CHAPTER 17

WATER QUALITY

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CHAPTER 17 WATER QUALITY

INTRODUCTION

This chapter identifies existing water quality conditions in the SCVJSS service area, including those of the Santa Clara River, and the impact of the 2015 Plan alternatives on them. This chapter should be examined in the context of the preceding chapter, Hydrology, and the subsequent chapter, Biological Resources, to accurately assess the total impact of the alternatives on the Santa Clara River and the other water resources of the valley.

The water quality impacts of the recommended project will be identified with regard to its effects on the water resources in the Santa Clarita Valley and downstream areas. As such, the water quality impacts will be analyzed against the standards and objectives specified by the various regulatory agencies in order to protect the beneficial uses of the water resources. Also, selected water quality constituents that have the potential to affect the biological habitat in the valley will be identified and further analyzed.

SETTING

Regulatory Setting

Clean Water Act

The Clean Water Act, enacted by the federal government in 1972 as an amendment to the 1956 Water Pollution Control Act, established the national strategy for controlling water pollution. The CWA directed states to establish water quality standards for all waters of the United States and to reevaluate such standards every three years.

The Water Quality Act of 1987, also known as the 1987 Amendments, added provisions to the CWA requiring states to promulgate water quality standards for toxic pollutants for which water quality criteria had been developed. The EPA has granted California primary responsibility for administering and enforcing provisions of the CWA, including NPDES permitting.

Section 404 and Section 401

Section 404 of the CWA established a permit program for regulating the discharge of dredged material or fill into U.S. waters, such as the Santa Clara River. The permit program is administered by the Secretary of the Army, acting through the Army Corps of Engineers. Section 404 authorizes the EPA to regulate the discharge of any dredged material or fill that can cause unacceptable adverse effects on municipal water supplies, recreational areas, wildlife, fisheries, or shellfish beds.

Section 401 of the CWA provided the authority for the state-operated 401 Certification Programs. The 401 certification process is commonly used by Regional Water Quality Control Boards to regulate hydrologic modification projects that require Section 404 permits.

National Pretreatment Program

The CWA established the National Pretreatment Program for which the EPA has promulgated regulations (40 CFR Part 403). The National Pretreatment Program requires publicly-owned treatment works with capacities greater than five mgd to implement pretreatment programs. POTWs have been given the authority to prohibit or limit discharges of any pollutant that could pass through the treatment processes into receiving waters, interfere with treatment plant operations, or limit biosolids disposal options.

POTWs are responsible for developing, implementing, and enforcing their own pretreatment programs. If POTWs fail to properly administer

pretreatment programs, they are subject to enforcement actions, penalties, fines, or other remedies provided for by the CWA.

Safe Drinking Water Act

The Safe Drinking Water Act, passed in 1974, established a national program for protecting the quality of drinking water supplied by public water suppliers. Under the SDWA, the EPA has issued Primary and Secondary Drinking Water Standards. These are the minimum standards which must be established by all states. Under the SDWA, states such as California with approved drinking water protection programs have implementation and enforcement authority. The 1986 amendments to the SDWA required the EPA to promulgate new standards for certain contaminants and established requirements for the protection of groundwater supplies.

Primary Drinking Water Standards

Primary Drinking Water Standards are water quality limits for contaminants that may cause or transmit disease, chemical poisoning, or other impairments to man.

Secondary Drinking Water Standards

Secondary Drinking Water Standards are water quality limits for assuring aesthetically adequate drinking water in terms of appearance, taste, and odor.

California Drinking Water Standards

California Drinking Water Standards are typically the same as the federal standards. Reclaimed water that is used to recharge groundwater, or is discharged to a surface water body designated as a drinking water supply, generally must meet California drinking water standards for trace constituents.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 established the State Water Resources Control Board, divided the state into nine hydrographic regions, and established an RWQCB for each region. The PCA requires the SWRCB and RWQCBs to adopt water quality control plans for protection of water quality. A water quality control plan must:

- Identify beneficial uses of waters to be protected.
- Establish water quality objectives for the reasonable protection of those beneficial uses.
- Establish an implementation program for achieving water quality objectives.

The PCA also provides for the issuance of Waste Discharge Requirements to dischargers. When discharges are made to waters of the United States, WDRs and NPDES permits for point source discharges are generally combined into a single permit.

The SWRCB is the primary agency responsible for formulating policies to protect surface waters and groundwater supplies within the State of California. The SWRCB has delegated authority for the day-to-day administration and enforcement of the PCA to the RWQCBs.

Each RWQCB develops basin plans that identify important water resources and specify the beneficial uses for each of these resources. Basin plans are generally reviewed by the SWRCB and updated every three years. The SWRP and the VWRP are under the jurisdiction of the Los Angeles RWQCB. The Los Angeles RWQCB is responsible for administering and enforcing NPDES permits, adopting water quality

control plans, and pretreatment programs within the Santa Clarita Valley.

RWQCB Water Quality Control Plan

The Santa Clarita Valley planning area is under the jurisdiction of the *1994 Water Quality Control Plan for the Santa Clara River Basin*. The Basin Plan identifies the existing and potential beneficial uses of specific water bodies in the region and contains water quality objectives and standards established to protect these uses. The planning area for the 2015 Plan generally coincides with the California Department of Water Resources Hydrological Unit No. 403.51, which includes the reach of the Santa Clara River from Soledad to just west of the Ventura County line. The Basin Plan identifies the existing beneficial uses for Hydrological Unit No. 403.51 as: agricultural supply, industrial process supply, industrial service supply, groundwater recharge, water-contact recreation, non-contact water recreation, warm freshwater habitat, wetland habitat, wildlife habitat, and rare, threatened or endangered species habitat. Potential beneficial uses include municipal and domestic supply. However, the 1994 amendments to the Basin Plan indicated that the Los Angeles RWQCB will be reviewing these designations at a later date and adopting a Basin Plan amendment following this review. In the meantime, no new effluent limitations are being placed in permits as a result of the potential beneficial use designations.

In addition to identifying beneficial uses, the Basin Plan contains narrative objectives for wetlands and numeric water quality objectives for inland surface waters, groundwaters, and ocean waters. The Basin Plan also provides strategies and implementation plans for the control of point source and non-point source pollutants, the remediation of pollution, and the monitoring and assessment of the region's waters.

California Water Code, Section 13523

The California Water Code contains provisions regarding the production, discharge, and use of reclaimed water. Section 13523 of the California Water Code provides that a RWQCB, after consulting with and receiving recommendations from the California State Department of Health Services and after any necessary hearings, establish water reclamation requirements for effluent that is used or proposed to be used as reclaimed water if it determines that such action is necessary for the protection of public health, safety, and welfare. Section 13523 further provides that such requirements shall include, or be in conformance with, the state-wide reclamation criteria.

NPDES and Reuse Permits

The above mentioned statutes and plans are implemented through the issuance of NPDES and reuse permits by the RWQCB for specific treatment plants.

NPDES Permits

The SWRP and VWRP abide by discharge permits under the NPDES that, under current law, must be renewed every five years. NPDES permits are issued by RWQCBs to carry out the objectives of the CWA and the PCA. A standard NPDES permit generally contains: findings, effluent limitations, receiving water limitations, standard provisions, a schedule, and pretreatment requirements.

Reuse Permits

In addition to the discharge permits and requirements, the SWRP and VWRP have water reclamation requirements (reuse permits) issued by the Los Angeles RWQCB. The reuse permits for the SWRP and the VWRP contain limits that are

consistent with specific water quality objectives of the Basin Plan. The reuse permits further require that reclaimed water shall not contain trace constituents or other substances in concentrations exceeding the limits of the current California Drinking Water Standards.

Title 22

The California Water Code requires the DHS to establish water reclamation criteria. In 1975, the DHS prepared Title 22 to fulfill this requirement. Title 22 was subsequently revised in 1978. The requirements of Title 22 regulate production and use of reclaimed water in California.

Title 22 establishes three categories of reclaimed water:

- Primary effluent.
- Adequately disinfected, oxidized effluent (secondary effluent).
- Adequately disinfected, oxidized, coagulated, clarified, filtered effluent (tertiary effluent).

Criteria for reuse of secondary and tertiary effluent in various reuse applications include criteria for maximum numbers of coliform bacteria present within the water. In addition to defining reclaimed water uses and treatment requirements, Title 22 defines requirements for sampling and analysis of effluent at treatment plants, requires preparation of an engineering report prior to production or use of reclaimed water, specifies general design requirements for treatment facilities and reliability requirements, and addresses alternative methods of treatment.

Santa Clara River Enhancement and Management Plan

A consortium of entities with widely varying interests in the Santa Clara River is currently preparing the Santa Clara River Enhancement and Management Plan. The Districts are one of the nearly thirty agencies and organizations represented on the Project Steering Committee for the Santa Clara River Enhancement and Management Plan.

Regional Setting

Regional Water Quality

Regional water quality in the SCVJSS service area is affected by a variety of discharges from point and non-point sources. Wastewater treatment plant effluent is the most common point-source discharge (SCAG, 1994). Common non-point sources include urban runoff, erosion, agriculture, and natural causes. Pollutants from both point and non-point sources include TDS, suspended solids, nutrients, heavy metals, pesticides, oil and grease, and bacteria. The water quality of the region is also a function of the local and imported water supply.

Effluent Quality

As indicated in the preceding chapter, the majority of the flow in the Upper Santa Clara River is tertiary treated reclaimed water discharged from the SWRP and VWRP. The water quality of the river in this reach, therefore, is closely related to the water quality of the effluent discharged. The effluent discharged to the river is subject to the requirements of the NPDES permits for the two WRPs. The NPDES permits contain provisions to protect the beneficial uses of the river and the natural ecosystem of which it is a part. The RWQCB determines effluent limits after assessing the level of treatment (i.e., tertiary), dilution factors, other area discharges, and beneficial uses of the receiving water. The RWQCB may allow a mixing zone, or zone of dilution within a specific part of the receiving water, on a case by case basis.

To meet monitoring requirements, each individual discharge point is sampled at a representative

Table 17-1

1996 AVERAGE EFFLUENT QUALITY VERSUS MAXIMUM LIMITATIONS

CONSTITUENT	SAUGUS WRP EFFLUENT	VALENCIA WRP EFFLUENT	NPDES MAXIMUM LIMITATION
BOD_5 (mg/l)	8	4	45[a],30[c],20[d]
Suspended Solids (mg/l)	2	2	45[a],40[c],15[d]
Settleable Solids (ml/l)	< 0.1	< 0.1	0.3[a],0.1[d]
Oil and Grease (mg/l)	< 1.6	< 1.0	15[a],10[d]
Total Dissolved Solids (mg/l)	681	797	1000[a]
Chloride (mg/l)	110	135	190[a,b]
Sulfate (mg/l)	151	187	400[a]
Boron (mg/l)	1.02	0.92	1.5[a]
Fluoride (mg/l)	0.43	0.49	1.6[a]
Detergents [MBAS] (mg/l)	0.15	0.18	0.5[a]
Coliform Group (MPN/100 ml)	< 1	< 1	2.2[c]
Nitrate+Nitrite Nitrogen (mg/l)	4.15	6.47	10[a]
Turbidity (NTU)	1.2	1.4	2[d]
pH	7.4	7.0	6.0-9.0
Antimony (mg/l)	< 0.0005	0.002	0.006[d]
Arsenic (mg/l)	< 0.001	< 0.001	0.05[d]
Barium (mg/l)	0.03	0.02	1[d]
Beryllium (mg/l)	< 0.01	< 0.005	0.004[d]
Cadmium (mg/l)	< 0.003	< 0.003	0.005[d]
Chromium [VI] (mg/l)	< 0.01	< 0.01	0.05[d]
Iron (mg/l)	0.02	0.07	0.3[d]
Lead (mg/l)	< 0.02	< 0.02	0.05[d]
Mercury (mg/l)	< 0.0001	< 0.0001	0.002[d]
Nickel (mg/l)	< 0.02	< 0.02	0.1[d]
Selenium (mg/l)	<0.001	< 0.001	0.01[d]
Silver (mg/l)	< 0.01	< 0.01	0.05[d]
Zinc (mg/l)	0.04	0.04	5[d]
Cyanide (mg/l)	< 0.01	< 0.01	0.0052[d]
Endrin (µg/l)	< 0.01	< 0.01	2[d]
Lindane (µg/l)	0.02	0.01	0.2[d]
Methoxychlor (µg/l)	< 0.01	< 0.01	40[d]
Toxaphene (µg/l)	< 0.5	< 0.5	3[d]
2,4 - D (µg/l)	< 3	< 1.7	70[d]
2,4,5-TP [Silvex] (µg/l)	< 0.05	< 0.05	10[d]
Tetrachloroethylene (µg/l)	< 0.3	< 1.6	5[d]

Table 17-1 (Continued)
1996 AVERAGE EFFLUENT QUALITY VERSUS MAXIMUM LIMITATIONS

CONSTITUENT	SAUGUS WRP EFFLUENT	VALENCIA WRP EFFLUENT	NPDES MAXIMUM LIMITATION
Carbon Tetrachloride (µg/l)	< 0.3	< 0.3	0.5[d]
1,1,1-Trichloroethane (µg/l)	< 0.5	< 0.5	200[d]
p-Dichlorobenzene (µg/l)	< 0.5	< 0.6	5[d]
Di[2-ethylhexyl]phthalate (µg/l)	< 2	3	4[d]

Notes: a) Maximum daily value.
b) For the Santa Clara River watershed, on January 27, 1997, an interim 190 mg/l chloride limit was set pending further study.
c) Maximum seven-day average value.
d) Maximum 30-day average value.

location. Parameters monitored continuously include flow, turbidity, and chlorine residual. Coliform bacteria, suspended solids, settleable solids, and temperature are monitored daily. Other parameters, such as TDS, metals, organics, and pesticides, are monitored monthly, quarterly, semi-annually, or using 24-hour composite samples. The VWRP and SWRP effluent is also subject to monthly chronic and yearly acute toxicity tests using the most sensitive of three test species.

Monitoring requirements for receiving waters specify the exact locations and frequency of sampling at locations upstream and downstream of discharge points. In general, constituents of concern in effluent are also monitored in the receiving waters. Monitoring is conducted weekly, quarterly, or annually with the frequency depending on the constituent.

Table 17-1 shows the quality of effluent discharged to the river and the limits specified in the NPDES permit for the VWRP.

Chlorination and Dechlorination

The RWQCB requirements for disinfection of SWRP and VWRP effluent are met through the use of sodium hypochlorite and/or chlorine. Chlorination provides disinfection of the effluent for the protection of public health. A chlorine residual is also an important constituent for reclaimed water transported through conventional conveyance facilities, since a chlorine residual inhibits growth of algae in pipes and storage tanks. However, too high a chlorine concentration in effluent discharged to the river can be toxic to the aquatic species. To protect these resources, the RWQCB has mandated a maximum chlorine residual of 0.1 mg/l in the receiving water after discharge to the river. In order to meet this requirement, the SWRP and VWRP effluent is dechlorinated prior to discharge.

Chlorides

The existing Basin Plan chloride objective, adopted in 1975, assumed a constant background level of chlorides in the water supply. As such, the Basin Plan specified a maximum chloride level of 100 mg/l in its NPDES permits. Since then, however, the level of chlorides in the water supply has fluctuated with a net increase since that time. Increases in chlorides have been attributed to drought conditions in the 1980s and the increase in use of imported water supply.

As a consequence, many dischargers, including the SCVJSS WRPs, have been unable to

consistently meet the 100 mg/l chloride standard. As a short-term measure, the RWQCB adopted Resolution 90-004, which allowed a maximum chloride limit of the lower of 250 mg/l or the chloride concentration in the water supply plus 85 mg/l. The resolution was intended to be an interim measure, providing relief for dischargers in the short-term.

Prior to the expiration of this resolution in February 1997, the RWQCB prepared a permanent amendment to the Basin Plan in the form of a proposed *Policy for Addressing Levels of Chloride in Discharges of Wastewater*, for public review in November 1996. The proposed policy was a result of a cooperative research effort by a number of interested parties including POTWs, water purveyors, water wholesalers, groundwater agencies, and agricultural representatives. The policy proposed a new chloride limit of 190 mg/l for discharges of wastewater to waterbodies in the Los Angeles Region.

During the public review period, however, a concern was raised regarding the impacts of chloride levels on the surface waters and groundwaters in Ventura County. As a result, at a January 27, 1997, public hearing, the RWQCB adopted Resolution 97-002 that sets the chloride limit at 190 mg/l in nearly all watersheds in the region, but not for the Santa Clara River watershed. For the Santa Clara River watershed an interim chloride limit of 190 mg/l was set, pending further study. The 1996 average chloride concentrations in SWRP and VWRP effluent were 110 mg/l and 135 mg/l, respectively.

The study will focus on the evaluation of appropriate chloride objectives for surface waters and groundwaters, and the development of cost-effective means to protect such waters. Chloride related water quality objectives for the Santa Clara River watershed will be reconsidered for revision by the year 2001, when the NPDES permits for this watershed are scheduled for renewal. Any new chloride objective will need to consider chloride levels in supply waters (including fluctuations due to drought conditions), reasonable loading factors during beneficial use and disinfection of supply waters and wastewaters, and the cost-effectiveness of advanced treatment technology capable of removing chloride.

Ammonia

Ammonia levels in the SWRP and VWRP effluent and the associated toxicity are a concern because the treated effluent is discharged to the Santa Clara River where ammonia could be detrimental to aquatic life. The RWQCB, through NPDES permit requirements, has given Districts Nos. 26 and 32 until June 2003 to either meet new receiving water objectives for ammonia, or to conduct studies leading to an approved less restrictive site specific objective for ammonia.

Preliminary chronic toxicity studies conducted by the Districts on the Santa Clara River, however, have indicated a likely toxic effect due to discharges from the WRPs. The laboratory toxicity tests are conducted using EPA-specified surrogate fish species in ambient river water sampled from downstream of the WRPs. The preliminary studies indicate that a large part of the observed toxicity may be due to the presence of ammonia.

Although the findings of these studies are still preliminary, the Districts have recognized the need to lower ammonia concentrations in the effluent to levels that will not have an adverse impact on receiving waters. Accordingly, the recommended project includes provision for reduction of ammonia to lower the concentration

to a non-toxic level. A complete discussion on the impact of the recommended project and the measures the Districts will employ to minimize any toxic effect due to ammonia is provided later in this chapter.

Reclaimed Water

Water Reclamation Requirements

General provisions state that the reclaimed water shall not result in odors or color or cause toxicity to humans, plants, or aquatic life. Also, reclaimed water supplies must not cause a nuisance, mosquito problems, or damage to structures or facilities. The major narrative limitations include the following:

- Reclaimed water must have received treatment equivalent to filtration to reduce turbidity.
- Reclaimed water must not contain trace constituents in concentrations exceeding California drinking water standards or action levels established by DHS.
- Reclaimed water must not cause a measurable increase in organic chemical contaminants in groundwater.

These narrative limits, along with numeric limits, quantity limits, and other general provisions, make up the water reclamation requirements and ensure the protection of public health.

Significance to Districts' Wastewater Facilities Planning

The Districts have pursued a program of wastewater reclamation and reuse since 1963. While the distribution of reclaimed water has not been thoroughly developed in the Santa Clarita Valley, reclaimed water generated at the Districts' other WRPs support a variety of beneficial reuses including landscape and agricultural irrigation, industrial cooling and process water, and groundwater recharge. In the Santa Clarita Valley, on a very small scale, reclaimed water has been used by the City of Santa Clarita for landscape irrigation and by construction contractors for dust control and compaction.

However, based on Department of Water Resources reports, it is apparent that, as water resources become increasingly scarce in response to rising demands and declining supplies, Southern California will depend more heavily on water reclamation and conservation to meet its needs. All of the reclaimed water produced at the SWRP and VWRP is suitable for reuse. The processes used to treat wastewater at the SWRP and VWRP are designed in accordance with accepted criteria for oxidation, clarification, filtration, and disinfection. Additionally, the effluent coliform concentrations conform to the most stringent limits required for any type of reuse.

Existing and Future Water Reuse

The Districts have witnessed a marked increase in the use of reclaimed water in their service areas other than the Santa Clarita Valley. Within the last 20 years, the state of California suffered through two serious droughts, and the number of reuse sites throughout the Districts' service area has increased from approximately 10 sites to over 360 sites.

Historically, the major obstacle in promoting reuse has been economics. Since reclaimed water must, by law, be kept separate from the potable water system, the cost of constructing separate distribution systems to deliver reclaimed water to widespread locations suitable for reuse can in certain areas be prohibitive. Additionally,

demands for landscape irrigation, one of the most common uses or reclaimed water, are largely seasonal. Also the demand for landscape irrigation at sites frequented by the public occurs at night when WRP flows are generally lowest, which sometimes necessitates storage of reclaimed water. However, the impending shortfall in water supply in the valley has dictated that water agencies take more interest in reclaimed water.

Currently, direct water reuse is almost non-existent in the valley. In fact, no reclaimed water distribution or storage system exists. The CLWA, however, forecasts a shortfall in water supply occurring in 2006 and by the year 2010 the potential shortfall is expected to approach 16,500 AFY (14.7 mgd) of water. In accordance with the projected population growth in the valley, the CLWA has developed a *Reclaimed Water System Master Plan* for the Santa Clarita Valley. The RWSMP includes plans for storage and conveyance of reclaimed water as well as identification of users and uses for the reclaimed water.

Reclaimed Water Quality

The reuse potential of reclaimed water is directly influenced by the quality of the water supply. Conventional wastewater treatment processes such as those employed at the SWRP and VWRP have very little effect on certain water quality parameters, including TDS. High TDS levels in the water supply are directly translated to high TDS levels in reclaimed water which tend to limit available reuse options. TDS levels at the VWRP and SWRP are now moderate, in the 600-900 mg/l range. Excessive TDS levels in reclaimed water may be detrimental to some plant species, thus, limiting irrigation applications. Additionally, high TDS can cause industrial process fouling or inefficiencies that could limit industrial applications.

The quality of the water supply is, therefore, very relevant to Districts' facilities planning. The viability of continued wastewater reclamation and reuse depends on the delivery of a high quality water supply to the region served by the WRPs and the ability to control industrial, commercial, and residential discharges of salts to the sewer system. One mechanism the Districts employ to control discharges is through industrial discharge permits that regulate the constituents in the discharges of large industrial sources.

Receiving Water Monitoring

In accordance with the NPDES permits for the SWRP and VWRP, Districts Nos. 26 and 32 have implemented a receiving water monitoring program. Currently, Districts Nos. 26 and 32 monitor five receiving water monitoring stations for conformance with permit requirements, as follows:

- *Station R-A:* Located 300 feet upstream of the SWRP discharge point. This station is dry most of the year.
- *Station R-B:* Located 300 feet downstream of the SWRP discharge point.
- *Station R-C:* Located 300 feet upstream of the VWRP discharge point.
- *Station R-D:* Located 300 feet downstream of the VWRP discharge point.
- *Station R-E:* Located approximately 2 miles downstream of the VWRP discharge point.

The NPDES permits specify both qualitative and quantitative receiving water limitations intended to allow conformance with broad receiving water objectives, namely to protect the beneficial uses of the receiving water and to maintain the river ecosystem. Table 17-2 shows many of the parameters monitored, the frequency of monitoring, and the average value

Table 17-2
SANTA CLARA RIVER RECEIVING WATER MONITORING STATIONS
1996 WATER QUALITY DATA

PARAMETER (UNITS)	FREQUENCY	R-B	R-C	R-D	R-E
TDS (mg/l)	quarterly	708	848	816	845
Ammonia Nitrogen (mg/l)	quarterly	9.9	1.7	9.1	4.8
Organic Nitrogen (mg/l)	quarterly	0.9	0.4	0.8	0.6
Nitrate Nitrogen (mg/l)	quarterly	5.4	4.6	7.2	4.9
Nitrite Nitrogen (mg/l)	quarterly	1.2	0.1	0.8	1.3
Total Cyanide (mg/l)	annually	0.003	< 0.002	0.003	0.002
Total Nitrogen (mg/l)	quarterly	17.7	5.2	21.1	12.9
Sulfate (mg/l)	quarterly	166	257	224	258
Chloride (mg/l)	quarterly	114	90.2	123	107
Total Phosphate (mg/l)	quarterly	5.95	2.22	4.64	3.57
Phenols (mg/l)	annually	< 0.002	0.002	< 0.001	< 0.002
MBAS (mg/l)	annually	0.04	< 0.02	0.05	0.03
Arsenic (mg/l)	annually	< 0.001	< 0.1	0.0012	0.0011
Cadmium (mg/l)	annually	< 0.003	< 0.003	< 0.003	< 0.003
Total Chromium (mg/l)	annually	< 0.01	< 0.01	< 0.01	< 0.01
Copper (mg/l)	annually	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (mg/l)	annually	< 0.02	< 0.01	0.02	0.02
Lead (mg/l)	annually	< 0.02	< 0.02	< 0.02	< 0.02
Mercury (mg/l)	annually	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (mg/l)	annually	< 0.02	< 0.02	< 0.02	< 0.02

Table 17-3
1996 GROUNDWATER MONITORING DATA

PARAMETER (UNITS)	FREQUENCY	SWRP AVERAGE VALUE	VWRP AVERAGE VALUE
Total Dissolved Solids (mg/l)	semi-annually	639	979
Nitrate-N (mg/l)	semi-annually	6.29	4.36
Nitrite-N (mg/l)	semi-annually	< 0.01	< 0.01
Chloride (mg/l)	semi-annually	76	103
Sulfate (mg/l)	semi-annually	152	332

for 1996 at four of the monitoring stations. The fifth station, Station R-A, is not included because it is dry most of the year, precluding systematic data gathering. In addition to the listed parameters, the Districts also monitor annually for polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and acute toxicity. Chronic toxicity is monitored quarterly. The Districts also conduct weekly in situ tests for temperature, dissolved oxygen, pH, coliform, and residual chlorine at each of the stations.

Groundwater Monitoring

The RWQCB also requires a groundwater monitoring program at the SWRP and VWRP. This program attempts to establish the impacts of the SCVJSS operations on the groundwater quality in the area.

The program consists of sampling for five constituents at two underground receiving water sampling stations, one located at each WRP. A summary of the groundwater sampling results for 1996 is shown in Table 17-3.

IMPACTS AND MITIGATION MEASURES OF THE 2015 PLAN ALTERNATIVES

Methodology and Assumption for Impact Analysis

As introduced in Chapter 16, Hydrology, the analysis of the impacts of the project on the river includes consideration of six discharge scenarios. The rationale for developing each of the scenarios is discussed in Chapter 16. The six discharge scenarios are as follows:

- *No Discharge Scenario:* SWRP: 0 mgd, VWRP: 0 mgd.
- *Reduced Discharge Scenario:* SWRP: 5.0 mgd, VWRP: 4.6 mgd.
- *Existing Discharge Scenario:* SWRP: 5.7 mgd, VWRP: 9.3 mgd.
- *Permitted Discharge Scenario:* SWRP: 6.5 mgd, VWRP: 12.6 mgd.
- *Recommended Project Discharge Scenario:* SWRP: 6.5 mgd, VWRP: 27.6 mgd.
- *Cumulative Discharge Scenario:* SWRP: 6.5 mgd, VWRP: 27.6 mgd, Newhall Ranch WRP: 5.0 mgd.

To accurately assess the water quality impacts of the recommended project, however, it was only necessary to rigorously analyze two of the scenarios: 1) the Recommended Project Discharge Scenario, and 2) the Cumulative Discharge Scenario. The Recommended Project Discharge Scenario represents the probable worst-case scenario in terms of identifying water quality impacts of the recommended project. Water quality impacts are a function of the discharge to the river, and the Recommended Project Discharge Scenario represents the maximum project specific discharge to the river. The Cumulative Discharge Scenario is included to assess the impacts of the recommended project along with existing and foreseeable similar projects, as required by CEQA.

Criteria for Determining Significance

Based on Appendices G and I of the State CEQA Guidelines, the recommended project would be considered to have a significant water quality impact if it would result in any of the following:

- A substantial degradation of surface water or groundwater quality or contamination of a public water supply.
- An exceedance of applicable water quality standards or objectives or impairment of beneficial uses.

The Recommended Project

VWRP Expansion Construction Impacts

Impact: *Potential for Short-Term Water Quality Degradation Resulting from VWRP Expansion Construction Activities.* Construction activities related to expansion of the VWRP would expose disturbed and loosened soils to weathering effects of precipitation and wind. Increased erosion and sedimentation could occur if soil is exposed during wet periods. Suspended sediments could increase turbidity in receiving streams; cause dissolved oxygen levels to decrease; and increase concentrations of nutrients, metals, and other pollutants associated with sediment particles.

Pollutants may also be introduced in the form of chemicals and other materials commonly used at

construction sites. Gasoline, oil, solvents, lubricants, concrete, cleaners and soaps, and sanitary waste are examples of pollutants that may reach receiving waters as a result of accidental spillage or exposure to runoff and that can reduce water quality. The potential effects on water quality are usually short term and diminish once construction is completed. This impact is considered significant.

Mitigation Measure 17-1: *Prepare and Implement a Stormwater Pollution Prevention Plan.* Districts Nos. 26 and 32 are required under the CWA to prepare and submit a general construction activity stormwater permit (a type of NPDES permit for stormwater) before beginning construction at the VWRP. The permit requires preparation of a stormwater pollution prevention plan (SWPPP). The SWPPP is based on the use of best management practices. BMPs applicable to construction sites include measures to prevent erosion, prevent pollutants from the construction materials from mixing with stormwater, and trap pollutants before they can be discharged.

The primary purpose of the SWPPP is preparation of sediment and erosion control measures by a qualified specialist. BMPs in the SWPPP would include measures such as limiting construction activities to the minimum area necessary, using silt fences or straw bales to filter sediment in runoff, revegetating bare soil areas before onset of the wet season, and locating covered material storage areas away from drainage channels. Construction activities may also be restricted by the SWPPP during wet periods. The SWPPP may also require water quality monitoring to ensure that background levels of turbidity and other constituents are not being exceeded.

The SWPPP would also contain requirements for the construction contractor(s) to prepare and implement a hazardous materials management plan to reduce the possibility of chemical spills or releases to drainage channels. Proper material handling, storage, and disposal protocols would be established and enforced.

The contents of the SWPPP and details of the required BMPs would be prepared by Districts Nos. 26 and 32 before they obtain the general construction activity stormwater permit from the SWRCB. The Districts' engineering staff will ensure that the permit has been obtained before construction starts and will monitor the site periodically to ensure that provisions of the SWPPP are being adhered to by the construction contractor(s).

VWRP Expansion Operations Impacts

Impact: *Potential for Groundwater Quality Degradation Due to Recharge.* The Basin Plan specifies groundwater recharge as one of the beneficial uses of the Santa Clara River watershed. Due to the hydrogeology of the region, downstream of the VWRP, the Santa Clara River undergoes some recharge and mixing with the Eastern Groundwater Basin. West of the Los Angeles-Ventura County line, the river usually completely percolates into the Piru Groundwater Basin (see Chapter 16, Hydrology, for a complete discussion of the flow regime of the river). Since the river is composed mainly of WRP effluent during the major part of the year, the groundwater quality could be impacted, especially with regards to constituents such as chloride and nitrate.

As noted earlier, the Districts and other interested parties are studying the impact of POTW discharges of chlorides on the groundwater quality of the Eastern Groundwater Basin and the downstream Piru, Fillmore, and Santa Paula Basins. Preliminary findings have indicated that the impact of existing and future POTW discharges on groundwater chloride levels is negligible. In addition, there has been a recent trend of improving chloride levels in imported water. Final conclusions are forthcoming pending the completion of the three-year study.

Also, as will be subsequently discussed, the recommended project includes denitrification to convert nitrate to nitrogen gas, thus the effluent will also continue to meet the Basin Plan objective for nitrate. Furthermore, the recommended project will remain in compliance with all NPDES requirements, which are intended to protect all beneficial uses of the river, including groundwater recharge and water supply. Therefore, this impact is considered to be less than significant.

Mitigation: No mitigation is required.

Impact: *Potential for Water Quality Degradation in the Santa Clara River Resulting from Increased Discharge of Reclaimed Water from the VWRP.* The proposed increased discharge from the VWRP to the Santa Clara River could increase the total mass loading of some constituents of concern, but generally not the concentrations. Note, the Santa Clara River upstream of the VWRP generally consists of SWRP effluent, which is very similar to that of VWRP effluent, so the concentration of most constituents in the VWRP effluent is similar to the background river constituents.

The Basin Plan objectives are embodied in NPDES permits. Water quality limits set in the NPDES permit provide the basis for application and enforcement of surface water quality standards and objectives. These limits have been adopted by the RWQCB based on water quality control plans, monitoring data, and other water quality regulatory programs. All proposed facilities will comply with all NPDES discharge limits that provide sufficient protection to water quality, therefore, this impact is less than significant.

Mitigation: No mitigation is required.

Impact: *Potential for Water Quality Degradation Resulting from Increased Reuse of Reclaimed Water.* The proposed increase in effluent discharge from the VWRP could affect regional water quality if the effluent is reused for irrigation or groundwater recharge. However, reuse of reclaimed water is regulated by water reclamation requirements. Use of reclaimed water is limited to approved amounts and locations and is subject to RWQCB requirements for monitoring and reporting. Districts Nos. 26 and 32 and the other joint parties must request approval from the RWQCB to reuse additional reclaimed water. As these regulatory provisions sufficiently protect water quality, this impact is less than significant.

Mitigation: No mitigation is required.

Impact: *Potential for Water Quality Degradation in the Santa Clara River Due to Plant Upset or Emergency Release.* Temporary plant upset due to unexpected constituent loading could possibly cause a temporary release of high levels of some constituents to the river. The Districts closely monitor unit process performance for evidence of upset, and have prepared contingency plans for many situations. The effluent is also extensively monitored for signs of any treatment problems.

The Districts also have prepared detailed contingency plans for emergency situations such as earthquakes or loss of power. The experience gained from the 1994 Northridge Earthquake, after which the VWRP continued full operation in conformance with all permitting requirements, confirmed that the VWRP can deal with a variety of adverse situations. To that end, the VWRP includes a number of backup and redundant systems, including backup power, which should allow continued operation in many plant upset or emergency conditions with minimal possibility of degrading the river's water quality. Furthermore, the possibility of plant upset or emergency already exists, and the operation of the proposed facilities will not significantly increase this possibility. Therefore, this impact is considered less than significant.

Mitigation: No mitigation is required.

Impact: *Potential for Cumulative Impact on Water Quality from Existing and Foreseeable Similar Facilities.* The cumulative impact of the additional flow from the expansion of the VWRP, the flow from existing dischargers, and the flow from foreseeable future dischargers was analyzed in accordance with CEQA requirements. In addition to the VWRP, the SWRP also discharges tertiary treated effluent to the Santa Clara River. The SWRP has a current treatment capacity of 6.5 mgd, though it is possible that in the future the SWRP could treat more flow through increased utilization of flow equalization. The other foreseeable similar facility is the proposed Newhall Ranch WRP with an estimated 2015 discharge of 5 mgd.

In the future, the SWRP could discharge to the river up to its permitted limit of 6.5 mgd or more, depending on the level of reuse and the utilization of flow equalization. The SWRP effluent consistently meets all the requirements of its NPDES permit and the effluent quality is as high, if not higher, than that of the VWRP. Based on information from the July 1996 draft *Specific Plan and Environmental Impact Report for the Newhall Ranch Project*, the proposed treatment plant will also produce a high quality, tertiary treated effluent in conformance with all NPDES standards (Impact Sciences, 1996). Furthermore, the *Specific Plan and Environmental Impact Report for the Newhall Ranch Project* states that the discharge to the river from the proposed Newhall Ranch WRP will be *near-zero* with the majority of the reclaimed water used for non-potable uses, rather then being discharged to the river. However, even assuming summer discharge from the proposed Newhall Ranch WRP, based on the expected high quality of effluent from all three sources (VWRP, SWRP, and Newhall Ranch WRP), the cumulative impact on water quality is a less than significant impact.

Mitigation: No mitigation is required.

Impact: *Potential for Impairment of Beneficial Use of Santa Clara River as a Warm Freshwater Habitat.* According to the Basin Plan, one of the main beneficial uses of the Santa Clara River is as a warm freshwater habitat. The discharges of the SCVJSS have beneficially impacted this habitat by allowing the beneficial use to be year round rather than intermittent. Nevertheless, maintaining vital habitat along the river through the future is an important consideration. Due to the critical influence of plant effluent on river water quality, expansion of the VWRP could possibly impact the biological resources of the river through impairment of this habitat.

In general, most water quality parameters of the VWRP discharge are at similar concentrations to those in the ambient river flow, which largely consists of effluent discharge from the SWRP. The effluent flow from the proposed expansion will largely have the same constituent concentration levels. Therefore, the concentration of most water quality parameters will not be significantly altered by any increase in flow from the VWRP.

However, there are a few water quality parameters of the river that under the recommended project could cause an impairment of beneficial use. These water quality constituents and characteristics are ammonia, temperature, dissolved oxygen, turbidity, and residual chlorine. Chapter 18, Biological Resources, will identify the important aquatic species located in the Santa Clara River and describe their physiological and behavioral responses to these constituents and characteristics.

- *Ammonia:* The Basin Plan specifies regional ammonia objectives for inland surface waters, including the Santa Clara River. The objectives specify 1-hour and 4-day ammonia concentration limits for the receiving waters, which are intended

to protect the aquatic species of the river from the acute and chronic toxic effects of ammonia. From a toxicity standpoint, the primary concern is ammonia as NH_3. Ammonia can also be present as the less toxic ammonium ion (NH_4^+). The distribution of ammonia species is governed by an equilibrium reaction that is sensitive to pH and temperature. Therefore, the ratio of toxic NH_3 to total ammonia, and hence the toxicity of the receiving water, is mainly a function of pH and temperature in the receiving water.

In general, at the pH and temperature normally found in the receiving water downstream of the VWRP, the 1-hour ammonia objective for ammonia seasonally ranges from 5-16 mg/l-N and the 4-day objective seasonally ranges from 1-2 mg/l-N. Figure 17-1 shows the 6-year (1991-96) monthly average ammonia levels of both the VWRP effluent and the receiving water downstream of the VWRP discharge (Receiving Water Station R-D). Note, that the objectives in the Basin Plan are pertinent only to the receiving water concentration. In general, at the pH and temperature ranges found in the river, the receiving water ammonia concentrations have consistently been below the 1-hour Basin Plan numerical limits, but generally above the 4-day limits.

The downstream ammonia concentrations are a function of the effluent ammonia concentration and the chemical, biological, and physical characteristics of the upstream receiving water, the river bed, and the effluent. Analysis of future receiving water ammonia concentrations indicated that, if the existing treatment process were to be maintained, the proposed increase in discharge would most likely result in increased ammonia concentrations in the downstream receiving water.

When the ammonia objective was adopted as a part of the Basin Plan in 1994, the Regional Board allowed for up to eight years following its adoption to either make the necessary adjustments/ improvements to meet these objectives, or to conduct studies leading to site-specific objectives for ammonia. Accordingly, the Districts have embarked on comprehensive studies to identify practicable ammonia control technologies and to classify the toxic effects of varying concentrations of ammonia.

Preliminary chronic toxicity studies examining the impact of SWRP and VWRP effluent on the Santa Clara River have indicated a likely toxic effect. The laboratory toxicity studies using sensitive fish species in ambient river water also indicate that a large part of the observed toxicity may be due to the presence of ammonia in the effluent. The parallel studies of ammonia control technology are addressing cost-effective means to reduce ammonia to very low levels through nitrification, below the 1-hour ammonia objectives specified in the Basin Plan. Accordingly, the recommended project includes provision for nitrification at both the SWRP and the VWRP to lower the ammonia concentration to non-toxic levels.

One consequence of the nitrification process is the conversion of ammonia to nitrate. Elevated levels of nitrate can cause an impact on the water quality of the receiving waters, especially groundwaters. In fact, a secondary ammonia objective, not related to its toxic effects, states that ammonia should not be present at levels that when naturally converted to nitrate, pose a threat to groundwater. Nitrate, however, can be subjected to denitrification during the treatment process and converted to nitrogen gas, which then volatilizes to the atmosphere. Nitrogen gas is the predominant constituent in ambient air and is very stable in the atmosphere.

As a result of the potential threat caused by toxicity of ammonia and the possibility of

degradation of water quality due to nitrates, the Districts have studied a combined nitrification-denitrification process that appears to be suitable for application at the SWRP and VWRP. Accordingly, the recommended project includes upgrading existing and planned SWRP and VWRP facilities to include nitrification-denitrification. The combined process will be designed to both reduce ammonia to very low levels and cause the conversion of a portion of the nitrates to nitrogen gas, therefore, the impact on the beneficial uses of the river as a warm freshwater habitat and for water supply is considered beneficial.

- *Temperature:* The temperature of the receiving water is an important characteristic of a warm freshwater habitat. The fish species living in the receiving water have particular physiological and behavioral patterns according to the temperature of the receiving water. For the Santa Clara River and the fish species living within it, the upper ranges of temperature rather than the lower ranges temperature seem to be important. See Chapter 18, Biological Resources, for a complete discussion of the desired and upper temperature ranges for the most sensitive fish species.

  To model the temperature related impacts of the recommended project, existing conditions were first studied. It was assumed that temperature would be a fairly conservative characteristic of water in the immediate vicinity of the discharge point, such that the receiving water temperature downstream of the VWRP discharge point ($T_{d/s}$) would be a function of the upstream temperature ($T_{u/s}$) and flow ($Q_{u/s}$), and the effluent temperature (T_e) and flow (Q_e). As such, downstream temperature could be represented by the following relationship:

$$T_{d/s} = \frac{[T_{u/s} \times Q_{u/s}] + [T_e \times Q_e]}{Q_{u/s} + Q_e}$$

The model was tested against six years of monthly temperature and flow data. In most cases, the model predicted downstream receiving water temperatures within one percent of the observed temperatures, and in all cases predicted it within four percent.

The model was then used to predict future downstream temperatures from increased effluent discharges. Based on the determinations made in Chapter 16, Hydrology, upstream receiving water flow would remain largely unchanged in the future, and correspondingly, the upstream receiving water temperature was assumed to remain the same as present conditions. The analysis of temperature impacts assumed a worst-case scenario in which all future VWRP effluent would be discharged to the river (i.e., no reuse). The monthly effluent temperature fluctuations were assumed to equal those observed over the last six years. Note that under this model, as VWRP effluent flow increases, the temperature of the receiving water becomes more dependant on the VWRP effluent temperature. See Figure 17-2 for the projected increase in temperature under the recommended project using this model.

Average 1991-96 downstream (Receiving Water Station R-D) monthly temperatures were compared to projected 2015 monthly downstream temperatures. The analysis concluded that under the recommended project, the temperature of the downstream receiving water would not increase by more than 1.0°F from February through October, with the receiving water actually decreasing in temperature in June. In particular, during the summer months when the upper ranges

of desired temperature for the fish species are approached, the temperature would increase by less than 0.5°F. Therefore, there is a less than significant impact on the beneficial use of the river for warm freshwater habitat under the recommended project.

- *Dissolved Oxygen:* The RWQCB has specified that the dissolved oxygen content of the receiving water should not drop below 5.0 mg/l as a result of the discharge. The dissolved oxygen content of the effluent leaving the VWRP is generally between 7-10 mg/l. In the receiving water, however, the dissolved oxygen content drops due to biological activity. Furthermore, increased temperatures lowers the saturation level of dissolved oxygen in water. Nevertheless, current monitoring has indicated that even in the hot summer months the receiving water dissolved oxygen has not been depressed below 5.0 mg/l.

  In fact, historical analysis of dissolved oxygen levels in the receiving water downstream of the VWRP discharge has indicated a general tendency towards increased dissolved oxygen concentrations coinciding with increased VWRP discharge. See Figure 17-3 for the monthly historical dissolved oxygen concentrations downstream of the VWRP discharge (Receiving Water Station R-D) from 1991-96. In general, Figure 17-3 shows that in 1991 the receiving water experienced the lowest dissolved oxygen concentrations, especially in the summer months. In 1996, the summer dissolved oxygen concentrations have been well above the permitted level. This trend is reasonable as VWRP effluent dissolved oxygen levels are generally greater then those of the receiving water upstream of the discharge point. As effluent discharge increases and, thus, becomes a greater contributor to downstream flow, it is anticipated that downstream dissolved oxygen concentrations will, at minimum, remain constant with 1996 levels, or possibly increase. Therefore, the dissolved oxygen impact is less than significant under the recommended project.

- *Turbidity:* While elevated turbidity is primarily thought of as a detriment to drinking water quality and aesthetics, it can also adversely affect the feeding behavior of certain fish species that rely on their visual acuity to locate food. The Basin Plan contains numeric limits and qualitative objectives that dictate the maximum amount by which turbidity can be increased. In particular, the Basin Plan turbidity objective states *(w)aters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.* Furthermore, for the reach of the river where the VWRP discharges, the Basin Plan specifies that the turbidity not be increased more than 20 percent as a result of the discharge.

  Due to the low levels of VWRP effluent turbidity (between 1-2 NTUs), however, the turbidity of the receiving water will not be increased by any level approaching the 20 percent specified in the Basin Plan. As existing regulations sufficiently protect water quality, the turbidity impact is less than significant.

- *Chlorine:* High residual chlorine levels in the effluent could impact the habitat downstream of the discharge. However, the existing and recommended VWRP facilities include dechlorination processes. The dechlorination processes ensure a residual chlorine level below 0.1 mg/l. At this level, the residual chlorine would not be toxic to fish species. Therefore, the impact is considered to be less than significant.

The Santa Clara River watershed is identified as a warm freshwater habitat by the RWQCB. The recommended project does not impair this beneficial use, including consideration of the impacts on receiving water constituents and characteristics such

as ammonia, temperature, dissolved oxygen, turbidity, and chlorine. Therefore, the impact of the recommended project on the beneficial use of the Santa Clara River as a warm freshwater habitat is less than significant.

Mitigation: No mitigation is required.

SWRP and VWRP Upgrade Construction Impacts

Impact: *Potential for Degradation of Water Quality Resulting from SWRP and VWRP Upgrade Construction Activities.* The construction activities associated with the upgrade of the SWRP and VWRP are minimal. The construction will not include significant grading or excavation activities, hence there is minimal possibility for contaminated run-off due to erosion, sedimentation, or construction-related pollutant release. Due to the minor nature of the construction activities associated with the upgrade, the impact of SWRP and VWRP upgrade construction is considered less than significant.

Mitigation: No mitigation is required.

SWRP and VWRP Upgrade Operations Impacts

Impact: *Potential for Impairment of Beneficial Use of Santa Clara River as a Warm Freshwater Habitat.* According to the Basin Plan, one of the main beneficial uses of the Santa Clara River is as a warm freshwater habitat. The discharges of the SCVJSS have beneficially impacted this habitat by allowing the beneficial use to continue year round rather than being intermittent. Nevertheless, maintaining vital habitat along the river in the future is an important consideration.

The upgrade is proposed in response to potential toxicity concerns of the SCVJSS effluent. As shown earlier in Figure 17-1, the receiving water downstream of the VWRP generally exceeds the 4-day ammonia objective specified in the Basin Plan, which ranges from 1-2 mg/l-N. Similarly, as shown in Figure 17-4, the receiving water downstream of the SWRP also consistently exceeds the Basin Plan objective. The VWRP effluent has a higher ammonia concentration due to the filter press filtrate that is treated at the VWRP.

The combined nitrification-denitrification process will be designed to both reduce ammonia to very low levels and cause the conversion of a portion of the nitrates formed to nitrogen gas. The resulting effluent will have ammonia and nitrate concentrations which will not impair the beneficial uses of the receiving water. Therefore, the impact on the beneficial uses of the river as a warm freshwater habitat and for water supply is considered beneficial.

Mitigation: No mitigation is required.

Biosolids Disposal and Reuse Impacts

Impact: *Potential for Degradation of Water Quality Resulting from Biosolids Disposal and Reuse.* Expansion of the VWRP would increase the quantity of biosolids that must be managed by Districts Nos. 26 and 32. Biosolids are currently managed via land application but could be managed by other measures such as composting and landfilling. These activities could degrade water quality as a result of accidental releases during transport or disposal, or from runoff to surface waters or leaching to groundwater. However, Districts Nos. 26 and 32 will use only sites that are properly permitted and for which all impacts, including the potential for water quality degradation, have been addressed thoroughly through either preparation of site-specific environmental documents or compliance with other federal, state, and local regulations. Therefore, this impact is less than significant.

Mitigation: No mitigation is required.

No Project Alternative

Under the No Project Alternative, most of the impacts of the 2015 Plan alternative would be avoided. However, failure to expand SCVJSS capacity could eventually result in decreased quality of effluent, leading to NPDES permit violations.

Impact: *Impairment of Beneficial Use of Santa Clara River as a Warm Freshwater Habitat.* According to the Basin Plan, one of the main beneficial uses of the Santa Clara River is as a warm freshwater habitat. Under the No Project Alternative, toxicity due to elevated ammonia levels would continue to have a significant impact since preliminary laboratory studies conducted by the Districts have indicated a likely toxicity effect due to ammonia concentrations in the effluent.