Improvement-Projects>.

<https://www.cityofventura.ca.gov/DocumentCenter/View/11725/2017-Notice-of-Preparation-State-Water-Interconnect-Project>.

https://map.cityofventura.net/flex/citymap/index.html?config=config_pending.xml.

City of Oxnard:

<https://www.oxnard.org/city-department/publicworks/>.

<https://www.oxnard.org/city-department/development-services/project-list/>.

<http://www.wishtoyo.org/santa-clara-river-estuary-restoration/>.

<https://www.unitedwater.org/resource-conservation-3/freeman-diversion>.

<http://vcpublicworks.org/water-sanitation-department/water-and-sanitation-services>.

City of Port Hueneme

<http://cityofporthueneme.org/DocumentCenter/View/962>.

CHAPTER 5

Growth Inducement

5.1 Introduction

The California Environmental Quality Act (CEQA) requires that Environmental Impact Reports (EIRs) discuss growth inducement. CEQA Guidelines Section 15126.2(d) provides the following guidance for the discussion and consideration of growth-inducing impacts:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

5.2 Methodology

The proposed projects would provide a reliable water supply to meet the needs of planned growth through 2035. As stated in CEQA Guidelines Section 15126.2(d), “indirect” growth inducement can include “reducing obstacles to population growth,” such as water supply. Growth inducement may result in adverse impacts if the growth is not consistent with local land use plans and growth management plans and policies for the area; this “disorderly” growth could indirectly result in additional adverse environmental impacts. Therefore, it is important to assess the degree to which the growth accommodated by a project would or would not be consistent with applicable land use plans.

This section analyzes the nature and extent of growth-inducement potential for the proposed project. The analysis includes an assessment of the city’s existing and projected population levels, and the city’s existing and projected water supply and demand, as well as a discussion of conformance with the City’s General Plan and policies. Growth-inducement potential is then assessed.

5.3 Project Area Population and Water Demand Projections

5.3.1 City of Ventura's 2015 Urban Water Management Plan Population Projections

The City's Water and Wastewater Department (Ventura Water) provides water services to residents and businesses within the city limits and in some additional areas within unincorporated Ventura County. Ventura Water provides wastewater collection and treatment services for approximately 98 percent of city residences as well as McGrath State Beach Park and the north coast communities (County Service Area No. 29). The City's service area is an established community composed primarily of residential areas with opportunities for infill development and includes large commercial and industrial areas along Main Street, Harbor Boulevard, Telephone Road, Ventura Avenue, Telegraph Road, and Victoria Avenue. In 2005, the City adopted an update to its General Plan, where future growth was redirected toward "infill first" with an emphasis on encouraging denser development of housing alongside commercial uses in the abovementioned commercial corridors, as well as Johnson Drive and Wells Road.

Population projections for the City's water service area were obtained from City's 2015 Urban Water Management Plan (UWMP). UWMPs are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies are available to meet existing and future water demand. Every urban water supplier that either provides over 3,000 acre-feet (AF) of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year planning horizon considering normal, dry, and multiple dry years. This assessment is to be included in its UWMP, which are to be prepared every 5 years and submitted to the Department of Water Resources (DWR) for consistency review under the Urban Water Management Planning Act. The UWMP takes into account the projected population growth for the water supplier's service area when determining future available water supply and future anticipated water demand.

As shown in **Table 5-1**, the City's water service area is anticipated to continue to experience steady growth from 2015 through 2040, with an anticipated annual growth rate of 0.55 percent within the city. Projections for areas served by the water system outside of the city are based on the historical annual growth rate (3-year average from 2013 to 2015) of 0.2273 percent in the number of connections. Population estimates were inferred to fit 5-year increments.

TABLE 5-1
CITY OF VENTURA'S 2015 UWMP POPULATION PROJECTIONS

	2015	2020	2025	2030	2035	2040
2015 UWMP Population Projections	109,338	112,378	115,503	118,714	122,015	125,407

Source: City of Ventura 2015.

The population projections in the 2015 UWMP are consistent with the amount of growth that could be allowed under the City's 2005 updated General Plan as assessed in the General Plan Final EIR. Although the planning horizon for the General Plan was shorter than the planning horizon for the Ventura Water Supply Projects (2025 instead of 2035), the General Plan and the General Plan Final EIR projected and evaluated the impacts of a City population of 126,000 to 133,160. These population levels are higher than the population projection for 2035, which is the basis of the demand calculations for the projects. Therefore, the projects will not induce growth within the city beyond the growth provided for by the General Plan and evaluated in the General Plan Final EIR.

5.3.2 Southern California Association of Governments Population Projections

The proposed projects are located within the city and in unincorporated area of the county of Ventura adjacent to the city boundaries. The proposed projects are located within the jurisdiction of the Southern California Association of Governments (SCAG). SCAG consists of local governments from Imperial, Orange, Los Angeles, Riverside, San Bernardino, and Ventura Counties. One of SCAG's primary functions is to forecast population, housing, and employment growth for each region, subregion, and city within its jurisdiction. SCAG recently adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS), which acts as a long-term planning and management plan for the regional transportation system, providing mitigation measures to off-set the impacts of projected growth.

SCAG and U.S. Census Bureau population estimates are enumerated in **Table 5-2** for the city, unincorporated Ventura County, and the county overall, beginning with the base year 2015 and including SCAG population forecasts for 2020, 2035, and 2040. These population estimates generally confirm the projections in the City's 2005 General Plan and the UWMP.

As shown in Table 5-1, the populations of the city, unincorporated county, and the county are all anticipated to increase at similar rates through 2040. The county's total population is anticipated to experience a slightly lower growth rate from 2015 through 2040, with a forecast total growth of 14.8 percent over the period. Unincorporated Ventura County is projected to experience the greatest growth through 2040 at 15.5 percent, which equates roughly to 15,277 additional residents. In addition, the city is forecast to experience steady growth until 2040, with a forecast total growth of 15.0 percent over the period, where annual growth would be around 0.6 percent. The growth anticipated for the city is slightly higher than the county overall.

TABLE 5-2
SCAG POPULATION PROJECTIONS

	2015	2020	2025	2030	2035	2040	% Change 2015–2040
City of Ventura	108,899 ¹	112,500	--	--	122,000	125,300	15.0%
Unincorporated Ventura County	98,323 ²	102,000	--	--	109,500	113,600	15.5%
Ventura County	840,833 ³	886,400	--	--	945,100	965,400	14.8%

Source: SCAG 2016.

¹ US Census Bureau 2015a.

² SCAG 2017. (Note: 2015 population estimates were not available so 2016 estimates were used as a proxy.)

³ US Census Bureau 2015b.

5.4 Existing and Future Water Supply and Demand

As discussed in the Chapter 2.0, *Project Description*, the city currently has six different water sources providing potable water to the city's service area, which include Casitas Municipal Water District; Ventura River/Foster Park; Mound Groundwater Basin; Oxnard Plain Groundwater Basin; Santa Paula Groundwater Basin; and recycled water from the Ventura Water Reclamation Facility (VWRF). Each of the city's six water sources and their existing water supplies, in normal and dry years, are summarized in **Table 5-3** (reproduced from Table 2-1 in this EIR). As shown in the table, water supplies are reduced during a prolonged drought.

In addition, the City also has a 10,000 acre-feet per year (AFY) contract amount from the California State Water Project (SWP), which is currently not utilized in the city's service area due to the lack of facilities to deliver the water to the city. Ventura Water currently is evaluating a SWP connection with Calleguas Municipal Water District (Calleguas) that would connect Ventura Water to the Calleguas potable water system. SWP water supplied through the Calleguas system would be subject to the SWP water allocation, updated each year depending on the hydrology in the state. In some years the full entitlement may be available, while in other years less water would be available. DWR indicates that over the long term an average of approximately 60 percent of water entitlements may be available to the State Water Contractors. In addition, water may be available during certain parts of the year but not others, making it an unreliable source. The City does not have storage opportunities to store water in aboveground or underground reservoirs when it is available. As a result, the SWP Interconnection is being pursued in parallel with the Ventura Water Supply Projects to augment water supplies when available, but it is not considered a reliable, consistent water supply.

**TABLE 5-3
SUMMARY OF VENTURA WATER SUPPLIES**

Water Supply Source Current Supply	Normal Year (AFY)	Dry Year (AFY) [4]	Estimated 2030 Supplies [4]
Casitas Municipal Water District [1]	5,340 ⁽¹⁾	3,204	5,841
Ventura River/Foster Park	4,200	2,384	3,647-6,700
Mound Groundwater Basin	4,000	2,130	4,000
Oxnard Plain Groundwater Basin	4,100	3,862	3,862
Santa Paula Groundwater Basin [2]	3,000 ⁽²⁾	3,000	1,141-3,000
City-Acquired Water Rights in 2016 (Santa Paula Basin) [3]	40.9 ⁽³⁾	40.9	40.9
Recycled Water	700	700	865
TOTAL	21,381	15,321	21,778–28,207

[1] The 5-year average normal water supply from Casitas is estimated to be 5,062 AFY. Adding in development under construction (estimated to be 189 AFY) brings the total normal year supply to 5,251 AFY.

[2] Includes 3,000 AF of original City allocation and 5.8 AF of water rights acquired for the past development of Tract 4632.

[3] 12.0 AF of water rights acquired for the development of Phase 1 of Tract 5632 in 2016 and 23.1 AF of water rights acquired for the development of Tract 5774 in 2016.

[4] Table 4-2 of the 2017 Comprehensive Water Resources Report, City of Ventura.

SOURCES: 2018 Comprehensive Water Resources Report.

In the 2016 water year, the VWRF produced an annual average of 6.5 million gallons a day (MGD) of tertiary-treated wastewater that meets Title 22 requirements for unrestricted non-potable uses. The City supplies approximately 0.6 MGD (700 AFY) of this recycled water for irrigation at two golf courses, a city park, and landscape areas within the city. The remaining tertiary-treated wastewater is conveyed through the wildlife ponds, where there are losses to percolation and evaporation, and then discharged to the Santa Clara River Estuary (SCRE). In the 2016 water year, an annual average of approximately 5.0 MGD was discharged to the SCRE. During the summer months (dry conditions) approximately 4.7 MGD was discharged to the SCRE.

Table 5-4 and **Table 5-5** (reproduced from Tables 2-2 and 2-3) summarize projected water supplies and demand during normal and dry years in the city's water service area through 2040. As shown in Table 5-5, during multiple dry years (defined as four consecutive dry years), the City could face a water deficit of 2,645 AF during 2020. By 2035, the UWMP concludes that a total of 5,400 AFY of additional supplies from potable reuse and desalination) are needed to meet projected demands. The projected requirement for additional supplies includes a contingency buffer of approximately 20 percent, as required by the Ventura Water Commission to avoid underestimating capital costs. The buffer reflects uncertainty about future water needs and the possibility that existing water supplies may not be fully available in the future. Where Table 5-5 appears to show surpluses in 2035 and 2040, the surplus amounts represent the buffer required for responsible water supply planning.

TABLE 5-4
COMPARISON OF SUPPLIES AND DEMAND IN AVERAGE/NORMAL YEAR (AF)

Water Supply Source	2020	2025	2030	2035	2040
Supplies					
Casitas Municipal Water District	5,741	5,901	6,065	6,233	6,407
Ventura	4,200	4,200	4,200	4,200	4,200
Groundwater	11,106	11,106	11,106	11,106	11,106
Recycled Water	700	700	700	700	700
Planned Additional Recycled Water	0	142	135	189	214
Planned Potable Reuse	0	2,381	2,670	3,898*	3,989
Planned Desalination	0	0	0	1,500*	1,500
Total Supplies	21,747	24,430	24,906	27,826	28,025
Estimated Demand	20,245	20,930	21,512	22,111	22,724
<i>Difference (Supply – Demand)</i>	<i>1,502</i>	<i>3,500</i>	<i>3,394</i>	<i>5,715</i>	<i>5,301</i>
<i>Difference as % of Demand</i>	<i>7%</i>	<i>17%</i>	<i>16%</i>	<i>26%</i>	<i>23%</i>

*5,398 AFY of additional supplies (Potable Reuse and Desalination)
 SOURCE: UWMP 2015, Table 6-1

TABLE 5-5
COMPARISON OF SUPPLIES AND DEMAND IN MULTIPLE DRY YEARS (AF)

Water Supply Source	2020	2025	2030	2035	2040
Supplies					
Casitas Municipal Water District	4,593	4,720	4,852	4,987	5,125
Ventura	1,298	1,298	1,298	1,298	1,298
Groundwater	11,009	11,009	11,009	11,009	11,009
Recycled Water	700	700	700	700	700
Planned Additional Recycled Water	0	142	165	189	214
Planned Potable Reuse	0	2,381	2,670	3,898*	3,989
Planned Desalination	0	0	0	1,500*	1,500
Total Supplies	17,600	20,250	20,694	23,581	23,744
Estimated Demand	20,245	20,930	21,512	22,111	22,724
<i>Difference (Supply – Demand)</i>	<i>(2,645)</i>	<i>(680)</i>	<i>(818)</i>	<i>1,470</i>	<i>1,020</i>
<i>Difference as % of Demand</i>	<i>-13%</i>	<i>-3%</i>	<i>-4%</i>	<i>7%</i>	<i>4%</i>

*5,398 AFY of additional supplies (Potable Reuse and Desalination)
 SOURCE: UWMP 2015, Table 6-3

To provide an adequate water supply to support future demand, the City has accounted for various water projects to provide new sources of potable water in the city's service area in its 2015 UWMP, as shown in the tables above. The 2015 UWMP identified well restoration and production, expansion of recycled water and advanced treatment potable reuse, pure water pipelines, and ocean desalination as new sources of potable water in the city. Development of the proposed projects would implement UWMP-recommended measures.

5.5 Growth-Inducement Potential

5.5.1 Direct Growth-Inducement Potential

Implementation of the proposed projects would not directly induce growth by developing housing or providing substantial permanent employment. Construction activities would create some short-term construction employment opportunities over 15 years from 2020 to 2035; each component would require approximately 10 to 20 construction workers, depending on the facility.

Construction workers would be drawn from the local and regional work force. The city's existing housing stock would be sufficient to house temporary construction workers, if needed, in addition to local hotel establishments. On a long-term basis, approximately 27 new employees would be required to operate the Advanced Water Purification Facility (AWPF) and conduct routine maintenance on the remaining facilities. The operation of the proposed project would be accommodated by the existing work force within the city and surrounding unincorporated areas of the county.

5.5.2 Indirect Growth-Inducement Potential

The City's adopted General Plan guides the type, location, and level of land use and development planned for the city. The proposed projects would accommodate the growth provided for by the City's General Plan, which was the basis of the 2015 UWMP. The environmental impacts of this growth were addressed in the *City of Ventura 2005 General Plan Final Environmental Impact Report*¹ (General Plan Final EIR). Because the proposed projects will not promote growth beyond the growth permitted by the General Plan and evaluated by the General Plan Final EIR, they are not growth-inducing.

In addition, SCAG, the regional authority charged with providing a framework for coordination of orderly regional growth and development, has prepared the 2016 RTP/SCS, which serves as a long-term planning and management plan for the regional transportation system, providing mitigation measures to offset the impacts of growth projected in the region. The 2016 RTP/SCS was prepared in coordination with the City and has also accounted for any indirect growth associated with the development of the proposed projects. The proposed projects would provide future water system infrastructure within the city, which would support planned population growth that has been identified for the service area. Thus, implementation of the proposed

¹ The General Plan Final EIR is hereby incorporated by reference as part of this Draft EIR and will be made available to the public, reviewers, and decision-makers.

projects would not create a new or expanded water supply that could create an indirect growth-inducement potential.

5.6 Secondary Effects of Growth

Growth is not in and of itself a significant adverse impact. However, population growth results in secondary environmental effects that can be significant. The environmental impact analysis conducted for local General Plans identify significant environmental impacts associated with growth. Secondary effects of growth typically found to be significant and unavoidable include:

- Effects to or loss of agricultural resources
- Air quality degradation
- Hydrology and water quality modification and degradation
- Traffic congestion
- Transportation demand increase
- Increased noise
- Increased demand on public services and utilities

One impact of growth is the potential for outgrowing existing utility infrastructure. The proposed project would mitigate this impact through the construction of additional potable water supplies.

The City of Ventura General Plan plans for increased growth. The General Plan EIR acknowledges that planned development results in adverse secondary effects. Effects which have been identified as significant and unavoidable are impacts to aesthetics, agriculture, air quality, solid waste disposal, and traffic. Pursuant to CEQA, the City of Ventura has adopted a statement of overriding considerations for the anticipated significant unavoidable effects. The proposed projects would not cause additional secondary effects beyond those identified in the General Plan EIR.

Regional adverse effects caused by growth are generally mitigated through regional resource management agencies. **Table 5-6** lists some of the agencies with the authority and mandate to mitigate secondary effects of growth.

TABLE 5-6
AGENCIES WITH AUTHORITY TO IMPLEMENT MITIGATION MEASURES FOR GROWTH-RELATED IMPACTS

Agency	Authority
Ventura County	Responsible for planning, land use, and environmental protection of unincorporated areas. Of particular importance is development of presently undeveloped lands, provision of regional solid waste management facilities, and regional transportation, air quality, and flood control improvement programs.
City of Ventura and City of Oxnard	Responsible for adoption of the General Plan and various planning elements and local land use regulations. Responsible for managing some wastewater treatment facilities. Adopt and implement local ordinances for control of noise and other environmental concerns. Participate in regional air quality maintenance planning through adoption of local programs to control emissions via transportation improvements. Responsible for enforcing adopted energy efficiency standards in new construction.
Local Agency Formation Commissions	Empowered to approve or disapprove all proposals to incorporate cities, to form special districts, or to annex territories to cities or special districts. Also empowered to guide growth of governmental service responsibilities.
Councils of Government	Under state and federal law, have authority and responsibility over transportation planning and funding. Allocate transportation infrastructure and housing.
Regional Water Quality Control Board	Shares responsibility with SWRCB to coordinate and control water quality. Formulates and adopts water quality control plans. Implements portions of the Clean Water Act when EPA and SWRCB delegate authority, as is the case with issuance of NPDES permits for waste discharge, reclamation, and storm water drainage.
State Department of Health	Responsible for the purity and potability of domestic water supplies for the state. Assists SWRCB and RWQCBs in setting quality standards.
California Air Resources Board	Responsible for adopting and enforcing standards, rules, and regulations for the control of air pollution from mobile sources throughout the state.
South Coast Air Quality Management District	Adopts and enforce local regulations governing stationary sources of air pollutants. Issue Authority to Construct Permits and Permits to Operate. Provide compliance inspections of facilities and monitors regional air quality. Developed the Clean Air Plan in compliance with the Clean Air Act.
U.S. Fish and Wildlife Service	Requires consultation under Section 7 or Section 10 of the Endangered Species Act for projects which could potentially impact endangered or threatened species. Prepares biological opinions on the status of species in specific areas and potential effects of proposed projects. Approves mitigation measures to reduce impacts and establishes Habitat Conservation Plans.
U.S. Army Corps of Engineers	Issues permits to place fill in waterways pursuant to Section 404 of the Clean Water Act.
California Department of Fish and Wildlife	Issues Stream Bed Alteration Agreements for projects potentially impacting waterways.
SOURCE: ESA 2018.	

5.7 References

City of Ventura, 2018 Comprehensive Water Resource Final Report, May 24, 2018.

City of Ventura, 2016. 2015 Urban Water Management Plan for the City of Ventura.
<https://www.cityofventura.ca.gov/documentcenter/view/2669>. Accessed April 9, 2018.

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U.S. Census Bureau, 2015b. Total Population for the County of Ventura in 2015. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_B01003&prodType=table. Accessed April 9, 2018.

CHAPTER 6

Alternatives Analysis

6.1 Introduction

6.1.1 Approach to Alternatives Analysis

According to the California Environmental Quality Act (CEQA), an Environmental Impact Report (EIR) must describe a reasonable range of alternatives to a proposed project that would feasibly attain most of the basic project objectives, and would avoid or substantially lessen any of the proposed project's significant environmental effects. Section 15126.6(f) of the CEQA Guidelines provides direction on the required alternatives analysis:

The range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

An EIR need not consider every conceivable alternative to a project. Rather, the alternatives must be limited to those that meet the project objectives, are feasible, and would avoid or substantially lessen at least one of the significant environmental effects of the project. “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. Section 15126.6(b) of the CEQA Guidelines states that an EIR:

must identify ways to mitigate or avoid the significant effects that a project may have on the environment ... the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or could be more costly.

Section 15126.6 (d) of the CEQA Guidelines provides further guidance on the extent of alternatives analysis required:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects

of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

The EIR must briefly describe the rationale for selection and rejection of alternatives and the information the lead agency relied on when making the selection. It also should identify any alternatives considered but rejected as infeasible by the lead agency during the scoping process and briefly explain the reasons for the exclusion. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects.

Section 15126.6(e)(1) of the CEQA Guidelines also requires that the No Project Alternative be addressed in this analysis. The purpose of evaluating the No Project Alternative is to allow decision-makers to compare the potential consequences of the proposed project with the consequences that would occur without implementation of the proposed project.

Finally, an EIR must identify the environmentally superior alternative. CEQA Guidelines (Section 15126.6[e][2]) require that if the environmentally superior alternative is the No Project Alternative, the EIR shall identify an environmentally superior alternative among other alternatives.

6.1.2 Project Objectives

As stated in Chapter 2, *Project Description*, the primary objectives of the proposed projects are to:

- Augment local water supply in an environmentally responsible and cost-efficient manner.
- Provide a drought- and disaster-resilient water supply.
- Protect, maintain, and improve ecological resources and related beneficial uses of the SCRE and its watershed.
- Improve municipal groundwater supply quality within the service area.
- Maintain compliance with the City of Ventura's VWRf NPDES permit.

6.1.3 Review of Significant Environmental Impacts

The proposed projects would be constructed in two phases. Phase 1, which this EIR reviews at the project level, includes the construction of the following distinct components:

- Advanced Water Purification Facility;
- Water Conveyance Systems;
- Groundwater Wells;
- Natural Treatment Wetlands

- VWRP Treatment Upgrades; and
- Concentrate Discharge Facility

Phase 2 of the project, examined at the program level in this EIR, includes either of the following, along with the expansion of the distribution system:

- AWP expansion as a first option pending regulatory approvals, and if this option is not approved and or does not meet the City's water supply needs: Ocean Desalination Facility

See Figure 2-2 for a depiction of the location of each project component.

As discussed in Section 6.1.1, the range of alternatives required to be evaluated in an EIR is limited to those alternatives that would avoid or substantially lessen any significant effects of the proposed project and would feasibly attain most of the project objectives.

6.2 Development of Alternatives

The City evaluated numerous alternative approaches that would protect the ecology of the SCRE, meet the City's projected water demands, comply with RWQCB NPDES permit requirements, and comply with the Consent Decree. The following sections describe these alternatives and compare them with the proposed project.

6.2.1 Alternative Water Supply Sources

State Water Project Connection

As a State Water Contractor, the City of Ventura has a 10,000 acre-foot per year allocation from the California State Water Project (SWP) per the 1971 agreements executed between the City, Casitas Municipal Water District (Casitas), and the Department of Water Resources (DWR). However, the City has never received any water from the allocation agreement, since the City has not constructed the infrastructure necessary to receive delivery of its allocation.

Ventura Water currently is evaluating a SWP connection with Calleguas Municipal Water District (Calleguas) that would connect Ventura Water to the Calleguas potable water system. The connection would allow for water conveyance through and between both water systems. Ventura Water is also negotiating a wheeling agreement with MWD for the conveyance of SWP water to Calleguas. The City is currently evaluating a siting and alignment study to determine how the interconnection project can be designed and operated to supply water to serve the regional needs of the City, Calleguas, Casitas Municipal Water District, and United Water Conservation District (United). The alignment study will determine the amount of water that Calleguas can wheel through its system without adversely affecting its customers.

The City is currently conducting CEQA review to analyze the State Water Interconnection Project that would include construction of a pipeline to connect with the Calleguas system near the Springville Reservoir, in the southwestern end of the Camarillo Hills, and trend northwesterly to the east end of the City to connect to the City's water system at Henderson Road, northeast of Satcoy Avenue. The interconnection pipeline would be approximately 8 miles in length and,

except for the portions within the cities of Ventura and Camarillo, would primarily be located within unincorporated Ventura County. The preferred alignment would be located primarily within farm roads on private agricultural parcels and within County of Ventura Watershed Protection District Channel roads. The Project would also include a Santa Clara River crossing.

SWP water supplied through the Calleguas system would be subject to the SWP water allocation, updated each year depending on the hydrology in the State. Some years the full entitlement may be available, while other years less water would be available. DWR indicates that over a long term average approximately 60 percent of water entitlements may be available to the State Water Contractors. In addition, water may be available during certain parts of the year but not others, making it an unreliable source. The City of Ventura does not have storage opportunities to store water in above ground or underground reservoirs when it is available. As a result, the SWP Interconnection is being pursued in parallel with the Ventura Water Supply Projects to augment water supplies when available, but would not feasibly obtain project objectives because it is not a reliable, consistent water supply.

Stormwater Capture Alternative

This alternative would implement stormwater detention facilities in the City of Ventura to capture stormwater flows and recharge the water into the Mound Groundwater Basin. Stormwater capture and use can be divided into two main types: infiltration and injection. The first type involves capture of stormwater and recharge into local groundwater basin through infiltration, where the local groundwater aquifer is unconfined and the underlying geology is relatively permeable. Since the producing layer of the Mound Groundwater Basin is confined by the upper unsuitable aquifer, rainwater runoff cannot be recharged from the surface through permeable soil layers. The local geology overlaying the confined aquifer is not conducive to successful groundwater recharge without the use of injection wells.

Pursuant to state and federal water quality regulations (see Section 3.9, Hydrology and Water Quality), injection of stormwater into the aquifer would require advanced treatment to remove toxic hydrocarbons, heavy metals, and pathogens. In addition, since stormwater arrives over a short period of time, a large detention system would be required to capture and store rainwater when it is available. To meet water quality criteria for groundwater recharge through injection using captured stormwater, the City would need to develop an entirely new collection conveyance, treatment, and injection well system involving numerous wells, treatment systems, pump stations, and conveyance pipelines needed to inject the advanced treated stormwater into the Basin. Also, siting of storage systems would be limited by the topography and the availability public spaces, such as schools and public parks. Based on the above and the local hydrogeological conditions, centralized stormwater capture for groundwater recharge through injection at the scale required to provide meaningful, reliable contributions to the City's water supply is technologically infeasible. Therefore, the Stormwater Capture Alternative is not considered further because it is not a feasible alternative that would meet most project objectives.

Increased Conservation

The City of San Buenaventura implements an aggressive water conservation and demand management program outlined in the UWMP and CWRR. Ventura Water prohibits water waste through its Water Conservation Ordinance (Division 22 –Public Utilities, Chapter 22.170). As described in the UWMP, water consumption within the City has decreased in recent years from 196 gallons per capita per day (PGD) in the period 1985 through 1989 to 166 GPD in the period 1994 through 2010. This decrease in per capita consumption is the result of plumbing code changes such as low flow fixtures and low water consuming appliances in some existing and all new housing; and an active water conservation program adopted by the City in 1975 and further strengthened with regulations in 1990. In response to worsening drought conditions, the City Council adopted Water Shortage Rates on June 8, 2015 that were developed and refined by a 13-member task force. The water shortage rates have assisted the City in achieving additional conservation. Ventura residents responded to the City's recent drought declaration and conservation messages. From 2010 to 2015 the estimated water use dropped to 117 GPCD.

Currently, all of the City's retail customers are metered and billed with commodity rates for both water and sewer service. The City does not have any unmetered services and all new connections are metered and billed volumetrically. The UWMP outlines Demand Management Measures (DMM) implemented by the City to continue aggressive conservation policies. The DMMs include the following:

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support

In addition to ongoing conservation programs, the City has developed a six-stage water shortage plan to reduce demands up to 50 percent of normal supply during a severe or extended water shortage. The plan includes voluntary and mandatory stages which mandate reduced water use in stages from an initial 10 percent up to 50 percent.

Water conservation and rationing policies adopted by Ventura Water are in place to ensure an equitable delivery of water supplies during drought conditions. However, as noted in the UWMP and 2018 CWRR, these measures do not provide for a stable, reliable water supply to meet future multi-year drought conditions. Since water conservation alone cannot provide sufficient water supplies, the conservation only alternative is not a feasible alternative that would meet most project objectives. Water conservation and demand management programs are necessary in conjunction with other water supply alternatives.

6.2.2 Alternatives Rejected from Further Consideration

The following alternatives were evaluated in the Estuary Special Studies Phase 2-Facilities Planning Study for Expanded Recycled Water Delivery (Carollo 2014) unless otherwise noted. The alternatives are summarized below:

Concentrate Alternatives

Use of the City of Oxnard Outfall for Concentrate Discharge Alternative

The City of Oxnard operates the Oxnard Water Treatment Plant (OWTP), approximately 10 miles south of the VWRP. The OWTP provides tertiary treatment to approximately 19 million gallons a day (MGD) and discharges the effluent through an ocean outfall compliant with an NPDES permit issued by the RWQCB. The Oxnard ocean outfall has sufficient capacity to accommodate the addition of concentrate produced by the AWPf.

The use of the Oxnard outfall would result in similar impacts to the potential Calleguas SMP connection, which is one option for the discharge of concentrate from the proposed projects. A pipeline would be constructed from the AWPf along essentially the same route for most of the distance, terminating at a point near the existing outfall facility that could accommodate a connection box valve. Oxnard's current NPDES permit does not accommodate the addition of brine and would need to be modified to accommodate the additional flow. Ventura Water would need to develop and approve an agreement with the City of Oxnard to modify the existing NPDES permit and use the existing outfall. This alternative would require an agreement on the future financing approach and parties responsible for both capital and O&M costs of maintaining the facilities. This alternative does not avoid any significant impacts of using the Calleguas SMP outfall. Furthermore, it is not a feasible alternative because of the unknown timing and feasibility of amending the NPDES permit to accommodate the AWPf brine. Therefore, it is not considered further.

Concentrate Crystallization (No Concentrate Discharge)

Thermal reduction processes are used to reduce the concentrate down to essentially a solid form that can be sent to a landfill for zero liquid discharge. Thermal treatment technologies convert electricity to heat to distill reverse osmosis (RO) concentrate into pure water and solid salts. Thermal treatment is completed in two steps – thermal concentration via a falling film evaporator, followed by evaporation via crystallization or evaporation ponds.

A falling film evaporator uses heat to concentrate salts up to either the dissolved solids or silica solubility barrier. A mechanical vapor compressor converts electricity to heat, driving the evaporative process. The vapor compressor heats water vapor through compression. A series of vertical tubes is used to exchange the vapor heat with the RO concentrate. The heat exchange causes evaporation of the RO concentrate, which is condensed into distillate. The distillate can be rerouted back into the AWPf treatment train at the influent of the RO process. The leftover liquid concentrate that is not evaporated (referred to as “blowdown”) requires further treatment to achieve ZLD.

A second step is required to evaporate the remaining blowdown from the first step to produce salt solids. This can be achieved through the use of either a crystallizer or evaporation ponds. A crystallizer uses additional compression to heat blowdown until it boils, producing water vapor as well as further concentrated blowdown that is high in salt solids. The blowdown is centrifuged to separate the salt solids from the water, and the solids are hauled off site. The water removed from the solids during centrifuging is recycled back into the feed tank of the crystallizer. Distillate from the crystallizer is blended with the thermal concentrator distillate and can be added into the primary RO influent. Alternatively, blowdown from the falling film thermal concentrator can be directed towards evaporation ponds. For this application, 27-acres of evaporation ponds would be required.

The thermal reduction process would include a brine concentrator and a crystallizer. A thermal brine concentrator recovers high quality distillate from the RO brine to the point where undesirable concentrations of salts are reached. The method of converting electricity to heat, and thereby driving the evaporative process, is through a mechanical vapor compressor. A vapor compressor heats water vapor through compression, and a series of vertical tubes is used to exchange the vapor heat with the brine solution. The heat exchange causes evaporation of the brine solution, which is condensed into distillate. A thermal crystallizer receives highly concentrated blowdown from the thermal brine concentrator and uses additional compression to heat the brine until it boils. The blowdown from the crystallizer is high in salt solids, which are centrifuged. The water removed from the solid is recycled back into the feed tank of the crystallizer. The crystallized solids would be sent to a landfill.

The main benefits of thermal treatment are its insensitivity to TOC levels and its ability to handle a wide range of water qualities. The main disadvantage is that the energy required varies based on the volume treated, but not by the concentration of total dissolved solids (TDS), such that treating RO concentrate with a very low TDS requires the same amount of energy input as treating RO concentrate with high TDS. Estimated annual energy requirements range from 5.0 to 5.4 MW/yr. The costs also are quite high ranging from an additional \$65 to \$80 million in capital costs and \$12-\$13 million per year in operations and maintenance costs. An additional 2 acres of space would be required for treatment facilities beyond the potential evaporation pond space needs.

The zero liquid waste process requires significant energy use and is very expensive. Due to the increased cost of brine reduction and the environmental impacts of the high energy use and additional space for evaporation ponds, this alternative is not feasible and would not reduce potentially significant adverse impacts of the proposed projects. Therefore, it has been rejected from further considerations.

Additional Concentrate RO + Evaporation/Crystalization (No Concentrate Discharge)

Another method for meeting a no concentrate discharge consists of four steps - chemical softening, media filtration, secondary RO, and evaporation via crystallization or evaporation ponds. The chemical softening serves to remove the scale-forming compounds that inhibit additional passes through the RO process. After chemical softening, media filtration is required to produce water suitable for RO influent. A secondary RO system can then be used to further concentrate the water to the pressure limit of RO membranes (1,200 psi). Finally, the waste from

the secondary RO system is evaporated to salt using either crystallization (similar to process described above) or evaporation ponds. The secondary RO system can achieve up to 90 percent recovery, under the assumption that the TOC fouling will be mitigated with upstream removal in the chemical softening system and through biocides or a chloramine residual. The concentrate from the secondary RO system, due to its low flowrate, can be discharged directly to a crystallizer/centrifuge or to evaporation ponds, although 92 acres would be required.

The advantage of this chemical/physical process is that the technologies operate proportionally to water quality, so if the concentrations of sparingly soluble salts and TOC are low, power demands are correspondingly low. The disadvantage of this process is that performance of the chemical and membrane processes are sensitive to water quality, which requires highly skilled operators. Estimated annual energy requirements range from 0.3 to 1.5 MW/yr, but chemical usage is quite high requiring chemical deliveries. The costs also are quite high, ranging from an additional \$61 to \$163 million in capital costs and \$12 to \$17 million per year in operations and maintenance costs. An additional 2 acres of space would be required for treatment facilities beyond the potential evaporation pond space needs.

Due to the increased cost of brine reduction and the environmental impacts of the chemical usage and deliveries, energy use, and space requirements, this alternative would not reduce potential adverse impacts of the proposed projects and has been rejected from further considerations.

Use of the NRG Ormond Beach Power Plant Outfall for Concentrate Discharge Alternative

The NRG Ormond Beach Power Plant cooling water intake and outfall pipelines will be abandoned when this power plant permanently shuts down in October 2018. This facility includes two 14-foot diameter pipelines which extend approximately 2,000 feet into the ocean. These pipelines currently draw sea water for plant cooling and then discharge heated water back to the ocean offshore of the City of Oxnard. Potentially, the existing pipelines could be repurposed for concentrate discharge from the proposed projects.

This alternative has been rejected from further analysis because it does not reduce environmental impacts, compared to the possible use of the Calleguas discharge outfall, and would have additional construction impacts due to the distance away from the City. This alternative would require a conveyance pipeline from the AWPf to the NRG Power Plant, which is approximately 1.5 miles past the Calleguas and Oxnard WTP existing outfalls. The sea floor construction required for a new outfall would also be required for use of the Ormond outfall to bring the pipeline to adequate depth of water, approximately 55 feet, and providing diffuser ports. In addition, since a 14-foot pipe diameter greatly exceeds the size required for the concentrate disposal, a smaller new pipe would need to be placed inside the existing pipe and a method to seal off or plug the remaining diameter would be required. This alternative would result in greater construction impacts due to the longer conveyance pipeline with the streets and the extension of the outfall and diffuser. The disturbance of the ocean floor as a result of the refurbishing the outfall and adding and outfall extension would result in greater marine impacts as opposed to constructing a new outfall using HDD technology. The HDD process would drill under the ocean

floor preventing the disturbance of the ocean floor environment. As a result, this alternative has been rejected from further consideration.

Concentrate Trucking Alternative

This alternative would include advanced treatment similar to the proposed project, but would eliminate the Concentrate Discharge Facility. Instead, the concentrate would be trucked off site to an existing ocean outfall, either the Oxnard Wastewater Treatment Plant (OWTP) or the Calleguas Salinity Management Pipeline (SMP). As part of this Alternative, brine reduction technologies would be constructed at the AWPf to minimize the daily truck trips required to dispose of the concentrate. Key factors relating to the feasibility and environmental impacts of this alternative include number of trucks per day, distance to the disposal site, proximity to residential traffic, cost of brine reduction technologies and disposal, and 24-hour 7 days per week reliability in perpetuity.

The Concentrate Trucking Alternative would require approximately 5-8 trucks per day operating 24-hours a day, in perpetuity, for the disposal of the concentrate. A one-way truck trip would travel approximately 10 miles to the OWTP and 11 miles to the SMP. Trucks would travel along city roads and within close proximity to residences. As a result, this alternative would increase the congestion on local roads, increase noise along residential roads, and increase emissions from haul trucks. In order to minimize daily truck trips, brine reduction technologies could be employed that substantially increase power use. The concentrate is condensed through additional chemical addition, RO membrane treatment and possibly thermal water reduction technologies that substantially increase energy demands and operational costs. Additional storage facilities would be needed to provide some equalization storage for the condensed brine. Due to the increased cost of brine reduction and the permanent operational impacts to air quality, noise and traffic as a result of 5-8 trucks per day operating 24-hours a day, in perpetuity, and high energy use, this alternative would not reduce potential environmental impacts of the proposed projects and has been rejected from further considerations.

Deep Well Injection Alternative

This alternative would use deep well injection technology in the Ventura Oil Fields to dispose of the concentrate from the proposed projects. The concentrate would need to be conveyed approximately 7 miles to the Ventura Oil Fields and then injected via new or converted injection wells that would need to be approved for the purpose of concentrate disposal. Deep well injection was determined to be less environmentally preferable than alternatives that are either located closer to the AWPf or are already permitted for concentrate disposal (Calleguas Outfall). Furthermore, this disposal method would require long-term agreements with individual oil extraction companies and individuals (AECOM 2011). Obtaining agreements that reliably protect the interests of the City and that do not present significant operational challenges and might not be feasible. This alternative would not reduce potential environmental impacts of the proposed projects and has been rejected from further considerations.

Non-Potable Recycled Water Alternatives

Ventura Water assessed multiple options for increasing non-potable water recycling in a report titled *Amended Estuary Special Studies Phase 2: Facilities Planning Study for Expanding Recycled Water Delivery* (Phase 2 Recycled Water Study). Several alternative approaches to reducing discharge volume, including increased use of discharged water for urban and agricultural irrigation, are discussed below. Unless otherwise specified, the Phase 2 Recycled Water Study is the source of all factual information discussed below.

Expand Urban Reuse

The average monthly demand of urban irrigation reuse customers within the service area is 1.3 MGD. Currently, less than 0.5 MGD is made available to customers that can take the water from a distribution facility located at the VWRf. Serving additional customers would involve construction of an extensive pipe network to deliver recycled water to users located throughout the city. Additional treatment would not be required because the VWRf currently treats wastewater to meet Title 22 standards for unrestricted reuse.

The urban irrigation market is small and is characterized by numerous very small users dispersed throughout the City, requiring an extensive piping network. Conveying recycled water from the VWRf to these numerous customers would be an inefficient means of distributing a small quantity of the total discharge and would offset only a small portion of the potable demands. Therefore, this alternative would not feasibly meet most project objectives and is rejected from further consideration.

Agricultural Reuse without Blending

The potential average monthly demand for recycled water for agricultural uses within the vicinity of the VWRf north of the Santa Clara River is 2.8 MGD, with a peak monthly demand of 4.6 MGD. Agricultural reuse is limited by crop water quality requirements. Many crops cannot accept treated wastewater due to the high total dissolved solids (TDS) and chloride concentrations. Strawberries are particularly sensitive to chloride concentrations in irrigation water. Advanced treatment would be required including ultra or microfiltration (UF/MF) and reverse osmosis (RO) to meet this water quality goal. The brine waste from the RO process would require treatment and/or disposal.

Pipelines and pump stations would be required to deliver recycled water to potential agricultural irrigation customers. The relatively large, and close proximity, of the agricultural irrigation market provides an opportunity for a significant reduction in discharge volume. However, this potential benefit is offset by the need for advanced treatment and brine treatment/disposal. If advanced treatment processes were implemented, the resulting water quality would be similar to the quality required for many types of end uses, including uses such as groundwater recharge and augmentation of potable water supplies.

Because agricultural reuse would require additional treatment of tertiary treated wastewater, this potential alternative does not incorporate the principal benefit of non-potable water recycling, which would be the elimination of the need for additional treatment processes and brine disposal.

This alternative does not meet the project objective of improving municipal groundwater supply quality. In comparison to other end uses that require similar advanced treatment processes and brine treatment/disposal, agricultural irrigation offers a less direct benefit to the City's water supply. As a result, this alternative has been rejected from further consideration.

Agricultural Reuse with Blending

This alternative involves using existing groundwater blended with VWRf effluent (no additional treatment) to meet specific crop water quality thresholds. The VWRf effluent TDS and chloride concentrations are approximately 1489 mg/L and 290 mg/L, respectively. Groundwater quality data (UWCD 2012) from wells located in the agricultural area west of highway US 101, indicate ranges of TDS and chloride concentrations of 1100 mg/L to 1800 mg/L and 60 mg/L to 80 mg/L, respectively. The VWRf average TDS effluent concentration is within the range of the groundwater TDS concentrations, suggesting that there is not significant opportunity to reduce the effluent TDS by blending it with groundwater. However, the chloride concentrations in the groundwater are much less than in the VWRf effluent and therefore present an opportunity for improving effluent water by blending it with groundwater.

To protect strawberry crops, the appropriate target chloride concentration for the blended water is 117 mg/L. To meet this limit, a blend of approximately 85 percent groundwater and 15 percent VWRf effluent would be required. At this blend ratio, to meet the average and maximum month demands, the VWRf effluent contribution would be limited to 0.4 MGD and 0.7 MGD respectively. Since the blending of VWRf effluent with groundwater would only provide a small portion of the available recycled water supply and would not reduce potable demands, it would not feasibly meet most project objectives and has been rejected from further consideration.

North Side Decentralized Treatment Plant for Agricultural Reuse

The north side of the City presents opportunities for implementing a decentralized treatment plant. There are potential recycled water customers for urban and agricultural irrigation in the north side of the City, near the Ventura River. The wastewater in this area has low concentrations of TDS and chloride because the potable water supply in this area has low TDS and chloride concentrations, and therefore provides the potential for agricultural irrigation without advanced treatment. Also, the site of a former wastewater treatment plant, located near the Seaside Pump Station, could be used for the site of a new decentralized treatment facility.

Raw wastewater could be diverted from the collection system for treatment at a new treatment plant, located near the Seaside Pump station. The diverted wastewater flow available is approximately 2.6 MGD. The potential average and maximum month urban irrigation demands in the vicinity of the potential site for a new decentralized treatment plant are 0.17 and 0.24 MGD, respectively. The potential average and maximum month agricultural irrigation demands are approximately 1.1 MGD and 1.8 MGD, respectively. The combined agricultural and urban average and maximum month demands are 1.3 and 2.0 MGD, respectively.

The treatment plant would be designed to meet Title 22 regulations for unrestricted reuse, and sized for up to 2.0 MGD. The solids from the treatment plant would be routed to the VWRf collection system for treatment.

The acceptance of recycled water for agricultural irrigation would depend on the effluent water quality. In August 2012, the City of Ventura collected samples from 2 locations in the collection system located near the Seaside Pump Station. Measured TDS and chloride concentrations were 676 mg/L and 68 mg/L, respectively. These TDS and chloride concentrations are acceptable for sensitive crops and no additional treatment beyond treatment required to meet Title 22 would be required.

This alternative only provides a diversion of 1.3 MGD (annual average) and up to 2 MGD (max month). This volume of diversion potential is relatively low compared to the required MEPDV diversion from the SCRE of 4.2 MGD, the volume required to achieve 90 percent diversion of existing flows. Therefore, this alternative would not meet the project objective of protecting the ecology of the SCRE by providing for the MEPDV. It also would not meet the goal of improving water supply reliability or quality. Furthermore, it is not feasible because it would require construction and operation of redundant secondary treatment facilities at a remote location. For these reason this alternative has been rejected from further consideration.

East Side Decentralized Treatment Plant for Agricultural and Urban Reuse

Similar to the North Side decentralized treatment plant alternative, this alternative would include construction of a small wastewater treatment plant for the purpose of providing an upstream supply of recycled water at a location in the vicinity of potential reuse opportunities.

On the east side of the City, there are potential recycled water customers for urban and agricultural irrigation, and there is a potential site of the decentralized treatment plant at the Saticoy Sanitary District WWTP. In the future, it is possible that the City will annex the Saticoy Sanitary District WWTP, and would therefore provide a source of wastewater and a site for a decentralized treatment facility. In addition, wastewater from the City's collection system would be diverted to the decentralized treatment plant.

Similar to the north side decentralized treatment plant alternative, the treatment plant would be designed to meet Title 22 regulations for unrestricted reuse. The available flow to divert in this area varies from 0.3 to 1.4 MGD, with a potential additional flow from Saticoy of 0.5 MGD. The potential average and maximum month urban irrigation demands in the vicinity of the potential site for a new decentralized treatment plant are 0.24 and 0.44 MGD, respectively. The potential average and maximum month agricultural irrigation demands are approximately 2.0 MGD and 3.3 MGD, respectively. The combined agricultural and urban average and maximum month demands are 2.2 and 3.7 MGD, respectively. The solids from the treatment plant would be routed to the VWRF collection system for treatment. The acceptance of recycled water for agricultural irrigation would depend on the effluent water quality.

In July 2012, the City collected water quality data from two sites near the Saticoy Sanitary District. Measured TDS and chloride concentrations were 1095 mg/L, and 319 mg/L, respectively. These concentrations exceed crop specific requirements for agricultural irrigation. Therefore, to serve the potential agricultural users, the decentralized plant would need to include RO, and brine treatment/disposal.

The location of this decentralized plant limits the brine treatment and disposal options to evaporation ponds or physical/chemical treatment processes, which are the most land intensive and costly brine treatment/disposal alternatives. It is possible that, if advanced treatment were considered for this plant, the recycled water could be used for groundwater recharge. However, regardless of the recycled water use, any alternative that required brine treatment/disposal would be limited by the land based or physical /chemical brine treatment /disposal alternatives at this location. Land disposal and physical/chemical treatment processes are too expensive for feasible implementation. Furthermore, this alternative would not meet the project objective of protecting the SCRE by accommodating the MEPDV. As a result, this alternative has been rejected from further consideration.

Injection of Effluent into the Semi-Perched Aquifer

This alternative would include the injection of tertiary treated wastewater into the semi-perched aquifer (which is not used for drinking water or agricultural uses) of the Mound Basin, after additional treatment to reduce nitrate and phosphate concentrations. The semi-perched aquifer would provide recharge to the SCR.

The Basin Plan does not make a distinction between water quality objectives for the semi-perched aquifer and the underlying aquifers in the Mound Basin. Therefore, water quality objectives for the semi-perched aquifer include the water quality objectives of the Mound Basin of 1200 mg/L TDS and 150 mg/L chloride. The Lower Santa Clara River Salt and Nutrient Management Plan (LSCRSNMP) indicates that there is no TDS assimilative capacity in the Mound Basin, and additional studies would need to be conducted to irrigate or recharge the Mound basin with tertiary effluent. The use of tertiary effluent in the semi-perched aquifer could therefore be subject to either implementation of management measures or a complete antidegradation analysis pending the results of these additional studies. Current regulatory requirements and associated delay make the alternative too uncertain to pursue at this time. Thus, the alternative would likely not meet the project objective of protecting the ecology of the SCRE by accommodating the MEPDV within the foreseeable future. Nor does this project meet the objectives for water supply reliability and quality improvements. As a result, this alternative is rejected from further consideration.

Surface Spreading at the United Water Conservation Districts Facilities

Surface spreading of recycled water is a method of groundwater recharge that is allowed by the State of California using tertiary treated effluent. However, there are strict requirements for use of diluent waters in the amount of 80 percent of the water recharged, thereby only allowing 20 percent recycled water contribution. In addition, there are other water quality requirements that must be met.

Implementing surface spreading at United Water Conservation District (UWCD) facilities would require partial RO treatment to satisfy the low chloride requirement (117 mg/L) established by the Upper Santa Clara River TMDL to be protective of agricultural uses. While it is possible that the City would receive some water supply benefit (e.g., an increased water right to pump from the

Oxnard Plain) by recharging the Oxnard Forebay via UWCD facilities, the realization of this credit is uncertain, and would most likely not be credited on a 1:1 basis. In addition, surface spreading operations require blending with water that is diverted from the Santa Clara River. This surface water diversion would create potential adverse environmental impacts on the river, particularly in drought conditions. It adds operational complexity and difficulty in reliably meeting the MEPDV of 90 percent diversion due to the potential variations of recycled water that could be recharged depending on the diluent waters available in any given year. For these reasons, this alternative has been rejected from further consideration.

AWPF Siting Alternative

Golf Course AWP Site

The Golf Course AWP site is located within the City of Ventura, south of the intersection of Olivas Park Drive and Perkin Avenue. The Golf Course site is located on the eastern-most portion of the Buenaventura Golf Course. This site is approximately 20 acres and is bounded by vacant space to the north, east, and south and a golf course to the west.

Currently, the site is located partially within the floodway of the SCR and entirely within the 1-percent annual chance (100-year-floodplain). The City is in the planning process of extending the SCR levee (Olivas Park Drive Roadway Extension and Levee Project). Once the levee project is completed the Golf Course site will be completely within the revised floodway of the river (Michael Baker 2018).

According to FEMA's fact sheet: *Critical Facilities and Higher Standards*, a critical facility is defined as one that "provides services and functions essential to the community, especially during and after a disaster. Examples of critical facilities requiring special consideration include... Drinking water and wastewater treatment plants." Based on the definition, the AWP would qualify as a critical facility (Michael Baker 2018). As a result, the AWP cannot be placed in the floodway and should not be placed in the 100-year floodplain. The facility would require flood protection not only for the 100-year storm event but also the 500-year event. Therefore, development of the Golf Course AWP site is not feasible, would not reduce the potential adverse effects of the proposed projects, and has been rejected from further considerations.

6.3 Alternative Impact Analysis

Five alternatives are identified in this EIR, including the No Project Alternative (Alternative 1). Three alternatives deal with the percentage of tertiary-treated water being diverted from the SCRE (Alternatives 2, 3, and 4). One alternative would divert water from the SCRE in the amount of the approved MEPDV and would convey it by pipeline to the Oxnard Wastewater Treatment Plant. Water supply needs would be met by an ocean desalination facility rather than the proposed AWP (Alternative 5). Two alternatives (Alternatives 2 and 5) would replace the AWP with a Phase 1 ocean desalination facility. One alternative addresses a different outfall location (Alternative 6).

This section includes a summary comparison of the environmental impacts of the proposed project and the project alternatives. **Table 6-1** provides a summary of the components of each alternative, providing for a comparison with the components of the proposed project components. **Table 6-2** provides a summary of the environmental impacts of each alternative, providing for a comparison with the environmental impacts of the proposed project.

Table 6-3 includes a summary of the ability of the project alternative to meet each of the project objectives.

6.3.1 Alternative 1: No Project Alternative

Pursuant to Section 15126.6(e)(2) of the CEQA Guidelines, the No Project Alternative shall:

discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

Description of Alternative

The No Project Alternative represents a “no build” scenario, in which none of the components of the project would be constructed or operated. Under this alternative, treated wastewater from the VWRP would not be diverted for potable reuse and would continue to flow into the existing ponds prior to discharge to the SCRE. The existing ponds would not be reconfigured, no new treatment wetlands would be developed, and there would be no new water conveyance system, concentrate discharge facility, groundwater wells, or VWRP treatment upgrade. The Phase 2 projects that would provide additional water for planned future growth (the AWP Expansion or ocean desalination facility, and the expansion of the distribution system) would not be developed. Under the No Project Alternative, the foreseeable future would include water rationing during drought conditions, as outlined in the CWRR. Up to 50 percent demand reduction would be mandatory if no other water supplies are provided. Either a new permit for discharge to the estuary would be negotiated, or the City would be in violation of the NPDES permit and Consent Decree. Continued discharge would not protect the ecology of the SCRE. Refer to Table 6-1 for a comparison of this alternative to the proposed projects.

**TABLE 6-1
COMPARISON OF THE ALTERNATIVES TO THE PROPOSED PROJECTS**

Project Alternatives	Proposed Project Components							
	Phase 1						Phase 2	
	Advanced Water Purification Facility	Water Conveyance System	Groundwater Wells	Natural Treatment Wetlands	VWRF Treatment Upgrades	Concentrate Discharge Facility	AWPF Expansion Project	Ocean Desalination
Alternative 1: No Project	This component would not be constructed.	This component would not be constructed.	This component would not be constructed.	This component would not be constructed.	No upgrades would be implemented.	This component would not be constructed.	The AWPf would not have been constructed.	This component would not be constructed.
Alternative 2: Zero Percent Diversion	This component would not be constructed	Similar to proposed project.	This component would not be constructed.	Similar to proposed project.	Similar to proposed project.	Similar to proposed project.	The AWPf would not have been constructed.	This component would be constructed in Phase 1 and would be larger in size.
Alternative 3: 60 Percent Diversion with Ocean Desalination Facility in Phase 1	The AWPf would be smaller than the proposed project	Similar to proposed project.	Fewer wells would be constructed.	Similar to proposed project.	Similar to proposed project.	Similar to proposed project.	Similar to proposed project.	This component would be constructed in Phase 1 and would be larger in size.
Alternative 4: 100 Percent in Phase 1	The AWPf would be larger than the proposed project.	Similar to proposed project.	Similar to proposed project.	This component would not be constructed.	No upgrades would be required.	Similar to proposed project.	Expansion would be implemented in Phase 1.	This component would not be constructed.
Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant	This component would not be constructed	Similar to proposed project.	This component would not be constructed.	This component would not be constructed.	No upgrades would be required.	Similar to proposed project.	The AWPf would not have been constructed.	This component would be constructed in Phase 1 and would be larger in size.
Alternative 6: Rehabilitation of Existing Outfall Structure	Similar to proposed project	Similar to proposed project	Similar to proposed project	Similar to proposed project	Similar to proposed project	This component would rehabilitate an existing outfall, instead of constructing a new one.	Similar to proposed project.	Similar to proposed project.

Ability to Meet Project Objectives

The No Project Alternative would not meet any of the project objectives. This alternative would not augment local water supplies or provide for a drought and disaster resilient water supply. There would not be a new diversion project or maintenance or improvement of ecological resources, and the City would be in violation of the Consent Decree, and possibly the CWA (depending on the Regional Board's orders in the new NPDES Permit). In addition, no new infrastructure would be constructed to help with the improvement of the groundwater quality within the service area or maintenance of the VWRf NPDES permit.

Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

Compared to existing conditions, the No Project Alternative would avoid all potentially significant construction impacts. Refer to Table 6-2 for a summary of the Alternative 1 impacts compared to the proposed project.

The benefits of the project, including the diversion of treated water from the SCRE to enhance water quality and habitat, the groundwater quality improvements, and the development of new local water supplies would not be achieved. The City would be required to negotiate a new NPDES permit and revise the Consent Decree.

6.3.2 Alternative 2: Zero Diversion Alternative

This Zero Diversion Alternative addresses the actions that would be taken to address water needs to meet planned growth under the relevant General Plans governing Ventura Water's service area. Under this alternative, the elements of the project that propose diversion of treated wastewater from the VWRf for potable use would not be implemented, including the construction of the AWPf, construction of the groundwater wells, the concentrate discharge system, and related components of the water conveyance system. Discharge of treated wastewater from the VWRf would continue to flow into the existing wildlife/treatment ponds prior to discharge to the SCRE. The existing wildlife/treatment ponds would not be reconfigured, and no new treatment wetlands would be developed. The VWRf treatment upgrades would not be implemented. Similar to the No Project Alternative, either a new permit for discharge to the estuary would be negotiated, or the City would be in violation of the NPDES permit and Consent Decree.

To meet the foreseeable water demands during drought years, the City would develop an ocean desalination project to produce 4.8 MGD (5,400 AFY) and 1.8 MGD (2,000 AFY) of groundwater desalting. This alternative would include a water conveyance pipeline from the ocean intake to the desalination facility, a new ocean water intake system, a concentrate pipeline to a new ocean outfall, and a product pipeline to either the Bailey WCF and/or the Saticoy WCF.

Since the Calleguas SMP does not accept ocean water desalination brine, a new outfall would be required. The new outfall and discharge would need to be compliant with the new Ocean Plan Amendment standards for ocean water desalination discharges, resulting in considerable permitting delay potential. Because this water supply solution likely would not be constructed

before 2035, when the UWMP found that significant water shortages would occur, this alternative would require the interim implementation of water rationing similar to that described in the No Project Alternative.

Refer to Table 6-1 for a comparison of this alternative to the proposed projects.

Ability to Meet Project Objectives

The Zero Diversion Alternative would fully meet only one of the project objectives (to provide a drought-and disaster-resistant water supply). However, it is likely that the length of time required to implement desalination could prevent the water supply benefits from being available in 2025 when needed. It would not meet any of the project objectives.

Since no discharge from the VWRF would be diverted from the estuary, the Zero Diversion alternative would not meet the objective of protecting, maintaining, and improving ecological resources and related beneficial uses of the SCRE and its watershed. It would not divert treated discharge from the VWRF, would not improve ecological resources, and would not comply with the Consent Decree. Nor would this alternative improve municipal supply groundwater quality within the service area. Furthermore, the construction of an ocean desalination plant for the entire water supply demand would lose the advantage of a local water supply and would therefore not be cost efficient. The Zero Diversion Alternative would not meet the objective to augment local water supply in an environmentally responsible and cost-efficient manner.

Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

The Zero Diversion Alternative could result in construction of an ocean desalination facility on the same site as the proposed AWPf. The construction impacts of the ocean desalination facility would be similar to the construction impacts of the AWPf site. Because the Calleguas SMP does not accept ocean water desalination brine, the construction of a concentrate discharge outfall would be required, with impacts equivalent to those of the proposed projects.

This alternative would eliminate impacts related to construction of the groundwater wells, but would require an ocean water intake facility, which would not be required under Phase 1 of the proposed projects.

A desalination facility large enough to meet future water needs would use more energy than the AWPf and Phase 2 projects. The process of treating ocean water to drinking water standards is very energy intensive. The desalination process would require additional energy resulting in increased GHG emissions, and the Zero Diversion Alternative would have a slightly higher impact on energy and air quality.

Refer to Table 6-2 for a summary of the Alternative 2 impacts compared to the proposed project.

The Zero Diversion Alternative would not meet project objectives to protect the ecology of the SCRE, and would not meet water supply objectives until after deficits have occurred. It would

not avoid any significant impacts of the proposed project, but would result in similar construction impacts with greater energy demands. The City would be required to negotiate a new NPDES permit and revise the Consent Decree.

6.3.3 Alternative 3: 60 Percent Diversion, with Ocean Desalination in Phase 1

Alternative 3 would divert 60 percent of the current flow of VWRP effluent during dry-weather, closed-basin conditions (currently an average monthly flow of 2.8 MGD). This alternative would implement only the first stage of Phase 1 of the proposed projects, and would not implement the 90 – 100 percent diversion recommended by the SRP. To meet the water supply needs of planned future growth as set forth in the UWMP, this alternative would require construction of the ocean desalination component in Phase 1 to supplement the reduced diversion of effluent from 90-100 percent to 60 percent to the AWP. A smaller AWP facility than the proposed project would share a site with a new desalination facility.

Alternative 3 would require fewer groundwater wells, since the AWP would produce a lower volume of treated water requiring groundwater retention as compared to the proposed project. All other components would be similar to the proposed projects. This alternative would require an ocean intake for the desalination facility that would not be required until the Phase 2 of the proposed project. Since the Calleguas SMP does not accept ocean water desalination brine, a new outfall would be required, with construction impacts the same as for the proposed project. The new outfall and discharge would need to be compliant with the new Ocean Plan Amendment standards for ocean water desalination discharges, resulting in considerable permitting delay potential. Because the desalination water supply solution likely would not be constructed before 2035, when the UWMP found that significant water shortages would occur, this alternative would require the interim implementation of water rationing similar to that described in the No Project Alternative.

Refer to Table 6-1 for a comparison of this alternative to the proposed projects.

Ability to Meet Project Objectives

Alternative 3 would not meet the project objectives. It would not implement the conclusions in the SRP report and the TRT analysis, which found that 90 – 100 percent diversion is would protect, maintain, and improve SCRE ecological resources. This alternative would require more energy to operate a larger desalination facility and would require construction of an ocean intake facility. In addition, due to the lengthy timeline for planning and permitting delays an ocean water desalination discharge facility in California, if ocean desalination is pursued under this Alternative, the Alternative would be less cost efficient and likely would not augment local water supply before water deficiencies are experienced.

Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

This alternative would not implement the conclusions in the SRP report and the TRT analysis, which found that 90 – 100 percent diversion is required in order to protect, maintain, and improve SCRE ecological resources. The alternative would require construction of an AWPf, and or construction of an ocean desalination facility, as well as the construction of a concentrate discharge outfall. Therefore, it would not reduce or eliminate any of the construction impacts of the proposed project. The larger desalination facility would require more energy than the potential Phase 2 facility. The increased energy usage would also increase the GHG emissions.

Refer to Table 7-2 for a summary of the Alternative 3 impacts compared to the proposed project.

6.3.4 Alternative 4: 100 Percent Diversion in Phase 1

Alternative 4 would divert 100 percent of the VWRf effluent during dry-weather, closed-berm conditions (currently an average monthly flow of 4.7 MGD) to the new AWPf for potable reuse in Phase 1. The AWPf would be a larger facility than the proposed project during Phase 1. Because this alternative would produce enough water to meet the needs of planned future growth, the Phase 2 components (AWPf expansion or ocean desalination) would not be needed. This alternative would not require the construction of Treatment Wetlands or the reconfiguration of the existing wildlife/treatment ponds, since 100% of the tertiary-treated effluent would be diverted for beneficial reuse and would not need to meet the 4 mg/L of nitrate water quality requirement of discharged water to the estuary. 100%diversion may result in drying up the existing wildlife ponds. This would eliminate the open water and wetland habitat values provided by the existing ponds. However, the existing ponds do not support sensitive species, and open water habitat exists in the SCRE. The elimination of the open water would reduce foraging and loafing habitat for migratory fowl. Other open water habitats exist in the region that would continue to support migratory birds including the SCRE. In addition, the VWRf Treatment Upgrades would not be required. The alternative would not address the CDFW recommendation to start discharge diversion at 60 percent.

Refer to Table 6-1 for a comparison of this alternative to the proposed project.

Ability to Meet Project Objectives

This alternative would meet project objectives.

Like the proposed projects, Alternative 4 would implement the conclusions in the SRP report and the TRT analysis, which found that 90 – 100 percent diversion is required in order to protect, maintain, and improve SCRE ecological resources. The 90 percent diversion in the proposed projects, however, would provide continued flows to the VWRf. The SRP found that a CDL of 0 – 0.5 MGD would protect the ecology of the SCRE, and other studies recommend some continued flow to protect beneficial uses. The proposed projects meet the SRP recommendation while also providing the maintenance of minimal flows, as recommended by the Phase 3 Study. The 100% Diversion Alternative does not address the potential for minimal continued flows to help to protect the SCRE ecology and adopts the most stringent SRP recommendation, which would constitute the most abrupt departure from existing conditions.

Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

Alternative 4 would result in similar construction impacts as the proposed project. It would require the construction of an AWPf facility larger than that proposed in Phase 1 of the proposed project, and a concentrate discharge outfall with the same impacts. As noted above, the alternative would implement the conclusions in the SRP report and the TRT analysis, which recommended 90 – 100 percent diversion of tertiary treated discharges. Consequently, the impact on the ecology of the SCRE would be positive compared to existing conditions. Unlike the proposed projects, Alternative 4 would not provide for the minimal discharge that CDFW has recommended for the first stage of the proposed projects. The elimination of flows to the wildlife/treatment ponds would ultimately result in the ponds drying up, changing existing open water pond to a dry mud flat

Refer to Table 6-2 for a summary of the Alternative 4 impacts compared to the proposed project.

6.3.5 Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant and Construction of Ocean Desalination Facility

Under Alternative 5, tertiary-treated water from the VWRf in the amount of the approved MEPDV would be conveyed by pipeline approximately 10 miles to the Oxnard Wastewater Treatment Plant. The treated water would be available to the City of Oxnard to reuse for non-local supply offset or to supplement the City of Oxnard's supply.

Alternative 5 would avoid construction of the AWPf, groundwater wells, and AWPf Expansion Project. This alternative would not require the construction of treatment wetlands or the VWRf treatment upgrades since 100% of the tertiary-treated effluent would be diverted. The Alternative would not augment water supplies for the City. As a result, the City would construct an ocean desalination facility to produce 4.8 MGD (5,400 AFY) and 1.8 MGD (2,000 AFY) of groundwater desalting to eliminate 2035 water supply deficits and meet secondary water quality standards for potable supplies. This alternative would require construction of the Ocean Desalination component in Phase 1 with the same locations described for the Phase 1 AWPf to meet water supply demands.

Refer to Table 6-1 for a comparison of this alternative to the proposed projects.

Ability to Meet Project Objectives

Alternative 5 would only meet two of the five proposed projects' objectives. None of the discharge would be diverted for future water supply within the City, rather all of the discharge from the VWRf would be transferred to the City of Oxnard. Without construction of the AWPf and with no water being utilized within the City of Ventura, water supplies would not be augmented through potable reuse and municipal supply groundwater quality would not be

improved within the service area by use of local recycled water supplies. Desalination would be required to supplement the future water supply.

Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

Construction impacts of a desalination facility within the same proposed sites would be similar to the impacts associated with construction of the AWPf. The desalination facility would require a new ocean outfall and intake system in Phase 1 and would require more energy to treat the water. Because the Calleguas SMP does not accept desalination brine, a new concentrate discharge outfall would have to be constructed, with impacts equivalent to those of the proposed projects. It would be expected that impacts to air quality, marine resources, and energy usage would be greater than the proposed project due to the larger energy demands required for the desalination facility and offshore ocean intake and outfall.

Refer to Table 6-2 for a summary of the Alternative 5 impacts compared to the proposed project.

6.3.6 Alternative 6: Rehabilitation of Existing Fairgrounds Outfall

Under Alternative 6, all of the components of the proposed projects would remain the same, except for the Concentrate Discharge Facility component. There are two potential existing outfalls that are no longer in operation in the proximity of the AWPf sites that may be re-purposed for the concentrate discharge (**Figure 6-1**). These outfalls served the former Seaside Sewage Treatment Plant, which was owned by the City of Ventura. Both pipelines emanate from a single point on the fairgrounds property.

The older of the two submerged pipelines is 20-inches in diameter and extends approximately 2,700 feet. Site observations made at low tide show that this pipeline is very corroded and would not be suitable for re-purposing as a brine line (Fugro, 2018).

The second outfall, constructed sometime prior to 1965, is a 30-inch diameter steel pipeline that extends for approximately 2,821 feet southward from the coast. This pipeline reaches a submerged depth of about 36 feet below sea level and was abandoned in the early 1970s. The condition of the outfall was assessed in 1993, and it was found to be in moderate to poor condition (Oceaneering Technologies, 1993). The pipeline is currently exposed across the nearshore zone during low tide, and as a result may be susceptible to damage by large waves over the long term. Oceaneering (1993) noted that the pipeline was mostly full of sediment at the seaward end of the diffuser, and that the length of the diffuser section was 33 to 52 feet. Seven diffusers extending an unknown height above the seafloor were observed during a dive inspection of the pipeline (Oceaneering Technologies, 1993).



SOURCE: ESRI

Ventura Water Supply Projects

Figure 6-1
Fairground Outfall Rehabilitation

Because this pipeline is currently exposed during low tide, rehabilitation would require constructing a trench on the beach. The pipe would need to be rehabilitated and repaired as necessary, and placed into the trench, to avoid damage by large waves. Rehabilitating the interior and exterior of the 54-year-old pipe on the ocean floor would likely involve routing out all sediment, inspection to determine exterior and interior condition, realignment of joints that have separated, resealing joints, slip lining with another smaller diameter pipe, and scraping off all barnacles and other attachments for coating the outside of the existing pipe.

The reuse of either potential outfall would require construction of a pipeline and pump station connecting the rehabilitated outfall to the existing AWPf. In addition, because these existing outfalls do not extend far enough out into the ocean to meet dilution requirements, extension of the outfalls along the sea floor would be required. Connection of a new outfall diffuser section to an existing pipe with questionable condition may also provide challenges and lead to additional repairs required over the life of the outfall.

Refer to Table 6-1 for a comparison of this alternative to the proposed projects.

Ability to Meet Project Objectives

Similar to the proposed project, Alternative 6 would meet all of the proposed projects' objectives. Refer to Table 6-3 for a comparison of the proposed projects' objectives.

Environmental Impacts of the Proposed Alternative

To the extent that Alternative 6 involves the construction and operation of the same facilities as the proposed project, its impacts would be the same. The rehabilitation outfall would require more impacts along the roadways and potentially road closure to connect the conveyance pipeline. Impacts relating to the rehabilitation of the concentrate discharge facility would be different and likely more significant than constructing a new outfall. Rehabilitation of the fairgrounds outfall would require major construction activities at Surfer's Point Beach, lowering the pipeline into a new trench that would limit beach access for several months. The construction activities on the beach and limiting access to the shoreline and accessing the submerged pipe would require barges in the surf zone eliminating the surfing opportunities for months. Construction would result in a significant impact to recreation in the area. In addition, accessing the existing outfall and removing sediment would require invasive construction methods that would result in temporary turbulence and impacts to wildlife attached to the existing outfall and marine species in the area. Once constructed, the operation of the facility would impact ocean water quality and marine biology similar to the proposed project.

Refer to Table 6-2 for a summary of the Alternative 6 impacts compared to the proposed project.

**TABLE 6-2
SUMMARY OF IMPACTS OF ALTERNATIVES COMPARED TO THE PROPOSED PROJECT**

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Aesthetics							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	-	0	0	-	0
Transport Street	LTSM	-	-	0	0	-	0
Portola Road	LTSM	-	-	0	0	-	0
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	NI	0	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	0	0	0	0	0
Calleguas Outfall	LTSM	-	0	0	0	0	0
<i>Phase 2</i>							
AWPF Expansion	NI	-	-	0	-	-	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Agriculture and Forestry Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	-	0
Transport Street	LTS	-	0	0	0	-	0
Portola Road	LTSM	-	0	0	+	-	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	NI	0	0	0	0	0	0
VWRF Treatment Upgrades	NI	0	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	LTS	-	0	0	0	0	0
Calleguas Outfall	LTS	-	0	0	0	0	0
Phase 2							
AWPF Expansion	NI	0	0	0	0	-	0
Ocean Desalination	NI	0	0	+	+	0	0
Air Quality							
Phase 1							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	-	-	+	0	0
Transport Street	LTSM	-	-	-	+	0	0
Portola Road	LTSM	-	-	-	+	0	0
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	LTSM	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	0	0	0	0	0
Calleguas Outfall	LTSM	-	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion/	LTS	-	-	0	-	-	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Biological Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	-	0	0	0	0	0
Portola Road	LTS	-	0	0	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	LTSM	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	0	0	0	0	0
Calleguas Outfall	LTSM	-	0	0	0	0	0
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
Cultural Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	0	-	+	0	0
Transport Street	LTSM	-	0	-	+	0	0
Portola Road	LTSM	-	0	-	+	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	LTSM	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	0	0	0	0	-
Calleguas Outfall	LTSM	-	0	0	0	0	-
<i>Phase 2</i>							
AWPF Expansion	NI	0	-	0	0	0	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Geology, Soils, and Seismicity							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	-	-	+	0	0
Transport Street	LTSM	-	-	-	+	0	0
Portola Road	LTSM	-	-	-	+	0	0
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	LTSM	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	0	0	0	0	-
Calleguas Outfall		-	0	0	0	0	-

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion	LTSM	-	-	0	-	-	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Greenhouse Gas Emissions							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	+	-	+	-	0
Transport Street	LTS	-	+	--	+	-	0
Portola Road	LTS	-	+		+	-	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTS	-	+	+	0	0	-
Calleguas Outfall	LTS	-	0	0	0	0	-
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
Hazards and Hazardous Materials							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	+	-	+	-	0
Transport Street	LTSM	-	+	-	+	-	0
Portola Road	LTSM	-	+	-	+	-	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	LTSM	-	0	0	-	-	0
Concentrate Discharge Facility	LTSM						
New Outfall	LTSM	-	+	0	0	0	-
Calleguas Outfall	LTSM	-	+	0	0	0	-
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Hydrology and Water Quality							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	+	0	+	0	0
Transport Street	LTS	-	+	0	+	0	0
Portola Road	LTS	-	+	0	+	0	0
Water Conveyance System	LTSI	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTS	-	+	0	0	0	-
Calleguas Outfall	LTS	-	0	0	0	0	-

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	NI	-	+	+	-	+	0
Land Use and Planning							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	-	0	0	0	0	0
Portola Road	LTS	-	0	0	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	NI	0	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	NI	0	0	0	0	0	0
Calleguas Outfall	NI	0	0	0	0	0	0
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
Marine Biological Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	NI	0	0	0	0	0	0
Transport Street	NI	0	0	0	0	0	0
Portola Road	NI	0	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	NI	0	0	0	0	0	0
Groundwater Wells	NI	0	0	0	0	0	0
Wildlife/Treatment Wetland	NI	0	0	0	0	0	0
VWRF Treatment Upgrades	NI	0	0	0	0	-	0
Concentrate Discharge Facility							
New Outfall	LTSM	-	+	+	0	0	+
Calleguas Outfall	LTS	-	+	+	0	0	+
<i>Phase 2</i>							
AWPF Expansion	NI	0	0	0	0	0	0
Ocean Desalination	LTSM	-	0	0	-	+	+
Mineral Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	-	0	0	0	0	0
Portola Road	LTS	-	0	0	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	0	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTS	-	0	0	0	0	0
Calleguas Outfall	LTS	-	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
Noise and Vibration							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	+	+	0	0	0
Transport Street	LTS	-	+	+	0	0	0
Portola Road	LTS	-	+	+	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-*	-	0	-*	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTS	-	+	+	0	0	+
Calleguas Outfall	LTS	-	+	+	0	0	+
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
Population, Housing and Environmental Justice							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	--	0	0	0	0	0
Portola Road	LTS		0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	0	0	0	0	0
Wildlife/Treatment Wetland	LTS	-	0	0	0	0	0
VWRF Treatment Upgrades	LTS	-	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	LTS	-	0	0	0	0	0
Calleguas Outfall	LTS	-	0	0	0	0	0
<i>Phase 2</i>							
AWPF Expansion	LTS	-	0	0	0	0	0
Ocean Desalination	LTS	-	0	0	0	0	0
Public Services							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	-	0	0	0	0	0
Portola Road	LTS	-	0	0	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	0	0	0	0	0
Wildlife/Treatment Wetland	LTS	-	0	0	0	0	0
VWRF Treatment Upgrades	LTS	-	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	LTS	-	0	0	0	0	0
Calleguas Outfall	LTS	-	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion	LTS	-	0	0	0	0	0
Ocean Desalination	LTS	-	0	0	0	0	0
Recreation							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	0	0	0	0	0
Transport Street	LTS	-	0	0	0	0	0
Portola Road	LTS	-	+	0	0	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	0	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	0	0
VWRF Treatment Upgrades	LTS	-	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	LTS	-	+	+	0	0	+
Calleguas Outfall	LTS	-	+	+	0	0	+
<i>Phase 2</i>							
AWPF Expansion	LTS	-	0	0	0	0	0
Ocean Desalination	LTS	-	0	0	0	0	0
Traffic and Transportation							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTSM	-	0	0	0	0	0
Transport Street	LTSM	-	0	0	0	0	0
Portola Road	LTSM	-	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
Water Conveyance System	LTSM	-	0	0	0	0	0
Groundwater Wells	LTSM	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTSM	-	0	0	-	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility		-					
New Outfall	LTSM		+	+	0	0	+
Calleguas Outfall	LTSM	-	+	+	0	0	+
<i>Phase 2</i>							
AWPF Expansion	LTSM	-	-	0	-	-	0
Ocean Desalination	LTSM	-	+	+	-	+	0
Tribal Cultural Resources							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	NI	0	0	0	0	0	0
Transport Street	NI	0	0	0	0	0	0
Portola Road	NI	0	0	0	0	0	0
Water Conveyance System	NI	0	0	0	0	0	0
Groundwater Wells	NI	0	0	0	0	0	0
Wildlife/Treatment Wetland	NI	0	0	0	0	0	0
VWRF Treatment Upgrades	NI	0	0	0	0	0	0
Concentrate Discharge Facility							
New Outfall	NI	0	0	0	0	0	0
Calleguas Outfall	NI	0	0	0	0	0	0

Environmental Resource Area per Project Component	Proposed Project Impact Determination	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard WTP	Alternative 6: Rehabilitation of Existing Outfall Structure
<i>Phase 2</i>							
AWPF Expansion	NI	0	0	0	0	0	0
Ocean Desalination	NI	0	0	+	0	0	0
Utilities, Service Systems, and Energy							
<i>Phase 1</i>							
Advanced Water Purification Facility							
Harbor Boulevard	LTS	-	+	+	+	0	0
Transport Street	LTS	-	+	+	+	0	0
Portola Road	LTS	-	+	+	+	0	0
Water Conveyance System	LTS	-	0	0	0	0	0
Groundwater Wells	LTS	-	-	-	0	-	0
Wildlife/Treatment Wetland	LTS	-	0	0	-	-	0
VWRF Treatment Upgrades	LTS	-	0	0	-	-	0
Concentrate Discharge Facility							
New Outfall	LTS	-	+	+	0	0	+
Calleguas Outfall	LTS	-	+	+	0	0	+
<i>Phase 2</i>							
AWPF Expansion	LTS	-	-	0	-	-	0
Ocean Desalination	LTS	-	+	+	-	+	0
LTS = Less-than-Significant Impact (-) = lesser impact LSM = Less-than-Significant Impact with Mitigation (+) = greater impact SU = Significant and Unavoidable Impact (0) = similar/no difference NI = No Impact *= results in a reduction in significance determination							
SOURCE: ESA, 2018							

TABLE 6-3
ABILITY OF PROJECT ALTERNATIVES TO MEET OBJECTIVES

Project Objectives	Proposed Project	Alternative 1: No Project	Alternative 2: Zero Percent Diversion	Alternative 3: 60 Percent Diversion	Alternative 4: 100 Percent Diversion in Phase 1	Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant	Alternative 6: Rehabilitation of Existing Outfall Structure
Augment local water supply in an environmentally responsible and cost-efficient manner.	Yes	No	No	No	Yes	No	Yes
Provide a drought- and disaster-resilient water supply	Yes	No	Yes	Yes	Yes	Yes	Yes
Implement a Diversion Infrastructure Project, while protecting, maintaining and improving ecological resources and related beneficial uses of the SCRE and its watershed, in compliance with the Consent Decree.	Yes	No	No	No	Yes	Yes	Yes
Improve municipal groundwater supply quality within the service area	Yes	No	No	Yes	Yes	No	Yes
Maintain compliance with the City of Ventura's VWRf NPDES permit	Yes	No	No	Yes	Yes	Yes	Yes
SOURCE: ESA, 2018							

6.4 Environmentally Superior Alternative

CEQA requires that an EIR identify an environmentally superior alternative (CEQA Guidelines Section 15126.6[e][2]). If the No Project Alternative is the environmentally superior alternative, another alternative must be identified as the environmentally superior alternative.

Table 6-3 shows the impacts of each alternative for each potentially significant impact. For purposes of comparing the environmental effects of the alternatives, the analysis considers whether each alternative would have the same impact, reduced impact, or increased impact on the other potentially significant environmental impacts addressed in the EIR.

The purposes of the proposed projects include improving the ecology of the SCRE by diverting treated wastewater which, under existing conditions, is discharged into the SCRE. A lengthy, nonpartisan scientific analysis and review process has established the environmental benefits of wastewater diversion. Under the Consent Decree, the parties' "shared commitment to protecting the ecology of the Estuary and its watershed" requires the "reclamation and diversion of an ecologically appropriate volume" of tertiary treated water from the existing VWRP. If an alternative would not meet these goals by implementing the MEPDV, its impacts on areas including water quality, biological resources, and hydrology could be adverse, compared to the proposed projects.

CEQA generally requires environmental impacts to be assessed against a baseline of conditions at the time of the filing on the Notice of Preparation. The impact analyses in Chapter 3 are compared to a baseline of existing conditions. For purposes of the comparison of alternatives in this section, however, the analysis will consider both existing conditions and conditions during the operational phase of the proposed projects in order to take into account the future benefits to the SCRE that would result from discharge diversion. The justification for this approach is that it would be counterfactual, and therefore not helpful to decision-makers or the public to ignore the impacts of diverting discharge from the SCRE. Therefore, the analysis below addresses both short-term impacts and long-term effects.

Alternative 1: No Project Alternative

The No Project Alternative (Alternative 1) would avoid all of the construction impacts of the proposed project. Using only existing conditions as the baseline, this alternative would be an environmentally preferable alternative because it would avoid all construction impacts. However, when compared to the operational phase of the project in light of the future ecological and environmental benefits of the proposed project, the No Project Alternative would not result in improvements to water quality and habitat values in the SCRE. The Consent Decree would not be met and the SRP recommendations would not be implemented. In addition, the City would not have a reliable water supply to meet dry year water demands. As a result, Alternative 1 is not the environmentally superior alternative.

Alternative 2: Zero Diversion Alternative

The Zero Diversion Alternative would require other water supply project(s) or construction of an ocean desalination facility that would result in impacts similar to the construction associated with the AWPf component of the proposed project. Under this alternative, the AWPf and groundwater wells would not be constructed.

If desalination is pursued, this alternative could require a larger desalination facility and ocean intake facility to accommodate the volume of water needed to meet the future water demands of the City, as well as a new concentrate discharge outfall which would result in the same construction impacts as a new discharge outfall for the proposed project. The option of using the Calleguas SMP for discharge would not be available, because the Calleguas SMP does not accept desalination brine. Impacts associated construction and operation of the intake slant wells on the beach would be greater than the proposed projects. The operation of the desalination facility would result in a greater energy demand resulting in greater GHG emissions as compared to the proposed projects.

With respect to the SCRE, the Zero Diversion Alternative would not improve habitat and water quality compared with existing conditions. The project objective of protecting, maintaining and improving ecological resources and related beneficial uses of the SCRE and its watershed would not be met. As a result, Alternative 2 is not the environmentally superior alternative.

Alternative 3: 60 Percent Diversion with Ocean Desalination Facility in Phase 1

The 60 Percent Diversion Alternative would require other water supply project(s) or construction of an ocean desalination facility in Phase 1 to supplement water supplies to meet the 2035 water supply demands. The AWPf facility would be designed to be smaller than the proposed project but may also include the desalination facility on the same site. The alternative would require fewer groundwater wells, since the AWPf would produce a lower volume of treated water requiring groundwater retention as compared to the proposed project. All other components would be similar to the proposed projects. The impacts of constructing the AWPf and a new concentrate discharge outfall, if that option is selected, would be the same as the Phase 1 construction impacts.

If desalination is pursued, impacts associated with construction and operation of the intake slant wells on the beach would be greater than the proposed projects. Furthermore, operation of the desalination facility would result in a greater energy demand for a longer period of time, resulting in greater GHG emissions compared to the proposed projects.

With respect to the SCRE, the 60 Percent Diversion Alternative would not be consistent with the SRP conclusion that protecting the natural habitat of endangered and threatened species requires that the discharge of tertiary treated effluent be limited to no more than 0.5 million gallons per day (MGD) when the berm is closed, as discussed in greater detail in Section 3.4, Biological Resources. By reducing discharge, the 60 Percent Diversion Alternative would make progress towards meeting the objective of protecting, maintaining, and improving ecological resources and

related beneficial uses of the SCRE and its watershed. However, the best available scientific information, as reflected in the SRP Report and TRT analysis, shows that the 60 Percent Diversion Alternative would provide less benefit to habitat and water quality compared with the proposed project. As a result, Alternative 3 is not the environmentally superior alternative.

Alternative 4: 100 Percent Diversion in Phase 1

The 100 Percent Diversion Alternative would result in more construction since the facility would be larger than the proposed project AWPf. No Phase 2 water supply project would be needed, and all construction and operational issues relating to the Phase 2 components would be avoided.

With respect to the SCRE, the SRP report and the TRT analysis conclude that 100 percent diversion would protect, maintain and improve SCRE ecological resources. Therefore, this alternative would meet the project objective of protecting SCRE resources to a greater extent than any of the other alternatives to the proposed projects. As a result, Alternative 4 would be the environmentally superior alternative of the Alternatives to the Project.

Alternative 5: Conveyance of Tertiary Effluent to Oxnard Wastewater Treatment Plant and Construction of Ocean Desalination Facility in Phase 1

The Conveyance of Tertiary Effluent to the OWTP Alternative would require the construction of a conveyance pipeline to the OWTP that would result in construction and operational impacts similar to the Calleguas SMP connection pipeline. The AWPf and groundwater wells would not be constructed, and the City would construct an ocean water desalination plant to meet future water demands identified in the UWMP. The Calleguas SMP does not accept desalination brine, and the construction of a concentrate discharge outfall would be required, resulting in construction-period noise impacts that are similar to the proposed projects.

If desalination is pursued, it would also require a larger ocean intake facility to accommodate the volume of water needed to meet the future water demands of the City. Impacts associated construction and operation of the intake slant wells on the beach would be greater than the proposed projects. In addition, the energy and GHG emissions would be greater with the operation of the desalination facility as compared to the proposed projects.

Like Alternative 4, this alternative would implement the conclusions in the SRP report and the TRT analysis, which found that 90 – 100 percent diversion would protect, maintain and improve SCRE ecological resources. However, due to the increased environmental impacts of constructing a larger desalination facility, Alternative 5 is not the environmentally superior alternative.

Alternative 6: Rehabilitation of Existing Outfall Structures

Alternative 6 would only affect the concentrate discharge facility. All other components would be the same as the proposed project. Effects to the SCRE would be the same as the proposed project. The rehabilitation of the existing outfall would have greater recreational, marine and coastal impacts compared to the proposed projects. Refurbishing the old outfall would impede the beach

access and surfing off the coast. The refurbishment would impact the ocean floor and surrounding marine environment more than constructing a new outfall. As a result, Alternative 6 is not the environmentally superior alternative.

Selection of Environmentally Superior Alternative

As described above, Alternative 4 would avoid additional construction-period impacts and would maintain and improve SCRE ecological resources as described in the SRP/TRT Final Reports. As a result, Alternative 4 is the environmentally superior of the Alternatives to the Project.

However, when considering that the proposed project closely comports with the SRP/TRT Report conclusions of a range of 0 – 0.5 MGD CDL, the proposed project would be considered environmentally superior to each of the other alternatives evaluated, to the extent that some remaining discharge from the VWRf less than 0.5 MGD provides measurable enhancement to the ecology of the SCRE.

CHAPTER 7

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CHAPTER 8

Acronyms

AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation.
ACLUP	Airport Comprehensive Land Use Plan
AF	acre feet
AFY	Acre-feet per year
AHP	Analytic Hierarchy Process
ALA	American Lifelines Alliance
ALUC	Airport Land Use Commission
AP Zoning Act	Alquist-Priolo Earthquake Fault Zoning Act
APCD	air pollution control district
APF	Area or Habitat Production Foregone
AQMP	Air Quality Management Plan
ASBS	Areas of Special Biological Significance
ASHRAE	American Society of Heating and Air-Conditioning Engineers
ASR	Aquifer Storage and Recovery (well)
ATCM	Airborne Toxic Control Measure (CARB)
AWPF	Advanced Water Purification Facility
AWTF	Advanced Water Treatment Facility
BAC	biologically active carbon
BACT	best available control technology
BAF	biologically activated filtration
BAU	business-as-usual
BMI	Benthic Macroinvertebrate
BMP	Best Management Practice
BMZ	brine mixing zone

BO	Biological Opinion
BWCF	Bailey Water Conditioning Facility
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal OES	California Office of Emergency Services
CalEEMod	California Emissions Estimator Model
CALFIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CAT	California Climate Action Team
CBC	California Building Code
CBD	Central Business District
CBSC	California Building Standards Commission
CCAA	California Clean Air Act of 1988
CCC	California Coastal Commission
CCMP	California Coastal Management Program
CCR	California Code of Regulations
CDFG	California Department of Fish & Game, now the California Department of Fish & Wildlife
CDFW	California Department of Fish and Wildlife
CDIR	California Department of Industrial Regulations
CDP	Coastal Development Permit
CE	Candidate for listing as Endangered
CEC	California Energy Commission
CECs	constituents of emerging concern
CEQA	California Environmental Quality Act

CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGBSC	California Green Building Standards Code
CGEU	California Gas and Electric Utilities
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CINP	Channel Islands National Park
CMP	Congestion Management Plan
CMWD	Calleguas Municipal Water District
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CPD	Commercial Planned Development
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSLC	California State Lands Commission
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CURB	City Urban Restriction Boundary
CVC	California Vehicle Code
CVPWA	County of Ventura Public Works Agency
CWA	Clean Water Act
CWC	Porter-Cologne Water Quality Control Act
CWRR	Comprehensive Water Resources Report
CY	cubic yards
CZARA	Coastal Zone Act Reauthorization Amendments
CZMA	Coastal Zone Management Act
DDT	Dichlorodiphenyltrichloroethane

DDW	California Division of Drinking Water, formerly California Department of Public Health
DHS	California Department of Health Services
DMM	Demand Management Measures
DNL	day-night average noise level
DO	dissolved oxygen
DOC	California Department of Conservation
DPR	direct potable use
DPS	Distinct Population Segment (of endangered California steelhead)
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
E	the basic equation for estimating emissions from a commercial harbor craft engine: $EF \times F \times (1 + D \times (A/UL)) \times HP \times LF \times Hr$ Where: EF = Emission factor, F = Correction Factor, D = Deterioration Factor, A = Age of Engine when emissions are estimated, UL = Useful Life, HP = Horsepower, LF = Load Factor, HR = Annual operating hours of the engine
EC	electrical conductivity
EDP	Education Data Partnership
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EMA	Emergency Management Agency
EMFAC	The Emission Factors Model (CARB)
EPA	Environmental Protection Agency
ERP	Emergency Response Plans
ESA	Environmental Science Associates
ESB	engineered storage buffer
ESHA	environmentally sensitive habitat area
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	Fire Affected Rock
FAT	full advanced treatment

FE	federally endangered
FED	Functional Equivalent Document (AB 32 Scoping Plan)
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FMP	Fisheries Management Plan
FP	fully protected
FPA	Financial Planning Association (Ventura)
FPPA	Farmland Protection Policy Act
FT	federally threatened
FTA	Federal Transit Administration
GCTD	Gold Coast Transit District
GHG	greenhouse gas
GIS	Geographic Information System
GPCD	gallons per capita per day
GPD	gallons per day
GRRP	Groundwater Replenishment Reuse Project
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWh	gigawatt-hours
GWP	global warming potentials
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HDD	horizontal directional drilling
HFC	Hydrofluorocarbon(s)
HMBP	Hazardous Material Business Plan
HMMP	Habitat Monitoring and Management Program

HMTA	Hazardous Materials Transportation Act of 1975
HSC	California Health and Safety Code
HSWA	Hazardous and Solid Waste Amendments
HTB	Heal the Bay
HVAC	heating, ventilation, and air conditioning
HWY	highway
IBC	International Building Code
IFI	Important Farmlands Inventory
IHA	Incidental Harassment Authorization
IND	Industrial Service Supply
IOUs	Investor-Owned Utilities
IPCC	Intergovernmental Panel on Climate Change
IPR	indirect potable use
KBTU	1,000 British thermal units
KW	kilowatts
LACM	Natural History Museum of Los Angeles County
LAFCO	Local Agency Formation Commission
LARWQCB	Los Angeles Regional Water Quality Control Board
LCP	Local Coastal Program
L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).
LED	light emitting diode
L_{eq}	The equivalent sound level over a specified period of time, typically, 1 hour (L_{eq}). The L_{eq} may also be referred to as the average sound level.
LID	Low Impact Development
L_{max}	The maximum, instantaneous noise level experienced during a given period of time.

L _{min}	The minimum, instantaneous noise level experienced during a given period of time.
LNG	liquefied natural gas
LOMR	Letter of Map Revision
LOS	level of service
LPNF	Los Padres National Forest
LRA	Local Responsibility Area
LSCRS NMP	Lower Santa Clara River Salt and Nutrient Management Plan
LTS determination)	Less than Significant, no mitigation proposed (impact determination)
LTSM	Less than Significant impact with mitigation (impact determination)
L _x	The noise level exceeded a percentage of a specified time period. For instance, L50 and L90 represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.
MAP-21	Moving Ahead for Progress in the 21st Century Act
MBTA	Migratory Bird Treaty Act
MCA	Medieval Climatic Anomaly
MCL	maximum containment levels
MEPDV	maximum environmentally protective diversion volume
MF	microfiltration
MG	million gallons
MGD	million gallons a day
MISA	Marine Invasive Species Act
MLD	Most Likely Descendant
MLLW	mean lower low water levels
MLMA	Marine Life Management Act
MLPA	Marine Life Protection Act (1999)
MLW	mean low water
MMPA	Marine Mammal Protection Act (1972)
MND	Mitigated Negative Declaration

MPA	Marine Protected Area
MPD	Manufacturing Planned Development
MPO	Metropolitan Planning Organization
MPRSA	Marine Protection, Research, and Sanctuaries Act
MRP	Monitoring and Reporting Program
MRZ	California Mineral Land Classification System's Mineral Resource Zones
MSA	Magnuson-Stevens Act
MSFMP	California Market Squid Fisheries Management Plan
MT	million tons
MUN	any water designated as municipal or domestic supply in a Regional Water Board Basin Plan
MW	megawatts
MWD	Municipal Water District
MWh	megawatt-hours
NA	not available
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NAIP	National Agriculture Imagery Program
NCCP	Natural Community Conservation Plan
NCPWF	North City Pure Water Facility (City of San Diego)
NCRS	Natural Resources Conservation District
NDMA	Nitrosodimethylamine
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NFMP	California Nearshore Fisheries Management Plan
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NI	No Impact (impact determination)
NMFS	National Marine Fisheries Service
NO	nitric oxide

NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	notice of intent
NOP	Notice of Preparation
NOT	Notice of Termination
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Unit
O ₃	ozone
OEHHA Guidance	<i>Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments</i> (OEHHA 2015)
OEHHA	California Environmental Protection Agency Office of Environmental Health Hazard Assessment
OFD	Oxnard Fire Department
OHP	Office of Historic Preservation
OP	California Ocean Plan
OPA	California Ocean Plan Amendment
OPD	Oxnard Police Department
OSHA	Occupational Safety and Health Administration
OWTP	Oxnard Wastewater Treatment Plant
PBF	physical and biological features
PFC	Perfluorocarbon(s)
PFMC	Pacific Fishery Management Council
PG&E	Pacific Gas & Electric
PGD	gallons per capita per day
PHPD	Port Hueneme Police Department
PM	particulate matter

PM ₁₀	particulate matter with an aerodynamic diameter of 10 micrometers or less
PM _{2.5}	particulate matter with an aerodynamic diameter of 2.5 micrometers or less
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PRDs	permit registration documents
PROC	Industrial Process Supply
PSD	Prevention of Significant Deterioration
PTS	permanent threshold shift
PWA	Public Works Administration
RCNM	<i>Roadway Construction Noise Model User's Guide (RCNM User's Guide)</i>
RCRA	Resource Conservation and Recovery Act
RFS	Renewable Fuel Standard
RMP	Risk Management Plan
RMS velocity	root mean square velocity
RO	reverse osmosis
ROC	reactive organic compounds
ROG	reactive organic gases
ROWD	Report of Waste Discharge
RPD	Residential Planned Development
RPS	California's Renewables Portfolio Standards
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWC	recycled municipal wastewater contribution
RWQCB	Regional Water Quality Control Board
S&HC	California Street and Highway Code
SAR	Second Assessment Report (IPCC)
SB	Senate Bill
SBRA	San Buenaventura Research Associates

SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCAT	South Coast Area Transit, now the Gold Coast Transit District
SCB	Southern California Bight
SCCAB	South Central Coast Air Basin
SCCIC	South Central Coastal Information Center
SCCWRP	Southern California Coastal Water Research Project
SCE	Southern California Edison
SCR	Santa Clara River
SCRE	Santa Clara River Estuary
SDC	seismic design category
SDG&E	San Diego Gas & Electric
SDWA	Safe Drinking Water Act
SE	state endangered
SEL	sound exposure level
SFEI	San Francisco Estuary Institute
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLC	State Lands Commission
SLF	Sacred Lands File
SMCA	state marine conservation areas
SMMNRA	Santa Monica Mountains National Recreation Area
SMP	Salinity Management Pipeline (City of Calleguas)
SMR	state marine reserves
SNMP	Salt and Nutrient Management Plan
SO ₂	sulfur dioxide
SO ₃	sulfur trioxides
SOAR	Save Open Space and Agricultural Resources
SOAR	Save Open Space and Agricultural Resources

SO _x	sulfur oxides
SPL	sound pressure level
SR	State Route
SRA	State Responsibility Area
SRF	Clean Water State Revolving Fund
SRP	Scientific Review Panel
SRS	Scientific Resource Surveys, Inc.
SSC	(State) Species of Special Concern
ST	state threatened
STIP	California Statewide Transportation Improvement Plan
SU	Significant and Unavoidable Impact, even after implementation of mitigation (impact determination)
sVGP	Small Vessel General Permit
SVP	Society for Vertebrate Paleontology
SWCF	Saticoy Water Conditioning Facility
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWRO	seawater reverse osmosis
SZ	Scientific Zone
TAC	toxic air contaminants
TCDD RfD	2,3,7,8-tetrachlorodibenzo-p-dioxin Reference Dose
TCVGM	<i>Transportation and Construction Vibration Guidance Manual</i>
TDM	Transportation Demand Management
TDS	total dissolved solids
TEQ	toxic equivalency
TMA	Transportation Management Associations
TMDL	Total maximum daily loads
TOC	total organic carbon
TRT	technical review team
TSCA	Toxic Substances Control Act of 1976

UF	ultrafiltration
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
UTS	unarmored threespine stickleback
UV AOP	ultraviolet light/advanced oxidation process
UWCD	United Water Conservation District
UWMP	Urban Water Management Plan
VC	Vacant
VCAPCD	Ventura County Air Pollution Control District
VCAQMP	Ventura County Air Quality Management Plan
VCFD	Ventura County Fire Department
VCK	Wishtoyo Foundation Ventura Coastkeeper
VCOE	Ventura County Office of Education
VCOG	Ventura Council of Governments
VCSO	Ventura County Sheriff's Office
VCTC	Ventura County Transportation Commission
VFD	Ventura (City) Fire Department
VHFHSZ	Very High Fire Hazard Severity Zone
VISTA	Ventura Intercity Transit Authority
VMMV	Ventura marsh milkvetch
VMT	vehicle-miles of travel
VOC	volatile organic compounds
VPD	Ventura (City) Police Department
VUSD	Ventura Unified School District

VWRF	Ventura Water Reclamation Facility
WBMWD	West Basin Municipal Water District
WCF	Water Conditioning Facility
WCP	Water Conservation Program
WDR	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WMP	Waste Management Plan
WRF	Water Reclamation Facility
WSE(L)	water-surface elevation
WTP	water treatment plant
WWTP	wastewater treatment plant
ZID	zone of initial dilution