State of California

Arnold Schwarzenegger
Governor

Substitute Environmental Documents prepared under the California Environmental Quality Act (CEQA) Requirements of a Certified Regulatory Program for the Boron, Chloride, Sulfate, and TDS (Salts) Total Maximum Daily Loads for the Calleguas Creek Watershed

May 31, 2007

California Environmental Protection Agency

Linda S. Adams
Cal/EPA Secretary

California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This Substitute Environmental Document (SED) analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing a total maximum daily load (TMDL) for salts in the Calleguas Creek watershed. This SED is based on a proposed salts TMDL that will be considered by California Regional Water Quality Control Los Angeles Region (Los Angeles Water Board) and, if approved, implemented through an amendment to the Water Quality Control Plan Los Angeles Region (Basin Plan). The proposed salts TMDL is described in the Staff Report, Technical Report, Tentative Board Resolution and Tentative Basin Plan Amendment available on the Los Angeles Water Board website. This SED analyzes the environmental impacts from foreseeable methods of compliance with the salts TMDL and provides the public information regarding environmental impacts, mitigation, and alternatives in accordance with the California Environmental Quality Act (CEQA).

Water quality in Calleguas Creek is limited by salts, including chloride, boron, sulfate, and total dissolved solids, as documented in the State of California 303(d) list of impaired waterbodies. Salts in waterways causes significant water quality problems and impairs beneficial uses of Calleguas Creek including aquatic habitat, agricultural supply and groundwater recharge beneficial uses. Not only do salts impair surface water uses, they are well known to degrade groundwater resources.

Water imported into the Calleguas Creek watershed for municipal and agricultural uses is the largest source of salts to the watershed. Additional salt loading stems from self regenerating water softeners used to treat supply water. The imported salts are mobilized into Calleguas Creek through POTW discharges and groundwater exfiltration. This SED finds foreseeable methods to comply with the salts TMDL focus on pollution prevention and establishment of regional desalting facilities to treat groundwater, surface water, and publicly owned treatment works (POTW) effluent. The desalting facilities generate a waste brine that will be discharged to the ocean through an ocean outfall. These implementation methods have been the focus of a regional planning effort for a water quality and salts management plan for the past five years by stakeholders in the Calleguas Creek watershed. The focus of the Calleguas Regional Salinity Management Project and the TMDL is to attain water quality objectives for salts through construction of a regional infrastructure to achieve a salt balance wherein the load of salts exported from the watershed is equivalent to or exceeds the salt import.

Desalting is carried out through reverse osmosis facilities wherein groundwater is treated and discharged back to the aquifer, reused, or discharged into Calleguas Creek and its tributaries. The brine resulting from groundwater desalting will be exported from the watershed through a regional brine line and discharged to the Pacific Ocean through an ocean outfall.

The foreseeable methods of compliance entail construction and operation of an infrastructure of extraction wells, surface water diversions, pipelines, reverse osmosis facilities, reclaimed water distribution, brine export pipeline, and ocean outfall throughout the Calleguas Creek watershed. These facilities require planning and implementation which has been underway for a number of years. Construction activities on several

pipeline alignments have been completed and environmental review of the project has been completed for a key area and the ocean outfall.

The above projects have already been subject to extensive environmental review. Both Camrosa Water District and Calleguas Municipal Water District have certified program level EIRs that examine the foreseeable environmental impacts from constructing and operating a system to comply with the salts TMDL. The SED finds that environmental impacts from the salts TMDL are those impacts related to installation and operation of the groundwater desalting system and ocean outfall. The SED identifies mitigation methods for impacts with potentially significant effects and finds that those methods can mitigate potential significant impacts to levels that are less than significant.

This SED analyzes three Program Alternatives and three types of Implementation Alternatives that encompass actions within the jurisdiction of the Regional Board and implementing municipalities and agencies. A No Project Alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving the proposed alternative. The SED analyzes the potential environmental impacts in accordance with significance criteria widely accepted by municipalities and government agencies in the Calleguas Creek watershed for CEQA review. The TMDL does not specify types of projects, specific locations or mitigation measures for those projects. Project are specified, designed, constructed, operated and mitigated for by the NPDES permittees and nonpoint source dischargers. Consequently, this environmental analysis is structured in accordance to guidelines for a Program SED rather than a Project SED.

Municipalities and agencies that will implement specific projects and BMPs may use this SED to help with the selection and approval of project alternatives. The implementing municipality or agency will be the lead agency and have responsibility for environmental review of the projects they determine necessary to implement the salts TMDL.

Approval of projects (i.e., project alternatives or components of project alternatives) refers to the decision of either the implementing municipalities or agencies to select and carry out an alternative or a component of an alternative. (Section 2.2 of this SED summarizes the components that comprise the project alternatives analyzed in this SED). The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project-level components will be subject to additional environmental review, including review by cities and municipalities implementing salts TMDL projects.

As discussed in this SED, California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Methods of compliance and selection of specific BMPs and associated mitigation measures are the responsibility of the responsible agencies for implementing the salts TMDL.

This SED finds that to the extent that there are significant adverse effects on the environment due to the implementation of this TMDL, there are feasible alternatives and/or feasible mitigation measures that would substantially lessen any significant adverse impact. Furthermore, to the extent the alternatives, mitigation measures, or both are not deemed feasible by implementing agencies, the necessity of implementing the federally required salts TMDL to achieve water quality objectives and restore the

beneficial uses that are currently impaired by salts in the Calleguas Creek Watershed outweigh the unavoidable adverse environmental effects.

The regulatory requirements and the program objectives for the Calleguas Creek Watershed Salts TMDL are provided in Section 2 and Section 3 respectively. Section 4 discusses the program level alternatives for the Salts TMDL and presents implementation alternatives to achieve compliance with the final allocations. Areas of controversy and issues to be resolved are addressed in Section 5, while a detailed description of implementation alternatives is provided in Section 6. An in-depth analysis of each resource area is presented in Section 7. This SED also contains site specific environmental impacts (Section 8), other environmental considerations (Section 9) and the CEQA Checklist and Determination (Section 10). A list of references and appendices refer to and provide supporting documentation for this SED.

2. REGULATORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS OF THE TMDL

This section presents the regulatory requirements for assessing environmental impacts of a TMDL implemented through a Basin Plan Amendment at the Regional Board. This TMDL for salts in the Calleguas Creek Watershed is evaluated at a program level of detail under a *Certified Regulatory Program* and the information and analyses are presented in these *Substitute Environmental Documents* as discussed in this section.

2.1 EXEMPTION FROM CERTAIN CEQA REQUIREMENTS

The Secretary of Resources has certified the State and Regional Boards' basin planning process as exempt from certain requirements of the California Environmental Quality Act (CEQA), including preparation of an initial study, negative declaration, and environmental impact report (California Code of Regulations, Title 14, Section 15251(g)). As the proposed amendment to the Basin Plan is part of the basin planning process, the environmental information developed for and included with the amendment is considered a substitute for an initial study, negative declaration, and/or environmental impact report.

2.2 CALIFORNIA CODE OF REGULATIONS AND PUBLIC RESOURCES CODE REQUIREMENTS

While the "certified regulatory program" of the Regional Board is exempt from certain CEQA requirements, it is subject to the substantive requirements of California Code of Regulations, Title 23, Section 3777(a) which requires a written report that includes a description of the proposed activity, an alternatives analysis, and an identification of mitigation measures to minimize any significant adverse impacts. Section 3777(a) also requires the Regional Board to complete an environmental checklist as part of its substitute environmental documents. This checklist is provided in section 10 of this document.

In addition, the Regional Board must fulfill substantive obligations when adopting performance standards such as TMDLs, as described in Public Resources Code section 21159. Section 21159, which allows expedited environmental review for mandated projects, provides that an agency shall perform, at the time of the adoption of a rule or regulation requiring the installation of pollution control equipment, or a performance standard or treatment requirement, an Environmental Analysis of the reasonably foreseeable methods of compliance. The statute further requires that the environmental analysis at a minimum, include, all of the following:

(1) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.

(2) An analysis of reasonably foreseeable mitigation measures to lessen the adverse environmental impacts.

(3) An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation that would have less significant adverse impacts. (Pub. Resources Code, § 21159(a).)

Section 21159(c) requires that the Environmental Analysis take into account a reasonable range of:

(1) Environmental, economic, and technical factors,

(2) Population and geographic areas, and

(3) Specific sites.

A "reasonable range" does not require an examination of every site, but a reasonably representative sample of them.

2.3 PROGRAM AND PROJECT LEVEL ANALYSES

Public Resources Code § 21159(d) specifically states that the public agency is not required to conduct a "project level analysis." Rather, a project level analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.) Notably, ***the Regional Board is prohibited from specifying the manner of compliance with its regulations*** (Water Code § 13360), and accordingly, the ***actual*** environmental impacts will necessarily depend upon the compliance strategy selected by the local agencies and other permittees.

This Substitute Environmental Document identifies the reasonably foreseeable environmental impacts of the ***reasonably foreseeable*** methods of compliance (Pub. Res. Code, § 21159(a)(1).), based on information developed during the CEQA scoping process that is specified in California Public Resources Code section 21083.9 This analysis is a program-level (i.e., macroscopic) analysis. CEQA requires the Regional Board to conduct a program-level analysis of environmental impacts. (Pub. Res. Code, § 21159(d).) Similarly, the CEQA substitute documents do not engage in speculation or conjecture (Pub. Res. Code, § 21159(a).) When the programmatic CEQA scoping identifies a potential environmental impact, the accompanying analysis identifies reasonably foreseeable feasible mitigation measures. (Pub. Res. Code, § 21151(a)(2).)

2.4 ENVIRONMENTAL IMPACT ANALYSIS OF EXISTING PROJECTS

TMDL implementation is carried out by water agencies, municipalities, POTWs and non-point dischargers in the Calleguas Creek Watershed to desalt groundwater and wastewater. These projects focus on desalting groundwater underlying Calleguas Creek and discharging salts to the Pacific Ocean outside of Southern Ventura County. Water quality will be attained by reducing salts loads from groundwater exfiltration. However, through construction of a brine disposal line and ocean outfall, responsible agencies will have several options for implementing structural and nonstructural BMPs or treatments to attain a salt balance and attain water quality objectives. Proposed implementation actions for the Calleguas Creek watershed salts TMDL include the following capital projects:

- Pipeline to convey brine and wastewater
- Pipelines to convey reclaimed wastewater
- Ocean outfall for brine discharge
- Groundwater extraction and treatment reverse osmosis
- Water blending facilities
- Creek Diversion

Calleguas Municipal Water District is working with municipalities and other public water and wastewater agencies to construct the Calleguas Regional Salinity Management

Conveyance (RSMC). The RSMC (or brine line) consists of a pipeline system to collect treated wastewater, poor quality groundwater, and brine concentrations from groundwater treatment facilities in the CCW and convey the effluent to other areas for direct use or to an existing ocean outfall. The brine line forms the backbone of all the proposed projects by providing a mechanism for transporting salts down gradient and out of the watershed through direct discharges to the ocean. Construction of the $107 million project began in 2003 and is expected to continue through 2018. CMWD certified a program environmental impact report in September 2002. Design specifications for the first segment of Phase 1 have been approved, and construction began in February 2003. Phase 2 and 3 components will be designed and constructed incrementally in coordination with POTWs and other potential dischargers. The availability of the line for use will depend on the issuance of a NPDES permit for the discharge point.

Another program environmental impact report was certified by the Camrosa Water District for the Renewable Water Resource Management Program (RWRMP) for the Southern reaches of the Calleguas Creek Watershed in October 2006. The overall goal of the project is to provide an adaptive management plan and the facilities to improve the reliability of local water resources and reduce dependence on imported water. The implementation of the majority of the projects for the RWRMP is linked to the brine line schedule as many of the implementation actions require the brine line in order to be completed. Detail descriptions of the environmental impact analysis are provided in the final EIR for the RSMC and the RWRMP.

3. TMDL OVERVIEW AND PROGRAM OBJECTIVES

3.1 INTRODUCTION

The Total Maximum Daily Load (TMDL) for salts in the Calleguas Creek Watershed was designed to attain the water quality standards for salts in waterbodies of the watershed. The TMDL was prepared pursuant to state and federal requirements to preserve and enhance water quality in the Calleguas Creek Watershed.

The California Water Quality Control Plan, Los Angeles Region, also known as the *Basin Plan*, sets standards for surface waters and ground waters in the regions. These standards are comprised of designated beneficial uses for surface and ground water, and numeric and narrative objectives necessary to support beneficial uses and the state's antidegradation policy. Such standards are mandated for all waterbodies within the state under the Porter-Cologne Water Quality Act. In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan implements the Porter-Cologne Water Quality Act (also known as the "California Water Code") and serves as the State Water Quality Control Plan applicable to the Calleguas Creek watershed, also requiring water quality standards for all surface waters as required pursuant to the federal Clean Water Act (CWA).

Section 303(d) of the CWA requires that "Each State shall identify those waters within its boundaries for which the effluent limitations are not stringent enough to implement any water quality standard applicable to such waters." The CWA also requires states to establish a priority ranking for waters on the 303(d) list of impaired waters and establish TMDLs for such waters. The elements of a TMDL are described in 40 CFR 130.2 and

130.7 and Section 303(d) of the CWA, as well as in USEPA guidance (USEPA, 1991). A TMDL is defined as the "sum of the individual waste load allocations for point sources and load allocations for non-point sources and natural background" (40 CFR 130.2) such that the capacity of the water body to assimilate pollutant loadings (the loading capacity) is not exceeded. TMDLs are required to account for seasonal variations, and must include a margin of safety to address uncertainty in the analysis.

States must develop water quality management plans to implement TMDLs (40 CFR 130.6). The USEPA has oversight authority for the 303(d) program and is required to review and either approve or disapprove the TMDLs submitted by states. If the USEPA disapproves a TMDL submitted by a state, USEPA is required to establish a TMDL for that water body. The Regional Board identified over 700 water body-pollutant combinations in the Los Angeles Region where TMDLs are required (LARWQCB, 2003). A schedule for development of TMDLs in the Los Angeles Region was established in a consent decree (Heal the Bay Inc., et al. v. Browner C 98-4825 SBA) approved on March 22, 1999. The consent decree combined water body pollutant combinations in the Los Angeles Region into 92 TMDL analytical units. In accordance with the consent decree, the analyses performed for TMDL development are summarized herein and the TMDL addresses waterbodies with salts listings in analytical units 3 and 4.
Based on the consent decree schedule, a TMDL for chloride was adopted by USEPA in March 2002 to address analytical unit 3. According to the consent decree, the remaining salts in analytical unit 4 (TDS, sulfate, and boron) TMDLs must be approved or established by United States Environmental Protection Agency (USEPA) by March 2012. This TMDL will supersede the chloride TMDL for analytical unit 3 previously established by EPA.

In addition to the 303(d) listings for salts, a number of other regulatory activities have been ongoing in the watershed to address chloride surface water concentrations and objectives. During the drought that began in the 1980s and continued through the early 1990s, many dischargers in the Los Angeles Region had difficulty meeting the chloride discharge limits based on the Basin Plan objectives. Although, chloride levels were expected to subside after the drought, many water bodies continued to exceed the chloride objective.

In 1997, the Regional Board adopted Resolution 97-02 (the Chloride Policy) that revised the chloride water quality objectives (WQOs) upward to 190 mg/L for specified reaches of the Los Angeles River and 180 mg/L in the San Gabriel River. However, the chloride objectives were not revised in the Calleguas Creek and Santa Clara River watersheds due to concerns for agricultural beneficial uses, which are sensitive to chloride levels. Rather, the Regional Board extended the interim limits in these watersheds and directed staff to carefully determine the chloride WQO that would fully support the agricultural beneficial use. The Regional Board determined that the interim limits expired on March 29, 2002.

After the expiration of the interim limits on March 29, 2002, the dischargers in the watershed worked with the State Water Resources Control Board (State Board) to develop a stay that would extend the interim limits for up to three years to allow them to pursue "a watershed planning effort to support determinations of beneficial uses, water quality objectives, and development of total maximum daily loads as necessary" (WQO 2002-0017). The State Board approved the stay in October 2002. The stay requires that a work plan be developed to "re-evaluate water quality objectives for chloride in the

Calleguas Creek watershed and/or the beneficial uses currently associated with chloride objectives in the Calleguas Creek watershed (Work Plan)." The Regional Board must then ensure that the work plan provides "an adequate approach to determining appropriate water quality standards and implementation with respect to chloride in the Calleguas Creek watershed."

The Calleguas Creek Watershed Management Plan submitted a work plan to meet the requirements of the stay agreement in January 2003 (*Calleguas Creek Watershed Salts TMDL Work Plan*). The Regional Board approved the work plan in July 2003, thereby fulfilling the requirements of the stay agreement. Concurrently with the activity surrounding the Chloride Policy, a chloride TMDL was being developed. In December 2001, the Regional Board developed a draft chloride TMDL (Draft Chloride TMDL) for the CCW. Although the Regional Board never adopted the proposed TMDL, the USEPA used it as a basis for developing a chloride TMDL for the CCW to meet the consent decree requirements. The USEPA developed chloride TMDL (EPA Chloride TMDL) was adopted by USEPA on March 2, 2002.

When the discharge permits for three of the POTWs in the watershed were renewed in 2003, the interim limits were placed in the NPDES discharge permits in accordance with the stay agreement. The USEPA objected to the draft orders that were consistent with the stay. USEPA contended that the final orders must include effluent limitations for chloride consistent with waste load allocations (WLA) contained in the EPA Chloride TMDL. As a result, the Regional Board adopted the orders with new chloride effluent limitations and accompanying time schedule orders based upon the EPA Chloride TMDL.
In response, the dischargers appealed their permits to the State Board. Another stay agreement was adopted in October 2003 to address the concerns outlined in the appeal. This agreement stayed the final chloride effluent limitations and time schedule orders associated with the limitations for all of the appealed permits. The stay acknowledged that the Regional Board has approved a work plan and activities related to the work plan were in progress. In December 2003, the Regional Board adopted orders for the remaining two POTWs that included effluent limitations for chloride consistent with WLAs contained in the EPA Chloride TMDL. These permits were also appealed to the State Board and a similar stay of the final chloride effluent limitations was developed.

In addition to the federal and state regulations described above, the Regional Board enacted Resolution No. 97-10, *Support for Watershed Management in the Calleguas Creek Watershed* on April 7, 1997. Resolution 97-10 recognized watershed management as an innovative, cost-effective strategy for the protection of water quality. Resolution 97-10 also recognized that the Calleguas Creek Municipal Water District and the Publicly Owned Treatment Works (POTWs) in the Calleguas Creek watershed had worked cooperatively with the Regional Board to develop an integrated watershed-wide monitoring program. The Calleguas Watershed Management Plan has been active since 1996 in the development of a watershed management plan for the Calleguas Creek watershed and has proactively worked with the Regional Board and the USEPA to develop TMDLs in the watershed.

The Calleguas Creek Watershed Management Plan has been active since 1996. In 2001, the group began discussions with the Regional Board and USEPA to provide assistance in the development of the TMDLs for the watershed. In December 2002, the group developed TMDL work plans for most constituents on the 2002 303(d) list. The

Salts TMDL Work Plan, developed with input from the LARWQCB and USEPA, forms the basis of all of the work conducted to develop this TMDL. USEPA Region IX approved the Salts TMDL Work Plan in June, 2003. The purpose of the watershed group assisting with the development of the TMDLs was to incorporate local expertise and reach a broad group of stakeholders to develop implementation plans to resolve the water quality problems within the watershed. Stakeholders include representatives of cities, counties, water districts, sanitation districts, private property owners, agricultural organizations, and environmental groups with interests in the watershed. A high level of stakeholder involvement has occurred throughout the TMDL development process. There have been no interventions from outside groups, and much of the work has been performed or paid for by members of local government agencies and USEPA grant funding.

3.2 PROJECT DESCRIPTION, TMDL GOALS, AND WATER QUALITY OBJECTIVES

As further set forth herein, this project is to adopt a regulation that will guide Regional Board permitting, enforcement, and other actions that will require responsible parties to take appropriate measures to restore and maintain all applicable Water Quality Standards in the impaired reaches of the Calleguas Creek Watershed, and in so doing comply with the requirements of section 303(d) of the federal Clean Water Act.

The Water Quality Control Plan Los Angeles Region (Basin Plan) designates beneficial uses of waterbodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed amendment would incorporate into the Basin Plan a TMDL for salts in the Calleguas Creek Watershed.

Eleven out of fourteen reaches in the CCW are identified on the 2002 Clean Water Act Section 303(d) list of water-quality limited segments as impaired due to elevated levels of salts including Arroyo Simi (Reach 7), Arroyo Las Posas (Reach 6), Tributaries to Arroyo Simi (Reach 8), South Fork Conejo Creek (Reach 13), North Fork Conejo Creek (Reach 12), Conejo Creek Hill Canyon (Reach 10), Arroyo Santa Rosa (Reach 11), Conejo Creek Main Stem (Reach 9B), Camrosa Diversion (Reach 9A), Calleguas Creek Upper Main Stem (Reach 3), and Revolon Slough (Reach 4).

Salts primarily impact two beneficial uses: agriculture irrigation and groundwater recharge. In addition, chloride has the potential to impact aquatic life, there are secondary drinking water standards for some salts, and industrial processing can be impacted by high salts concentrations. The Regional Board's goal in incorporating the TMDL is to protect and restore the overall water quality in the Calleguas Creek watershed by controlling the loading of salts.

The Water Quality Objectives (WQOs) for chloride, boron, sulfate, and TDS, are 150, 1, 250, and 850 respectively for Calleguas Creek Watershed (above Potrero Road) as defined in the current Los Angeles Regional Board Basin Plan .[1] (Table 3-8, Water Quality Objectives for Selected Constituents in Inland Surface Water). The targets are applied as an instantaneous maximum, to protect designated AGR and GWR uses in the watershed. Application of the WQO as an instantaneous maximum is consistent with

[1] Los Angeles Regional Board Basin Plan 1994.

long standing Regional Board practice. Water quality objectives for chloride, boron, sulfate, and TDS were not established for the Mugu Lagoon and the Calleguas Creek Estuary, due to tidal influences. Regional Board notes that there were chloride interim limits of 160 mg/L for Arroyo Simi and tributaries-upstream of Madera Road and 190 mg/L for Arroyo Simi- downstream of Madera Road, Arroyo Las Posas, Calleguas Creek and tributaries-between Potrero Road and Arroyo Las Posas and tributaries in the Calleguas Creek from 1997 to March 29, 2002 in accordance with the State of California's Chloride Policy.

4. DESCRIPTION OF ALTERNATIVES

These substitute environmental documents analyze two Program Alternatives that encompass actions within the jurisdiction of the Regional Board and implementing municipalities and agencies. The program alternatives include the salts TMDL as it is proposed for Regional Board adoption; a salts TMDL established by the US EPA, and a No Program Alternative in which a salts TMDL is not implemented. While unlawful, a No Program Alternative is also analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving a proposed alternative. The specifics of the many projects which would make up a program alternative are discussed in detail in Section 6 and include structural and non structural Best Management Practices (BMPs) that are reasonably foreseeable to be implemented under the salts TMDL program alternatives.

The components assessed at a program level generally are program elements that would be implemented as part of the salts TMDL, but these elements do not have specific locations or design details identified. The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project-level components will be subject to additional future environmental review, including review by cities and municipalities implementing salts TMDL projects.

4.1 PROGRAM ALTERNATIVES

4.1.1 Alternative1 - Regional Board TMDL

This program alternative is based on the TMDL that is presently proposed for Regional Board consideration. Wastewater treatment plants (POTWs), permitted stormwater dischargers, other NPDES dischargers, and irrigated agricultural discharges are assigned allocations for this TMDL. Mass-based wasteload allocations are assigned for these dischargers to allow tracking and coordination with achieving the salt balance in the watershed. POTW allocations were calculated as the water quality objective multiplied by the flow of the POTW. An adjustment factor was added to the allocations to ensure background loads that are not exported from the watershed are subtracted from the POTW loadings to meet the loading capacity and to allow for increased exports from the watershed to compensate for increased POTW loadings when water supply loads to the POTW increase. Permitted stormwater dischargers and irrigated agricultural discharges are assigned a dry weather wasteload and load allocation equal to the average dry weather critical condition flow rate multiplied by the numeric target for each constituent. WLAs apply to POTWs, permitted stormwater dischargers, and irrigated agricultural discharges during dry weather when the flows in the receiving water are below the 86th percentile flow. During wet weather, the loading capacity of the stream is significantly increased by stormwater flows with very low salt concentrations. Any discharges from the POTWs, permitted stormwater dischargers, and irrigated agricultural discharges during wet weather would be assimilated by these large storm flows and would not cause exceedances of water quality objectives.

The proposed TMDL would require the POTWs, permitted stormwater dischargers, other NPDES dischargers, and irrigated agricultural dischargers to achieve their allocations in prescribed percentages of the watershed, and final allocations in the entire watershed

within 15 years. The goal of the TMDL implementation plan is to achieve a salts balance within the Calleguas Creek Watershed (CCW), attain water quality objective and protect salt-sensitive beneficial uses. Through achieving a salts balance, water quality is expected to improve and allow achievement of water quality standards. The implementation plan for the Salts TMDL includes watershed specific implementation actions that will be enacted throughout the watershed and subwatershed specific implementation actions. Specific projects include the Calleguas Regional Salinity Management Conveyance (RSMC), water reservation program, and water softener reduction program. Subwatershed specific implementation actions include the Renewable Water Resource Management Programs (RWRMP) for Northern and Southern Reaches of the Calleguas Creek Watershed. RWRMP includes expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers that currently contain water with high salts concentrations, development of existing and new water blending facilities, relocation of the wastewater discharge point for the Camarillo WRP, Camrosa WRF, and in a later phase the Hill Canyon WTP to downstream of Potrero Road Bridge on the Calleguas Creek, installation of wells to pump groundwater and discharge into the stream system, and construction of shallow dewatering wells in the lower watershed where salts may accumulate.

Calleguas Municipal Water District, and Camrosa Water District had certified program environmental impact reports for the RSMC and the RWRMP for Southern Reaches of the Calleguas Creek Watershed in September 2002 and October 2006 respectively. Construction of the RSMC, a $107 million project began in 2003 and is expected to continue through 2018. The RWRMPs for Northern and Southern Reaches of the Calleguas Creek Watershed is an integrated set of facilities to reduce reliance on imported water supplies while improving water quality through the managed transport of salts out of the watershed. The RWRMP will be implemented as a four-phase project with information from each phase being used to inform the implementation of the next phase. The project will be adjusted as necessary based on information gained during each implementation phase. The approximate schedule for completion of the RWRMPs will be 15 years after the effective date of the TMDL.

4.1.2 Alternative 2 – US EPA TMDL

This program alternative is based on a TMDL that could be established by the United States Environmental Protection Agency. If the Regional Board fails to adopt a Salts TMDL for Calleguas Creek Watershed, the USEPA, compelled by consent decree, will adopt a Salts TMDL. Because the technical analysis will be very similar to the Regional Board analysis and because the same laws and regulations apply, it is assumed that the technical portions and WLAs of this TMDL Program Alternative will be essentially the same as Program Alternative 1. However, because such a TMDL is not implemented through a Basin Plan amendment, the WLAs will be implemented through NPDES permit limits as the permits are renewed without consideration of a compliance schedule. Because NPDES permits are renewed every five years, all responsible parties could be required to meet full compliance immediately following the TMDL adoption by USEPA, or within 5 years.

4.1.3 Alternative 3 – No Program Alternative

This program alternative assumes that neither the EPA nor Regional Board implements a salts TMDL. The No Project TMDL is contrary to federal and state law and a Court

Ordered Consent Decree between citizen plaintiffs and the US Environmental Protection Agency. Therefore, the failure to implement a salts TMDL is unlawful and unfeasible.

No Program would *not* restore beneficial uses to the Calleguas Creek Watershed. Either TMDL Program Alternative will restore beneficial uses in the Calleguas Creek watershed and attain water quality standards by reducing salts loading and increasing salts export out of the watershed. As such, either salts TMDL program alternative 1 or 2 represents a benefit to the environment and the No TMDL Program Alternative represents a continued salt impairment of the environment.

4.1.4 Recommended Program Alternative

This environmental analysis finds that Program Alternative 1 is the most environmentally advantageous alternative.

Alternative 3 is not a feasible alternative and, while it avoids impacts due to required implementation actions, it allows the salts impairments of the Calleguas Creek Watershed to continue. Both program alternatives 1 and 2 will comply with law and consent decree and remove the salts impairments from the Calleguas Creek Watershed. The key difference between program alternative 1 and 2 is the establishment of the Regional Board TMDL Basin Plan Amendment in alternative 1 which will allow an implementation schedule. While the same WLAs will need to be met and the same technological choices will be available by both alternatives, alternative 1 will allow a measured implementation, resulting in full compliance at 15 years. Alternative 2, in contrast, will require compliance at the time of permit renewal, in all permit cases, in less than 5 years. The environmental impacts due to alternative 2 may be of greater severity as the intensity of implementation actions will be greater to comply with the shorter time frame. The longer schedule of alternative 1, allows for prioritization and planning, more thoroughly mitigated impacts, more appropriately designed, sited and sized structural devices and, therefore, less environmental impact, in general. In addition, prioritization and planning will likely result in more efficient use of funds and lower overall costs.

4.2 PROJECT ALTERNATIVES

The program alternatives above present many alternatives and options and do not require any specific projects to achieve compliance. Rather, a project level analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.). Notably, the Regional Board is prohibited from specifying the manner of compliance with its regulations (Water Code § 13360), and accordingly, the actual environmental impacts will necessarily depend upon the compliance strategy selected by the local agencies and other permittees.

Although the Regional Board does not mandate the manner of compliance, foreseeable environmental impacts from methods of compliance are well known by responsible parties. Calleguas Municipal Water District is working with other public water and wastewater agencies to construct the Calleguas Regional Salinity Management Conveyance (RSMC), which is designed to help manage high salinity water use and disposal. The RSMC (or brine line) consists of a pipeline system to collect treated wastewater, poor quality groundwater, and brine concentrations from groundwater treatment facilities in the CCW and convey the effluent to other areas for direct use or to an existing ocean outfall. Calleguas MWD had certified a program environmental impact

report for the RSMC in September 2002. The Renewable Water Resource Management Plan (RWRMP) for Northern and Southern Reaches of the Calleguas Creek Watershed are also constructed to implement the TMDL. And are integrated set of facilities to reduce reliance on imported water supplies while improving water quality through the managed transport of salts out of the watershed. The Camrosa Water District Board of Directors had certified the final EIR for the Renewable Water Resource Management Program for Southern Reaches of Calleguas Creek Watershed at its regular Board meeting of October 26, 2006. Additional actions to be developed in the Calleguas Creek watershed to ensure achievement of water quality standards, protection of beneficial uses, and the achievement of a salt balance, include additional Reverse Osmosis (R.O.) of POTW effluent, interception and R.O. of groundwater from basins in upper groundwater basins, and diversion of storm water to aquifers and treatment facilities.

5. AREAS OF CONTROVERSY

During the development of the TMDL, Regional Board staff worked with US EPA, the Calleguas Creek Watershed Management Plan (CCWMP) and staff from Larry Walker Associates (LWA) on a frequent and regular basis. Outreach and stakeholder comments were solicited through the CCWMP structure, which included monthly water quality/water resources subcommittee meetings, steering committee meetings, and several subcommittee meetings responsible for various aspects of watershed management. These meetings were open to the public; agendas and meeting minutes were also published on the CCWMP website: www.calleguascreek.org. In addition to the monthly CCWMP meetings, Regional Board staff, USEPA staff and CCWMP representatives met on a monthly basis to discuss TMDL issues. These meetings were facilitated and noted by staff of the CCWMP, and several of these meetings were attended by representatives of the Calleguas Creek Watershed including POTWs, municipalities, water purveyors, groundwater management agencies, and agricultural and environmental groups. To date, no controversy has been communicated to the Regional Board.

6. DESCRIPTION OF IMPLEMENTATION ALTERNATIVES

This Section of the SED begins with a description of activities that could be conducted to achieve a salts balance and water quality objectives in the watershed. The implementation plan has been developed as a phased plan to allow for a review of implemented actions to assess the impacts on the salt balance and water quality. The specific actions taken to achieve the salt balance may vary to some degree from the elements presented here based on this evaluation and future analyses of the most cost effective and beneficial mechanisms for achieving the salt balance. To the extent possible, all ideas being considered as mechanisms for implementing the TMDL have been included in the plan.

The Regional Board is prohibited from specifying the manner of compliance with its regulations (Water Code § 13360), and accordingly, the actual compliance strategies will be selected by the local agencies and other permittees. Although the Regional Board does not mandate the manner of compliance, foreseeable methods of compliance proposed by responsible parties are presented below.

The project-level components will be subject to additional future environmental review. A project level environmental analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.).

6.1 CALLEGUAS REGIONAL SALINITY MANAGEMENT CONVEYANCE

Calleguas Regional Salinity Management Conveyance (RSMC), which is designed to help manage high salinity water use and disposal. The RSMC consists of a pipeline system to collect treated wastewater, poor quality groundwater, and brine concentrations from groundwater treatment facilities in the CCW and convey the effluent to other areas

for direct use or to an existing ocean outfall. The brine line forms the backbone of all the proposed projects by providing a mechanism for transporting salts downgradient and out of the watershed through direct discharges to the ocean.

The project is divided into three phases. Phase 1 is comprised of the pipeline from the Camrosa Water District Wastewater Treatment Plant to an existing ocean outfall in the City of Oxnard. The remaining portions of the pipeline system extend north and east from the Camrosa plant to the City of Simi Valley. Phase 2 segments will extend the pipeline to the City of Moorpark and Phase 3 will reach the City of Simi Valley

6.1.1 Description

The RSMC consists of a pipeline system to transport wastewater and brine concentrate to an existing outfall for ocean disposal. Over time, the proposed project would result in a net reduction in the salinity of surface water and groundwater within the Calleguas Creek watershed. Wastewater is defined as tertiary-treated municipal wastewater, and brine is defined as the byproduct of reverse osmosis treatment (or equivalent technology) of groundwater or wastewater. Environmental documentation and compliance with CEQA and NEPA for new water treatment facilities that may utilize the pipeline system for conveyance of wastewater or brine streams would be the responsibility of the individual facility operators.

The locations of potential wastewater and/or brine input sources to the pipeline system include the following:

- Simi Valley Water Quality Control Plant;
- Moorpark Wastewater Treatment Plant;
- Camarillo Sanitary District Water Reclamation Plant;
- Camrosa Water Reclamation Facility;
- Groundwater wells located in Simi Valley and unincorporated portions of Ventura County near Moorpark and Camarillo; and
- Industrial operations located in proximity to the pipeline alignment.

The alignment of the proposed pipeline system lies almost entirely within the Calleguas Creek watershed, and extends approximately 32 miles from its upstream end in the City of Simi Valley to its downstream terminus near Ormond Beach in the City of Oxnard. The pipeline system passes through the cities of Simi Valley, Moorpark, Camarillo and Oxnard, and portions of unincorporated Ventura County.

6.1.2 Status and Schedule

Construction of the $107 million project began in 2003 and is expected to continue through 2018. Calleguas MWD certified a program environmental impact report in September 2002. Design specifications for the first segment of Phase 1 have been approved, and construction began in February 2003. Phase 2 and 3 components will be designed and constructed incrementally in coordination with POTWs and other potential dischargers

Table 6.1-1 Schedule for RSMC

Element	Schedule [a]
Phase 1 Pipeline and Outfall	2010
Phase 2 Pipeline	2014
Phase 3 Pipeline	2018

6.2 RENEWABLE WATER RESOURCE MANAGEMENT PROGRAM FOR SOUTHERN REACHES OF CALLEGUAS CREEK WATERSHED

6.2.1 Description

The Renewable Water Resource Management Program (RWRMP) for Southern Reaches of Calleguas Creek Watershed is an integrated set of facilities to reduce reliance on imported water supplies while improving water quality through the managed transport of salts out of the watershed. There are three major elements to the project: water resource reclamation, salts management, and adaptive management. While either water resource reclamation or salts management could be optimized without reference to the other, this project seeks to increase water resources while moving toward a net daily salts balance.

The overall goal of the project is to provide an adaptive management plan and the facilities to improve the reliability of local water resources and reduce dependence on imported water. Objectives of the project include:

- Recycle and reuse wastewater to the greatest extent possible;
- Reclaim abandoned unconfined groundwater resources;
- Provide a reliable, high-quality, water supply to support the existing environmental value of the riparian corridor;
- Increase agricultural water quality options to promote agricultural sustainability;
- Achieve a salts balance within each sub-watershed;
- Reduce the salt load to surface waters; and
- Manage recycled and reclamation projects in a manner that achieves and maintains a salt balance.

The RWRMP will be implemented as a four-phase project with information from each phase being used to inform the implementation of the next phase. The project will be adjusted as necessary based on information gained during each implementation phase. Phase 1 of the RWRMP includes elements to reduce the amount of salts imported into the watershed and transport salts downgradient through the Conejo Creek/Calleguas Creek reaches.

Phase 1 includes the following elements:

1. Expansion of the recycled water transmission and distribution system to allow the transport and use of more recycled water and to facilitate moving salts downgradient.

2. Treatment of unconfined aquifers in the Pleasant Valley Basin near Channel Islands University (CSUCI) that currently contain water with high salts concentrations. The treated water will be used to supplement Camrosa's potable water deliveries and will therefore reduce the amount of salts imported into the watershed. Additionally, the brine from the treatment process will be discharged to the RSMC and moved out of the watershed to the ocean.
3. Development of existing and new water blending facilities to allow the provision of water at the quality requested by agriculture to protect the beneficial use.
4. Relocation of the wastewater discharge point for the Camarillo WRP, Camrosa WRF, and in a later phase the Hill Canyon WTP to downstream of Potrero Road Bridge on the Calleguas Creek. The combined wastewaters would be discharged to a point downstream of the Potrero Road Bridge when there is surplus wastewater in the water recycling system. This discharge location would also be used when the Calleguas MWD brine disposal system may be unable to receive such waters because of temporary operational interruptions. The relocation facilitates moves salts downgradient and out of the watershed by discharging them to a reach that is not impaired by salts and directly discharges to the lagoon.
5. Install pumping facilities and pipelines to connect Camarillo WRP to the Camrosa recycled water system and discontinuation of direct discharge to the stream by Camarillo WRP. This facility will reduce the amount of salts imported into the watershed through increased use of reclaimed water.

Phase 2 includes the following elements:

1. Treatment of water produced from the Santa Rosa Basin to reduce the salt concentrations. The treated water will be used to supplement Camrosa's potable water deliveries and will therefore reduce the amount of salts imported into the watershed. Additionally, the brine from the treatment process will be discharged to the RSMC and moved out of the watershed to the ocean.
2. If needed, replenishment water will be released in the City of Thousand Oaks to identify the discharge locations and volumes needed to maintain in-stream beneficial uses after Hill Canyon WTP effluent discharges terminate in Phase 3. Replenishment water will consist of imported water and/or local shallow groundwater. This element ensures protection of beneficial uses if the Hill Canyon WTP effluent discharge is terminated.

Phase 3 of the RWRMP will consist of implementation of one of the following options:

1. Diversion of the North and South Forks of Arroyo Conejo at the Hill Canyon WTP to the brine line.
2. Termination of the discharge of effluent from the Hill Canyon WTP into Arroyo Conejo and introduction of the effluent directly into the Camrosa recycled/non-potable water distribution system for agricultural irrigation purposes.

Phase 4 includes the following elements:

1. Installation of wells to pump groundwater from the Conejo Valley Basin and discharge into the stream system in coordination with replenishment releases to assure compliance with surface water quality standards. Use of groundwater would reduce the amount of imported water otherwise needed for replenishment uses.

Construction of shallow dewatering wells in the lower watershed where salts may accumulate. The wells will be operated to 1) Blend with other waters for irrigation uses, 2) discharged to the RSMC, or 3) treated for use and the brine stream discharged to the RSMC. Disposal of these waters on an as needed basis would prevent continued salt accumulation and excess salt loading to the surface water system.

6.2.2 Status and Schedule

Camrosa Water District had certified program environmental impact reports for the RWRMP for Southern Reaches of the Calleguas Creek Watershed in October 2006. The current schedule for completion of Phases 1 through 4 is shown in the following table. The dates shown are approximate and are the number of years after the effective date of the TMDL.

Table 6.2-1. Schedule for RWRMP

Element	Schedule
Phase 1	3 years
Phase 2	6 years
Phase 3	10 years
Phase 4	15 years

6.3 RENEWABLE WATER RESOURCE MANAGEMENT PROGRAM FOR NORTHERN REACHES OF CALLEGUAS CREEK WATERSHED

6.3.1 Description

The implementation plan for the Northern Reaches of the Calleguas Creek watershed includes many of the same elements as the Southern Reaches RWRMP. The Northern Reach Renewable Water Management Plan (NRRWMP) will reduce the amount of salts imported into the watershed, move salts downgradient and out of the watershed, provide for protection of beneficial uses and reduce the amount of salt added to the water. The plan will be composed of three phases as described below.

Phase 1 of the NRRWMP consists of the following elements:

1. Blending of imported State Project Water with poorer quality groundwater from the shallow South Las Posas Basin aquifer to obtain water of sufficient quality for agricultural use. Higher volumes of water from the South Las Posas basin will be pumped and blended with imported water. The higher pumping rates will remove the poorer quality water and allow recharge by higher quality surface water into the basin. As more water is pumped from the shallow South Las Posas Basin aquifer, pumping from the lower Las Posas Basin, which has higher quality water will be reduced. The project will also serve to improve the quality of the water in the shallow portions of the South Las Posas Basin and protect the beneficial use by ensuring adequate water quality is available for irrigation of sensitive crops.
2. Water conservation and water softener reduction elements will also be implemented during this phase as discussed under general activities above.

Phase 2 of the NRRWMP consists of the following elements:

1. Construction of a groundwater desalter facility near Moorpark to pump and treat poor quality groundwater in the South Las Posas Basin. The pumping and treatment of poor quality groundwater will supplement imported water supplies and reduce the groundwater levels in the shallow groundwater. By lowering groundwater levels, higher quality storm water flows can recharge the groundwater basin and improve the quality in the basin. Brine from the treatment will be transported out of the watershed through the RSMC.
2. Construction of a groundwater desalter facility in Camarillo near the intersection of Lewis and Upland Road. The pumping and treatment of poor quality groundwater will supplement imported water supplies for the City of Camarillo and transport salts out of the watershed in the brine. During phase 2, groundwater from two existing wells will be treated. Brine from the treatment will be transported out of the watershed through the RSMC. Under Phase 3, an additional well will be added to the treatment process to double the volume of water produced.

During Phase 3 of the NRRWMP, additional water will be treated at the Camarillo desalter (as described above). Additionally, the following activity will be conducted:

- Management of the Simi Basin dewatering wells would be altered to either 1) blend with other waters for irrigation uses downstream, 2) discharge directly to the RSMC brine disposal system, or 3) be treated for use and the brine stream discharged to the RSMC. Inclusion of options 2 or 3 requires the extension of the RSMC to Simi Valley that could be costly and will is scheduled to occur by 2018. Additional pumping of these wells may be implemented to provide a larger local water supply or to discharge a larger mass of salts from the region.

During Phase 4, additional activities will be explored and implemented based on the results of Phases 1 and 2. If additional activities are needed to meet the salt balance, the following items will be considered:

- Additional phases of the Moorpark desalter to treat more unconfined groundwater.
- Building another desalter in the Somis area to treat unconfined groundwater.
- Pumping unconfined groundwater and discharging directly to the brine line (could be implemented during any phase of the project and as a control measure during periods of high imported water salts concentrations).
- Construction of smaller/individual desalters by agriculture to treat local groundwater supplies for irrigation.
- Additional production and management of reclaimed water or unconfined groundwater.

6.3.2 Status and Schedule

The current schedule for completion of Phases 1 through 4 is shown in the following table.

Table 6.3-1. Schedule for NRRWMP

Element	Schedule
Phase 1	3 years
Phase 2	7 years
Phase 3	10 years
Phase 4	15 years

6.4 WATER CONSERVATION

6.4.1 Description

New programs and enhancements to existing programs for water conservation in both urban landscape and agricultural irrigation will be developed to contribute to reducing the import of salts into the CCW. The programs will target reductions in imported water and groundwater pumping from deep aquifers to reduce salt loading to the watershed. Implementation actions required in other TMDLs that have been adopted in the CCW will likely result in more significant water conservation requirements for irrigated agriculture. Additional water conservation may be necessary to achieve water quality objectives in the CCW if site-specific objectives are not adopted.

6.4.2 Status and Schedule

Water conservation programs already exist throughout the watershed. This implementation action will expand on the existing programs to provide additional outreach and possibly incentives and/or disincentives to increase water conservation. Implementation of additional water conservation actions will begin on the effective date of the TMDL and the minimum goals shown above are expected to be achieved within 3 years of the effective date of the TMDL.

6.5 WATER SOFTENER

6.5.1 Description

Although the majority of salts are brought into the watershed through the imported water supply and deep groundwater pumping, salts are added to water during human use of the water. Many chemicals, cleaning products, and fertilizers can add salts to water, but the additions are fairly minor. Water softeners can add significant amounts of salts to the water during household use. Water softeners are estimated to contribute 40% of the chloride load and 15% of the TDS load in POTW discharges. Overall, water softeners are estimated to account for about 9% of the chloride load and 2% of the TDS load to the watershed. In the CCW, the water supply is generally of pretty high quality and water softeners are not in universal use throughout the watershed. However, in some areas where the water supply is of poorer quality water softener contributions may be more significant.

Although water softeners are not the major source of salts to the CCW, targeted programs to reduce contributions from this source will reduce the input of salts to the CCW. Programs will also be implemented to provide incentives and/or disincentives to

reduce the use of self-regenerative water softeners in the watershed with a goal of reducing the overall load to the sewer system from softeners by 10 percent in the Southern Reaches and 25 percent in the Northern Reaches.

6.5.2 Status and Schedule

The water softener programs will be coordinated with existing public outreach and education programs in the watershed. Public outreach will be the first step in the program followed by incentives and/or disincentives as necessary to achieve the goals of the implementation plan. Additionally more information on the locations of water softeners may need to be gathered to allow targeted efforts to remove water softeners. Initial implementation of the program to identify appropriate mechanisms for reducing water softener loadings will begin after the effective date of the TMDL. The minimum goals listed above are expected to be achieved within 3 years of the effective date of the TMDL.

If any ordinances to ban prospective installation of water softeners are necessary to achieve the goals of the implementation plan. Additional time may be necessary to develop the information required to implement the ordinance.

6.6 Best Management Practice for Irrigated Agriculture

Under the Conditional Waiver of Discharges from Irrigated Lands and as a result of other adopted TMDLs in the CCW, best management practices (BMPs) may be required that will also reduce the discharge of salts to receiving waters in the CCW. BMP implementation under these programs will also consider the reductions necessary to meet the load allocations for agriculture and the salt balance.
Additionally, agricultural users may install smaller desalting facilities or individual wellhead treatment throughout the watershed to contribute to the salt balance and achieving water quality objectives.

7. SETTING, IMPACTS, AND MITIGATION

7.1 INTRODUCTION

This section presents the environmental setting, impacts, and mitigation, where applicable, for the proposed implementation alternatives evaluated in this draft Substitute Environmental Document (SED). The implementation alternatives for achieving compliance with the Calleguas Creek Watershed Salts TMDL are described in detail in Section 6 of this document and again in the TMDL Staff Report and Technical Report. Each of these implementation alternatives have been independently evaluated in this draft SED. The environmental setting for the Calleguas Creek Watershed is discussed prior to the analysis of resource area, which includes the potential negative environmental impacts of the Implementation Alternatives (see Section 6 for a detailed description of the TMDL Implementation Alternatives). The following resource areas are included in this section, each of which includes a description of potential impacts, and mitigations.

Section 7.2 Aesthetics
Section 7.3 Agricultural Resources
Section 7.4 Air Quality
Section 7.5 Biological Resources
Section 7.6 Coastal Resources
Section 7.7 Cultural Resources
Section 7.8 Geology and Soils
Section 7.9 Hazards and Hazardous Materials and Human Health
Section 7.10 Hydrology and Water Quality
Section 7.11 Land Use
Section 7.12 Noise
Section 7.13 Population and Housing
Section 7.14 Public Services
Section 7.15 Recreation
Section 7.16 Transportation
Section 7.17 Utilities

This information is used to support the environmental checklist provided in Section 10 of this document.

7.1.1 Approach to Environmental Setting and Impact Analysis

Any potential environmental impacts associated with the Calleguas Creek Watershed Salts TMDL depend upon the specific compliance projects selected by the responsible jurisdictions, most of whom are public agencies subject to their own CEQA obligations. (See Pub. Res. Code § 21159.2.) This CEQA substitute document identifies broad mitigation approaches that could be considered at the program level. Consistent with CEQA, the substitute document does not engage in speculation or conjecture, but rather considers the reasonably foreseeable environmental impacts of the foreseeable methods of compliance, the reasonably foreseeable feasible mitigation measures, and the reasonably foreseeable alternative means of compliance, which would avoid, eliminate, or reduce the identified impacts.

Within each of the sections listed above, this draft SED evaluates the impacts of each implementation alternative relative to the subject resource area. The physical scope of the environmental setting and the analysis in this EIR is the Calleguas Creek Watershed.

The implementation alternatives evaluated in this draft SED are evaluated at a program level for impacts for each resource area. An assumption is made that a more detailed project-level analysis will be conducted by all responsible agencies and jurisdictions once their mode of achieving compliance with the salts TMDL has been determined. The analysis in this draft SED assumes that, project proponents will design, install, and maintain implementation measures following all applicable laws, regulations, ordinances, and formally adopted municipal and/or agency codes, standards, and practices. Several handbooks are available and currently used by municipal agencies that provide guidance for the selection and implementation of BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005).

7.1.2 Program Level versus Project-Level Analysis

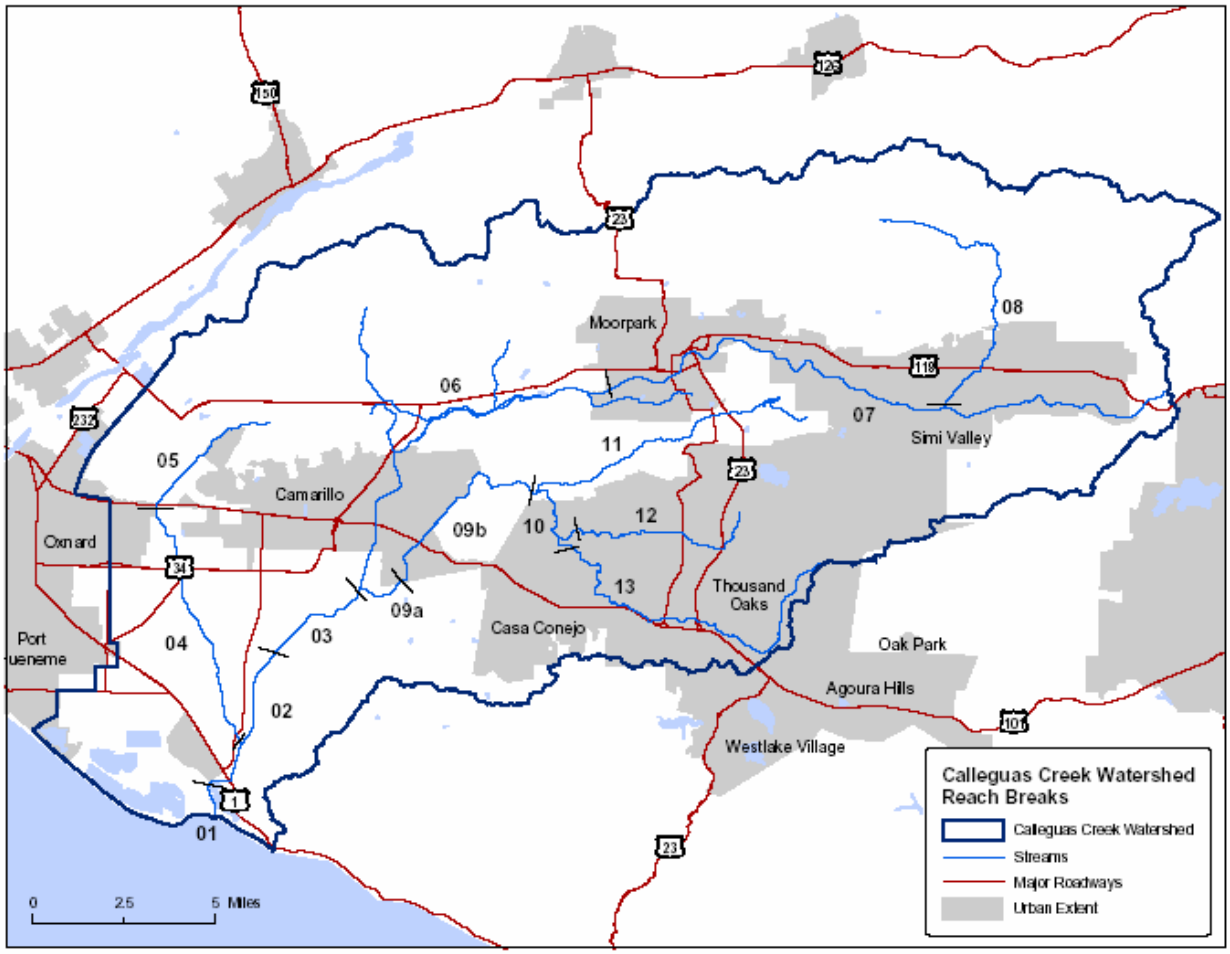
As previously discussed, the Regional Board is the lead agency for the TMDL program, while the responsible agencies are the lead agencies for any and all projects implemented, within their jurisdiction, to comply with the program. The Regional Board does not specify the actual means of compliance by which responsible agencies choose to comply with the TMDL. Therefore, the implementation alternatives are mostly evaluated at a program level in this draft SED. The alternatives assessed at a program level generally are projects that would be implemented as part of TMDL compliance, but these projects do not necessarily have specific locations or design details identified. However, in the instances where information is available on site-specific impacts, a more in-depth level of analysis is provided. The project-level environmental impact analyses, to be conducted by the responsible agencies, will be based on specific locations within the watershed.

7.1.3 Environmental Setting (15125)

Calleguas Creek and its tributaries are located in southeast Ventura County and a small portion of western Los Angeles County. Calleguas Creek drains an area of approximately 343 square miles from the Santa Susana Pass in the east to Mugu Lagoon in the southwest. The main surface water system drains from the mountains in the northeast part of the watershed toward the southwest where it flows through the Oxnard Plain before emptying into the Pacific Ocean through Mugu Lagoon. The watershed, which is elongated along an east-west axis, is about thirty miles long and fourteen miles wide. The Santa Susana Mountains, South Mountain, and Oak Ridge form the northern boundary of the watershed; the southern boundary is formed by the Simi Hills and Santa Monica Mountains.
Land uses in the CCW include agriculture, high and low density residential, commercial, industrial, open space and a Naval Air Base located adjacent to Mugu Lagoon. The watershed includes the cities of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Most of the agriculture is located in the middle and lower watershed with the major urban areas (Thousand Oaks and Simi Valley) located in the upper watershed. The current land use in the watershed is approximately 26% agriculture, 24% urban, and 50% open space. Patches of high quality riparian habitat are present along the length of Calleguas Creek and its tributaries.
Three major sub watersheds characterize the watershed: the Arroyo Simi/Las Posas in the north, Conejo Creek in the south and Revolon Slough in the west. Additionally, several minor agricultural drains in the Oxnard plain also drain the lower watershed. The following

sections describe the sub watersheds in more detail. Figure 1 depicts Calleguas Creek with reach names and designations used in this report.

Figure 7.1-1. Waterbodies in the Calleguas Creek Watershed.



7.1.3.1 Beneficial Uses of the Watershed

Salts primarily impact two beneficial uses: agriculture irrigation and groundwater recharge. In addition, chloride has the potential to impact aquatic life, there are secondary drinking water standards for some salts, and industrial processing can be impacted by high salts concentrations. The following table summarizes the locations of these beneficial uses as listed in the Basin Plan.

Beneficial uses of the Calleguas Creek watershed are summarized in Table 7.1-1, excerpted from the 1994 Basin Plan. These are the designated beneficial uses that must be protected (LARWQCB, 1994).

Table 7.1-1. Beneficial Uses of Surface Waters of the Calleguas Creek.

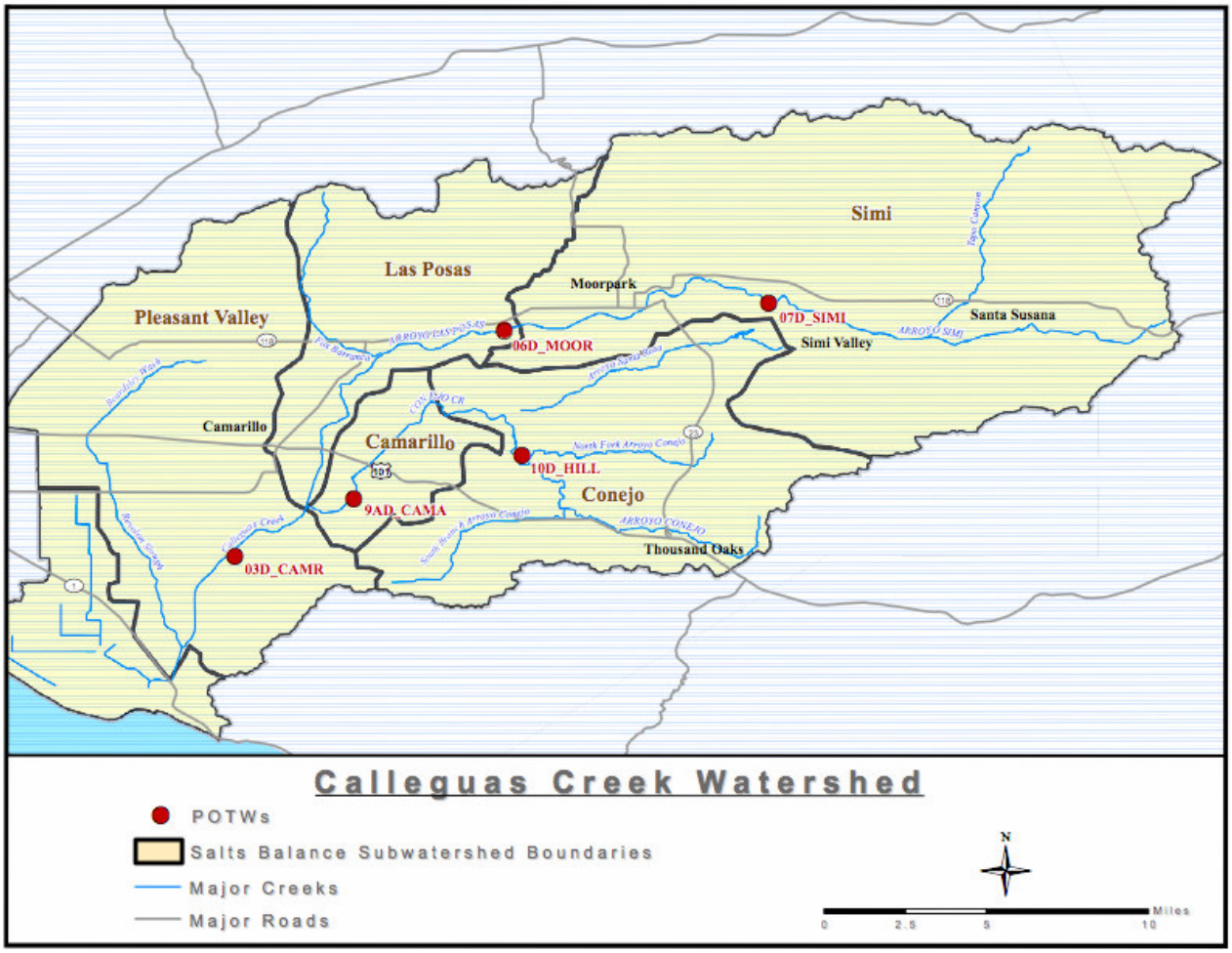
Reach	Reach No.	Hydro Unit	WARM	MUN	IND	PROC	AGR	GWR
Mugu Lagoon	1	403.11						
Calleguas Creek Estuary	2	403.11						
Calleguas Creek	2, 3	403.11	E	P*			E	E
Calleguas Creek	3, 9A	403.12	E	P*	E	E	E	E
Revolon Slough	4	403.11	E	P*	P		E	E
Beardsley Wash	5	403.61	E	P*				
Conejo Creek	3, 9A	403.12	E	P*	E	E	E	E
Conejo Creek	9B	403.63	I	P*				I
Arroyo Conejo	9A,9B,10	403.64	I	P*				I
Arroyo Conejo	13	403.68	I	P*				I
Arroyo Santa Rosa	11	403.63	I	P*				I
Arroyo Santa Rosa	11	403.65	I	P*				I
North Fork Arroyo Conejo	12	403.64	E	P*			E	E
Arroyo Las Posas	6	403.12	E	P*	P	P	P	E
Arroyo Las Posas	6	403.62	E	P*	P	P	P	E
Arroyo Simi	7	403.62	I	P*	I			I
Arroyo Simi	7	403.67	I	I*	I			I
Tapo Canyon	8	403.66	I	I*		P	P	I
Tapo Canyon	8	403.67	I	I*		P	P	I

7.1.3.2 Surface Water

The main surface water system drains from the mountains toward the southwest, where it flows through the Oxnard Plain before emptying to the Pacific Ocean through Mugu Lagoon. Dry weather surface water flow in the Calleguas Creek watershed is primarily composed of groundwater, municipal wastewater, urban non-storm water discharges, and agricultural runoff. In the upper reaches of the watershed, upstream of any wastewater discharges, groundwater discharge from shallow surface aquifers provides a constant base flow. Additionally, urban non-stormwater runoff and groundwater extraction for construction dewatering or remediation of contaminated aquifers contribute to the base flow. Stream flow in the upper portion of the watershed is minimal, except during and immediately after rainfall. Flow in Calleguas Creek is described as "storm-peaking" and is typical of smaller watersheds in coastal southern California. "Storm-peaking" refers to peak discharges limited to a wet weather season and concentrated into a few days after short-term, discrete storm events, when flow commonly is two to three orders of magnitude greater than non-storm flow (Duke, 2001).

For the purposes of this TMDL, the CCW has been divided into five subwatersheds that will be used for assigning numeric targets, allocations and compliance with the TMDL. The subwatersheds are shown in Figure 7.1-1. The five subwatersheds (Simi, Las Posas, Conejo, Camarillo and Pleasant Valley) were developed based on ensuring protection of beneficial uses by defining the base of the subwatersheds (compliance points for the TMDL) at points where beneficial uses occur and at the point of discharge to the tidally influenced portion of the watershed where salts objectives do not apply. Additionally, the subwatersheds were developed specifically for this TMDL to group areas with related beneficial uses, sources of water, and uses of water and to provide consistency with implementation actions planned for the watershed. Finally, the salts objectives only apply upstream of the tidally influenced portion of the watershed, Reach 2 of Calleguas Creek, Mugu Lagoon, and the lower portion of Revolon Slough are not addressed by this TMDL because the salts objectives do not apply. Therefore, the subwatersheds do not consider areas that drain to tidally influenced portions of the watershed.

Figure 7.1-2 CCW Salts TMDL Subwatersheds



The following sections summarize the characteristics of the subwatersheds and Mugu Lagoon. Additionally, several minor agricultural drains in the Oxnard plain also drain the lower watershed including Mugu Lagoon.

- Simi and Las Posas Subwatershed

The Arroyo Simi and Arroyo Las Posas drain the northern portion of the watershed. The northern part of the watershed system originates in the Simi Valley and surrounding foothills. The surface flow comes from the headwaters of the Arroyo Simi at Santa Susanna pass (upper parts of Reach 7) and Tapo Canyon (Reach 8). Arroyo Simi and Arroyo Las Posas flow through the cities of Simi Valley and Moorpark and join with Calleguas Creek, upstream from the City of Camarillo. Upstream of Simi Valley, the creek is unlined and passes through open space and recreational areas. Through the City of Simi Valley, the Arroyo Simi flows through concrete lined or rip-rapped channels. Between Simi Valley and Moorpark, a distance of approximately 7 miles, the creek is unlined and without rip-rap forming high quality natural creek and riparian habitats. From

the edge of Moorpark to Hitch Boulevard, the creek is once again rip-rapped on the sides with a soft bottom throughout most of the channel, but in some areas, such as under bridges, the bottom is covered with concrete and rip-rap. The Arroyo Simi essentially becomes the Arroyo Las Posas at Hitch Blvd. Downstream of Hitch Boulevard, Arroyo Las Posas passes through agricultural fields and orchards in a primarily natural channel. Although the Arroyo Las Posas channel joins with Calleguas Creek near Camarillo, surface flow is typically not present in this portion of the channel due to evaporation and groundwater recharge upstream of Seminary Road.
Two POTWs discharge in the subwatershed. The Simi Valley Water Quality Control Plant (WQCP) discharges to the Arroyo Simi on the western edge of the City of Simi Valley. The Moorpark Wastewater Treatment Plant (WWTP) discharges primarily to percolation ponds near the Arroyo Las Posas downstream of Hitch Boulevard. Direct discharges to the Arroyo Las Posas from the Moorpark WWTP only occur during extremely wet periods.

- Conejo and Camarillo Subwatershed

Conejo Creek and its tributaries (Arroyo Conejo and Arroyo Santa Rosa) drain the southern portion of the watershed. Flow in the southern portion of the watershed originates in the City of Thousand Oaks and flows through the east side of the City of Camarillo before joining Calleguas Creek upstream of California State University Channel Islands (CSUCI). The subwatershed supports significant residential and agricultural land uses. The streams and channels of the Conejo Creek subwatershed are described below, in order from uppermost to lower.

Arroyo Conejo

The Arroyo Conejo runs through Thousand Oaks and has three branches, the main fork, the north fork, and the south fork. The main fork of the Arroyo Conejo runs underground for most of its length, with the portions that are above ground flowing through concrete lined channels until the creek enters Hill Canyon on the western side of Thousand Oaks at the confluence with the South Fork of the Arroyo Conejo. The South Fork runs through the southern and western portions of Thousand Oaks. For most of its length, the South Fork flows underground or through concrete lined channels. The North Fork of the Arroyo Conejo runs through Thousand Oaks upstream of the Hill Canyon Wastewater Treatment Plant (WWTP). The channel is concrete lined for the portion that runs through the city, but becomes unlined when it nears the treatment plant. The Hill Canyon WWTP discharges to the North Fork of the Arroyo Conejo on the western edge of the City of Thousand Oaks. The main fork and the south fork join together about a mile upstream of the treatment plant. The joined flow (usually called the south fork at this point) and the north fork converge approximately 0.4 miles downstream of the Hill Canyon WWTP. The Arroyo Conejo then flows in a natural channel through a primarily open space area until it merges with the Arroyo Santa Rosa to form Conejo Creek at the confluence.

Arroyo Santa Rosa

Arroyo Santa Rosa runs on the northern edge of the City of Thousand Oaks and through agricultural land in the Santa Rosa Valley. Arroyo Santa Rosa is a natural channel for most of its length with portions of riprap and concrete lining along the sides and bottom of the channel in the vicinity of homes (such as near Las Posas Road). Prior to 1999, a wastewater treatment plant (Olsen Road) discharged to Arroyo Santa Rosa and

maintained a constant surface flow in the reach. Since 1999, the POTW has not discharged and the channel is dry during non-storm events.

Conejo Creek

Arroyo Conejo and Arroyo Santa Rosa converge at the base of Hill Canyon to form Conejo Creek, which flows downstream approximately 7.5 miles through the City of Camarillo to its confluence with Calleguas Creek. Just downstream of Camarillo, the Camarillo Sanitary District Water Reclamation Plant discharges to Conejo Creek. Conejo Creek provides the majority of the flow in Calleguas Creek. For most of the length of the Conejo and Calleguas Creeks, the sides of the channel are rip rapped and the bottom is unlined.

- Pleasant Valley Subwatershed

Calleguas Creek

Calleguas Creek runs along the eastern side of Oxnard Plain to Mugu Lagoon. From the headwaters in the hills north of Camarillo to the confluence with the Arroyo Las Posas through to the confluence with Conejo Creek, Calleguas Creek is typically dry due to rapid infiltration and evaporation. During wet weather storm events, the stretch of Calleguas Creek provides a conduit for transporting storm flows from the upper CCW to the Pacific Ocean. The Camrosa WRP is located near California State University, Channel Islands. The Camrosa WRP only discharges to the creek during extreme storm events. Calleguas Creek is tidally influenced from Mugu Lagoon to approximately Potrero Road.

Revolon Slough

Revolon Slough drains the agricultural land in the western portion of the watershed (Oxnard Plain). The slough does not pass through any urban areas, but does receive drainage from tributaries that drain urban areas. Revolon Slough starts as Beardsley Wash in the hills north of Camarillo. The wash is a rip rapped channel for most of its length and combines with Revolon Slough at Central Avenue in Camarillo. The slough is concrete lined just upstream of Central Avenue and remains lined for approximately 4 miles to Wood Road. From there, the slough is soft bottomed with rip-rapped sides. The lower mile to mile and a half of the slough to above Las Posas Road appears to be tidally influenced by inflows from Mugu Lagoon. Revolon Slough flows into Mugu Lagoon in a channel that runs parallel to Calleguas Creek. The flows from Revolon Slough and Calleguas Creek only converge in the lagoon. In addition to Revolon Slough, a number of agricultural drains (Oxnard Drain, Mugu Drain, and Duck Pond Drain) serve as conveyances for agricultural and industrial drainage water to the Calleguas Creek estuary and Mugu Lagoon. Revolon Slough is tidally influenced to approximately Laguna Road.

- Mugu Lagoon

Mugu Lagoon, an estuary at the mouth of Calleguas Creek, supports a diverse wildlife population including migratory birds and endangered species. The Point Mugu Naval Air Weapons Station directly impacts Mugu Lagoon as do the substantial agricultural activities in the Oxnard Plain. The lagoon consists of approximately 287 acres of open water, 128 acres of tidal flats, 40 acres of tidal creeks, 944 acres of tidal marsh and 77 acres of salt pan (California Resources Agency, 1997). The Lagoon is comprised of a

central basin that receives the flow from Revolon Slough and Calleguas Creek, and two arms (eastern and western) that receive some drainage from agricultural and industrial drains. In addition, multiple drainage ditches drain into the lagoon. Two of these ditches, Oxnard drainage ditches 2 and 3, discharge urban and agricultural runoff originating beyond the Naval Station's boundaries into the central and western portion of the lagoon. The remaining ditches discharge urban and industrial runoff originating on the Station.

The salinity in the lagoon is generally between 31 and 33 parts per thousand (ppt) (Granade, 2001). The central basin of the lagoon has a maximum tidal range of approximately -1.1 to 7 feet (as compared to mean sea level) with smaller ranges in the eastern and western arms of the lagoon. The western arm of the lagoon receives less tidal volume because of a bridge culvert that restricts the flows in that area. The velocity of water traveling through the narrow mouth of the lagoon is approximately 5-6 knots, which is a high velocity for a lagoon (Grigorian, 2001). The mouth of the lagoon never closes, apparently as a result of a large canyon present at the mouth of Calleguas Creek. The canyon prevents ocean sand from building up to a high enough level to close the mouth and likely accounts for the high velocities in the lagoon (Grigorian, 2001).

7.1.3.3 Groundwater

Groundwater features of the watershed are dominated by the Fox Canyon Aquifer System, which is linked to the neighboring Santa Clara River Watershed. The Fox Canyon Aquifer System is a series of deep, confined aquifers. The deep aquifers today receive little or no recharge from the watershed. The water quality in these aquifers is very high. However, because there is little recharge to these aquifers they suffer from overdraft. Major groundwater basins within the watershed include the Simi Basin, East Las Posas, West Las Posas, South Las Posas, Pleasant Valley, and Arroyo Santa Rosa Basins. Significant aquifers within the watershed include the Epworth Gravels, the Fox Canyon aquifer, and the Grimes Canyon aquifer in order from shallowest to deepest. In addition, the top 350 feet of sediments within the Pleasant Valley Basin are often referred to as the "Upper Zone", and are thought by some to be equivalent to the Hueneme aquifer zone that is a more well-defined and recognized layer to the west of the Pleasant Valley Basin.
Shallower, unconfined aquifers are located in the valleys of the watershed. In the upper sub-watersheds of Simi Valley and Conejo Valley, groundwater collects in the lower areas and overflows into the down-gradient valleys. The Tierra Rejada, Santa Rosa and South Las Posas valley basins are larger than the upper valley basins and are the most significant unconfined basins on the watershed. Areas of perched and unconfined groundwater are also present along the base of the Santa Monica Mountains, and overlying areas of the southeastern Oxnard Plain in the Pleasant Valley.

Water rights have not been adjudicated in many of these basins, and groundwater production is not comprehensively controlled or maintained. However, groundwater extractions are regulated in the Oxnard Plain, Pleasant Valley Basin and the Las Posas Basin by the Fox Canyon Groundwater Management Agency. In some basins, groundwater is being over-drafted and as a result Pleasant Valley has experienced subsidence. In other basins, such as the South Las Posas Basin, groundwater storage has increased significantly in the last several decades.

7.1.3.4 Anthropogenic Alterations

Historically, the Oxnard Plain served as the flood plain for Calleguas Creek. Starting in the 1850's, agriculture began to be practiced extensively in the watershed. By 1889, a straight channel from the area near the present day location of Highway 101 to the Conejo Creek confluence had been created for Calleguas Creek. In the 1920's, levees were built to channelize flow directly into Mugu Lagoon (USDA, NRCS, 1995). Increased agricultural and urban land uses in the watershed resulted in continued channelization of the creek to the current channel system. Historically, Calleguas Creek was an ephemeral creek flowing only during the wet season. The cities of Simi Valley, Moorpark, Camarillo, and Thousand Oaks experienced rapid residential and commercial development beginning in the 1960s. In the early 70's, State Water Project supplies began being delivered to the watershed. In 1957, the Camarillo Water Reclamation Plant came online, followed by the Hill Canyon WWTP in Thousand Oaks in 1961. Increasing volumes of discharges from these POTWs eventually caused the Conejo/Calleguas system to become a perennial stream by 1972 (SWRCB, 1997). When the Simi Valley Water Quality Control Facility began discharging in the early 1970's, the Arroyo Simi/Arroyo Las Posas became a perennial stream that gradually flowed further downstream and currently reaches Seminary Road in Camarillo. However, surface flows from the Arroyo Simi/Arroyo Las Posas do not connect with surface flows in the Conejo Creek/Calleguas system, except during and immediately following large storm events.

7.1.3.5 Flow Diversion Project

The Conejo Creek Diversion Project (CCDP) in the Calleguas Creek watershed diverts the majority of flow in Conejo Creek to agricultural uses in the Pleasant Valley area. The diversion project is located approximately 7 miles downstream from the Hill Canyon Wastewater Treatment Plant (WWTP). The water rights application allows the diversion of an amount equal to Hill Canyon's effluent minus 4 cfs for in-stream uses and channel losses. An additional amount of water equal to the flow contributed by use of imported water in the region (estimated at 4 cfs) may be diverted when at least 6 cfs of water will remain in the stream downstream of the diversion point (SWRCB, 1997). Natural flows due to precipitation will not be diverted. As a result of this project, flows in the lower reach of Conejo Creek have been reduced to less than half of the previous creek flows. Projects similar to the CCDP may be developed as part of the overall Watershed Management Plan for Calleguas Creek to address water resource, water quality, or flooding/erosion concerns. As such, TMDLs must be developed in a manner that considers the impacts of changing flows in the watershed and does not result in restrictions on the necessary use of the water for other purposes.

7.1.3.6 Reach Designations

Table 7.1-2 summarizes the reach descriptions of Calleguas Creek used in this TMDL and the correlation between these reaches and the 303(d) and consent decree listed reaches. These reach designations provide greater detail than the designations in the current *Water Quality Control Plan: Los Angeles Regional Water Quality Control Plan* (Basin Plan). The reach revisions may provide an appropriate analytical tool for future analyses in the watershed. At this time, though, the reach revisions are not regulatory and do not alter water quality objectives for the reaches in the existing Basin Plan.

Table 7.1-2 Description of CCW Reaches on 2002 303(d) List.

Reach Names for Salts TMDL	Reach Names as Listed in 303(d) List and Consent Decree	Geographic Description	Notes: Hydrology, land uses, etc.
1 Mugu Lagoon	Mugu Lagoon	Lagoon fed by Calleguas Creek	Estuarine; brackish, contiguous with Pacific Ocean
2 Calleguas Creek South	Calleguas Creek Reach 1 and Reach 2 (Estuary to Potrero Rd.)	Downstream (south) of Potrero Rd	Tidal influence; concrete lined; tile drains; Oxnard Plain
3 Calleguas Creek North	Calleguas Creek Reach 3 (Potrero to Somis Rd.)	Potrero Rd. upstream to confluence Conejo Creek	Concrete lined; no tidal influence; Agriculture tile drains; Pleasant Valley Basin. Camrosa WRP discharges to percolation ponds.
4 Revolon Slough	Revolon Slough Main Branch	Revolon Slough from confluence with Calleguas Creek to Central Ave	Concrete lined; tile drains; Oxnard Plain; tidal influence
5 Beardsley Channel	Beardsley Channel	Revolon Slough upstream of Central Ave.	Concrete lined ; tile drains; Oxnard Plain
6 Arroyo Las Posas	Arroyo Las Posas Reach 1 and Reach 2 (Lewis Somis Rd. to Moorpark Fwy (23))	Confluence with Calleguas Creek to Hitch Road	Ventura Co. POTW discharge at Moorpark to percolation ponds; discharges enter shallow aquifer; dry at Calleguas confluence
7 Arroyo Simi	Arroyo Simi Reach 1 and Reach 2 (Moorpark Fwy (23) to Headwaters)	End of Arroyo Las Posas (Hitch Rd) to headwaters in Simi Valley.	Simi Valley WQCP discharge; discharges from shallow aquifers; pumped GW; GW discharges from shallow aquifers.
8 Tapo Canyon	Tapo Canyon Reach 1 and Reach 2	Confluence w/ Arroyo Simi up Tapo Canyon to headwaters	Origin near gravel mine, used by nursery, ends in residences.
9A Conejo Creek	Conejo Creek Reach 1 (Confl with Calleguas Creek to Santa Rosa Rd.)	Extends from the confluence with Arroyo Santa Rosa downstream to the Camrosa Diversion	Camarillo WWTP discharge; Pleasant Valley Groundwater Basin contains both confined and unconfined perched aquifers. Groundwater and surface water used for agriculture.
9B Conejo Creek	Conejo Creek Reach 1 and Reach2 (Confl with Calleguas Creek to Thousand. Oaks city limit)	Extends from Camrosa Diversion to confluence with Calleguas Creek.	Pleasant Valley Groundwater Basin contains both confined and unconfined perched aquifers. Camarillo WWTP discharges to percolation ponds near downstream end.
10 Hill Canyon reach of Conejo Creek	Conejo Creek Reach 2 and Reach 3 (Santa Rosa Rd. to Lynn Rd.)	Confluence w/ Arroyo Santa Rosa to confluence w/ N. Fork; and N. Fork to just above Hill Canyon WWTP	Hill Canyon WWTP; stream receives N. Fork Conejo Creek surface water.
11 Arroyo Santa Rosa	Arroyo Santa Rosa	Confluence w/Conejo Creek to headwaters	Olsen Rd. WRP; dry before Calleguas Ck confluence except during storm flow.
12 North Fork Conejo Creek	Conejo Creek Reach 3 (Thousand. Oaks city limit to Lynn Rd.)	Confluence w/Conejo Creek to headwaters	
13 Arroyo Conejo (S.Fork Conejo Cr)	Conejo Creek Reach 4 (Above Lynn Rd.)	Confluence w/ N. Fork to headwaters - two channels	City of Thousand Oaks; pumped/treated GW

7.2 AESTHETICS

This section focuses on the existing visual resources at, or in the vicinity of, the proposed implementation locations of the Salts TMDL. The potential impacts that could

result to visual resources from installation and maintenance of each of the implementation alternatives are addressed, and the significance of those impacts, if anticipated, is analyzed for each of the implementation alternatives. Mitigation to reduce the impacts to the project is provided, where applicable. Visual resources include the aesthetics of the component sites and their surroundings, valued views, designated scenic highways, corridors or parkways, and lighting.

7.2.1 Affected Environment

This section provides an overview of visual resources known to occur in the Calleguas Creek Watershed, specifically as related to each implementation alternative for the salts TMDL.

The Calleguas Creek Watershed is located in the southern portion of Ventura County. The scenic resources within and near (i.e., within the viewshed of) the project area are diverse and are comprised of topographic/physical features including mountains, plains, valleys, and beaches. Significant hills and mountains in the region are the Santa Monica Mountains to the south, the Simi Hills to the east, and South Mountain, Big Mountain and the Santa Susana Mountains to the north. Several creeks and drainages flow through the area, including Arroyo Conejo, Conejo Creek, Calleguas Creek, Long Grade Canyon Creek and Revolon Slough. These water courses ultimately terminate at the coastal wetlands (e.g., Ormond Beach Wetlands, Mugu Lagoon), beaches and Pacific Ocean beyond. Within the watershed, urban development is concentrated primarily within the Cities of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Each of these cities remain as distinct entities due to intervening topographic features (e.g., hills) and land uses such as open space and agriculture. Relatively vast and productive agricultural areas also remain within the watershed. These zones are identified as the East and West Las Posas Valley, Oxnard Plain/Pleasant Valley Plain (transected by Revolon Slough and Calleguas Creek), and the Santa Rosa Valley (located between the Arroyo Las Posas to the north and Conejo Creek to the south. Based upon a review of the County of Ventura General Plan Resources Appendix (Ventura County, 2000), there are no Ventura County designated scenic resources areas or scenic highway protection areas within the project's area of impact. Within the project area, U.S. 101 and State Route (SR) 1 are considered eligible State scenic highways. Roads located within the immediate project area designated as eligible County scenic highways are Lewis Road, Hueneme Road, Potrero Road, Las Posas Road and Santa Rosa Road. It should be noted that their designation as eligible scenic highways currently provides no protection from an aesthetic standpoint. However, at the time of identification of these road segments for their eligibility as designated scenic highways, the importance of preserving the scenic vistas from these roads was recognized in the certified FEIRs for the RSMC and RWRMP.

7.2.2 Thresholds of Significance

In accordance of Appendix G of the CEQA Guidelines, the project would have a significant effect on the environment if it would do any of the following:

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

7.2.3 Impacts and Mitigations

7.2.3.1 Construction, Expansion and Upgrading of Groundwater Treatment Plan, Waste Water Treatment Plans, Water Blending Facilities,

Views of equipment, materials, exposed soils, trenches, and stockpiled soil during construction may temporarily reduce visual quality (scenic variety, visual sensitivity and visual condition). However, this site is not visible to the public and exhibits low visual quality. Therefore, construction-related aesthetics impacts are considered less than significant. Once constructed, the pumping plant would be characteristic of the Camarillo WRP and would not affect visual quality of the area. No long-term aesthetics impacts would occur.

7.2.3.2 Pipeline installation

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would be required along most of the alignment. Views of equipment, materials, exposed soils, trenches, and stockpiled soil may temporarily reduce visual quality during construction. The alignment (including creek crossing) is visible to the public and exhibits distinctive scenic variety and moderate visual sensitivity. Views of construction activities would cause a short-term deterioration of visual quality. Although this impact is considered to be adverse, the change in visual quality would not be substantial because of its temporary nature and existing agricultural operations involve exposed soil and heavy equipment. Overall, construction-related aesthetics impacts are considered less than significant. However, pipeline installation would also involve the removal of native vegetation and the loss of coast live oak trees. The loss of these trees is considered significant due to the visual sensitivity of the area and distinctive scenic variety.

The pipeline alignment would be used to widen Hill Canyon Road, and permanently displace about 4 acres of vegetation. The long-term loss of vegetation (including oak trees) and widened Hill Canyon Road would degrade the visual condition in Hill Canyon. The long-term aesthetics impact is considered significant

7.2.3.3 Relocated Calleguas Creek Discharge

Construction of this feature would involve excavation of the bank of Calleguas Creek and construction of a temporary access ramp. Views of exposed soil, equipment and soil stockpiles may reduce visual quality. However, the impact would be temporary (a few weeks) and occur in a low-moderate visual sensitivity area. Therefore, construction-related aesthetics impacts are considered less than significant. The discharge structure would be constructed of concrete and would not be inconsistent with the visual quality of the balance of the Calleguas Creek channel, which is lined with rock rip-rap, with numerous storm drain discharge structures. No long-term aesthetics impacts would occur.

7.2.3.4 Brine Pipeline

Pipeline construction would occur within a City-designated scenic corridor (Upland Road). Pipeline installation would be accomplished using typical trenching techniques, proceeding at a rate of about 300 feet per day. Temporary access roads would not be required. Views of equipment, materials, exposed soils, trenches, and stockpiled soil may temporarily reduce visual quality during construction. Views of construction activities are uncharacteristic of the existing visual condition of the project area, such that short-term deterioration of visual quality would occur. Although this impact is considered to be adverse, it is less than significant because of its temporary nature.

7.2.3.5 Replenishment Facility Sites

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages and unlikely to be visible from public viewing areas. Subsequent analysis may be required by responsible parties as these facilities may be located near City streets. However, impacts are expected to be less than significant due to the small scale of these facilities and very limited number of persons affected.

7.2.4 Cumulative

The proposed project would incrementally contribute to construction-related short-term degradation of visual resources. However, due to the short-term and/or mobile nature of the construction impacts, and the low probability of other projects impacting the same area as the proposed project at the same time, short-term construction impacts are not expected to be cumulatively considerable.

Excluding the Phase 3 pipeline in Hill Canyon for the RWRMP, no long-term aesthetics impacts would occur. Other development planned in Hill Canyon include an equestrian center at Santa Rosa County Park and stream bank restoration. These projects are not expected to result in long-term aesthetics impacts. Therefore, the project would not incrementally contribute to the aesthetics impacts of other projects.

7.2.5 Mitigation Measures

The following measures are provided to minimize and offset aesthetics impacts associated with pipeline installation in Hill Canyon:

- The area of ground disturbance and vegetation removal associated with pipeline installation shall be minimized to the extent practical
- The dripline of all mature native trees in close proximity to the pipeline installation work area shall be fenced. The pipeline alignment and work area shall be modified to the extent feasible to avoid impacts to mature native trees.
- All oak trees greater than two inches in diameter at breast height removed or damaged shall be replaced with two 24-inch box specimens and one 36-inch box specimen, for each oak tree removed or damaged.
- All disturbed areas not affected by road widening shall be restored

7.3. AGRICULTURAL RESOURCES

This section addresses the potential impacts that could result to agricultural land from each implementation alternatives of the salt TMDL and significance of those impacts, if anticipated. Mitigation to reduce the impacts of the proposed alternatives is provided where applicable.

7.3.1 Affected Environment

Ventura County agriculture gross dollar sales in 2004 were estimated at $1.4 billion. Approximately 100,000 acres in the southern portion of the County are devoted to agricultural production. Ventura County agriculture focuses on production of citrus, cut flowers and nursery products as well as vegetables and field crops. Agriculture has become the leading industry in the County.

The Ventura County Agricultural Commissioner's Annual Crop Report for 2004 indicates strawberries are the leading single commodity with a value of $363,646,000. The most valuable crop group is fruits and nuts with a year 2004 value of $740 million.

7.3.1.1 Soils

Proposed facility sites and areas served by new recycled water sources support several soil series on Prime farmland or farmland of Statewide Importance. Within the project area, Anacapa, Camarillo, Hueneme, Cibo, Metz, Mocho, Pacheco, Pico and Sorrento soil series represent important farmland soils. These soils were classified by Edwards, et. al. (1970) and are described below.

The Anacapa series consists of well-drained sandy loams and gravelly sandy loams 60 inches or more deep. Slopes range from 0 to 9 percent, with elevations from 25 feet to 500 feet above msl. These soils are mainly used for vegetables and citrus crops. The Natural Resources Conservation Service has determined that the Anacapa soil series meets the criteria for Prime farmland.

The Camarillo series consists of poorly drained sandy loams and loams 60 inches or more deep. Slopes range from 0 to 2 percent, with elevations from 25 feet to 200 feet above msl. These soils are primarily used for production of vegetables and lemons. The Natural Resources Conservation Service has determined that Camarillo sandy loam and Camarillo loam soil series meet the criteria for farmland of Statewide Importance.

The Hueneme series consists of poorly drained loamy sands and sandy loams 60 inches or more deep. Slopes range from 0 to 2 percent, with elevations from 25 feet to 250 feet above msl. These soils are used for production of vegetables, lemons, strawberries, and field crops. The Natural Resources Conservation Service has determined that the Hueneme loamy sand and sandy loam soil series meets the criteria for Prime farmland.

The Pacheco series consists of poorly drained silty clay loams 60 inches or more deep. Slopes range from 0 to 2 percent, with elevations from 25 feet to 100 feet above msl. These soils are primarily used for production of vegetables, lemons, and field crops. The Natural Resources Conservation Service has determined that Pacheco silty clay loam soil series meets the criteria for farmland of Statewide Importance.

The Pico series consists of well-drained and somewhat excessively drained calcareous sandy loams and loams 60 inches or more deep. Slopes range from 0 to 9 percent, with elevations from 25 feet to 800 feet above msl. These soils are used for vegetables, citrus crops, field crops, and walnuts. The Natural Resources Conservation Service has determined that the Pico sandy loam soil series meet the criteria for Prime farmland. Pico loam, sandy substrate soil series meets the criteria for farmland of Statewide Importance.

The Mocho series consists of well-drained loams, gravelly loams, and clay loams 60 inches or more deep. Slopes range from 0 to 9 percent, with elevations from 100 feet to 1,000 feet above msl. These soils are used for vegetables, citrus crops, avocados, field crops, and walnuts. The Natural Resources Conservation Service has determined that the Mocho clay loam soil series meet the criteria for Prime farmland. Mocho loam soil series meets the criteria for farmland of Statewide Importance.

The Metz series consists of somewhat excessively drained, calcareous, loamy sands and loamy fine sands 60 inches or more deep. Slopes range from 0 to 9 percent, with elevations from 25 feet to 1,000 feet above msl. These soils are used for vegetable, strawberries, avocados, walnuts, citrus crops, and field crops. The Natural Resources Conservation Service has determined that the Metz soil series meet the criteria for Prime farmland.

The Sorrento series consists of well-drained loams and silty clay loams 60 inches or more deep. Slopes range from 0 to 9 percent, with elevations from 25 feet to 1,700 feet. These soils are used for vegetables, field crops, citrus crops, avocados, and walnuts. The Natural Resources Conservation Service has determined that the Sorrento loam (0-2 percent slopes), silty clay loam (0-2 percent slopes) and clay loam soil series meet the criteria for Prime farmland. The Sorrento loam (2-9 percent slopes) and silty clay loam (2-9 percent slopes) soil series meet the criteria for farmland of Statewide Importance.

7.3.1.2 Agricultural Classification

The Department of Conservation, Division of Land Resource Protection, provides oversight of agricultural lands in California. The Farmland Mapping and Monitoring Program (FMMP) of the Department of Conservation uses soil surveys from the United States Department of Agriculture (USDA) in conjunction with land use data to determine farmland classification. Farmland classifications do not include publicly owned lands for which an adopted policy preventing agricultural use is enforced. The following classifications of agricultural lands are defined in the FMMP.

Prime Farmland
Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are

permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Farmland of Statewide Importance
Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. Similar to Prime Farmland, Farmland of Statewide Importance must meet specific criteria for soil pH, temperature, sodium content, permeability, and other defined characteristics.

Unique Farmland
Unique Farmland is land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Local Importance
Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance or Unique Farmland. This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Grazing Land
Grazing Land is defined as land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. Grazing Land does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

7.3.2 Regulatory Setting

Important Farmlands Inventory (IFI).
The Important Farmlands Inventory (IFI) system is used by the USDA Natural Resources Conservation Service (NRCS) to map and classify lands that have agricultural value. This system divides farmland into classes based upon soil type and the productive capability of the land. These classes are similar to California's Department of Conservation Farmland Mapping and Monitoring Program described above. The County of Ventura uses this system to inventory agricultural lands.

Farmland Protection Policy Act (FPPA).
The proposed action would be constructed using Federal funding (in part); therefore, it must comply with the Farmland Protection Policy Act (FPPA). The FPPA requires the

NRCS (formerly the Soil Conservation Service) to determine the acres and classification (Prime, Statewide, Unique, Local) of farmlands to be converted to other uses by proposed Federally funded projects. As part of this process, the NRCS determines the relative value of farmland to be converted using established land evaluation criteria. The lead Federal agency (or implementing local agency) then conducts a site assessment to apply site-specific criteria and a point system (7 CFR 658.5) to determine the significance of conversion. These factors include:

Percentage of land in non-urban use within 1 mile;

Percentage of site perimeter bordering on non-urban uses;

Percentage of site farmed for more than 5 of the last 10 years;

Applicability of State and local farmland protection policies;

Size of farm unit relative to average unit in the County;

Percentage of farm unit made non-farmable due to interference with land patterns;

Availability of farm support services and markets;

Presence of on-farm investments (structures, drainage and irrigation systems, etc.);

Potential for conversion of site to reduce demand for farm support services that may reduce the viability of other farms in the area; and

Potential for conversion to contribute to eventual conversion of surrounding farmland.

The land evaluation rating assigned by NRCS is on a scale from 0 to 100 points and the site assessment rating is on a scale of 0 to 160 points. The FPPA requires that alternative sites and/or project configurations be considered for overall ratings (sum of land evaluation and site assessment) exceeding 160 points.

According to 7 CFR 658.3(c) of the Farmland Protection Policy Act, only actions that would convert farmland to nonagricultural uses are subject to the Act. All farmlands that would be temporarily disturbed during pipeline installation would be returned to their original state for use in agricultural operations. This includes the farmlands used for construction of temporary access roads.

Ventura County Programs

Ventura County has adopted four programs to preserve farmland:

Agricultural land use designation establishing a 40 acre minimum parcel size and Agriculture-Exclusive zoning;

Greenbelt agreements to prevent urban encroachment;

Land Conservation Act (LCA) contracts to provide property tax reductions as an incentive to maintain agricultural use; and

Participation in water resources development and conservation programs to ensure long-term water availability for agriculture.

General Plan policies relative to farmland protection include the following:

Policy 1.6.2.1 Discretionary development located on land designated as Prime or

Statewide Importance shall be planned and designed to remove as little land from agricultural production as possible and minimize impacts on topsoil.

Policy 1.6.2.2 Hillside agricultural grading shall be regulated by the Public Works Agency through the Hillside Erosion Control Ordinance.

Policy 1.6.2.3 LCA contracts shall be encouraged on irrigated farmlands.

Policy 1.6.2.4 The Public Works Agency shall plan transportation capital improvements so as to mitigate impacts to important farmlands to the extent feasible.

Policy 1.6.2.5 The County shall preserve agricultural land by retaining and expanding the existing Greenbelt Agreements and encouraging the formation of additional Greenbelt Agreements.

Policy 1.6.2.6 Discretionary development adjacent to Agriculture-designated lands shall not conflict with agricultural use of those lands.

Greenbelt Agreements.

Several cities in Ventura County, the Local Agency Formation Commission (LAFCO) and the County have adopted greenbelt agreements between jurisdictions to further the objectives of the County's Guidelines for Orderly Development by preserving agriculture and open space between urban areas. The underlying purpose of a greenbelt is to establish a mutual agreement between cities regarding the limit of urban growth for each city. Annexation is discouraged within greenbelts. Any change to those boundaries would require mutual consent between the cities and LAFCO. These agreements have established a policy of non-annexation and retention of open space within parts of Ventura County.

Greenbelts in the area effected by proposed implementation actions include the Oxnard-Camarillo Greenbelt (located southwest of Camarillo) and the Santa Rosa Valley Greenbelt (located east of Camarillo). Two of the new recycled water service areas (Pleasant Valley and eastern Camarillo) and most of the Phase 1 pipelines would be located within the Oxnard-Camarillo Greenbelt. The proposed new recycled water service area in Santa Rosa Valley would be located east of the Santa Rosa Valley Greenbelt.

7.3.3 Thresholds of Significance

Significance thresholds developed by Ventura County (2000) are applied for proposed implementation actions including the RSMC and RWRMP.

Permanent loss of agricultural soils on the project site is considered a significant project-specific impact if any of the following thresholds are equaled or exceeded.

Prime/Statewide	5 acres
Unique	10 acres
Local	15 acres

Loss of agricultural soils on the project site is considered a significant cumulative impact if any of the following thresholds are equaled or exceeded.

Prime/Statewide	1 acres
Unique	2 acres

The project would have a significant impact if it would permanently:

Adversely affect the quantity or quality of water used for agricultural production;

Substantially impair the productivity of adjacent agricultural areas;

Result in the introduction of or a substantial increase in pests and/or disease in nearby agricultural areas; or

Pose substantial land use incompatibilities with adjacent property currently in or suitable for agricultural production.

7.3.4 Impacts of proposed implementation actions

Pipeline installation would generally require an easement to be purchased from property owners for construction and maintenance. Agricultural crops may, depending on the crop and season, require removal and reimbursement within the maximum 75-foot-wide disturbance corridor.

Project impacts to agricultural resources may include temporary loss of access and production during the construction period, which would vary from several weeks to several months at any one location. Construction of permanent access roads would not be required within farmland along the temporary or permanent easements of the proposed pipeline system. Instead, existing access roads would be used, and compatible agricultural operations would be allowed to continue within the permanent easement overlying the pipeline rights-of-way, resulting in no permanent loss of farmlands. Project construction specifications would require stockpiling topsoil during pipeline installation and replacement over the pipeline, preserving these soils for agricultural use.

7.3.4.1 Loss of Important Farmland

The project plans for RSMC and RWRMP were overlaid on Important Farmland Maps obtained from the California Department of Conservation to determine the loss or temporary disturbance of important farmlands.

- RSMC Project

In Phase I of the RSMC, approximately 39,900 feet of the 45,600-foot-long corridor for Phase I are adjacent to Prime farmlands or farmlands of Statewide Importance. The proposed project may result in the temporary disturbance of up to 28.8 acres of Prime farmland and 39.9 acres of Statewide Importance farmland along the Phase I corridor. No farmlands are considered of “Unique” or “Local Importance” occur along the preferred alignment. Due to the short period of disturbance (and associated loss of production) at any single location and the preservation of topsoil, impacts to important farmlands are considered less than significant. Loss of farmland in Phase I would be

limited to 0.34 acres, associated with the preferred diversion structure site. However, this land has been designated "Developed" on the Important Farmland Maps. This site is located adjacent to Edison Road, and conversion of this site to non-agricultural uses would not preclude continuing production on surrounding farmlands. Therefore, loss of agricultural land is considered a less than significant impact.

In Phase II, approximately 63,125 feet of the 123,000-foot-long Phase II pipeline corridor is adjacent to Prime farmlands, farmlands of Statewide Importance, and to a lesser degree, Unique and Locally Important farmlands. The proposed project may result in temporary disturbance of up to 89.5 acres of Prime farmland, 14.6 acres of Statewide Importance farmland, 1.3 acres of Unique farmlands, and 3.2 acres of Locally Important farmlands along the Phase II corridor. Due to the short period of disturbance (and associated loss of production) at any single location and the preservation of topsoil, impacts to important farmlands are considered less than significant. However, this land has been designated "Developed" on the Important Farmland Maps. This site is located adjacent to Edison Road, and conversion of this site to non-agricultural uses would not preclude continuing production on surrounding farmlands. Therefore, loss of agricultural land is considered a less than significant impact.

- RWRMP Project

In Phase I of the RWRMP Project, approximately 18,500 feet of proposed pipelines would traverse Prime farmlands or farmlands of Statewide Importance. Phase 1 of the Proposed Action would result in a maximum temporary disturbance of 22.4 acres of Prime farmland and 9.5 acres of Statewide Importance farmland. No farmlands are considered of "Unique" or "Local Importance" occur along the Phase 1 pipeline alignments. Excluding the well near California State University Channel Islands (CSUCI well), Conejo wells facility and Conejo Creek monitoring station, all other non-pipeline components would be located on lands designated "urban" or "other lands", and would not directly affect farmlands. The CSUCI well treatment facility would be located on land mapped as Prime farmlands, but would be located within the existing well facility such that no loss of Prime farmlands would occur. The proposed blending facility at the Conejo well facility would be located on land mapped as Prime farmlands, but would be located within the existing well facility such that no loss of Prime farmlands would occur. The site of the proposed monitoring station on Conejo Creek is located on lands mapped as Unique farmlands. However, this facility would be located at a non-agricultural site adjacent to the Creek and would not displace agricultural uses. Most of the new recycled water service area in Pleasant Valley supports Statewide Importance farmland and most of the new recycled water service area in eastern Camarillo supports Prime farmland. These farmlands may be temporarily disturbed during installation of small distribution pipelines. However, no loss of farmland would occur.

In Phase II of the RWRMP project, facilities associated with production and treatment of groundwater from the Conejo Groundwater Basin would not be located within or adjacent to farmlands. Facilities associated with discharge of imported water as replenishment water would not be located within or adjacent to farmlands. Therefore, these facilities would not result in the loss of important farmlands.
In Phase III, the proposed Thousand Oaks-Camrosa Interconnect pipeline would traverse approximately 8,900 feet of Prime farmland, 1,800 feet of Statewide Importance farmland and 200 feet of Unique farmland. Based on a maximum 75 foot-wide disturbance corridor, 15.3 acres of Prime farmland, 3.1 acres of Statewide Importance farmland and 0.3 acres of Unique farmland would be

affected. Construction of permanent access roads would not be required along the pipeline alignment. Instead, existing access roads would be used, and compatible agricultural operations would be allowed to continue within the permanent easement overlying the pipeline right-of-way, resulting in no permanent loss of farmlands.

In Phase IV, most of the lower watershed supports Prime farmland and Statewide Importance farmland. Some loss of farmlands may occur as a result of the construction and operation of dewatering wells, blending facilities, treatment facilities and distribution pipelines. These losses are not expected to exceed the thresholds of significance, and would be considered a less than significant impact.

7.3.4.2 Greenbelt Agreements

All disturbance to farmlands would be temporary, and agricultural production would continue over the buried pipeline. Therefore, all open space under the Greenbelt Agreements established within the project area would be retained with no changes in their boundaries. There would be no project-specific impacts to greenbelts.

7.3.4.3 Land Conservation Act Contracts

All farmlands enrolled in LCA contracts established within the areas involved under the proposed implementation actions would be preserved. Thus, no project-specific impacts to LCA Contracts are expected.

7.3.4.4 Displacement of Crops

Pipeline installation would displace agricultural crops and may reduce access to other crops due to open trenches. However, displacement of crops would be limited a 75-foot-wide construction corridor over a period of a few months. Crops affected are mostly short-rotation row crops, such that the pipeline alignment could be planted soon after construction is complete, minimizing loss of production. Access requirements would resolved as part of acquisition of temporary construction easements, such that trenches would be closed as needed to allow nearly continuous access to all cultivated areas along the pipeline alignment. Loss of productivity is not considered substantial because areas affected would be relatively small and the duration of effects would be short. Therefore, loss of production impacts to agricultural resources would be less than significant.

7.3.4.5 Indirect Impacts

- RSMC Project

The proposed project would improve the quality and reliability of agricultural water supplies by a long-term reduction in total dissolved solids of groundwater used for irrigation. This impact is considered beneficial.

Construction activities would generate dust, adversely affecting crops along the construction corridor. However, dust control measures have been incorporated into the project and would be included in the final plans and specifications. Therefore, loss of agricultural production associated with fugitive dust is considered a less than significant impact.

- RWRMP Project

- Phase I

  Phase I would involve adding Camarillo Water Reclamation Plant (WRP) effluent to the existing Camrosa recycled water system. Additional recycled water made available by the implementation of Phase 1 would be applied to the Pleasant Valley and eastern Camarillo expanded service areas. The recycled water would supplement existing agricultural water supplies. Changes in irrigation water quality associated with expanded use of recycled water have the potential to adversely affect crop production.

  The proposed Pleasant Valley recycled water service area supports Statewide Importance farmland and is currently irrigated with local groundwater (Pleasant Valley Groundwater Basin). Portions of the proposed recycled water service area also receive water delivered by the Pleasant Valley County Water District (PVCWD), which includes deep aquifer groundwater supplemented by surface water from the Santa Clara River and Conejo Creek. Based on the Calleguas Creek Characterization Study (Bookman-Edmonston, 2000), the average TDS and chloride concentrations in the Pleasant Valley Groundwater Basin are 1485 mg/l and 229 mg/l, respectively. There is significant variation in groundwater quality drawn from the lower aquifer system as opposed to the upper aquifer system, with water quality from the lower aquifer system generally lower in TDS and chloride than groundwater in the upper aquifer system. In addition, there is variation in water quality dependent on general location within the Basin with chloride levels exceeding 200 mg/l along the southern and eastern portions of the Pleasant Valley Basin in the area proposed for expanded recycled water service. (UWCD, 2003).

  The average TDS and chloride concentrations in surface water diverted from Conejo Creek are 805 mg/l and 156 mg/l, respectively. Camarillo WRP effluent has slightly higher TDS and chloride concentrations (889 and 185 mg/l, respectively) than effluent from the Camrosa Water Reclamation Facility (WRF) and may cause a small increase in TDS and chloride in recycled water applied to crops. However, recycled water would be substantially higher in quality than existing groundwater and similar to diverted Conejo Creek water. No substantial change in irrigation water quality is expected to occur within existing or proposed recycled water service areas.

  The proposed eastern Camarillo recycled water service area (east of Lewis Road, west of Calleguas Creek, see Figure 3-2) supports Prime farmland and is currently irrigated with groundwater from the Pleasant Valley Groundwater Basin and recycled water from the Camrosa WRF. This area is currently outside the Camrosa Water District boundaries and is not eligible to receive diverted Conejo Creek water under the terms of the water rights agreement. The current recycled water service supply would shift from Camrosa WRF water to recycled water from the Camarillo

WRP. As noted above, recycled water from the Camarillo WRP has slightly higher TDS and chloride as compared to the Camrosa WRF, but less than existing groundwater. Overall, no substantial change in irrigation water quality is expected as a result of implementation of Phase 1 of the Proposed Action.

Construction activities would generate dust, adversely affecting crops along the construction corridor. These effects may extend several hundred feet from the pipeline alignment. However, dust control measures have been incorporated into the project and would be included in the final plans and specifications. Therefore, loss of agricultural production associated with fugitive dust is considered a less than significant impact.

- Phase II

  Phase 2 of the Proposed Action would not effect crop irrigation water quality or quantity as treated groundwater or imported water would be used for potable uses or discharged to surface water.

  Construction activities would generate dust, adversely affecting crops adjacent to the proposed treatment plant. These effects may extend several hundred feet from the site. However, dust control measures have been incorporated into the project and would be included in the final plans and specifications. Therefore, loss of agricultural production associated with fugitive dust is considered a less than significant impact.

- Phase III

  Most of the dry season surface flow in Arroyo Conejo and Conejo Creek is a result of effluent discharge. Implementation of Phase 3 would result in the termination of effluent discharge to Arroyo Conejo (Hill Canyon WTP), and would decrease the quantity of surface water recharging the Arroyo Santa Rosa groundwater basin and available for diversion from Conejo Creek. However, recycled water provided in Phase 1 (and expanded supplies provided by Phase 3) would reduce demand for groundwater and diverted surface water such that available agricultural irrigation water supplies would increase over existing conditions.

  Based on water quality data collected by the City of Thousand Oaks, discharge from the Hill Canyon WTP to Arroyo Conejo lowers surface water concentrations of TDS and chloride (Fugro West, 1997). Implementation of Phase 3 would result in the termination of effluent discharge to Arroyo Conejo (Hill Canyon WTP), and could increase TDS and chloride concentrations in surface waters recharging groundwater in the Arroyo Santa Rosa groundwater basin and diverted for agricultural use at the Conejo Creek diversion. However, as indicated in the Water Resources section of this EIR (Table 5.7-8), discharge of replenishment water would improve surface water quality, and preserve agricultural water supplies.

  Phase 3 would involve adding Hill Canyon Wastewater Treatment Plant (WTP) effluent to the existing Camrosa recycled water system. Additional recycled water made available by the implementation of Phase 3 would be applied to the Pleasant Valley, eastern Camarillo and eastern Santa Rosa Valley expanded service areas (see Figure 3-2). The proposed eastern Santa Rosa Valley recycled water service area is currently irrigated with groundwater and imported water. This area is within

the Camrosa service area and supports only limited agriculture. Changes in irrigation water quality associated with expanded use of recycled water could adversely affect crop production.

Hill Canyon WTP effluent has lower TDS and lower chloride concentrations (615 and 156 mg/l, respectively) as compared to the current blend of Conejo Creek Diversion Project water and non-potable groundwater used in the Santa Rosa Valley. The proposed Phase 1 water quality blending facility would be used to manage water quality. Therefore, TDS and chloride concentrations of the Camrosa recycled water system would decrease with implementation of Phase 3. Recycled water would be higher in quality than existing groundwater and diverted Conejo Creek water. No substantial change in irrigation water quality is expected to occur within existing or proposed recycled water service areas.

7.3.5 Cumulative

The Ventura Council of Governments projects that Ventura County will grow in population by 5 percent from 2005 to 2010. These population projections form the basis of the Ventura County General Plan. Much of this population growth is expected to occur in Ventura, Camarillo, Oxnard, Simi Valley and Thousand Oaks. Development projects associated with this growth may result in the loss of farmland. Ventura County programs (see Section 5.2.1.3) to preserve farmland are expected to restrict any substantial loss of farmland. However, the 1988 Ventura County General Plan EIR determined that direct and indirect loss of agricultural soils is a significant cumulative impact on a regional basis. The proposed implementation actions and alternatives would not result in the loss of farmland and would not contribute to this cumulative impact.

Agricultural lands temporarily affected by project construction may also be affected by construction of other infrastructure projects, such as roadway improvements. However, it is unlikely that the impacts of proposed implementation actions would occur at the same time and same location. Therefore, cumulative impacts are expected to be same as project-specific impacts. As with project-specific impacts, cumulative loss of agricultural production associated with fugitive dust is considered a less than significant impact.

7.3.6 Mitigation Measures

No significant impacts were identified; therefore, no mitigation measures are required.

7.4 AIR QUALITY

This section provides an overview of air quality, odor conditions, and health risks known to occur within the study area associated with the salts TMDL implementation activities, including short term construction and installation activities and long term activities. Federal, state, and regional regulations apply to the Calleguas Creek Watershed area air quality and set controls and goals for air quality criteria for the regional area. These criteria and the regional compliance with established air quality standards are summarized below. Findings of the significance of impacts are presented. Mitigation to reduce the impacts associated with each activity is discussed where applicable.

7.4.1 Affected Environment

The proposed project is located in the Oxnard Plain Airshed, a sub-basin of the South Central Coast Air Basin. The Airshed is characterized by cool winters and warm, dry summers tempered by cooling sea breezes. Summer, spring and fall weather is generally a result of the movement and intensity of the semi-permanent high pressure area located several hundred miles to the west. Marine influences generally predominate during this period and cause afternoon onshore flow and evening off-shore flow. Winter weather is generally a result of the size and location of low pressure weather systems originating in the north Pacific Ocean.

Ventura County winds are dominated by a diurnal land-sea breeze cycle. This cycle is broken only by occasional winter storms and infrequent strong Santa Ana winds from the northeast. The sea breeze is generally stronger than the land breeze and results in a net flow from west to east. Westerly sea breezes carry pollutants generated in the coastal areas into the inland valleys where dispersion is restricted. The presence of temperature inversions and westerly transport result in meteorological conditions conducive to ozone formation in the inland valleys. In particular, Simi Valley and the Conejo Valley suffer from restricted vertical mixing caused by temperature inversions and transport of pollutants from the South Coast Air Basin. Consequently, the highest ozone concentrations in Ventura County typically occur in these Valleys. The Simi Valley station records the highest pollutant concentrations, due to adverse meteorological conditions and occasional transport of pollutants from the adjacent San Fernando Valley.

7.4.2 Regulatory Setting

7.4.2.1 Air Quality Standard

Air quality standards are specific concentrations of pollutants that are used as thresholds to protect public health and the public welfare. The U.S. Environmental Protection Agency (EPA) has developed two sets of standards; one to provide an adequate margin of safety to protect human health and the second to protect the public welfare from any known or anticipated adverse effects. At this time, sulfur dioxide is the only pollutant for which the two standards differ.

ARB developed air quality standards for California, which are generally lower in concentration than the Federal standards. California standards exist for ozone, carbon monoxide, PM10, visibility, sulfates, lead, hydrogen sulfide and vinyl chloride.

In July 1997, EPA finalized new health-based ozone and particulate matter (PM) standards. However, due to several lawsuits the standards were not fully implemented until February 2001. The new Federal ozone standard is based on a longer averaging period (8-hour vs. 1-hour), recognizing that prolonged exposure is more damaging. The new Federal PM standard is based on finer particles (2.5 microns and smaller vs. 10 microns and smaller), recognizing that finer particles may have a higher residence time in the lungs and cause greater respiratory illness. On April 28, 2005, the ARB established a new State 8-hour ozone standard of 0.07 ppm, in response to the Children's Environmental Health Protection Act. Table 7.4-1 lists the applicable State and Federal air quality standards.

Table 7.4-1 Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Standard
Ozone	1-Hour 8-Hour	0.09 ppm 0.07 ppm	-- 0.08 ppm
Carbon Monoxide (CO)	1-Hour 8-Hour	20 ppm 9.0 ppm	35 ppm 9.0 ppm
Nitrogen Dioxide (NO_2)	1-Hour	0.25 ppm	---
Inhalable Particulate Matter ($PM_{2.5}$)	24-Hour Annual Mean	-- 12 ug/m3	65 ug/m3 15 ug/m3
Inhalable Particulate Matter (PM_{10})	24-Hour Annual Mean	50 ug/m3 20 ug/m3	150 ug/m3 50 ug/m3
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm	0.14 ppm

7.4.2.2 Health Risk Issues

The combustion of diesel fuel in truck engines (as well as other internal combustion engines) produces exhaust containing a number of compounds that have been identified as hazardous air pollutants by EPA and toxic air contaminants by the ARB. Particulate matter (PM) from diesel exhaust has recently been identified as a toxic air contaminant, which has prompted ARB to develop a Final Risk Reduction Plan (released October 2000) for exposure to diesel PM. Based on ARB Resolution 00-30, full implementation of emission reduction measures recommended in the Final Risk Reduction Plan would result in a 75 percent reduction in the diesel PM Statewide inventory and the associated cancer risk by 2010, and an 85 percent reduction by 2020 in the diesel PM inventory and potential cancer risk.

7.4.2.3 Effects of Air Pollution

The primary chemical compounds that are considered pollutants emitted into or formed in the atmosphere include ozone, oxides of nitrogen, sulfur dioxide, hydrocarbons, carbon monoxide, and particulate matter.

Ozone is formed in the atmosphere through a complex series of chemical reactions generally requiring light as an energy source. Ozone is a pungent, colorless gas that is a strong irritant and attacks the respiratory system. Respiratory and cardiovascular diseases are aggravated by exposure to ozone. A healthy person exposed to high concentrations of ozone may experience nausea, dizziness, and burning in the chest. Ozone also damages crops and other vegetation.

Oxides of nitrogen (NO_x) which are considered pollutants include nitric oxide (NO) and nitrogen dioxide (NO_2). NO is colorless and odorless and is generally formed by combustion processes combining atmospheric oxygen and nitrogen. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen in the atmosphere or at the emission source. Both NO and NO_2 are considered ozone precursors because they react with hydrocarbons and oxygen to produce ozone. Exposure to NO_2 may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas which affects the upper respiratory tract. Sulfur dioxide may combine with particulate matter and settle in the lungs, causing damage to lung tissues. Sulfur dioxide may combine with water in the atmosphere to form sulfuric acid that may fall as acid rain, damaging vegetation.

Hydrocarbons include a wide variety of compounds containing hydrogen and carbon. Many hydrocarbons (known as reactive organic compounds [ROC]) react with NO and NO_2 to form ozone. Generally, ambient hydrocarbon concentrations do not cause adverse health effects directly, but result in ozone formation.

Carbon monoxide (CO) is a colorless, odorless gas generally formed by incomplete combustion of hydrocarbon-containing fuels. Carbon monoxide does not irritate the respiratory tract, but does interfere with the ability of blood to carry oxygen to vital tissues.

Particulate matter consists of a wide variety of particle sizes and composition. Generally, particles less than 10 microns (PM_{10}) are considered to be pollutants because they accumulate in the lung tissues and may contain toxic materials which can be absorbed into the system.

7.4.2.4 General Air Quality Trends

Two pollutants (ozone and PM_{10}) are of particular interest because State air quality standards for these pollutants are occasionally exceeded. Table 7.4-2 lists the monitored maximum concentrations and number of exceedances of State air quality standards for the years 2003 through 2005. Ozone concentrations monitored at the Thousand Oaks station occasionally exceed the State 1-hour standard (0.09 ppm). The ozone 8-hour Federal standard was not exceeded at the El Rio station, but was exceeded an average of 3 periods per year at the Thousand Oaks station. Ozone levels at the El Rio station are lower, due to lower temperatures, less sunlight (summer marine layer) and more consistent wind-induced dispersion.

PM_{10} concentrations monitored at the El Rio and Thousand Oaks stations occasionally exceed the State 24-hour standard, but do not exceed the State or Federal annual standards. The $PM_{2.5}$ standard is rarely exceeded at either station.

Table 7.4-2. Air Quality Standard Exceedances

Pollutant	2003	2004	2005
Ozone 1-hour ppm (El Rio/Thousand Oaks			
Highest Hour	0.081/0.109	0.084/0.108	0.076/0.109
Number of State Exceedances (Days > 0.09 ppm)	0/13	0/5	0/2
Ozone 8-hour ppm (El Rio/Thousand Oaks)			
Highest 8-hour Period	0.071/0.089	0.079/0.090	0.067/0.082
Number of Federal Exceedances (Periods > 0.08 ppm)	0/5	0/4	0/0
PM10 (El Rio/Thousand Oaks)			
Highest sample	124/67	60/69	54/NA
Number of State exceedances (samples>50)	5/3	1/1	2/NA
PM2.5 (El Rio/Thousand Oaks)			
Highest sample	82/32	29/38	35/28
Number of Federal exceedances (samples>65)	1/0	0/0	0/0

7.4.2.5 Ventura County Attainment Status and Planning

Federal.
Ventura County has been considered a non-attainment area for the Federal ozone standard because ambient ozone concentrations exceed the 1-hour standard. The 1990 Amendments to the Federal Clean Air Act require statutory deadlines for attainment of Federal air quality standards including:

- 1990 base year emission inventory by November 15, 1992;
- 1990-1996 Rate of Progress Plan by November 15, 1993;
- Post-1996 Rate of Progress Plan by November 15, 1994;
- Plan to attain the Federal ozone standard by 2005; and
- Contingency measures to ensure continued progress towards attainment of the Federal ozone standard.

The ARB submitted a 1990 emission inventory to EPA on behalf of the APCD, but was considered incomplete due to the lack of a public hearing. A public hearing was conducted on October 19, 1993 to satisfy EPA's requirements. The 1990-1996 Rate of Progress Plan that provides for at least a 15 percent reduction in VOC emissions between 1990 and 1996 was approved by EPA on January 6, 1997. The Post-1996 Rate-of-Progress Plan provides for a 9 percent reduction in VOC emissions by 1999, another 9 percent reduction by 2002 and a third 9 percent reduction by 2005. However, reductions in NO_x emissions can be used to satisfy ROC emission reduction targets. The Post-1996 Rate-of-Progress Plan was also approved by EPA on January 6, 1997.

The Air Quality Management Plan (AQMP) discussed below is also applicable to attainment of Federal standards. The most recent AQMP revision (2004) indicates Ventura County is on track to attain the Federal 1-hour ozone standard. However in 2005, the Federal 1-hour standard was deemed inapplicable to most areas in the nation (including Ventura County), and the Federal 8-hour ozone standard became the focus of ozone attainment. Ventura County is considered a moderate non-attainment area for the Federal 8-hour ozone standard.

State.
Assembly Bill 2595 (known as the California Clean Air Act) took effect on January 1, 1989. The goal of this bill is to attain the California air quality standards by the earliest practicable date. The Ventura County portion of the South Central Coast Air Basin has been classified as a severe non-attainment area for the State ozone standard. The South Central Coast Air Basin has been classified as in attainment for CO.

A 1991 AQMP was prepared by the Ventura County APCD to meet the requirements of the California Clean Air Act and was adopted by the Ventura County Board of Supervisors on October 8, 1991. The 1991 AQMP was approved by ARB on August 13, 1992. The 1991 AQMP did not contain a predicted date of attainment of the State ozone standard. However, the 1991 AQMP included stationary source and mobile source control measures that will substantially reduce emissions. New and revised stationary source control measures that should substantially reduce the projected emissions inventory include various coatings rules (paints), consumer products rules (deodorants, hair spray, etc.) and electrical power generating equipment (Rule 59). New and revised mobile source control measures include various trip reduction related measures, clean fuels, revisions to Rule 210 and an indirect source control program for projects which attract large numbers of vehicles (large commercial or residential projects). The 1991 AQMP does not specifically address attainment of the State PM_{10} standard. However, many of the control measures contained in the 1991 AQMP would result in substantial reductions in PM_{10} emissions.

A 1994 Air Quality Management Plan (AQMP) was developed that included a demonstration that attainment of the Federal ozone standard will occur in 2005 as required. Control measures included in the 1994 AQMP will substantially reduce the 1990 emissions inventory and allow progress towards attainment of the Federal ozone standard. These measures include surface coating restrictions, clean-up solvent restrictions, emission reductions at the Mandalay power station and an enhanced smog check compliance program. The 1994 AQMP complies with the triennial progress report, triennial plan revision and other requirements of the California Clean Air Act that were required to be completed by the end of 1994.

The AQMP was revised in 1995 to include changes to the 1990 emissions inventory, additional control measures approved by ARB, abandonment of the Federal Implementation Plan on April 11, 1995, revisions to the transportation conformity emission budget and revised photochemical modeling.

The AQMP was revised again in 1997 to extend the projected adoption and implementation dates for nine control measures identified in the 1995 AQMP Revision. This action does not affect the expected attainment date or rate of progress requirements.

The most recent AQMP revision was in 2004, and focused on updating the emissions inventory and assessing conformity with transportation projects.

7.4.3 Threshold of Significance

The Ventura County APCD is the local agency responsible for implementation of the State Implementation Plan (SIP). In October 2003, the Ventura County APCD updated the "Ventura County Air Quality Assessment Guidelines" (Guidelines), which include project-specific thresholds that should not be exceeded to ensure consistency with the SIP and minimize public exposure to pollutants:

- Conflict with or obstruct implementation of the Air Quality Management Plan (AQMP);
- Violate any air quality standard or contribute to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria non-attainment pollutant;
- Expose the public (especially schools, day care centers, hospitals, retirement homes, convalescent facilities and residences) to substantial pollutant concentrations; and
- Create objectionable odors affecting a substantial number of people.

A considerable net increase of ozone precursors (a non-attainment pollutant) is considered 25 pounds per day of reactive organic compounds (ROC) and oxides of nitrogen (NO_x). Camrosa has adopted these thresholds for determining the significance of environmental impacts of the proposed project. However, these thresholds are only applied to long-term operation impacts, because the 2003 Ventura County Air Quality Assessment Guidelines state that construction emissions are temporary and not subject to significance criteria.

At this time, the ARB and EPA have not provided the Ventura County Air Pollution Control District (or any other local District) any guidance regarding the assessment of mobile diesel emissions in environmental documents. There is no accepted methodology for assessing health risk associated with diesel PM from motor vehicles. There are no air quality standards for toxic compounds associated with diesel combustion. However, ARB and EPA acknowledge it is a regional problem which can only be regulated at the State and National level.

7.4.4 Impacts

7.4.5.1 Construction

Air pollutant emissions generated by construction activities would include exhaust emissions and wind-blown (fugitive) dust. Pipeline installation activities involved in the RSMC and the RWRMP project would include access road construction, vegetation clearing, trenching, pipe laying, trench backfilling, dewatering, and transportation (materials, equipment and workers). Construction of the Camarillo WRP pumping plant, CSUCI well treatment plant and water blending facilities would involve building pad grading, transportation and erection of mechanical, electrical and fluid systems and installation of piping and electrical connections.

Construction exhaust emissions were calculated using activity assumptions, load factors and emission factors from *Nonroad Engine and Vehicle Emissions Study* (EPA, 1991). Fugitive dust emissions were estimated using project assumptions and emission factors from *Compilation of Air Pollutant Emission Factors, Volume I*, Sections 11.9 and 13.2 (EPA, 1995 and 2003). Wind erosion of exposed soil surfaces was estimated using an emission factor (26.4 pounds PM_{10} per day per acre) from the South Coast Air Quality Management District (SCAQMD) CEQA Air Quality Handbook (1993) and reduced by 50 percent based on watering of exposed soils by the construction contractor.

Emissions estimates for proposed implementation actions are provided for peak day and annual scenarios. Detail emission calculations for the RSMA and the RWRMP are provided in the FEIRs for the RSMC and the RWRMP. The peak day scenario includes three construction teams operating simultaneously; two pipeline trenching teams and one water blending facility team. Therefore, emissions associated with each construction team were estimated, and added together to produce an overall peak day scenario.

Pipeline installation emissions were estimated by multiplying the estimated emissions of a pipelaying spread by the number of work days, which is based on the pipeline length and minimum pipelaying rates (feet per work day) for the proposed pipe size. The number of work days for tunneling are based on an average of 12 work days per major pipe crossing (roadways and major streams). Emissions associated with construction of other facilities was estimated based on anticipated heavy equipment use, worker transportation needs and dust generation.

Transportation emissions were estimated using the EMFAC2002 model developed by the ARB, and assuming that most Phase 1 construction work would occur in 2008. The trip distance was assumed to be 15 miles based on the average home-work trip distance in Ventura County from APCD (2003). The total number of one-way vehicle trips on a peak day during pipeline installation was assumed to be 220, based on 70 one-way truck trips and 30 one-way construction worker trips per trenching team (two), and 20 one-way trips for blending plant construction.

Construction-related PM_{10} emissions may cause or substantially contribute to local exceedances of the State PM_{10} standard or cumulatively hinder progress towards attainment of the State PM_{10} standard. In addition, dust generated by construction activities immediately adjacent to residences may be considered a nuisance and violate APCD Rule 51. Rule 51 prohibits the discharge of air contaminants which "cause injury, detriment, nuisance or annoyance to any considerable number of persons…" However, the following dust control measures will be included in the project's construction specifications to ensure compliance with Rule 51:

- Removal of vegetation and ground disturbance shall be limited to the minimum area necessary to complete project construction activities. Vegetative cover shall be maintained on all other portions of the project area.
- Regular ground wetting of exposed soils and sediments, and unpaved access roads shall be conducted during construction to control fugitive dust emissions.
- Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application

of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.

- All graded and excavated material, exposed soil areas, and active portions of project construction sites, 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.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), 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 his/her discretion in conjunction with the APCD in determining when winds are excessive.
- Silt containing material excavated, stockpiled or transported during construction shall be wetted regularly.
- On-site construction vehicle speed shall be limited to 15 miles per hour in unpaved areas.
- Trucks transporting backfill material to the project site shall be covered or maintain a minimum two-foot freeboard; and
- Roadways in the vicinity of construction access points shall be swept as necessary to prevent the accumulation of silt.

Construction-related NO_x and ROC emissions (see Tables 5.3-3 and 5.3-4) are not considered significant impacts due to their short-term nature. However, these emissions may cause or substantially contribute to local exceedances of the State ozone standard or cumulatively hinder progress towards attainment of the State ozone standard. Therefore, the following measures will be included in the project's construction specifications:

- Minimizing idling time; and
- Maintaining engines in good condition and proper tune.
- The number of pieces of equipment in operation at any one time shall be minimized.
- Alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, shall be used if feasible.

The proposed implementation actions including construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells would generate short-term diesel exhaust emissions associated with heavy equipment usage, and truck transportation

of construction materials. The amount of heavy equipment usage and number of diesel truck trips associated with project construction would be short-term and minimal in a regional context, such that the proposed action would have a less than significant contribution to public health risk. In a local context, the proposed project would represent a short-term contribution to public health risk associated with exposure to toxic air contaminants. Therefore, diesel exhaust emissions and associated toxic air contaminants are considered a less than significant impact to air quality.

The proposed implementation actions would not generate long-term diesel exhaust emissions; therefore, no long-term air quality impact associated with toxic diesel exhaust would occur. Detail construction emission for each proposed implementation action is documented in the FIERs for the RSMC and the RWRMP.

7.4.5.2 Operation

Emissions associated with operation would be limited to that generated by motor vehicles used to inspect and maintain the proposed facilities. It is assumed that a peak day would generate 10 one-way trips, and a peak year would generate 150 one-way trips. Operation emissions are estimated in Table 7.4-3, and are less than the significance thresholds. Therefore, operation emissions are considered a less than significant impact.

Table 7.4-3 Operation Emissions

Period	NOx		ROC		CO		PM10	
	Pounds/day	Tons/year	Pounds/day	Tons/year	Pounds/day	Tons/year	Pounds/day	Tons/year
Peak Day	0.15	--	0.06	--	1.50	--	0.01	--
Annual	--	0.001	--	0.001	--	0.011	--	0.001
Threshold	25	NA	25	NA	NA	NA	NA	NA

Odors are generated by existing wastewater treatment facilities, such as the Camrosa Water Reclamation Facility. However, odor generation is generally controlled by management practices such as aeration, closed vessels and drying (sludge). Wastewater treatment proposed as part of Phase 3 involves wastewater previously treated at the Hill Canyon WTP and would be treated in closed vessels. Therefore, no increases in odors would occur

7.4.5.3 Cumulative

The Ventura Council of Governments projects that Ventura County will grow in population by 5 percent from 2005 to 2010. These population projections form the basis of the Ventura County General Plan. Most of this population growth is expected to occur in Ventura, Camarillo, Oxnard, Simi Valley and Thousand Oaks. Development projects associated with this growth may be under construction at the time the proposed implementation actions is implemented. The proposed implementation actions would incrementally contribute to construction emissions associated with these other projects,

and would result in cumulative impacts to regional air quality. However, the incremental contribution of the proposed implementation actions would be small on a regional basis, such that cumulative impacts are considered less than significant. This finding is supported by the Ventura County APCD significance thresholds which indicate that projects that would not cause increased population growth above that forecasted or generate emissions less than two pounds NOx or ROC per day would not be cumulatively significant. The proposed implementation actions would not result in population growth and operational emissions would be less than two pounds NOx or ROC per day.

7.4. 6. Mitigation Measures

Dust control measures

- Removal of vegetation and ground disturbance should be limited to the minimum area necessary to complete project construction activities. Vegetative cover should be maintained on all other portions of the project area.
- Regular ground wetting of exposed soils and sediments, and unpaved access roads should be conducted during construction to control fugitive dust emissions.
- Pre-grading/excavation activities should include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- All graded and excavated material, exposed soil areas, and active portions of project construction sites, including unpaved on-site roadways, should be treated to prevent fugitive dust. Treatment should include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering should be done as often as necessary and reclaimed water shall be used whenever possible.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth-moving, and excavation operations should 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 should use his/her discretion in conjunction with the APCD in determining when winds are excessive.
- Silt containing material excavated, stockpiled or transported during construction should be wetted regularly.
- On-site construction vehicle speed should be limited to 15 miles per hour in unpaved areas.
- Trucks transporting backfill material to the project site should be covered or maintain a minimum two-foot freeboard; and

- Roadways in the vicinity of construction access points should be swept as necessary to prevent the accumulation of silt.

Ozone control methods:

- Minimizing idling time; and
- Maintaining engines in good condition and proper tune.
- The number of pieces of equipment in operation at any one time should be minimized.
- Alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, should be used if feasible.

7.5 BIOLOGICAL RESOURCES

7.5.1 Affected Environment

7.5.1.2 Regional Overview

Land use in the Calleguas Creek watershed is approximately 55 percent agriculture and urban uses, and approximately 45 percent is open space. The natural areas of the watershed are vegetated with coastal scrub communities, grasslands, oak woodland, oak savanna, chaparral, and riparian communities. Native grassland areas, oak woodlands, and riparian areas have largely been replaced by agricultural and urban uses.

The Calleguas Creek watershed drains an area of approximately 343 square miles in southern Ventura County. Primary water bodies are Calleguas Creek, Conejo Creek, Arroyo Los Posas, Arroyo Conejo, Arroyo Santa Rosa, Arroyo Simi, Revolon Slough, and Mugu Lagoon. The northern boundary of the watershed consists of the Santa Susana Mountains, South Mountain, and Oak Ridge, while the southern boundary is defined by the Simi Hills and Santa Monica Mountains. Land uses within the watershed vary. Development is concentrated within the cities of Simi Valley, Moorpark, Thousand Oaks, Oxnard and Camarillo. Agriculture is a dominant land use, consisting primarily of orchards and row crops along the valleys and the Oxnard Plain.

Mugu Lagoon is a coastal estuary that encompasses approximately 320 acres of open water and adjacent salt marsh (Onuf, 1987). The lagoon extends approximately 3.6 miles parallel to the coast, but is no more than 0.7 miles wide. Mugu Lagoon was formed approximately 3,000 years ago during a period of higher sea levels, and may have been 10 times as large as it is today (Onuf, 1987). Prior to extensive human disturbance, Mugu Lagoon was not an estuary but, in fact, a true lagoon, with direct ocean access and minimal freshwater input (Onuf, 1987). Calleguas Creek did not flow directly into the lagoon, but rather into an extensive delta of freshwater marshes that occupied much of the Oxnard Plain. In 1884, shortly after railroad connections with San Francisco and the eastern United States were established and crop agriculture had become widely established on the Oxnard Plain, Calleguas Creek was channelized to direct flood waters away from crop land (former freshwater marsh), directing the creek into the northern portion of Mugu Lagoon (Onuf 1987). After the Creek was diverted into it, Mugu Lagoon became more estuarine in nature.

Mugu Lagoon, unlike most of the region's coastal wetlands, receives perennial freshwater input associated with discharge of treated wastewater into Arroyo Conejo and Conejo Creek. Due to this constant flow, closure of the ocean inlet to the lagoon has not been documented for over 20 years. Mugu Lagoon is typified by fairly constant tidal flushing on the whole.

Mugu Lagoon is one of the largest and most important coastal wetlands in southern California, and one of the least disturbed and best protected. However, it has been adversely affected by human disturbance. Current threats to the lagoon include large inputs of sediments, agricultural fertilizers, pesticides, and urban pollutants from the Calleguas Creek watershed. High sediment inputs from Calleguas Creek threaten to fill the lagoon, and have already substantially reduced its depth and volume in the last

several decades (Onuf 1987). Erosion potential in the watershed is high due to the steep topography and the mineral composition and structure of exposed rocks, which are almost exclusively sedimentary in origin, and of relatively young age (less than 100 million years old) (Onuf, 1987). Erosion has been greatly accelerated by human development, most notably the conversion of natural areas to agriculture (Onuf, 1987).

The Calleguas Creek Watershed Implementation Plan for Mugu Lagoon was developed by the U.S. Department of Agriculture, Soil Conservation Service and Forest Service in 1994 for and in cooperation with the Ventura County Resource Conservation District and the California State Coastal Conservancy. The purpose of the Implementation Plan is to identify and quantify erosion sources and sediment transport in the watershed, and to formulate a plan to address and minimize present and future sedimentation impacts to Mugu Lagoon. The Implementation Plan explores a number of alternatives to minimize sedimentation impacts, including the implementation of erosion control measures at land uses throughout the watershed (particularly agriculture), stabilization of eroding creek banks, enhancement of riparian and upland vegetation, and constructing sediment trapping basins along Calleguas Creek and its tributaries upstream of the lagoon. The County of Ventura, U.S. Army Corps of Engineers (Corps), and other responsible agencies have been working to implement several of the measures recommended by the Implementation Plan.

Approximately 45 percent of the Calleguas Creek watershed is vegetated, with the remainder comprised of urban and agricultural land uses. Of this 45 percent, the most common plant communities are coastal scrub (15 percent), chaparral (17 percent) and grassland (7 percent). Riparian vegetation comprises only 1.9 percent of the watershed area.

7.5.1.2 Description of Habitats, Vegetation Types, and Wildlife

- Vegetation

  Riparian Communities.

  Riparian habitats in the vicinity of the proposed facilities vary considerably in composition and density based on the availability of soil moisture, past disturbance history, substrate and gradient. Smaller intermittent streams generally support mulefat scrub (dominated by mulefat [*Baccharis salicifolia*]) or southern willow scrub (dominated by arroyo willow [*Salix lasiolepis*] and mulefat). Larger streams such as Conejo Creek and Arroyo Conejo are generally perennial due to rising groundwater (South Fork Arroyo Conejo) and/or discharge of treated wastewater (Conejo Creek and Arroyo Conejo). These streams support more diverse riparian communities, both in terms of species diversity and structural diversity (multiple canopy layers). However, channelization and flood control maintenance has resulted in the loss or simplification of these riparian communities in some locations, as riparian forest is replaced by linear strips of immature willow scrub.

  Arroyo Conejo supports arroyo willow riparian forest, and species composition is quite variable depending on location relative to stream flow, disturbance history, and soil depth. Generally, it is dominated by arroyo willow, but red willow (*Salix laevigata*) is codominant in many areas. Western sycamore (*Platanus racemosa*) and narrow-leaf willow (*Salix exigua*) is scattered within this community, and may be locally dominant in

canopy area. The non-native giant reed is also scattered within this community, and may be locally dominant, forming dense clumps.

Coast live oaks (*Quercus agrifolia*) may also dominate riparian communities along undisturbed drainages, with willows (*Salix* sp.), western sycamore, mulefat, and giant reed also present. California black walnut (*Juglans californica*) may also be present in similar locations as coast live oak, such as on the margins of riparian corridors and shaded canyons.

The banks of smaller intermittent streams in the watershed are often planted with non-native trees such as blue gum (*Eucalyptus globulus*), ornamental pines or black locust (*Robinia pseudoacacia*). These trees may reduce the diversity of instream riparian communities through shading and litter accumulation.

Emergent vegetation within more permanent streams is common and is generally dominated by cattail (*Typha* sp), rushes (J*uncus* sp.) and watercress (*Rorippa nasturtium-aquaticum*). However, non-native species are generally dominant in shallow areas, and include curly dock (*Rumex crispus*) and water speedwell (*Veronica anagallis-aquatica*) and annual beard grass (*Polypogon monspeliensis*).

Coastal Scrub

Coastal scrub vegetation is typified by low to moderate-sized drought-deciduous shrubs with shallow root systems. In the Calleguas Creek watershed, coastal scrub is dominated by California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), our Lord's candle (*Yucca whipplei*), coyote brush (*Baccharis pilularis*), and buckwheat (*Eriogonum cinereum, E. fasciculatum*). Prickly pear cactus (*Opuntia littoralis*) is also common and may form dense aggregations on hillsides. Coastal scrub vegetation in the Calleguas Creek watershed forms a complex mosaic, interspersed with annual grassland, oak woodland and various forms of chaparral.

Coast Live Oak Woodland.

Coast live oak (*Quercus agrifolia)* woodland occurs at the potential Replenishment Water Discharge Location on Conejo Creek near Avenida de los Arboles (Phase 2), and along the proposed alignment for the Thousand Oaks – Camrosa Recycled Water Interconnect within Hill Canyon (Phase 3). California black walnut trees are also intermixed with coast live oaks at the latter location.

Annual Grassland.

This community is characterized by mostly annual grasses that have mostly colonized areas disturbed by past construction or agricultural activities (including grazing). It is dominated by non-native species, including wild oats (*Avena fatua*), ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), tocalote (*Centaurea melitensis*), and summer mustard (*Hirschfeldia incana*).

- Aquatic and Terrestrial Wildlife

Fish

Species observed in drainages of the watershed include arroyo chub (*Gila orcutti*), mosquitofish (*Gambusia affinis*), green sunfish (*Lepomis cyanellus*), large-mouth bass (*Micropterus salmoides*), black bullhead (*Ameiurus melas*), and goldfish (*Carassius auratus*) (Padre 1998, 1999b & 2002; Montgomery Watson 1995).

Amphibians

Amphibian species observed in the watershed include western toad (*Bufo boreas*), bullfrog (*Rana catesbeiana*), Pacific chorus frog (*Pseudacris regilla*) and black-bellied salamander (*Batrachoseps nigriventris*) (Padre 1998 & 2002). Monterey salamander (*Ensatina eschscholtzia*) and arboreal salamander (*Aneides lugubris*) have a high potential to occur in oak-dominated riparian and upland habitat within the watershed.

Reptiles

Lizards observed in the watershed include side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus* occidentalis), southern alligator lizard (*Elgaria multicarinata*), coastal western whiptail (*Cnemidophorus tigris multiscutatus*) silvery legless lizard (*Anniella pulchra*) and coast horned lizard (*Phrynosoma coronatum frontale*) (Padre 1998 & 2002; ENSR 1997; NDDB 2005). Western skink (*Eumeces skiltonianus*) may also occur within the watershed.

Snakes observed in the watershed include San Diego gopher snake (*Pituophis melanoleucus annectans*), western rattlesnake (*Crotalus viridis*), two-striped garter snake (*Thamnophis hammondii*), California kingsnake (*Lampropeltis getulus californiae*), striped whipsnake (*Masticophis lateralis*) and San Diego mountain kingsnake (*Lampropeltis getulus*) (Padre 1998, 1999b & 2002); Montgomery Watson 1995; Impact Sciences 1997). San Bernardino ring-necked snake (*Diadophus punctatus modestus*), coast patched-nose snake (*Salvadora hexalepis virgultea*), long-nosed snake (*Rhinocheilus lecontei*), and red coachwhip (*Masticophus flagellum piceus*) have the potential to occur within the watershed. Red coachwhip was reported in Happy Camp Canyon by Brisby (1978), north of Moorpark, but subsequent agricultural activities may have extirpated this species.

The southwestern pond turtle (*Actinemys marmorata pallida*) is known to occur in Arroyo Conejo and Conejo Creek (Fugro West 1995b). Red-eared slider (*Chrysemys scripta elegans*) has been observed in Arroyo Conejo (Fugro West 1995b).

Birds.

At least 198 bird species have been observed at Point Mugu Naval Air Station, including wetland and upland species (Onuf 1987). Ornithological surveys in the southeastern portion of the watershed (Arroyo Conejo) identified 68 resident or regular migrant species of birds within or adjacent to the riparian corridor (Padre 1998, 1999b, & 2002). Additional species occurring more removed from the riparian corridor are expected to be present. Ornithological surveys in the southwestern portion of the watershed (Conejo Creek at Camarillo Regional Park) identified 58 resident or regular migrant species of birds (Impact Sciences 1997). Ornithological surveys in the eastern

portion of the watershed (White Oaks Park, Simi Valley) identified 56 resident or regular migrant species of birds.

Bird species known from Arroyo Simi include Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia brewsteri*), yellow-breasted chat (*Icteria virens*), hooded oriole (*Icterus cucullatus*), Brewer's blackbird (*Euphagus cyanocephalus*), black phoebe (*Sayornis nigricans*), red-winged blackbird (*Agelaius phoeniceus*), rough-winged swallow (*Stelgidopteryx serripennis*), cliff swallow (*Hyrundo pyrrhonota*), barn swallow (*Hyrundo rustica*), white-throated swift (*Aeronautes saxatalis*), California towhee (*Pipilo crissalis*), California quail (*Callipepla californica*), and California scrub-jay (*Aphelocoma californicus)*. These species were observed along Arroyo Simi between Simi Valley WQCP and Hitch Blvd (Montgomery Watson 1995) and may be observed throughout the project area.

Other common species reported from the watershed include downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), acorn woodpecker (*Melanerpes formicivorus*), violet-green swallow (*Tachycineta thalassina*), oak titmouse (*Parus inornatus*), western bluebird (*Sialis mexicanus*), house wren (*Troglodytes aedon*), California horned lark (*Eremophila alpestris actia*), European starling (*Sturnus vulgaris*), osprey (*Pandion haliaetus*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginiensis*), barn owl (*Tyto alba*), and western screech-owl (*Otus kennicottii*).

Mammals

Mammals observed in the watershed include Virginia opossum (*Didelphis virginiana*), Yuma myotis (*Myotis yumanensis*), Botta's pocket gopher (*Thomomys bottae*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), gray fox (*Urocyon cinereoargenteus*), American badger (*Taxidea taxus*), Audubon's cottontail (*Sylvilagus audubonii*), western gray squirrel (*Sciurus griseus*), California ground squirrel (*Spermophilus beecheyi*), California pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), cactus mouse (*Peromyscus eremicus*), California vole (*Microtus californicus*), dusky-footed woodrat (*Neotoma fuscipes*), San Diego desert woodrat (*Neotoma lepida intermedia*) and black-tailed deer (*Odocoileus hemionus*) (Padre 1998, 1999b, & 2002; ESA 1997, NDDB 2005).

Other mammals that are likely to occur within the watershed include long-tailed weasel (*Mustela frenata*), striped skunk (*Mephitis mephitis*), California myotis (*Myotis californicus*), ornate shrew (*Sorex ornatus*) and broad-footed mole (*Scapanus latimanus*).

Black-tailed jackrabbit was formerly common in southern California from the coast to the desert but now is scattered in remnant populations. This species is known to occur in the Ormond Beach area (Impact Sciences 1995) and near Arroyo Simi (MWD 1994) to the southwest and northeast of the project area, respectively.

- Wildlife Movement Corridors

Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary habitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

Calleguas Creek, Conejo Creek, and associated tributaries may play an important role as migration corridors for wildlife species moving between the Santa Monica and the Santa Susana mountains through Simi Valley to Mugu Lagoon and coastal habitat. These migration corridors are especially critical through urban areas where human activities would otherwise prohibit or impair the movement of species between habitat areas. Mugu Lagoon and the wetlands at Ormond Beach serve as important habitat for bird species during migration through the Pacific Flyway. Many bird species use these areas as an annual stopover location for several days of rest and feeding prior to continuing migration to their seasonal destination. These habitats also provide critical staging areas for migratory species.

- Sensitive Communities

Sensitive natural communities included those that are considered rare by the California Department of Fish and Game (CDFG) Natural Diversity Data Base (NDDB), considered sensitive by other trustee agencies or the scientific community. The NDDB has inventoried natural communities and ranked them according to their rarity and potential for loss. Rare natural communities found within the watershed and their conservation status are provided below in Table 5.4-2.

Riparian forest is a community that is in decline along many of the rivers and streams in California. Riparian areas are ecologically important because they provide habitat elements including water, food, and cover to many animal species, as well as nesting habitat for many bird species. Riparian areas also serve as migration corridors for many animal species especially through urban areas. Riparian forest along the pipeline alignments and other proposed project facilities is degraded in most areas, invaded by non-native species that out-compete native vegetation, or are channelized through urban areas. Even the highest quality riparian forest along the pipeline alignment (including mature native vegetation in both overstory and understory layers) has been adversely affected by human activities, which decreases the habitat value for wildlife.

Table 7.5-1 Special-Status Natural Communities of the Watershed

Community	NDDB Ranking
Southern cottonwood-willow riparian forest	G3, S3.2
Southern arroyo willow riparian forest	G2, S2.1
Southern riparian scrub	G3, S3.2
Southern willow scrub	G3, S2.1
Valley oak woodland	G3, S2.1
California walnut woodland	G2, S2.1
Coastal scrub communities	Varies with composition
Southern coastal salt marsh	G2, S2.1
Coastal freshwater marsh	G3, S2.1
Coastal brackish marsh	G2, S2.1
Southern foredune	G2, S2.1

NDDB Rankings

G2 2,000 to 10,000 acres of this habitat exist worldwide, and the habitat is considered very threatened.

G3: Between 10,000 and 50,000 acres of this community remain worldwide, and the community is considered threatened.

S2.1 Between 2,000 to 10,000 acres of this habitat exist Statewide, and the habitat is considered very threatened.

S3.2 Between 10,000 to 50,000 acres of this community remain statewide, and the community is considered threatened.

Coastal scrub communities are becoming increasingly rare throughout their range and are considered endangered by much of the scientific community (Westman 1981, Westman 1986, Atwood 1990). Davis et al. (1995) consider coastal scrub a natural community at risk because less than five percent of remaining is protected in parks, reserves, and conservation easements.

- Regulated Waters and Wetlands

The term wetland is used to describe a particular landscape characterized by inundation or saturation with water for a sufficient duration to result in the alteration of physical, chemical, and biological elements relative to the surrounding landscape. Wetland areas are characterized by prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide habitats that are essential to the survival of many threatened or endangered species as well as other wetland dependent species. Wetlands also have value to the public for flood retention, storm abatement, aquifer recharge, water quality improvement, and for aesthetic qualities. Wetlands also play a role in the maintenance of air and water quality and contribute to the stability of global levels of available nitrogen, atmospheric sulfur, carbon dioxide, and methane (Mitsch and Grosselink 1986). Wetlands are rapidly declining within California and efforts are being made to maintain and preserve remaining wetlands within California. Historically, Southern California had extensive wetlands with significant freshwater inflow. Approximately 90 percent have been destroyed, leaving few isolated wetlands comprising fragmented wetland habitat.

Regulatory agencies with jurisdiction over wetlands include the U.S. Army Corps of Engineers (Corps) with authority to enforce two Federal regulations involving wetland preservation; the Clean Water Act (Section 404), which regulates the disposal of dredge and fill materials in waters of the U.S., and the Rivers and Harbors Act of 1899 (Section 10), which regulates diking, filling, and placement of structures in navigable waterways. State regulatory agencies with jurisdiction over wetlands include the State Water Quality Control Board that enforces compliance with the Federal Clean Water Act (Section 401) regulating water quality; the California Coastal Commission, which regulates development within the coastal zone as stipulated in the California Coastal Act (Sections 30230, 30231, 30233, and 30240 apply to preservation and protection of wetlands); and the California Department of Fish and Game, which asserts jurisdiction over waters and wetlands with actions that involve alterations to streams or lakes by issuing Streambed Alteration Agreements under Section 1600 of the Fish and Game Code.

Definitions

As defined by the Corps at 33 CFR 328.3(a)(3), “water of the United States” are those that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. Based on the 2001 U.S. Supreme Court decision in Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, and guidance from the U.S. Army Corps of Engineers and U.S. Environmental Protection Agency, the Federal government no longer asserts jurisdiction over isolated waters and wetlands under Section 404 of the Clean Water Act based on the ”migratory bird rule”. Further guidance on the issue of isolated wetlands and waters is expected from the U.S. Army Corps of Engineers.

Under Corps and EPA regulations, wetlands are defined as: "those areas that are inundated or saturated by surface or groundwater 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."

In non-tidal waters, the lateral extent of Corps jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: “…line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” (33 CFR 328[e]).

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, is responsible for identifying waters, including wetlands, on agricultural lands and associated non-agricultural lands pursuant to the Food Security Act of 1985 (PL 99-198), the Food, Agricultural, Conservation, and Trade Act of 1990 (PL 101-624), the Federal Agricultural Improvement and Reform Act of 1996, and the 1994 Interagency Memorandum of Agreement. Agricultural land is defined by the National Food Security Act Manual as “…land that is intensively used and managed for the production of food and fiber. Examples are cropland, hayland, and pastureland, including native pastures and rangeland, orchards, vineyards,

areas which support wetland crops, other lands use to produce or support the production of livestock and small tree farms." On sites that qualify as agricultural land, the wetland delineations are verified by NRCS, but Section 404 permits are still issued by the Corps.

The U.S. Fish and Wildlife Service and CDFG define wetlands as: "…lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification, wetlands must have one or more of the following attributes: 1) at least periodically, the land supports predominantly hydrophytes; 2) the substrate is predominantly undrained hydric soil; and 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season each year."

The Ventura County General Plan Goals, Policies and Programs document defines wetlands as: "…lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. The frequency of occurrence of water is sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, vernal pools, wet meadows, river and stream overflows, mudflats, ponds, springs and seeps."

Distribution of Wetlands

All of the major drainages (Calleguas Creek, Revolon Slough, Arroyo Santa Rosa, Conejo Creek, and Arroyo Conejo) support waters of the U.S. and Corps-defined wetlands, at least in areas where wetland vegetation persists and soils have not been recently disturbed. In addition, some of the larger tributaries may also support Corps-defined wetlands. Nearly all major and minor drainages in the watershed support U.S. Fish and Wildlife Service and CDFG-defined wetlands and County-defined wetlands, since these definitions only require that hydrophytes are either present at some time or the area is capable of supporting hydrophytes. Even frequently maintained flood control channels support some hydrophytes.

- Special-Status Plant Species

Special-status plant species are either listed as endangered or threatened under the Federal or California Endangered Species Acts, or rare under the California Native Plant Protection Act, or considered to be rare (but not formally listed) by resource agencies, professional organizations (California Native Plant Society), and the scientific community. For the purposes of this project, special-status plant species are defined in Table 7.5-2.

The literature search and field surveys conducted for this impact analysis indicates that 22 special-status plant species occur in the vicinity of project components. For detail information about the current regulatory status and nearest known location of each species, relative to the RSMC and RWRMP projects, please refer to their FEIRs.

Table 7.5-2 Definitions of Special-Status Plant Species

- Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register Vol. 70, No. 90, pp. 24870-24934, May 11, 2005).
- Plants that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines,* Section 15380).
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in CNPS, 2001).
- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Lists 3 and 4 in CNPS, 2001).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), state and local agencies or jurisdictions.
- Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range
- Trees protected under the Ventura County Tree Protection Ordinance
- Trees protected under the City of Thousand Oaks oak tree ordinance and landmark tree ordinance

- Special-Status Wildlife Species

Special-status wildlife species are defined in Table 7.5-4. Literature research and field surveys conducted for this impact analysis indicates that 37 special-status wildlife species occur in the vicinity of project components. Information regarding regulatory status and known location of these species relative to project components level are provided the FEIRs for RSMC and RWRMP, for listed and non-listed species, respectively. Additional discussion of threatened and endangered species is provided below.

Steelhead (Oncorhynchus mykiss)

Steelhead have been divided into 15 evolutionary significant units (ESU) based on similarity in life history, location, and genetic markers. The southern California ESU includes 15 populations from the Santa Ynez River in the north to San Mateo Creek in the south. Calleguas Creek was included in the proposed critical habitat designation published in the Federal Register on February 5, 1999 (Vol. 64, No. 24, pages 5740-5754). A fisheries study was prepared for the City of Thousand Oaks as part of the Conejo Creek Diversion Project, demonstrating that steelhead had never spawned in Calleguas Creek (or tributaries). Therefore, based on this study (in part), Calleguas Creek was deleted from the final critical habitat designation published in the Federal Register on February 16, 2000 (Vol. 65, No. 32, pages 7764-7787). A separate two-year pilot study was conducted on the Calleguas Creek watershed to examine the ecological effects of land use on stream benthic and fish communities, resulting in no observations of steelhead throughout the study area (Lin et al., 2000).

Steelhead are assumed absent from the Calleguas Creek watershed for the purposes of this assessment.

Tidewater goby (Eucyclogobius newberryi)

This species was listed as endangered by USFWS in 1994 and critical habitat was designated in 2000, which did not include Calleguas Creek or Mugu Lagoon. However, USFWS proposed to remove tidewater goby populations north of Orange County from the endangered species list in 1999. This species has not been recently documented from Mugu Lagoon, but was reported from other coastal streams outside the project area including Hueneme Drain, J Street Drain, Oxnard Industrial Drain and East Hueneme Channel (Impact Sciences 1995, Steve Howard pers. comm. 2005). A two-year pilot study was conducted on the Calleguas Creek watershed to examine the ecological effects of land use on stream benthic and fish communities, resulting in no observations of tidewater goby throughout the study area (Lin et al., 2000). For the purposes of this assessment, tidewater goby are assumed absent from the Calleguas Creek watershed.

California red-legged frog (Rana aurora draytonii)

This species was listed as threatened in 1996 by the USFWS. Calleguas Creek was not included in the final critical habitat designation published in the Federal Register on March 13, 2001 (Vol. 66, No. 49, pages 14625-14674). Field surveys were conducted for this species in 1995, including Calleguas Creek from Highway 1 to the confluence with Conejo Creek, all of Conejo Creek, and Arroyo Conejo from the Hill Canyon Treatment Plant to the confluence with Arroyo Santa Rosa. California red-legged frog was not found during these surveys (Fugro West 1995b). The highest quality habitat for California red-legged frog within the Calleguas Creek watershed occurs within Arroyo Conejo, where permanent surface water is available and habitat alteration has been less than other portions of the watershed. However, this species has not been found in Arroyo Conejo during numerous surveys conducted in Hill Canyon (Fugro West 1995b; LSA 1996; ESA 1997). In addition, surveys conducted as part of the Thousand Oaks Unit W wastewater pipeline reconstruction project in 1998 and 2000, did not find California red-legged frog in Arroyo Conejo. The lack of this species in Arroyo Conejo may be associated with a high density of introduced predators (bullfrog, crayfish, green sunfish, large-mouth bass). Therefore, California red-legged frog is assumed to be absent from the Calleguas Creek watershed.

Arroyo toad (Bufo microscaphus californicus)

This species was listed as endangered by USFWS in 1995 and critical habitat was designated in 2001. Arroyo toad has not been reported from Calleguas Creek watershed, and the watershed was not included in the critical habitat designation. Numerous amphibian surveys conducted in Arroyo Conejo and Arroyo Simi (see discussion under California red-legged frog) did not find this species. The nearest known location of arroyo toad is Piru Creek, 16 miles north of Simi Valley, or 10 miles north of the Calleguas Creek watershed boundary (Oak Ridge).

Southwestern willow flycatcher (Empidonax traillii extimus)

This species was listed as endangered by USFWS in 1995 and critical habitat was designated in 1997. The first recent breeding reported in the region was from the

Fish Hatchery near Fillmore in 2000 (along the Santa Clara River). Southwestern willow flycatcher has not been reported from the Calleguas Creek watershed, and is assumed to be absent.

California gnatcatcher (Polioptila californica)

This species is listed as threatened by USFWS and as a California Species of Special Concern by CDFG. California gnatcatcher has bred just north of Moorpark since about 1995. A pair was observed in Dry Canyon in 2000, about 11 miles east of the proposed Thousand Oaks/Camrosa Recycled Water Interconnect, but nesting was not confirmed (Jim Greaves, personal communication, 2001). Areas of California sagebrush dominated coastal sage scrub are considered suitable habitat. Protocol surveys (tape playback) conducted in Camarillo Regional Park (near Camrosa storage ponds) in 1996 by Impact Sciences (1997) did not detect this species.

Least Bell's vireo (Vireo belli pusillus)

This species is listed as endangered by the USFWS and the CDFG. In Ventura County, the principal breeding population (about 60 pairs) occurs scattered along the Santa Clara River from just east of Saticoy, to east of Interstate 5 in Los Angeles County. Sightings in the Calleguas Creek watershed include:

- Calleguas Creek: single male sighted on April 25 and May 3, 2005, lack of nesting was confirmed on May 15 and 19, 2005.
- Arroyo Simi: nesting observed at the Caltrans mitigation site adjacent to the SR 23 bridge;
- Arroyo Las Posas: pair observed by the Moorpark Wastewater Treatment Plant (Jim Greaves, personal communication, 2001), but nesting was not observed; and
- White Oak Creek (Simi Valley): pair with young observed.

Areas of extensive riparian forest and/or riparian scrub adjacent to upland foraging habitats are considered suitable habitat. Habitat for least Bell's vireo is present along Calleguas Creek and lower Conejo Creek, but is considered low quality due to the very narrow width of the riparian corridor and minimal upland foraging areas. Least Bell's vireo may forage along Calleguas Creek and Conejo Creek, but nesting is not expected. Protocol surveys were conducted in Hill Canyon in 1996 and 1997, with negative results (LSA, 1996).

7.5.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on a biological resource if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on a 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 Game (CDFG) or the U.S. Fish and Wildlife Service (USFWS);

- 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 CDFG or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to marsh, riparian scrub, etc.) through direct removal, filling, hydrological interruption, or other means;

- 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;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

7.5.3 Environmental Impacts

This section presents potential impacts to biological resources related to the implementation of the Calleguas Creek Watershed Salts TMDL. Potential impacts are evaluated for proposed implementation actions, including construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided. Detail environmental impacts and mitigation measure for the RSMC and RWRMP are provided in their FEIR.

7.5.3.1 RSMC

- Pipeline Impacts

Phase I

This Phase consists of the portion of the pipeline system from the Camrosa Water Reclamation Facility to the Ormond Beach power plant ocean outfall. However, the availability and composition of brine or wastewater from this facility is uncertain at this time. Therefore, impacts associated with ocean discharge are considered only for the entire project (Phase I and II), where project-wide assumptions were developed and a dilution analysis of the ocean discharge of wastewater was conducted.

Certain segments of the proposed project would traverse row crops and turf farms, with no loss or disturbance of native vegetation or wildlife habitat. Special-status species

located in close proximity to the alignment are limited to arroyo chub. Impacts to this species would be avoided through tunneling under the drainages.

Calleguas Creek and Revolon Slough are channelized, but retain earthen banks (levees) and streambed. Calleguas Creek supports patches of willow scrub and freshwater marsh, which would meet the Corps, CDFG and County definition of wetlands. Revolon Slough supports disturbed wetland habitat, dominated by non-native species such as poison hemlock and cocklebur. Installation of the pipeline at the crossings will require boring and jacking, or microtunneling methods, which includes excavating push pits on each side of the creek crossing and using a boring machine to auger a tunnel under the creek through which the pipeline would be installed. The disturbance associated with this method of installation would be temporary and would consist of clearing vegetation to excavate the push pits on either side of the crossing. The area impacted by these two creek crossings would be agricultural lands adjacent to the earthen levees. Impacts to wetlands and sensitive riparian communities would be avoided.

Trenching would result in the loss of brackish marsh. Pipeline installation would affect (through trenching and storage of spoils or materials) of southern coastal salt marsh and southern foredunes. Southern coastal salt marsh and brackish marsh are expected to meet the Corps, CDFG and County wetland definitions. The loss of these sensitive communities and wetlands is considered a significant impact.

The pipeline would also be located adjacent to known populations of salt marsh bird's beak, red sand verbena, spiny rush, globose dune beetle, wandering skipper and Belding's savannah sparrow. In addition, sandy beach tiger beetle may occur within the foredunes. Direct loss of individuals and/or habitat of these special-status species, and indirect effects (dust and noise) is considered a significant impact.

Tidewater goby may occur in the tributary to the Oxnard Drain at the terminus of Edison Road, and may be adversely affected by trenching, through increases in turbidity, sedimentation-related loss of habitat and stranding. These adverse effects may result in significant impacts to this species.

Least terns and western snowy plovers may be nesting within or in close proximity to the pipeline alignment. Construction activities would remove nesting habitat, disturb nesting birds and may result in nest abandonment and loss of eggs and/or nestlings. These potential impacts are considered significant.

Least terns and western snowy plovers may be nesting within or in close proximity to the pipeline alignment. Construction activities would remove nesting habitat, disturb nesting birds and may result in nest abandonment and loss of eggs and/or nestlings. These potential impacts are considered significant.

Pipeline installation would be conducted such that larger drainages (and more likely migration routes) would be crossed by tunneling, such that no direct impacts to wildlife movement would occur. Noise and dust associated with tunneling activities may discourage some wildlife movement, but this impact is considered less than significant due to the short duration and daytime hours of activity.

Noise, dust and night lighting (if required) associated with pipeline installation at the two crossings would disturb wildlife using these riparian corridors. Such disturbance may

result in reduced foraging success, reduced reproduction and increased predation risk. Disturbance would not have a substantial adverse affect because no special-status species would be affected, the area affected would be limited to about 100 linear feet of channel, and the duration of the impact would be only a few weeks. Therefore, disturbance impacts associated with creek crossings are considered less than significant.

Phase II

This Phase consists of implementation of the balance of the proposed project, including contribution of wastewater from all identified potential sources. It is expected that most of the 75-foot-wide disturbance corridor would be located within the disturbed roadside. Pipeline installation would result in the loss of buckbrush chaparral, coastal sage scrub, southern riparian scrub, arroyo willow riparian forest, arroyo willow riparian forest, and annual grassland. In addition, pipeline installation along Conejo Creek may disturb southwestern pond turtle burrows and result in some mortality. Impacts to special-status species are considered significant.

Special-status species reported in the vicinity of the proposed project include Plummer's mariposa lily, Catalina mariposa lily, coast live oak, coastal western whiptail, Southern California rufous-crowned sparrow, black walnut, western sycamore, arroyo chub, silvery legless lizard, San Bernardino ring-neck snake, San Diego mountain kingsnake, coast patch-nosed snake, Cooper's hawk, least Bell's vireo, yellow warbler, yellow-breasted chat, loggerhead shrike, coastal cactus wren, California gnatcatcher, California horned lark, Bell's sage sparrow, grasshopper sparrow, Southern California rufous-crowned sparrow, San Diego desert woodrat, San Diego black-tailed jackrabbit, American badger and ringtail. These species may be directly affected by loss of habitat and/or individuals, or indirectly as a temporary loss of foraging habitat due to noise, dust and night lighting (if needed) associated with pipeline installation activities.

In addition, trenching within or adjacent to stream channels may result in sedimentation of downstream aquatic habitats, and adversely affect arroyo chub. Some loss of southern riparian scrub and arroyo willow riparian forest would occur. The loss of coastal sage scrub, arroyo willow riparian forest, and southern riparian scrub is considered a significant impact, because these communities are becoming rare in the region. In addition, mature trees protected under Section 9-1.1503 of the Simi Valley Zoning Ordinance and oak trees protected under Section 8107-25 of the Ventura County Zoning Ordinance would be removed or damaged. Impacts to special-status species are considered significant.

Southern riparian scrub and arroyo willow riparian forest within the Arroyo Las Posas and three tributaries area are expected to meet the criteria for wetlands under the County and CDFG definitions, and some portion of this area is expected to meet the criteria for wetlands under the Corps definition. The loss of wetlands is considered a significant impact.

- Loss of Instream Flow

FEIR for the RSMC indicates stream flow would be reduced because effluent (Simi Valley Water Quality Control Plant and Camarillo Water Reclamation Plant) currently discharged to streams would be lost as brine to the proposed pipeline, and groundwater

from the Simi Valley dewatering wells would be reclaimed and not discharged to Arroyo Simi. The analysis is based on reasonable worst-case (dry season) conditions, existing groundwater and wastewater production rates and full implementation of the Conejo Creek Diversion Project (under construction) (10 cfs loss of stream flow). Stream flow in Arroyo Simi would be reduced by 38 percent (6.1 to 3.8 cfs) upstream of the Simi Valley WQCP, and reduced by 23 to 31 percent downstream of the Simi Valley WQCP. Stream flow in Arroyo Las Posas would be reduced by 37 to 51 percent upstream of the MWTP (Hitch Blvd). Stream flow in Conejo Creek would be reduced by 9 to 18 percent downstream of the Camarillo WRP. Stream flow in Calleguas Creek would be reduced by 3 to 7 percent at SR 1.

The relative amount of project-related surface flow reductions is based on existing groundwater and wastewater production rates and would decrease over time as population growth occurs in the service areas of affected treatment plants, and rates of treated wastewater discharge to surface waters increase.

Reduction in surface flow may result in the reduction in the area of riparian communities and wildlife habitat, and aquatic habitat. Generally, riparian habitat is established and maintained by high groundwater levels and surface flow during the wet season (November-April), which would not be substantially altered by the proposed project. However, dry season inputs of surface flow from groundwater wells and wastewater treatment plants raises local groundwater levels, which increases the availability of soil moisture to riparian plants and may lengthen the functional growing season. Substantial project-related reductions in dry season surface flow inputs may result in a decrease in area and diversity of riparian communities, as multi-layered arroyo willow, red willow and cottonwood canopies are replaced with immature arroyo willows and mulefat. In addition, dry season surface water is critical for the survival of aquatic species, including sensitive fish and reptiles; arroyo chub, southwestern pond turtle and two-striped garter snake. However, determining the amount of flow reduction that would have a significant impact is very site-specific and is outside the scope of this program-level document. For the purposes of this document, flow reductions are assumed to have a significant impact by adversely affecting special-status species, wetlands, and fish and wildlife habitat.

The riparian forests between the Simi Valley WQCP and SR 23 are the best developed (in terms of structural and species diversity) along Arroyo Simi, and a 23 to 31 percent reduction in dry season flow may result in a significant impact to sensitive riparian communities, wetlands, and riparian-dependent wildlife such as arroyo chub, Cooper's hawk, least Bell's vireo, yellow warbler and yellow-breasted chat.

Riparian communities are less well developed downstream of Hitch Blvd; however, a 37 to 51 percent reduction in dry season flow may result in a significant impact to sensitive riparian communities, wetlands, and riparian-dependent wildlife such as arroyo chub, Cooper's hawk, least Bell's vireo, yellow warbler and yellow-breasted chat.

Conejo Creek is channelized downstream of the Camarillo Water Reclamation Plant, with only scattered riparian vegetation. However, a 9 to 18 percent reduction in dry season flow may cause a substantial reduction in the area and quality of aquatic habitat, resulting in a significant impact to sensitive aquatic species; arroyo chub, southwestern pond turtle and two striped garter snake.

- Marine Impacts

As discussed in the FEIR for the RSMC, discharge of the pipeline to the existing outfall at the Ormond Beach power plant would result in exceedances of California Ocean Plan water quality objectives for ammonia, copper and mercury. These water quality objectives were developed to protect marine life. Therefore, exceedances of these water quality objectives would substantially degrade the quality of the marine environment and may have lethal or sublethal effects to invertebrates, fish, marine birds and marine mammals, including special-status species (California least tern, California brown pelican and marine mammals). This water quality impact to biological resources is considered significant.

Fish, birds and mammals would be adversely affected by project-related ocean discharge of wastewater, primarily by mercury toxicity. Mercury may cause mortality in fish, and reduce egg production, viability of sperm, frequency of hatching and survival of offspring. Birds feeding on fish contaminated by mercury, such as terns, cormorants and pelicans, may suffer increased mortality and reduced reproduction. However, long-lived mammals may be most affected, by the long term accumulation of mercury through ingestion of contaminated prey (fish and invertebrates). Species most affected would be those that may feed in close proximity to the outfall, such as California sea lion, harbor seal and bottle-nosed dolphin.

- Migration Corridors

Pipeline installation would be conducted such that larger drainages (and more likely migration routes) would be crossed by tunneling, such that no direct impacts to wildlife movement would occur. Noise and dust associated with tunneling activities may discourage some wildlife movement, but this impact is considered less than significant due to the short duration and daytime hours of construction activity.

Smaller streams would be crossed by trenching; however, this disturbance would be limited to a short duration (about two weeks) and would be conducted during daylight hours. Since wildlife movement is concentrated during nighttime, no significant impacts to wildlife movement are expected. In addition, all pipelines would be buried, such that no barriers would be constructed.

7.5.3.2 RWRMP

Phase 1

This initial phase focuses on increasing recycled/reclaimed water use, reducing salt inputs to surface waters and construction of facilities to transport salts out of the watershed. Detail environmental impacts and mitigation measure for the RWRMP are provided in the attached FEIR for the RWRMP. Impacts to biological resources throughout the Phase 1 project sites include temporary and permanent impacts to wetlands, sensitive plant communities, native vegetation, and wildlife habitat.

- Wetlands.

Temporary and permanent impacts to wetlands are likely to occur at four Phase 1 project sites. Approximately 0.36 combined acres of CDFG-defined wetlands would be temporarily affected, and 0.025 acres would be permanently affected by project activities. Temporary impacts to Corps-defined wetlands may total approximately up to 0.22 acres. Due to historic losses and current rarity of wetlands in the watershed, temporary and permanent impacts to wetlands are considered potentially significant. Impacts for each location and respective wetland area are listed in Table 7.5-3, below:

Table 7.5-3. Phase 1 Wetland Impacts

Project Component / Location	CDFG Wetlands	Corps Wetlands
36-inch replacement line pipe bridge at Calleguas Creek	0.15 (temp) 0.005 (perm)	<0.05 (temp)
36-inch replacement line/Camrosa storage ponds tributary	0.09 (temp)	<0.05 (temp)
36-inch replacement line & CSUCI 8-inch brine disposal pipeline at Long Grade Canyon	0.03 (temp)	<0.03 (temp)
Wastewater Discharge Structure at Calleguas Creek	0.09 (temp) 0.02 (perm)	<0.09 (temp)
Total:	**0.36 (temp)** **0.025 (perm)**	**0.22 (temp)**

- Sensitive Plant Communities.

  Temporary and permanent impacts to CDFG rare plant communities are likely to occur at three Phase 1 project sites. Approximately 0.39 combined acres of southern riparian scrub, arroyo willow riparian forest, southern willow scrub, and freshwater marsh would be temporarily affected, and 0.005 acres of arroyo willow riparian forest would be permanently affected by project activities. Due to the rarity of riparian plant communities in the watershed, temporary and permanent impacts to sensitive plant communities are considered potentially significant. Impacts for each location and respective sensitive plant community are listed in Table 7.5-4 below:

Table 7.5-4. Phase 1 Sensitive Plant Community Impacts

Project Component / Location	Sensitive Plant Community			
	Southern riparian scrub	Arroyo willow riparian forest	Freshwater marsh	Southern willow scrub
36-inch replacement line pipe bridge at Calleguas Creek	-	0.2 (temp) 0.005 (perm)	0.05 (temp)	-
36-inch replacement line at Camrosa storage ponds tributary	0.09 (temp)	-	-	-
CSUCI 10-inch water line at Camarillo Regional Park	-	-	-	0.05 (temp)
Total:	**0.09 (temp)**	**0.2 (temp)** **0.005 (perm)**	**0.05 (temp)**	**0.05 (temp)**

- Native Plant Communities.

  Temporary and permanent impacts to common native plant communities are likely to occur at three Phase 1 project sites. Approximately 1.35 combined acres of coastal sage scrub, mulefat scrub, annual grassland, big saltbush scrub, and coyote brush scrub would be temporarily affected by project activities. Essentially all of this area is adjacent to disturbed areas (e.g., paved or unpaved access roads) where pipeline alignments or other facilities would be located. Due to the small area affected in comparison to that present in the watershed, temporary impacts to native plant communities are considered less than significant. Impacts for each location and respective sensitive plant community are listed in Table 7.5-5 below:

Table 7.5-5. Phase 1 Native Plant Community Impacts

Project Component / Location	Plant Community	Temporary Impact (ac)
36-inch replacement line/Camrosa storage ponds tributary to Calleguas Creek pipe bridge	Annual grassland, mulefat scrub, coastal sage scrub, coyote brush scrub, big saltbush scrub	0.6
36-inch replacement line & CSUCI 8-inch brine disposal pipeline/Long Grade Canyon crossing to Lewis/Potrero/Hueneme Roads intersection	Coyote brush scrub	0.2
CSUCI 10-inch water line at Camarillo Regional Park	Annual grassland, mulefat scrub, coastal sage scrub, coyote brush scrub, big saltbush scrub	0.55
	Total	**1.35**

- Special-Status Plant Species.

  Special-status plant species with the potential to occur within or near the Phase 1 project sites have been identified in the project area. However, none of these species or suitable habitat has been identified within the areas affected by the project during recent field surveys and through literature research. Therefore, no impacts to special-status plant species would occur.

- Wildlife.

  Temporary and permanent impacts to wildlife and their habitat may occur at various locations throughout the Phase 1 project sites, primarily where native plant communities and wetlands are present. Impacts to wildlife are broken down into three sub-sections: wildlife habitat, special-status wildlife species, and wildlife corridors.

  Approximately 1.7 acres of wildlife habitat (compiled from sensitive and native plant community area calculations) are likely to be temporarily affected by Phase 1 project activities. Of that, approximately 0.025 acres of habitat would be permanently affected by the construction of the 36-inch replacement line pipe bridge abutments on the banks of Calleguas Creek. Due to the temporary nature of construction activities at any one

location and the small amount of area likely to be permanently impacted by the Phase 1 project, impacts to wildlife habitat are considered less than significant

Threatened or endangered wildlife species known from the region do not occur in close proximity to project components. Therefore, no impacts to these species would occur.

Non-listed species with the potential to occur within or near the Phase 1 project sites have been identified during recent field surveys and through literature research. The potential for impacts to occur to these species may be considered a significant impact. Impacts to non-listed wildlife species for Phase 1 are listed in Table 7.5-6 below:

Table 7.5-6. Phase 1 Non-Listed Wildlife Species Impacts

Species (status)	Impact(s)	Project Component(s) / Location(s)
Arroyo chub (CSC)	Increased turbidity, temporary interruptions in spawning activity.	➢ 36-inch replacement line pipe bridge/Calleguas Creek
Two-striped garter snake (CSC, P)	Loss of vegetation and bank material (potential breeding sites), noise, migration barriers, reduced foraging success, potential direct mortality.	➢ Camarillo WRP 24-inch tie-in/Calleguas Creek; ➢ 36-inch replacement line/Camrosa storage ponds tributary; ➢ 36-inch replacement line pipe bridge/Calleguas Creek; ➢ Wastewater Discharge Structure/Calleguas Creek
Coastal western whiptail (SA), Coast horned lizard (CSC, P), San Diego desert woodrat (CSC)	Temporary loss of habitat, noise, migration barriers, potential direct mortality.	➢ 36-inch replacement line/Camrosa storage ponds tributary to Calleguas Creek pipe bridge; ➢ CSUCI 10-inch water line/Camarillo Regional Park
Yellow breasted chat (CSC)	Temporary loss of habitat, noise, deterrence from habitat areas.	➢ Camarillo WRP 24-inch tie-in/Calleguas Creek; ➢ 36-inch replacement line pipe crossings of Calleguas Creek
Southern California rufous-crowned sparrow (CSC, AWL), Coastal cactus wren (CSC), Loggerhead shrike (CSC, AWL), White-tailed kite (SA, P)	Temporary loss of habitat, noise, deterrence from habitat areas.	➢ 36-inch replacement line/Camrosa storage ponds to Calleguas Creek pipe bridge; ➢ CSUCI 10-inch water line/Camarillo Regional Park
Osprey (CSC), California horned lark (CSC)	Reduced foraging success.	➢ Wastewater Discharge Structure/Calleguas Creek ➢ 36-inch replacement line pipe crossings of Calleguas Creek

Status Codes: CSC California Species of Special Concern (CDFG)
FE Federal Endangered (USFWS)
FPD Federal Proposed for Delisting (USFWS)
FT Federal Threatened (USFWS)
FC Federal Candidate (USFWS)
P Protected under the California Fish and Game Code
SE State Endangered (CDFG)
AWL Audubon Watch List
SA Special animal (CDFG)

Nesting birds including raptor species protected under the California Fish and Game code have been identified in the project area through recent field surveys and literature research. Due to the presence of suitable nesting habitat within and in close proximity to Phase 1 project sites, impacts to nesting/breeding birds may be considered potentially significant.

Noise, dust and night lighting (if required) associated with construction activities within or adjacent to wildlife corridors (i.e., creeks or areas supporting native vegetation) may create disturbance resulting in reduced foraging success, reduced reproduction and increased predation risk. However, due to the limited areas required at each creek crossing, short duration of each project element, and project design within existing disturbed areas (e.g., paved or unpaved access roads), impacts to wildlife corridors are considered less than significant.

- Flow Impacts

Phase 1 of the Proposed Action would result in the termination of discharge of the Camarillo WRP to Conejo Creek. As part of this Program EIR/EA, Larry Walker Associates utilized the Hydrologic Simulation Program-Fortran (HSPF) model of the Calleguas Creek watershed developed by Aqua Terra Consultants (2005) to simulate project-related changes in surface flow. However, the HSPF model was enhanced and the simulation time extended by Larry Walker Associates as part of development of the Metals and Selenium TMDL. The HSPF model uses historic weather conditions (October 1, 1987 through December 31, 2004) to simulate surface flow, based on project-related changes to existing discharges and diversions of surface waters. The modeling is based on the assumption that the Conejo Creek Diversion maintains a 6 cubic feet per second (cfs) bypass (surface flow allowed to remain in the Creek), no diversion occurs when surface flows exceed 51.6 cfs and the maximum diversion rate is 21.7 cfs. Estimated stream flow rates at Route 1 and Mugu Lagoon do not account for tidal inputs or flow from Revolon Slough. Surface flow reductions are provided in Table 7.5-7 as median and minimum values over the modeling period (1987-2004 weather data).

Table 7.5-7. Summary of Phase 1 Surface Flow Reduction Impacts

Statistical Parameter	Existing Conditions (cfs)	Phase 1 (cfs)	Percent Reduction (cfs)
Conejo Creek at Howard Road			
Median Flow	11.8	6.1	48
Minimum Flow	6.6	5.9	11
Calleguas Creek at Potrero Road			
Median Flow	12.5	7.5	40
Minimum Flow	6.3	4.4	30
Calleguas Creek at Route 1*			
Median Flow	9.9	5.5	44
Minimum Flow	3.9	1.9	51

*Flow values do not include contribution from Revolon Slough and tidal flow from Mugu Lagoon

Potential impacts associated with surface flow reduction include loss of riparian vegetation and associated habitat, loss of wetlands, and loss of aquatic habitat. These losses could occur if a portion of the streambed became dry, if the area and depth of

instream pools was reduced, or riparian vegetation was deprived of water. The Phase 1 reduction in surface flow is very similar to the flow reduction associated with operation of the Conejo Creek Diversion, located approximately one mile upstream of the Camarillo WRP. This facility began operation in 2001 to implement a water right granted to the City of Thousand Oaks, and diverts a portion of the surface flow in Conejo Creek to Camrosa's storage ponds. Field inspection by Padre Associates biologists and inspection of aerial photographs taken before (1994) and after (2002) the flow diversion began indicate that the extent and quality of habitat in Conejo Creek has not changed as a result of flow diversion. Similarly, the surface flow reduction associated with Phase 1 of the Proposed Action would also not have a significant impacts on riparian habitat and wetlands. Surface flow would remain as a result of discharge of effluent from the Hill Canyon Wastewater Treatment Plant (WTP), rising groundwater from Arroyo Conejo, storm run-off and irrigation run-off (urban and agricultural). These flows would be confined to a narrow channel by levees, and would maintain saturated soils and riparian vegetation, which are primary components of wetlands.

Calleguas Creek is currently maintained from Route 1 upstream to the City of Camarillo boundary by the Ventura County Watershed Protection District. The portion of Conejo Creek from the Calleguas Creek confluence to near Upland Road is also maintained by the District. Maintenance is conducted periodically as needed to prepare for winter storm flows and repair minor storm damage, and includes application of herbicide on the banks, minor grading of access roads, replacement of small amounts of rock rip-rap and vegetation removal. The extent of vegetation removal is dictated by regulatory permits. Two Streambed Alteration Agreements were issued by the California Department of Fish and Game to the Watershed Protection District in spring 2006 to allow removal of sediment in Calleguas Creek. The reach between Lewis Road and Hueneme Road (Agreement 1600-2005-0634-R5) does not require any vegetation to be retained, but indicates the District intends to mow alternate sides of the channel annually, if needed. The reach between Hueneme Road and Route 1 (Agreement 1600-2006-0051-R5) requires a 12-foot wide strip of vegetation be preserved during sediment removal; however, this strip may be mowed. Therefore, riparian vegetation and wildlife habitat was entirely removed from over 4 miles of lower Calleguas Creek in 2006.

In summary, habitat conditions in portions of Calleguas and Conejo Creeks that would be affected by the Phase 1 surface flow reduction are controlled by storm events and periodic maintenance, and not the volume of surface flow. Surface flow would be maintained at a minimum of 6 cfs at the Conejo Creek Diversion as required by the City of Thousand Oaks water rights permit. This volume is considered sufficient to maintain riparian vegetation and wetlands in Conejo Creek and Calleguas Creek. However, flow reductions would substantially reduce the depth and extent of instream pools, especially during drought periods. These pools primarily support introduced species such as bullfrogs and bullhead. However, the arroyo chub is a native species of special concern that would be adversely affected by the reduction in pool area and depth. Phase 1 impacts to arroyo chub are considered significant.

Reduction in surface flow inputs from Calleguas Creek into Mugu Lagoon in Phase 1 may affect salinity and volume of the Lagoon, which may adversely affect habitat for fish, birds and other wildlife. Mugu Lagoon is composed of three basins, the central basin, western arm and eastern arm. The central basin receives freshwater input from Calleguas Creek, Revolon Slough and a large agricultural drain. The western arm receives freshwater input from the Oxnard Drain and run-off from the Naval Air Station

Point Mugu. The eastern arm receives freshwater input from Laguna Peak, Point Mugu State Park and adjacent areas. Circulation patterns in the Lagoon are characterized by slow rates of mixing and flushing in the western arm, and moderate to fast rates of mixing and flushing in the eastern arm and central basin (Tetra Tech EM, 2002). With the exception of freshwater influences during storm events, Mugu Lagoon is primarily marine-dominated. The tidal prism (volume of water moved in and out of the Lagoon by tides) is large compared to the volume retained at low water (U.S. Department of the Navy, 2002). The salinity of the Lagoon is similar to seawater (34 ppt) most of the time. The central basin receives most of the freshwater input, but this stream is channelized into a deepened area, with a direct path out of the mouth of the Lagoon. Only in the western extremity of the western arm does a salinity gradient exist (Tetra Tech EM, 2002). Based on the large tidal prism and presence of other freshwater inputs, the project-related reduction in freshwater input from Calleguas Creek is not expected to substantially affect the volume or salinity of water in Mugu Lagoon. Therefore, no significant impacts to wetlands, sensitive plant communities or wildlife would occur.

Phase 2

The second phase would enhance groundwater treatment, expand recycled water distribution facilities and initiate water releases to the Arroyo Conejo creek system in anticipation of termination of discharge of the Hill Canyon WTP to North Fork Arroyo Conejo (Phase 3).

- Groundwater Reclamation. A portion of the water produced from the Camrosa's Conejo wells along Hill Canyon Road (Santa Rosa Basin) would be treated for salt removal to produce potable water to supplement Camrosa's potable water deliveries. A treatment plant would be constructed at the Camrosa Water District headquarters to treat up to 5 million gallons per day of Conejo well water. The treatment process would employ either reverse osmosis or electrodialysis reversal technology. Treated water would be blended with Conejo well water to reduce salt concentrations. The brine waste stream from the treatment plant would be discharged to the Calleguas MWD brine disposal system for ocean disposal. A 2.7 mile-long small diameter brine disposal pipeline would be installed along Upland Road to connect to the Calleguas MWD brine disposal system near Arroyo Las Posas.

  The treatment plant would be constructed within the existing Camrosa Water District headquarters facility. The brine disposal pipeline would be constructed within the Upland Road right-of-way through residential areas, and at Calleguas Creek, would be attached to the Upland Road Bridge. Calleguas Creek at this location on September 1, 2005, was a dry, mostly bare, sandy channel with scattered arroyo willows and mulefat. No cliff swallow nests or suitable bat habitat were observed beneath the bridge deck. Due to the location of the facilities, both facilities described above would result in no loss or disturbance of native vegetation or wildlife habitat.

- Initiate Replenishment Water Releases.

  Experimental water releases to Arroyo Conejo would be initiated to determine the feasibility to maintain instream beneficial uses following the termination of discharge of Hill Canyon WTP effluent (see Phase 3). The source of the replenishment water may include treated groundwater, imported water from the Calleguas MWD distribution system and/or a portion of the treated Hill Canyon WTP wastewater. Wells, treatment

facilities and distribution system needed for groundwater production would likely be located within or adjacent to existing facilities or other previously disturbed areas and are presumed to have no loss or disturbance of native vegetation or wildlife habitat. However, additional environmental analysis may be required when information is available regarding the location and characteristics of these facilities.

Replenishment water would be released to Arroyo Conejo in the City of Thousand Oaks. The discharge structure(s) required for the release of this groundwater to Arroyo Conejo would likely be located in riparian areas, but locations and design would be selected to minimize loss of habitat. The following impact analysis is focused on structures associated with discharge of imported water based on generalized locations of turn-outs of the Calleguas MWD distribution system. Construction of each discharge structure would require an area measuring approximately 0.05 acres. A site assessment of each preliminary discharge location (approximate) was conducted on September 1, 2005. A brief description is provided in Table 7.5-8 below:

Table 7.5-8. Phase 2 Potential Replenishment Water Discharge Locations

Approximate Location	Site Description	Impact
Montclef Road and Lucero Road	Creek originates from an underground culvert and drains into a 40-foot wide arroyo willow riparian forest (channelized).	Temporary (0.02 acres) and permanent (0.005 acres) disturbance of arroyo willow riparian forest. Nesting birds may be present.
Avenida de los Arboles and Frontier Road	Creek originates from an underground culvert drains into a small, but steep, rocky canyon. Vegetation is mainly annual grassland, disturbed coastal sage scrub, and sparse oak woodland.	Temporary (0.02 acres) and permanent (0.005 acres) disturbance of coastal sage scrub, and potential removal of several small oak trees. Nesting birds may be present.
Moorpark Road near Avenida de los Flores	Disturbed dry streambed supporting mostly non-native plants including annual grasses, palm, *Eucalyptus*, and other ornamental trees form a dense woodland.	Temporary (0.02 acres) and permanent (0.005 acres) disturbance of thickly vegetated, dry streambed. Site supports non-native vegetation, but may provide wildlife habitat. Nesting birds may be present.
West Thousand Oaks Blvd. near Oaks Mall	Creek originates from an underground box culvert into a deep pool surrounded by arroyo willow riparian forest and Peruvian pepper trees. Adjacent to 101 Freeway (north).	Temporary (0.02 acres) and permanent (0.005 acres) disturbance of arroyo willow riparian forest and freshwater marsh. Arroyo chub, two-striped garter snake, southwestern pond turtle, and nesting birds may be present.
Wendy Drive near Gerald	Creek is channelized by earthen (mostly bare) banks. Surface	Temporary (0.02 acres) and permanent (0.005 acres)

Road	flow 40 feet wide is present. Native and non-native freshwater marsh species present.	disturbance of freshwater marsh. Arroyo chub, two-striped garter snake and southwestern pond turtle may be present.

Impacts to biological resources described in Table 5.4-13 are not fully known as details of proposed facilities have not be determined. Additional CEQA analysis would be required when the source of replenishment water has been selected, and facility locations and characteristics have been determined to fully determine impacts. Impacts to wetlands, sensitive riparian plant communities, special-status species and breeding birds may be significant.

Additional monitoring (beyond Phase 1) may be implemented to determine the effects of replenishment water releases. This may require adding facilities to Phase 1 monitoring stations, and could result in some loss of habitat. Additional CEQA analysis would be conducted when more information is available to fully determine impacts. Impacts to wetlands, sensitive riparian plant communities, special-status species and breeding birds may be significant.

Phase 3

This phase focuses on terminating discharge of effluent from the Hill Canyon WTP into Arroyo Conejo and introducing it directly into the Camrosa recycled/non-potable water distribution system for agricultural irrigation purposes. Impacts to biological resources throughout the Phase 3 project sites include temporary and permanent impacts to wetlands, sensitive plant communities, native vegetation, and wildlife habitat

- *Wetlands*. The North Fork and South Fork of Arroyo Conejo, Conejo Creek, and Arroyo Santa Rosa meet the CDFG and Corps definitions of wetlands. Wetland impacts are based on the 1997 wetland delineation conducted for the Hill Canyon Regional Recreational Facility by ESA (1997). Temporary and permanent impacts to wetlands are likely to occur at the North Fork Arroyo Conejo pipe bridge, two locations along Hill Canyon Road (adjacent to Arroyo Conejo), the Arroyo Santa Rosa pipe bridge, and the Conejo Creek pipe bridge. Approximately 0.43 combined acres of CDFG-defined wetlands would be temporarily affected, and 0.125 acres would be permanently affected by project activities. Temporary impacts to Corps-defined wetlands may total approximately up to 0.137 acres, and 0.02 acres would be permanently affected by project activities. Due to the rarity of wetlands in the watershed and recognized sensitivity of wetlands, temporary and permanent impacts to wetlands are considered potentially significant. Impacts for each location and respective wetland area are listed in Table 7.5-9 below:
-

Table 7.5-9. Phase 3 Construction-related Wetland Impacts (acres)

Project Component / Location	CDFG Wetlands	Corps Wetlands
North fork of Arroyo Conejo pipe bridge	0.04 (temp) 0.005 (perm)	0.009 (temp)
Hill Canyon Road – upper location (adjacent to Arroyo	0.14 (temp)	0.05 (temp)

Conejo)	0.05 (perm)	
Hill Canyon Road – lower location (adjacent to Arroyo Conejo)	0.17 (temp) 0.06 (perm)	0.06 (temp) 0.02 (perm)
Arroyo Santa Rosa pipe crossing	0.05 (temp)	0.009 (temp)
Conejo Creek pipe bridge	0.04 (temp) 0.005 (perm)	0.009 (temp)
Total:	**0.44 (temp)** **0.120 (perm)**	**0.137 (temp)** **0.02 (perm)**

Temporary and permanent impacts to CDFG rare plant communities are likely to occur at the North Fork and South Fork of Arroyo Conejo, Arroyo Santa Rosa, Conejo Creek, and along Hill Canyon Road. Arroyo willow riparian forest and freshwater marsh would be temporarily and permanently affected by project activities. Due to the rarity of riparian plant communities in the watershed, temporary and permanent impacts to sensitive riparian plant communities are considered potentially significant. Impacts for each location and respective sensitive plant community are listed in Table 7.5-10 below:

Table 7.5-10. Phase 3 Sensitive Plant Community Impacts (acres)

TO/Camrosa Interconnect Location	Sensitive Plant Community	
	Arroyo willow riparian forest	**Freshwater marsh**
Hill Canyon Segment	0.3 (temp) 0.1 (perm)	0.05 (temp) 0.02 (perm)
Arroyo Santa Rosa pipe bridge	0.04 (temp) 0.005 (perm)	-
Conejo Creek pipe bridge	0.03 (temp) 0.005 (perm)	0.01 (temp)
Total:	**0.37 (temp)** **0.11 (perm)**	**0.06 (temp)** **0.02 (perm)**

- *Special-Status Plant Species*. Based on numerous field surveys by LSA in 1997 for the Hill Canyon Regional Recreation Facility and field work conducted by Padre as part of the City of Thousand Oaks removal project, the only special-status plant species in the immediate project area are Conejo buckwheat, coast live oak and California black walnut. Conejo buckwheat occurs on rock outcrops immediately east of Hill Canyon Road and may be impacted by dust generated by pipeline installation and debris generated by blasting of bedrock. Impacts to Conejo buckwheat are considered potentially significant.

  Impacts to native trees along Hill Canyon Road may include removal of approximately five (5) coast live oaks measuring from 6 to 40 inches in diameter, and eleven (11) California black walnuts measuring from 2 to 8 inches in diameter. Removal of oaks would be contrary to the City of Thousand Oaks oak tree ordinance (Section 5-14 of the Municipal Code). One of the black walnut trees to be removed meets the definition of a landmark tree under the City's landmark tree

ordinance (Section 5-24 of the Municipal Code). Removal of five oak trees and one landmark tree is considered a significant impact.

- *Special-Status Wildlife Species*. Suitable habitat for arroyo chub, southwestern pond turtle, two-striped garter snake, western whiptail, San Diego mountain kingsnake, Cooper's hawk, yellow warbler, yellow-breasted chat and Yuma myotis would be removed or indirectly disturbed during installation of the Interconnect pipeline along Hill Canyon Road. Suitable habitat for arroyo chub, southwestern pond turtle, two-striped garter snake and Yuma myotis would be removed or indirectly disturbed during installation of the Interconnect pipeline crossing of Conejo Creek.

  Short-term impacts to arroyo chub may include increased turbidity and interrupted spawning activity from work crews crossing the North Fork and South Fork of Arroyo Conejo at the pipe bridge and pipeline segments along Hill Canyon Road within the streambank, and at the Conejo Creek pipe bridge. No long-term impacts to arroyo chub are anticipated from the construction of the pipe bridges. Short-term impacts to other wildlife species may include increased turbidity, noise, removal of native vegetation and bank material (which may provide refugia and potential breeding sites), deterrence from the area for use as foraging or breeding habitat, and temporary migration barriers on Arroyo Conejo and Conejo Creek. In addition, direct mortality of these species may occur during construction. Long-term impacts for these special-status species include permanent removal of breeding and foraging habitat along Hill Canyon Road and at proposed pipe bridges. Impacts to special-status wildlife species are considered potentially significant.

- Nesting birds including raptor species protected under the California Fish and Game code have been identified in the project area through recent field surveys and literature research. Due to the presence of suitable nesting habitat within and in close proximity to the Phase 3 pipeline, impacts to nesting/breeding birds may be considered potentially significant.

- *Flow Reduction Impacts*. Phase 3 of the Proposed Action would result in the termination of discharge of the Hill Canyon WTP to North Fork Arroyo Conejo. As part of this Program EIR/EA, Larry Walker Associates utilized the Hydrologic Simulation Program-Fortran (HSPF) model of the Calleguas Creek watershed developed by Aqua Terra Consultants (2005) to simulate project-related changes in surface flow. However, the HSPF model was enhanced and the simulation time extended by Larry Walker Associates as part of development of the Metals and Selenium TMDL. The HSPF model uses historic weather conditions (October 1, 1987 through December 31, 2004) to simulate surface flow, based on project-related changes to existing discharges and diversions of surface waters. The modeling is based on the following assumptions:
  - Replenishment water is discharged to Arroyo Conejo, at rates varying from 2 to 8 cfs;
  - The Conejo Creek Diversion maintains a 6 cubic feet per second (cfs) bypass (surface flow allowed to remain in the Creek);
  - No diversion occurs when surface flows exceed 51.6 cfs; and
  - The maximum diversion rate is 21.7 cfs.

The modeling results are provided in Table 7.5-11 as median and minimum values over the modeling period (1987-2004). Phase 3 flow rates for the 8 cfs replenishment discharge scenario would be the same as for the 6 cfs scenario for locations downstream of the Conejo Creek Diversion, as the additional 2 cfs of flow would be diverted. Table 7.5-11 indicates flow reductions would be substantial even when offset by discharge of replenishment water.

Potential impacts associated with surface flow reduction include loss of riparian vegetation and associated habitat, loss of wetlands, and loss of aquatic habitat. These losses could occur if a portion of the streambed became dry, if the area and depth of instream pools was reduced, or riparian vegetation was deprived of water. As discussed under Phase 1, habitat conditions in Conejo Creek and Calleguas Creek are controlled by storm damage and channel maintenance and not dry season flow volumes. Therefore, loss of riparian vegetation and wetlands in these areas is expected to be less than significant. However, Arroyo Conejo in Hill Canyon is relatively unconfined and flow reductions associated with Phase 3 would likely result in some reduction in wetted channel area, and saturated soils. It is possible that some reduction in wetland area would occur.

Table 7.5-11. Summary of Phase 3 Surface Flow Reduction Impacts (overall median)

Existing Conditions (cfs)	Replenishment Scenario	Phase 3 (cfs)	Percent Reduction (cfs)
Conejo Creek below Hill Canyon			
18.3	2 cfs	5.3	82
	4 cfs	7.3	71
	6 cfs	9.3	49
	8 cfs	11.3	38
Conejo Creek at Howard Road (1)			
11.8	2 cfs	5.9	50
	4 cfs	6.1	48
	6 cfs	6.2	47
	8 cfs	6.1	48
Calleguas Creek at Route 1 (2)			
9.9	2 cfs	4.9	51
	4 cfs	5.4	45
	6 cfs	5.5	44
	8 cfs	5.5	44

(1) Flows in excess of 6 cfs are diverted prior to Howard Road
(2) Flow values do not include contribution from Revolon Slough and tidal flow from Mugu Lagoon

In addition, the composition of riparian vegetation in areas removed from the low flow channel may slowly change from riparian forest to riparian scrub, or from marsh to riparian forest. Generally, riparian forests are maintained by winter floods and the seasonal presence of groundwater within the root zone (Jones and Snyder, 1984). Currently, baseflow generated by rising water from the Conejo Valley Groundwater Basin and discharge of effluent from the Hill Canyon WTP maintains high groundwater levels in Hill Canyon. Some reduction in groundwater levels in Hill Canyon may occur with termination of effluent discharge and production of groundwater from the Conejo Valley Groundwater Basin (a likely component of Phase 3). Therefore, surface flow reduction associated with Phase 3 may

significantly impact riparian vegetation, sensitive plant communities and wetlands in Hill Canyon, and may be compounded by groundwater production.

Discharge of replenishment water in the upper reaches of Arroyo Conejo would increase surface flow and provide a perennial source of water. This may result in an increase in the area and habitat quality of riparian vegetation in the immediate location of the discharge as well as portions of North Fork and South Fork Arroyo Conejo upstream of the Hill Canyon WTP. Based on preliminary replenishment water discharge locations identified in Figure 3-5, approximately 6.3 miles of stream channels would be provided with additional surface flow. Concrete-lined channels and box culverts within the City of Thousand Oaks were not included in this estimate. The benefits of additional surface flow in the upper reaches of Arroyo Conejo would partially offset impacts in Hill Canyon.

Overall, loss or modification of riparian vegetation and wetlands in Hill Canyon associated with Phase 3 would reduce habitat area and quality for special-status wildlife species including arroyo chub, southwestern pond turtle, two-striped garter snake, yellow warbler, yellow-breasted chat and Cooper's hawk. In addition, Phase 3 related surface flow reductions may decrease the area and depth of dry season instream pools in Arroyo Conejo, which would adversely affect arroyo chub, southwestern pond turtle and two-striped garter snake. Flow reduction-related impacts to special-status wildlife species are considered potentially significant.

Impacts described above for Phase 3 are based on preliminary information regarding pipeline alignments, replenishment water volumes, discharge locations and modeled creek flows. Additional CEQA analysis would be required following project design development to fully determine impacts.

Phase 4

This Phase focuses on pumping brackish groundwater to transport salts out of the watershed.

- Conejo Groundwater Basin. This component may be initially implemented as part of Phase 2 to provide replenishment water, and impacts are discussed under Phase 2. Wells would be installed to pump groundwater from the Conejo Valley Basin and discharge into the stream system in coordination with replenishment releases to assure compliance with surface water quality standards. Major new components would include several shallow groundwater wells (3-5) located near the South Fork of the Arroyo Conejo with metering facilities and diffusers for release into the creek. Well locations have not been identified to date, but would likely be within the northern and western portion of Thousand Oaks. Future CEQA analysis would be required upon completion of project design, but locations and design would likely be selected to minimize loss of habitat.

- Lower Watershed. As an additional management tool that could be implemented by others to manage salt loading in lower areas of the Watershed, shallow dewatering wells could be constructed and operated to:
  - Blend with other waters for irrigation uses;
  - Discharged to the Calleguas MWD brine disposal system, or

- Treated for use and the brine stream discharged to the Calleguas MWD brine disposal system.

Disposal of these waters on an as-needed-basis would prevent continued salt accumulation and excess salt loading to the surface water system. Major components would include new shallow wells (number and location to be determined) and pipelines to pump and transport water to the Calleguas MWD brine disposal system. This component is outside the direct jurisdiction of the current public agencies participating in this project, but could be implemented by others in coordination with the Calleguas Creek Watershed Integrated Regional Water Management Plan. Future CEQA analysis would be required upon completion of project design, but locations and design would likely be selected to minimize loss of habitat.

7.6.3.3 Cumulative Impacts

There are several proposed projects included in the Calleguas Creek Watershed Integrated Watershed Management Plan developed by a consortium of public agencies and interested parties. These projects may be implemented at about the same time and affect the same resources, and may result in cumulative biological impacts. Potentially cumulative biological impacts include:

- RSMC: would result in loss of sensitive plant communities and wildlife habitat along Arroyo Las Posas upstream of the Proposed Action, and affect special-status species in the immediate vicinity of the Proposed Action. However, impacts of the Proposed Action are considered significant and would be mitigated such that the cumulative contribution would not be considerable.

- RWRMP

  West Simi Desalter: would result in the termination of groundwater discharge to Arroyo Simi, and may affect surface flows in Calleguas Creek. Adverse effects on instream biological resources associated with surface flow reductions of the Proposed Action may be exacerbated by the West Simi Desalter project but would remain less than significant due to hydrogeologic conditions in the Somis area (no dry season surface flow) and channelized condition of Calleguas Creek

  Ventura County Waterworks District no. 1 Reclaimed Water System Expansion: may affect sensitive plant communities and wildlife habitat in the Moorpark area. Impacts would be limited to temporary pipeline installation and relatively distant from the Proposed Action. Therefore, impacts would not be cumulatively considerable.

  Simi Valley Regional Recycled Water System: would result in the termination of treated effluent to Arroyo Simi, and may affect surface flows in Calleguas Creek. Adverse effects on instream biological resources associated with surface flow reductions of the Proposed Action may be exacerbated by this project but would remain less than significant due to hydrogeologic conditions in the Somis area and channelized condition of Calleguas Creek.

  Conejo Creek North Fork-Wildwood Park Water Management Enhancement Project: would create approximately 5 acres of riparian woodland habitat, and

serve to offset habitat loss associated with the projects of the Calleguas Creek Watershed Integrated Watershed Management Plan.

Calleguas Creek Watershed Arundo/Tamarisk Pilot Removal Project: may result in short-term adverse impacts to sensitive riparian habitats, with long-term benefits associated with an increase in the density of native plant species. Adverse impacts may occur in the vicinity of the Proposed Action and result in cumulative impacts. However, impacts of the Proposed Action to riparian habitats are considered significant and would be mitigated such that the cumulative contribution would not be considerable.

7.5.4 Mitigation Measures

Detail mitigation measures for specific environmental impacts for the RSMC and RWRMP are provided in their FEIR. The following measures, in general, should be implemented to minimize impacts to special-status species, sensitive communities, wetlands and wildlife habitat.

Surface flow should be augmented to maintain habitat for arroyo chub in Calleguas Creek. Surface flow in Calleguas Creek at Route 1 should not decrease below 2.6 cfs, measured as a monthly average. This value represents the modeled lowest monthly (July) minimum for current conditions, to ensure pool habitat is available during the dry season. Flow augmentation should be provided by reducing the amount of surface flow diversion at the Conejo Creek Diversion to ensure stream pool habitat is maintained.

A flow monitoring and groundwater study should be conducted to:

- Identify changes in baseflow in Arroyo Conejo that may occur as a result of groundwater production in the Conejo Valley Groundwater Basin;
- Identify potential changes in groundwater elevations in Hill Canyon associated with changes in baseflow and termination of discharge of effluent from the Hill Canyon WTP;
- Determine the change in wetted surface area in Hill Canyon associated with changes in baseflow and groundwater elevations;
- Identify potential effects on the area and habitat value of riparian vegetation and wetlands;
- Identify impacts to fish and wildlife associated with changes in riparian vegetation and associated habitat;
- Identify and implement mitigation measures to offset impacts to riparian vegetation, wetlands and special-status species, which may include discharge of a portion of Hill Canyon WTP effluent, augmentation of existing City efforts to control giant reed in Hill Canyon, augmentation of the City's existing pond turtle habitat enhancement efforts.

The pipeline disturbance corridor (impact areas) should be reduced in width to the extent feasible adjacent to sensitive plant communities and wetlands. Alternative trench spoil

storage and pipe lay-down areas should be used at these locations. Abutments of pipe bridges and associated permanent structures should be located outside the riparian corridor to the extent feasible.

The dripline of all oak trees in close proximity to the pipeline installation work area should be fenced. The pipeline alignment and work area should be modified to the extent feasible to avoid impacts to oak trees and landmark trees. All oak trees greater than two inches in diameter at breast height removed or damaged should be replaced with two 24-inch box specimens and one 36-inch box specimen, for each oak tree removed or damaged.

Replenishment water discharge structures should be designed and located to minimize streambed erosion, and loss of wetlands and riparian vegetation.

All construction activity associated with installation of the 36-inch replacement pipeline and CSUCI well brine pipeline in the vicinity of Round Mountain should be limited to the Lewis Road right-of-way to avoid potential impacts to special-status plant species.

Conejo buckwheat populations shall be protected in place from pipeline installation activities along Hill Canyon Road. Protective measures should be developed in coordination with CDFG and may include a temporary solid barrier to prevent inadvertent losses and dust impacts.

Focused wildlife surveys should be conducted at all creek crossings and areas supporting native vegetation prior to the initiation of construction by a qualified biologist to identify the presence and distribution of special-status wildlife species. Facilities required to produce, treat, distribute, meter and discharge replenishment water should be designed and located to minimize loss of native vegetation and wildlife habitat. Riparian plant communities and oak woodlands should be avoided to the extent feasible. Mitigation measures should be developed to avoid, minimize or offset impacts to the extent feasible, and may include:

- Modifying the pipeline alignments or structure locations to avoid or minimize loss of habitat;
- Limiting construction activities to the non-breeding season (August 15 to March 1);
- Maintaining surface flow through the construction area;
- Relocating aquatic species (arroyo chub and two-striped garter snake) during dewatering (if needed) or other instream construction activities; and
- Reducing population levels of invasive species (giant reed, crayfish, bullfrogs, large-mouth bass) that reduce habitat value for special-status species.

Additional water quality monitoring facilities (if required) should be designed and located to minimize loss of native vegetation and wildlife habitat. Riparian forest and oak woodlands should be avoided to the extent feasible.

Breeding bird surveys should be conducted by Camrosa (or project partner agencies) in May and June prior to the initiation of construction at all proposed creek crossings and pipeline segments adjacent to creeks. Surveys should include all suitable habitat within 500 feet of identified impact areas. No heavy equipment should be operated within 200

feet of any active nest of migratory bird species unless authorized by the appropriate resource agency.

Impact areas located within or adjacent to native vegetation should be staked in the field by a surveyor, in coordination with project partner agencies and the construction contractor, immediately prior to the initiation of construction. Construction activities should be monitored in the vicinity of sensitive habitats and known locations of special-status species, to ensure no disturbance occurs outside the staked impact area. The monitor should work with Camrosa staff and the construction contractor to modify the impact area as needed to minimize impacts and meet the goals of the project.

A restoration plan should be developed by project partner agency overseeing construction to restore pre-construction topography, and replace wetlands, native plant communities and wildlife habitat affected by project construction. Affected areas should be returned to pre-construction conditions, or better, in terms of native plant cover, species composition and diversity. The plan should be prepared in coordination with trustee agencies and include erosion control methods and materials, specific planting areas, plant palettes, sources of plant material, propagation methods, planting methods, monitoring and maintenance methods and success criteria. The restoration plan should be completed and approved by regulatory agencies (if required) prior to the initiation of construction. Restoration should be implemented within one year of the completion of construction. Removal of invasive plant species (such as giant reed or castor bean) should be conducted to offset permanent impacts associated with pipe bridges.

7.5.5 Residual Impacts

Mitigation measures are provided to minimize impacts to sensitive communities, wetlands and special-status species, through avoidance and restoration. It is expected that full implementation of these measures would reduce impacts to a level of less than significant. However, future CEQA (and possibly NEPA) analysis would be required as a project levels when detailed project design information has been developed, and may determine that residual impacts would be significant.

7.6 COASTAL RESOURCES

This section describes the existing coastal resources that occur in the Calleguas Creek watershed and the potential impacts to these resources caused by the alternative compliance measures for the Calleguas Creek Watershed Salts TMDL.

7.6.1 Description of Coastal Resources

The Calleguas Creek and its watershed drain into the Mugu Lagoon which supports a diverse wildlife population including migratory birds and endangered species. The lagoon consists of approximately 287 acres of open water, 128 acres of tidal flats, 40 acres of tidal creeks, 944 acres of tidal marsh and 77 acres of salt pan (California Resources Agency, 1997). The Lagoon is comprised of a central basin that receives the flow from Revolon Slough and Calleguas Creek, and two arms (eastern and western) that receive some drainage from agricultural and industrial drains. In addition, multiple drainage ditches drain into the lagoon. Two of these ditches, Oxnard drainage ditches 2 and 3, discharge urban and agricultural runoff originating beyond the Naval Station's boundaries into the central and western portion of the lagoon. The remaining ditches discharge urban and industrial runoff originating on the Station.

The salinity in the lagoon is generally between 31 and 33 parts per thousand (ppt) (Granade, 2001). The central basin of the lagoon has a maximum tidal range of approximately -1.1 to 7 feet (as compared to mean sea level) with smaller ranges in the eastern and western arms of the lagoon. The western arm of the lagoon receives less tidal volume because of a bridge culvert that restricts the flows in that area. The velocity of water traveling through the narrow mouth of the lagoon is approximately 5-6 knots, which is a high velocity for a lagoon (Grigorian, 2001). The mouth of the lagoon never closes, apparently as a result of a large canyon present at the mouth of Calleguas Creek. The canyon prevents ocean sand from building up to a high enough level to close the mouth and likely accounts for the high velocities in the lagoon (Grigorian, 2001).

The California Coastal Act (CCA), enacted in 1976, is the Coastal Zone Management Program for California. The CCA (Public Resources Code §30000 et seq.) exists to "protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources" (Public Resources Code §30001.5). The coastal zone extends from the California/Oregon border to the California/Mexico border, seaward to the end of the jurisdictional waters of the United States, including all offshore islands, and inland generally 1,000 yards (Public Resources Code §30103).

The coastal resources protected by the CCA include:

- Coastal Zone access (including beach access)
- Coastal recreation (boating and water-oriented activities)
- Marine environment (biological productivity and protection of human health)
- Land resources in the Coastal Zone (sensitive habitats)

7.6.2 Thresholds of Significance

A significant impact to coastal zone management would occur if the direct and indirect changes in the environment that may be caused by the alternative would potentially result in one or more of the following future conditions:

- Damage to the overall quality of the coastal zone environment and its natural and artificial resources.

- Disorderly, unbalanced utilization and conservation of coastal zone resources.

- Elimination of public access to and along the coast by vehicle, bicycle, or foot; or restriction of public recreational opportunities in the coastal zone.

7.6.3 Environmental Impacts and Mitigation Measures

This section presents potential impacts to coastal resources related to the implementation of the Calleguas Creek Watershed Salts TMDL. Potential impacts are evaluated for each alternative method of compliance discussed. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

This is a program-level analysis of the potential impacts . The specific location of each alternative would be determined during the implementation of the Salts TMDL.

In general, the proposed implementation actions for the Calleguas Creek Watershed Salts TMDL include construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, construction of shallow dewatering wells, and collection and transportation of brine and treated wastewater to the Pacific Ocean through existing and/or new ocean outfall.

The ocean outfall of the proposed pipeline system would receive four types of wastewater: tertiary-treated wastewater from the POTWs, RO effluent from POTWs, RO effluent from groundwater wells, and effluent from existing outfall users which could effect water quality. Water quality standards of the California Ocean Plan for ammonia, copper and mercury could be exceeded at the Ormond Beach outfall, under design flow rates when the power plant was not pumping cooling water through the outfall.

However, the Calleguas MWD must meet the water quality standards of the Ocean Plan to obtain a discharger permit from the Regional Board. Project related wastewater flow would be controlled/mitigated through water quality testing of the wastewater to be discharged to the brine disposal system and monitoring of ocean discharge water quality. Prior to any discharge to the proposed pipeline system, each prospective discharger should complete an ocean impact analysis using a dilution model acceptable to the Regional Board. Extensive water quality testing should be conducted on the prospective water source using methods and minimum levels consistent with the Ocean Plan. The discharger shall demonstrate compliance with the effluent limitations of the Ocean Plan and any other requirement of the NPDES permit issued for the proposed project. Calleguas MWD is currently working with the Regional Water Quality Control

Board to develop dilution ratios and effluent limits that would ensure compliance with the California Ocean Plan.

7.7 CULTURAL RESOURCES

This section describes the existing historic and archaeological resources that occur in the urbanized portion of the Calleguas Creek watershed and the potential impacts to these resources caused by the alternative compliance measures for the Salts TMDL.

7.7.1 Regional History

Early settlement.
Calleguas Creek watershed lies within the former territory of the Native American Indian group known as the Chumash. The Chumash once occupied the coastal region from San Luis Obispo County to Malibu Canyon, and inland as far as the western edge of the San Joaquin Valley, as well as the four northern Channel Islands (Grant 1978). The Chumash also occupied Ventura County and the southwest corner of Los Angeles County.

Archeological records indicate the Chumash settled in California more than 9,000 years ago, but Spanish colonization (beginning in mid-1700s) ended the Chumash way of life (King 1990. The Spanish government built missions throughout California, but following Mexican independence from Spain in 1822, the Mexican government secularized the Spanish missions and sold the land. Calleguas Creek watershed falls within the historic boundaries of three Mexican land grants, Ranchos El Rio de Santa Clara O'La Colonia, Calleguas, and Guadalasca. Mexican land ownership ended in 1848, following the Mexican-American war.

Beginning in the 1850s, the Calleguas watershed developed into a region dominated by agricultural development. Completion of the Southern Pacific Railroad in 1887 initiated a land boom which resulted in the expansion of the oil and agriculture industries in the County. Following the drilling of artesian wells in 1871 and the construction of the Port Hueneme Wharf, the Oxnard Plain quickly developed into a major agricultural region. Today, land use within the watershed is still primarily agricultural, including production of tomatoes, lemons, strawberries, and other row crops.

Calleguas Creek History.
In 1862, there was no defined creek channel south of the present location of U.S. 101 near Camarillo. Early maps (1861 and 1866) show the Calleguas drainage terminating north of Round Mountain. In approximately 1884, local farmers established a channel reaching the ocean. The 1904 Hueneme quadrangle topographic map developed by the U.S. Geological Survey shows Calleguas Creek in its approximate present day location, terminating at Mugu Lagoon, which was larger than currently present. In the early 1920's, levees were built from the Lewis Road crossing to about 4,000 feet downstream of the present Hueneme Road crossing.

7.7.2 Regulations

The proposed project falls under Federal, State and County cultural resource laws and policies. An overview of the major laws and policies used to assess impacts to the project site's cultural resources is presented below.

The following is a discussion of Federal laws and statutes regarding cultural resources.

Archeological and Historic Preservation Act of 1974 (AHPA).
It is the purpose of this act to further the policy set forth in "An Act to Provide for the Preservation of Historic American Sites, Buildings, Objects, and Antiquities of National Significance and for Other Purposes" approved August 21, 1935. The AHPA of 1974 amends the Reservoir Salvage Act of 1960. This Act specifically provides for the preservation of historical and archeological data which might be irreparably lost or destroyed as a result of: 1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alterations of terrain caused by the construction of a dam by an agency of the United States, or by any private person or corporation holding a license issued by any such agency; or 2) any alteration of the terrain caused as result of any Federal construction project or federally licensed project, activity, or program.

Archeological Resource Protection Act of 1979 (ARPA).

The ARPA states that archeological resources on public and Indian lands are an accessible and irreplaceable part of the Nation's heritage. The Act provides for the following:

- Establishes protection for archeological resources to prevent loss and destruction due to uncontrolled excavations and pillaging;

- Encourages increased cooperation and exchange of information between government authorities, the professional archeological community, and private individuals having collections of archeological resources prior to the enactment of this Act;

- Establishes permit procedures to permit excavation or removal of archeological resources (and associated activities) located on public or Indian lands; and

- Defines excavation, removal, damage, or other alteration or defacing of archeological resources as a "prohibited act" and provides for criminal and monetary rewards to be paid to individuals furnishing information leading to the finding of a civil violation or conviction of a criminal violator.

National Historic Preservation Act of 1966 (as amended). The National Historic Preservation Act (NHPA) expresses a general policy of supporting and encouraging the preservation of prehistoric and historic resources for present and future generations by directing Federal agencies to assume responsibility for considering historic resources in their activities. The statute ensures the accomplishment of its policies and mandates by several means:

- Authorizes the Secretary of the Interior to establish and maintain a National Register of Historic Places;

- Directs the Secretary of the Interior to approve State preservation programs, and to designate State Historic Preservation Officers to administer State preservation efforts;

• Authorizes a grant program for States for historic preservation projects and individuals for the preservation of listed National Register properties;

• Establishes the Advisory Council on Historic Preservation (ACHP) as an independent Federal agency;

• Establishes procedures that Federal agencies must follow in managing Federally owned or controlled property and requires consultation with the ACHP prior to the approval of any undertaking which may harm historic properties; and

• Establishes a National Historic Preservation Fund.

Section 106 (16 U.S.C. 470f) of the National Historic Preservation Act of 1966 (80 STAT. 915) requires that: the head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking. The regulations governing the implementation of Section 106 written by the ACHP are presented in 36 CFR Part 800, Protection of Historic Properties. Briefly, the steps in the Section 106 process involve:

• Determine whether a proposed project constitutes an undertaking and identify consulting parties, which includes Native Americans (§800.3);

• Determine the Area of Potential Effects (APE) (§800.4). Then gather information on existing sites and research and contact consulting parties;

• Identify historic properties (§800.4b); Evaluate historic significance by applying the National Register criteria to identified properties in the APE and determine eligibility (§800.4c);

• Assess project effects on eligible or listed NRHP properties (§800.4d and §800.5); and

• Resolve any adverse effects through consultations with SHPO, Native Americans and interested parties, and notify the ACHP (§800.6).

• A Memorandum of Agreement (MOA) must be drafted (§800.8(c)(4)(i)(B)).

Under Section 106, historic properties can be determined eligible for inclusion in the National Register under the streamlined eligibility process. An historic property determined eligible for inclusion in the National Register is afforded the same protection as historic properties that have been formally nominated. However, such properties would not be listed until a formal nomination has been processed and approved.

Executive Order 13007. President Clinton signed Executive Order 13007 on May 24, 1996, which requires Federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sites.

The following is a discussion of State laws and statutes regarding cultural resources.

California Register of Historical Resources
Drafted in 1995, this document provides proposed guidelines for the nomination of properties to the California Register. The California Register is an authoritative guide to be used by state and local agencies, private groups, and citizens to identify the State's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change. The criteria for listing resources on the California Register are based on those developed by the National Park Service for listing on the National Register of Historic Places with modifications in order to include a broader range of resources which better reflect the history of California.

California Public Resources Code
Section 5097.9 of the California Public Resources Code stipulates that it is contrary to the free expression and exercise of Native American religion to interfere with or cause severe irreparable damage to any Native American cemetery, place of worship, religious or ceremonial site, or sacred shrine.

State Health and Safety Code
If human remains are exposed during construction, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then contact the most likely descendent of the deceased Native American, who would serve as a consultant on how to proceed with the remains.

The following is a discussion of County laws and statutes regarding cultural resources.

Ventura County General Plan Policies
Section 1.8 of the Goals, Policies and Programs of the Ventura County General Plan provide a framework for the protection of cultural resources. These policies require assessments, determination of impacts in consultation with recognized local Native American groups, avoidance of impacts to significant resources when feasible, and development of mitigation according to guidelines of State Historic Preservation Office (SHPO) and the NAHC.

7.7.3 Environmental Impacts

Thresholds of Significance

Section 15064.5(b) of the State CEQA Guidelines, entitled "Determining the Significance of Impacts on Historical and Unique Archaeological Resources," would apply to historical resources that are found eligible for the California Register or meet the other significance criteria in Section 15064.5(a) of the guidelines. Section 15064.5(b) of the guidelines is as follows:

A project with an effect 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.

- Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- The significance of an historical resource is materially impaired when a project:
- a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
- b. Demolishes or materially alters in an adverse manner those physical characteristics that 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 an 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; or
- c. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA

Summary of Impacts to Historical or Cultural Sites for Proposed Actions

Camarillo WRP Effluent Pump Station and Effluent Pipeline.
No archeological sites or historic resources were identified during the record search and Phase 1 archeological field survey. However, prehistoric sites are often located at the confluence of major drainages, such as the proposed effluent pipeline crossing near the confluence of Conejo and Calleguas Creeks. There is a potential that unknown buried archeological deposits may exist within or adjacent to this portion of the effluent pipeline alignment, and may be impacted by trenching or other pipeline installation activities. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Replacement Pipeline and CSUCI Well Pipelines.
These pipelines would be located within the Lewis Road right-of-way immediately adjacent to Round Mountain, which is considered a sacred shrine and archeological site. Engineering design has not be conducted for these pipelines and it is not known if any excavation of Round Mountain would be required during pipeline installation. Such

excavation may affect the significance of this shrine and/or adversely affect buried cultural artifacts, and would be considered a significant impact.

New Recycled Water Service Areas.
Historic and prehistoric archeological sites have been recorded within and adjacent to the new recycled water service areas. The proposed project would provide an alternative source of water to existing agricultural land uses and would not result in any additional development, or related disturbance of cultural resources. Therefore, no Ventura County Landmarks would be adversely affected. However, small pipelines would be installed to distribute recycled water in these areas. The alignment of these pipelines has not been determined at this time, and pipeline installation may adversely affect cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Flow and Water Quality Monitoring Stations.
Known archeological sites are located in close proximity to the proposed monitoring station sites at Conejo Creek and Arroyo Conejo. Excavation and related ground disturbing activities associated with construction of monitoring stations may adversely affect unrecorded cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Groundwater Reclamation.
Seven archeological sites are located in close proximity to the proposed treatment plant site and brine pipeline alignment. Excavation and related ground disturbing activities associated with construction of these facilities may adversely affect unrecorded cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Replenishment Water Facilities.
A large number of archeological sites are located in the general area that may be affected by this project component. Ground disturbing activities associated with installation and operation of these facilities may adversely affect cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Thousand Oaks-Camrosa Interconnect Pipeline. Seven archeological sites are located within or immediately adjacent to the pipeline alignment. Excavation and related ground disturbing activities associated with pipeline installation may adversely affect cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Lower Watershed Brackish Groundwater Production. Currently, this project component is conceptual and site locations have not been identified. Therefore, it is unknown if cultural resources would be adversely affected by installation and operation of wells, treatment facilities and pipelines. Any such impact would be considered significant, if "historically significant" resources were adversely affected.

Water Blending Facilities.
Six archeological sites are located in close proximity to the blending facility site at Hill Canyon Road. However, all proposed improvements would occur within the existing

facility with minimal excavation. Therefore, “historically significant” resources are not expected to be adversely affected.

7.7.5 Mitigation Measures

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Areas affected by construction activities within 300 feet of the confluence of Conejo Creek and Calleguas Creek should be monitored by a professional archeologist.

- A professional archeologist should provide a cultural resources orientation to construction workers associated with excavation activities. The orientation should include a description of the type of cultural resources that may be encountered during construction and what steps are to be taken if such a find is unearthed.

- Alternatively, additional field surveys should be conducted by a qualified archeologist to verify the extent of cultural resources within the area to be affected by construction. The pipeline alignments should be modified as needed to avoid any historically significant resources identified.

- The alignment and construction methodology for the replacement pipeline and CSUCI well pipeline should be designed to avoid excavation of Round Mountain.

- An archeological survey should be conducted of proposed impact areas within new water recycling service areas, the Hill Canyon water blending site, Conejo Creek monitoring station site and Arroyo Conejo monitoring station site, Camrosa headquarters treatment plant site, brine pipeline alignment and water replenishment facility sites, Thousand Oaks-Camrosa interconnect pipeline alignment, and impact areas associated with lower watershed brackish groundwater production.

- The findings and recommendations of the archeological survey report should be incorporated into the project design, focusing on avoidance of cultural resources.

- If impacts to identified cultural resources cannot be feasibly avoided, an Evaluation Excavation and/or Data Recovery Excavation and/or a monitoring program should be completed. The evaluation should include a determination of eligibility for listing on the National Register of Historic Places. The effects of the proposed project on these resources (if any) should be determined, and Native American representatives should be contacted. Mitigation measures should be developed as appropriate for the significance of the resource and magnitude of project impacts, and submitted to the State Historic Preservation Office for concurrence. Any other requirements for Section 106 processing should also be completed at that time. The site evaluation and data recovery should be completed in consultation with Reclamation, SHPO, Native Americans and interested parties.

- Plans for monitoring, treatment of human remains, and unplanned discoveries should be written in consultation with USBR, SHPO, Native Americans, interested parties,

and Advisory Council, if they chose to participate. These plans should be incorporated into the Final EIR/EA for the RMSC and the RWRMP.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work should be terminated within the vicinity of the find. In compliance with Plans developed as part of measure 3 above, the find should be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area could resume.

RSMC

There is a potential that unknown buried archaeological deposits may exist within or adjacent to the pipeline alignment, and may be impacted by trenching or other pipeline installation activities. Any such impact would be considered potentially significant, if historically significant resources were adversely affected.

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- The final pipeline alignments and associated construction impact corridor should be field verified to ensure it lies within the cultural APE surveyed by Conejo Archeological Consultants. An archeologist should conduct an archaeological survey of those areas not previously surveyed. Additional mitigation measures and/or changes in the alignment to avoid resources to the extent feasible should be developed.

- A memorandum of Agreement should be drafted for mitigation of historic properties. All requirements of Section 106 of the National Historic Preservation Act should be fully implemented.

- Plan for monitoring, treatment of human remains, and unplanned discoveries should be written in consultant with USBR, SHPO, Native Americans, interested parties, and Advisory Council if they choose to participate. These plans should be incorporated into the final EIR/EA

- A professional archeologist should provide a cultural resources orientation to construction workers associated with excavation activities. The orientation should include a description of the type of cultural resources that may be encountered during construction and what steps are to be taken if such a find is unearthed.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work should be terminated within the vicinity of the find. The find should be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area could resume.

- In those areas determined archeologically sensitive for Native American resources, a professional archeologist and Chumash consultant should be retained to monitor all excavation activity.

- If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then contact the most likely descendents of the deceased Native American, who would then serve as consultant on how to proceed with the remains.

Project construction
Project construction may require demolition destruction, relocation, or alteration of its immediate surroundings of one or more of these structures

The following measures shall be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- The final pipeline alignments should be designed to avoid structures 50 years or older.

- If any structures 50 years or older cannot be avoided by project construction, then a professional historian should be retained to conduct an architectural historical evaluation of the structure(s). The historic assessment should determine the eligibility of the structures for the National Register of Historic Places and the California Register. Mitigation measures should be developed for substantial adverse changes to historically significant structures and may include documentation and relocation.

- A Memorandum of Agreement should be drafted for mitigation of historic properties. All requirements of Section 106 of the National Historic Preservation Act should be fully implemented.

RWRMP
Camarillo WRP Effluent Pump Station and Effluent Pipeline.

No archeological sites or historic resources were identified during the record search and Phase 1 archeological field survey. However, prehistoric sites are often located at the confluence of major drainages, such as the proposed effluent pipeline crossing near the confluence of Conejo and Calleguas Creeks. There is a potential that unknown buried archeological deposits may exist within or adjacent to this portion of the effluent pipeline alignment, and may be impacted by trenching or other pipeline installation activities. Any such impact would be considered significant, if “historically significant” resources were adversely affected

The following measures shall be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Areas affected by construction activities within 300 feet of the confluence of Conejo Creek and Calleguas Creek should be monitored by a professional archeologist.

- A professional archeologist should provide a cultural resources orientation to construction workers associated with excavation activities. The orientation should include a description of the type of cultural resources that may be encountered during construction and what steps are to be taken if such a find is unearthed.

- Plans for monitoring, treatment of human remains, and unplanned discoveries shall be written in consultation with USBR, SHPO, Native Americans, interested parties, and Advisory Council, if they chose to participate. These plans should be incorporated into the Final EIR/EA.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work shall be terminated within the vicinity of the find. The find should be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area may resume.

Replacement Pipeline and CSUCI Well Pipelines

These pipelines would be located within the Lewis Road right-of-way immediately adjacent to Round Mountain, which is considered a sacred shrine and archeological site. Engineering design has not be conducted for these pipelines and it is not known if any excavation of Round Mountain would be required during pipeline installation. Such excavation may affect the significance of this shrine and/or adversely affect buried cultural artifacts, and would be considered a significant impact.

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- The alignment and construction methodology for the replacement pipeline and CSUCI well pipeline should be designed to avoid excavation of Round Mountain.

- Alternatively, additional field surveys should be conducted by a qualified archeologist to verify the extent of cultural resources within the area to be affected by construction. The pipeline alignments should be modified as needed to avoid any historically significant resources identified.

- Plans for monitoring, treatment of human remains, and unplanned discoveries should be written in consultation with USBR, SHPO, Native Americans, interested parties, and Advisory Council, if they choose to participate. These plans should be incorporated into the Final EIR/EA.

New Recycled Water Service Areas and monitoring stations

Historic and prehistoric archeological sites have been recorded within and adjacent to the new recycled water service areas. Pipelines would be installed to distribute recycled water in these areas. The alignment of these pipelines has not been determined at this time, and pipeline installation may adversely affect cultural resources. Any such impact would be considered significant, if “historically significant” resources were adversely affected.

Known archeological sites are located in close proximity to the proposed monitoring station sites at Conejo Creek and Arroyo Conejo. Excavation and related ground disturbing activities associated with construction of monitoring stations may adversely

affect unrecorded cultural resources. Any such impact would be considered significant, if "historically significant" resources were adversely affected

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Conduct a Phase I archeological survey of proposed impact areas within new water recycling service areas, the Hill Canyon water blending site, Conejo Creek monitoring station site and Arroyo Conejo monitoring station site.

- Incorporate the findings and recommendations of the Phase I archeological survey report into the project design, focusing on avoidance of cultural resources.

- If impacts to identified cultural resources cannot be feasibly avoided, a Phase II Evaluation Excavation and/or Phase III Data Recovery Excavation and/or a monitoring program should be completed. The evaluation should include a determination of eligibility for listing on the National Register of Historic Places. The effects of the proposed project on these resources (if any) should be determined, and Native American representatives should be contacted. Mitigation measures should be developed as appropriate for the significance of the resource and magnitude of project impacts, and submitted to the State Historic Preservation Office for concurrence. Any other requirements for Section 106 processing should also be completed at that time. The site evaluation and data recovery should be completed in consultation with Reclamation, SHPO, Native Americans and interested parties.

Groundwater Reclamation and Replenishment Water Facilities

Seven archeological sites are located in close proximity to the proposed treatment plant site and brine pipeline alignment. Excavation and related ground disturbing activities associated with construction of these facilities may adversely affect unrecorded cultural resources.

A large number of archeological sites are located in the general area that may be affected by this project component. Ground disturbing activities associated with installation and operation of these facilities may adversely affect cultural resources.

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Conduct a Phase I archeological survey of the Camrosa headquarters treatment plant site, brine pipeline alignment and water replenishment facility sites (wells, treatment facilities, pipelines, discharge structures).

- Incorporate the findings and recommendations of the Phase I archeological survey report into the project design, focusing on avoidance of cultural resources.

- If impacts to identified cultural resources cannot be feasibly avoided, a Phase II Evaluation Excavation and/or Phase III Data Recovery Excavation and/or a monitoring program should be completed. The evaluation should include a determination of eligibility for listing on the National Register of Historic Places. The effects of the

proposed project on these resources (if any) should be determined, and Native American representatives should be contacted.

- Mitigation measures should be developed as appropriate for the significance of the resource and magnitude of project impacts, and submitted to the State Historic Preservation Office for concurrence. Any other requirements for Section 106 processing should also be completed at that time. The site evaluation and data recovery should be completed in consultation with Reclamation, SHPO, Native Americans and interested parties.

- Plans for monitoring, treatment of human remains, and unplanned discoveries should be written in consultation with USBR, SHPO, Native Americans, interested parties, and Advisory Council, if they chose to participate. These plans should be incorporated into the Final EIR/EA.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work should be terminated within the vicinity of the find. In compliance with Plans developed as required above, the find should be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area may resume.

Thousand Oaks-Camrosa Interconnect Pipeline

Seven archeological sites are located within or immediately adjacent to the pipeline alignment. Excavation and related ground disturbing activities associated with pipeline installation may adversely affect cultural resources. Any such impact would be considered significant, if “historically significant” resources were adversely affected

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Conduct a Phase I archeological survey of the Thousand Oaks-Camrosa interconnect pipeline alignment.

- Incorporate the findings and recommendations of the Phase I archeological survey report into the project design, focusing on avoidance of cultural resources.

- If impacts to identified cultural resources cannot be feasibly avoided, a Phase II Evaluation Excavation and/or Phase III Data Recovery Excavation and/or a monitoring program should be completed. The evaluation should include a determination of eligibility for listing on the National Register of Historic Places. The effects of the proposed project on these resources (if any) should be determined, and Native American representatives should be contacted. Mitigation measures should be developed as appropriate for the significance of the resource and magnitude of project impacts, and submitted to the State Historic Preservation Office for concurrence. Any other requirements for Section 106 processing should also be completed at that time. The site evaluation and data recovery should be completed in consultation with Reclamation, SHPO, Native Americans and interested parties.

- Plans for monitoring, treatment of human remains, and unplanned discoveries should be written in consultation with USBR, SHPO, Native Americans, interested parties, and Advisory Council, if they chose to participate. These plans should be incorporated into the Final EIR/EA.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work should be terminated within the vicinity of the find. In compliance with Plans developed as required above, the find should be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area may resume.

Lower Watershed Brackish Groundwater Production
Currently, this project component is conceptual and site locations have not been identified. Therefore, it is unknown if cultural resources would be adversely affected by installation and operation of wells, treatment facilities and pipelines. Any such impact would be considered significant, if "historically significant" resources were adversely affected

The following measures should be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- Conduct a Phase I archeological survey of proposed impact areas associated with lower watershed brackish groundwater production.

- Incorporate the findings and recommendations of the Phase I archeological survey report into the project design, focusing on avoidance of cultural resources.

- If impacts to identified cultural resources cannot be feasibly avoided, a Phase II Evaluation Excavation and/or Phase III Data Recovery Excavation and/or a monitoring program should be completed. The evaluation should include a determination of eligibility for listing on the National Register of Historic Places. The effects of the proposed project on these resources (if any) should be determined, and Native American representatives should be contacted.

- Mitigation measures should be developed as appropriate for the significance of the resource and magnitude of project impacts, and submitted to the State Historic Preservation Office for concurrence. Any other requirements for Section 106 processing should also be completed at that time. The site evaluation and data recovery should be completed in consultation with Reclamation, SHPO, Native Americans and interested parties.

- Plans for monitoring, treatment of human remains, and unplanned discoveries should be written in consultation with USBR, SHPO, Native Americans, interested parties, and Advisory Council, if they chose to participate. These plans should be incorporated into the Final EIR/EA.

- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work should be terminated within the vicinity of the find. In compliance with Plans developed as required above, the find should be evaluated by

a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area may resume.

7.7.6 Summary of Residual Impacts

For the all alternatives, it is expected that cultural resources impacts can be avoided or mitigated through proper documentation of resources by qualified archeologists. Therefore, residual impacts are expected to be less than significant.

The proposed project may be Federally funded (in part), and therefore compliance with the National Historic Preservation Act is required. Full implementation of mitigation measures provided would result in a finding of compliance.

7.8 GEOLOGY AND SOILS

This section describes the existing geological and soil resources in the Calleguas Creek watershed and the potential impacts to these resources caused by compliance measures for the Calleguas Creek Chloride TMDL.

7.8.1 Geologic Setting

The project area lies within the western portion of the Transverse Ranges Geomorphic Province of California. The province ranges from 10 to 50 miles wide and contains rock units from nearly all major geologic eras and periods beginning with the Precambrian.

Project facilities would be located in Pleasant Valley, Santa Rosa Valley and the southeastern portion of the Oxnard Plain. Most facilities are underlain by recent alluvial deposits (surficial sediments). The proposed recycled water service area in Pleasant Valley also includes areas underlain by extrusive volcanic rock (breccias and basaltic rocks). The proposed recycled water service area in eastern Santa Rosa Valley includes areas underlain by extrusive volcanic rock as well as the Saugus Formation (Pleistocene sediments) (Dibblee and Ehrenspeck, 1990). Soils of the project area include the Anacapa, Camarillo, Hueneme, Cibo, Metz, Mocho, Pacheco, Pico and Sorrento soil series (Edwards, et. al. (1970). Most of these soils are classified as well drained, sandy loams.

The project area is a seismically active region. The Simi-Santa Rosa Fault System is the dominant geologic structure affecting the project area, and is comprised of the Simi Fault and Santa Rosa Fault. The fault system is located approximately 1,000 feet north of the proposed Hill Canyon pumping plant site, and two miles north of proposed improvements to the Camarillo Water Reclamation Plant, and two miles north of the proposed pipeline between the storage ponds and the Camrosa Water Reclamation facility.

The project area is subject to potential damage from ground shaking events that could occur as a result of seismic activity along this fault system. Liquification is a phenomenon that occurs when loosely consolidated, saturated, granular soils (e.g., beach sands) lose their load bearing capabilities during ground shaking events, and settle or flow in a fluid-like manner. Seismically induced settlement of dry soils can occur in soils that are loose, soft, or that are moderately dense, but weakly cemented. Those phenomena can cause severe damage to overlying structures, resulting in potential injuries to people.

Historically, the project area has been used for agriculture, with little industrial activity. Areas with known hazardous materials contamination issues in the region include the Camarillo Airport (former Oxnard Air Force Base) and Naval Base Ventura County. However, these sites are located at least two miles from project components.

7.8.2 Impact analysis

a. Due to the proximity of several faults, fault rupture is a potential threat, which would adversely affect the proposed pipelines and other structures during the design life of the project. However, the project does not include any habitable structures which would increase public exposure to this hazard. In addition, a site- specific geotechnical study would be completed as part of project design and recommendations would be fully implemented to reduce fault rupture and other seismic-related impacts to a less than significant level. The project sites are relatively level and are not subject to landslides; therefore, no impacts to existing or proposed facilities are expected due to seismically-induced landslides.

b. Soil erosion may occur at the proposed pipeline crossings of Calleguas Creek and Conejo Creek; however, the pipeline would be buried under the streambed or suspended above it. Therefore, soil erosion is not expected. Topsoil removed during pipeline installation would be replaced, such that loss of topsoil would not occur.

c. The proposed pipeline between the storage ponds and the Camrosa Water Reclamation Facility lie in an area of high liquefaction potential. A site-specific geotechnical study would help identify unstable geologic units and soils. Based on the findings of this study, features would be incorporated into the project design to prevent damage to project facilities. Such features may include pipe material specifications, pipe joint specifications, burial depth, pipe bedding materials and support piles. Therefore, impacts associated with landslides, liquefaction, lateral spreading, subsidence or expansive soils are considered less than significant.

d. Septic waste disposal systems are not proposed as part of this project. No impacts would result.

7.8.3 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

- Exposes people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

    - Strong seismic ground shaking;

    - Seismic-related ground failure, including liquefaction;

    - Landslides;

- Results in substantial soil erosion or the loss of topsoil;

- Is 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;

- Is located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or

- Is built on soil incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water.

7.9.4 Environmental Impacts and Mitigation Measures

This section presents potential impacts to geology and soils resources related to the implementation of the Calleguas Creek Chloride TMDL. Potential impacts are evaluated for each alternative method of compliance, including structural devices, institutional controls, and public education. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

RSMC and RWRMP

Certain segments of the RSMC project would cross the Calleguas Creek, Revolon Slough, tributary to Oxnard Drain, Arroyo Simi, and small drainages. These crossing may be completed using tunneling or trenching methods. Should trenching methods be used to install the segments, significant soil erosion associated with disturbance of the bed and banks of these drainages may occur.

The following measures should be fully implemented to reduce geologic and soil-related impacts:

Appropriate BMPs, as established in the project's National Pollutant Discharge Elimination System Construction Storm Water Permit, should be employed at all construction sites. Such measures may include, but are not limited to, temporary sand bagging, construction of berms, installation of geofabric, and revegetation of areas by hydroseeding and mulching. CMWD should be responsible for implementation by the construction contractor.

All trench crossings of intermittent drainages should be conducted when no surface flows are present, and should be re-contoured, re-compacted, and revegetated to approximate pre-project conditions at the earliest practicable date. CMWD should be responsible for implementation by the construction contractor.

Emergency shut-off valves should be designed and installed at all locations where flows would enter the pipeline, especially at critical areas such as active faults zones.

7.8.5 Residual Impacts/Further Study

No further study of this issue is required. With mitigation incorporated, impacts to geology and soils will not be significant.

7.9 HAZARDS, HAZARDOUS MATERIALS, AND HUMAN HEALTH

This section addresses the potential for impacts related to the presence and use of hazardous materials within the Calleguas Creek watershed. Impacts associated with the project were based on a review of existing literature and a search of environmental records for hazardous sites.

7.9.1 Environmental Records Search

An environmental records search was conducted for the project site by Environmental Data Resources, Inc. (EDR) on October 3, 2005. The EDR report was utilized to identify known or suspected areas of contamination, underground storage tank locations, solid waste management facilities, and hazardous waste treatment, storage, and/or disposal locations.

Sites identified in close proximity to project components are:

- Camarillo State Hospital (near Phase 1 replacement pipeline): gasoline storage tank leak - case closed 2004;

- California State University Channel Islands (former State Hospital, near Phase 1 replacement pipeline): small quantity generator of hazardous waste;

- Camarillo WRP (Phase 1 pump station): small quantity generator of hazardous waste;

- Camrosa WRF (near replacement pipeline): small quantity generator of hazardous waste, diesel storage tank leak - case closed 1999;

- Smith Ranch (near Camarillo WRP effluent pipeline): gasoline storage tank leak – case closed 1991;

- Charles Van Northwick Landscape (1957 Lewis Road, near replacement pipeline and CSUCI well brine pipeline): small quantity generator of hazardous waste;

7.9.2 Regulatory Setting

The following section provides a brief description of some of the applicable state and federal regulations relating to the use, storage, and disposal of hazardous substances and petroleum.

Federal Laws/Regulations

Federal Water Pollution Control Act of 1972 (Clean Water Act). The Clean Water Act governs the control of water pollution in the United States. This Act includes the National Pollutant Discharge Elimination System (NPDES) program, which requires that

permits be obtained for point discharges of wastewater. This Act also requires that storm water discharges be permitted, monitored, and controlled for public and private entities.

Resource Control and Recovery Act of 1974 (RCRA). RCRA was enacted as the first step in the regulation of the potential health and environmental problems associated with solid hazardous and non-hazardous waste disposal. RCRA, and the formation of the U.S. Environmental Protection Agency (EPA) to implement the Act, provide the framework for national hazardous waste management, including tracking hazardous wastes from point of origin to ultimate disposal.

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). Under CERCLA, owners and operators of real estate where there is hazardous substances contamination may be held strictly liable for the costs of cleaning up contamination found on their property. No evidence linking the owner/operator with the placement of the hazardous substances on the property is required. CERCLA, also known as Superfund, established a fund for the assessment and remediation of the worst hazardous waste sites in the nation. Exceptions are provided for crude oil wastes that are not subject to CERCLA.

Superfund Amendments and Reauthorization Act (SARA). Congress established the "innocent landowner defense" in the 1986 amendments to CERCLA known as the Superfund Amendments and Reauthorization Act (SARA). The landowner "must have undertaken, at the time of acquisition, all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice in an effort to minimize liability." In an effort to clarify what constitutes "all appropriate inquiry," the ASTM has developed a standard that provides specific definition of the steps one should take when conducting a "due diligence" environmental site assessment for commercial real estate.

Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Act). This Act was enacted in 2002 to create new exemptions from Superfund liability, authorizes brownfields revitalization funding, and provides assistance to state and local site clean-up programs. The EPA has released draft All Appropriate Inquiry (AAI) standards in accordance with the Federal Brownfields which would replace the current ASTM standard for environmental due diligence for protection of potential purchasers of contaminated property.

Hazardous and Solid Waste Amendments of 1984 (HSWA). The HSWA law was enacted to close RCRA loopholes and regulated leaking underground storage tanks (USTs) specifically. The California State Water Resources Control Board (SWRCB), the Central Coast Regional Water Quality Control Board (RWQCB), and the local County Division of Environmental Health, as a Certified Unified Program Agency (CUPA) program, oversee UST regulations and cleanup of leaking USTs.

Asbestos Hazard Emergency Response Act of 1986 (AHERA). The Act is the federal legislation that governs the management and abatement of asbestos-containing materials in buildings.

National Emission Standards for Hazardous Air Pollutants; Asbestos, 40 CFR Part 61. This regulation requires the assessment and proper removal of asbestos-containing materials that could release asbestos when disturbed prior to the demolition of buildings.

Clean Air Act. The regulatory programs that govern stationary sources of air pollution apply to any facility that emits or has the potential to emit conventional pollutants: oxides of nitrogen and sulfur, carbon monoxide, volatile organic compounds (VOCs) or particulate matter. It may also apply to emission sources of certain toxic chemicals. In addition to the existing air district permitting programs required by state law and district rules, a new federal operating permit program must be implemented to meet federal Environmental Protection Agency (EPA) regulations adopted pursuant to Title V of the 1990 amendments of the Clean Air Act. Locally the Clean Air Act regulations are implemented and enforced by the Ventura County Air Pollution Control District (APCD).

California Laws/Regulations

Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code). The Porter-Cologne Act established a regulatory program to protect water quality and protect beneficial uses of the state's waters. The Porter-Cologne Act also established the State Water Resources Control Board and nine regional boards as the main state agencies responsible for water quality in the state. Discharges of wastes (including spills, leaks, or historical disposal sites) where they may impact the waters of the state are prohibited under the Porter-Cologne Act, including the discharge of hazardous wastes and petroleum products. The assessment and remediation of these waters are regulated by the regional boards, the Central Coast Regional Water Quality Control Board administers such waters in the vicinity of the proposed project.

Title 22, California Code of Regulations. Title 22 of the California Code of Regulations regulates the use and disposal of hazardous substances in California. It contains regulatory thresholds for hazardous wastes which are more restrictive than the federal hazardous waste regulations.

California Health and Safety Code Sections 25500 et seq. The California community right-to-know hazardous material law applies to any facility that handles any hazardous material (chemical, chemical-containing products, hazardous wastes, etc.) in a quantity that exceeds reporting thresholds. The most common thresholds that trigger regulation based on that state statute are 500 pounds of solid, 55 gallons of liquid, and 200 cubic feet of compressed gas, based on the presence of individual chemicals. The basic requirements of hazardous materials and community right-to-know regulations for covered facilities include:

- Determining whether the facility handles hazardous materials;

- Immediate reporting of releases of hazardous materials;

- Submission and update of a Hazardous Materials Business Plan (including a accurate chemical inventory, site map showing hazardous materials storage locations, emergency response plan, and notification procedures) as required by the local administering agency;

- Notification of the local administering agency of the handling of specified quantities of acute hazardous materials and submission of a Risk Management Plan (RMP) as required;

• Annual submission for manufacturing facilities of a Toxic Chemical Release Report (Form R) if threshold amounts of certain toxic chemicals are made, or processed for use; and,

• Requirements for hazardous materials storage imposed by local administering agencies, fire departments, and California Occupational Safety and Health Administration (Cal/OSHA) standards.

California Air Resources Board – Air Toxics Control Measure. Under the California Air Resources Board Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prior to construction permit issuance, a geologic evaluation is required to determine the presence or absence of naturally-occurring asbestos. If naturally occurring asbestos is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM before grading may begin. These requirements may include, but are not limited to, 1) preparation of an "Asbestos Dust Mitigation Plan," which must be approved by APCD before grading begins; and 2) an "Asbestos Health and Safety Program", as determined necessary by APCD.

7.9.3 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

- Reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- The project is 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.

- 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, would the project result in a safety hazard for people residing or working in the project area.

- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

- Expose people or structures to the risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

7.9.4 Environmental Impacts and Mitigation Measures

Environmental Impacts

The proposed project involves treatment, blending, transportation and discharge of treated municipal wastewater, groundwater and imported potable water. Products would be limited to blended imported/groundwater, treated wastewater and a brine stream. These products are not considered hazardous under State or Federal regulations. However, it is possible that operation and maintenance of treatment plants may include de-scaling compounds and other small amounts of cleaning materials that may be considered hazardous. If so, these materials should be properly labeled, used and stored according to State and Federal law. The public would not be exposed to these materials; therefore, the project would not result in any health hazards associated with hazardous materials.

The project includes excavation in agricultural areas to install pipelines and construct treatment plants and blending facilities. It is possible that soil contaminated with hazardous materials such as petroleum hydrocarbons or residual concentrations of organo-chlorine pesticides may be encountered, which may result in exposure of construction workers and the public. Elevated concentrations of pesticides, such as DDT, are known to occur in soils of the Oxnard Plain (Fugro West, 1996; Padre Associates, 2003) and may occur along the pipeline alignments. Public or worker exposure of pesticides or other hazardous materials in soils during project excavation is considered a potentially significant impact. Excavated materials may also further contaminate the water supply.

Samples shall be analyzed for organo-chlorine pesticides, lead, arsenic and total petroleum hydrocarbons according to EPA methods acceptable to the California Department of Toxic Substances Control. Soils with contaminant concentrations above the applicable Preliminary Remediation Goals established by U.S. EPA for residential soil shall be considered contaminated and segregated in a stockpile. Contaminated soil shall be covered with impervious materials to prevent wind erosion and exposure to rainfall and storm run-off. These materials may be used as backfill, provided they are covered with at least one foot of non-contaminated soil or asphalt concrete.

Mitigation Measures

Soil samples should be obtained in all previously cultivated areas affected by project excavation, prior to project-related excavation. Pipeline alignments should be sampled every 1,000 feet. The soil samples should be collected at a depth of one-foot and two-feet. The number and depth of samples at each site may be adjusted based on field conditions, anticipated depth of soil disturbance and preliminary analytical results.

Samples should be analyzed for organo-chlorine pesticides, lead, arsenic and total petroleum hydrocarbons according to EPA methods acceptable to the California

Department of Toxic Substances Control. Soils with contaminant concentrations above the applicable Preliminary Remediation Goals established by U.S. EPA for residential soil should be considered contaminated and segregated in a stockpile. Contaminated soil should be covered with impervious materials to prevent wind erosion and exposure to rainfall and storm run-off. These materials may be used as backfill, provided they are covered with at least one foot of non-contaminated soil or asphalt concrete.

When excavated, contaminated soil should be handled by workers properly trained in accordance with the requirements of the California Occupational Safety and Health Administration (Cal OSHA). A Health and Safety Plan should be developed and implemented by qualified individuals to minimize exposure of workers. Contaminated soils should be treated as hazardous materials and proper precautions taken to prevent inhalation (dust control) and dermal (skin) contact by construction workers.

7.9.5 Residual Impacts

Implementation of mitigation measures is expected to reduce impacts to a level of less than significant. Therefore, residual impacts are less than significant.

7.10 HYDROLOGY AND WATER QUALITY

The proposed project seeks to reconcile two potentially competing public policy objectives: to improve water supply reliability through water reclamation and to improve water quality in compliance with the Federal Clean Water Act as implemented by the State of California. The policies and regulations that address these public policy objectives are found in Federal, Inter-State, State, Regional, and local policies and regulations.

7.10.1 Regulatory Environment

California State Constitution

Article X, Section 2 of the California State Constitution is the primary law addressing the State's interest in water resources. It reads in pertinent part:

> It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

California Water Code

The State's interest in water resources as applied to water reclamation and water recycling is further elaborated in the California Water Code. The pertinent sections are reproduced below:

> 461. It is hereby declared that the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of reclaimed water in the satisfaction of requirements for beneficial uses of water.
>
> 13510. It is hereby declared that the people of the state have a primary interest in the development of facilities to recycled water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state.
>
> 13511. The Legislature finds and declares that a substantial portion of the future water requirements of this state may be economically met by beneficial use of recycled water. The Legislature further finds and declares that the utilization of recycled water by local communities for domestic, agricultural, industrial, recreational, and fish and wildlife purposes will contribute to the peace, health, safety and welfare of the people of the state. Use of recycled water constitutes the development of "new basic water supplies" as that term is used in Chapter 5 (commencing with Section 12880) of Part 6 of Division 6.
>
> 13512. It is the intention of the Legislature that the state undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the state.

State Water Plan

The State's policies are reflected in the integration of water reclamation and water recycling in key plans for water resource management. The existing State Water Plan identifies water recycling and brackish water reclamation as important resource strategies to meet Southern California's water demands (California Department of Water Resources, 1998). The current draft California Water Plan Update 2005, Volume 2, Resource Management Strategies, recommends a variety of water resource strategies that have been incorporated into the proposed project including Conjunctive Management & Groundwater Storage (Chap. 4), Desalination (Chap. 6), Groundwater Remediation (Chap. 11), Matching Water Quality to Use (Chap 12), Recycled Municipal Water (Chap. 16), Urban Runoff Management (Chap. 21), and Watershed Management (Chap. 25) (California Department of Water Resources, 2005).

The California Water Plan Update 2005 (public review draft) lists fourteen recommendations. The first three recommendations are explicitly applicable to regional and local water resource management while the remaining eleven recommendations discuss broader state responsibilities. These local water resource management recommendations are: 1) diversity regional water portfolios, 2) promote and implement integrated regional water management, and 3) improve water quality. The diversification of water resources recommendation encourages efficient management of existing supplies as well as augmenting supplies through water recycling. This recommendation also cites the need to design conveyance systems that promote flexibility to complement water management strategies. The Integrated Regional Water Management recommendation identifies the need for integrated resources planning across jurisdictional boundaries and to meet multiple water management objectives.

Bureau of Reclamation Southern California Water Reclamation and Reuse Study

The Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 as passed by the United States Congress directed the Secretary of the Interior to investigate opportunities for water reclamation and reuse. The act authorized the Bureau of Reclamation to undertake a feasibility study for water reclamation in Southern California. In 1996, Congress reauthorized the act and authorized the support for eight additional projects in Southern California, including the Conejo Creek Diversion Project which currently reclaims the City of Thousand Oaks tertiary-treated wastewater discharges at a surface water diversion structure on Conejo Creek immediately downstream of U.S. Highway 101. The Act also funded the completion of a Phase I and Phase II of the Southern California Comprehensive Water Reclamation and Reuse Study.

Camrosa Water District and the Calleguas Municipal Water District were included as participants in the project advisory committee. The Study recognized that limited supplies of fresh water and increasing demands required diversification of the water supply to ensure reliability. The Study identified recycled water as "one of the most dependable, abundant, and underutilized supplies of water in southern California". The Study identified the benefits of developing this resource as manifold: recycled water is locally controlled as opposed to resources imported from other states or regions, recycled water is drought resistant, recycled water reduces environmental impacts from expanding the use of imported water supplies or local discharge of wastewater to inland receiving waters, and represents a baseline water use efficiency that is expected from a region dependent on imported water resources.

The Southern California Comprehensive Water Reclamation and Reuse Study. Phase II report, identified both short term projects and a long term strategy to promote water recycling in Southern California. The proposed project is a refinement of a portion of the short-term implementation plan found in Appendix C of the Phase II report (U.S. Bureau of Reclamation, 2002).

Metropolitan Water District of Southern California Regional Planning

The Metropolitan Water District of Southern California (Metropolitan) is a consortium of cities and water districts providing drinking water over a 5,200 square mile area stretching from Ventura County to San Diego County. Metropolitan imports water from the California State Water Project and the Colorado River Project to meet water demands in its Southern California service area. In addition to imported water sources, Metropolitan owns facilities and promotes programs to manage conjunctive use of local and imported water resources, promote water reclamation and water conservation. The local Metropolitan member agency is Calleguas Municipal Water District which supplies imported water to the City of Thousand Oaks, Camrosa, and the area served by the Camarillo Sanitary District. Metropolitan's water resource planning documents include its Integrated Water Resources Plan Update (2003) and its Regional Urban Water Management Plan.

The Integrated Water Resources Plan (IRP) Update (2003) was adopted by the Metropolitan Board of Directors on July 13, 2004. The plan reviewed the previous IRP adopted in January 1996 to identify changed conditions and update the resource targets through 2025. The update recommended updating resource targets to include a supply buffer of 10% of regional demands to address risks of water quality concerns limiting water supply and to manage implementation risks in implementing planned projects. This updated the resource targets for an added 500,000 acre-feet of supply, half of which is targeted for local water recycling, groundwater recovery and desalination. These additional resources are planned for local development in collaboration with Metropolitan's Local Resource Program.

Metropolitan's Regional Urban Water Management Plan is in a draft stage at the writing of this document. The draft plan reiterates the water recycling and groundwater recovery projects and associated future supply projections described in the Bureau of Reclamation's Southern California Comprehensive Water Reclamation and Reuse Study and Metropolitan's Integrated Water Resources Plan Update 2003 as integral to water supply reliability. (Draft RUWMP pp. III-25 to III-39).

Calleguas Municipal Water District's Urban Water Management Plan

The Calleguas Municipal Water District Urban Water Management Plan references the Renewable Water Resources Management Plan as a potential new local supply under development.

Integrated Regional Water Management Plan for Calleguas Creek Watershed

From June to July 2005, the Calleguas Creek Watershed Management Plan Steering Committee, the Calleguas Municipal Water District; the City of Camarillo, the City of Thousand Oaks, the City of Simi Valley, the Camarillo Sanitary District, the Mountains Recreation and Conservation Authority, the Ventura County Resource Conservation District, and the Camrosa Water District's respective governing bodies adopted an Integrated Regional Water Management Plan (IRWMP) for the Calleguas

Creek Watershed. The integrated plan is a milestone in a watershed planning effort that began in 1996 and has included a broadly based group of stakeholders representing federal, state, and local public agencies, water and sanitary districts, environmental NGOs, business interests, and agricultural interests. The proposed project is described in Volume II of the Calleguas Creek Watershed Integrated Regional Water Management Plan and can be found at the Calleguas Municipal Water District's website, www.calleguas.com. The proposed project is identified as a priority project in the IRWMP.

Federal Clean Water Act (CWA)

The Federal Water Pollution Control Act Amendments of 1972 and 1987, collectively known as the Clean Water Act (33 United States Code [USC] §§1251 et seq.), establish the principal Federal statutes for water quality protection. The Clean Water Act (CWA) was established with the intent "to restore and maintain the chemical, physical, and biological integrity of the nation's water, to achieve a level of water quality which provides for recreation in and on the water, and for the propagation of fish and wildlife."

According to the 1998 National Water Quality Inventory (Inventory), a biennial summary of State surveys of water quality mandated by CWA, approximately 40 percent of the nation's waters that were assessed did not meet water quality standards that have been established by the Federal and State governments. The Inventory lists 21,845 water bodies as "impaired", or not meeting water quality standards, including over 5 million acres of lakes and estuaries, and over 300,000 river and shoreline miles. Approximately 218 million Americans live within 10 miles of a water body designated as impaired.

The three most common causes of water body impairment listed in the Inventory are sediments, nutrients, and pathogens. Other main causes of impairment listed include lower dissolved oxygen concentrations, habitat and flow alterations, changes in pH, and inputs of metals, mercury, and pesticides. The 1998 Inventory indicates that approximately 10 percent of impaired waters are affected solely by point sources, approximately 47 percent by a combination of point and non-point sources, and 43 percent solely by non-point sources.

There are several key sections of CWA that guide the regulation of water pollution in the United States. The most important sections of CWA in the context of affected streams are briefly discussed below.

Section 208, Water Quality Control Plans. This section requires the preparation of local water quality control plans throughout the nation. Each water quality control plan covers a defined drainage area. The primary goal of each water quality control plan is attain water quality standards established by CWA and the State governments within the defined area of coverage. Minimum content requirements, preparation procedures, time constraints, and Federal grant funding criteria pertaining to the water quality control plans are established in Section 208. Preparation of the water quality control plans has been delegated to the individual States by the EPA.

Section 303(d), Impaired Waters Program. Section 303(d) requires States, territories, and tribes to develop lists of impaired waters within their jurisdictions every two years. Impaired waters are those that do not meet water quality standards. States,

territories, and tribes are also required to establish priority rankings for waters on their respective lists. Water bodies in a given State or territory are prioritized by comparing their existing degrees of pollution, and the sensitivity and importance of beneficial uses that are being threatened. The water bodies that are deemed most important are designated as “high priority”.

Section 303(d) also requires States, territories, and tribes to develop Total Maximum Daily Loads (TMDLs) for all water bodies on their respective lists of impaired waters. In essence, TMDLs are plans by which impaired water bodies would be restored such that they consistently meet the established water quality standard(s) that are currently being violated. TMDLs specify the maximum amount of pollutants that a water body can receive and still meet water quality standards, and allocates pollutant loads among point and non-point sources in the subject watershed. The intent of CWA is for the TMDL program to work hand in hand with the impaired waters lists; impaired waters are identified, and then restored to meet water quality standards. Based upon a March 22, 1999 consent decree between the U.S. Environmental Protection Agency (EPA), Heal the Bay, Inc. and Baykeeper, TMDLs must be prepared for all impaired waters within 13 years.

Each of the major waterbodies of the Calleguas Creek watershed have been listed under Section 303(d) as impaired. Table 7.10-1 lists these waterbodies in the project area, and the pollutants contributing to impairment.

Table 7.10-1. Impaired Waters of the Calleguas Creek Watershed

		Pollutant			
Reach No.	**Reach Name**	**Boron**	**Chloride**	**Sulfates**	**TDS**
7	Arroyo Simi	X	X	X	X
6	Arroyo Las Posas		X	X	X
8	Tribs to Arroyo Simi	X	X	X	X
13	South Fork Conejo Creek		X	X	X
12	North Fork Conejo Creek			X	X
10	Conejo Creek Hill Canyon		X	X	X
11	Arroyo Santa Rosa			X	X
9B	Conejo Creek Main Stem		X	X	X
9A	Camrosa Diversion			X	X
3	Calleguas Creek Upper Main Stem		X		X
2	Calleguas Creek Lower Main Stem				
4	Revolon Slough	X		X	X
5	Beardsley Wash				
1	Mugu Lagoon				

Section 401, Water Quality Certifications. This section of CWA requires that, prior to the issuance of a Federal license or permit for an activity or activities that may

result in a discharge of pollutants into navigable waters (see Section 404 discussion, below), the permit applicant must first obtain a certification from the State in which the discharge would originate. A State certification indicates that the proposed activity or activities would not result in a violation of applicable water quality standards established by Federal or State law, or that there are no water quality standards that apply to the proposed activity. Water quality certifications would be required as part of any Section 404 permits issued by the Corps for pipeline crossings affecting waters of the U.S., the proposed outfall structure on Calleguas Creek and any replenishment water discharge structures within waters of the U.S.

Section 402, NPDES. NPDES requires permits for pollution discharges into water bodies such that the permitted discharge does not cause a violation of Federal and State water quality standards. NPDES permits define quantitative and/or qualitative pollution limitations for the permitted source, and control measures which must be implemented to achieve the pollution limitations. Pollution control measures are often referred to as Best Management Practices, or BMPs. Simply put, BMPs are practical ways of reducing water pollution. The term BMP can be used to describe a wide variety of pollution control measures. One example of a BMP is to install filtration equipment to remove pollutants from industrial wastewater. Other types of BMPs include periodically cleaning out urban storm drains to reduce pollutant loads (e.g., debris, sediments, etc.) in urban storm water runoff, and installing soil containment devices (e.g., silt fencing) around construction sites to reduce erosion of sediments into surface waters.

Section 402 identifies the types of dischargers that are required to obtain NPDES permits, and establishes a timetable for NPDES program implementation, which is being carried out in two major phases: Phases I and II. Since 1990, Phase I NPDES regulations have required permits for storm water discharges from the following types of sources:

- Major industrial point sources such as wastewater treatment plants, electricity generating stations, industrial factories, mining operations, etc.;

- Construction activities disturbing five or more acres or land, and;

- Municipal storm water systems serving populations of 100,000 persons or more.

In 1999, EPA established Phase II NPDES regulations, which will expand the existing NPDES program to include the following categories of pollution sources:

- All municipalities within designated urbanized areas, and small municipalities outside of designated urbanized areas with a population of at least 10,000 and/or a population density of at least 1,000 persons per square mile, and;

- Construction activities that disturb between one and five acres of land.

The proposed project would be subject to the Statewide General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 99-08-DWQ). This permit applies to all construction projects that would disturb more than one acre, and requires the development and implementation of a Storm Water Pollution

Prevention Plan (including all applicable BMPs) and to eliminate or reduce non-storm discharges to storm water systems and other waters of the U.S.

Section 404, Discharge of Dredge and Fill Material. Section 404 assigns the U.S. Army Corps of Engineers (Corps), with permitting authority for proposed discharges of dredged and fill material into waters of the United States. Waters of the U.S. are defined as "…waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters."

The Corps typically considers all natural drainages with defined beds and banks to be waters of the U.S. Section 404 establishes procedures by which the permitting agency is to review, condition, approve, and deny permit requests. Per the regulations, permitting agencies are responsible to conduct public noticing and provide the opportunity for public hearings during the review of each permit request. This includes informing the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) of each permit request. Consultation with USFWS and/or NMFS is required for proposed discharges that could impact species protected by the Federal Endangered Species Act. Measures that are required by USFWS and/or NMFS to minimize impacts to federally protected species must be included as conditions of the permit. The proposed project would require Section 404 permits for pipeline crossings affecting waters of the U.S., the proposed outfall structure on Calleguas Creek and any replenishment water discharge structures within waters of the U.S.

California Porter-Cologne Act

The Porter-Cologne Act (California Water Code Section 13000) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater, and to both point and non-point sources of pollution. Pursuant to the Porter-Cologne Act, it is the policy of the State:

- The quality of all the waters of the State shall be protected;
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason;
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation; and
- The State shall undertake all possible steps to encourage development of water recycling facilities to help meet the growing water requirements of the State.

Pursuant to the Porter-Cologne Act, the responsibility for protection of water quality in California rests with the State Water Resources Control Board (SWRCB). The SWRCB administers Federal and State water quality regulations for California's ocean waters, and also oversees and funds the State's nine Regional Water Quality Control Boards (RWQCBs). The RWQCBs prepare water quality control plans, establish water quality objectives, and carry out Federal and State water quality regulations and permitting duties for inland water bodies, enclosed bays, and estuaries within their respective regions. The Porter-Cologne Act gives the SWRCB and RWQCBs broad

powers to protect water quality by regulating waste dischargers to water and land, and requiring clean up of hazardous wastes.

The RWQCBs regulate discharges under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge report permits. Anyone discharging or proposing to discharge materials that could affect water quality (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge. The Porter-Cologne Act provides RWQCBs with several options for enforcing regulations, including cease and desist orders, cleanup and abatement orders, administrative civil liability orders, civil court actions, and criminal prosecutions.

Los Angeles Regional Water Quality Control Board.
As indicated above, the California Porter-Cologne Act assigns the SWRCB and RWQCBs with the responsibility of protecting surface water and groundwater quality in California. Each RWQCB's jurisdiction covers one of the State's nine regional hydrologic units. The RWQCB's duties include the preparation and implementation of Water Quality Control Plans, regulation of waste discharges to water and land, and administration of a number of other programs, including the impaired waters and TMDL programs mandated by CWA. The RWQCBs also consider requests for water quality certifications mandated by CWA Section 401.

The Calleguas Creek watershed is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB), which includes coastal drainages from Rincon Point (western boundary of Ventura County) to the eastern Los Angeles County boundary.

Water Quality Control Plan, Los Angeles Region. Per the requirements of the CWA and the California Porter-Cologne Act, LARWQCB has prepared a Water Quality Control Plan for the watersheds under its jurisdiction. The Water Quality Control Plans from all nine of the RWQCBs and the California Ocean Plan (prepared and implemented by SWRCB) collectively constitute the State Water Quality Control Plan. Water Quality Control Plan, Los Angeles Region has been designed to support the intentions of the CWA and the Porter-Cologne Act by: (1) characterizing watersheds within the Los Angeles Region; (2) identifying beneficial uses that exist or have the potential to exist in each water body; (3) establishing water quality objectives for each water body to protect beneficial uses or allow their restoration, and; (4) providing an implementation program that achieves water quality objectives. Implementation program measures include monitoring, permitting, and enforcement activities. Per the requirements of CWA Section 303(c), the Water Quality Control Plan is reviewed every three years and revised as necessary to address problems with the plan, and meet new legislative requirements.

Beneficial uses designated by LARWQCB in the Water Quality Control Plan for the Calleguas Creek watershed are listed in Table 7.10-2. Beneficial uses are potential uses of surface waters and groundwater that could be supported, including water supply, recharge of groundwater supplies, recreation and wildlife habitat.

The Water Quality Control Plan establishes general qualitative and/or quantitative water objectives that apply to all inland surface waters, estuaries, and enclosed bays in the Los Angeles Region. The general objectives pertain to the following water quality parameters: color, taste and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances (e.g., nutrients),

sediment, turbidity, pH, dissolved oxygen, temperature, toxicity pesticides, chemical constituents, other organics, and radioactivity. The Water Quality Control Plan also provides water quality objectives for specific beneficial uses such as municipal water supply, agriculture, cold freshwater aquatic life habitat, fish spawning habitat, recreation, etc. Water quality parameters of concern and numeric objectives vary considerably depending on the nature of the beneficial use. For example, objectives for municipal water supply and fish spawning habitat are much more stringent and apply to a greater number of parameters than those for agricultural or industrial water supply. The Water Quality Control Plan also establishes several specific water quality objectives for the Calleguas Creek watershed.

The Water Quality Control Plan also incorporates the "Policy with Respect to Water Reclamation in California" (SWRCB Resolution No. 77-1) which commits the State and Regional Boards to encourage water recycling projects which put to beneficial use wastewater that would otherwise discharge to brackish receiving waters, replace or supplement the use of fresh water, and/or be used to enhance instream beneficial uses.

Table 7.10-2. Beneficial Uses in the Calleguas Creek Watershed

Resource	Beneficial Uses
Mugu Lagoon	Navigation, water-contact recreation (potential), non-water contact recreation, commercial and sport fishing, estuarine habitat, marine habitat, wildlife habitat, preservation of biological habitats, rare, threatened or endangered species habitat, migration of aquatic organisms, spawning habitat, shellfish harvesting, wetland habitat
Calleguas Creek	Municipal water supply (potential), industrial water supply, industrial process supply, agricultural supply, groundwater replenishment, water-contact recreation, non-water contact recreation, warm freshwater habitat, wildlife habitat, wetland habitat
Conejo Creek	Municipal water supply (potential), industrial water supply, industrial process supply, agricultural supply, groundwater replenishment, water-contact recreation, non-water contact recreation, warm freshwater habitat, wildlife habitat
Arroyo Conejo	Municipal water supply (potential), groundwater replenishment (intermittent), freshwater replenishment (intermittent), water-contact recreation (intermittent), non-water contact recreation (intermittent), warm freshwater habitat (intermittent), wildlife habitat

Waste Discharge Permitting.

LARWQCB is responsible for administering the State Waste Discharge Program for discharges to land and the Federally delegated NPDES program for discharges to surface waters. NPDES mandates that proponents of regulated activities that would result in a discharge of waste to a water body must obtain a permit from the permitting agency (LARWQCB locally), and adhere to any conditions imposed by the permitting agency to protect public health and water quality. See the discussion of CWA Section 402 for details on the NPDES program.

Impaired Waters, TMDLs. Consistent with the requirements of CWA Section 303(d), LARWQCB identifies impaired waters and prepares TMDLs for impaired waters within its jurisdiction. TMDLs completed to date for the Calleguas Creek Watershed include:

- Chloride: 2002
- Nitrogen compounds: 2003
- Toxicity, chlorpyrifos and diazinon: 2005
- Organochlorine pesticides, polychlorinated biphenyls and siltation: 2005

Chloride

Salts, especially chloride, are a critical factor affecting water quality in the watershed. The connection between salts and water supply are inextricably linked in watersheds where imported water supplies are extensively utilized. The evolution of the Chloride TMDL reflects a growing understanding of how water supply management, wastewater management, and surface water quality standards are linked.

The U.S. EPA Region 9 adopted a TMDL for Chloride on March 22, 2002 based largely on the RWQCB's study of the effect of drought on groundwater salt levels (www.epa.gov/region9/water/tmdl/final.html). The study concluded dry weather cycles subject groundwater basins to enhanced concentration of salts with reduced dilution from rainfall. Subsequent surface water discharge of higher concentrated groundwater following basin replenishment during wet weather cycles would help create high surface water salts concentrations.

Because of the unique relationship between wastewater discharges and the broader hydrologic and salts balance in the watershed, public agencies petitioned the SWRCB for a temporary stay in implementing the chloride effluent limits to allow time to work with the RWQCB to "constructively address chloride regulation in the Calleguas Creek watershed and to amicably resolve issues" (SWRCB Stipulation for Further Order Issuing Stay, October 2003, p. 2).

This analysis also characterized the mass loadings and surface/groundwater interactions. These investigations are documented in the Progress Report on Efforts to Address Salts on the Calleguas Creek Watershed (Larry Walker Associates, 2004). Consistent with the EPA/RWQCB's analysis, the investigation found that salts accumulate in the watershed, but not just under drought conditions. Even during average to slightly above average rainfall years, more salts enter the watershed on an average daily basis through imported water supplies, than exit the watershed in surface waters. The Progress Report calculated that given the mass balance of the source waters and the recirculation of irrigation waters only about 10% of the watershed dry weather average daily salts load entering the watershed leaves via surface water drainage to the ocean. The remaining 90% of the salts accumulate until sustained heavy rainfall washes out the accumulated salts.

While wet and dry weather patterns follow a generally cyclical pattern, there is a significant variation in the length of dry weather patterns (Hanson et al., 2003). The

accumulation of salts during these relatively dry periods and the subsequent release during wet weather cycles complicates the instantaneous management of chlorides and salts on the watershed by stockpiling a store of salts that once in solution would exceed the assimilative capacity of other contributing sources to the surface waters. The proposed suite of projects proposes to address this problem through the managed transport of salts through the watershed such that the average daily import of salts is matched by a corresponding export of salts. Over time, this managed transport of the imported salt loading will work in concert with natural processes of rainwater recharge to improve groundwater and surface water quality.

7.10.2. Surface Water Characteristics

The Calleguas Creek Watershed is approximately 30 miles long and 14 miles wide, with a surface area of about 343 square miles. The northern boundary of the watershed is formed by the Santa Susana Mountains, South Mountain and Oak Ridge, the southern boundary is formed by the Simi Hills and Santa Monica Mountains. Primary surface water features of the watershed include Calleguas Creek, Arroyo Las Posas, Arroyo Simi, Conejo Creek, Arroyo Conejo, Arroyo Santa Rosa, Revolon Slough and Mugu Lagoon.

The Watershed was historically characterized as an ephemeral stream system that supported substantial surface flow only during the wet season. Importation of State Water Project water began in 1963, and over time, the watershed began to support perennial surface water. Since 1962, dry weather flows on Conejo Creek above U.S. Highway 101 increased from an average of 0.5 cfs to 15 cfs (Hanson et al., 2004). These flows are a result of rising groundwater generated by percolation of applied imported water, discharge of treated municipal wastewater to streams and urban run-off. Currently, natural surface flow in the Watershed is augmented by:

- Discharge of groundwater from the Simi Valley dewatering wells to Arroyo Simi;
- Discharge of tertiary-treated effluent from the Simi Valley Water Quality Control Plant (Simi Valley WQCP) to Arroyo Simi;
- Discharge of tertiary-treated effluent from the Hill Canyon Wastewater Treatment Plant to Arroyo Conejo;
- Discharge of tertiary-treated effluent from the Camarillo Sanitary District Water Reclamation Plant (Camarillo WRP) to Conejo Creek; and
- Agricultural irrigation run-off and tiled drain discharge.

In addition, wastewater is occasionally discharged during wet weather periods from the Moorpark Wastewater Treatment Plant (MWTP) to Arroyo Las Posas, and from the Camrosa Water District Water Reclamation Facility (Camrosa WRF) to Calleguas Creek.

Currently, a portion of the Simi Valley WQCP effluent is reclaimed for irrigation purposes. The amount of effluent reclaimed is expected to increase over time, reducing

the amount discharged to Arroyo Simi. However, this effect may be offset by the overall increase in wastewater production as the City's population grows.

The State Water Resources Control Board (SWRCB) previously approved modifications of the instream flow regime of Conejo Creek pursuant to the City of Thousand Oaks' permitted water right Application 29408 and wastewater change petition WW#6. The SWRCB's determination is documented in the SWRCB's Water Rights Decision 1638, September 18, 1997. The City of Thousand Oaks applied to divert water from Conejo Creek attributable to its wastewater discharges from the Hill Canyon Wastewater Treatment Plant and return flows from applied imported water originating from the city. In approving the City's water right permit, the SWRCB established instream flow requirements. In summary, the flow requirements mandate that a 6 cubic feet per second (cfs) minimum flow be maintained downstream of the point of diversion. The point of diversion is located on Conejo Creek immediately downstream from U.S. Highway 101. The proposed project does not seek to change this flow requirement, and in the analysis that follows uses the SWRCB's 6 cfs flow below U.S. Highway 101 as the baseline for the proposed operation of replenishment water in the later phases of the project.

7.10.3. Groundwater Characteristics

Regional Delineation

The project area lies within the Santa Clara-Calleguas Hydrologic Unit, which covers most of Ventura County, part of northern Los Angeles County, and small parts of Santa Barbara and Kern Counties, comprising a total drainage area of 1,760 square miles. The Santa Clara River and Calleguas Creek are the major streams in this area, draining the San Gabriel Mountains, Santa Susana Mountains, Oak Ridge, South Mountain, Simi Hills, Sawmill, Liebre and Frazier Mountains. Large reserves of groundwater exist in alluvial aquifers underlying the Oxnard Plain and along valleys of the Santa Clara River and its tributaries (LARWQCB 1994).

The project area is underlain by the Ventura Central Groundwater Basins, including the Pleasant Valley and Arroyo Santa Rosa groundwater basins. These groundwater basins are primarily recharged by Calleguas Creek and its tributaries, which include Revolon Slough, Conejo Creek and Arroyo Conejo. Downstream of its tributaries, Calleguas Creek drains a predominantly agricultural area on the Oxnard Plain and empties into Mugu Lagoon. While natural flows in the past were intermittent, discharges of municipal, agricultural, and urban wastewaters have increased surface flow in the watershed resulting in increased sedimentation in the lagoon, and additional problems produced by irrigation return-flows which add nutrients, pesticides, and other dissolved constituents to the creek and its tributaries (LARWQCB 1994).

Beneficial uses have been designated by the LARWQCB, setting narrative and numerical objectives for water quality protection of groundwaters. Ground water accounts for most of the Region's local (i.e., non-imported) supply of fresh water, and accordingly, many groundwater basins are designated as municipal and domestic supply. Other beneficial uses designated to groundwater basins may include industrial process supply, or the use of water for industrial activities that depend primarily on water quality; industrial service supply, or the use 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 re-pressurization; agricultural supply, or the use of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing; and aquaculture, or the use of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for humans consumption or bait purposes (LARWQCB 1994).

Specific groundwater quality problems for the Ventura Central Groundwater Basins include overdraft, degradation, and contamination. Overdraft is defined as the condition of a groundwater basin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years during which water supply conditions are about average (California Department of Water Resources [DWR], 1999). Despite efforts to artificially recharge groundwater and to control efforts of pumping, groundwater in several of the Ventura Central basins has been, and continues to be, overdrafted. In the project area, the Lower Aquifer System of the Pleasant Valley Basin exhibits a large pumping depression that has been below sea level for several decades despite groundwater recharge and direct delivery of mitigation water by the United Water Conservation District (UWCD). At the peak of the local drought in the early 1990's, groundwater elevations in this pumping depression dropped as deep as 160 feet below sea level (UWCD, 2003).

Some of the aquifers in the coastal basins are in hydraulic continuity with seawater; thus seawater is intruding further inland, degrading large volumes of groundwater with high concentrations of chloride. In addition, nutrients and other dissolved constituents in irrigation return-flows are seeping into shallow aquifers and degrading groundwater in these shallow unconfined basins. Furthermore, degradation and cross-contamination is occurring as degraded or contaminated groundwater travels between aquifers through abandoned and improperly sealed wells and corroded active wells.

Pleasant Valley Basin

Recycled water would be applied as supplemental irrigation water within the Pleasant Valley Basin as part of Phase 1 of the proposed project. The Pleasant Valley Basin is comprised of approximately 21,600 acres, with an estimated storage capacity of about 1.9 million acre-feet. The Basin was estimated to be 60 percent full in 1999. The Basin is considered to be overdrafted as average annual recharge (about 11,400 acre-feet) is less than the estimated total annual pumpage (about 18,500 acre-feet). Based on water sampling from 10 public supply wells, TDS concentrations vary from 597 to 1,420 mg/l, with an average of 922 mg/l (DWR, 2004).

For confined aquifers within the Pleasant Valley groundwater basin, existing beneficial uses include municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply. For unconfined and perched aquifers, existing beneficial uses include industrial service supply, industrial process supply, and agricultural supply; and potential beneficial uses include municipal and domestic supply (LARWQCB 1994).

Arroyo Santa Rosa Basin

Recycled water could be applied as irrigation water within the Arroyo Santa Rosa Basin as part of Phase 1 of the proposed project. In addition, groundwater from this Basin would be treated as part of Phase 2. The Arroyo Santa Rosa Basin is comprised of approximately 3,730 acres, with an estimated storage capacity of about 100,000 acre-feet. The Basin was estimated to be 70 to 80 percent full in 1999. Groundwater level data shows water levels are relatively stable throughout the Arroyo Santa Rosa groundwater basin and the basin now exhibits a subdued variation over wet and dry cycles as compared with the natural hydrology and pre-imported water signature of this unconfined basin. The stable water levels are believed to be the result of decreased extractions and increased recharge to aquifers from infiltration of streamflow from Arroyo Conejo. The infiltration of Hill Canyon Wastewater Treatment Plant effluent is a major component of the water balance in the Santa Rosa Valley, likely comprising 50 percent of total recharge to the basin (Stahl, Gardner & Dunne 1994). Based on water sampling from seven public supply wells, TDS concentrations vary from 670 to 1,200 mg/l, with an average of 1,006 mg/l (DWR, 2004).

Designated beneficial uses of the Arroyo Santa Rosa groundwater basin include municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply (LARWQCB 1994).

Conejo Valley Basin

Brackish groundwater would be produced from this Basin as part of Phases 2 and 3 of the proposed project. The Conejo Valley Basin is comprised of approximately 28,900 acres, with an estimated storage capacity of about 7,100 acre-feet. The Basin was estimated to be 75 percent full in 1999. Groundwater production in the Basin is estimated at less than 100 acre-feet per year. Within the Modelo and Topanga Formations, TDS concentrations vary from 404 to 2,064, with an average of 1,189 mg/l (DWR, 2004).

Designated beneficial uses of the Conejo Valley Groundwater Basin include municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply (LARWQCB 1994). Use of this groundwater for municipal and domestic supply has largely been abandoned in favor of better quality imported water.

7.10.4 Water Quality Concerns

Aquatic life in Mugu Lagoon and inland streams has been adversely affected by pollutants from non-point sources. DDT, PCBs, other pesticides and some metals have been detected in both sediment and aquatic life collected from Calleguas Creek. Aquatic toxicity of surface waters has been detected, likely the result of accumulation of historic pesticides in sediments and ammonia from wastewater treatment plant discharges. Fish collected from Calleguas Creek and Revolon Slough have skin lesions and other abnormalities. High levels of salts are common in the water column as well as in groundwater. The RWQCB considers the Calleguas Creek Watershed highly impaired, primarily due to agricultural activities, including the disturbance and erosion of historically contaminated soils.

Mugu Lagoon is considered a toxic hot spot under the Bay Protection and Toxic Cleanup Program due to:

• Reproductive impairment of the endangered clapper rail;

• Exceedance of the State advisory level for mercury in fish;

• Exceedance of national guideline levels for DDT in fish;

• High sediment concentrations of DDT, PCB, chlordane and chlorpyrifos; and

• Sediment toxicity.

7.10.5. Significance Thresholds

Surface water and ground water quality

Water quality standards from the California Toxics Rule (Federal Register Vol. 65 No. 97, pp. 31682-31719, May 18, 2000) are used as thresholds of significance for priority toxic pollutants in surface waters.

Any project-related exceedance of the water quality objectives of the Water Quality Control Plan is considered a significant impact. By complying with this Plan, it is expected that surface waters are protected for aquatic life, wildlife, water contact recreation, and other designated beneficial uses. Compliance also ensures groundwaters are protected for designated beneficial uses.

Surface water and ground water quantity

Any reduction in water quantity that may threaten beneficial uses is considered a significant impact. Any project-related reduction in surface flow that would substantially reduce the potential for the affected waterbody to support identified beneficial uses is considered a significant impact.

Any project-related activity that would substantially increase groundwater production from an overdrafted basin is considered a significant impact. Overdraft is defined as a long-term decline in groundwater in storage caused by extraction rates exceeding recharge rates.

7.10.6. Proposed Action and Potential Impacts

7.10.6.1 RSMP

- Construction Impacts

Pipeline crossings of major streams (Calleguas Creek, Revolon Slough, Conejo Creek, Arroyo Simi, Arroyo Las Posas) would be conducted by tunneling and would avoid direct impacts to water quality. However, smaller streams (including Alamos Canyon, Grimes Canyon, Fox Barranca) would be crossed using trenching methodology. Trench excavation and other use of heavy equipment within and adjacent to these streams could result in the suspension of sediment in surface water.

Even in the dry season, trenching and other soil and vegetation disturbance in streambeds may result in accelerated erosion of the bed and bank, and any deposited earth material during the first major storm, causing increased turbidity and sedimentation.

In addition, runoff of storm water during installation of these pipeline crossings and other pipeline segments in close proximity to surface waters may transport sediment and other pollutants to these creeks. The proposed project would be subject to the Statewide General Permit for Storm Water Discharges Associated with Construction Activity, and would need to submit a Storm Water Pollution Prevention Plan to eliminate or reduce non-storm discharges to storm water systems and other waters of the U.S.

Suspended sediment generated by construction activity within or adjacent to surface waters and storm run-off would result in an increase in turbidity that would likely exceed water quality objectives. Exposure of organic materials within the sediments could increase biological oxygen demand by bacterial decomposers at the sediment-water interface (Wetzel, 1975). Respiration by these bacteria could reduce dissolved oxygen in the water column below the 5 mg/l objective developed to protect warm freshwater habitat. Pollutants bound to the sediments would be re-suspended and may include biostimulatory substances (excess nutrients), inorganic chemicals (mostly heavy metals), organic chemicals (including pesticides and polychlorinated biphenyls), and oil and grease. The 1998 California 303(d) list of impaired waters indicates both Arroyo Las Posas and Calleguas Creek have high levels of DDT in bottom sediment. These pollutants may be temporarily available to aquatic organisms at higher than pre-project concentrations.

Biostimulatory substances (primarily nutrients) could result in the proliferation of aquatic vegetation and algae downstream and affect beneficial uses, including warm freshwater habitat and wildlife terrestrial habitat. Inorganic chemicals could result in direct toxicity of aquatic organisms. Organic chemicals (primarily pesticides) could result in direct toxicity of aquatic organisms and/or bioaccumulation within vertebrate animals. Pesticides are generally insoluble in water, but are readily adsorbed by the sediments. Pesticides are particularly harmful to crustaceans, but are also toxic to shellfish, fish, and humans. Uptake of pesticides by aquatic organisms may occur by the ingestion of suspended sediment or diffusion through the skin (Hart and Fuller, 1979).

Increases in turbidity and settleable materials can result in physical effects that adversely affect beneficial uses related to fisheries habitat and wetlands. Increased turbidity would reduce light penetration, which may reduce primary productivity of phytoplankton, benthic algae, and bacteria. Reduced primary productivity may adversely affect fisheries by reducing the food supply (zooplankton) of most larval and many adult fish. Sedimentation may smother fish eggs and larvae, smother benthic invertebrates, and alter the substrate composition. Substrate composition is important for breeding in fish species. Overall, construction activities are expected to result in exceedances of water quality objectives for turbidity, nutrients, inorganic chemicals, organic chemicals, oil and grease, which is considered a significant water quality impact.

- Ocean Water Quality

The proposed project would result in the collection and transportation of brine and treated municipal wastewater to the Pacific Ocean, through an existing ocean outfall. The following analysis addresses the water quality impact of this discharge.

The proposed project is in a preliminary planning stage, such that not all possible sources of wastewater or brine have been identified, and actual flow rates from identified sources may be quite different than estimated in Table 3-1. However, this analysis is focused on providing a reasonable worst-case assessment, by using maximum anticipated flows and all known effluent water quality data for these sources. When in operation, the proportion of flow from the various sources are expected to vary on an annual basis with seasonal demands for reclaimed water, and vary in the long-term as population growth occurs at higher rates in some areas and as additional reclaimed water projects are implemented.

Future environmental assessment may be required when the pipeline alignments, water volume and water quality parameters of the project are known with greater certainty. This assessment would likely include further analysis of potential ocean water quality impacts when more specific information regarding the intended volume and quality of wastewater to be discharged to the proposed pipeline system is known for each contributor. It is likely that dilution modeling would be repeated each time a major wastewater contributor (or group of smaller industrial or agricultural contributors) commits to using the proposed pipeline system.

The ocean outfall of the proposed pipeline system would receive four types of water: tertiary-treated wastewater from the MWTP and Camrosa WRF; RO effluent (brine) from Simi Valley and Camarillo; RO brine from groundwater wells in Simi Valley, Ventura County, and Santa Rosa; and effluent from existing outfall users at Ormond Beach (or Oxnard). Flow rates for each contributing facility to the proposed pipeline system are based on current discharge capacity with a 50 percent capacity increase allowance to account for future expansion or inclusion of industrial or agricultural users. It is assumed that there is no seasonal variation in discharge rate to the proposed pipeline system.

Effluent concentrations from the proposed pipeline contributors are not available for cyanide and antimony. However, cyanide and antimony data is available for the Hill Canyon Treatment Plant, another local wastewater treatment facility. Due to lack of any other data, it was assumed that effluent from treatment plants contributing to the proposed pipeline system have similar concentrations of these metals. Samples collected from the effluents may indicate concentrations that are substantially different than these values.

7.10.6.2 RWRMP

Phase 1

- Construction impacts

Pipeline crossings of major streams (Calleguas Creek, Conejo Creek), would be conducted by tunneling or a pipe bridge, and would avoid direct impacts to water quality. However, smaller streams such as Arroyo Santa Rosa and agricultural ditches in new recycled water service areas would be crossed using trenching methodology. Trench excavation and other use of heavy equipment within and adjacent to these streams would result in the suspension of sediment in surface water.

In addition, runoff of storm water during installation of these pipeline crossings and other facilities (new Camrosa WRF outfall, blending facility at the storage ponds, water quality monitoring equipment) in close proximity to surface waters may transport sediment and other pollutants to these drainages. The proposed project would be subject to the Statewide General Permit for Storm Water Discharges Associated with Construction Activity, and would need to submit a Storm Water Pollution Prevention Plan to eliminate or reduce non-storm discharges to storm water systems and other waters of the U.S.

Suspended sediment generated by construction activity within or adjacent to surface waters and storm run-off would result in an increase in turbidity that would likely exceed water quality objectives. The use of concrete near surface waters (for trench slurry backfill, encasements or for the outfall structure) may result in discharge of concrete residue or concrete-contaminated run-off to surface waters. Such an event would likely cause an exceedance of the pH water quality objective.

The use of heavy equipment within or adjacent to surface waters may result in inadvertent discharge of fuels, lubricants or coolant to surface waters. Such discharges may result in an exceedance of oil and grease and aquatic toxicity water quality objectives. Overall, construction activities may result in exceedances of water quality objectives, which is considered significant water quality impact.

- Surface Flow

Phase 1 includes the construction of a pump station and pipeline to transport treated effluent from the Camarillo WRP to Camrosa's storage ponds. Currently, a portion of the Camarillo WRP treated effluent is discharged to Conejo Creek. Therefore, the proposed project would result in the termination of effluent discharge to surface waters.

Surface water flow was simulated using the Hydrologic Simulation Program-Fortran (HSPF) (LWA). The HSPF model uses historic weather conditions (October 1, 1987 through December 31, 2004) to simulate surface flow, based on project-related changes to existing discharges and diversions of surface waters. Modeling is based on the assumption that the Conejo Creek Diversion maintains a 6 cubic feet per second (cfs) bypass (surface flow allowed to remain in the Creek), no diversion occurs when surface flows exceed 51.6 cfs and the maximum diversion rate is 21.7 cfs. Estimated stream flow rates at Route 1 and Mugu Lagoon do not account for tidal inputs or flow from Revolon Slough.

The State Water Resources Control Board (SWRCB) approved modifications of the instream flow regime of Conejo Creek pursuant to the City of Thousand Oaks' permitted water right Application 29408 and wastewater change petition WW#6. The SWRCB's determination is documented in the SWRCB's Water Rights Decision 1638, September 18, 1997. The City of Thousand Oaks applied to divert water from Conejo Creek attributable to its wastewater discharges from the Hill Canyon Wastewater Treatment Plant and return flows from applied imported water originating from the city. In approving the City's water right permit, the SWRCB established instream flow requirements. In summary, the flow requirements mandate that a 6 cubic feet per second (cfs) minimum flow be maintained downstream of the point of diversion. The point of diversion is located on Conejo Creek immediately downstream from U.S. Highway 101. The proposed project does not seek to change this flow requirement, and in the analysis that follows uses the SWRCB's 6 cfs flow below U.S. Highway 101 as the

baseline for the proposed operation of replenishment water in the later phases of the project.

In the latter phases of the RWRMP project, water currently diverted as part of the City of Thousand Oaks's water right by the Conejo Creek Diversion Project would be recycled directly from the Hill Canyon Wastewater Treatment Plant. The Conejo Creek Diversion would still serve to regulate replenishment flows. The benefit of the current operation of the Conejo Creek Project in reducing demands for imported water and groundwater would continue. The minimum 6 cfs flow would be maintained downstream of the point of diversion.

Results from the model indicated flow reductions would occur in Conejo Creek (downstream of the current discharge location) and in Calleguas Creek. Modeled flow reductions related to Phase 1 of the proposed project would be up to 5.7 cfs (48 % reduction) with the highest flow reductions occurring during the summer. Minimum flow rates would not be as greatly affected by Phase 1.

The Phase 1-related surface flow impact would reduce the potential for Conejo Creek and Calleguas Creek to support beneficial uses identified in the Basin Plan and is considered significant, including maintenance of freshwater habitat, wildlife habitat and wetland habitat. These impacts are discussed further in the Biological Resources section. Post-Phase 1 surface flows would be adequate to meet water supply and groundwater replenishment uses, as the project would increase agricultural water supplies in the region and reduce groundwater use.

Surface Water Quality. The project-related termination of discharge of Camarillo WRP treated effluent to Conejo Creek would affect water quality in Conejo Creek and Calleguas Creek, through the reduction in flow and reduction in pollutant loading. These impacts are considered beneficial.

As part of this Program EIR/EA, post phase 1 surface water quality was analyzed using the Dynamic Calleguas Creek Modeling System (DCCMS) (LWA). The DCCMS flow simulations are based on 101 recursions using surface flow and water quality data from the period of October 1, 1958 through March 31, 2004 to develop probability distributions for current watershed conditions. The modeling is based on the assumption that the Conejo Creek Diversion maintains a 6 cubic feet per second (cfs) bypass (surface flow allowed to remain in the Creek), no diversion occurs when surface flows exceed 100 cfs and the maximum diversion rate is 21.7 cfs. The DCCMS was used to model monthly median concentrations of TDS, chloride, boron and sulfates in surface water at eight locations for current, Phase 1 and Phase 3 conditions. Results indicate:

- Chloride monthly median concentrations in Conejo Creek and Calleguas Creek would slightly decrease downstream of the current Camarillo WRP discharge location;

- TDS monthly median concentrations would be reduced below the water quality objective in Conejo Creek downstream of the Camarillo WRP discharge location;

- TDS monthly median concentrations in Calleguas Creek would not substantially change, and would not cause an exceedance of the 850 mg/l water quality objective.

• Sulfate monthly median concentrations (monthly median) in Calleguas Creek at Potrero Road would increase and may exacerbate modeled exceedances of the 250 mg/l water quality objective; and

• Boron monthly median concentrations in Conejo Creek and Calleguas Creek would slightly decrease downstream of the current Camarillo WRP discharge location.

Based on DCCMS modeling, maximum sulfate concentrations in Calleguas Creek at Potrero Road will vary from 470 to 572 mg/l. The maximum project-related increase in sulfate concentrations in Calleguas Creek will be 89 mg/l at Potrero Road, and appears to be caused by the project-related reduction in surface flow which tends to dilute sulfate in groundwater entering surface waters in the vicinity of Potrero Road. The sulfate water quality objective is 250 mg/l upstream of Potrero Road, and 350-600 mg/l downstream (based on maintaining the agricultural supply beneficial use). The portions of Calleguas Creek downstream of Potrero Road (Reaches 1, 2 and 3) are not considered impaired for sulfate and surface water is not used for agricultural irrigation in this area. Therefore, the project-related increase in sulfate concentrations is considered a less than significant impact.

Other surface water constituents which impair water quality in the watershed under Clean Water Act Section 303(d) include ammonia, nitrate, copper, nickel, zinc, selenium and mercury. Baseline data and relationships for these constituents are not well represented in the DCCMS. Therefore, a single water quality value representing current conditions was generated for each constituent using the available water quality data. These values are based on median concentrations and median of the monthly flow rates calculated by the DCCMS. These values should be considered indicative of trends and not absolute values. Project-related changes in the constituent concentrations are estimated assuming that inputs from other than treatment plant discharges remain constant. Note that recent implementation of denitrification at the Hill Canyon WTP and planned implementation of denitrification at the Camarillo WRP is not reflected in the existing or proposed ammonia and nitrate data. Selenium data are not presented as this element occurs in multiple forms (some are inert) which cannot be distinguished due to lack of data. The modeling indicates:

• Ammonia, nitrate, copper, zinc and mercury concentrations in Conejo Creek and Calleguas Creek would decrease downstream of the current Camarillo WRP discharge location;

• Nickel concentrations would increase slightly but would remain well below the 100 µg/l water quality objective.

Additional surface water constituents which impair water quality in the watershed under Clean Water Act Section 303(d) include historic pesticides (chlordane, DDT, endosulfan, chlorpyrifos, dieldrin, toxaphene, dacthal, hexachlorocyclohexane, ChemA), fecal coliform, aquatic toxicity and polychlorinated biphenyls (PCB). These constituents are associated with past land use in the watershed, wastewater discharges and non-point source run-off. Phase 1 of the proposed project would result in the termination of discharge of Camarillo WRP treated effluent to Conejo Creek. This effluent does not contain historic pesticides or PCB and would not result in any change in the

concentration of these constituents in surface waters. The Camarillo WRP treated effluent may contribute to aquatic toxicity; therefore, termination of discharge would be considered beneficial.

Phase 1 also includes moving the Camrosa WRF treated effluent discharge point to Calleguas Creek currently located adjacent to Camrosa's storage ponds approximately 2.5 miles downstream to a new outfall located downstream of Potrero Road. Discharge of Camrosa WRF treated effluent only occurs during the wet season, when supply of recycled water exceeds demand. The proposed project includes both new sources of recycled water and new customers; therefore, no substantial changes in the frequency, volume or composition of these discharges are expected. Initially, effluent that is currently discharged from the Camarillo WRP may be discharged at the new outfall; however, due to tidal influences chloride is less of a concern downstream of Potrero Road and no site-specific water quality objective has been established for this area. Therefore, relocation of the treated effluent discharge location is considered a beneficial impact as chloride would have a lesser effect on the aquatic ecosystem and potential exceedances of the chloride water quality objective would not occur.

Currently, much of the water used for irrigation of crops in the Camarillo area is supplied by surface water captured by the Conejo Creek Diversion Project. Phase 1 includes increasing use of recycled water (primarily from the Camarillo WRP) which would modify the water quality of irrigation water, and may affect surface water quality through run-off of irrigation water. A comparison of median concentrations of constituents in diverted surface water and treated effluent from the Camarillo WRP indicates chloride, TDS, ammonia, nitrate, sulfate and boron concentrations are higher in the Camarillo WRP effluent. However, terminating discharge of the Camarillo WRP treated effluent to Conejo Creek would reduce chloride, TDS, ammonia, nitrate, sulfate and boron concentrations directly, which would offset adverse effects of reduced quality agricultural return flows to surface waters.

Source control of salts in the watershed (primarily reducing the number of salt-based water softeners) would reduce salt loading (including chloride and TDS) in wastewater discharged to surface waters, which would improve water quality. This impact on surface water quality is considered beneficial.

- Groundwater Quality.

Phase 1 includes the following components that would affect groundwater quality:

• Water conservation and source control of salts;

• Pumping brackish groundwater from the CSUCI well, treating the water and incorporating it into the Camrosa potable water distribution system;
• Increasing the supply of recycled water by adding the Camarillo WRP treated effluent to the Camrosa storage and distribution system; and

• Increasing the use of recycled water by expanding Camrosa's distribution system into Santa Rosa Valley, east Camarillo and southern Pleasant Valley.

Imported water also imports salts into the watershed. Water conservation would reduce the use of imported water and its associated salts. Such conservation would offset

increased use of imported water for blending at the Conejo wells and Woodcreek Well. Source control of salts would reduce salt loading in wastewater and recycled water, such that salt inputs to groundwater aquifers (through streambed infiltration or percolation following irrigation) would be reduced. In the long-term, TDS and chloride concentrations in groundwater supplies would decline. This impact on groundwater quality is considered beneficial.

The CSUCI well produces from a shallow aquifer, with relatively close hydraulic connections with Calleguas Creek and poor hydraulic connection with the Upper and Lower Aquifer systems of the Pleasant Valley Groundwater Basin (Brown, 2005). Pumping and treatment of water from the CSUCI well would draw down this aquifer and provide storage capacity for recharge by higher quality water from rainfall percolation and surface water infiltration. The proposed CSUCI well treatment would remove salts from the watershed (via the Calleguas MWD Brine disposal system) and improve water quality in this shallow aquifer. Potable water produced by the CSUCI well would substitute for imported water, and its associated salt loading. Impacts on groundwater quality are considered beneficial.

Currently, much of the water used for irrigation of crops in the Camarillo area is supplied by surface water captured by the Conejo Creek Diversion Project. The increased use of recycled water (primarily from the Camarillo WRP) would modify the water quality of irrigation water, and may affect groundwater quality through percolation of irrigation water. Camarillo WRP treated effluent would be blended with Camrosa WRF effluent and diverted surface water, such that changes in irrigation water quality would be negligible. Note that recent implementation of denitrification at the Hill Canyon WTP and planned implementation of denitrification at the Camarillo WRP is not reflected in the ammonia and nitrate data.

The expansion of the recycled water distribution system would also result in substituting recycled water for imported water for landscape irrigation. This would reduce the amount of salts imported into the watershed, and ultimately slow the degradation of groundwater quality caused by salt accumulation. Preliminary mass balance estimates prepared by Camrosa indicate Phase 1 would reduce chloride inputs to the watershed from about 47,300 to 41,900 pounds per day, and increase the rate of chloride removal from about 15,800 to 16,600 pounds per day.

Table 7.10-3 Phase 1 Impacts to Surface Flow (monthly median-cfs)

Parameter	Conejo Creek Below Hill Canyon	Conejo Creek above the Diversion	Conejo Creek at Howard Road (1)	Calleguas Creek at Potrero Road	Calleguas Creek at Route 1 (2)	Calleguas Creek at Mugu Lagoon (2)
Existing Conditions						
Overall Median (3)	18.3	19.2	11.8	12.5	9.9	19.4
Overall Minimum (4)	9.9	12.3	6.6	6.3	3.9	8.7
Phase 1 Conditions						
Overall Median (3)	18.3	19.2	6.1	7.5	5.5	15.5
Overall Minimum (4)	9.9	12.3	5.9	4.4	1.9	4.1
Median and minimum values during period of maximum change (5)	NA: no effect	NA: no effect	June-August median 6.1 minimum 5.9	July median 6.8 minimum 4.8	July median 4.5 minimum 2.1	July median 14.1 minimum 6.0

Notes:
(1) Flow in excess of 6 cfs is diverted prior to Howard Road
(2) Flow does not include contribution from Revolon Slough and tidal flow from Mugu Lagoon
(3) Median values for the entire modeling period (1987-2004 weather)
(4) Minimum value over the entire modeling period (1987-2004 weather)
(5) Monthly median and minimum values for the period of maximum change (median)

Table 7.10.4 Phase 1 Impacts to Chloride, TDS, Sulfates and Boron in Surface Water (monthly median, mg/L)

Constituent	Parameter	North Fork Arroyo Conejo	South Fork Arroyo Conejo	Conejo Creek Below Hill Canyon	Conejo Creek at the Diversion	Conejo Creek at Howard Road	Calleguas Creek at Potrero Road
Chloride WQ objective: 150	Existing range(1)	192-200	195-216	149-159	150-161	160-170	171-182
	Proposed range(2)	192-200	195-216	149-159	150-161	152-160	170-181
	Value and period of maximum change	NA: no effect	NA: no effect	NA: no effect	NA: no effect	8 mg/l decrease, December-March	3 mg/l decrease, November
TDS WQ objective: 850	Existing range	1493-1709	1663-1977	745-781	776-816	842-867	889-909
	Proposed range	1493-1709	1663-1977	745-781	776-816	802-846	884-916
	Value and period of maximum change	NA: no effect	NA: no effect	NA: no effect	NA: no effect	43 mg/l decrease August	7 mg/l increase, January, December
Sulfates WQ objective: 250	Existing range	75-238	119-224	141-154	150-161	183-191	252-311
	Proposed range	75-238	119-224	141-154	150-161	153-164	264-342
	Value and period of maximum change	NA: no effect	NA: no effect	NA: no effect	NA: no effect	33 mg/l decrease, February	38 mg/l increase, August
Boron WQ objective: 1.0	Existing range	0.23-0.24	0.35-040	0.57-0.58	0.60-0.61	0.62-0.63	0.57-0.60
	Proposed range	0.23-0.24	0.35-0.40	0.57-0.58	0.60-0.61	0.61-0.62	0.54-0.58
	Value and period of maximum change	NA: no effect	NA: no effect	NA: no effect	NA: no effect	0.01 mg/l decrease, February, March, July, August	0.03 mg/l decrease, February, March, June, August, October

Notes: (1) Range of monthly median values for existing conditions
(2) Range of monthly median values under Phase 1 conditions

Table 7.10.5 Phase 1 Impacts to Ammonia, Nitrate, Copper, Nickel, Zinc, and Mercury in Surface Water (median)

Constituent	Condition	North Fork Arroyo Conejo	South Fork Arroyo Conejo	Conejo Creek Below Hill Canyon	Conejo Creek at the Diversion	Conejo Creek at Howard Road	Calleguas Creek at Potrero Road	Calleguas Creek at Route 1	Calleguas Creek at Mugu Lagoon
Ammonia (mg/l) WQO: 1.55	Existing	0.04	0.79	2.70	0.99	0.72	0.09	0.22	0.17
	Proposed	0.04	0.79	2.70	0.99	*0.51*	*0.06*	*0.15*	*0.12*
Nitrate (mg/l) WQO: 10	Existing	6.31	2.36	11.9	15.4	11.3	14.9	41.4	73.9
	Proposed	6.31	2.36	11.9	15.4	*9.18*	*12.5*	*33.4*	*60.8*
Copper (µg/l) CTR: 25	Existing	1.50	No data	2.24	1.81	2.38	3.11	3.69	2.92
	Proposed	1.50	No data	2.24	1.81	*1.14*	*1.54*	*1.76*	*1.42*
Nickel (µg/l) WQO: 100	Existing	2.4	2.2	3.7	3.8	3.8	6.7	7.3	3.47
	Proposed	2.4	2.2	3.7	3.8	*4.5*	*8.2*	*8.6*	*4.16*
Zinc (µg/l) CTR: 247	Existing	5.27	No data	16.0	17.0	18.5	15.9	11.3	7.65
	Proposed	5.27	No data	16.0	17.0	*12.1*	*10.8*	*7.36*	*5.09*
Mercury (µg/l) CTR: 0.05	Existing	0.003	0.008	0.006	0.003	0.004	0.007	0.004	0.003
	Proposed	0.003	0.008	0.006	0.003	*0.002*	*0.003*	*0.002*	*0.002*

Notes: the lowest applicable criteria is provided under Constituent, WQO: Water Quality Objective, CTR: California Toxics Rule

Table 7.10.6. Phase 1 Effects on Irrigation Water Quality

Irrigation Water Source	Ammonia (mg/l)	Nitrate (mg/l)	Boron (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	TDS (mg/l)
Existing Irrigation Water Quality						
Conejo Creek (diversion)	1.0	15	0.35	156	214	805
Future Irrigation Water Quality – Phase 1 (add Camarillo WRP)						
Camarillo WRP	2.0	25	0.63	185	223	889
Camrosa WRF	0.05	1.4	0.47	157	148	718
Future Irrigation Water Quality – Phase 3 (add Hill Canyon WTP)						
Hill Canyon WTP	3.6	7.3	0.47	156	139	615
Combined (Hill Canyon, Camarillo, Camrosa)	3.0	10	0.5	162	155	676

Pumping of brackish groundwater from the CSUCI well may be viewed as increasing production from the overdrafted Pleasant Valley Groundwater Basin. However, the CSUCI well produces from a shallow semi-perched aquifer which is largely isolated from the upper and lower aquifer systems of the Basin by clay layers. Based on a review of logs for wells in the vicinity, substantial clay layers (mostly greater than 50 feet thick) exist at a depth of 300 feet and below (Brown, 2005). In addition, the lower aquifer system is absent in the vicinity of the well (east of Calleguas Creek) (Woodward-Clyde 1997, Brown 2005). Groundwater produced during test pumping of this well in 2003 yielded very high TDS concentrations (1,648 mg/l) which is not considered suitable for potable or irrigation uses. In addition, the well would be sealed below 400 feet to prevent inadvertent extraction from the upper aquifer system. Therefore, no increase in Basin groundwater pumping would occur.

The expansion of the recycled water distribution system would also result in providing supplemental recycled water in lieu of groundwater for crop irrigation, which would reduce pumping from overdrafted basins. Water conservation programs to be implemented as part of Phase 1 would reduce groundwater use in the Camrosa service area. Preliminary estimates prepared by Camrosa indicate Phase 1 would reduce groundwater pumping from overdrafted basins by 3.4 million gallons per day. This would be considered a beneficial impact to groundwater quantity.

- Drinking Water Quality.

The quality of potable water (primarily TDS and chlorides) provided by Camrosa would improve as a result of Phase 1 implementation:

• Treated water from the CSUCI well would be very low in TDS and chlorides;

• Blending groundwater from the Woodcreek Well with imported water would decrease TDS and chlorides; and

• Increased blending of groundwater from the Conejo wells with imported water would decrease TDS and chlorides.

- Ocean Water Quality.

Brine produced by groundwater treatment at the CSUCI well would be discharged to the Calleguas MWD Brine disposal system which would ultimately discharge to the Pacific Ocean near Oxnard. Impacts to ocean water quality have been assessed in the Final Program EIR/EA for the Calleguas Regional Salinity Management Project prepared by Calleguas MWD. The Final Program EIR/EA concluded that the ammonia, copper and mercury water quality standards of the California Ocean Plan would be exceeded at the Ormond Beach outfall, under design flow rates when the power plant was not pumping cooling water through the outfall. Calleguas MWD is currently working with the Regional Water Quality Control Board to develop dilution ratios and effluent limits that would ensure compliance with the California Ocean Plan. Phase 1 brine flows were included in the design flows analyzed in the Program EIR/EA for the Calleguas Regional Salinity Management Project, and impacts have been assessed and would be mitigated as part of that project.

Phase 2

- Construction impacts.

Run-off of storm water during construction of the treatment plant at the Camrosa headquarters and replenishment water facilities may transport sediment and other pollutants to Arroyo Conejo and Conejo Creek. The proposed project would be subject to the Statewide General Permit for Storm Water Discharges Associated with Construction Activity, and would need to submit a Storm Water Pollution Prevention Plan to eliminate or reduce non-storm discharges to storm water systems and other waters of the U.S.

Suspended sediment generated by construction activity within or adjacent to surface waters and storm run-off would result in an increase in turbidity that would likely exceed water quality objectives. The use of concrete near surface waters (for replenishment water discharge structures) may result in discharge of concrete residue or concrete-contaminated run-off to surface waters. Such an event would likely cause an exceedance of the pH water quality objective.

The use of heavy equipment within or adjacent to surface waters may result in inadvertent discharge of fuels, lubricants or coolant to surface waters. Such discharges may result in an exceedance of oil and grease and aquatic toxicity water quality objectives. Overall, construction activities may result in exceedances of water quality objectives, which is considered a potentially significant water quality impact.

- Surface Flow.

Phase 2 includes the discharge of treated groundwater or imported water to the North Fork and/or South Fork Arroyo Conejo. During Phase 2, these releases would be experimental and intermittent, with volumes ranging from about 1 to 8 cfs. Most of this flow would be re-captured at the Conejo Creek Diversion and used for agricultural irrigation. Surface flow would increase in Arroyo Conejo downstream of the discharge

and in Conejo Creek upstream of the Diversion. This impact is considered beneficial to surface water resources.

- Surface Water Quality.

Water released would be dechlorinated, but otherwise suitable for potable uses and have lower TDS and chloride concentrations than surface water. A small amount of brine would be produced from treatment of groundwater from the Conejo Groundwater Basin. The brine would be discharged to a City sewer and treated at the Hill Canyon WTP. Salts dissolved in this brine stream would not be removed at the Hill Canyon WTP and would be discharged to North Fork Arroyo Conejo with the City's treated effluent. This small increase in salt loading would be offset by the lower instream TDS and chloride concentrations associated with upstream discharge of treated groundwater. Overall, impacts to surface water quality are considered beneficial.

- Groundwater Quality.

Phase 2 includes treatment of groundwater from the existing Conejo wells (Arroyo Santa Rosa Groundwater Basin) to remove TDS and chlorides prior to distribution. Treated water would be blended with untreated water to meet water quality goals. The brine waste stream would be discharged to the Calleguas MWD Brine disposal system, resulting in the removal of salts from the watershed. Preliminary mass balance estimates prepared by Camrosa indicate Phase 2 (in combination with Phase 1) would increase the rate of chloride removal from about 15,800 to 18,900 pounds per day. In the long-term, TDS and chloride concentrations in the Arroyo Santa Rosa Groundwater Basin would decline as a result of enhanced salt removal from the watershed. This impact on groundwater quality is considered beneficial.

The Conejo wells produce groundwater from the portion of the Arroyo Santa Rosa Groundwater Basin upgradient from the Bailey Fault where replenishment water from upstream discharges would offset the proposed use of groundwater. No impact on groundwater quantity would occur.

- Ocean Water Quality.

Brine produced by groundwater treatment would be discharged to the Calleguas MWD Brine disposal system which would ultimately discharge to the Pacific Ocean near Oxnard. Impacts to ocean water quality have been assessed in the Final Program EIR/EA for the Calleguas Regional Salinity Management Project prepared by Calleguas MWD. The Final Program EIR/EA concluded that the ammonia, copper and mercury water quality standards of the California Ocean Plan would be exceeded at the Ormond Beach outfall, under design flow rates when the power plant was not pumping cooling water through the outfall. Calleguas MWD is currently working with the Regional Water Quality Control Board to develop dilution ratios and effluent limits that would ensure compliance with the California Ocean Plan. Phase 2 brine flows were included in the design flows analyzed in the Program EIR/EA for the Calleguas Regional Salinity Management Project, and impacts have been assessed and would be mitigated as part of that project.

<u>Phase 3</u>

- **Construction Impacts**.

The proposed interconnect pipeline would parallel Arroyo Conejo along Hill Canyon Road and cross Arroyo Santa Rosa and Conejo Creek. The Arroyo Santa Rosa crossing would be completed when the stream was dry, and the Conejo Creek pipeline crossing would be completed using a pipe bridge. However, run-off of storm water during pipeline installation may transport sediment and other pollutants to these drainages. The proposed project would be subject to the Statewide General Permit for Storm Water Discharges Associated with Construction Activity, and would need to submit a Storm Water Pollution Prevention Plan to eliminate or reduce non-storm discharges to storm water systems and other waters of the U.S.

Suspended sediment generated by construction activity within or adjacent to surface waters and storm run-off would result in an increase in turbidity that would likely exceed water quality objectives. The use of concrete near surface waters (for pipe bridge abutments or pipe encasements) may result in discharge of concrete residue or concrete-contaminated run-off to surface waters. Such an event would likely cause an exceedance of the pH water quality objective.

The use of heavy equipment within or adjacent to surface waters may result in inadvertent discharge of fuels, lubricants or coolant to surface waters. Such discharges may result in an exceedance of oil and grease and aquatic toxicity water quality objectives. Overall, construction activities may result in exceedances of water quality objectives, which is considered a significant water quality impact.

- **Surface Flow**.

Phase 3 includes the construction of a pump station and pipeline to transport treated effluent from the Hill Canyon WTP to Camrosa's recycled water distribution system near Reservoir 1-A. Currently, all treated effluent from the Hill Canyon WTP is discharged to North Fork Arroyo Conejo. Therefore, the proposed project would result in the termination of effluent discharge to surface waters. Table 7.11.7 provides estimates of existing and post-Phase 3 stream flow at six locations in the watershed obtained from the HSPF model. Note that flow values at Route 1 and Mugu Lagoon are under-predicted as they do not include contributions from Revolon Slough and tidal flow from the Lagoon. Phase 3 also includes the discharge of replenishment water (imported water or treated groundwater) to North Fork and South Fork Arroyo Conejo to offset loss of flow associated with termination of discharge of Hill Canyon WTP treated effluent to North Fork Arroyo Conejo. Modeling results of four replenishment scenarios are provided:

- 1 cfs discharge to both North Fork and South Fork (2 cfs total);
- 2 cfs discharge to both North Fork and South Fork (4 cfs total);
- 3 cfs discharge to both North Fork and South Fork (6 cfs total); and
- 4 cfs discharge to both North Fork and South Fork (8 cfs total).

Data presented in Table 7.11.7 indicate:

• Median surface flow in South Fork Arroyo Conejo and Conejo Creek (above the Diversion) would decrease by 13 cfs (68 percent reduction above the Diversion) for the 2 cfs (total) replenishment water discharge scenario;

• Median surface flow in South Fork Arroyo Conejo and Conejo Creek (above the Diversion) would decrease by 11 cfs (58 percent reduction above the Diversion) for the 4 cfs (total) replenishment water discharge scenario;

• Median surface flow in South Fork Arroyo Conejo and Conejo Creek (above the Diversion) would decrease by 9 cfs (47 percent reduction above the Diversion) for the 6 cfs (total) replenishment water discharge scenario;

• Median surface flow in South Fork Arroyo Conejo and Conejo Creek (above the Diversion) would decrease by 7 cfs (37 percent reduction above the Diversion) for the 8 cfs (total) replenishment water discharge scenario;

• Some surface flow would be maintained in Arroyo Conejo, Conejo Creek and Calleguas Creek for the 2 cfs replenishment water scenario, even during dry periods (see minimum values in Table 7.11.7);

Median values are presented in Table 7.11.7 instead of maximum values. During peak flow periods following storms, project-related flow reductions would be less than one percent of total flow. Increasing the replenishment water discharge rate from 6 to 8 cfs would not increase stream flow downstream of the Conejo Creek Diversion, as the additional 2 cfs would be captured by the Diversion.

Based on an assessment of daily flow values produced by modeling, a replenishment water discharge rate of 2 cfs would meet the 6 cfs minimum surface flow requirement at the Diversion, during the spring, fall and winter and about one-half of the summer. Note the overall median value for the 1987-2004 modeling period is 6.1 cfs (see Table 7.11.7).

Preliminary modeling results also indicate a replenishment water discharge rate of 4 cfs would meet the 6 cfs minimum surface flow requirement at the Diversion, during the spring, fall and winter and essentially all days during the summer.

The Phase 3-related surface flow impact would reduce the potential for Arroyo Conejo (downstream of the Hill Canyon WTP discharge point), Conejo Creek and Calleguas Creek to support beneficial uses identified in the Basin Plan and is considered significant. Beneficial uses adversely affected would be freshwater habitat, wildlife habitat and wetland habitat. These impacts are discussed further in the Biological Resources section of this Program EIR/EA. Post-Phase 3 surface flows would be adequate to meet water supply and groundwater replenishment uses, as the project would increase agricultural water supplies in the region and reduce groundwater use.

Surface Water Quality. The project-related termination of discharge of Hill Canyon WTP treated effluent to North Fork Arroyo Conejo would affect water quality in Arroyo Conejo, Conejo Creek and Calleguas Creek, through the reduction in flow and reduction in pollutant loading. In addition, the discharge of imported water or treated groundwater as replenishment water would alter surface water quality.

The DCCMS was used to model monthly median concentrations of TDS, chloride, boron and sulfates in surface water at eight locations for Phase 3 conditions (all five replenishment water discharge scenarios). Chloride data are summarized in Table 11.7.8. The modeling indicates:

• Chloride concentrations in North Fork and South Fork Arroyo Conejo would decrease by 40 to 55 percent depending on replenishment water discharge rates and location;

• Chloride concentrations in Conejo Creek and Calleguas Creek would also be substantially reduced;

• TDS, sulfate and boron concentrations would also be reduced in Arroyo Conejo, Conejo Creek and Calleguas Creek; and

• Ammonia, nitrate, copper, nickel, zinc, and total mercury concentrations would be reduced in Arroyo Conejo, Conejo Creek and Calleguas Creek.

Phase 3 impacts to surface water quality are considered beneficial.

- Groundwater Quality.

Based on water quality data collected by the City of Thousand Oaks, discharge from the Hill Canyon WTP to Arroyo Conejo lowers surface water concentrations of TDS and chloride (Fugro West, 1997). Implementation of Phase 3 would result in the termination of effluent discharge to Arroyo Conejo (Hill Canyon WTP), and could increase TDS and chloride concentrations in surface waters recharging groundwater in the Arroyo Santa Rosa groundwater basin. However, as indicated in Table 7.11.8, discharge of replenishment water would improve surface water quality, and preserve groundwater quality.

Currently, much of the water used for irrigation of crops in the Camarillo area is supplied by surface water captured by the Conejo Creek Diversion Project. The incorporation of Hill Canyon WTP treated effluent into Camrosa's recycled water system would modify the water quality of irrigation water, and may affect groundwater quality through percolation of irrigation water. A comparison of median concentrations of constituents in surface water captured at the Conejo Creek Diversion and combined treated effluent indicates chloride, TDS, ammonia, nitrate, sulfate and boron concentrations would be very similar (see Table 7.11.6). In addition, much of the Hill Canyon WTP effluent would be used in the Santa Rosa Valley, which is currently irrigated with higher TDS groundwater. Potential changes to irrigation water quality are considered a less than significant impact to groundwater quality.

Treated effluent from the Hill Canyon WTP provided in Phase 3 would serve the Phase 1 expansion of the recycled water distribution system, and would result in substituting recycled water for imported water for landscape irrigation. This would reduce the amount of salts imported into the watershed. Using Hill Canyon WTP effluent directly would also prevent mixing this water with surface water with generally higher salt concentrations, allowing this salt to be carried downstream. The removal of salts from the watershed would ultimately slow the degradation of groundwater quality caused by salt accumulation. Preliminary mass balance estimates prepared by Camrosa indicate

Phase 3 (combined with Phases 1 and 2) would reduce chloride inputs to the watershed from about 47,300 to 38,700 pounds per day, and increase the rate of chloride removal from about 15,800 to 20,600 pounds per day.

The use of Hill Canyon WTP effluent in Camrosa's expanded recycled water distribution system (Phase 1) would result in substituting recycled water for groundwater for crop irrigation, which would reduce pumping from overdrafted basins. Preliminary estimates prepared by Camrosa indicate Phase 3 (combined with Phases 1 and 2) would reduce groundwater pumping from overdrafted basins by 14.3 million gallons per day. This would be considered a beneficial impact to groundwater quantity.

Table 7.10.7. Phase 3 Impacts to Surface Flow (cfs)

Parameter	Conejo Creek Below Hill Canyon	Conejo Creek above the Diversion	Conejo Creek at Howard Road (1)	Calleguas Creek at Potrero Road	Calleguas Creek at Route 1 (2)	Calleguas Creek at Mugu Lagoon (2)
Existing Conditions						
Overall Median (3)	18.3	19.2	11.8	12.5	9.9	19.4
Overall Minimum (4)	9.9	12.3	6.6	6.3	3.9	8.7
Phase 3 Conditions – 2 cfs Replenishment Water						
Overall Median (3)	5.3	6.1	5.9	6.9	4.9	15.0
Overall Minimum (4)	1.7	1.6	1.6	2.7	1.0	2.4
Phase 3 Conditions – 4 cfs Replenishment Water						
Overall Median (3)	7.3	8.1	6.1	7.4	5.4	15.4
Overall Minimum (4)	3.5	3.5	3.4	3.7	1.6	3.1
Phase 3 Conditions – 6 cfs Replenishment Water						
Overall Median (3)	9.3	10.1	6.1	7.5	5.5	15.5
Overall Minimum (4)	5.5	5.5	5.4	4.4	1.9	4.1
Phase 3 Conditions – 8 cfs Replenishment Water						
Overall Median (3)	11.3	12.1	6.1	7.5	5.5	15.5
Overall Minimum (4)	7.5	7.5	5.9	4.4	1.9	4.1

Notes: (1) Flow in excess of 6 cfs is diverted prior to Howard Road
(2) Flow does not include contribution from Revolon Slough and tidal flow from Mugu Lagoon
(3) Median values for the entire modeling period (1987-2004)
(4) Minimum value over the entire modeling period (1987-2004)

Table 7.10.8. Phase 3 Impacts to Surface Water Chloride Concentrations (monthly median values, mg/l)

Scenario	Parameter	North Fork Arroyo Conejo	South Fork Arroyo Conejo	Conejo Creek Below Hill Canyon	Conejo Creek Upstream of the Diversion	Conejo Creek at Howard Road	Calleguas Creek at Potrero Road
Existing	Range (1)	192-200	195-216	149-159	150-161	160-170	171-182
North Fork 2 cfs (3) South Fork 2 cfs (4)	Proposed range(2)	93-103	124-132	111-120	121-130	124-131	146-166
	Value and period of maximum change	99 decrease, February, July, August	86 decrease, July	42 decrease, June-August	33 decrease, May-September	39 decrease, September	25 decrease, January
North Fork 2 cfs South Fork 4 cfs	Proposed range	93-103	104-112	100-109	109-117	112-120	134-147
	Value and period of maximum change	99 decrease, February, July, August	107 decrease, July	52 decrease, July-August	45 decrease, May-August	51 decrease, August-September	37 decrease, January-February
North Fork 3 cfs South Fork 3 cfs	Proposed range	86-95	112-120	100-109	109-117	111-120	134-147
	Value and period of maximum change	106 decrease, February, July, August	99 decrease, July	52 decrease, July-August	46 decrease, August	51 decrease, August-September	37 decrease, January-February
North Fork 4 cfs South Fork 2 cfs	Proposed range	82-91	124-132	100-109	109-117	111-120	134-147
	Value and period of maximum change	110 decrease, February, July	86 decrease, July	52 decrease, July-August	46 decrease, August	51 decrease, August-September	37 decrease, January-February
North Fork 4 cfs South Fork 4 cfs	Proposed range	82-91	104-112	93-102	101-109	104-112	124-141
	Value and period of maximum change	110 decrease, February, July	107 decrease, July	58 decrease, July-August	53 decrease, July-August	59 decrease, August-September	43 decrease, February

Notes: (1) Range of monthly median values for existing conditions
(2) Range of monthly median values under Phase 3 conditions (termination of Hill Canyon WTP discharge, replenishment water discharge)
(3) Rate of replenishment water discharged to North Fork Arroyo Conejo
(4) Rate of replenishment water discharged to South Fork Arroyo Conejo

Phase 4

Impacts associated with groundwater production from the Conejo Groundwater Basin are addressed under Phase 2.

- Groundwater Quality.

The number, location and production rates of brackish groundwater wells in the lower watershed that would be implemented are unknown. Therefore, impacts cannot be quantified. However, pumping and treating water from shallow aquifers would serve to remove salts from the watershed and slow degradation of groundwater caused by salt accumulation.

7.10.6 Cumulative Impacts

The proposed actions are projects included in the Calleguas Creek Watershed Integrated Watershed Management Plan developed by a consortium of public agencies and interested parties. These projects may be implemented at about the same time and

affect the same resources, and may result in cumulative water resources impacts. Potentially cumulative impacts may include:

• Calleguas Regional Salinity Management Project (Brine Line): the Proposed Action includes termination of discharge of Hill Canyon WTP effluent to Arroyo Conejo which may exacerbate water quality impacts of the Brine Line project. However, these impacts are addressed in this EIR/EA.

• Camarillo Groundwater Treatment Facility: would remove salts from the watershed and facilitate use of poor quality groundwater. Impacts would be beneficial and consistent with the Proposed Action.

• South Las Posas Basin Regional Desalter: would remove salts from the watershed and facilitate use of poor quality groundwater. Impacts would be beneficial and consistent with the Proposed Action.

• Somis Desalter: would remove salts from the watershed and facilitate use of poor quality groundwater. Impacts would be beneficial and consistent with the Proposed Action.

• West Simi Desalter: would remove salts from the watershed and facilitate use of poor quality groundwater. Impacts would be beneficial and consistent with the Proposed Action. However, termination of groundwater discharge to Arroyo Simi could affect beneficial uses in Calleguas Creek through reduced surface flow and water quality. Surface flow and surface water quality impacts are not expected to be cumulatively considerable as surface water in Arroyo Simi does not reach Calleguas Creek (excluding storm flows).

• Ventura County Waterworks District no. 1 Reclaimed Water System Expansion: would reduce salt loading to Arroyo Las Posas and the South Las Posas Basin, and is considered beneficial.

• Simi Valley Regional Recycled Water System: would result in the termination of discharge of effluent to surface water and reduce salt loading. However, reduced surface lows could affect beneficial uses in Calleguas Creek. Surface flow impacts are not expected to be cumulatively considerable as surface water in Arroyo Simi does not reach Calleguas Creek (excluding storm flows).

7.10.7 Mitigation Measures

Mitigation for water quality impacts is based on best management practices (BMP) for construction activities (Camp Dresser & McKee et al., 1993) to ensure compliance with the Statewide Stormwater Construction General Permit. The following measures shall be included in the Stormwater Pollution Prevention Plan and implemented by the construction contractor in coordination with Camrosa to minimize disturbance of sediments and erosion, and reduce the potential for hydrocarbon discharge from construction equipment.

• De-watering should be conducted for excavation below the water table and include discharge to a sediment basin (or equivalent) prior to entering storm drains, creeks or other surface water (BMP's CA1, ESC56);

• Soil borings should be conducted and soils should be tested prior to construction within the bed or banks of local creeks in order to identify potential metal and/or pesticide contamination. If contaminants found in these soils (if any) exceed levels considered hazardous as defined in the California Code of Regulations, Title 22, Section 22621 et. seq., they should be stored on an impermeable surface (or equivalent measures) to prevent contamination of surrounding areas and removed to an appropriate disposal site (BMP CA22);

• Heavy equipment should be fueled in a designated area away from creeks, storm drains and culverts should be used. This designated area should include a drain pan or drop cloth and absorbent materials to clean up spills (BMP CA31);

• Vehicles and equipment should be maintained properly to prevent leakage. If maintenance must occur onsite, a designated area away from creeks, storm drains and culverts should be used. This designated area should include a drain pan or drop cloth and adsorbent materials to clean up spills (BMP CA32);

• Construction activities within or immediately adjacent to intermittent streams should occur following the seasonal termination of surface flow to avoid surface water (BMP ESC1 in part);

• Construction activities within or immediately adjacent to perennial streams should include diversion of surface flow around all work areas to prevent working in flowing water. This may require alternately diverting flows to one side of the creek bed, to allow work on the opposite side of the creek bed and bank to proceed. Non-erosive materials such as sand bags and/or plastic sheeting should be used to construct the diversion berm (BMP ESC52);

• Vegetation adjacent to construction activities should be preserved when feasible to minimize erosion (BMP ESC2);

• A temporary stream crossing with culvert should be constructed if repeated crossing of flowing water by heavy equipment or vehicles is necessary (BMP ESC22);

• Adjacent to drainages, concrete should not be applied during or immediately prior to periods of precipitation;

• Concrete application should be limited to areas isolated from surface water, and any groundwater affected by concrete should not be discharged to surface waters.

Surface Water Quantity Impacts (WR-2 & WR-5)

Under Biological Resources, two mitigation measures will address these impacts. First, surface flow will be augmented to maintain habitat for arroyo chub in Calleguas Creek. Surface flow in Calleguas Creek at Route 1 should not decrease below 2.6 cfs, measured as a monthly average. This value represents the modeled lowest monthly

(July) minimum for current conditions, to ensure pool habitat is available during the dry season. Flow augmentation should be provided by reducing the amount of surface flow diversion at the Conejo Creek Diversion to ensure stream pool habitat is maintained. Secondly, a flow monitoring and groundwater study should be conducted to:

- Identify changes in baseflow in Arroyo Conejo that may occur as a result of groundwater production in the Conejo Valley Groundwater Basin;

- Identify potential changes in groundwater elevations in Hill Canyon associated with changes in baseflow and termination of discharge of effluent from the Hill Canyon WTP;

- Determine the change in wetted surface area in Hill Canyon associated with changes in baseflow and groundwater elevations;

- Identify potential effects on the area and habitat value of riparian vegetation and wetlands;

- Identify impacts to fish and wildlife associated with changes in riparian vegetation and associated habitat;

- Identify and implement mitigation measures to offset impacts to riparian vegetation, wetlands and special-status species, which may include discharge of a portion of Hill Canyon WTP effluent, augmentation of existing City efforts to control giant reed in Hill Canyon, augmentation of the City's existing pond turtle habitat enhancement efforts

7.10.8 Residual Impacts

While some impacts to water are potentially significant, full implementation of identified mitigation measures would reduce water resources impacts below the level of significance.

7.11 LAND USE

This section provides an overview of land uses within the Calleguas Creek watershed and an analysis of impacts to land use and planning associated with implementation of the Salts TMDL.

7.11.1 Affected Environment

The proposed project area is within the Calleguas Creek Watershed which is located within the southern portion of Ventura County. The watershed includes physical features such as mountains, plains, valleys and beaches. Primary drainages of the Watershed include Arroyo Simi, Arroyo Las Posas, Calleguas Creek, Conejo Creek, Arroyo Conejo and Revolon Slough. These drainages ultimately terminate in coastal wetlands at Mugu Lagoon. Within the watershed, urban development is concentrated primarily within the cities of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. These cities are distinct entities due to intervening topographic features (e.g., hills) and land uses such as open

space and agriculture. Large productive agricultural areas also occur within the watershed. These areas include the Oxnard Plain, Las Posas Valley, Santa Rosa Valley and Tierra Rejada Valley.

7.11.1.1. Applicable Plans and Policies

The proposed project would be subject to the general plan policies of the applicable jurisdiction traversed by each project component, including Ventura County and the cities of Oxnard, Camarillo, Moorpark and Simi Valley. The proposed project would also be subject to regional plans such as Fox Canyon Groundwater Management Agency's Groundwater Management Plan, and the City of Oxnard's Coastal Land Use Plan.

7.11.1.2 Proposed Action

Phase I.

The alignment of the segment cross Calleguas Creek and Revolon Slough would be located within the Lewis Road and Hueneme Road rights-of-way and the Ventura County Flood Control District (VCFCD) rights-of way. The alignment would also cross under State Route (SR) 1. The only non-agricultural land use along this alignment is a small amount of commercial land uses adjacent to SR 1. The California State University at Channel Islands is located approximately 2,500 feet east of the proposed pipeline terminus at the Camrosa Water Reclamation Facility. This segment is located within unincorporated Ventura County. The Ormond Beach power plant located adjacent to the Pacific Ocean at the termination of the segment.

Diversion Structure. This structure would function as an interconnection between the proposed pipeline and the existing ocean outfall used by the Ormond Beach power plant at Ormond Beach. The Diversion Structure would be located within an area of about 100 feet by 150 feet, located immediately north of the power plant and immediately west of the terminus of Edison Road, on land currently owned by the Metropolitan Water District. The land use designation of the power plant area is Coastal Energy Facility (EC) in Oxnard's Coastal and Use Plan and Public Utility/Energy Facilities in the City's 2020 General Plan. The proposed Diversion Structure site is designated Coastal Dependent Industrial (CDI) in the Oxnard Coastal Land Use Plan, and Industrial in the City's 2020 General Plan.

Phase II.

The segment from the Simi dewatering wells to the Simi Valley Water Quality Control Plant (Simi Valley WQCP) is located within the City of Simi Valley. Open space including Tierra Rejada Park and Arroyo Simi is located south of the eastern portion of the alignment. Industrial uses are located both north and south of the alignment and residential uses are also located south of the alignment.

The alignment of the segment that connect the Simi Valley WQCP and the Moorpark Wastewater Treatment Plant would generally follow the Union Pacific Railroad, but would also follow roadways including Hitch Boulevard, Gabbert Road, Poindexter

Avenue, High Street, Los Angeles Avenue and Easy Street. This alignment would include several creek crossings, railroad crossings and roadway crossings (SR 118, SR 23 and Spring Road). This segment alignment passes through unincorporated Ventura County, the City of Moorpark and the City of Simi Valley. Agriculture and open space are the prevalent land uses in the vicinity of the pipeline alignment. However, residential and industrial land uses are more common within the cities of Moorpark and Simi Valley.

The segment from the Moorpark Wastewater
Treatment Plant to Adolfo Road crossing of Calleguas Creek would be located along the north bank of the Arroyo Las Posas until reaching Upland Road near St. John's Seminary, then continue along the north bank of Calleguas Creek to Adolfo Road. This area is characterized by open space including vast areas under agricultural cultivation and the riparian corridors of the Arroyo Las Posas and Calleguas Creek. This segment extends through the City of Camarillo and unincorporated Ventura County. Residential uses in the City of Camarillo exist in proximity to the proposed alignment (e.g., rear yards of Talud Terrace and Tranquila Drive).

The segment extended from Adolfo Road to the Lewis Road
bridge along Calleguas Creek would include a connection to the Camarillo Sanitary District Wastewater Reclamation Plant. Much of this segment would parallel Calleguas Creek. However, a portion would be within the rights-of-way for Rancho Road and Howard Road. The pipeline would cross under U.S. 101. The southern portion of this segment is in an area that is generally agricultural (unincorporated Ventura County). However, the northern portion of the segment is located within a developed portion of the City of Camarillo. Land uses within the City of Camarillo adjacent to the pipeline alignment include residential, public park and industrial uses.

The segment located along the west bank of Calleguas Creek would be located on private property and would extend from the Camrosa Water Reclamation Facility to the intersection of Lewis Road and Calleguas Creek. This segment is located within an agricultural area of unincorporated Ventura County.

7.11.2 Thresholds of Significance

The proposed project would have a significant environmental impact on land use if it would:

- Physically divide an established community;

- Conflict with any applicable land use plan, policy, or regulation to 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; or

- Conflict with any applicable habitat conservation plan or natural community conservation plan.

7.11.3 Environmental Impacts and Mitigation Measures

Potential environmental impacts are evaluated based on the above thresholds of significance. The reasonable foreseeable impacts are identified for the installation and

operation phases of each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.11.3.1. Proposed Action

Phase I.

Policy Consistency. Project consistency with the policies of the Ventura County General Plan, City of Oxnard 2020 General Plan and City of Oxnard Coastal Land Use Plan were assessed. In addition, consistency with the Fox Canyon Groundwater Management Agency's Groundwater Management Plan was assessed. The Proposed Action is consistent with each of these plans. In fact, the wastewater reclamation and groundwater recovery projects that would serve the proposed pipeline system are considered as water conservation benefits of the Draft Groundwater Management Plan Update.

A diversion structure would be located at Point Hueneme and would include a masonry structure, valves and associated piping. The precise location of this facility has not been determined; however, it would be located in a CDI zone. The construction and operation of the diversion structure would be consistent with this zoning.

Land Use Conflicts. Pipeline installation would be accomplished using open trenching methods in most areas and tunneling methods such as boring and jacking for major crossings including larger creeks and State highways. The method of construction proposed for roadway, State highway and larger creek crossings is such that no direct impacts to these facilities would occur. No new permanent access roads would be required; however, temporary access roads would be constructed within the 75-foot-wide pipeline installation corridor. The only above-ground project components would be a few small valve boxes and the diversion structure. The project design would be consistent with the most current version of "Standard Specifications for Public Works Construction" by Public Works Standards, Inc. All relevant conditions of encroachment permits would be included in the final project plans and specifications to ensure compliance.

Easements would be obtained as needed from property owners along the pipeline alignments. These may include temporary construction easements and permanent utility easements. Temporary easements would be used for storage and staging of equipment and materials, and permanent easements would accommodate the pipeline. Generally, the pipeline would be located within or immediately adjacent to existing roadway rights-of-way or within agricultural areas. The presence of the pipeline would not displace existing development or preclude future development along these roadway corridors. In addition, the pipeline would be buried at least 5 feet deep, allowing for continued agricultural land use within the permanent pipeline easement.

However, pipeline installation would primarily occur within or adjacent to roadway and VCFCD rights-of-way, and would require creek and roadway crossings. These crossings may adversely affect the operation of public works facilities, including roadways and flood control channels. The Ventura County Public Works Agency Transportation Division was contacted with respect to land use impacts to County roads. As with all construction projects, the proposed project would comply with standard

encroachment permit conditions, which would include traffic control procedures and payment of appropriate fees for damage to roadway infrastructure among others (Britt, personal communication, July 2001). No significant impacts to roads would occur.

Similarly, the City of Oxnard Development Services Director was also contacted with respect to installation of the proposed pipeline within the rights-of-way of City roads. Calleguas Municipal Water District would need to enter a franchise agreement with the City specifying the terms of the project, then an encroachment permit would be issued (Roshanian, personal communication, July 2001). Standard Specifications for Public Works Construction and the specifications of the franchise agreement would be adhered to, and no land use impacts associated with installation of the pipeline in City roads are expected.

The California Department of Transportation (Caltrans) was consulted with respect to the proposed State highway crossings, similar to Ventura County Transportation Division, Caltrans stated that compliance with the encroachment permit procedures and conditions would avoid any significant impacts to State Highways from project construction (Acosta, personal communication, July 2001).

VCFCD was consulted with respect to the use of flood control rights-of-way for the proposed project. The permitting manager of this Division stated that the County prefers not to have pipelines located along creeks (Keivanfar, personal communication, July 2001). Additionally, VCFCD has generated new 100-year flood flow rates for the watershed which are higher than those used to prepare the Flood Insurance Rate Maps for the area. Therefore, VCFCD anticipates the future necessity for installing additional flood control improvements to protect land uses from flood waters. Installation of the proposed pipeline within these areas of future work is not desired as it would require relocation of the pipeline. For pipeline areas that are proposed within Ventura County fee ownership areas, Calleguas Municipal Water District would need to obtain an encroachment permit from the VCFCD. The proposed pipeline would be fully buried and would not add fill to flood prone areas, such that no increase in storm water elevations would occur. Any flood control facilities affected during pipeline installation would be fully repaired as part of encroachment permit conditions and construction specifications.

Upon completion of construction, all pipelines would be subsurface; during the life of the project there is the potential for routine maintenance to occur on the pipeline. Long-term or blanket permits/agreements are provided to utilities by the County Transportation Division, City of Oxnard and Caltrans for the routine inspection and repair of such infrastructure. For pipeline segments within VCFCD rights-of-way, Calleguas would be required to obtain an encroachment permit any time repair work needs to be conducted. Any public works facilities affected during pipeline maintenance would be fully repaired as part of encroachment permit conditions and/or construction specifications. Therefore, no significant land use impacts to roadways are expected. Since the pipeline would be subsurface, it would not result in any other long-term land use conflicts.

The existing outfall at Point Hueneme would be used. Therefore, no land use impacts would be associated with construction of or modifications of the outfall. The project would need to comply with discharge permits. Therefore, no land use impacts associated with discharge are expected.

Phase II.

Policy Consistency. The proposed action was assessed for consistency with the policies of the City of Camarillo General Plan, City of Moorpark General Plan, City of Simi Valley General Plan, Ventura County General Plan, and the Fox Canyon Groundwater Management Agency's Groundwater Management Plan. The proposed action is consistent with all applicable plans and policies.

Land Use Conflicts. Construction in Phase II would include continuation of the main pipeline with extensions to various facilities such as the Camarillo Sanitary District Water Reclamation Plant, Moorpark Wastewater Treatment Plant, Simi Valley WQCP and Simi Valley dewatering wells. This phase would be located within the cities of Camarillo, Moorpark, Simi Valley and unincorporated portions of Ventura County.

As with Phase I, encroachment permits would be required for pipeline installations in roadways and flood control facilities, and creek and roadway crossings. However, Phase II also includes railroad crossings; therefore, the Real Estate and Utility Division of the Union Pacific Railroad was consulted. The railroad representative stated that they have no problem with such utility crossings. However, the proposed encroachment or crossing must meet the standard specifications and construction procedures as required by the railroad (e.g., encroachment must be at the outer limits of the railroad rights-of-way within 5 feet of property line and a minimum of 35 feet from the centerline of the nearest track, track bores must be a minimum of 60-inches below base of rail, manholes must be capable of withstanding H-20 highway loading requirements and must be installed so as not to create a stumbling hazard, etc.).

The project would be consistent with the most current version of "Standard Specifications for Public Works Construction" by Public Works Standards, Inc. All relevant conditions of encroachment permits would be included in the final project plans and specifications to ensure compliance. Therefore, Phase II would not result in any land use impacts with respect to existing facilities, including roadways, railroads and flood control structures. As stated previously, other potential short-term impacts to adjacent land uses (e.g., dust impacts on residential and agricultural use and noise impacts on sensitive receptors) are addressed elsewhere in this SED.

As with Phase I, upon completion of construction, all pipelines would be subsurface. However, during the life of the project there is the potential for routine maintenance to occur on the pipeline. Long-term or blanket permits/agreements are provided to utilities by the County Transportation Division, City of Oxnard and Caltrans for the routine inspection and repair of such infrastructure. For pipeline segments within VCFCD rights-of-way, Calleguas would be required to obtain an encroachment permit any time repair work needs to be conducted. Any public works facilities affected during pipeline maintenance would be fully repaired as part of encroachment permit conditions and/or construction specifications. Therefore, no significant land use impacts to roadways are expected. Since the pipeline would be subsurface, it would not result in any other long-term land use conflicts.

Cumulative.

Any land use conflicts with public or private facilities associated with other development would be resolved through implementation of standard measures as part of the

encroachment permit process. Therefore, no significant cumulative impacts are expected.

7.11.3.3 Mitigation Measures

Potential conflicts between implementation efforts and other land uses can be resolved by standard planning efforts under which specific projects are reviewed by local planning agencies. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined.

7.12 NOISE

This section addresses the potential impacts that may result to surrounding land uses from noise and vibrations due to activities used to achieve compliance with the Calleguas Creek Watershed Salts TMDL.

7.12.1 Noise Measurement Scales

The California Health and Safety Code Section 46022 defines noise as "excessive undesirable sound, including that produced by persons, pets and livestock, industrial equipment, construction, motor vehicles, boats, aircraft, home appliances, electric motors, combustion engines, and any other noise-producing objects." The degree to which noise can affect the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise; the amount of background noise present before the intruding noise; and the nature of work or human activity that is exposed to the noise source. Table 7.13-1 provides examples of noise levels from common sounds.

Noise levels are measured on a logarithmic scale because of physical characteristics of sound transmission and reception. Noise energy is typically reported in units of decibels (dB). Noise levels diminish (or attenuate) as distance to the source increases according to the inverse square rule, but the rate constant varies with the type of sound source. The typical sound attenuation rate from point sources such as industrial facilities is about 6 dB per doubling of distance. Heavily traveled roads with few gaps in traffic approximate continuous line sources and attenuate at 3 dB per doubling of distance. Noise from more lightly traveled roads is attenuated at 4.5 dB per doubling of distance.

Table 7.13-1 Common Sound Levels

Outdoor Sound Levels	Sound Pressure (µPa)	Sound Level (dBA)	Indoor Sound Levels
	6,324,555	110	Rock Band at 5m
Jet Over-flight at 300m		105	
	2,000,000	100	Inside NY Subway Train
Gas Lawn Mower at 1m		95	
	632,456	90	Food Blender at 1m
Diesel Truck at 15m		85	
Noisy Urban Area (daytime)	200,000	80	Garbage Disposal at 1m
		75	Shouting at 1m
Gas Lawn Mower at 30m	63,246	70	Vacuum Cleaner at 3m
Suburban Commercial Area		65	Normal Speech at 1m
	20,000	60	
Quiet Urban Area (daytime)		55	Quiet Conversation at 1m
	6,325	50	Dishwasher in Adjacent Room
Quiet Urban Area (nighttime)		45	
	2,000	40	Empty Theater or Library
Quiet Suburb (nighttime)		35	
	632	30	Quiet Bedroom at Night
Quiet Rural Area (nighttime)		25	Empty Concert Hall
Rustling Leaves	200	20	
		15	Broadcast and Recording Studios
	63	10	
		5	
Reference Pressure Level	20	0	Threshold of Hearing

Source; (Air & Noise Compliance, 2006)

Community noise levels are typically measured in terms of the A-weighted decibel (dBA). A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Equivalent noise level (Leq) is the average noise level on an energy basis for a specific time period. The duration of noise and the time of day at which it occurs are important factors in determining the impact of noise on communities. Noise is more disturbing at night and noise indices have been developed to account for the time of day and duration of noise generation. The Community Noise Equivalent Level (CNEL) and Day- Night Average Level (DNL or Ldn) are such indices. These indices are time-weighted average values

equal to the amount of acoustic energy equivalent to a time-varying sound over a 24-hour period. The CNEL index penalizes night-time noise (10 p.m. to 7 a.m.) by adding 10 dB and evening noise (7 p.m. to 10 p.m.) by adding 5 dB to account for increased sensitivity of the community after dark. The Ldn index penalizes night-time noise the same as the CNEL index, but does not penalize evening noise.

7.12.2 Vibration

In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. The effects of ground-borne vibration include feelable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. Figure 7-13-1 illustrates common vibration sources and the human and structural response to ground-borne vibration. The range of interest is from approximately 50 VdB to 100 VdB. Background vibration is usually well below the threshold of human perception and is of concern only when the vibration affects very sensitive manufacturing or research equipment. Electron microscopes and high-resolution lithography equipment are typical of equipment that is highly sensitive to vibration.

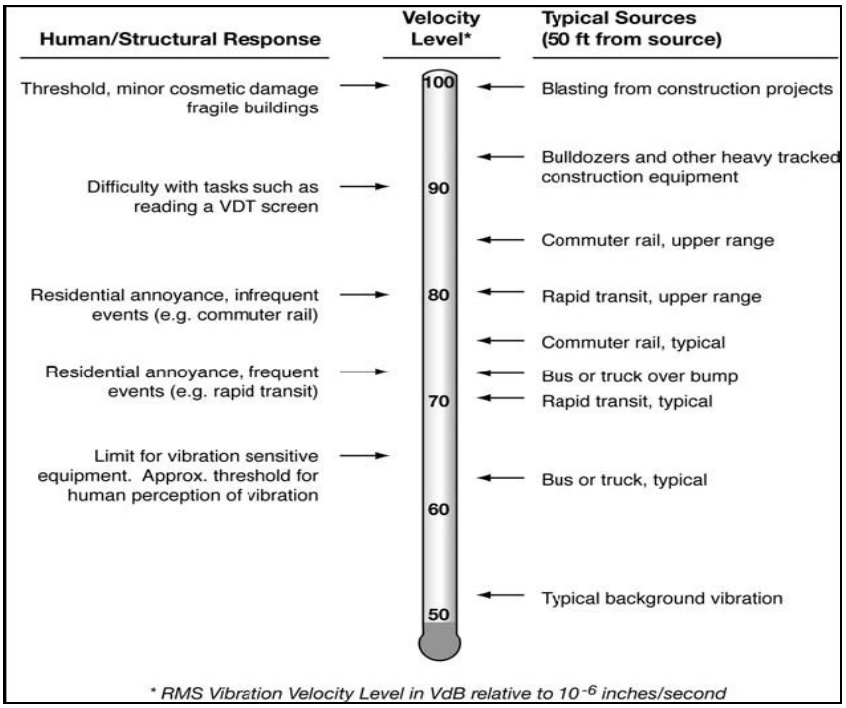


Figure 7.12-1: Typical Levels of Groundbourne Vibration (Source: Federal Transit Administration, 2006)

7.12.3 Significance Thresholds for noise and vibration

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would cause:

- 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.

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- 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 exposes people residing or working in the project area to excessive noise levels.

- For a project within the vicinity of a private airstrip, the project exposes people residing or working in the project area to excessive noise levels.

7.12.4 Regulatory Framework

7.12.4.1 Noise Regulations

The Ventura County General Plan Policy 2.16.2-1 includes a threshold for noise generators of 55 dBA Leq (1-hour), or ambient noise level plus 3 dBA Leq during the hours of 6 a.m. to 7 p.m. This threshold has been applied to construction equipment by the Ventura County Resource Management Agency. The 55 dBA threshold was originally developed for oil production and other long-term activities, where noise control is feasible and impacts would be long-term. This threshold is not considered applicable to construction noise due the mobile nature of construction equipment and short-term nature of impacts. The nearest jurisdiction with specific restrictions on construction noise is the City of Oxnard. In addition, most other local jurisdictions (cities of Port Hueneme, Moorpark, Simi Valley) have similar restrictions. Therefore, in the absence of any other applicable thresholds, these restrictions have been adopted as thresholds of significance by CMWD for the proposed project.

City of Oxnard Ordinance no. 2292 established the following noise standards:

- Residential zones: 55 dBA Leq from 7 a.m. to 10 p.m.
- Residential zones: 50 dBA Leq from 10 p.m. to 7 a.m.
- Commercial zones: 65 dBA Leq from 7 a.m. to 10 p.m.
- Commercial zones: 60 dBA Leq from 10 p.m. to 7 a.m.
- Industrial zones: 70 dBA Leq (anytime)

However, Section 19-60.9(D) of Ordinance no. 2292 exempts construction activities from these noise standards, provided they are conducted between 7 a.m. and 6 p.m. on weekdays or Saturday.

7.12.4.2 Vibration Regulations

The State of California currently does not have regulations or guidelines relating to vibrations.

7.12.5 Current Noise Environment

The proposed project spans several municipalities including portions of Ventura County and the cities of Simi Valley, Moorpark, Camarillo, and Oxnard. Currently, land uses along the proposed pipeline routes consist of residential, commercial, industrial, and agricultural. As such, existing noise levels can be attributable to a number of sources, including but not limited to motor vehicles, industrial and commercial operations, air

traffic from local airports, railroad transportation, and agricultural operations. In particular, existing vehicular traffic on Hueneme Road, Lewis Road, Somis Road, Los Angeles Avenue, West Easy Street, State Route (SR) 1, SR 118, SR 23 and U.S. Highway 101 contribute substantially to existing noise levels throughout the project area. Noise sensitive receptors along the proposed pipeline alignments include residential neighborhoods, mobile home parks, elementary and high schools and Channel Islands State University.

Noise levels were measured within the vicinity of several sensitive receptor locations along the proposed pipeline alignments on July 5, 2001 using a Larson & Davis Type DSP80 Precision Integrating Sound Level Meter. Leq noise measurements were taken along the alignments for 15-minute periods.

Table 7.13-2 identifies the noise measurement location within the proposed project area and the ambient Leq value. However, it is important to realize that existing noise data presented in Table 7.13.2 are short-term monitoring values and may not adequately characterize the existing noise environment within the project area.

Table 7.12-2. Existing Noise Levels in the Project Area

Monitoring Location	Receptor Type	Nearest Project Component	Distance to Component	dBA Leq
Channel Islands State University	School	Preferred Segment E-F and F-G Alternative A Segment E-F and F-G	2,500 feet from Point F	52.5
Lamplighter Mobile Home Park, Via Rosal near Pleasant Valley Road	Residential	Preferred Segment D-E Alternative A Segment D-E	Within 300-foot-wide pipeline corridor	59.5
Pancho Road/Howard Road intersection	Residential	Preferred Segment E1-E2	Within 300-foot-wide pipeline corridor	57.0
Terminus of Adolfo Road at Conejo Creek	Residential	Alternative B Segment D-E	Within 300-foot-wide pipeline corridor	53.4
Flynn Road at Calle Cancun	Residential	Alternative B Segment C-D	Within 300-foot-wide pipeline corridor	65.3
Somis Road at North Street	Residential	Alternative A Segment C-D	Within 300-foot-wide pipeline corridor	67.2
Hollyglen Court, Moorpark	Residential	Alternative B Segment B-C	Within 300-foot-wide pipeline corridor	51.2
Arroyo Vista Community Park	Recreation, also typical of homes along Arroyo Simi	Alternative A Segment B-C	400 feet south of the 300-foot-wide pipeline corridor	48.7
Chaparral Middle School, Poindexter Avenue, Moorpark	School	Preferred Segment B-C Alternative B Segment B-C	Within 300-foot-wide pipeline corridor for Alternative B	62.8
Spring Street near E. Los Angeles Avenue, Moorpark	Residential	Preferred Segment B-C	Within 300-foot-wide pipeline corridor	67.5
Moorpark Continuation High School, Condor Drive, Moorpark	School	Preferred Segment B-C Alternative A Segment B-C	Within 300-foot-wide pipeline corridor	65.4
Villa del Arroyo mobile home park, Los Angeles Avenue, Simi Valley	Residential	Preferred Segment B-C Alternative A Segment B-C	Within 300-foot-wide pipeline corridor	59.9

7.12.6 Environmental Consequences relating to noise

Implementation of the proposed project would result in short-term noise impacts to sensitive noise receptors during construction. Once the pipeline is installed, there would be no long-term operational noise sources associated with the proposed project, except for minor routine maintenance activities. These activities would generate a maximum of ten peak day vehicle trips, which would contribute to existing traffic noise. However, the incremental increase in vehicle trips on area roadways would be less than one percent, such that no perceptible noise increase would occur.

The pipelines would be installed using conventional open trench construction techniques. In areas where it is not feasible to perform open cut trenching (e.g., State Highway crossings, flood control channel crossings, stream crossings, railroad crossing, etc.), tunneling techniques may be utilized, such as boring and jacking, micro-tunneling or similar methods. Noise impacts would be generally limited to normal working hours (7 a.m. to 5 p.m.). However, some nighttime work may be required at critical locations such as creek and highway crossings.

Project related impacts would consist of short-term noise generated by construction equipment required for pipe installation, trucks and vehicles for transporting materials and construction workers to and from the site. Due to the linear nature of the project, the width of the disturbance corridor would typically be confined to an area approximately 50 to 75 feet in width. Pipeline installation rates are estimated at about 200 feet per day and would generally consist of trenching, spoil handling, pipeline installation, backfilling, and restoration. Typically, the pipe would be brought to the site just ahead of construction and staged along the alignment ready for placement. Trenching methods would involve very little stationary equipment and would be complete at any one location within a few weeks.

Construction noise emissions would be dominated by stationary equipment for short periods of time in areas where tunneling would be required (Calleguas Creek, Conejo Creek, Revolon Slough, State highways). This methodology includes excavating push-pits on each side of the crossing, using a boring machine to excavate a horizontal hole under the major structure, and inserting a steel casing or directly installing pipe sections. All equipment required for tunneling would be confined to the immediate area of the crossing and removed upon completion of the tunneling operation. Tunneling operations may be completed within a reasonably short time period (i.e., a month or less); however, unforeseen obstructions and/or geologic conditions have the potential to hinder these operations.

Three generalized noise scenarios were developed to characterize project impacts; trenching, trenching adjacent to an existing noise barrier and tunneling. Existing noise barriers included natural topography and existing noise walls. These scenarios are based on the development of peak day scenarios consisting of simultaneous construction activities in close proximity to a sensitive receptor. Residences, schools and hospitals were considered sensitive receptors for the purposes of this analysis.

A construction noise worksheet model was used to estimate construction noise levels within the vicinity of the sensitive receptors. Noise-generating equipment was identified for each construction activity and noise levels estimated based on noise reference levels in Bolt, Beranek and Newman (1971) and the distance of each noise generator from the closest receptor.

Due to the large area traversed by the pipeline alignments, only those sensitive receptors in close proximity to the alignment were modeled. These receptors characterize the maximum impacts of the project. Most of these receptors are located within the 300-foot-wide alignment corridor. Although the disturbance corridor is expected to be a maximum of 75 feet wide, a 300-foot-wide corridor was assessed to allow for minor re-alignment of the pipeline to avoid utilities and other obstructions. For the purposes of modeling, it was assumed that the actual pipeline alignment would be located 100 feet from the residential or school structure, for those sensitive receptors within the 300-foot-wide alignment corridor. Noise attenuation associated with existing noise barriers was calculated for those sensitive receptors located within the 300-foot-wide alignment corridor. Barrier attenuation was calculated to be 7 dBA, based on an assumed 6-foot-high barrier, located 50 feet from the sensitive receptor and 50 feet from noise generators.

7.12.7. Proposed Action

Phase I.

This phase consists of installation of the pipeline segments from the Camrosa Water Reclamation Facility to the Ormond Beach power plant. The majority of the current land use within the vicinity of the pipeline alignments consists of agriculture; however, there are several single-family residences along Hueneme Road. Results from construction noise modeling indicated the noise threshold was exceeded at approximately 6 rural residences along Hueneme Road. However, no work would be conducted on Sunday or on Monday through Saturday between 6 p.m. and 7 a.m. in close proximity to these residences. Nighttime work may be required for tunneling under Revolon Slough and Calleguas Creek; however, no residences are located within 1.5 miles of these two sites. Therefore, noise and vibrational impacts are considered less than significant.

Phase II.

This project phase consists of installation of the pipeline segments not included as part of Phase I. This includes pipeline segments which are beginning in Simi Valley and ending at the Camrosa Water Reclamation Facility. Sensitive receptors occur near the Simi Valley dewatering wells, at Via del Arroyo mobile home park, Moorpark Continuation High School and residential areas in Moorpark, and the Lamplighter mobile home park. The noise threshold was exceeded at all sensitive receptors along the Phase II alignments. Construction work conducted from Monday through Saturday between 7 a.m. and 6 p.m. would be exempt from Ordinance 2292 and considered less than significant noise impacts. However, nighttime work may be required for tunneling under Calleguas Creek, Arroyo Simi and U.S. 101, which would significantly impact residences at the Lamplighter mobile home park and homes on Avenida Colonia (and possibly the Via del Arroyo mobile home park) in Moorpark. Nighttime exceedances of noise thresholds are considered a significant impact.

Cumulative Impacts. The noise environment of residences and other noise-sensitive receptors located adjacent to the project area is dominated by roadway noise and other existing land uses. It is anticipated that the project would be implemented within the next

2 to 10 years. The Ventura Council of Governments projects that Ventura County population by grow 8 percent between 2001 to 2010, and by 18 percent by 2020. These population projections form the basis of the Ventura County General Plan. Most of this population growth is expected to occur in Ventura, Camarillo, Oxnard, Simi Valley and Thousand Oaks. As part of this population growth, traffic volumes along roadways affected by the proposed project are expected to increase. Increased traffic volume would result in an increase in ambient noise at sensitive receptors affected by the proposed project. Construction activities associated with the proposed project would incrementally contribute to this noise increase. However, due to the short-term nature of project-related noise impacts (a few days to a month at any one location), the incremental contribution of the project is not considered significant. However, nighttime exceedances of noise standards would contribute to ambient traffic noise levels and are considered cumulatively significant

7.12.8 Mitigation Measures

Phase I.

No significant impacts were identified; therefore, mitigation measures are not necessary.

Phase II.

The following measures should be fully implemented to reduce construction noise impacts associated with pipeline installation to the extent feasible:

1. Noise Control Corporation STC-30 noise blankets (or equivalent 13 dBA noise attenuation) should be utilized to fully enclose all equipment associated with tunneling, if residences or schools are located within 2,000 feet and work occurs after 6 p.m.;

2. No construction work should occur within 350 feet of a residence after 6 p.m. or on Sunday (even with noise blankets installed);

3. Heavy equipment activity adjacent to residences should be limited to the minimal period required to complete pipeline installation; and

4. Equipment engine covers should be in place and mufflers should be in good working condition. The above mitigation measures should be monitored by a person designated by the construction contractor. The name and telephone number of the designated person should be provided to the CMWD. These mitigation measures should be enforced through routine inspection of the site by CMWD representatives.

7.12.9 Residual Impacts

Phase I.

No significant impacts were identified; therefore, residual impacts would be less than significant.

Phase II.

Nighttime construction work may be required for tunneling, and noise standards would be exceeded at adjacent residences even with noise blankets in place. Affected areas include the segment crossing of Arroyo Simi (residences on Avenida Colonia), and the segment crossing of U.S. 101 (residences at the Lamplighter mobile home park). Noise impacts in these areas may not be fully mitigable and residual impacts would be significant.

7.12.10 Federal Findings

There are no Federal thresholds or standards for short-term noise or vibrational impacts. Impacts would be limited to construction-related noise, which would occur in areas with existing high noise levels (mostly along roadways). Noise impacts would persist for only a few weeks at any one sensitive receptor.

7.13 POPULATION AND HOUSING

This section provides an overview of the population and housing resources within the Calleguas Creek Watershed and an analysis of impacts to population and housing associated with implementation of the Calleguas Creek Salts TMDL. The reasonable foreseeable impacts are analyzed for each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.13.1 Environmental Setting

The Ventura County Association of Governments projects an average annual population growth rate of 0.9 percent through 2030. Population growth is based on socioeconomic factors such as housing and employment. Ventura County accounts for slightly more than 2% of the state's residents with a population of 753,197 (US Census Bureau, 2000). GIS analysis of the 2000 census data yields a population estimate of 334,000 for the CCW, which equals about 44% of the county population. According to the Southern California Association of Governments (SCAG), growth in Ventura County averaged about 51% per decade from 1900-2000; with growth exceeding 70% in the 1920s, 1950s, and 1960s. Both Moorpark and Camarillo are predicted to experience greater than 30% growth in 2000-2020. Thousand Oaks is expected to have the lowest growth rate of the CCW cities during that same time period, and is likely to be surpassed by Simi Valley as the most populous city in the watershed by 2020 (SCAG, Minjares, 2004). In general, smaller cities in the watershed are likely to grow faster than larger cities.

The increase in population requires additional supply water. Therefore, future growth could result in increased loads of salts being imported into the watershed. However, the TMDL implementation plan is designed to maintain a salts balance in the watershed. If additional salts are imported into the watershed, a larger volume of salts will also be required to export out of the watershed to maintain the balance. Consequently, increased salt imports from future growth are not expected to result in higher salt concentrations in receiving waters.

7.13.2 Thresholds of Significance

The following thresholds for determining the significance of impacts related to population and housing are contained in the environmental checklist form contained in Appendix G of the most recent update of the California Environmental Quality Act Guidelines. Impacts related to population and housing are considered significant if the project would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure).

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

7.13.3 Environmental Impacts

The reasonable foreseeable impacts are identified for the construction and operation phases of each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.14.3.1 Construction, Expansion and Upgrading of Groundwater Treatment Plan, Waste Water Treatment Plans, Water Blending Facilities

It is unlikely that the reasonable foreseeable impacts associated with construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. The project would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population. As such, the project would not result in a direct or indirect significant increase in population growth of the area. The project would not result in the displacement of housing. As people would not be displaced as a result of project implementation, it would not be necessary to provide replacement housing.

7.14.3.2 Pipeline installation

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. It is unlikely that the reasonable foreseeable impacts associated with pipeline installation will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. Pipeline installation would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population. As such, pipeline installation would not result in a direct or indirect significant increase in population growth of the area. Pipeline installation would not result in the displacement of housing. As people would not be displaced as a result of project implementation, it would not be necessary to provide replacement housing.

7.14.3.3 Relocated Calleguas Creek Discharge

Construction of this feature would involve excavation of the bank of Calleguas Creek and construction of a temporary access ramp. It is unlikely that the reasonable foreseeable impacts associated with excavation of the bank of Calleguas Creek and construction of a temporary access ramp will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. The project would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population. As such, the project would not result in a direct or indirect significant increase in population growth of the area. The project would not result in the displacement of housing. As people would not be displaced as a result of project implementation, it would not be necessary to provide replacement housing.

7.14.3.4 Brine Pipeline

Pipeline installation would be accomplished using typical trenching techniques, proceeding at a rate of about 300 feet per day. Temporary access roads would not be required. It is unlikely that the reasonable foreseeable impacts associated with pipeline

installation will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. Pipeline installation would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population. As such, pipeline installation would not result in a direct or indirect significant increase in population growth of the area. Pipeline installation would not result in the displacement of housing. As people would not be displaced as a result of project implementation, it would not be necessary to provide replacement housing.

7.14.3.5 Replenishment Facility Sites

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages and unlikely to be in existing recreational sites. No impact on population and housing is expected due to the small scale of these facilities. Subsequent analysis may be required by responsible parties.

7.14 PUBLIC SERVICES

This section provides an overview of the existing conditions for public services in the Calleguas Creek Watershed and an analysis of potential impacts to these services that could result from implementation the Calleguas Creek Salts TMDL. Public services that could be affected include fire and police protection, maintenance of public facilities, including roads and other governmental services. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.14.1 Environmental Setting

7.14.1.1 Fire Protection Services

The Ventura County Fire Department provides a full range of fire protection services within the unincorporated areas of Ventura County and within the following incorporated cities that are located in the Calleguas Creek Watershed: Moorpark, Camarillo, Simi Valley, and Thousand Oaks. The range of services includes fire prevention and suppression, medical aid, rescue, hazardous material mitigation, a variety of non-emergent public services and all supporting services (Ventura County Fire Department, 2007).

Fire protection is provided to the citizens of Ventura County through two governmental structures: city government and the Ventura County Fire Protection District. The cities of Oxnard and Fillmore provide fire protection services to their citizens through city fire departments. The remaining county citizens receive their fire protection from the fire protection district, which is governed by the county board of supervisors. The board of supervisors includes five members elected by the public in open election to a 4-year term. Each supervisor represents a district that is modified periodically to allow for equal representation to each county resident (Ventura County Fire Department, 2007).

7.14.1.2 Police Protection Services

The Ventura County Sheriff's Department (VCSD) provides law enforcement for the unincorporated areas of Ventura County, as well as several cities within the county. The cities that VCSD serves within the Calleguas Creek Watershed are Camarillo, Moorpark, and Thousand Oaks. The city of Simi Valley operates its own police department.

7.14.1.3 Schools

Ventura County has a total of 21 public school districts, providing education to a K-12 student population that currently exceeds 145,000. Three community colleges and a public four year university provide continuing education opportunities (Ventura County Office of Education, 2007). Nine school districts are within the Calleguas Creek Watershed serving the cities of Simi Valley, Camarillo, Moorpark, and thousand oaks. Oxnard School District serving the city of Oxnard is partially within the Calleguas Creek Watershed. California State University at Channel Islands, University of La Verne and two community colleges are also within the Calleguas Creek Watershed.

7.14.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it 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 any of the public services: a) Fire protection, b) Police protection, c) School, d) Parks, and e) Other public facilities.

7.14.3 Environmental Impacts

The reasonable foreseeable direct impacts are identified for each alternative. Where applicable, mitigation measures to reduce the direct impacts associated with each alternative are provided.

7.14.3.1 Construction, Expansion and Upgrading of Groundwater Treatment Plan, Waste Water Treatment Plans, and Water Blending Facilities

There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during the construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities will result in development of land uses for residential, commercial, and/or industrial uses and result in growth increase at small scale. It is reasonably foreseeable that these activities would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that these activities will not contribute to an increase in the cumulative demand for fire and police emergency services.

7.14.3.2 Pipeline installation

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during pipeline

installation. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that pipeline installation would create any more significant impediments than other such typical activities. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Pipeline installation will not result in development of land uses for residential, commercial, and/or industrial uses and will not result in growth increase. It is reasonably foreseeable that pipeline installation would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that pipeline installation will not contribute to an increase in the cumulative demand for fire and police emergency services.

7.14.3.3 Relocated Calleguas Creek Discharge

Construction of this feature would involve excavation of the bank of Calleguas Creek and construction of a temporary access ramp. There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during excavation of the bank of Calleguas Creek and construction of a temporary access ramp. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the construction activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that excavation of the bank of Calleguas Creek and construction of a temporary access ramp would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Excavation of the bank of Calleguas Creek and construction of a temporary access ramp will not result in development of land uses for residential, commercial, and/or industrial uses and will not result in growth increase. It is reasonably foreseeable that these activities would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that these activities will not contribute to an increase in the cumulative demand for fire and police emergency services.

7.14.3.4 Brine Pipeline

Pipeline installation would be accomplished using typical trenching techniques, proceeding at a rate of about 300 feet per day. There is potential for temporary delays in

response times of fire and police vehicles due to road closure/traffic congestion during pipeline installation. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Pipeline installation will not result in development of land uses for residential, commercial, and/or industrial uses and will not result in growth increase. It is reasonably foreseeable that pipeline installation would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that pipeline installation will not contribute to an increase in the cumulative demand for fire and police emergency services.

7.14.3.5 Replenishment Facility Sites

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages. Subsequent analysis may be required by responsible parties. However, impacts are expected to be less than significant due to the small scale of these facilities.

7.14.3.6 Cumulative

The proposed project would incrementally contribute to construction-related short-term impairment to public services. However, due to the short-term and/or mobile nature of the construction impacts, and the low probability of other projects impacting the same area as the proposed project at the same time, short-term construction impacts are not expected to be cumulatively considerable.

Once construction completed, the project would not result in population growth at the level that requires additional fire stations and schools. As such, the project would not result in the accelerated physical deterioration of any public services and is not expected to incrementally contribute to long-term impacts on public services.

7.15 RECREATION

This section provides an overview of the recreational facilities in the Calleguas Creek Watershed, and an analysis of potential impacts to these recreational facilities that could result from implementation the Calleguas Creek Salts TMDL. Recreational resources include public parks, golf courses, beaches, lakes, rivers, wildlife areas, recreation centers, and senior citizen centers. The reasonable foreseeable impacts are analyzed for the compliance measures. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.15.1 Environmental Setting

The Ventura County Parks Department oversees local and community parks in the unincorporated County areas. For the most part, incorporated cities within the Ventura County operate their own departments of park and recreation. Figure 7.16-1 is an illustration for location of county parks in the Ventura County.

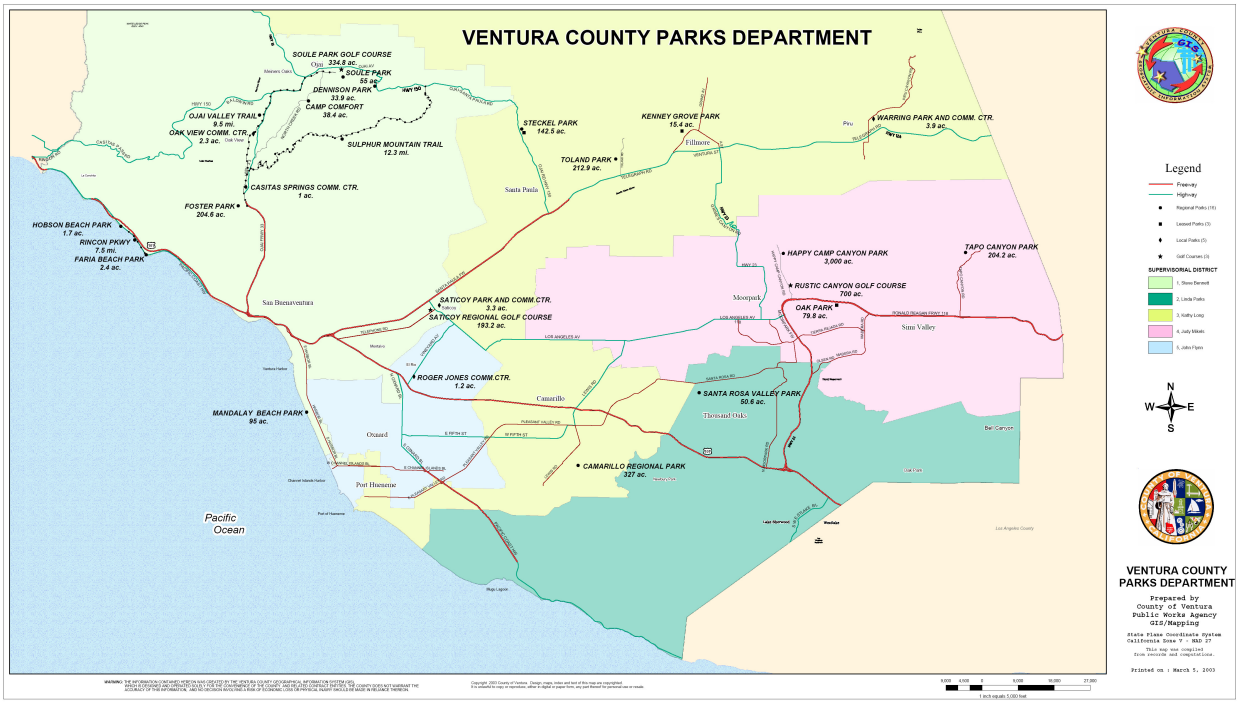


Figure 7.16-1 Locations of county parks in the Ventura County.

From: http://gsa.countyofventura.org/parks/parkinfo.htm

7.15.2 Thresholds of Significance

The following thresholds for determining the significance of impacts related to recreation are contained in the environmental checklist form contained in Appendix G of the most recent update of the California Environmental Quality Act Guidelines. An alternative would result in a significant recreation impact if it would:

- Increase the use of the existing neighborhood and regional parks or other recreational facilities such that a substantial physical deterioration of the facilities would occur or be accelerated.

- Substantially degrade the recreational use of existing parks.

- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

- Preclude the implementation of planned facilities.

7.15.3 Environmental Impacts

The reasonable foreseeable direct impacts are identified for the construction and operation phases of each alternative. Where applicable, mitigation measures to reduce the direct impacts associated with each alternative are provided.

7.15.3.1 Construction, Expansion and Upgrading of Groundwater Treatment Plan, Waste Water Treatment Plans, Water Blending Facilities

It is not reasonably foreseeable that park land, recreational or open space areas will be needed for the construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities.

It is reasonably foreseeable that construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities may temporarily impact the usage of existing recreational sites. This only poses temporary impairment to recreational opportunities. Mitigation measures include incremental construction, expansion and upgrading of facilities located near parks, bike lanes, and other recreational sites to avoid impairment of the entire site. Once constructed, the pumping plant would not affect the usage of existing recreational sites. No long-term aesthetics impacts would occur. Therefore, construction-related parks and recreation impacts are considered less than significant.

7.15.3.2 Pipeline installation

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. It is not reasonably foreseeable that park land, recreational or open space areas will be needed for pipeline installation.

It is reasonably foreseeable that pipeline installation may temporarily impact the usage of existing recreational sites. The installation only poses temporary impairment to recreational opportunities. Mitigation measures include the incremental pipeline installation located near parks, bike lanes, and other recreational sites to avoid impairment of the entire site. Once constructed, the pipeline would not affect the usage of existing recreational sites. No long-term recreation impacts would occur. Therefore, pipe installation-related parks and recreation impacts are considered less than significant.

7.15.3.3 Relocated Calleguas Creek Discharge

Construction of this feature would involve excavation of the bank of Calleguas Creek and construction of a temporary access ramp. It is not reasonably foreseeable that park land, recreational or open space areas will be needed for excavation of the bank of Calleguas Creek and construction of the temporary access ramp.

It is reasonably foreseeable that excavation of the bank of Calleguas Creek and construction of the temporary access ramp may temporarily impact the usage of existing recreational sites. The excavation and construction activities only pose temporary impairment to recreational opportunities. Mitigation measures include incremental excavation and construction located near parks, bike lanes, and other recreational sites to avoid impairment of the entire site. Once completed, the relocated Calleguas Creek discharge would not affect the usage of existing recreational sites. No long-term recreation impacts would occur. Therefore, related parks and recreation impacts are considered less than significant.

7.15.3.4 Brine Pipeline

Pipeline installation would be accomplished using typical trenching techniques, proceeding at a rate of about 300 feet per day. Temporary access roads would not be required. It is not reasonably foreseeable that park land, recreational or open space areas will be needed for pipeline installation.

It is reasonably foreseeable that pipeline installation may temporarily impact the usage of existing recreational sites. The installation only poses temporary impairment to recreational opportunities. Mitigation measures include the incremental pipeline installation located near parks, bike lanes, and other recreational sites to avoid impairment of the entire site. Once constructed, the pipeline would not affect usage of existing recreational sites. No long-term recreation impacts would occur. Therefore, pipe installation-related parks and recreation impacts are considered less than significant.

7.15.3.5 Replenishment Facility Sites

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages and unlikely to be in existing recreational sites. Subsequent analysis may be required by responsible parties as these facilities may be located near recreational sites. However, impacts are expected to be less than significant due to the small scale of these facilities.

7.15.3.6 Cumulative

The proposed project would incrementally contribute to construction-related short-term impairment to recreational opportunities. However, due to the short-term and/or mobile nature of the construction impacts, and the low probability of other projects impacting the same area as the proposed project at the same time, short-term construction impacts are not expected to be cumulatively considerable.

Once construction completed, the proposed project would not affect the usage of existing recreational sites. The project would not result in population growth at the level that noticeably increasing the use of existing neighborhood or regional parks, or any other recreational facilities. As such, the project would not result in the accelerated physical

deterioration of any recreational facilities and is not expected to incrementally contribute to long-term recreational impacts.

7.16 TRANSPORTATION

This section addresses potential impacts to transportation, which may result from implementation the Calleguas Creek Salts TMDL. Where applicable, mitigation measures to reduce potential impacts are provided.

7.16.1 Environmental Setting

7.16.1.1 Regional Roadway Network

Regional access to the Phase I project area is provided by State Route (SR) 1 and U.S. 101. Major roadways serving the Phase I project area include Hueneme Road, Wood Road, South Las Posas Road, Lewis Road, Santa Rosa Road, and Pleasant Valley Road. The preferred pipeline alignment parallels several of these roadways for total of approximately 39,000 feet.

Regional access to the Phase II project area is provided by SR 118, SR 1, and U.S. 101. Major County roadways serving the Phase II project area include Lewis Road, Pleasant Valley Road, Santa Rosa Road. The Phase II preferred pipeline alignment parallels Rancho Road, Howard Road, Hitch Blvd., Poindexter Avenue, High Street, East Los Angeles Avenue, Nogales Avenue, Easy Street, Chain Drive, SR 118 and the Union Pacific railroad corridor. Physical characteristics of the major roadways serving the project area, including number of lanes, volume, and Level of Service (LOS) are presented in Table 7.16-1.

Alternative pipeline alignments also parallel several of the above-listed roads along with Perkins Road, Arnold Road, and Olds Road within the Phase I project area; and Lewis Road, Pleasant Valley Road, Camino Ruiz, Adolfo Road, Somis Road, Flynn Road, Gabbert Road, and U.S. 101 within the Phase II project area.

Existing Traffic Volumes and Levels of Service.
Available existing (2000) traffic count data were obtained from the County of Ventura to assess current conditions. At Hitch Blvd, Hueneme Road, Las Posas Road, Lewis Road, Pleasant Valley Road, Santa Rosa Road, and Wood Road vehicles per day counts were conducted by the County in 2000. The VPD counts on each roadway were assigned a LOS classification in Table 7.16.1, based on Ventura County thresholds listed for Class I roadways (level terrain, meeting County road standards). The most recent available traffic counts (year 2001) were obtained from Caltrans (www.dot.ca.gov/hq/traffops/saferesr/trafdata/2001all) for affected State highways (SR 1, U.S. 101, and SR 118).

Table 7.16-1 Roadway Physical Characteristics

Roadway	Location	Number of Lanes	Vehicles per Day (2000)	LOS
Phase I				
SR 1	Hueneme Road	4	16,500	A
U.S. 101	Pleasant Valley Road	6	126,000	E
Hueneme Road	East of Las Posas Road	2	10,800	D
Wood Road	South of Hueneme Road	2	2,100	A
South Las Posas Road	South of SR 34	2	13,400	D
Lewis Road	South of Pleasant Valley Road	2	9,300	C
Santa Rosa Road	West of Las Posas Road East	4	16,300	A
Pleasant Valley Road	South of SR 34	2	11,100	D
Phase II				
SR 1	Hueneme Road	4	16,500	A
U.S. 101	Pleasant Valley Road	6	124,000	E
Los Angeles Avenue (SR 118)	Grimes Canyon Road	2	17,500	E
SR 118 Freeway	Madera Road	6	69,000	B
Lewis Road	South of Pleasant Valley Road	2	9,300	C
Pleasant Valley Road	South of SR 34	2	11,100	D
Santa Rosa Road	West of Las Posas Road East	4	16,300	A
Hitch Blvd.	South of SR 118	2	2,500	B

Sources: Ventura County Public Works Agency, Caltrans

Level of Service Methodology.

Level of service (LOS) is a quantitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS FO. LOS definitions are provided in Table 7.16-2 for Class I County roadways. Freeway LOS assignment is very similar, but is based more on travel speeds relative to design speed. LOS is based on a quantitative measurement of traffic volumes known as Average Daily Traffic (ADT) and/or Vehicles Per Day (VPD). These two calculations are considered generally the same since they both result in a count of the total average daily traffic along a specified roadway. These LOS roadway capacities are “rule-of-thumb” only. They are affected by such factors as intersections (number and configuration), degree of access control, roadway grades, design geometrics, truck traffic, directionality of traffic, etc.

Table 7.16-2 Level of Service (LOS) Definition

Level of Service	Average Daily Traffic (ADT)		Traffic Conditions
	Number of Lanes	ADT	
A	2	2,400	Free, uninterrupted low volume flow at high speeds with no restrictions on maneuverability (lane changing) and with little or no delays.
	4	19,000	
	6	29,000	
B	2	5,600	Stable flow with some restrictions to operating speed occurring.
	4	28,000	
	6	42,000	
C	2	10,000	Stable flow but with speed and maneuverability restricted by higher traffic volumes. Satisfactory operating speed for urban locations with some delays at signals.
	4	38,000	
	6	57,000	
D	2	16,000	Approaching unstable flow with tolerable operating speeds subject to considerable and sudden variation, little freedom to maneuver and with major delays at signals.
	4	47,000	
	6	70,000	
E	2	27,000	Unstable flow with volume at or near capacity, lower operating speeds and major delays and stoppages.
	4	58,000	
	6	87,000	
F	-	-	Forced flow operation with low speeds and stoppages for long periods due to congestion. Volumes below capacity.
FO	-	-	Forced traffic flow. Speed and flow may drop to zero with high densities. Delays of 15 minutes to 1 hour. Operating speed less than 20 miles per hour.

7.16.1.2 Railway Corridors

In the vicinity of the Phase I project area, railroad corridors are limited to the Ventura County Railroad, which links Port Hueneme to the Union Pacific Railroad in Oxnard. Proposed pipeline segment G-H Alternative A would cross the Ventura County Railroad tracks at Hueneme Road. In the Phase II project area, the Union Pacific Railroad operates tracks from Oxnard, along Fifth Street, along SR 34 (Lewis Road) to Somis, and along SR 118 to Moorpark and Simi Valley. Proposed pipeline segments B-C and C-D (Alternatives A & B only) involve several crossings of the Union Pacific Railroad tracks.

7.16.2 Environmental Consequences

The proposed project would primarily generate vehicle trips during the construction period, associated with delivery of materials and equipment, and worker transportation. Operation and maintenance activities associated with project operation are expected to be limited to a few trips per month and are considered negligible in terms of traffic impacts.

7.16.2.1 Thresholds of Significance

Based on the policy and guidelines provided by CEQA (PRC Section 21001 and the CEQA Guidelines), an individual or cumulative impact of the proposed project would be significant if it does one or more of the following:

- Causes an increase in traffic which is substantial in relation to existing traffic load and capacity of the street system;
- Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Results 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;
- Substantially increases hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- Results in inadequate parking capacity; or
- Conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

7.16.2.2 Proposed Action

This analysis assumes that up three construction teams may be working simultaneously, with a trip generation of up to 70 one-way truck trips and 30 one-way worker trips per day per team. Although it is assumed that all project-related truck trips are new to the regional roadway network, it is likely that most project-related truck trips would be made by the existing pool of trucks serving the construction industry. As noted in Section 3.6, Project Construction, it is difficult to anticipate the type of construction and associated trip generation rates at each construction site. Likewise, it is difficult to anticipate exactly how far apart each construction team would be working at any one time. However, it is possible that vehicles serving two teams may utilize the same roadways for a few months. This could lead to an increase of 200 VPD (100 per team) for that portion of roadway during the days when the two teams are working close together.

RSMP

Phase I.

- Construction-related Trips

The addition of 200 ADT would not result in any change in LOS or cause any of the roadways to fall to unacceptable levels (LOS E). Traffic impacts are considered less than significant.

- Circulation Impacts

Pipeline installation activities may result in lane closures and temporary detours. However, standard traffic control measures from the most current version of "Standard Specifications for Public Works Construction" by Public Works Standards, Inc., with regard to traffic and access, storage of equipment and materials in public streets, and street closures, detours and barricades would be fully implemented. Affected areas are mostly farmlands, with a few rural residences, and no traffic-dependent businesses. Access to these land uses would be maintained, including emergency access for public services (police and fire). Circulation impacts are considered less than significant.

- Conflicts with Transportation Facilities

All roadways disturbed during pipeline installation would be restored to their preconstruction condition. All railroad crossings would be completed through tunneling, such that no impact to facilities or operations is expected. Restoration of transportation facilities and requirements to minimize conflicts would be enforced through encroachment permits issued by the Ventura County Public Works Agency, affected city public works departments, Caltrans, and the Union Pacific Railroad. Compliance with these encroachment permits would result in less than significant impacts to transportation facilities.

Phase II

- Construction-related Trips

The project-related addition of a maximum of 200 VPD would not change the LOS of affected roadways, or cause existing roadways to operate at unacceptable LOS. Traffic impacts are considered less than significant.

- Circulation Impacts

Pipeline installation activities may result in lane closures and temporary detours. Access to residential and commercial areas in Moorpark and western Simi Valley may be reduced. Traffic-dependent businesses along Los Angeles Avenue and High Street may be adversely affected. However, standard traffic control measures from the most current version of "Standard Specifications for Public Works Construction" by Public Works Standards, Inc., with regard to traffic and access, storage of equipment and materials in public streets, and street closures, detours and barricades would be fully implemented. Affected areas are mostly farmlands, with a few rural residences, and no traffic-dependent businesses. Access to these land uses would be maintained, including emergency access for public services (police and fire). Circulation impacts are considered less than significant.

- Conflicts with Transportation Facilities

The discussion under Phase I is applicable to Phase II of the proposed project. Project-related impacts would be less than significant

Cumulative.

Other construction projects may occur in close proximity during the construction phase of the proposed project, and may exacerbate circulation impacts and transportation

conflicts discussed for Phase I and II. However, coordination with these projects would be achieved through the encroachment permit process, such that cumulative impacts would be less than significant.

RWRMP

Phase I.

- Construction-related Trips.

This portion of the project area would likely be accessed from Rice Road or South Las Posas Road. The addition of 200 ADT would not result in any change in LOS or cause any of the to fall to unacceptable levels (LOS E). Traffic impacts are considered less than significant.

- Circulation Impacts.

Pipeline installation activities may result in lane closures and temporary detours. However, standard traffic control measures from the most current version of "Standard Specifications for Public Works Construction" by Public Works Standards, Inc., with regard to traffic and access, storage of equipment and materials in public streets and street closures, detours and barricades would be fully implemented. Affected areas are mostly farmlands, with a few rural residences, and no traffic-dependent businesses. Access to these land uses would be maintained, including emergency access for public services (police and fire). Circulation impacts are considered less than significant.

- Conflicts with Transportation Facilities.

All roadways disturbed during pipeline installation would be restored to their preconstruction condition. All railroad crossings would be completed through tunneling, so that impacts to facilities or operations are not expected. Restoration of transportation facilities and requirements to minimize conflicts would be enforced through encroachment permits issued by the Ventura County Public Works Agency, affected city public works departments, Caltrans and the Union Pacific Railroad. Compliance with these encroachment permits would result in less than significant impacts to transportation facilities.

Phase II.

- Construction-related Trips.

This portion of the project would be accessed from SR 118, Los Angeles Avenue, Somis Road, Lewis Road, Adolfo Road and Pleasant Valley Road. Table 7.17.1 indicates that Los Angeles Avenue and Pleasant Valley Road operate at poor LOS. The project-related addition of a maximum of 200 VPD would not change the LOS of affected roadways, or cause existing roadways to operate at unacceptable LOS. Traffic impacts are considered less than significant.

- Circulation Impacts.

Pipeline installation activities may result in lane closures and temporary detours. Access to residential and commercial areas in Moorpark and western Simi Valley may be reduced. Traffic-dependent businesses along Los Angeles Avenue and High Street may be adversely affected. However, standard traffic control measures from the most current version of "Standard Specifications for Public Works Construction" by Public Works

Standards, Inc., with regard to traffic and access, storage of equipment and materials in public streets and street closures, detours and barricades would be fully implemented.

Implementation of these measures would maintain access through providing alternate routes (detours) and minimizing road closures. In addition, traffic control would be short-term at any one location, for 2 weeks or less. Emergency access for public services (police and fire) would also be maintained. Circulation impacts are considered less than significant.

Conflicts with Transportation Facilities. The discussion under Phase I is applicable to Phase II of the proposed project. Project-related impacts would be less than significant.

Cumulative
Other construction projects may occur in close proximity during the construction phase of the proposed project, and may exacerbate circulation impacts and transportation conflicts discussed for Phase I and II. However, coordination with these projects would be achieved through the encroachment permit process, such that cumulative impacts would be less than significant.

7.16.3 Mitigation Measures

No significant impacts were identified. Therefore, mitigation measures are not required.

7.16.4 Residual Impacts

No mitigation measures are necessary. Therefore, there are no expected residual impacts.

7.16.5 Federal Findings

No Federal findings are required for conflicts with transportation facilities.

7.17 UTILITIES AND SERVICE SYSTEMS

This section evaluates the effects of the proposed project on utilities and service systems by describing the existing condition of the utility and identifying the anticipated demand for utilities, as well as existing and planned utility availability. For purposes of this document, utilities include power or natural gas, communication systems, water, sewer or septic tanks, stormwater drainage, and solid waste disposal.

7.17.1 Power and Natural Gas

7.17.1.1 General Setting

For the purposes of this analysis, energy resources consist of power (electricity) and natural gas. The 2005 Integrated Energy Policy Report prepared by the California Energy Commission (CEC) summarizes the state of California's electrical and natural gas supplies (CEC, 2005). Despite improvements in power plant licensing, enormously successful energy efficiency programs and continued technological advances, development of new energy supplies is not keeping pace with the state's increasing demands. A key constraint in energy is the state's electricity transmission system. Under most circumstances, the state's power grid is able to reliably delivery energy to consumers; for the majority of the days during the year adequate energy supplies are reliably provided to consumers. California's electricity demand is driven by short summer peaks, such that reducing peak demand is the essential factor in adequately planning for the State's electrical needs. These peak demands include a few hours to several days each year, such that managing demand, rather than developing supplies at new power plants for this limited time appears the most efficient method to meet State needs on peak days (Ibid.). The CEC has developed an action plan which includes increasing energy capacity in investor-owned utilities, incentives for combined heat and power projects (cogeneration), energy efficiency programs, expansion of renewable energy programs.

California has not experienced a widespread natural gas shortage in many years. Current supplies are adequate to meet demands. The state has made infrastructure improvements that will increase the reliability and operational flexibility of the natural gas system, but must still address the need for additional pipeline capacity to meet peak demand (CEC, 2005). The state imports 87 percent of its statewide natural gas supply and therefore must be prepared for declining production in most U. S. supply basins and potential natural disasters that could the states ability to meet consumer natural gas demand (Ibid.). The state is working to reduce the demand for natural gas and increase the efficiency while at the same time improving and maintaining the natural gas infrastructure. Natural gas is provided to the Los Angeles region by The Southern California Gas Company (SCGC), which provides service to 19 million people in California. The SCGC receives its supply of natural gas from several sources: Southern California, Northern California, and out-of-state suppliers. All natural gas services are regulated by the California Public Utilities Commission CPUC.

Regulations

Federal

There are no federal laws, regulations, or policies, applicable to the Salts TMDL that pertain to power and natural gas.

State

California Public Utilities Commission.

The CPUC regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. CPUC is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of the California economy. CPUC also enforces CEQA requirements for utility construction.

California Energy Commission.

Created by the legislature in 1974, the California Energy Commission regulates the provision of electricity and natural gas in the State of California. With the signing of the Electric Industry Deregulation Law in 1998 (AB1890), the role of the commission includes overseeing funding programs that support public interest energy research; advance energy science and technology through research, development, and demonstration; and provide market support to existing, new, and emerging renewable technologies.

7.17.1.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

7.17.1.3 Environmental Impact and Mitigation Measures

- Impact: The implementation of the Calleguas Creek Salts TMDL would not require or result in the construction of new energy production or transmission facilities, nor will these actions require substantial alterations to power or natural gas utilities.
- Mitigation: There will be no impacts related to power and natural gas and no mitigation is required.

7.17.2 Communication Systems

7.17.2.1 General Setting

In general the communications systems used through out the Calleguas Creek Watershed are typical communications tools such as, telephone, radios and cell phones. These services are provided by many different private companies. It is anticipated that these three communication tools (telephone, cell phone and radios) would be the most critical communication systems utilized to implement this TMDL and are evaluated under Impact B.

State Regulations

California Public Utilities Commission.

The CPUC regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. CPUC is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of the California economy. CPUC also enforces CEQA requirements for utility construction.

7.17.2.2 Thresholds of Significance

A project will normally have a significant adverse environmental impact on communications if the project would:

- Require or result in the construction of transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

7.17.2.3 Environmental Impact and Mitigation Measures

- Impact: The implementation of the Calleguas Creek Salts TMDL would not require or result in a need for new systems, or substantial alterations to the communications systems.
- Mitigation: There will be no impacts related to communication systems and no mitigation is required.

7.17.3 Water

7.17.3.1 General Setting

Supply water for the Calleguas Creek watershed includes water imported from the State Water Project, water produced from the watershed's deep confined aquifer system (Las Posas and Pleasant Valley groundwater basins), and Santa Clara River water (Freeman Diversion). Water supply for all cities except Thousand Oaks is composed of a combination of local groundwater and imported water. Thousand Oaks is supplied exclusively by the State Water Project (SWP). Moorpark is supplied almost exclusively with SWP, but has the option to turn on wells as an additional supply if needed. Agricultural supply is primarily composed of local groundwater or reclaimed water that is supplemented with imported water from the SWP and Santa Clara River.

Regulations
Federal
Federal Safe Drinking Water Act
Enacted in 1974 and implemented by the EPA, the federal *Safe Drinking Water Act* imposes water quality and infrastructure standards for potable water delivery systems nation-wide. The primary standards are health-based thresholds established for numerous toxic substances. Secondary standards are recommended thresholds for taste and mineral content.

U.S. Environmental Protection Agency

The EPA established primary drinking water standards in the *Clean Water Act* Section 304. States are required to ensure that potable water retailed to the public meets these standards. Standards for a total of eighty-one individual constituents have been established under the *Safe Drinking Water Act* as amended in 1986. The U.S. EPA may add additional constituents in the future. State primary and secondary drinking water standards are promulgated in CCR Title 22 Sections 64431–64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance.

State

Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 et seq.)

The *Urban Water Management Planning Act* (Act) was developed due to concerns over potential water supply shortages throughout California. It requires information on water supply reliability and water use efficiency measures. Urban water suppliers are required, as part of the Act, to develop and implement Urban Water Management Plans (UWMP) to describe their efforts to promote efficient use and management of water resources.

Water Conservation Projects Act

California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (Water Code Sections 11950–11954), as reflected below:
11952 (a). It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects.

7.17.3.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

- Have insufficient water supplies available to serve the project from existing entitlements and resources, or would require new or expanded entitlements.

7.17.3.3 Environmental Impact and Mitigation Measures

- Impact: Potential projects associated compliance with Calleguas Creek Salts TMDL will result in reduction of the need for water supply. The implementation of the Calleguas Creek Salts TMDL will not result in the development of any large residential, retail, industrial or any other development projects that would significantly increase the demand on the current water supply facilities or require new water supply facilities.
- Mitigation: There will be no impacts related to water supply and no mitigation is required.

7.17.4 Sewer/ Septic Tanks

7.17.4.1 General Setting

The sewer system throughout the Calleguas Creek Watershed includes five publicly owned treatment works (POTWs). They include the Camrosa Waste Water Reclamation Facility, Camarillo Waste Water Treatment Plant, Ventura County Wastewater Treatment Plant, Hill Canyon Wastewater Treatment Plant, and Simi Valley Water Quality Control Plant. In general these plants receive waste from commercial, industrial and residential sources. All incoming wastewater receives primary, secondary and tertiary treatment. In addition, the effluent is disinfected and used in water recycling programs or discharged to various reaches or tributaries of the Calleguas Creek.

Onsite wastewater treatment systems (septic systems) are used in areas in where direct connection to sewer lines is not possible and have been used as a form of wastewater disposal for many decades. A septic tank system generally consists of a tank between 1,000 to 1,500 gallons which is connected to an inlet wastewater pipe at one end and the to septic leech field at the other. Recent designs of the tank usually include two chambers which are separated by means of a dividing wall. Wastewater enters the first chamber of the tank and allows solids to settle and scum to float on top. The settled solids are anaerobically digested reducing the volume of the solids. The liquid portion flows through the division to the second chamber where further settlement takes places and the remaining liquid flows to the leach field and remaining solids decompose in the soil.

Regulations
Federal
Federal Water Pollution Control Act (Clean Water Act)
The major piece of federal legislation dealing with wastewater is the federal *Water Pollution Control Act*, which is designed to restore and preserve the integrity of the nation's waters. The federal *Water Pollution Control Act*, popularly known as the *Clean Water Act*, is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Enacted originally in 1948, the Act was amended numerous times until it was reorganized and expanded in 1972. It continues to be amended almost every year. In addition to the federal *Water Pollution Control Act*, other federal environmental laws regulate the location, type, planning, and funding of wastewater treatment facilities.

State
Operations of Wastewater Treatment Plants are subject to regulations set forth by the California Department of Health Services and the California State Water Resources Control Board.

Regional Water Quality Board
Under the Los Angeles Regional Water Quality Control Board (LARWQCB) National Pollutant Discharge Elimination System (NPDES) permit system, all existing and future municipal and industrial discharges to surface waters within the area would be subject to regulations.

7.17.4.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Result in a 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.

7.17.4.3 Environmental Impacts and Mitigation Measures

- Impact: The proposal implementation actions will not result in a need for new systems, or substantial alterations to the sewer or septic tanks.
- Mitigation: There will be no impacts related to sewer and septic tank systems and no mitigation is required.

7.17.5 Stormwater Drainage

7.17.5.1 General Setting

Regulations

Federal

The *Clean Water Act* was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The EPA has delegated responsibility for implementation of portions of the *Clean Water Act* to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) for water quality control planning and programs, such as the National Pollutant Discharge Elimination System (NPDES) program.

State

The Los Angeles County NPDES permit requires that discharges within permit area are subject to the provisions of the Ventura County NPDES Storm Water Permit. The NPDES storm water permit was issued by LARWQCB for municipal storm water and urban runoff discharges within Ventura County and for co-permitees.

7.17.5.2 Thresholds of Significance

A project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new stormwater facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

7.17.5.3 Environmental Impact and Mitigation Measures

The propose implementation actions would not result in a need for new systems, or substantial alterations to the storm water drainage. No significant impacts are expected, and therefore no mitigation measures are proposed.

7.17.6 Solid Waste and Disposal

7.17.6.1 General Setting

The Ventura County Sanitation District (VCSD) is responsible for solid waste services throughout Ventura County. Solid waste in Ventura County is collected by waste haulers and several city governments. The waste is then disposed at landfills in the County, transformation facilities (such as refuse to energy), and inter-modal facilities that transport the waste to facilities outside the.

Regulations

Federal

There are no applicable federal laws, regulations, or policies that pertain to solid waste.

State

At the state level, the management of solid waste is governed by regulations established by the CIWMB, which delegates local permitting, enforcement, and inspection responsibilities to local enforcement agencies. In 1997, some of the regulations adopted by the State Water Quality Control Board (SWQCB) pertaining to landfills (Title 23, Chapter 15) were incorporated with CIWMB regulations (Title 14) to form Title 27 of the California Code of Regulations (CCR).

State Law AB 939

In 1989, the Legislature adopted the Integrated Waste Management Act of 1989, which established an integrated waste management hierarchy that consists of the following in order of importance: source reduction, recycling, composting, and land disposal of solid waste. The law also required that each county prepare a new Integrated Waste Management Plan. The Act further required each City to prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. Each source reduction element includes a plan for achieving a solid waste reduction goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. Recently, a number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act were adopted, including a revision to the statutory requirement for 50 percent

diversion of solid waste. Under these provisions, local governments shall continue to divert fifty percent of all solid waste on and after January 1, 2000.

7.18.6.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on solid waste and disposal if the project would:

- The project will be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

- The project does not comply with federal, state, and local statutes and regulations related to solid waste.

7.17.6.3 Environmental Impacts and Mitigation Measures

The proposed implementation actions would not result in a need for new systems, or substantial alterations to the solid waste and disposal system. No mitigation is required.

8 OTHER ENVIRONMENTAL CONSIDERATIONS

This section evaluates several other environmental considerations of reasonably foreseeable methods of complying with the salts TMDL. Cumulative Impacts of the Program Alternatives (as required by CEQA Guidelines 15130); 9.2) Potential Growth-Inducing Effects of the Program Alternatives (as required by CEQA Guidelines 15126); 9.3) Unavoidable Significant Impacts (as required by CEQA Guidelines 15126.2); and 9.4) Environmental Justice.

8.1 CUMULATIVE IMPACTS

Cumulative impacts, defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed TMDL, but also the impacts from other municipal and private projects, which would occur in the watershed during the period of implementation.

The areas of cumulative impacts analyzed in this section include: 1) the Program level cumulative impacts and 2) the Project level cumulative impacts. On the program level, the impacts from multiple TMDLs, if exist, are analyzed. On the project level, while the full environmental analysis of individual projects are the purview of the implementing municipalities of agencies, the cumulative impact analysis included here entails consideration of construction activities occurring in the vicinity of one another as a result of other projects being built in the same general time frame and location. The salts TMDL projects, if occurring with other construction projects, could contribute to temporary cumulative noise and vibration effects that would not occur with only one project.

8.1.1 Program cumulative impacts

Regarding programmatic cumulative impacts, the Regional Board has adopted four additional TMDLs for the Calleguas Creek watershed: nitrogen compounds (nitrogen compounds and related effects in the Calleguas Creek TMDL in effect July 13, 2003); toxicity, chlorpyrifos, and diazinon (Calleguas Creek toxicity TMDL in effect March 24, 2006); organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and siltation (Calleguas Creek OC pesticides & PCBs TMDL in effect March 24, 2006), and metal and selenium(Calleguas Creek watershed metals and selenium TMDL in effect March 26, 2007.

Regarding the nitrogen TMDL, the TMDL source analysis found that the greatest sources of nitrogen to the Calleguas Creek were from discharges from the POTWs in the watershed and runoff from agricultural activities in the watershed. Agricultural discharge is the major nonpoint source of oxidized nitrogen to Calleguas Creek and its tributaries. This source is particularly significant in Revolon Slough and other agricultural drains in the lower Calleguas watershed where there are no point sources of ammonia and oxidized nitrogen. The Implementation Plan includes wastewater treatment to remove ammonia and oxidized nitrogen from POTW effluent and implementation and evaluation of agricultural best management practices (BMPs) in the Calleguas Creek watershed. Neither of these approaches should disrupt any proposed implementation actions as applied for salts.

Regarding the toxicity TMDL, the TMDL source analysis found that agricultural and urban uses are the largest sources of chlorpyrifos and diazinon in the watershed. Urban use of diazinon and chlorpyrifos is unlikely to be a long-term source to the Calleguas Creek Watershed (CCW) as both of these pesticides have been banned for sale for non-agricultural uses on December 31, 2005 by federal regulation. The Implementation Plan includes source control activities to reduce urban sources of pesticides and implementation and evaluation of agricultural BMPs in the watershed. Neither of these approaches should disrupt any proposed implementation actions as applied for salts.

Regarding the OC pesticides & PCBs TMDL, the TMDL source analysis found that the largest source of OC pesticides in the listed waters is agricultural runoff. Most PCB residues are due to past use of PCBs as coolants and lubricants in transformers, capacitors, and other electrical equipment. Atmospheric deposition is also a potential source of PCBs. Urban runoff and POTWs are minor sources of OC pesticides and PCBs. The Implementation Plan includes source control activities to reduce any active sources of OC pesticides and PCBs in the watershed, and implementation and evaluation of agricultural best management practices (BMPs) in the watershed. Neither of these approaches should disrupt any proposed implementation actions as applied for salts.

Regarding the metals and selenium TMDL, the TMDL source analysis found that significant sources of metals and selenium in the watershed include urban runoff, agricultural runoff, groundwater seepage, and POTW effluent. For mercury, open space was also a significant source. The Implementation Plan includes source control activities to reduce sources of metal and selenium and/or effluent discharge removal for POTWs in the watershed, and implementation and evaluation of agricultural best management practices (BMPs) in the watershed. Neither of these approaches should disrupt any proposed implementation actions as applied for salts.

For compliance with the Calleguas Creek Salts TMDL, the following construction and integration of capital projects are proposed: pipeline to convey brine, wastewater, and reclaimed wastewater; ocean outfall for brine discharge; groundwater extraction and treatment reverse osmosis; water blending facilities; and creek diversion. Water conservation, removal of water softener002C and Best Management Practices for Irrigated Agriculture will also be done in the watershed for compliance with this TMDL and will have secondary benefit to the other TMDLs that are implemented at the same time.

8.1.2 Project cumulative impacts

Specific TMDL projects must be environmentally evaluated and cumulative impacts considered as the implementing municipality or agency designs and sites the project. However, as examples, TMDL projects and other construction activities may result in cumulative effects of the following nature:

Noise and Vibration - Local residents in the near vicinity of installation and construction activities may be exposed to noise and possible vibration. The cumulative effects, both in terms of added noise and vibration at multiple salts TMDL installation and construction sites, and in the context of other related projects, are not considered cumulatively

significant due to the temporary nature of noise increases. Noise mitigation methods are available as discussed in the check list.

Air Quality - Implementation of the salts TMDL Program may cause additional emissions of criteria pollutants and slightly elevated levels of carbon monoxide during construction or installation activities. The TMDL, in conjunction with all other construction activity, may contribute to the region's non-attainment status during the installation period. Because these installation-related emissions are temporary, compliance with the TMDL would not result in long-term significant cumulative air quality impacts. In the short term, cumulative impacts could be significant if the combined emissions from the individual TMDL projects exceed the threshold criteria for the individual pollutants.

Transportation and Circulation - Compliance with the salts TMDL involves construction and installation activities occurring at difference sites in the Calleguas Creek watershed. Construction and installation activities may be occurring in the same general time and space as other related or unrelated projects. In these instances, construction activities from all projects could produce cumulative traffic effects which may be significant, depending upon a range of factors including the specific location involved and the precise nature of the conditions created by the dual construction activity. Special coordination efforts may be necessary to reduce the combined effects to an acceptable level. Overall, significant cumulative impacts are not anticipated because coordination can occur and because transportation mitigation methods including are available as discussed in the check list. In addition, the fact that construction and installation activities for the salts TMDL are being conducted in the same vicinity as other projects will not make mitigation methods less implementable.

Public Services - The cumulative effects on public services in the salts TMDL study area would be limited to traffic inconveniences discussed above. These effects are not considered cumulatively significant as discussed above.

Aesthetics - Construction activities associated with other related projects may be ongoing in the vicinity of the salts TMDL construction sites. To the extent that combined construction activities do occur, there would be temporary adverse visual effects of less than cumulatively significant proportions as discussed in the checklist.

8.2 GROWTH-INDUCING IMPACTS

This section presents 8.2.1) an overview of the CEQA Guidelines relevant to evaluating growth inducement, 8.2.2) a discussion of the types of growth that can occur in the Calleguas Creek Watershed, 8.2.3) a discussion of obstacles to growth in the watershed, and 8.2.4) an evaluation of the potential for the TMDL Program Alternatives to induce growth.

8.2.1 CEQA Growth-Inducing Guidelines

Growth-inducing impacts are defined by the State CEQA Guidelines as: The ways in which a 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 impacts which would remove obstacles to population growth. Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects... [In addition,] the characteristics of some projects.. .may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It is not assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. (CEQA Guidelines, Section 15126.2{d)).

Growth inducement indirectly could result in adverse environmental effects if the induced growth is not consistent with or accommodated by the land use plans and growth management plans and policies. Local land use plans provide for land use development patterns and growth policies that encourage orderly urban development supported by adequate public services, such as water supply, roadway infrastructure, sewer services, and solid waste disposal services.

Public works projects that are developed to address future unplanned needs (i.e., that would not accommodate planned growth) could result in removing obstacles to population growth. Direct growth inducement would result if, for example, a project involved the construction of new wastewater treatment facilities to accommodate populations in excess of those projected by local or regional planning agencies. Indirect growth inducement would result if a project accommodated unplanned growth and indirectly established substantial new permanent employment opportunities (for example, new commercial, industrial, or governmental enterprises) or if a project involved a construction effort with substantial short-term employment opportunities that indirectly would stimulate the need for additional housing and services. Growth inducement also could occur if the project would affect the timing or location of either population or land use growth, or create a surplus in infrastructure capacity.

8.2.2 Types of Growth

The primary types of growth that occur within the watershed are 1) development of land and 2) population growth. Economic growth, such as the creation of additional job opportunities, also could occur; however, such growth generally would lead to population growth and, therefore, is included indirectly in population growth.

Growth in land development

Growth in land development is the physical development of residential, commercial, and industrial structures in the watershed. Land use growth is subject to general plans, community plans, parcel zoning, and applicable entitlements and is dependent on adequate infrastructure to support development.

Population Growth

Population growth is growth in the number of persons that live and work in the salts TMDL area and other jurisdictions within the boundaries of the area. Population growth occurs from natural causes (births minus deaths) and net emigration to or immigration from other geographical areas. Emigration or immigration can occur in response to economic opportunities, life style choices, or for personal reasons.

Although land use growth and population growth are interrelated, land use and population growth could occur independently from each other. This has occurred in the past where the housing growth is minimal, but population within the area continues to increase. Such a situation results in increasing population densities with a corresponding demand for services, despite minimal land use growth.

Overall development in the Ventura County is governed by the Ventura County General Plan, which is intended to direct land use development in an orderly manner. The General Plan is the framework under which development occurs, and, within this framework, other land use entitlements (such as variances and conditional use permits) can be obtained. Because the General Plan guides land use development and allows for entitlements, it does not represent an obstacle to land use growth. The cities with in the Salts TMDL area also have plans which direct land use development.

8.2.3 Existing Obstacles to Growth

Obstacles to growth could include such things as inadequate infrastructure, such as an inadequate water supply that results in rationing, or inadequate wastewater treatment capacity that results in restrictions in land use development. Policies that discourage either natural population growth or immigration also are considered to be obstacles to growth.

8.2.4 Potential for the compliance with the proposed TMDL to induce growth.

Direct Growth Inducement

Because the reasonably foreseeable methods of compliance with the proposed salts TMDL focus on construction and installation of the brine line, desalters facilities, water blending facilities to reduce the amount of salts imported into the CCW, reduce the amount salts added to water in the CCW, and transport salts down gradient and export them out of the watershed, the salts TMDL would not result in the construction of new housing and, therefore, would not directly induce growth.

Indirect Growth Inducement

Two areas of potential indirect growth inducement are relevant to a discussion of the proposed TMDL: (1) the potential for compliance with the TMDL to generate economic opportunities that could lead to additional immigration, and (2) the potential for the proposed TMDL to remove an obstacle to land use or population growth.

Construction and installation for the proposed TMDL would occur over a 15-year time period. Construction, installation, and maintenance spending for compliance would generate jobs throughout the region. Based on the annual construction cost estimates, the alternatives would result in direct jobs and indirect jobs. The creation of jobs in the region is considered a benefit.

Although the construction activities associated with the salts TMDL would increase the economic opportunities in the area and region, this construction is not expected to result in or induce substantial or significant population or land use development growth because the majority of the new jobs that would be created by this construction are expected to be filled by persons already residing in the area or region, based on the existing surplus of unemployed persons in the area and region. SCAG estimates that the SCAG region had over 405,000 unemployed persons.

The second area of potential indirect growth inducement is through the removal of obstacles to growth. As discussed above, no obstacles exist to land use or to population growth in the watershed.

8.3 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of potential significant, irreversible environmental changes that could result from a proposed project. Examples of such changes include commitment of future generations to similar uses, irreversible damage that may result from accidents associated with a project, or irretrievable commitments of resources. Although the proposed TMDL would require resources (materials, labor, and energy) they do not represent a substantial irreversible commitment of resources.

In addition, implementation of the TMDL will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of the agricultural supply and groundwater recharge beneficial uses will have positive social and economic effects by reducing the amount salts to the watershed through supply water and increasing the use of reclaimed water for irrigation. In addition, habitat carries a significant non-market economic value. Enhancement of habitat beneficial uses will also have positive indirect economic and social benefits. Section 7 of this SED identifies the anticipated environmental effects for each resource area, identifies mitigation measures for potentially significant impacts, and determines that impacts after implementation of mitigation are insignificant.

9. CEQA CHECKLIST AND DETERMINATION

9.1 ENVIRONMENTAL CHECKLIST

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
1.	**Earth. Will the proposal result in:**				
	a. Unstable earth conditions or in changes in geologic substructures?		X		
	b. Disruptions, displacements, compaction or overcoming of the soil?		X		
	c. Change in topography or ground surface relief features?				X
	d. The destruction, covering or modification of any unique geologic or physical features?				X
	e. Any increase in wind or water erosion of soils, either on or off the site?		X		
	f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?			X	
	g. Exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?			X	
2.	**Air. Will the proposal result in:**				
	a. Substantial air emissions or deterioration of ambient air quality?		X		

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	b. The creation of objectionable odors?				X
	c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?				X
3.	**Water. Will the proposal result in:**				
	a. Changes in currents, or the course of direction or water movements, in either marine or fresh waters?	X			
	b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?		X		
	c. Alterations to the course of flow of flood waters?		X		
	d. Change in the amount of surface water in any water body?	X			
	e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?		X		
	f. Alteration of the direction or rate of flow of ground waters?	X			
	g. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	X			
	h. Substantial reduction in the amount of water otherwise available for public water supplies?			X	

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	i. Exposure of people or property to water related hazards such as flooding or tidal waves?		X		
4.	**Plant Life. Will the proposal result in:**				
	a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?	X			
	b. Reduction of the numbers of any unique, rare or endangered species of plants?	X			
	c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?			X	
	d. Reduction in acreage of any agricultural crop?			X	
5.	**Animal Life. Will the proposal result in:**				
	a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	X			
	b. Reduction of the numbers of any unique, rare or endangered species of animals?	X			
	c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			X	
	d. Deterioration to existing fish or wildlife habitat?	X			

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
6.	**Noise. Will the proposal result in:**				
	a. Increases in existing noise levels?	X			
	b. Exposure of people to severe noise levels?	X			
7.	**Light and Glare. Will the proposal:**				
	a. Produce new light or glare?			X	
8.	**Land Use. Will the proposal result in:**				
	a. Substantial alteration of the present or planned land use of an area?		X		
9.	**Natural Resources. Will the proposal result in:**				
	a. Increase in the rate of use of any natural resources?				X
	b. Substantial depletion of any nonrenewable natural resource?				X
10.	**Risk of Upset. Will the proposal involve:**				
	a. A risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?		X		
11.	**Population. Will the proposal:**				
	a. Alter the location, distribution, density, or growth rate of the human population of an area?				X
12.	**Housing. Will the proposal:**				
	a. Affect existing housing, or create a demand for additional housing?				X

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
13.	**Transportation/Circulation. Will the proposal result in:**				
	a. Generation of substantial additional vehicular movement?		X		
	b. Effects on existing parking facilities, or demand for new parking?			X	
	c. Substantial impact upon existing transportation systems?			X	
	d. Alterations to present patterns of circulation or movement of people and/or goods?			X	
	e. Alterations to waterborne, rail or air traffic?		X		
	f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X		
14.	**Public Service. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:**				
	a. Fire protection?		X		
	b. Police protection?		X		
	c. Schools?				X
	d. Parks or other recreational facilities?			X	
	e. Maintenance of public facilities, including roads?				X
	f. Other governmental services?			X	

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
15.	**Energy. Will the proposal result in:**				
	a. Use of substantial amounts of fuel or energy?			X	
	b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?			X	
16.	**Utilities and Service Systems. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:**				
	a. Power or natural gas?			X	
	b. Communications systems?			X	
	c. Water?			X	
	d. Sewer or septic tanks?				X
	e. Storm water drainage?				X
	f. Solid waste and disposal?				X
17.	**Human Health. Will the proposal result in:**				
	a. Creation of any health hazard or potential health hazard (excluding mental health)?		X		
	b. Exposure of people to potential health hazards?		X		
18.	**Aesthetics. Will the proposal result in:**				
	a. The obstruction of any scenic vista or view open to the public?	X			
	b. The creation of an aesthetically offensive site open to public view?	X			

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
19.	**Recreation. Will the proposal result in:**				
	a. Impact upon the quality or quantity of existing recreational opportunities?		X		
20.	**Archeological/Historical. Will the proposal:**				
	a. Result in the alteration of a significant archeological or historical site structure, object or building?		X		
21.	**Mandatory Findings of Significance**				
	Potential to degrade: Does the project have the potential to degrade the quality of the environment, 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X*			
	Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)			X	
	Cumulative: Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the			X	

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	total of those impacts on the environment is significant.)				
	Substantial adverse: Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

*These potentially significant impacts can be reduced and/or eliminated by mitigation measures such as those described in the SED and those used as standard practices by responsible agencies and jurisdictions. California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Selection of specific BMPs and associated mitigation measures are within the responsibility and jurisdiction of the responsible agencies for implementing the chloride TMDL. The mitigation measures available for this impact are based on common practices for implementing public works projects. The finding of Potentially Significant is based on the unlikely potential for implementing agencies to fail to exercise due diligence, pre-project planning and adherence to existing codes, standards and/or practices.

9.2 DISCUSSION OF ENVIRONMENTAL EVALUATION

The analysis of potential environmental impacts is based on the numerous alternative means of compliance available for reducing salts in the Calleguas Creek watershed in response to the proposed Basin Plan amendment. These include construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. Potential impacts to air quality, geology and soils, biological resources, hydrology, land use planning, public services, and utilities are discussed below, and it is found that any significant impacts can be mitigated at a project level. Many of the mitigation measures identified are common practices currently employed by agencies when planning and implementing storm water BMPs. Agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). The evaluation considers whether the environmental impact indicated will have a substantial, adverse change in any of the physical conditions within the area affected by the activity. In addition, the evaluation discusses environmental effects in proportion to their severity and probability of occurrence.

1. **Earth. a.** Will the proposal result in unstable earth conditions or in changes in geologic substructure?

Answer: Less Than Significant with Mitigation Incorporated

It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in unstable earth conditions or in changes in geologic substructure. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in such sensitive areas. Furthermore, no impact is expected because foreseeable methods of compliance, including construction of structural methods to reduce salts, would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures. To the extent that such facilities could result in unstable earth conditions or in changes in geologic substructures, potential impacts could be avoided or mitigated through proper siting, design, and ground and groundwater level monitoring to ensure stable conditions.

Pipeline installation would cross certain drainages using trenching methods. Should trenching methods be used to install these segments, significant soil erosion associated with disturbance of the bed and banks of these drainages may occur. The following measures shall be fully implemented to reduce geologic and soil-related impacts:

Appropriate Best Management Practices, as established in the project's National Pollutant Discharge Elimination System Construction Storm Water Permit, shall be employed at all construction sites. Such measures may include, but are not limited to,

temporary sand bagging, construction of berms, installation of geofabric, and revegetation of areas by hydroseeding and mulching.

All trench crossings of intermittent drainages shall be conducted when no surface flows are present, and shall be re-contoured, re-compacted and revegetated to approximate pre-project conditions at the earliest practicable date.

Emergency shut-off valves shall be designed and installed at all locations where flows would enter the pipeline, especially at critical areas such as active fault zones.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

1. Earth. b. Will the proposal result in disruptions, displacements, compaction or overcoming of the soil?

Answer: Less than significant with mitigation incorporated

Depending on the implementation methods chosen, the proposal may result in surface soil excavation during construction of pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. Notably, most of the relevant areas are already urbanized, and have already suffered soil compaction and hardscaping. Standard construction techniques, including but not limited to, shoring, piling and soil stabilization can mitigate any potential short-term impacts. In addition, adverse impacts could be mitigated to less than significant levels if structural methods are properly designed and sited in areas where the risk of soil disruption is minimal.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

1. Earth. c. Will the proposal result in change in topography or ground surface relief features?

Answer: No impact

No impact is expected because foreseeable methods of compliance, including implementation of structural methods to reduce salts, would not be of the size or scale to result in change in topography or ground surface relief features. To the extent that such facilities could result in change in topography or ground surface relief features, potential

impacts could be avoided or mitigated through siting such alterations in geologically stable areas outside of flood plains.

1. Earth d. Will the proposal result in the destruction, covering or modification of any unique geologic or physical features?

Answer: No impact

It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in the destruction, covering or modification of any unique geologic or physical features. No impact is expected because foreseeable methods of compliance, including implementation of structural methods to reduce salts, would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features. Furthermore, to the extent that such facilities could result in the destruction, covering or modification of any unique geologic or physical features, potential impacts could be mitigated by mapping these features to avoid siting facilities in these areas.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

1. Earth. e. Will the proposal result in any increase in wind or water erosion of soils, either on or off the site?

Answer: Less than significant impact with mitigation incorporated

Depending on the implementation methods chosen, the proposal may result in soil excavation during construction and installation of pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. Wind or water erosion of soils may occur as potential short-term impact. Construction sites are required to retain sediments on site, either under a general construction storm water permit or through the construction program of the applicable MS4 permit-both of which are already designed to minimize or eliminate erosion impacts on receiving water. Appropriate Best Management Practices, as established in the project's National Pollutant Discharge Elimination System Construction Storm Water Permit, shall be employed at all construction sites. Such measures may include, but are not limited to, temporary sand bagging, construction of berms, installation of geofabric, and revegetation of areas by hydroseeding and mulching.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in

order that potential environmental impacts be reduced or avoided such that there is no significant impact.

1. Earth. f. Will the proposal result in changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?

Answer: Less than significant impact

While wind or water erosion of soils may occur as potential short-term impact as discussed in 1.e, above, construction sites are required to retain sediments on site, either under a general construction storm water permit or through the construction program of the applicable MS4 permit-both of which are already designed to minimize or eliminate erosion impacts on receiving water. Appropriate Best Management Practices, as established in the project's National Pollutant Discharge Elimination System Construction Storm Water Permit, shall be employed at all construction sites. Such measures may include, but are not limited to, temporary sand bagging, construction of berms, installation of geofabric, and revegetation of areas by hydroseeding and mulching. The degree of potential erosion or deposition is not extensive enough to modify the channel of a river, stream or bed of the ocean, any bay inlet or lake.

1. Earth. g. Will the proposal result in exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?

Answer: Less than Significant

No impact is expected. Although areas of the watershed are subject to geologic hazards, geotechnical studies prepared at the project level would ensure that treatment facilities or BMPs were not employed in these areas in order to mitigate potential impacts to a less than significant level. It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in exposure of people or property to geologic hazards. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in sensitive areas.

Construction and installation of pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells would not cause or accelerate instability due to on- or off-site landslides, lateral spreading, subsidence, expansive soils, liquefaction, or collapse. New water desalter and blending facilities would not be of the size or scale to result in unstable earth conditions, changes in geologic substructures, topography or ground surface relief features, or destruction, covering or modification of any unique geologic or physical features.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

2. Air. a. Will the proposal result in substantial air emissions or deterioration of ambient air quality?

Answer: Less than significant impact with mitigation incorporated

Short term increases in traffic during the construction and installation of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells are potential sources of increased air pollutant emissions.

Air pollutant emissions generated by construction activities would include exhaust emissions and wind-blown (fugitive) dust. Pipeline installation activities would include access road construction, vegetation clearing, trenching, pipe laying, trench backfilling, dewatering, and transportation (materials, equipment and workers). Construction of the pumping plants, well treatment plants, and water blending facilities would involve building pad grading, transportation and erection of mechanical, electrical and fluid systems and installation of piping and electrical connections.

Construction-related PM_{10} emissions may cause or substantially contribute to local exceedances of the State PM_{10} standard or cumulatively hinder progress towards attainment of the State PM_{10} standard. In addition, dust generated by construction activities immediately adjacent to residences may be considered a nuisance and violate APCD Rule 51. However, the following dust control measures are available to reduce the impacts of dust.

- Removal of vegetation and ground disturbance shall be limited to the minimum area necessary to complete project construction activities. Vegetative cover shall be maintained on all other portions of the project area.
- Regular ground wetting of exposed soils and sediments, and unpaved access roads shall be conducted during construction to control fugitive dust emissions.
- Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- All graded and excavated material, exposed soil areas, and active portions of project construction sites, 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.

- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), 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 his/her discretion in conjunction with the APCD in determining when winds are excessive.
- Silt containing material excavated, stockpiled or transported during construction shall be wetted regularly.
- On-site construction vehicle speed shall be limited to 15 miles per hour in unpaved areas.
- Trucks transporting backfill material to the project site shall be covered or maintain a minimum two-foot freeboard; and
- Roadways in the vicinity of construction access points shall be swept as necessary to prevent the accumulation of silt.

Construction-related NO_x and ROC emissions are not considered significant impacts due to their short-term nature. However, these emissions may cause or substantially contribute to local exceedances of the State ozone standard or cumulatively hinder progress towards attainment of the State ozone standard. Therefore, the following measures may be included in the project's construction specifications to reduce impacts:

- Minimizing idling time; and
- Maintaining engines in good condition and proper tune.
- The number of pieces of equipment in operation at any one time shall be minimized.
- Alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, shall be used if feasible.

The potential re-suspension of sediments and associated pollutants during construction could also impact air quality. An operations plan for the specific construction and/or maintenance activities could be completed to address the variety of available measures to limit the air quality impacts. These could include vapor barriers and moisture control to reduce transfer of small sediments to air.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

2. Air. b. Will the proposal result in creation of objectionable odors?

Answer: No impact

Odors are generated by existing wastewater treatment facilities, such as the Camrosa Water Reclamation Facility, Camarillo Wastewater Treatment Plant, Ventura County Wastewater Treatment Plant, Hill Canyon Wastewater Treatment Facility, and Simi Valley Water Quality Control Plant. However, odor generation is generally controlled by management practices such as aeration, closed vessels and drying (sludge). The RSMP and RWRMP projects do not involve wastewater treatment, such that no odor impacts associated with wastewater treatment would occur.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

2. Air. c. Will the proposal result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?

Answer: No Impact

Foreseeable methods of compliance would not be of the size or scale to result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

3. Water. a. Will the proposal result in changes in currents, or the course of direction or water movements, in either marine or fresh waters?

Answer: Potentially significant

The course of direction or water movement may change depending on the choice and implementation of compliance measures. For instance, the Phase 1-related surface flow impact would reduce the potential for Conejo Creek and Calleguas Creek to support beneficial uses identified in the Basin Plan and is considered significant, including maintenance of freshwater habitat, wildlife habitat and wetland habitat. These impacts are discussed further in the Biological Resources section. Post-Phase 1 surface flows would be adequate to meet water supply and groundwater replenishment uses, as the project would increase agricultural water supplies in the region and reduce groundwater use.

The State Water Resources Control Board (SWRCB) approved modifications of the instream flow regime of Conejo Creek pursuant to the City of Thousand Oaks' permitted water right Application 29408 and wastewater change petition WW#6. The SWRCB's determination is documented in the SWRCB's Water Rights Decision 1638, September

18, 1997. The City of Thousand Oaks applied to divert water from Conejo Creek attributable to its wastewater discharges from the Hill Canyon Wastewater Treatment Plant and return flows from applied imported water originating from the city. In approving the City's water right permit, the SWRCB established instream flow requirements. In summary, the flow requirements mandate that a 6 cubic feet per second (cfs) minimum flow be maintained downstream of the point of diversion. The point of diversion is located on Conejo Creek immediately downstream from U.S. Highway 101. The proposed project does not seek to change this flow requirement, and in the analysis that follows uses the SWRCB's 6 cfs flow below U.S. Highway 101 as the baseline for the proposed operation of replenishment water in the later phases of the project.

In the latter phases of the RWRMP project, water currently diverted as part of the City of Thousand Oaks's water right by the Conejo Creek Diversion Project would be recycled directly from the Hill Canyon Wastewater Treatment Plant. The Conejo Creek Diversion would still serve to regulate replenishment flows. The benefit of the current operation of the Conejo Creek Project in reducing demands for imported water and groundwater would continue. The minimum 6 cfs flow shall be maintained downstream of the point of diversion.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

3. Water. b. Will the proposal result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?

Answer: Less than significant impact with mitigation incorporated

Absorption rates, drainage patterns, and surface water runoff may change depending on the chosen compliance alternative. Changes in drainage patterns and the rate and amount of surface water runoff will occur if groundwater recharge is diverted and/or captured and treated to achieve compliance with the TMDL. Reduction in surface water runoff resulting from the water conservation program and the use of infiltration devices and other structural BMPs would be considered a positive environmental impact, as there would conceivably be a corresponding reduction in salts loading associated with urban and storm water runoff. Such devices address the effects of development and increased impervious surfaces in the watershed.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

3. Water. c. Will the proposal result in alterations to the course of flow of flood waters?

Answer: Less than significant impact with mitigation incorporated

Termination or reduction of discharge of Camarillo WRP effluent to Conejo Creek would reduce surface flow. However, surface flow would be maintained at a minimum of 6 cfs at the Conejo Creek Diversion as required by the City of Thousand Oaks water rights permit. The reduction in surface flow will likely reduce peak floodwater flows as some of these peak flows constitute a potential flooding hazard and/or a safety hazard to residents in near-vicinity. In addition, reduction in surface water runoff resulting from the use of structural and non-structural BMPs would also be considered a positive environmental impact and reduce peak floodwater flows.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

3. Water. d. Will the proposal result in change in the amount of surface water in any water body?

Answer: Potentially significant impact

Termination or reduction of discharge of Camarillo WRP effluent to Conejo Creek and maybe termination of the Hill Canyon WWTP effluent discharge would reduce surface flow. However, surface flow would be maintained at a minimum of 6 cfs at the Conejo Creek Diversion as required by the City of Thousand Oaks water rights permit. This volume is considered sufficient to maintain riparian vegetation and wetlands in Conejo Creek and Calleguas Creek. However, flow reductions would substantially reduce the depth and extent of instream pools, especially during drought periods. Surface flow shall be augmented to maintain habitat for arroyo chub in Calleguas Creek. Surface flow in Calleguas Creek at Route 1 shall not decrease below 2.6 cfs, measured as a monthly average. This value represents the modeled lowest monthly (July) minimum for current conditions, to ensure pool habitat is available during the dry season. Flow augmentation shall be provided by reducing the amount of surface flow diversion at the Conejo Creek Diversion.

3. Water. e. Will the proposal result in discharge to surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?

Answer: Less than significant with mitigation

Compliance with the proposed Basin Plan Amendment aims will alter surface water quality by reducing the amount of salts that enters the Calleguas Creek and increasing the amount of salts export out of the watershed. This salts reduction will positively impact water quality and associated beneficial uses of surface waters, including agricultural supply, groundwater recharge, and other beneficial uses. This project will

not foreseeably result in negative impacts to temperature, dissolved oxygen, or turbidity in Calleguas Creek.

The proposed pipeline system will require an ocean outfall. The ocean outfall of the proposed pipeline system would receive four types of wastewater: tertiary-treated wastewater from the POTWs, RO effluent from POTWs, RO effluent from groundwater wells, and effluent from existing outfall users which could effect water quality. Water quality standards of the California Ocean Plan for ammonia, copper and mercury would be exceeded at the Ormond Beach outfall, under design flow rates when the power plant was not pumping cooling water through the outfall. Calleguas MWD must meet the water quality standards of the Ocean Plan and obtain a discharger permit from the Regional Board. Project related wastewater flow would be controlled/mitigated through water quality testing of the wastewater to be discharged to the brine disposal system and monitoring of ocean discharge water quality. Prior to any discharge to the proposed pipeline system, each prospective discharger shall complete an ocean impact analysis using a dilution model acceptable to the Regional Board. Extensive water quality testing shall be conducted on the prospective water source using methods and minimum levels consistent with the Ocean Plan. The discharger shall demonstrate compliance with the effluent limitations of the Ocean Plan and any other requirement of the NPDES permit issued for the proposed project. Calleguas MWD is currently working with the Regional Water Quality Control Board to develop dilution ratios and effluent limits that would ensure compliance with the California Ocean Plan.

3. Water. f. Will the proposal result in alteration of the direction or rate of flow of ground waters?

Answer: Potentially significant impact

Currently, baseflow generated by rising water from the Conejo Valley Groundwater Basin and discharge of effluent from the Hill Canyon WTP maintains high groundwater levels in Hill Canyon. Some reduction in groundwater levels in Hill Canyon may occur with termination of effluent discharge and production of groundwater from the Conejo Valley Groundwater Basin. A flow monitoring and groundwater study shall be conducted to:

- Identify changes in baseflow in Arroyo Conejo that may occur as a result of groundwater production in the Conejo Valley Groundwater Basin;
- Identify potential changes in groundwater elevations in Hill Canyon associated with changes in baseflow and termination of discharge of effluent from the Hill Canyon WTP;
- Determine the change in wetted surface area in Hill Canyon associated with changes in baseflow and groundwater elevations; and
- Identify and implement mitigation measures to offset impacts to groundwater recharge

3. Water. g. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

Answer: Potentially significant impact

The RWRMP for northern and southern reaches of the Calleguas Creek watershed includes pumping and treatment of unconfined aquifers that currently contain groundwater with high salts concentrations to improve groundwater quality and export salts out of the watershed. The higher pumping rates will remove the poorer quality water and allow recharge by higher quality surface water into the groundwater basin. Additionally, the brine from the treatment process will be discharged to the RSMC and moved out of the watershed to the ocean. The treatment of groundwater will positively impact groundwater quality and associated beneficial uses of groundwater and surface waters, including agricultural supply, groundwater recharge, and other beneficial uses. This project will not foreseeably result in negative impacts to quality of groundwater

3. Water. h. Will the proposal result in substantial reduction in the amount of water otherwise available for public water supplies?

Answer: Less than significant impact

Proposed implementation action for the salts TMDL includes termination of the effluent from the Camarillo (and potentially in the future Hill Canyon WTP effluent). Termination of the POTWs' effluents would reduce surface flow. However, POTWs' effluent will be introduced directly into the Camrosa recycled/non-potable water distribution system for agricultural irrigation purposes. Recycle and reuse treated wastewater will be done to the greatest extent possible to reduce dependence on imported water and associated salt loading to the watershed. Groundwater with high salts concentration will also be treated to provide a reliable, high-quality, water supply to support the existing beneficial in the watershed. The overall goal of the project is to provide an adaptive management plan and the facilities to improve the reliability of local water resources and reduce dependence on imported water without resulting in substantial reduction in the amount of water available for public water supply.

3. Water. i. Will the proposal result in exposure of people or property to water related hazards such as flooding or tidal waves?

Answer: Less than significant impact with mitigation incorporated

Depending on the implementation methods chosen, compliance with the proposed TMDL may result in flooding hazards if structural methods of salts reduction are not properly designed and constructed. Potential impact can be mitigated through proper design and maintenance of these compliance structures.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

4. Plant Life. a. Will the proposal result in change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?

Answer: Potentially significant

Certain areas of sensitive riparian plant communities/habitat (southern riparian scrub, arroyo willow riparian forest, southern willow scrub, and freshwater marsh) in the Calleguas Creek watershed would be temporarily affected by project construction, and arroyo willow riparian forest in some areas would be permanently affected by project activities. Due to the rarity of riparian plant communities in the watershed, temporary and permanent impacts to sensitive plant communities are considered potentially significant. Non-listed special-status wildlife species are likely to occur within or near project sites. These species would be adversely affected by construction activities and loss of habitat. Mitigation measures shall be developed to avoid, minimize or offset impacts to the extent feasible. Impact areas located within or adjacent to native vegetation shall be staked in the field by a surveyor, in coordination with project partner agencies and the construction contractor, immediately prior to the initiation of construction. Construction activities shall be monitored in the vicinity of sensitive habitats and known locations of special-status species, to ensure no disturbance occurs outside the staked impact area. The monitor shall be approved by responsible parties and have completed coursework in biology and conservation. The monitor shall work with designated staff and the construction contractor to modify the impact area as needed to minimize impacts and meet the goals of the project. All construction activity associated with installation or replacement pipeline shall be limited to the Lewis Road right-of-way to avoid potential impacts to special-status plant species.

A restoration plan shall be developed by responsible parties to restore pre-construction topography, and replace wetlands, native plant communities and wildlife habitat affected by project construction. Affected areas shall be returned to pre-construction conditions, or better, in terms of native plant cover, species composition and diversity. The plan shall be prepared in coordination with trustee agencies and include erosion control methods and materials, specific planting areas, plant palettes, sources of plant material, propagation methods, planting methods, monitoring and maintenance methods and success criteria. The restoration plan shall be completed and approved by regulatory agencies (if required) prior to the initiation of construction. Restoration shall be implemented within one year of the completion of construction. Removal of invasive plant species shall be conducted to offset permanent impacts associated with pipe bridges.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

4. Plant life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of plants?

Answer: Potentially significant

Conejo buckwheat (State-listed rare) occurs on rock outcrops immediately east of Hill Canyon Road and may be impacted by dust generated by pipeline installation and debris generated by blasting of bedrock. Conejo buckwheat populations shall be protected in place from pipeline installation activities along Hill Canyon Road. Protective measures shall be developed in coordination with CDFG and may include a temporary solid barrier to prevent inadvertent losses and dust impacts.

Impacts to native trees may include removal of coast live oaks and California black walnuts. Removal of oaks would be contrary to the City of Thousand Oaks oak tree ordinance (Section 5-14 of the Municipal Code). One of the black walnut trees to be removed meets the definition of a landmark tree under the City's landmark tree ordinance (Section 5-24 of the Municipal Code). Removal of oak trees and landmark tree is considered a significant impact. Mitigation measures shall be developed to avoid, minimize or offset impacts to the extent feasible. The dripline of all oak trees in close proximity to the pipeline installation work area shall be fenced. The pipeline alignment and work area shall be modified to the extent feasible to avoid impacts to oak trees and landmark trees. All oak trees greater than two inches in diameter at breast height removed or damaged shall be replaced with two 24-inch box specimens and one 36-inch box specimen, for each oak tree removed or damaged.

The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board recommends that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

4. Plant life. c. Will the proposal result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?

Answer: Less than significant

It is not reasonably foreseeable that potential projects associated compliance with Calleguas Creek watershed Salts TMDL would result in the introduction of exotic or invasive plant species into an area. Nor will potential projects result in a barrier to the normal replenishment of existing species. However, in the case that a restoration plan is incorporated into the specific project design, the possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. In any event, use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California (1999, California Invasive Plant Council, as amended) should be prohibited.

4. Plant life. d. Will the proposal result in reduction in acreage of any agricultural crop?

Answer: Less than significant impact with mitigation incorporated

The Important Farmlands Inventory (IFI) system is used by the USDA Natural Resources Conservation Service (NRCS) to map and classify lands that have agricultural value. This

system divides farmland into classes based upon soil type and the productive capability of the land. These classes are similar to California's Department of Conservation Farmland Mapping and Monitoring Program described above. The County of Ventura uses this system to inventory agricultural lands.

The proposed actions would be constructed using Federal funding (in part); therefore, it must comply with the Farmland Protection Policy Act (FPPA). The FPPA requires the NRCS (formerly the Soil Conservation Service) to determine the acres and classification (Prime, Statewide, Unique, Local) of farmlands to be converted to other uses by proposed Federally funded projects.

Ventura County has adopted four programs to preserve farmland:

- Agricultural land use designation establishing a 40 acre minimum parcel size and Agriculture-Exclusive zoning;
- Greenbelt agreements to prevent urban encroachment;
- Land Conservation Act (LCA) contracts to provide property tax reductions as an incentive to maintain agricultural use; and
- Participation in water resources development and conservation programs to ensure long-term water availability for agriculture.

Several cities in Ventura County, the Local Agency Formation Commission (LAFCO) and the County have adopted greenbelt agreements between jurisdictions to further the objectives of the County's Guidelines for Orderly Development by preserving agriculture and open space between urban areas. The underlying purpose of a greenbelt is to establish a mutual agreement between cities regarding the limit of urban growth for each city. Annexation is discouraged within greenbelts. Any change to those boundaries would require mutual consent between the cities and LAFCO. These agreements have established a policy of non-annexation and retention of open space within parts of Ventura County. Greenbelts in the project area include the Oxnard-Camarillo Greenbelt (located southwest of Camarillo) and the Santa Rosa Valley Greenbelt (located east of Camarillo). Two of the new recycled water service areas (Pleasant Valley and eastern Camarillo) and most of the Phase 1pipelines would be located within the Oxnard-Camarillo Greenbelt. The proposed new recycled water service area in Santa Rosa Valley would be located east of the Santa Rosa Valley Greenbelt.

A primary tool to preserve farmlands is the California Land Conservation Act (LCA) or Williamson Act contract program. Under the Act, landowners may voluntarily enter into a long-term contract (10 year minimum) to maintain their property in agriculture or open space in exchange for reduced property tax assessment. The term of an LCA contract is generally 9 years, and automatically renews itself for another 10-year-period unless a Notice of Non-Renewal is filed. Since its inception in 1962, the program has been the backbone of agricultural preservation efforts statewide. Several LCA Contracts have been established within the project area.

The County of Ventura and eight cities in the County (Ventura, Camarillo, Oxnard, Simi Valley, Thousand Oaks, Moorpark, Santa Paula, Fillmore) have enacted Save Open Space and Agricultural Resources (SOAR) ordinances or initiatives. The County SOAR ordinance requires voter approval to allow development of lands with agricultural, open

space and rural land use designations. The city SOAR ordinances establish a city urban restriction boundary and require voter approval for development outside the boundary. SOAR ordinances make it difficult to convert farmlands as it requires voter approval and costs of the placing the project on the ballot is the responsibility of the applicant.

Pipeline installation would generally require an easement to be purchased from property owners for construction and maintenance. Agricultural crops may, depending on the crop and season, require removal and reimbursement within the maximum 75-foot-wide disturbance corridor.

Project impacts to agricultural resources may include temporary loss of access and production during the construction period, which would vary from several weeks to several months at any one location. Construction of permanent access roads would not be required along the temporary or permanent easements. Instead, existing access roads would be used, and compatible agricultural operations would be allowed to continue within the permanent easement overlying the pipeline right-of-way, resulting in no permanent loss of farmlands. Proposed implementation actions would have no foreseeable impact on the acreage of any agricultural crop.

5. Animal Life. a. Will the proposal result in change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?

Answer: Potentially significant impact

Termination of discharge of Camarillo WRP effluent to Conejo Creek would reduce surface flow. Flow reductions would substantially reduce the depth and extent of instream pools, especially during drought periods. These pools primarily support introduced species such as bullfrogs and bullhead. However, the arroyo chub is a native species of special concern that would be adversely affected by the reduction in pool area and depth. Nesting migratory birds including raptor species protected under the California Fish and Game code have been identified in the project area through recent field surveys and literature research.

Surface flow shall be augmented to maintain habitat for arroyo chub in Calleguas Creek. Flow augmentation shall be provided by reducing the amount of surface flow diversion at the Conejo Creek Diversion to ensure stream pool habitat is maintained. Focused wildlife surveys shall be conducted at all creek crossings and areas supporting native vegetation prior to the initiation of construction by a qualified biologist to identify the presence and distribution of special-status wildlife species. Mitigation measures shall be developed to avoid, minimize or offset impacts to the extent feasible, and may include:

- Modifying the pipeline alignments or structure locations to avoid or minimize loss of habitat;
- Limit construction activities to the non-breeding season (August 15 to March 1);
- Maintain surface flow through the construction area;
- Relocating aquatic species (arroyo chub and two-striped garter snake) during dewatering (if needed) or other instream construction activities; and

- Reducing population levels of invasive species (giant reed, crayfish, bullfrogs, large-mouth bass) that reduce habitat value for special-status species.

Breeding bird surveys shall be conducted by Camrosa (or project partner agencies) in May and June prior to the initiation of construction at all proposed creek crossings and pipeline segments adjacent to creeks. Surveys shall include all suitable habitat within 500 feet of identified impact areas. No heavy equipment shall be operated within 200 feet of any active nest of migratory bird species unless authorized by the appropriate resource agency.

5. Animal Life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of animals?

Answer: Potentially significant

Depending on the implementation method chosen, it is possible that direct or indirect impacts to special-status animal species may occur. Because these animal species are protected by state and/or federal Endangered Species Acts, impacts to them would be considered potentially significant. Even though, it is expected that potential projects would occur in previously developed areas it is possible for special-status species to occur in what would generally be described as urban areas. If these species are present during activities such as, ground disturbance, construction, operation and maintenance activities associated with the potential projects, it could conceivably result in direct impacts to special status species including the following:

Direct loss of a sensitive species
Increased human disturbance in previously undisturbed habitats
Mortality by construction or other human-related activity
Impairing essential behavioral activities, such as breeding, feeding or shelter/refugia
Destruction or abandonment of active nest(s)/den sites
Direct loss of occupied habitat

In addition, potential indirect impacts may include but are not limited to, the following:

Displacement of wildlife by construction activities
Disturbance in essential behavioral activities due to an increase in ambient noise levels and/or artificial light from outdoor lighting around facilities

Responsible agencies should endeavor to avoid compliance measures that could result in significant impacts to unique, rare or endangered (special-status) species, should any such species be present at locations where such compliance measures might otherwise be performed, and instead opt for such measures as enforcing litter ordinances in sensitive habitat areas. Mitigation measures, however, could be implemented to ensure that potentially significant impacts to special status animal species are less than significant. When the specific projects are developed and sites identified a search of the California Natural Diversity Database could be employed to confirm that any potentially special-status animal species in the site area are properly identified and protected as necessary. Focused protocol animal surveys for special-status animal species will be conducted at each site location.

If special-status animal species are potentially near the project site area, as required by the Endangered Species Act (ESA), two weeks prior to grading or the construction of facilities and per applicable USFWS and/or CDFG protocols, pre-construction surveys to determine the presence or absence of special-status species will be conducted. The surveys should extend 300 feet off site to determine the presence or absence of any special-status species adjacent to the project site. If special-status species are found to be present on the project site or within the 300 feet buffer area mitigation would be required under the ESA. To this extent mitigation measures shall be developed with the USFWS and CDFG to reduce potential impacts. Mitigation can include nighttime lighting shall be angled down and away from potential habitat areas. Furthermore, the use of prismatic glass coverings and cutoff shields is recommended to further prevent light spillover off site.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

5. Animal Life. c. Will the proposal result in introduction of new species of animals into an area, or in a barrier to the migration or movement of animals?

Answer: Less than significant impact

It is not reasonably foreseeable that proposed implementation actions will result in the introduction of a new animal species. Construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells would not considerably restrict wildlife movement. A travel route is generally described as a landscape feature (such as a ridgeline, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g. water, food, den sites). Wildlife corridors are generally an area of habitat, usually linear in nature, which connect two or more habitat patches that would otherwise be fragmented or isolated from one another. It is considered unlikely that proposed implementation actions would be constructed in areas such as these.

However, proposed actions may potentially impact wildlife crossings. A wildlife crossing is a small narrow area relatively short and constricted, which allows wildlife to pass under or through obstacles that would otherwise hinder movement. Crossings are typically manmade and include culverts, underpasses, and drainage pipes to provide access across or under roads, highways, or other physical obstacles.

Construction activities associated with the implementation of the salts TMDL such as the brineline system may impact migratory avian species. These avian species may use portions of potential project sites, including ornamental vegetation, during breeding season and may be protected under the Migratory Bird Treaty Act (MBTA) while nesting. The MBTA includes provisions for protection of migratory birds under the authority of the

USFWS and CDFG. The MBTA protects over 800 species including, geese, ducks, shorebirds, raptors, songbirds, and many other relatively common species.

If structural methods of implementation are chosen at locations where they would foreseeably adversely impact species migration or movement patters, mitigation measures could be implemented to ensure that impacts which may result in a barrier to the migration or movement of animal is less than significant.
Any site-specific wildlife crossings should be evaluated in consultation with CDFG. If a wildlife crossing would be significantly impacted in an adverse manner, then the design of the project should include a new wildlife crossing in the same general location.

If construction occurs during the avian breeding season for special status species and/or MBTA-covered species, generally February through August, then prior (within 2 weeks) to the onset of construction activities, surveys for nesting migratory avian species will be conducted on the project site following USFWS and/or CDFG guidelines. If no active avian nests are identified on or within 200 feet of construction areas, no further mitigation would be necessary.

Alternatively, to avoid impacts, the agencies implementing the TMDL may begin construction after the previous breeding season for covered avian species and before the next breeding season begins. If a protected avian species was to establish an active nest after construction was initiated and outside of the typical breeding season (February – August), the project sponsor, would be required to establish a buffer of 200 feet or as required by USFWS between the construction activities and the nest site.

If active nest for protected avian species are found within the construction footprint or within the 200-foot buffer zone, construction would be required to be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation are developed in consultation with USFWS or CDFG. These impacts are highly site specific, and assuming they are foreseeable, they would require a project-level analysis and mitigation plan.

Finally, to the extent feasible, responsible agencies should endeavor to avoid compliance measures that could result in significant barriers to the beneficial migration or movement of animals, and instead opt for such measures as enforcing litter ordinances in sensitive areas.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

5. Animal Life. d. Will the proposal result in deterioration to existing fish or wildlife habitat?

Answer: Potentially significant

Non-listed special-status wildlife species are likely to occur within or near project sites . These species would be adversely affected by construction activities and loss of habitat.

These affects are considered a potentially significant impact. Focused wildlife surveys shall be conducted at all creek crossings and areas supporting native vegetation prior to the initiation of construction by a qualified biologist to identify the presence and distribution of special-status wildlife species. Mitigation measures shall be developed to avoid, minimize or offset impacts to the extent feasible, and may include:

- Modifying the pipeline alignments or structure locations to avoid or minimize loss of habitat;
- Limit construction activities to the non-breeding season (August 15 to March 1);
- Maintain surface flow through the construction area;
- Relocating aquatic species (arroyo chub and two-striped garter snake) during dewatering (if needed) or other instream construction activities; and
- Reducing population levels of invasive species (giant reed, crayfish, bullfrogs, large-mouth bass) that reduce habitat value for special-status species

6. Noise. a. Will the proposal result in increases in existing noise levels?

Answer: Potentially significant

Depending on the implementation strategy chosen, the proposal may result in increases in existing noise levels, particularly in the case of construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. The potential for increased noise levels due to construction is limited and short-term. These short-term noise impacts can be mitigated by implementing commonly-used noise abatement procedures, standard construction techniques such as sound barriers, mufflers and employing restricted hours of operation. However, nighttime work may be required for tunneling under Calleguas Creek, Arroyo Simi and U.S. 101, which would significantly impact residences in Moorpark. Nighttime exceedances of noise thresholds are considered a significant impact. Community participation should be actively sought through open dialog between the implementing agency and affected parties. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

6. Noise. b. Will the proposal result in exposure of people to severe noise levels?

Answer: Potentially significant

Depending on the implementation methods chosen, the proposal may result in increases in exposure of people to severe noise levels, particularly in the case of construction of new pipeline systems, expansion of the recycled water transmission and distribution system, treatment of unconfined aquifers, development of existing and new water desalter and blending facilities, relocation of the wastewater discharge point, installation of wells to pump poor quality groundwater, and construction of shallow dewatering wells. The potential for severe noise levels due to construction is limited and short-term. Contractors and equipment manufacturers have been addressing noise problems for many years and through design improvements, technological advances, and a better understanding of how to minimize exposures to noise, noise effects can be minimized. An operations plan for the specific construction and/or maintenance activities could be done to address the variety of available measures to limit the impacts from noise to adjacent homes and businesses. These could include: (1) reducing the levels of noise from the source. This can be done by using newer, quieter equipment which may be hydraulic or electric, or if diesel, have mufflers to reduce the noise, (2) installing noise barriers or curtains around the noisy equipment, (3) reducing the time, and in some cases, season of exposure to noise, (4) reducing the distance of the noise making machinery from the receptors where possible, and (5) actively seeking community participation through open dialog between the implementing agency and affected parties.

Well treatment plants would produce noise during nighttime operation and may exceed the standards of the City's Municipal Code at adjacent residences. This long-term noise impact is considered significant. The well treatment plants shall be enclosed in a masonry block building to reduce project-related noise levels at adjacent residences. Noise measurements shall be conducted during initial operation of the treatment plant to verify noise levels comply with the City's Municipal Code (45 dBA 9 pm to 7 am, 55 dBA 7 am to 9 pm) at the nearest residences. If noise measurements indicate noise levels exceed standards set by the City's Municipal Code, additional noise attenuation materials/designs shall be implemented as needed to comply.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

7. Light and Glare. Will the proposal produce new light or glare?

Answer: Less than significant

Implementation of the proposed Basin Plan amendment is not likely to produce new light or glare because none of the reasonably foreseeable means of compliance involve additional lighting. Should night time construction activities be proposed, or should lighting be used to increase safety around treatment facilities, potential impacts should be evaluated at the project level. A lighting plan could be prepared to include shielding on all light fixtures and address limiting light trespass and glare through the use of shielding and directional lighting methods, including but not limited to, fixture location

and height. Potential mitigation efforts may also include screening and low-impact lighting.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

8. Land Use. a. Will the proposal result in substantial alteration of the present or planned land use of an area?

Answer: Less than significant impact with mitigation incorporated

Project consistency with the policies of the Ventura County General Plan, City of Oxnard 2020 General Plan and City of Oxnard Coastal Land Use Plan for the RSMP and the RWRMP were assessed. In addition, consistency with the Fox Canyon Groundwater Management Agency's Groundwater Management Plan was assessed. The proposed implementation actions are consistent with each of these plans. In fact, the wastewater reclamation and groundwater recovery projects that would serve the proposed pipeline system are considered as water conservation benefits of the Draft Groundwater Management Plan Update.

A diversion structure would be located at Point Hueneme and would include a masonry structure, valves and associated piping. The precise location of this facility has not been determined; however, it would be located in a CDI zone. The construction and operation of the diversion structure would be consistent with this zoning.

Pipeline installation would be accomplished using open trenching methods in most areas and tunneling methods such as boring and jacking for major crossings including larger creeks and State highways. The method of construction proposed for roadway, State highway and larger creek crossings is such that no direct impacts to these facilities would occur. Easements would be obtained as needed from property owners along the pipeline alignments. These may include temporary construction easements and permanent utility easements. Temporary easements would be used for storage and staging of equipment and materials, and permanent easements would accommodate the pipeline. Generally, the pipeline would be located within or immediately adjacent to existing roadway rights-of-way or within agricultural areas. The presence of the pipeline would not displace existing development or preclude future development along these roadway corridors. In addition, the pipeline would be buried at least 5 feet deep, allowing for continued agricultural land use within the permanent pipeline easement. However, pipeline installation would primarily occur within or adjacent to roadway and VCFCD rights-of-way, and would require creek and roadway crossings. These crossings may adversely affect the operation of public works facilities, including roadways and flood control channels. The proposed projects would comply with standard encroachment permit conditions, which would include traffic control procedures and payment of appropriate fees for damage to roadway infrastructure among others. No significant impacts to roads would occur. The proposed State highway crossings should comply

with the encroachment permit procedures and conditions to avoid any significant impacts to State Highways from project construction.

VCFCD has generated new 100-year flood flow rates for the watershed which are higher than those used to prepare the Flood Insurance Rate Maps for the area. Therefore, VCFCD anticipates the future necessity for installing additional flood control improvements to protect land uses from flood waters. Installation of the proposed pipeline within these areas of future work is not desired as it would require relocation of the pipeline. For pipeline areas that are proposed within Ventura County fee ownership areas, Calleguas Municipal Water District would need to obtain an encroachment permit from the VCFCD. The proposed pipeline would be fully buried and would not add fill to flood prone areas, such that no increase in storm water elevations would occur. Any flood control facilities affected during pipeline installation would be fully repaired as part of encroachment permit conditions and construction specifications.

Upon completion of construction, all pipelines would be subsurface; during the life of the project there is the potential for routine maintenance to occur on the pipeline. Long-term or blanket permits/agreements are provided to utilities by the County Transportation Division, City of Oxnard and Caltrans for the routine inspection and repair of such infrastructure. For pipeline segments within VCFCD rights-of-way, Calleguas would be required to obtain an encroachment permit any time repair work needs to be conducted. Any public works facilities affected during pipeline maintenance would be fully repaired as part of encroachment permit conditions and/or construction specifications. Therefore, no significant land use impacts to roadways are expected. Since the pipeline would be subsurface, it would not result in any other long-term land use conflicts.

Potential conflicts between implementation efforts and other land uses can be resolved by standard planning efforts under which specific projects are reviewed by local planning agencies. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined.

9. Natural Resources. a. Will the proposal result in increase in the rate of use of any natural resources,

Answer: No impact

Implementation of the proposed Basin Plan amendment is not foreseeably likely to significantly increase the rate of use of any natural resources or cause substantial depletion of any nonrenewable natural resource. The proposed project would not require quarrying, mining, dredging, or extraction of locally important mineral resources. Treatment facilities may consume electricity to operate pumps, R.O., etc.

9. Natural Resources. b Will the proposal result in substantial depletion of any non-renewable natural resource

Answer: No impact

See 9. a.

10. Risk of Upset Will the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?

Answer: Less than significant impact with mitigation incorporated

It is not reasonably foreseeable that implementation of the proposed Basin Plan amendment would involve a risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions. Nor would it foreseeably result in any increased exposure to hazards or hazardous material. While some use of hazardous materials (e.g., paint, oil, gasoline) is likely during construction, potential risks of exposure can be mitigated with proper handling and storage procedures.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?

Answer: No impact

It is not reasonably foreseeable that the proposed Basin Plan amendment would directly or indirectly induce population growth in the area, displace existing housing, or displace people.

12. Housing. Will the proposal **a**ffect existing housing, or create a demand for additional housing?

Answer: No impact

It is unlikely that the reasonable foreseeable impacts associated with construction, expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. The project would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population. As such, the project would not result in a direct or indirect significant increase in population growth of the area. The project would not result in the displacement of housing. As people would not be displaced as a result of project implementation, it would not be necessary to provide replacement housing.

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. It is unlikely that the reasonable foreseeable impacts associated with pipeline installation will directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. Pipeline installation would not result in the addition of housing to the area, or require long-term employees, that could result in an increase in population.

13. Transportation/Circulation. a. Will the proposal result in generation of substantial additional vehicular movement?

Answer: Less than significant impact with mitigation incorporated

The proposed project would primarily generate vehicle trips during the construction period, associated with delivery of materials and equipment, and worker transportation. Operation and maintenance activities associated with project operation are expected to be limited to a few trips per month and are considered negligible in terms of traffic impacts. It is difficult to anticipate the type of construction and associated trip generation rates at each construction site. Likewise, it is difficult to anticipate exactly how far apart each construction team would be working at any one time. It is possible that vehicles serving two teams may utilize the same roadways for a few months. This could lead to an increase of 200 vehicles per day (VPD) or 100 VDP per team for that portion of roadway during the days when the two teams are working close together. The addition of 200 average daily traffic (ADT) would not result in any change in Level of Service (LOS) or cause any of the roadways to fall to unacceptable levels (LOS E). Traffic impacts are considered less than significant.

Pipeline installation activities may result in lane closures and temporary detours. However, standard traffic control measures from the most current version of “Standard Specifications for Public Works Construction” by Public Works Standards, Inc., with regard to traffic and access, storage of equipment and materials in public streets, and street closures, detours and barricades would be fully implemented. Affected areas are mostly farmlands, with a few rural residences, and no traffic-dependent businesses. Access to these land uses would be maintained, including emergency access for public services (police and fire). Circulation impacts are considered less than significant.

All roadways disturbed during pipeline installation would be restored to their preconstruction condition. All railroad crossings would be completed through tunneling, such that no impact to facilities or operations is expected. Restoration of transportation facilities and requirements to minimize conflicts would be enforced through encroachment permits issued by the Ventura County Public Works Agency, affected city public works departments, Caltrans, and the Union Pacific Railroad. Compliance with these encroachment permits would result in less than significant impacts to transportation facilities.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

13. Transportation/Circulation. b. Effects on existing parking facilities, or demand for new parking?

Answer: Less than significant

The proposal may result in alterations to existing parking facilities during construction period of the treatment facilities. The treatment facilities can be designed to accommodate space constraints or be placed under parking spaces and would not significantly decrease the amount of parking available in existing parking facilities. Available parking spaces can be reconfigured to provide equivalent number of spaces or provide functionally similar parcel for use as offsite parking to mitigate potential adverse parking impacts.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

13. Transportation/Circulation. c. Will the proposal result in substantial impacts upon existing transportation systems?

Answer: Less than significant

The proposal implementation actions may result in temporary alterations to existing transportation systems during construction of the pipeline and treatment facilities. The potential impacts are limited and short-term. Potential impacts could be reduced by limiting or restricting hours of construction so as to avoid peak traffic times and by providing temporary traffic signals and flagging to facilitate traffic movement. As discussed previously, the addition of 200 ADT would not result in any change in LOS or cause any of the roadways to fall to unacceptable levels (LOS E).

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

13. Transportation/Circulation. d. Will the proposal result in alterations to present patterns of circulation or movement of people and/or goods?

Answer: Less than significant

See response to “Transportation/Circulation.” 13.b., and 13.c.

13. Transportation/Circulation. e. Will the proposal result in alterations to waterborne, rail or air traffic?

Answer: Less than significant impact with mitigation incorporated

In the vicinity of the Phase I project area of the RSMP, railroad corridors are limited to the Ventura County Railroad, which links Port Hueneme to the Union Pacific Railroad in Oxnard. The proposed pipeline segment would cross the Ventura County Railroad tracks at Hueneme Road. In the Phase II project area the Union Pacific Railroad operates tracks from Oxnard to Somis, and along SR 118 to Moorpark and Simi Valley. This proposed pipeline involved several crossing of the Union Pacific Railroad tracks. All railroad crossing would be completed through tunneling, such that no impact to facilities or operation is expected. Restoration of transportation facilities and requirement to minimize conflicts would be enforced through encroachment permits issued by the Ventura County Public Works Agency, affected by city public works departments, Caltrans and the Union Pacific Railroad. Compliance with these encroachment permits would results in less than significant impacts to transportation facilities.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

13. Transportation/Circulation. f. Will the proposal result in increase in traffic hazards to motor vehicles, bicyclists or pedestrians?

Answer: Less than significant impact with mitigation incorporated

The foreseeable methods of compliance may entail short-term disturbances during construction of pipeline and treatment facilities. The specific project impacts can be mitigated by appropriate mitigation methods during construction. To the extent that site-specific projects entail excavation in roadways, such excavations should be marked, barricaded, and traffic flow controlled with signals or traffic control personnel in compliance with authorized local police or California Highway Patrol requirements. These methods would be selected and implemented by responsible local agencies considering project level concerns. Standard safety measures should be employed including fencing, other physical safety structures, signage, and other physical impediments designed to promote safety and minimize pedestrian/bicyclists accidents. It is not foreseeable that this proposal will result in significant increases in traffic hazards to motor vehicles, bicyclists or pedestrians, especially when considered in light of those hazards currently endured in an ordinary urbanized environment.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

14. Public Service. a. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Fire protection?

Answer: Less than significant impact with mitigation incorporated

There is potential for temporary delays in response time of fire and police vehicles due to road closure/traffic congestion during construction activities. However, any construction activities would be subject to applicable building and safety and fire prevention regulations and codes. The responsible agencies could notify local emergency service providers of construction activities and road closures and could coordinate with local providers to establish alternative routes and appropriate signage. In addition, an Emergency Preparedness Plan could be developed for the construction of proposed new facilities in consultation with local emergency providers to ensure that the proposed project's contribution to cumulative demand on emergency response services is less than significant and would not result in a need for new or altered fire protection services. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of structural devices would create any more significant impediments than such other ordinary activities.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

14. Public Service. b. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Police protection?

Answer: Less than significant impact with mitigation incorporated

It is not foreseeable that this proposal will have an effect upon, or result in a need for new or altered any police protection services except for possible increased traffic control during construction projects and the potential for temporary delays in response time of police vehicles due to road closure/traffic congestion during construction activities. The responsible agencies could notify local police service providers of construction activities and road closures and could coordinate with local police providers to establish alternative routes and traffic control during construction projects. In addition, an Emergency Preparedness Plan could be developed for the proposed new facilities in consultant with local emergency providers to ensure that the proposed project's contribution to cumulative demand on emergency response services is less than significant and would not result in a need for new or altered police protection services. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of structural devices would create any more significant impediments than such other ordinary activities.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

14. Public Service. c. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Schools?

Answer: No impact

Proposed implementation strategies for this TMDL include water conservation, water softener reduction, best management practices for irrigated agriculture, and treatment of high salts concentration groundwater. It is not foreseeable that this proposal will have an effect upon, or result in a need for new or altered any school services.

14. Public Service. d. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Parks or other recreational facilities?

Answer: Less than significant impact

It is not foreseeable that this proposal will have a negative impact upon, or result in a need for new or altered governmental services to parks or other recreational facilities other than minor and temporary impacts due to construction projects.

14. Public Service. e. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: maintenance of public facilities, including roads?

Answer: No Impact

It is not foreseeable that this proposal will have a negative impact upon, or result in a need for new or altered governmental services to maintenance of public facilities, including roads.

14. Public Service. f. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: other government services?

Answer: Less than significant impact with mitigation incorporated

The proposal will result in the need for increased monitoring in the Calleguas Creek and it tributaries to track compliance with the TMDL and would result in the need for new or altered governmental services. Nevertheless, these types of alterations to governmental

services are not “environmental” impacts that involve a change in the physical environment.

15. Energy. a. Will the proposal result in use of substantial amounts of fuel or energy?

Answer: Less than significant impact

The foreseeable means of compliance with the proposed Basin Plan Amendment include treatment facilities which will require expenditure of fuel or energy. However, compliance should not result in the use of substantial additional amounts of fuel or energy, or a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy.

15. Energy. b. Will the proposal result in a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy.

Answer: Less than significant impact

See response to “15. Energy. a.”

16. Utilities and Service Systems. a. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: power or natural gas?

Answer: Less than significant impact

Installation of treatment facilities may require minor alterations to existing power or natural gas systems. Power, and natural gas lines might need to be rerouted to accommodate the addition of full capture systems. The degree of alteration depends upon local system layouts and careful placement and design can mitigate. However, it is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to power or natural gas utilities

16. Utilities and Service Systems. b. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: communications systems?

Answer: Less than significant impact

Implementation of this TMDL will require construction of pipeline and treatments facilities. It is anticipated that construction and maintenance crews will use various communication systems such as, telephones, cell phones, and radios. These types of communication devices and systems are used daily by the construction and maintenance personnel as part of regular business activities. It is not expected that the proposed implementation actions would create undue stress on the established communication systems and will not require substantial alterations to the current communication system or a new communication system.

16. Utilities and Service Systems. c. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: water?

Answer: Less than significant impact

Proposed implementation action for the salts TMDL includes water conservation, water softener reduction, best management practices for irrigated agriculture, and treatment of high salts concentration groundwater. Recycle and reuse treated wastewater will be done to the greatest extent possible to reduce dependence on imported water and associated salt loading to the watershed. Groundwater with high salts concentration will be treated to provide a reliable, high-quality, water supply to support the existing beneficial in the watershed and would also be considered a positive environmental impact. The overall goal of the project is to provide an adaptive management plan and the facilities to improve the reliability of local water resources and reduce dependence on imported water. It is not foreseeable that this proposal will result in a substantial increased need for new systems, or substantial alterations to water utilities.

16. Utilities and Service Systems. d. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: Sewer or septic tanks?

Answer: No impact

Implementation of this Basin Plan amendment involves a progressive reduction in salts discharges to the Calleguas Creek through water conservation program, water softener reduction, best management practices for irrigated agriculture, and treatment of high salts concentration groundwater. It is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to sewers or septic tanks.

16. Utilities and Service Systems. e. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: storm water drainage?

Answer: No Impact

Implementation of this Basin Plan amendment involves a progressive reduction in salts discharges to the Calleguas Creek through water conservation program, water softener reduction, best management practices for irrigated agriculture, and treatment of high salts concentration groundwater. It is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to storm water drainage.

16. Utilities and Service Systems. f. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: solid waste and disposal?

Answer: No Impact

Implementation of this Basin Plan amendment involves a progressive reduction in salts discharges to the Calleguas Creek through water conservation program, water softener reduction, best management practices for irrigated agriculture, and treatment of high salts concentration groundwater. It is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to solid waste and disposal system.

17. Human Health. a. Will the proposal result in creation of any health hazard or potential health hazard (excluding mental health)?

Answer: Less than significant impact with mitigation incorporated

See response to 10. Upset. Use of heavy equipment during construction may add to the potential for construction accidents. Unprotected sites may also result in accidental health hazards for people.

In addition, certain structural BMPs have may become a source of standing water. Any source of standing water can potentially become a source of vector production.

Potential health hazards attributed to construction and installation of pipeline and treatment facilities can be mitigated by use of OSHA construction and maintenance, health and safety guidelines. Potential health hazard attributed to BMP maintenance can be mitigated through OSHA industrial hygiene guidelines. Installation of non-vector producing BMPs can help mitigate vector production from standing water. Netting can be installed over structural BMPs and treatment facilities to further mitigate vector production. Treatment facilities and structural BMPs can be redesigned and sites can be properly protected to prevent accidental health hazards as well as prevent vector production. Vector control agencies may also be employed as another source of mitigation. Structural BMPs prone to standing water can be selective installed away from high-density areas and away from residential housing and/or by requiring oversight and treatment of those systems by vector control agencies.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

17. Human Health. b. Will the proposal result in exposure of people to potential health hazards?

Answer: Less than significant impact with mitigation incorporated

See response to 17 Human Health a.

18. Aesthetics. a. Will the proposal result in the obstruction of any scenic vista or view open to the public?

Answer: Potentially significant impact

Views of equipment, materials, exposed soils, trenches, and stockpiled soil during construction may temporarily reduce visual quality (scenic variety, visual sensitivity and visual condition). However, proposed project sites are not visible to the public and exhibits low visual quality. Therefore, construction-related aesthetics impacts are considered less than significant.

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. Views of equipment, materials, exposed soils, trenches, and stockpiled soil may temporarily reduce visual quality during construction. The alignment (including creek crossing) is visible to the public and exhibits distinctive scenic variety and moderate visual sensitivity. Views of construction activities would cause a short-term deterioration of visual quality. Although this impact is considered to be adverse, the change in visual quality would not be substantial because of its temporary nature and existing agricultural operations involve exposed soil and heavy equipment. Overall, construction-related aesthetics impacts are considered less than significant. However, pipeline installation would also involve the removal of native vegetation and the loss of coast live oak trees. The loss of these trees is considered significant due to the visual sensitivity of the area and distinctive scenic variety.

The pipeline alignment would be used to widen Hill Canyon Road, and permanently displace about 4 acres of vegetation. The long-term loss of vegetation (including oak trees) and widened Hill Canyon Road would degrade the visual condition in Hill Canyon. The long-term aesthetics impact is considered significant

The following measures are provided to minimize and offset aesthetics impacts associated with pipeline installation:

- The area of ground disturbance and vegetation removal associated with pipeline installation shall be minimized to the extent practical
- The dripline of all mature native trees in close proximity to the pipeline installation work area shall be fenced. The pipeline alignment and work area shall be modified to the extent feasible to avoid impacts to mature native trees.
- All oak trees greater than two inches in diameter at breast height removed or damaged shall be replaced with two 24-inch box specimens and one 36-inch box specimen, for each oak tree removed or damaged.
- All disturbed areas not affected by road widening shall be restored

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages and unlikely to be visible from public viewing areas. Subsequent analysis may be required by responsible parties as these facilities may be located near City streets. However, impacts are expected to be less than significant due to the small scale of these facilities and very limited number of persons affected.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

18. Aesthetics. b. Will the proposal result in the creation of an aesthetically offensive site open to public view?

Answer: Potentially significant impact

See response to 18 Aesthetic a.

19. Recreation. a. Will the proposal result in impact on the quality or quantity of existing recreational opportunities?

Answer: Less than significant impact with mitigation incorporated

Expansion and upgrading of groundwater treatment plan, waste water treatment plans, and water blending facilities may temporarily impact the usage of existing recreational sites. This only poses temporary impairment to recreational opportunities. Mitigation measures include incremental construction, expansion and upgrading of facilities located near parks, bike lanes, and other recreational sites to avoid impairment of the entire site. Once constructed, the pumping plant would not affect the usage of existing recreational sites. No long-term aesthetics impacts would occur. Therefore, construction-related parks and recreation impacts are considered less than significant.

Pipeline installation would be accomplished using typical trenching techniques, but would be bored and jacked under Calleguas Creek. A temporary access road would require along most of the alignment. It is not reasonably foreseeable that park land, recreational or open space areas will be needed for pipeline installation.

The replenishment facility sites have not been selected to date, but are expected to be located in areas adjacent to drainages and unlikely to be in existing recreational sites. Subsequent analysis may be required by responsible parties as these facilities may be located near recreational sites. However, impacts are expected to be less than significant due to the small scale of these facilities.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

20. Archeological/Historical. Will the proposal result in the alteration of a significant archeological or historical site structure, object or building?

Answer: Potentially significant

There is a potential that unknown buried archaeological deposits may exist within or adjacent to the pipeline alignment, and may be impacted by trenching or other pipeline installation activities. Any such impact would be considered potentially significant, if historically significant resources were adversely affected. Any potential impact to specific archeological and/or historical resources by the construction of new treatment facilities can be determined by a project-level EIR once the location of any such facility has been determined. The agencies responsible for implementing this TMDL could consult the relevant local archeological or historical commissions or authorities to determine ways to avoid significant adverse impacts to any such structures, if implementation is proposed that would affect them. The following measures shall be fully implemented to reduce potential impacts to cultural resources to a less than significant level:

- The final pipeline alignments and associated construction impact corridor shall be field verified to ensure it lies within the cultural APE surveyed by Conejo Archeological Consultants. An archeologist shall conduct an archaeological survey of those areas not previously surveyed. Additional mitigation measures and/or changes in the alignment to avoid resources to the extent feasible shall be developed.
- A memorandum of Agreement shall be drafted for mitigation of historic properties. All requirements of Section 106 of the National Historic Preservation Act shall be fully implemented.
- Plan for monitoring, treatment of human remains, and unplanned discoveries shall be written in consultant with USBR, SHPO, Native Americans, interested parties, and Advisory Council if they choose to participate. These plan shall be incorporate into the final EIR/EA
- A professional archeologist shall provide a cultural resources orientation to construction workers associated with excavation activities. The orientation shall include a description of the type of cultural resources that may be encountered during construction and what steps are to be taken if such a find is unearthed.
- In the event that intact archeological deposits are exposed during project construction, all earth disturbing work shall be terminated within the vicinity of the find. The find shall be evaluated by a professional archeologist in consultation with affected Native American groups and SHPO, and mitigated as warranted. After the find has been appropriately mitigated, work in the area may resume.
- In those areas determined archeologically sensitive for Native American resources, a professional archeologist and Chumash consultant shall be retain to monitor all excavation activity.
- If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then contact the most likely descendents of

the deceased Native American, who would then serve as consultant on how to proceed with the remains.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

21. Mandatory Findings of Significance.

The implementation of this Basin Plan amendment will result in improved water quality in the waters of the Region and will have significant positive impacts to the environment over the long term. Specific projects employed to implement the Basin Plan amendment may have adverse significant impacts to the environment, but these impacts are expected to be limited, short-term or may be mitigated through design and scheduling. The Staff Report and the Basin Plan amendment and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented treatment facilities should not foreseeably have a significant adverse effect on the environment. Any potential impacts can be mitigated at the subsequent project level phase when specific sites and methods have been identified, and responsible agencies can and should implement the recommended mitigation measures.

The implementation of this TMDL will result in improved water quality in the Calleguas Creek Watershed, but it may result in short-term localized significant adverse impacts to the environment. Specific projects employed to implement the TMDL may have significant impacts, but these impacts are expected to be limited, short-term or may be mitigated through careful design and scheduling. The Staff Report for the Calleguas Creek Watershed Salts TMDL and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented structural or non-structural methods of compliance should not have a significant adverse effect on the environment, and all agencies responsible for implementing the TMDL should ensure that their projects are properly designed and implemented. Any of the potential impacts need to be mitigated at a subsequent, project level because they involve specific sites and designs not specified or specifically required by the Basin Plan Amendment to implement the TMDL. At this stage, any more particularized conclusions would be speculative.

Specific projects, that may have a significant impact, would be subject to a separate environmental review. The lead agency for subsequent projects would be obligated to mitigate any impacts they identify, for example by mitigating potential flooding impacts by designing the BMPs with adequate margins of safety.

Furthermore, implementation of the TMDL is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this

analysis are not deemed feasible by those local agencies, the necessity of implementing the federally required TMDL and removing the significant environmental effects from salts impairment in the Calleguas Creek Watershed (an action required to achieve the express, national policy of the Clean Water Act) remains.

In addition, implementation of the TMDL will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of the agricultural supply and groundwater recharge will have positive social and economic effects by reducing salts loading to the watershed through imported water and providing high quality treated groundwater and surface water for agricultural uses. In addition, habitat carries a significant non-market economic value. Enhancement of habitat beneficial uses (including the warm freshwater habitat, cold freshwater habitat, wildlife habitat, wetland habitat and rare, threatened or endangered species) will also have positive indirect economic and social benefits. These substantial benefits outweigh any unavoidable adverse environmental effects.

In accordance with Pub. Res. Code, § 15091, the Regional Board finds that although the proposed project could have significant effect on the environment, revisions in the project, to avoid or substantially lessen the impacts, can and should be made or agreed to by the project proponents. This finding is supported by the evidence provided in the impact evaluation section of this document, which indicates that all foreseeable impacts are either short-term or can be readily mitigated, and elsewhere in the administrative record).

10. STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION

10.1 STATEMENT OF OVERRIDING CONSIDERATIONS (14 CAL CODE REGS. § 15093)

The Regional Board staff has balanced the economic, legal, social, technological, and other benefits of this proposed boron, sulfate, TDS, and chloride TMDL against the unavoidable environmental risks in determining whether to recommend that the Regional Board approve this project. Upon review of the environmental information generated for this project and in view of the entire record supporting the TMDL, staff has determined that the specific economic, legal, social, technological, and other benefits of this proposed boron, sulfate, TDS, and chloride TMDL outweigh the unavoidable adverse environmental effects, and that such adverse environmental effects are acceptable under the circumstances.

The implementation of this Basin Plan amendment will result in improved water quality in the waters of the Region and will have significant positive impacts to the environment (including restoration and enhancement of beneficial uses) and the economy over the long term. Enhancement of the recreational beneficial uses (both water contact recreation and non-contact water recreation) will have positive social and economic effects by eliminating boron, sulfate, TDS, and chloride impairments of water quality. These impacts will improve water quality, enhance local water supplies and support agricultural productivity. This will also have positive indirect economic and social benefits. Specific projects employed to implement the Basin Plan amendment may have significant adverse impacts to the environment, but these impacts are generally expected to be limited, short-term or may be mitigated through design and scheduling.

The Staff Report and the Basin Plan amendment, and this SED provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented BMPs or boron, sulfate, TDS, and chloride treatment systems generally should not foreseeably have a significant adverse effect on the environment. Any potential impacts can be mitigated at the subsequent project level when specific sites and methods have been identified, and responsible agencies can and should implement the recommended mitigation measures. These mitigation measures in most cases are routine measures to ease the expected and routine impacts attendant with ordinary minor construction projects and infrastructure maintenance in an urbanized environment. Routine construction and maintenance of power lines, sewers, streets, etc. are regular and expected incidents of living in urban and rural environments such as the Ventura County. Sewer and power line construction and maintenance, traffic alterations, and environmental impacts from them already occur and are expected. This project will foreseeably require many more such projects, but their individual impacts are not expected to be extraordinary in the magnitude or severity of impacts. Specific projects, that may have a significant impact, would therefore be subject to a separate environmental review. The lead agency for subsequent projects would be obligated to mitigate any impacts they identify, for example by mitigating potential flooding impacts by designing the BMPs with adequate margins of safety. Notably, in almost all circumstances, where unavoidable or unmitigable impacts would present unacceptable hardship upon nearby receptors or venues, the local agencies have a variety of alternative implementation measures available instead.

Nevertheless, the environmental and economic impacts associated with similar water supply and water quality projects to boron, sulfate, TDS, and chloride TMDL are already occurring elsewhere in the watershed. On balance, to the extent upstream communities will be required to share some of those burdens with the down stream communities, it is not unjust but appropriate.

This TMDL is required by law under section 303(d) of the federal Clean Water Act, and if this Regional Board does not establish this TMDL, the USEPA will be required to do so under a federal consent decree. The impacts associated with USEPA's establishment of the TMDL would be significantly more severe, as discussed herein, because USEPA will not provide a compliance schedule, and the final waste load allocations, pursuant to federal regulations, would need to be complied with upon incorporation into the relevant storm water permits. (40 CFR 122.44(d)(1)(vii)(B).) Since compliance would not be authorized over a period of years, all of the impacts associated with complying would be truncated into a short time frame, thus exacerbating the magnitude of the cumulative effects of performing all projects relatively simultaneously throughout the region.

The implementation of this TMDL will result in improved water quality in the Calleguas Creek Watershed, but it may result in short-term localized significant adverse impacts to the environment as implementation projects may be undertaken at many places throughout the watershed over a period of 15 years. Individually, these impacts are generally expected to be limited, short-term or may be mitigated through careful design and scheduling. The Staff Report for the Calleguas Creek boron, sulfate, TDS, and chloride TMDL and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented structural or non-structural methods of compliance should mitigate and generally avoid significant adverse effects on the environment, and all agencies responsible for

implementing the TMDL should ensure that their projects are properly designed and implemented.

All of the potential impacts must, however, be mitigated at the subsequent, project level because they involve specific sites and designs not specified or specifically required by the Basin Plan Amendment to implement the TMDL. At this stage, any more particularized conclusions would be speculative. The Regional Board does not have legal authority to specify the manner of compliance with its orders or regulations (Wat. C. § 13360), and thus cannot dictate that an appropriate location be selected for any particular project, that it be designed consistent with standard industry practices, or that routine and ordinary mitigation measures be employed. These measures are all within the jurisdiction and authority of the agencies that will be responsible for implementing this TMDL, and those agencies can and should employ those alternatives and mitigation measures to reduce any impacts as much as feasible. (14 Cal. Code Regs., § 15091(a)(2).)

Implementation of the TMDL is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this analysis are not deemed feasible by those local agencies, the necessity of implementing the federally required TMDL and removing the boron, sulfate, TDS, and chloride impairment from the Calleguas Creek (an action required to achieve the express, national policy of the Clean Water Act) remains. In summary, the incidental environmental impacts of the project that may be suffered by the localities that are required to implement controls to prevent their discharges from releasing excessive salts into the Creek are justified in view of the broader benefits to the environment, to the local and regional economy, and to residents' quality of life in the greater region from a healthy watershed that supports the uses to which the water is dedicated.

10.2 DETERMINATION

On the basis of this evaluation and staff report for the TMDL, which collectively provide the required information:

☐ I find the proposed Basin Plan amendment could not have a significant effect on the environment.

☐ I find that the proposed Basin Plan amendment could have a significant adverse effect on the environment. However, there are feasible alternatives and/or feasible mitigation measures that would substantially lessen any significant adverse impact. These alternatives are discussed above and in the staff report for the TMDL.

☒ I find the proposed Basin Plan amendment may have a significant effect on the environment. There are no feasible alternatives and/or feasible mitigation measures available which would substantially lessen some significant adverse impacts. See the attached written report for a discussion of this determination.

DATE:

_____ _____

Deborah J. Smith
Interim Executive Officer

11 DOCUMENT PREPARERS

This document was prepared by the staff of the Los Angeles Regional Water Quality Control Board. The following persons were directly involved in the preparation of this document.

Name	Section
Sam Unger, P.E., Section Chief, Regional Programs	Executive Summary Program Alternatives Areas of Controversy and Issues to be Resolved Site Specific Environmental Analysis Technical Review Other Environmental Considerations
L.B. Nye	Executive Summary Program Alternatives Areas of Controversy and Issues to be Resolved Site Specific Environmental Analysis Technical Review Other Environmental Considerations
Yanjie Chu, PhD	Population and Housing Public Services Recreation Air Quality Water Quality Geology and Soil
Man Voong	Technical Review Other Environmental Considerations
Thanhoan Nguyen	Executive Summary Program Alternatives Areas of Controversy and Issues to be Resolved Site Specific Environmental Analysis Technical Review Other Environmental Considerations
Sarah Rothenberg	Public Service Transportation and Traffic Population and Housing Land Use

12 REFERENCES

Black & Veatch Corporation. 2005. *Calleguas Municipal Water District 2005 Urban Water Management Plan*.

Bolt, Beranek and Newman. 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Prepared for the U.S. Environmental Protection Agency (PB-206717).

Bookman-Edmonston Engineering/Navigant Consulting, Inc. 2000. *Draft Results of the Coordinated Monitoring Program: Groundwater Element*. Prepared for Calleguas Municipal Water District.

Brisby, W.L. 1978. *General Biotic Survey of the Flora and Fauna of Parcel Map No. 3220, Tracts J and K.* Report for the Marn Development Company, Rancho Simi.

Brock, James. 1987. *A Cultural Resources Overview of Lower Calleguas Creek*.

Brown, N. 2005. *Groundwater Geology of the Eastern Pleasant Valley Basin*. Prepared for the Camrosa Water District.

Burgess, R. 1985. *Study of Selected Plant Species for the Conejo Creek Realignment Project*. Prepared for the Ventura County Public Works Agency.

California Department of Conservation, California Geological Survey. 2002. Guidelines for Evaluating the Hazard of Surface Fault Rupture – Note 49.

California Department of Conservation. 2004. *Farmland Mapping and Monitoring Program Important Farmland Maps*, Newbury Park, Camarillo, and Oxnard 7.5' Quadrangle Maps.

California Department of Parks and Recreation. 1992. *California Points of Historical Interest*. Office of Historic Preservation, Sacramento, California.

California Department of Parks and Recreation. 2005a. List of California Historical Landmarks at Office of Historical Preservation website (www.ohp.parks.ca.gov).

California Department of Parks and Recreation. 2005b. *Directory of Historic Properties in the Historic Property Data File for Ventura County*. Office of Historic Preservation, Sacramento, California.

California Department of Water Resources. 1998. *California Water Plan Update, Bulletin 160-98*.

California Department of Water Resources. 1999. *Groundwater Level Data Common Terms.* http://well.water.ca.gov/gwbrochure/terms/

California Department of Water Resources. 2004. *California's Groundwater, Bulletin 118*.

California Department of Water Resources. 2005. *California Water Plan Update 2005: A Framework for Action, Bulletin 160-05 Public Review Draft*.

California Native Plant Society. 2001. *Inventory of Rare and Endangered Vascular Plants of California*. Special Publication No. 1. Sacramento, CA.

California Regional Water Quality Control Board Los Angeles Region. 2000. Order No. 00-108: Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within Ventura County Flood Control District, County of Ventura, and the Cities of Ventura County. July 27, 2000.

Camarillo, City of. 1996. *City of Camarillo General Plan Noise Element*. Prepared by the Department of Community Development.

Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates and Resources Planning Associates. 1993. *California Storm Water Best Management Practice Handbooks, Construction Activity.* Prepared for Stormwater Quality Task Force. Sacramento, CA.

Clewlow, William. 1975. *Archeological Resources of the Proposed Calleguas Creek Project*.

Davis, F.W., P.A. Stine, D.M. Stoms, M.I. Borchart, and A.D. Hollander. *Gap Analysis of the Actual Vegetation of California, 1. Southwestern Bioregion.* Madrono 42(1):40-78.

DeLisle, H., G. Cantu, J. Feldner, R. Horne, P. O'Connor, M. Peterson, and B. Robertson. 1986. *The Present Status of the Herpetofauna of the Santa Monica Mountains*. Prepared under the auspices of the Southwest Herpetological Society and the Society for the Study of Amphibians and Reptiles.

Dibblee, T.W and H.E. Ehrenspeck. 1990. Geologic Map of the Camarillo and Newbury Park Quadrangles, Ventura County, California, Scale: 1:24,000.

Edelman, P. 1990. *Critical Wildlife Corridor/Habitat Linkage Areas between the Santa Susana Mountains, the Simi Hills and the Santa Monica Mountains*. Prepared for The Nature Conservancy.

Edwards, R.D., D.F. Rabey, and R.W. Kover. 1970. *Soil Survey Ventura Area, California*. USDA Soil Conservation Service in cooperation with University of California Agricultural Experiment Station.

ENSR Consulting and Engineering. 1997. *Final Master Environmental Impact Report for the West End Community Development Project and West End Specific Plan*. Prepared for the City of Simi Valley.

Environmental Science Associates (ESA). 1997. *Draft Environmental Impact Report #307 Hill Canyon Regional Recreational Facility*. Prepared for the Hill Canyon Recreational Resources Authority.

Fox Canyon Groundwater Management Agency. 1997. *Draft Groundwater Management Plan Update*.

Fugro West, Inc. 1995a. *Final Program Environmental Impact Report for the Las Posas Basin Aquifer Storage and Recovery Project.* Prepared for Calleguas Municipal Water District.

Fugro West, Inc. 1995b. *Aquatic Surveys of Calleguas and Conejo Creeks*. Prepared for Calleguas Municipal Water District. Thousand Oaks, CA.

Fugro West, Inc. 1996. *Farmland Conversion Study and Hazardous Materials Study for the Springville Road Bike Path Project*. Prepared for the Ventura County Public Works Agency.

Fugro West, Inc. 1997. *Data Collection Program, Annual Report 1996, Conejo/Calleguas Creek System, Ventura County, California*. Prepared for the City of Thousand Oaks.

Grant, Campbell. 1978. *Chumash: Introduction*. In: Handbook of North American Indians, California, Vol. 8. Edited by Robert F. Heizer, Smithsonian Institution, Washington D.C.

Hall, E.R. 1981. *The Mammals of North America*. John Wiley & Sons. New York, NY.

Hanson R.T., P. Martin and K.M. Koczot. 2003. *Simulation of Ground-Water/Surface-Water Flow in the Santa Clara-Calleguas Basin, Ventura County, California*. U.S. Geological Survey Water-Resources Investigations Report 02-4136.

Headman and Jaszewski. 1984. *Fundamentals of Urban Design*. American Planning Association, Chicago Illinois.

Hickman, J. C. 1993. *The Jepson Manual, Higher Plants of California*. University of California Press. Berkeley, CA.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, Non-Game Heritage Program. Sacramento, CA.

Impact Sciences, Inc. 1995. *North Ormond Beach Coastal Management Plan*. Prepared for Ventura County Flood Control District.

Impact Sciences, Inc. 1997. *Final Environmental Impact Report Camarillo Regional Park Golf Course and Amphitheatre*. Prepared for the County of Ventura, General Services Agency.

Izbicki, John A. 1993. *Seawater Intrusion in a Coastal California Aquifer*. U.S. Geological Survey Fact Sheet 125-96. http://water.wr.usgs.gov/fact/b07/up.html.

Jennings, M.R. 1983. *An Annotated Checklist of the Amphibians and Reptiles of California*. California Fish and Game 69(3):151.

Jones, T.T. and B.W. Snyder. 1984. *Potential Effect of Sewage Effluent Removal from the Lower Salinas River Riparian System*. In: California Riparian Systems, Ecology, Conservation and Productive Management. Edited by Richard Warner and Kathleen Hendrix.

Jones & Stokes Associates, Inc. 1995. *South Ormond Beach Wetland Restoration and Management Plan*. Prepared for the City of Oxnard with assistance from Philip Williams & Associates, EMCON Associates and Pacific Coast Land Design.

King, Chester. 1990. *The Evolution of Chumash Society: A Comparative Study of Artifacts Used in the Social Maintenance of the Santa Barbara Channel Islands Region Before A.D. 1804.* Garland Publishing, Inc., New York.

Kratcher, Kenneth T. 1977. Cultural Resources Survey Report for the Proposed Upgrading of the Wastewater Reclamation Plant at Camarillo, California.

Larry Walker Associates, Inc. (LWA) 2000. *Calleguas Creek Characterization Study-Results of the Coordinated Water Quality Monitoring Program, Surface Water Element*. Prepared for the Calleguas Municipal Water District.

Larry Walker Associates. 2004. *Progress Report on Efforts to Address Salts on the Calleguas Creek Watershed*. Prepared for the Calleguas Creek Watershed Management Plan.

Lin, C.J., R.F. Ambrose. 2000. *Examining the Ecological Effects of Land Use on Stream Benthic and Fish Communities in Calleguas Creek Watershed, Ventura County, California.*

Lopez, Robert. 1978. *An Archaeological Reconnaissance of the proposed Route of a Pipeline for the Exchange of Water and Sewer Services Between the Camrosa County Water district and the Camarillo State hospital, Ventura County, California*.

Los Angeles Regional Water Quality Control Board (LARWQCB). 1994. *Water Quality Control Plan Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*.

LSA Associates, Inc. 1996. *Updated Biological Constraints Analysis for the Hill Canyon Regional Recreational Facility*. Prepared for Golf Dimensions, Irvine, CA.

Maki, Mary. 1994a. *Phase I Cultural Resources Survey of 9 Acres for the Hueneme Bridge Replacement Project County Bridge No. 280/ State Bridge No. 52C10034, Ventura County. California*.

Maki, Mary. 1994b. *Replacing the Existing Hueneme Road Bridge (County Bridge No. 280/ State Bridge No. 52C10034, Ventura County. California*.

Maki, Mary. 1996. *A Phase I Cultural Resources Survey of 7.4 Linear Miles for the Conejo Creek Diversion Project, Ventura County, California*.

Maki, Mary. 2005a. *Phase I Archaeological Survey of the Effluent Pump Station and Effluent, Replacement and Well Pipelines for the Renewable Water Resource Management Program, Camarillo, Ventura County, California. Prepared for Padre Associates.*

Maki, Mary. 2005b. Letter report summarizing a cultural resource records search for the Renewable Water Resource Management Program. Prepared for Padre Associates.

Marsh, K.G. 1981. *Biological Assessment West End Industrial Area, Simi Valley, California*. Prepared for PRC Toups.

Mitsch, W. J. and J. G. Gosselink. 1986. *Wetlands*. Van Nostrand Reinhold Company, Inc.

Montgomery Watson. 1995. *Report on Arroyo Simi Characterization*. Prepared for the Simi Valley County Sanitation District.

National Park Service. 2005. *National Register of Historic Places*.

National Marine Fisheries Service. 2001. Letter to Calleguas Municipal Water District reporting a negative finding of southern steelhead in Calleguas Creek Watershed.

Natural Diversity Data Base (NDDB). 2005. RAREFIND 3 output for the Point Mugu, Camarillo, Newbury Park, Thousand Oaks, Simi Valley West, Simi Valley East, Moorpark, and Santa Paula 7.5-minute quadrangles. California Department of Fish and Game. Sacramento, CA.

Natural Resources Conservation Service. 1994. *Draft Calleguas Creek Watershed Implementation Plan for Mugu Lagoon*. Prepared in coordination with the U.S. Forest Service, the Ventura County Resource Conservation District and the California State Coastal Conservancy.

Onuf, C. P. June 1987. *The Ecology of Mugu Lagoon, California: An Estuarine Profile.* Performed for U.S. Department of the Interior, Fish and Wildlife Service. Biological Report 85(7.15).

Pacific Southwest Biological Services, Inc. 1989. *Report of a Biological Survey of Wood Ranch Eastern Sector Simi Valley, California*. Prepared for Robert Bein, William Frost & Associates and the City of Simi Valley. National City, CA.

Padre Associates, Inc. 1998. *Final Program EIR for the Unit W & Unit F Interceptor Reconstruction Project*. Prepared for Boyle Engineering Corporation and the City of Thousand Oaks.

Padre Associates, Inc. 1999a. *Biological Baseline Assessment for Lower Happy Camp Canyon Regional Park, Ventura County, California*. Prepared for County of Ventura, General Services Agency, Parks Department.

Padre Associates, Inc. 1999b. *Final Supplemental EIR for Phase II of the Unit W Interceptor Reconstruction Project*. Prepared for Boyle Engineering Corporation and the City of Thousand Oaks.

Padre Associates, Inc. 2002. *Final Program Environmental Impact Report/Environmental Assessment for the Calleguas Regional Salinity Management Project*. Prepared for Calleguas Municipal Water District.

Padre Associates, Inc. 2003. *Pleasant Valley Road Widening Project Initial Study, Mitigated Negative Declaration no. 03-33*. Prepared for the City of Oxnard.

Padre Associates, Inc. 2006. *Final Program Environmental Impact Report/Environmental Assessment for the Renewable Water Resource Management Program for the Southern Reaches of the Calleguas Creek Watershed*. Prepared for Camrosa Water District.

Perliter & Ingalsbe. 1980. *Groundwater Quality in the Santa Rosa Groundwater Basin, Vol. 2*.

Public Works Standards, Inc. 1999. *Standard Specifications for Public Works Construction*. Adopted by Joint Cooperative Committee of Southern California Chapter, American Public Works Association and Southern California Districts, Associated General Contractors of California.

Reed, P.B. Jr. 1988. *National List of Plant Species that occur in Wetlands*: *California (Region 0).* (U.S. Fish and Wildl. Serv. Biol. Rep. 88(26.10)). St. Petersburg, FL.

Romani, John. 1994. *A Cultural Resource Survey for the Proposed Renovation of the Camrosa Wastewater Treatment Plant, Round Mountain, Ventura County*. On file at the South Central Coastal Information Center, CSU Fullerton.

Sawyer, J. O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. Prepared for the California Native Plant Society.

Simon, Joseph M. & D. S. Whitely. 1994. *Phase I Archaeological Survey of the Proposed Hill Canyon 9.2 Mile Pipeline Corridor, Ventura County, California*.

Simon, Joseph M. & D. S. Whitely. 1995. *Phase I Archaeological Survey and Cultural Resources Assessment of the Avalon Theater Project Study Area, Camarillo, Ventura County, California*.

Singer, Clay A. 1986. *Cultural Resources in the Vicinity of Five Potential County Jail Sites in the Western Part of the Oxnard Plain, Ventura County, California – A Review of Records and Documents*.

Singer, Clay A. 1974. *Assessment of Potential Impact Upon Archaeological Resources from Proposed Excavation of Borrow Material from Calleguas Creek Streambed, Ventura County, California.*

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*.

South Coast Air Quality Management District (SCAQMD) webpage. 2006. http://www.aqmd.gov/ceqa/handbook/signthres.doc. Accessed October, 2006.

South Coast Air Quality Management District. 2006. Regulation XI - Source Specific Standards. Rule 1186.1 - Less-Polluting Sweepers. http://www.aqmd.gov/rules/reg/reg11/r1186-1.pdf#.

Staal, Gardner, and Dunne, Inc. 1994. *Data Collection Program Annual Report 1993, Conejo/Calleguas Creek, Santa Rosa Ground Water Basin, Ventura County, California*. Prepared for City of Thousand Oaks, Camrosa Water District.

State of California Department of Transportation (Caltrans). 2003a. Construction Manual. December 2003

State Water Resources Control Board. 1997. *1996 California Water Quality Assessment Report*. California Environmental Protection Agency.

State Water Resources Control Board. 2000. *2001 California Ocean Plan, Water Quality Control Plan Ocean Waters of California*.

Swift, C. C., T. R. Haglund, M. Ruiz, and R. N. Fischer. 1993. *The Status and Distribution of the Freshwater Fishes of Southern California.* Southern California Academy of Sciences, 1993.
Tetra Tech EM. 2002. *Final Integrated Natural Resources Management Plan Naval Base Ventura County Point Mugu, California*. Prepared for the Department of the Navy.
Thalheimer, E. 2000. Construction Noise Control Program and Mitigation Strategy at the Central Artery Tunnel Project. Noise Control Engineering Journal. 48(5) Sept-Oct.
Thousand Oaks, City of. 2000. Thousand Oaks General Plan Noise Element. Department of Planning and Community Development.
Triem, Judy. 1985. *Ventura County, Land of Good Fortune*. Windsor Publications, Chatsworth, California.
United Water Conservation District. 2003. *Inland Saline Intrusion Assessment Project Study*. Submitted to the California Department of Water Resources.
U.S. Bureau of Reclamation. 2002., *Southern California Comprehensive Water Reclamation and Reuse Study, Phase II*.
U.S. Department of Agriculture, Forest Service. 1974. *National Forest Landscape Management*, Volume 2, Chapter 1.
U.S. Department of the Navy (USN). 2000. *Draft Environmental Impact Statement, Point Mugu Sea Range*.
U.S. Environmental Protection Agency. 1991. *Nonroad Engine and Vehicle Emission Study. EPA 460/3-91-02.*
U.S. Environmental Protection Agency. 1995. *Compilation of Air Pollutant Emission Factors (AP-42), Volume I.*
Ventura County. 1997. *Ventura County Historical Landmarks & Points of Interest*.
Ventura County. 2000. *Ventura County Initial Study Assessment Guidelines*.
Ventura County Agricultural Commissioners Office. 2005. *Annual Crop Report for 2004*.
Ventura County Air Pollution Control District. 2003. *Ventura County Air Quality Assessment Guidelines*.
Ventura County Air Pollution Control District. 2005. *Draft 2004 Ventura County Air Quality Management Plan Update*.
Ventura County General Services Agency, Recreation Services. 1997. *Historical Landmarks & Points of Interest*.
Ventura County Public Works Agency. 2005. *Traffic Volumes on Ventura County Roadways.*
Ventura County Resource Management Agency. 1988, updated 2000. *Ventura County General Plan Resources Appendix*.
Ventura County Resource Management Agency. 2004 (updated). *Ventura County General Plan Goals, Policies and Programs*.
Westman, W.E. 1981. *Diversity Relations and Succession in California Coastal Sage Scrub*. Ecology 62:170.
Westman, W.E. 1986. *Implications of Ecological Theory for Rare Plant Conservation in Coastal Sage Scrub*. In: Conservation and Management of Rare and Endangered Plants. California Native Plant Society. Sacramento, CA.
Wetzel, R.G., (1975). *Limnology*. W.B. Saunders, Philadelphia, PA.
Wlodarski, Robert. 1998. *A Phase 1 Archaeological Study for the Lewis Road Widening Project, Ventura County, California*. On file at the South Central Coastal Information Center, CSU Fullerton.
Zeiner D. C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife. Vol. I Amphibians and Reptiles*. California Department of Fish and Game, Sacramento, California. 272 pp.
Zeiner D. C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife. Vol. II Birds*. California Department of Fish and Game, Sacramento, California. 731pp.
Zeiner D. C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. *California's Wildlife. Vol. III Mammals*. California Department of Fish and Game, Sacramento, California. 407pp.