UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
40 CFR PART 6
SUBPART E: ENVIRONMENTAL REVIEW PROCEDURES FOR WASTEWATER TREATMENT CONSTRUCTION GRANTS PROGRAM

RUSSIAN RIVER COUNTY SANITATION DISTRICT THIRD UNIT PROCESSES PROJECT ENVIRONMENTAL ASSESSMENT FOR THE PURPOSE OF EPA FUNDING PROGRAM

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ACRONYMS

ACL - Administrative Civil Liabilities

ADWF - average dry-weather flow

AWT - Advanced Wastewater Treatment

BAAQMD - Bay Area Air Quality Management District

Board - Russian River County Sanitation District's Board of Directors

BOD - biochemical oxygen demand

CDO - Cease and Desist Orders

CEQA - California Environmental Quality Act

cfm - cubic feet per minute

cfs - cubic feet per second

Corps - U.S. Army Corps of Engineers

CO - carbon monoxide

CUPA - Certified Unified Program Agency

d - day

DFG - California Department of Fish and Game

DHS - California Department of Health Services

District - The Russian River County Sanitation District

DO - dissolved oxygen

EA - Environmental Assessment

EIR - Environmental Impact Report

EPA - Environmental Protection Agency

ESD - equivalent single-family dwelling units

FEMA - Federal Emergency Management Agency

ft - feet

FWS - U.S. Fish and Wildlife Service

gpd - gallons per day

gpm - gallons per minute

L - liter

lb - pounds

mg - million gallons

mgd - million gallons per day

mg/L - milligrams per liter

ml - milliliter

MPN - most probable number

NAHC - Native American Heritage Commission

NCRWQCB - North Coast Regional Water Quality Control Board

NDDB - California Department of Fish and Game California Natural Diversity Database

NO_2 - nitrogen dioxide

NPDES - National Pollutant Discharge Elimination System permit

NSCAPCD - Northern Sonoma County Air Pollution Control District

NTU - nephelometric turbidity units

NWIC - Northwest Information Center

OSHA - California Occupational Health Safety Association

O_3 - ozone

Pb - lead

PG&E - Pacific Gas and Electric Company

PM10 - particulate matter

PSM - Process Safety Management

RMP - Environmental Protection Agency's Risk Management Program

RRCSD - Russian River County Sanitation District

SCWA - Sonoma County Water Agency

SWRCB - State Water Resources Control Board

SHPO - State Historic Preservation Office

SO_2 - sulfur dioxide

SS - Settleable solids

sq - square

THP - Timber Harvest Plan

TO - Tentative Order

TSS - total suspended solids

TUPP - Third Unit Process Project

UBC - Uniform Building Code

UFC - Uniform Fire Code

USEPA - United States Environmental Protection Agency

EXECUTIVE SUMMARY

This document is an Environmental Assessment (EA) for the proposed Third Unit Processes Project (TUPP) for the Russian River County Sanitation District's (RRCSD) treatment facility in the unincorporated community of Guerneville, California. The RRCSD is seeking federal funding for the construction of the TUPP at the RRCSD treatment facility. This EA was developed in accordance with 40 CFR PART 6; Subpart E: Environmental Review Procedures for Wastewater Treatment Construction Grants Program; as environmental review must be carried out in order to receive the federal funds from the United States Environmental Protection Agency (USEPA). This EA for the TUPP was prepared by the RRCSD and issued by the USEPA (See Appendix A, USEPA Suggested Guidelines for the Preparation of EAs).

The RRCSD holds a National Pollutant Discharge Elimination System (NPDES) permit administered by the North Coast Regional Water Quality Control Board (NCRWQCB), pursuant to Section 402 of the Clean Water Act and Division 7 of the California Water Code. The Sonoma County Water Agency (SCWA) is the contract operator for the RRCSD. The SCWA does not have NPDES discharge limits, as the SCWA is not named in the RRCSD's permit. The RRCSD is a distinct (both legally and financially) special district, separate from the SCWA.

An Environmental Impact Report (EIR) was completed in accordance with the California Environmental Quality Act (CEQA) for the RRCSD's Wastewater Collection, Treatment, and Disposal Facilities in 1976. The treatment portion of the 1976 project called for three processing units. A processing unit includes an aeration basin, a secondary clarifier, and a tertiary filter. For the treatment portion of the 1976 EIR, three processing units were originally approved. Over the course of several years, two of the processing units were built. However, although the third processing unit was analyzed in the 1976 EIR and was included in the 1976 project approval, it was never built. For a detailed discussion on the 1976 EIR see the text in the Project Background below.

During significant flood events on the lower Russian River, the amount of sewage received by the treatment facility (influent) exceeds the facility's treatment capacity. This has caused the RRCSD treatment facility to discharge partially treated wastewater (effluent) into the Russian River. This type of occurrence is in violation of the RRCSD's NPDES discharge permit for the RRCSD treatment facility. This resulted in issuances of Cease and Desist Orders (CDOs) by the NCRWQCB.

The third unit processes project was proposed to improve wastewater treatment during high winter flows and to comply with CDOs issued by the NCRWQCB. In 1999, the RRCSD proposed to complete the third unit process as originally approved and authorized by the 1976 EIR. As a consequence, the RRCSD prepared an Environmental Analysis report, which concluded that a supplemental or subsequent EIR would not be necessary for the TUPP. For a detailed discussion on the Environmental Analysis see the text in the Project Background below. The third unit processes would not increase the permitted discharge levels of the treatment facility.

This EA includes the discussion of project background; purpose and need; alternatives; the present environment; potential direct and indirect impacts of the preferred alternative and the no action alternative; proposed mitigation measures; and cumulative impacts. Information sources are identified and additional materials are provided in the appendices."

Project Background

As discussed above, an EIR was completed in accordance with CEQA for the RRCSD's Wastewater Collection, Treatment, and Disposal Facilities in 1976. The EIR included an analysis of the environmental impacts associated with the construction, operation, and maintenance of the facility to treat 1.8 million gallons per day (mgd) maximum sustained flow. The project included construction of a gravity collection system with fifteen pump stations; a process treatment facility including comminution and influent flow measurement (headworks), three aeration basins, three secondary clarifiers, tertiary filters, disinfection, consisting of a chlorine contact chamber, and effluent storage; an effluent outfall to the Russian River for disposal season discharge; and land disposal systems for reclamation. The treatment portion of the project called for three processing units. A processing unit includes an aeration basin, a secondary clarifier, and a tertiary filter. For the treatment portion of the 1976 EIR, three processing units were originally approved. The RRCSD's Board of Directors (Board) certified the EIR, adopted mitigation measures, and approved the project on May 3, 1976 by Resolution No. 53481. A Notice of Determination was filed with the Sonoma County Clerk's office on May 3, 1976. Over the course of several years, two of the processing units were built. However, although the third processing unit was analyzed in the 1976 EIR and was included in the 1976 project approval, it was never built. With the exception of the treatment facilities third unit processes (i.e., the third aeration basin, third secondary clarifier, tertiary filters, and appurtenances), the entire project was completed in 1983.

The total cost for the collection system and treatment facility was approximately $23,143,125. The approximate breakdown of funding sources includes:

Funding Source	Date	Amount
Environmental Protection Agency (EPA)	(09/22/77)	$11,040,00
	(06/08/79)	$4,511,250
	Total	$15,551,250
State Grants	(09/22/77)	$1,840,000
	(06/12/79)	$751,875
	Total	$2,591,875
House and Urban Development (HUD) Block Grants		$100,000
1976 General Obligation Bonds (Ballot Measure J: Approved by voters (06/08/76)	(06/08/76)	$2,900,000

Revenue Bonds (Board Resolution #69813)	(06/30/81)	$2,000,000
Total Cost:		$23,143,125

The RRCSD paid the EPA approximately $3,000,000 back of grant funding for disallowed expenses. The resultant amount of EPA and State contributions was therefore, $15,143,125.

The RRCSD treatment facility's third unit processes was not constructed during the original construction due to the rising cost of the overall project. Initial bid cost for the collection system and treatment works was over sixty percent higher than the engineer's estimate. The RRCSD went through "value engineering" wherein potential ideas to reduce the overall cost were formulated and considered for implementation. As a result of the value engineering processes the RRCSD decided to postpone the construction of the third aeration basin, third secondary clarifier, and tertiary filters.

As mentioned above, the RRCSD holds a NPDES permit administered by the NCRWQCB. The NPDES permit (Permit No. CA0024058) regulates wet-weather discharge to the Russian River and dry-weather land disposal. In accordance with the permit, the RRCSD treatment facility may discharge effluent to the Russian River from October 1 to May 14 (wet season) of each year. Discharges to the Russian River may be up to 1 percent of the flow of the Russian River. The RRCSD treatment facility must discharge only through land irrigation between May 15 and September 30 (dry season) of each year. The RRCSD treatment facility's dry season land discharge maximum permitted (average dry weather flow) ADWF is 0.51, due to limits of reclamation system capacity. During certain periods of the reclamation season, the RRCSD uses the maximum amount of reclamation season disposal capacity available. The RRCSD's NPDES permit requires that the quality of the water used for irrigation meets standards established by the California Department of Health Services (DHS) under Title 22.

The NCRWQCB has issued Cease and Desist Orders (CDOs) to the RRCSD for permit violations at the RRCSD treatment facility. The NCRWQCB issued the following CDOs:

1) CDO No. 97-09 issued on January 23, 1997 for indirect discharge to the Russian River of co-mingled advanced wastewater treatment (AWT) standard reclaimed water and rainwater on May 21, 1996;

2) CDO No. 97-76 issued on August 28, 1997 for a discharge violation of 201,000 gallons of treated effluent and co-mingled rainwater to the Russian River through irrigation runoff that occurred on May 21, 1996 (CDO No. 97-76 superseded CDO 97-09); and

3) CDO No. 98-57 issued on May 28, 1998 for a discharge violation to the Russian River during the flood event of February 1998.

For more detailed information on these CDOs, see Section L. "Water Quality Problems" of this document. CDO No. 97-09 (CDO No. 97-76 superseded CDO 97-09) required the RRCSD to prepare and submit one report that outlined the short-term and long-term actions to prevent future discharge violations. The report was submitted on March 15, 1997 and resubmitted on March 25,

1997. CDO No. 98-57 required two reports; one outlined the short-term actions to prevent future discharge violations, and the second outlined long-term actions to prevent future discharge violations. The short-term report was submitted on July 30, 1998, and the long-term report was submitted on December 1, 1998.

In 1999 the RRCSD looked at alternatives to address flood issues in the 1999 *RRCSD Facility Upgrades and Disposal Expansion Project EIR*. The RRCSD's Board was scheduled to consider certification of the 1999 Final EIR on March 23, 1999. The Board decided to set aside the 1999 Final EIR due to public concern regarding the lack of a precise project description. Therefore, the 1999 EIR was never certified.

On April 20, 1999, the Board directed the RRCSD's staff to prepare an environmental analysis for the construction of the treatment facility's third unit processes [the third aeration basin, the third secondary clarifier, the tertiary filters, and appurtenances] at the RRCSD's treatment facility and determine additional items needed to address flood related issues. The RRCSD proposed that construction of the third unit process, an element of the 1976 Wastewater Collection, Treatment, and Disposal Project, would satisfy the requirements of CDO No. 97-09 and CDO No. 97-76 because the volume of storage in the third aeration basin would be sufficient to store the volume of effluent that was the subject of the May 1996 reclamation season permit violation. In addition, treating more excess influent to tertiary standards during high winter inflows would minimize potential for future discharge violations.

Staff completed an Environmental Analysis in early 1999 that addressed whether a supplemental or subsequent EIR would be required for the proposed TUPP to comply with CEQA. The Environmental Analysis discussed the relationship between the proposed TUPP and the 1976 Wastewater Collection, Treatment, and Disposal Facilities EIR; discussed the NCRWQCB CDOs; and identified additional items needed to address high winter inflow and flood-related issues.

The Environmental Analysis noted that the 1976 EIR described the third unit processes and analyzed all potentially significant environmental impacts associated with the third unit processes construction and operation. The Environmental Analysis also concluded the following: (1) There were no major revisions to the 1976 EIR that would be required to implement the proposed TUPP; (2) there is no significant new information that would require the preparation of a subsequent or supplemental environmental document; and, (3) there are no significant or substantial changes in the circumstances under which the proposed TUPP is proposed. Therefore, according to the Environmental Analysis construction of the third unit processes would not result in any environmental impacts other than those disclosed in the 1976 EIR, and a subsequent or supplemental environmental document to the 1976 EIR is not required to approve and implement the proposed TUPP. On May 25, 1999, the Board approved resolution No. 99-0678 determining that no subsequent or supplemental EIR was required for the proposed TUPP, directing the General Manager/Chief Engineer to file a Notice of Determination; and authorizing the General Manager/Chief Engineer to proceed with the design, preparation of the project specifications and contract drawings, bidding process, and funding for the construction of the TUPP. A Notice of Determination was filed with the Sonoma County Clerk in accordance with CEQA, on May 25, 1999. Mitigation Measures identified in the 1976 EIR to reduce or avoid environmental impacts would be incorporated into the project design. See Appendix B, TUPP History Timeline.

A lawsuit was filed by the Russian River Watershed Protection Committee (petitioner) challenging the RRCSD's approval of the Environmental Analysis, which calls for the completion of the third unit processes at the RRCSD treatment facility. The trial court denied the petition and the Appellate Court upheld the trial court's decision. The petitioner filed a motion for reconsideration with the Appellate Court which was also denied. Appellant did not file a petition for review with the California Supreme Court. After the appropriate time elapsed, the Appellate Court issued its remittitur. In short, the case has been concluded; the RRCSD can proceed without any legal impediment with completing the TUPP, as proposed in the 1976 EIR, to improve wastewater treatment during high winter flows and to comply with CDOs issued by the NCRWQCB.

I. PURPOSE AND NEED FOR ACTION

The TUPP purpose and need is to 1) reliably treat and adequately dispose of permitted wastewater flows during high influent flow periods, particularly during flood events on the lower Russian River; 2) to comply with the NCRWQCB CDOs; and 3) to minimize future discharge violations. The TUPP would not increase the average dry weather flow capacity of the RRCSD's treatment facility, but, would expand the wet weather treatment capacity to the level allowed under the 1976 EIR, and meet DHS Title 22 requirements for redundancy. The TUPP would provide treatment for permitted flows.

Current RRCSD tertiary treatment capacity is not adequate to treat the high influent volume resulting from large flood events. The TUPP is designed to increase the RRCSD tertiary treatment capacity for peak wet weather flows and would meet the DHS Title 22 requirements for redundancy.

The TUPP would not increase the amount of permitted effluent to be discharged in the winter (1 percent of Russian River flow). The TUPP would not increase the allowed average dry weather flow discharged in the dry season.

A. Proposed Project

The TUPP's proposed third aeration basin, third secondary clarifier, tertiary filters, and appurtenances, dimensions and materials are described below:

Treatment Facility: Appendix C contains a mass balance that shows flow rates for various conditions to the treatment processes as modified under this project. This mass balance shows how the capacity of each component varies as flow rates and wastewater characteristics vary.

Third Aeration Basin: During the aeration process large amounts of air are mechanically supplied to a mixture of wastewater, beneficial bacteria, and other microorganisms. Oxygen speeds the growth of beneficial microorganisms, which biologically consume harmful organic matter in the wastewater.

Presently, the RRCSD's treatment facility has two rectangular aeration basins, each measuring approximately 52 feet wide by 104 feet long by 20 feet deep. The proposed third aeration basin would be the same shape and size as each of the existing aeration basins: approximately 52 feet

wide, 104 feet long, and 20 feet deep. The proposed third aeration basin would be constructed of reinforced concrete and would be capable of operating in parallel with the existing two aeration basins. The third aeration basin would act as a flow equalization basin in the short term. In the future, aeration piping would be added to the aeration basin to increase aeration basin capacity and to allow aeration basin redundancy. This aeration piping would be added if the ADWF capacity needed to be increased or if biochemical oxygen demand (BOD) concentrations of the influent increased. Under this project, excess flows would first be diverted to the third aeration basin for storage and/or treatment. If storage or treatment capacity were not available, wastewater would be diverted to an existing 1 million gallon (mg) reservoir either from the flood overflow pipeline or through the third aeration basin.

Proposed appurtenances would include a walkway between the third aeration basin and the existing aeration basins, mechanical equipment, piping, and a blower building. The proposed blower building would be constructed to enclose one proposed blower and the four existing, relocated blowers. This proposed structure would help minimize noise produced from the blowers. The proposed blower building would be approximately 46 feet long by 16 feet wide, and 15 feet tall. The proposed blower building would be constructed of reinforced concrete.

Secondary Clarifier: The clarification process produces effluent to a secondary level of treatment. In the clarification process, microorganisms and stabilized organic matter form clumps that settle out of the wastewater. The settled materials are referred to as biosolids.

The RRCSD treatment facility's existing secondary clarifiers each measure 40 feet in diameter by 20 feet deep, with a normal operating liquid depth of 12 feet. The proposed third secondary clarifier would be approximately 60 feet in diameter and 20 feet deep, with a normal operating liquid depth of 15 feet. The proposed third secondary clarifier would be larger than the existing secondary clarifiers to maintain the ability to effectively treat the flow from the aeration basins under maximum month and maximum sustained peak conditions. Maintaining the ability to effectively treat the flow from the aeration basins requires optimizing system clarifier overflow rates and solids loading rates. High flow rates, that occur under maximum month and maximum sustained peak conditions, to the secondary clarifiers limits the amount of time the solids have to flocculate together and settle to the clarifier bottoms. This promotes "wash out" of solids which can overload downstream processes. Maintaining a clarifier system overflow rate below 900 gallons per day per square feet (gpd/sq ft) and a solids loading rate below 25 pounds per square feet per day (lb/sq ft/d), minimizes "wash out" potential. As shown in Appendix C, having a third secondary clarifier of 60 feet diameter allows the system overflow rate and the solids loading rate to be maintained conservatively below these values, under all flow conditions.

The proposed secondary clarifier would be constructed of reinforced concrete and structural steel. The proposed clarifier would be capable of operating in parallel with the existing two secondary clarifiers. Proposed appurtenances would include a collection box, an access walkway, mechanical equipment, and piping.

Tertiary Filters: In the tertiary treatment process, treated wastewater is filtered prior to disinfection. The RRCSD's tertiary filtration utilizes sand and

activated carbon. Tertiary filtration removes a high percentage of the solids remaining after secondary clarification.

The existing filtration system consists of two 14-ft diameter by 17-ft high gravity filters. These filters are automatic, self-backwashing, gravity filters that contain internal clearwell compartments for backwashing the filter media. These existing tertiary filters are nearing the end of their service lives. The DHS does not currently approve this filter system for Title 22 applications. These two filters would be replaced with a DHS approved system, either a cloth disk media filter system or a pulsed bed filter system. Designs for each option would be incorporated into the construction contract bid documents, so that each option could be competitively bid against one another.

Cloth disk media filters use random weave cloth media disks to remove suspended solids and fine particulate matter. Each disk contains six pie-shaped sections mounted vertically to a rotating hollow filtrate header tube suspended in a large trough. Secondary effluent flows into the trough, through the cloth media filters, and into the hollow header that discharges into a tertiary effluent chamber, which is the outlet of the disk package. Each disk is constructed primarily of epoxy coated steel or stainless steel. Ancillary support systems include high-pressure spray wash system, back wash system, access platform, and control system. Two cloth media disks would be required – one running and one standby. Each disk would be approximately 16 feet long by 9 feet wide by 12 feet high and would be mounted on a common concrete pad with the ancillary systems. The footprint of the entire cloth media tertiary filtration system would be approximately 50 feet long by 35 feet wide by 12 feet high.

Pulsed bed filters contain cells of shallow sand beds and an under-drain system that permits the filter surface to be "pulsed" or regenerated periodically, prolonging filter runs and keeping the filter on-line, despite unpredictable changes in solids loadings and solid characteristics. Each filter is constructed primarily of epoxy-coated steel with extensive polyvinyl chloride sheets with orifices that contain the sand filter media. Ancillary support systems include back wash system, compressed air system, degreasing system, access platform, and control system. Six pulsed bed cells would be required – five running and one standby. Each cell would be approximately 12 feet long by 10 feet wide by 12 feet high. The footprint of the entire pulsed bed tertiary filtration system would be approximately 50 feet long by 35 feet wide by 12 feet high, including ancillary support systems.

The proposed tertiary filter system would not operate as three parallel units as the aeration basins and the secondary clarifiers would. As shown in Appendix C, the proposed tertiary filtration system would provide tertiary level treatment at maximum sustained flows with one unit out of service, thereby meeting DHS Title 22 requirements.

Disinfection: The rotometers in the chlorinators limit the existing chlorine injection system to 400 pounds per day (lb/d). To maintain a chlorine concentration of 15 milligrams per liter (mg/L) in a 3.5 mgd effluent stream requires a chlorine injection rate of 440 lb/d. Replacing the rotometers in the existing chlorinators with 500 lb/d rotometers would allow the chlorinators to maintain a residual chlorine concentration of 15 mg/L at 3.5 mgd.

B. Disposal Method

Existing Disposal System: The RRCSD, through its NPDES permit (Permit No. CA0024058) issued by the NCRWQCB, is permitted to discharge to the Russian River between October 1 and May 14, and is required to discharge through land disposal, during the reclamation season (May 15 to September 30). The RRCSD discharge to the Russian River is limited by the RRCSD's NPDES permit to 1 percent of the river's flow at Guerneville. To determine compliance, the RRCSD uses flow data from the Hacienda Bridge gauging station, upstream of the river discharge point. The reclamation season discharge to the land is limited to 0.51 mgd. The RRCSD is limited to a maximum ADWF of 0.51 mgd due to constraints of its dry weather disposal capacity. The disposal lands (upper and lower irrigation on 77-acre easement of timberlands on the Burch property, an at the Northwood Golf Course) are operated near maximum capacity at certain times of the year.

The RRCSD's existing land disposal area consists of three sites, two of which are located on land currently leased from private property owners, Roger and Michele Burch. The Burch sites consist of an approximately 77-acre parcel located southeast of the RRCSD's treatment facility along the northern bank of the Russian River. The RRCSD irrigates approximately 16 acres of the lower area and approximately 2 acres of the upper area on the ridges of the Burch property. The RRCSD's third disposal site is the Northwood Golf Course, located south of the RRCSD's treatment facility. The Northwood Golf Course includes approximately 40 acres of turf and uses an average of 0.10 mgd of the RRCSD's recycled water for irrigation.

Proposed Disposal System: The disposal system under the proposed TUPP would not change from the existing disposal system described above.

C. Population Basis for Capacity Determinations

The RRCSD's treatment facility capacity determinations were based on estimates and projections from the 1975 RRCSD Project Report on Wastewater Collection, Treatment and Disposal Facilities. In projecting the permanent population of the RRCSD's service area, a fairly linear annual growth rate of two percent was assumed. The total population (permanent and nonpermanent) estimated for the service area included the following: 1974 estimate was 7,800; the projection for 1986 was 8,500; the projection for 1996 was 9,300; and the projection for 2016 was 10,400.

As noted in Section III. C. "Population", the current service area population is estimated at approximately 7,647. While this value is below the 1975 population estimates, high winter flow and CDOs necessitate the need to find a solution. The proposed action to address this need is the construction of the TUPP.

D. Design Capacity

There was no existing public wastewater facility in 1975 when the 1976 EIR was written; therefore, information on wastewater flows, flow variations, waste characteristics and infiltration did not exist. Wastewater flows and characteristics were developed based on the estimated 1974 population (7,800) and commercial development within the study area. The 1975 Project Report on Wastewater Collection, Treatment and Disposal Facilities estimated the per capita flows per

day for summer and winter months to be 80 gallons for permanent population and 60 gallons for nonpermanent population. The estimated summer average daily domestic flow was 524,000 gallons and the estimated winter average daily domestic flow was 284,000 gallons. The estimated summer average daily commercial flow was 50,000 gallons and the estimated winter average daily commercial flow was 30,000 gallons.[1]

E. Increase Over Present Capacity

The TUPP would not increase the permitted capacity of the RRCSD's treatment facility, but, would expand the wet weather treatment capacity to the level allowed under the 1976 EIR and meet DHS Title 22 requirements for redundancy. The TUPP would provide treatment for permitted flows. Expansion of the RRCSD's reclamation season disposal system would be required before an overall increase in the RRCSD's treatment capacity could be achieved.

The RRCSD is limited by its dry weather disposal NPDES permitted maximum capacity of 0.51 mgd. The disposal lands (upper and lower irrigation on 77-acre easement of timberlands on the Burch Property, and at the Northwood Golf Course) are operated near maximum capacity at certain times of the year. Year 2000 ADWF to the RRCSD treatment facility was 0.284 mgd. The current permit states that ADWF to the RRCSD treatment facility shall not exceed 0.71 mgd, based on the treatment capacity. The dry weather flow to the facility is well below its capacity, and there is currently no moratorium on hookups. In order for the RRCSD to increase its overall capacity, the RRCSD would need to find new disposal areas and complete any necessary environmental documentation in compliance with CEQA.

If the RRCSD wanted to expand its dry season disposal capacity, it would have several options available for doing so. One option is to purchase or lease timberlands surrounding the existing disposal area. The RRCSD currently has an easement which allows the RRCSD to irrigate effluent on a 77-acre portion of a 490-acre parcel owned by Mr. Roger Burch. The parcel owned by Mr. Burch is rugged, undeveloped timberland. If additional land were obtained for the purpose of irrigation it would require a CEQA review process, during which the public and public agencies would have an opportunity to comment. Another dry-weather disposal option is to make the tertiary recycled water available for use by nearby farmers for crop irrigation. To make the recycled water available to other users, the RRCSD would likely pursue a Master Water Recycler Permit, as allowed by California Water Code 13523.1. Other options for recycled water use, such as landscape irrigation or toilet flushing, have not yet been fully explored.

If the RRCSD desired a permit modification to increase the RRCSD wet or dry season NPDES discharge limits, the RRCSD would submit a Report of Waste Discharge to the NCRWQCB. NCRWQCB staff would then write a new or modified draft permit, referred to as a Tentative Order (TO). The TO would be released for public comment (including the discharger's comments). Once the comments were addressed, a final order would be presented to the NCRWQCB in a public hearing for possible action (which could include adoption, request for

[1] Russian River County Sanitation District Sonoma County, California Project Report on Wastewater Collection, Treatment and Disposal Facilities. December 1975.

modification, or denial). The procedure for public noticing and responding to comments is set by the NCRWQCB and is the responsibility of the NCRWQCB, not the RRCSD.

F. Proposed Project Relationship With Other Planning

Sonoma County General Plan Consistency: The following goals of the Sonoma County General Plan support the TUPP components. Goal LU-4.1 of the Land Use Element of the Sonoma County General Plan is to maintain adequate public services in both rural and urban service areas to accommodate projected growth.[2] Goal PF-1 of the Public Facilities and Services Element is to assure that wastewater management facilities are adequate to meet projected needs and are provided in a manner that preserves riparian habitat, supports water-dependent resources, enhances recreational opportunities, and preserves and enhances water quality and the environment.[3] The project is consistent with both of these goals.

The various components of the RRCSD's treatment facility proposed TUPP would be constructed on land already owned by the RRCSD and zoned Public/Quasi-Public. The RRCSD's treatment facility proposed TUPP would be consistent with the permitted uses of Public/Quasi-Public zoned lands.

State Implementation Plan: The RRCSD is not required to obtain a permit from the Northern Sonoma County Air Pollution Control District (NSCAPCD) for the operation of the RRCSD's treatment facility because the treatment facility was in operation prior to the NSCAPCD requirement. See Section III. F. "Climate and Air Quality."

II. ANALYSIS OF ALTERNATIVES

A. Description of Project Alternatives

The 1976 EIR proposed the following treatment systems as potential treatment alternatives:

- Aeration ponds followed by tertiary filtration
- Extended aeration activated sludge process with tertiary filtration
- Complete mix packaged treatment facility with tertiary filtration

The extended aeration activated sludge alternative was the preferred treatment alternative and was subsequently approved for implementation by the RRCSD Board. The extended aeration activated sludge alternative consisted of three processing units. Each unit process consisted of a single aeration basin, a single secondary clarifier, and a single tertiary filter. The three unit processes would operate in parallel. Only two of the three unit processes were originally constructed due to funding availability. The third aeration basin, third secondary clarifier, and third tertiary filter constitute the third unit process.

[2] Sonoma County Planning Department. *Sonoma County General Plan*. 1994.
[3] Sonoma County Planning Department. *Sonoma County General Plan*. 1994.

The RRCSD looked at alternatives to address flood issues in the 1999 *RRCSD Facility Upgrades and Disposal Expansion Project EIR.* The RRCSD's Board was scheduled to consider certification of the 1999 Final EIR on March 23, 1999. The Board decided to set aside the 1999 Final EIR due to public concern regarding the lack of a precise project description. Therefore, the 1999 EIR was never certified.

In addition to alternatives to address flood issues outlined in the 1999 EIR, the third unit processes project was proposed to improve wastewater treatment during high winter flows and to comply with Cease and Desist Orders issued by the NCRWQCB. In 1999, the RRCSD proposed to complete the third unit process as originally approved and authorized by the 1976 EIR. As a consequence, the RRCSD prepared an Environmental Analysis report, which concluded that a supplemental or subsequent EIR would not be necessary for the TUPP.

B. No Action Alternative

Prior to approval and partial completion of the project outlined in the 1976 EIR, sewage disposal in the Guerneville area consisted of septic tanks and cesspools. These aging sewage disposal systems began failing with sewage effluent reaching ground, surface, roadside ditches, and streams. Had no action been taken back in 1976, the public and the environment would have experienced negative impacts to fish species in the Russian River and to human health.

Currently, a no action alternative would result in the continuance of existing conditions at the RRCSD's treatment facility. The RRCSD's treatment facility would continue to have difficulty treating high winter flows. As a result, the RRCSD could anticipate future discharge violations resulting from discharge of non-tertiary treated effluent during storm events and inadequate disinfection time for effluent. This could potentially result in negative impacts to fish species in the Russian River, human health issues, as well as economic impacts to the RRCSD from resulting fines.

C. Reasons for Eliminating Alternatives

The following treatment alternatives were considered in the 1976 EIR in the evaluation of the RRCSD's treatment facility processes. These alternatives were eliminated from further study based on feasibility potential, environmental concerns, and/or failure to meet the project's stated purpose and need.

Implementing these alternatives at this time would require constructing a small packaged treatment system or a set of aeration ponds in parallel with the two existing aeration basins and secondary clarifier. Flow split and equalization of solids and biological loading rates between these treatment systems and the extended aeration activated sludge process would be prohibitively expensive to monitor and operate.

Aeration Ponds

Aeration ponds that could have met the project treatment requirements would have required additional acreage than the extended aeration activated sludge process (of which TUPP is a part). In the extended aeration activated sludge process alternative, solids are removed daily from the

wastewater stream, dewatered, and hauled to an approved landfill. In the aeration pond alternative, solids would accumulate in the aeration pond over time for disposal approximately every 20 years. This alternative would have required additional acreage to site the ponds resulting in additional environmental impacts. Suitable acreage to place additional ponds was not available in the immediate vicinity. Therefore, this alternative was eliminated from further study.

The reasons for eliminating aeration ponds as a viable treatment alternative in the 1976 EIR are still valid today.

Complete Mix Packaged Plant

Another alternative presented in the 1976 EIR was a complete mix packaged treatment plant. The relatively long solids detention time in the extended aeration activated sludge process produces a stable waste sludge, which eliminates the need for a separate solids stabilization treatment process. Although the complete mix packaged treatment plant alternative would have required a smaller footprint than the extended aeration activated sludge process, this alternative would have required a separate means of stabilization treatment of the solids removed from the secondary treatment process. Therefore, this alternative was not cost competitive with the extended aeration activated sludge process alternative.

The reasons for eliminating the complete mix packaged plant as a viable treatment alternative in the 1976 EIR are still valid today.

Tertiary Treatment Alternatives

All three treatment alternatives proposed in the 1976 EIR (extended aeration activated sludge, aeration ponds, and complete mix packaged plant) required additional tertiary treatment. Sand filtration was one of few commercially available tertiary treatment systems available at the time. However, sand filtration was the only tertiary treatment alternative deemed the most viable at the time.

Currently, adding a third tertiary sand filter of the same capacity and style as the two existing tertiary filters would not provide enough continuous tertiary treatment capacity as the proposed secondary treatment process. Two additional tertiary sand filters would be required to provide this capacity. Another tertiary sand filter would be required to meet DHS Title 22 tertiary filter redundancy requirements. In addition, the two existing tertiary filters are nearing the end of their service lives. Cloth media disk type filters and pulsed bed filters are currently the most cost competitive tertiary treatment systems commercially available. Therefore, to meet the purpose and need of the project the sand filters would be replaced with either cloth media disk type filters or pulsed bed filters.

III. PRESENT ENVIRONMENT

A. Community Location

Location: The RRCSD's treatment facility is located southeast of Vacation Beach and north of the Russian River at 18400 Neeley Road in the unincorporated community of Guerneville, in Sonoma County, California. The RRCSD is located in the Russian River Basin approximately 70 miles north-northwest of San Francisco and 16 miles west-northwest of Santa Rosa. The location of the RRCSD's treatment facility is shown on Figure 1 and Figure 2.

Surrounding Communities: Residential properties of Vacation Beach are located to the west of the RRCSD's treatment facility property. The Burch timberland property surrounds the RRCSD's treatment facility to the north, south, and east, and is zoned for resources and rural development.

Major Economic Activities: The economy of the Russian River area is tied to it seasonal influx in recreational visitors. The Russian River area remains the primary recreational area of Sonoma County for both residents and tourists, providing camping, fishing, swimming, boating, golfing, and hiking. Other economic activities include the winery industry, and some timber harvesting.

Land use: The RRCSD's treatment facility property is zoned for public/quasi-public use and is used for the tertiary treatment of wastewater. The RRCSD's service area includes the following land use designations: Urban Residential (maximum density of 10 units per acre), Recreation/Visitor - Serving Commercial Areas, and Public/Quasi-Public.[4]

Utilities:

Fire Protection: The project area has high to very high potential for large wildland fires. Fire protection services are provided by the Russian River Fire Protection District and volunteer fire departments.[5] The California Department of Forestry is responsible for fighting wildland fires.

Law Enforcement: Law enforcement services are provided by the Sonoma County Sheriff Department. The Sonoma County Sheriff Department maintains a substation in Guerneville.

Schools: Guerneville School District services the project area, which includes kindergarten through eighth grade. Grades nine through twelve attend either El Molino High School in Forestville or Laguna High School in Sebastopol. [6]

Power and Natural Gas: Power is supplied to the project area by the Pacific Gas and Electric Company (PG&E). Natural gas is supplied through a network of underground distribution pipelines and electric power is supplied by overhead and smaller underground transmission lines.

Communications: Telephone communications are provided to the project area by Pacific Bell. The majority of telephone lines in the project area are overhead. Cable television is provided through a combination of underground and overhead lines by TCI-cable. The SCWA's remote

[4] Sonoma County General Plan. *Land Use Map, Russian River*. March 1994.
[5] Russian River Economic Task Force, *Preliminary Needs Assessment for Lower Russian River Community*, 1998.
[6] Sonoma County Planning Department. *Sonoma County General Plan*. 1994.

telemetry network connects the RRCSD's treatment facility to its Operation and Maintenance Center in Santa Rosa.

Potable Water: The Sweetwater Springs Water District and the Armstrong Valley Water Company supply potable water to the RRCSD's service area. Private wells are also a source of water in the RRCSD's service area.

Water Treatment and Disposal: The RRCSD is a public utility that provides wastewater collection, treatment, and disposal services to businesses and residences within its service area.

Sewer and Septic Tanks: The RRCSD provides sewer services within the project area through underground pipes. Septic tanks and leach fields are used primarily at individual residences outside the RRCSD's service area. Septic tanks and leach fields located within the service area are permitted and monitored by the Sonoma County Permits and Resource Management Department.

Storm Water Drainage: Storm water drainage facilities within the project area are provided through a combination of flood control ditches, culverts, and underground storm drainpipes. These facilities are provided and maintained by private landowners, by the Sonoma County Public Works Department, and by the SCWA.

Solid Waste: The County of Sonoma operates a refuse disposal site on Pocket Drive near Guerneville.

Access and Transportation: The RRCSD's treatment facility is accessed by Neeley Road, which is a two-lane local road servicing a residential area in Vacation Beach. State Highway 116 provides access to Neeley Road south of the Russian River. River Road and State Highway 116 are the primary arterials in the area, and carry large traffic volumes.

Sonoma County Transit provides fixed-route transit service within Sonoma County. Sonoma County Transit connects river communities, such as Guerneville, with Santa Rosa and Sebastopol. The No. 28 Line provides service along River Road between Russian River communities, including Duncuns Mills, Guerneville, and Rio Nido. Also, this Line crosses the Russian River on State Highway 116 at Guerneville and services Vacation Beach along Neeley Road. Neeley Road terminates at the RRCSD's treatment facility. Line No. 20 provides services along River Road from as far west as Duncans Mills to Santa Rosa and Sebastopol. Many of the highways and roads in the region also include bike lanes.

B. Service Area

As of July 2001, there are approximately 3,318 parcels within the RRCSD's service area, of which 2,434 parcels were provided[7] wastewater collection, treatment, and disposal service. The service area includes the unincorporated areas of Rio Nido, Armstrong Park, Drake Estates, Guerneville, Guernewood Park, and Vacation Beach, in Sonoma County. The general location of the RRCSD's treatment facility and service area are shown on Figure 2.

[7] Phone conversation with Debbie Webster, Sonoma County Water Agency on June 20, 2002.

C. Population

Population Served: The following calculations are from the January 2002 Report of Waste Discharge for Russian River County Sanitation RRCSD. As of July 2001, The RRCSD provides wastewater collection, treatment, and disposal services to approximately 2,434 parcels in its service area. The January 2002 Report found the population to be approximately 7,647. The approximate population was determined by multiplying the equivalent single-family dwelling units (ESDs) of 3,134 by the occupancy rate of 2.44 people per household: 3,134 x 2.44 = 7,647[8]. In general, the population growth is due to nonpermanent residents becoming permanent residents.

D. Topography

Topography in the project area is characteristic of the north Coast Ranges with surface relief dominated by northwest-southwest trending ridges and valleys. The Coast Ranges are generally located to the west of the Russian River watershed with peak elevations between 1,000 and 3,500 feet and slopes often in excess of 30 percent. Valley elevations range from 100 to 400 feet. The project area is located within a portion of the Russian River watershed. The headwaters of the Russian River are located approximately 15 miles north of Ukiah in Mendocino County. The Russian River meanders west through the coastal mountain range, and the elevation of the river gradually declines until it reaches sea level at the river's mouth at Jenner.

E. Geology

Seismic Activity: Like all parts of Northern California, future earthquakes may affect the RRCSD.

Major Geological Faults: There are no known active faults within the RRCSD's property, although inactive thrust faults are mapped outside the property boundaries. The closest active faults are the San Andreas Fault zone, which is approximately 8.5 miles southwest of the project area, and the Healdsburg fault zone, which is approximately 12 miles northeast of the project area.[9]

Soils: Soil associations occurring within the project vicinity are characterized as lowland sediments and mountainous bedrock-derived soils. Soils in basins, tidal flats, flood plains, terraces, and alluvial fans were developed from unconsolidated alluvium of sedimentary and volcanic materials deposited in valleys and along the shores. These soils are characterized as being level to steep and excessively drained to poorly drained. Runoff rates in these soils vary from slow to medium and erosion hazards are slight to moderate. These soils consist of very

[8] Sonoma County Water Agency. *Report of Waste Discharge for Russian River County Sanitation District Sonoma County, California.* January 2002.
Sonoma County General Plan. March 1991.
[9] Giblin Associates, *Report Geotechnical,* 1997.

gravelly sandy loams to clays. Soils of this type include the Huichica-Wright-Zamora, Pajaro, and Yolo-Cortina-Pleasanton associations.[10]

Soils of the high terraces, foothills, uplands and mountains generally are developed on bedrock terrain or on bedrock thinly overlain by unconsolidated material. These soils are characterized as nearly level to very steep and moderately well drained to excessively well drained. Runoff rates vary from medium to very rapid and erosion hazards tend to be moderate to very high. These formed in material weathered from volcanic tuff, rhyolite, serpentine, sandstone, shale, and metamorphosed schist, as well as basic igneous rock. Soil associations of this type in the project vicinity include the Yorkville-Suther, Hugo-Josephine-Laughlin, Empire-Caspar-Mendocino, and Goldridge-Cotati-Sebastopol[11]

Erosion Potential: The potential for slope failure exists on the many steep slopes surrounding the RRCSD's property and evidence of landslides are visible. On February 6, 1998, a mudslide originating from the property north of the RRCSD's property line deposited approximately 175 cubic yards (cy) of mud, branches and other debris within the RRCSD's property line. See Section H1. L. "Water Quality Problems," CDO No. 98-57 and Civil Liability Order (CDO) No. 98-56 for damage occurred. Because the mudslide originated on private property, the RRCSD is limited in the actions it can take to prevent future slides. The RRCSD has evaluated the site and has constructed a small retaining wall to shield the treatment facility from debris flows in the same area of the February 1998 slide. The RRCSD has contacted the property owners to repair the slide and has provided input to the private property's timber harvest plan to reduce future landslides.

The slide occurred at the site originally designated for the proposed third secondary clarifier. Since the slide happened, the planned location for the proposed third secondary clarifier has been moved. The proposed third secondary clarifier new location would be built just north of the tertiary filters (see Figure 2).

F. Climate and Air Quality

Regional Climate: The project area is located in the northern California coastal region, which is influenced by marine winds and coastal fog that moderate temperatures. Subsidence inversions, occurring when a warm air layer acts as a cap on an underlying cooler air layer, occur frequently in Sonoma County, particularly during the fall and winter. These inversions trap pollutants released at ground level in the valleys. The topographical features that contour Sonoma County serve to channel surface flow, but also inhibit dispersion of pollutant emissions.

Predominant winds measured at the meteorological station nearest the project site (Santa Rosa) are typically out of the south during spring, summer and fall and out of the northwest during the winter. Winds are most variable during winter and most persistent during summer. In summer, winds shift to a more southerly orientation. Wind speeds are highest during spring and lowest in

[10] United States Department of Agriculture (USDA), *Soil Survey, Sonoma County*, Forest Service and Soil Conservation Service. May 1972.
[11] United States Department of Agriculture (USDA), *Soil Survey, Sonoma County*, Forest Service and Soil Conservation Service. May 1972.

fall. In more coastal areas, northwest (off-shore) winds are common in spring and summer. Calm conditions occur frequently during nighttime hours during all seasons, and during winter into the late morning hours.

Air Quality: Odorous gases produced in the existing treatment facility commonly include hydrogen sulfide, ammonia, and certain organic compounds containing nitrogen and sulfur that have not been completely oxidized. Odors occur in fresh, or incompletely treated wastewater and liquid process side streams, raw sludge, screenings, grit, and skimmers. Also, objectionable odors can occur during general cleaning activities. The processed wastewater from the treatment facility is tertiary treated which is chlorinated water, and does not produce an objectionable odor.

As discussed earlier, the RRCSD does not have a permit from the NSCAPCD for the operation of the RRCSD's treatment facility because it was in operation prior to the NSCAPCD requirement and because the treatment facility generates few odor complaints. Odors associated with the wastewater treatment process are noticeable in the vicinity of the aeration basins and the biomass handling equipment. The RRCSD's property is not within close vicinity of any residences, commercial centers, or recreational areas. The nearest residence is approximately 400 feet from a possible source of odors at the RRCSD's treatment facility. Local residences have occasionally contacted the facility, during the month of October, regarding objectionable odors. Fall is the season when winds are calm and odors tend to settle in low-lying areas. If changes were made to the treatment facility, which result in significant increases in odors, the RRCSD would be required to apply for a permit. Other sources of emissions at the treatment facility include one 700-horse power (hp) emergency generator and maintenance vehicles.

There are no known existing or projected air quality violations or problems within the RRCSD's service area. Existing RRCSD facilities, which generate emissions, include emergency generators at the RRCSD's Main Lift Stations on River Road and at Rio Nido. Air quality in the RRCSD's service area is generally good.

G. Environmental Inventory

The following list describes the environmental inventory present or nearby the TUPP area. The RRCSD's disposal/irrigation sites are not part of the TUPP, however, information is supplied where applicable.

i. **Wetlands** [U.S. Army Corps of Engineers (Corps)]

Wetlands and "Waters of the United States"

Potential Section 404 jurisdictional wetlands near the project area consist of vegetated sections of depressional features. Plant species in these potentially Corps jurisdictional wetland areas include pennyroyal, curly dock, umbrella sedge, ryegrass, and other sedge species. Most of the creeks and drainages in the project area have sparse enough vegetation (less than 5 percent vegetative cover) to qualify as "Waters of the U.S." for Corps jurisdictional purposes. Wetland and "Waters of the U.S." habitat types occur nearby the project area and are discussed below.

Seasonal Wetland: The seasonal wetlands located near the project area would not be affected by the TUPP. These seasonal wetlands are hydrologically isolated depressions that support a low-growing cover of annual herbs and grasses located south, southeast, northeast, and southwest of the project site.

Botanical surveys for sensitive plant species were conducted by SCWA staff in accordance with U.S. Fish and Wildlife Service (FWS) 1996 and California Department of Fish and Game (DFG) 1997 guidelines, on the RRCSD's treatment facility on April 7, June 9 and June 18 1998. Botanical surveys were timed to coincide with the flowering period of sensitive species with potential to occur in the TUPP area. No special status plant species were observed within the project area during surveys.

A determination of whether suitable habitat existed for the sensitive species listed in Appendix D was made from a reconnaissance of the project area. In general, vegetation communities within the project area were previously disturbed by the development of the treatment facility. No potential habitat for special status plant species was identified within the project area and no occurrences are anticipated.[12]

The TUPP would not block flows or create runoff that may alter the seasonal nature of wetlands located outside of the project area. Contract specifications include the use of silt fencing to contain any sedimentation produced during construction. (See Appendix E, TUPP Erosion Control Plan and Details.)

Potential Waters of the U.S.: A drainage is located within the RRCSD's treatment facility that may be potential Waters of the U.S., however it is not within the TUPP area. This drainage is located in the northwest corner of the facility, is approximately 0.03 acre in surface area, and has been previously diverted into rock-lined channels to carry hillside surface runoff during storm events.

ii. **Groundwater Resources** [Including sole source aquifers as designated by EPA]

There are no sole source aquifers designated by the EPA within Sonoma County.[13]

iii. **Floodplain** [FEMA]

The Federal Emergency Management Agency's Flood Insurance Rate Map designates the TUPP area and the RRCSD's disposal/irrigation sites as Zone X, which consists of areas determined to be outside 500-year flood plain.[14]

[12] Sonoma County Water Agency. *Biological Resources Technical Report of Russian River County Sanitation District Third Unit Processes Project Area.* August 2002.
[13] Environmental Protection Agency, Region 9. *Fact Sheet:* The *EPA's Sole Source Aquifer Program.* November, 1994.
[14] The Federal Emergency Management Agency. *Flood Insurance Rate Map Sonoma County (Unincorporated Areas). Communit-Panel Number 060375 0635 B.* Revised April 2, 1991.

iv. **Important/Significant Agricultural Lands** [Natural Resources Conservation Services]

The 1994 and 1998 Sonoma County Important Farmland Maps does not designate the TUPP area as Important/Significant Agricultural Land. Its given designation is Other Land; Land which does not meet the criteria of any other category.[15]

v. **Coastal Zones** [Coastal Commission]

The TUPP, and the RRCSD's disposal/irrigation sites are outside of the North Central Coast California Coastal Commission's Coastal Zone jurisdiction.[16]

vi. **Wild and Scenic Rivers** [National Park Service]

There are no Wild and Scenic Rivers designated by the National Park Service within Sonoma County.[17]

vii. **Coastal Barriers** [Coastal Commission]

Not Applicable. The proposed project is not a coastal barrier, nor a coastal project.[18]

viii. **Major Botanical Features** [List features of service area, facilities site(s), and disposal/irrigation sites].

The existing treatment facility footprint is developed with wastewater treatment equipment and appurtenant structures. There are some areas within the treatment facility footprint, primarily the outer perimeter of the property boundary, that are not fully developed. Those areas are either barren or vegetated with coast redwoods (*Sequoia sempervirens*), shrubs, forbs, herbs, and ornamentals. The existing Burch property disposal/irrigation site includes mixed evergreen habitat. The Northwood Golf Course disposal/irrigation site includes turf.[19]

ix. **Important Fish and Wildlife** [List major species, economically or recreationally important species that occur in service area, facilities site(s) and disposal/irrigation site]

The major game fisheries that inhabit the Russian River and tributaries include the federally listed threatened central California steelhead and central California coast coho salmon, American shad, largemouth bass, and smallmouth bass. In addition to game species, several non-game species also inhabit the Russian River and its tributaries including Sacramento sucker, California roach, and Sacramento squawfish. Fish that are

[15] U.S. Department of Interior, Natural Resources conservation Service. Sonoma County Important Farmland 1994 Map. 1994; and U.S. Department of Interior, Natural Resources conservation Service. Sonoma County Important Farmland 1998 Map. 1998.
[16] Phone conversation with Chris Kern, North Central Coast California Coastal Commission on April 26, 2002.
[17] National Park Service. http://www.nps.gov/rivers/wildriverslist.html#ca. April 26, 2002.
[18] Phone conversation with Chris Kern, North Central Coast California Coastal Commission on April 26, 2002.
[19] J.B. Gilbert and Associates. *February 1976 Environmental Impact Report, Wastewater Collection Treatment and Disposal Facilities, Russian River County Sanitation District.* February 1976.

important to the local Russian River economy include steelhead, coho and coastal chinook salmon, and American shad.[20]

x. **Endangered or Threatened Species** [U.S. Fish and Wildlife]

There were no federally endangered or threatened species identified in the 1976 EIR. After the publication of the 1976 EIR the following species were listed as threatened in evolutionarily significant units that included the Russian River watershed.[21]

Threatened Species:

Fish

The following species were listed as threatened by the National Marine Fisheries Service on October 31, 1996, August 18, 1997 and September 16, 1999, respectively.

- Coho Salmon (*Oncorhynchus kisutch*)
- Steelhead (*Oncorhynchus mykiss*)
- Chinook Salmon (*Oncorhynchus tshawytscha*)

There is no suitable habitat present for listed fish species within the proposed project area.

Birds

The following species was listed as threatened by the FWS on June 22, 1990.

- Northern Spotted Owl (*Strix occidentalis caurina*)

Endangered Species:

There are no species listed as endangered in the RRCSD's treatment facility area or disposal/irrigation sites.[22]

Wildlife Surveys:

Wildlife surveys were conducted by SCWA staff on the RRCSD's treatment facility on April 7, June 9, June 18 1998, and November 5, 2002. The 1998 and 2002 surveys were performed at appropriate times for target species. The 1998 and 2002 surveys were

[20] J.B. Gilbert and Associates. *February 1976 Environmental Impact Report, Wastewater Collection Treatment and Disposal Facilities, Russian River County Sanitation District.* February 1976.
[21] United States Fish and Wildlife Service. *Federal and threatened species that may be affected by projects in Camp Meeker 7 ½ Minute Quad.* March 25, 2002; and United States Fish and Wildlife Service. *Federal and threatened species that may be affected by projects in Guerneville 7 ½ Minute Quad.* Updated July 23, 2002, Gather August 6, 2002.
[22] Sonoma County Water Agency. *Biological Resources Technical Report of Russian River County Sanitation District Third Unit Processes Project Area.* August 2002.

conducted by walking transects through all present habitats. Wildlife species were identified with the use of binoculars, identification of avian calls and songs, and observation of signs (tracks, scat, and feathers).[23] Potential habitat for special status species was identified during the surveys and all wildlife species observed were recorded. Avian species scientific and common nomenclature followed the American Ornithologists' Union Seventh Edition Check-List of North American Birds, plus supplements (AOU 1998). Nomenclature for all other wildlife species followed the DFG California Natural Diversity Database (NDDB) and FWS species lists.

The Burch property owners (also known as the Silver Estate), adjacent to the RRCSD's treatment facility proposed TUPP area, conducted FWS protocol surveys for the federally threatened northern spotted owl (Checkal 1998), for the Silver Estate Timber Harvest Plan (THP). FWS protocol requires surveys to be at least five days apart and a minimum of four night visits must be completed prior to June 30 for a one year survey (one year surveys require a minimum of six complete night visits) (FWS 1991). Night surveys were performed on April 1, 14, 20, and 30, and May 7 and 14, 1998 (GTE & Associates 1998). Surveys were performed by establishing six calling points on the property. No responses were recorded during surveys.

A list of special status wildlife species with potential to occur within the project area is provided in Appendix F. For identifying species with potential habitat within the project area, information on local occurrences of these species was gathered by reviewing the NDDB (2002), the FWS species lists (2002), the Burch property Silver Estate THP (Checkal 1998), and consulting with resource agencies and knowledgeable individuals.

Results

No wildlife species of concern and special status wildlife species were identified during the 1998 and 2002 surveys.

The following discussion provides information regarding wildlife species of concern; identified special status wildlife species, and wildlife species protected under the Migratory Bird Treaty Act as having potential to occur within the project area.[24]

Species of Concern - Wildlife:

Species of Concern is an informal term that refers to those species that the FWS office believe might be declining or be in need of concentrated conservation actions to prevent decline. These species receive no legal protection.

The text below describes a wildlife species of concern identified outside the RRCSD treatment facility property.

[23] Sonoma County Water Agency. *Biological Resources Technical Report of Russian River County Sanitation District Third Unit Processes Project Area.* August 2002.
[24] Sonoma County Water Agency. *Biological Resources Technical Report of Russian River County Sanitation District Third Unit Processes Project Area.* August 2002.

Osprey

The Silver Estate THP identified an occupied osprey (*Pandion haliaetus*) nest on the Burch timberland property, which is a DFG species of special concern. The nest is located outside of the RRCSD's treatment facility proposed TUPP area (approximately 1,500 feet north of the RRCSD treatment facility). Due to the nest location, the TUPP will not impact the nest. Osprey was not observed during surveys at the RRCSD's treatment facility. It is unlikely that the osprey would nest in tree stands located within the RRCSD's treatment facility due to the level of development and regular disturbance that occurs on site.

Special Status - Wildlife:

Special Status Species is an informal term that refers to any FWS listing that a species may have (i.e. threatened or species of concern).

No special status wildlife species were observed on the RRCSD property during SCWA surveys conducted in 1998 and 2002. The text below discusses wildlife species that are special status species (threatened and species of concern) identified as having potential to occur within the project area.

Northern Spotted Owl

Northern spotted owl is a FWS threatened species under the Endangered Species Act and is a DFG species of special concern. The Silver Estate THP describes potential nesting, roosting, and foraging habitat for northern spotted owl on the Burch property (also known as the Silver Estate), adjacent to the RRCSD's treatment facility. The THP included FWS protocol surveys for northern spotted owl (Checkal 1998). No occurrences were recorded during these surveys. The northern spotted owl was not observed during surveys conducted by the SCWA at the RRCSD's treatment facility. Remnant stands of mixed evergreen forest within the project area provide minimal marginal habitat for northern spotted owl. It is unlikely that tree stands present within the project area would be used for nesting as the stands are surrounded by the existing treatment facility.

Northwestern Pond Turtle

Northwestern pond turtle (*Clemmys marmorata marmorata*) is a FWS species of concern, a DFG species of special concern, and is protected as a native reptile under 14 CCR §42. The northwestern pond turtle was not observed during surveys. The RRCSD's treatment facility filtration pond has potential marginal aerial and aquatic basking habitat. However, no suitable nesting habitat for the northwestern pond turtle is located within the vicinity of the proposed project area.

Migratory Bird Treaty Act:

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of

migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful.

The text below discusses a species protected by the Migratory Bird Treaty Act identified on the RRCSD treatment facility property during the 1998 surveys. No species protected by the Migratory Bird Treaty Act were found during the 2002 survey.

Killdeer

A killdeer (*Charadrius vociferus*) nest was encountered during SCWA surveys of the RRCSD's treatment facility on June 18, 1998. Killdeer and its nests are protected under the Migratory Bird Treaty Act and may not be disturbed or harmed.

Discussion

Potential marginal habitat for the northern spotted owl is present, and potential marginal aerial and aquatic basking habitat exists for the northwestern pond turtle within the proposed project area. Although northern spotted owl and northwestern pond turtle were not observed during the 1998 and 2002 surveys, pre-construction surveys for these species would be conducted if the proposed TUPP were constructed. The text below describes pre-construction surveys that would be conducted.

Pre-construction Surveys:

Pre-construction surveys for the presence of northwestern pond turtle would be performed for 48 hours prior to starting construction. If northwestern pond turtles are observed, they would be moved to appropriate habitat outside of the construction area by a wildlife biologist in consultation with DFG.

Pre-construction surveys for nesting birds, which include osprey, northern spotted owl, killdeer, and other potential nesting bird species would be performed if construction activities are scheduled to take place during the nesting bird season (late February to the end of July). Surveys would be done within 4 hours of local dawn for nesting bird species. Pre-construction surveys for the northern spotted owl would be done in accordance with FWS survey protocol. Should nesting activity be observed for any nesting bird species, the FWS and DFG would be consulted prior to construction.

Pre-construction surveys would be conducted by walking meandering transects through the present habitat. Wildlife species would be identified by the use of binoculars, spotting scope, identification of avian calls and songs, and identification of breading birds. Signs of active nesting including nest building breeding behaviors and actual nest sites would be looked for.

xi. **Critical Habitats** (Habitats essential for survival of endangered or threatened species)

Near the project site, the Russian River supports habitat for threatened species (i.e. Coho Salmon, Steelhead, Chinook Salmon, and Northern Spotted Owl). There are no species

listed as endangered in the RRCSD's treatment facility area. As discussed above under Section G. x. "Endangered and Threatened Species", there is no suitable habitat present for listed fish species within the proposed project area. . Remnant stands of mixed evergreen forest within the project area provide minimal marginal habitat for northern spotted owl. However, it is unlikely that tree stands present within the project area would be used for nesting as the stands are surrounded by the existing treatment facility.

At present, high flood flows overwhelm the RRCSD treatment facility, and at times results in the discharge of less than tertiary treated wastewater to the Russian River. The TUPP would increase the RRCSD treatment facility's ability to treat the inundation inflows due to large flood events. Therefore, the RRCSD's treatment facility would be less likely to be overwhelmed during floods and less likely to release less than tertiary treated wastewater to the Russian River habitat. Therefore, construction of the TUPP would not adversely affect critical habitat, as the project is not anticipated to negatively affect the Russian River.

xii. **Environmentally Sensitive Areas**

The existing treatment facility footprint is developed with wastewater treatment equipment and appurtenant structures. There are some areas within the RRCSD's treatment facility footprint, primarily the outer perimeter of the property boundary, that are not fully developed. Some surrounding areas of the RRCSD's treatment facility and portions of the RRCSD's property have environmentally sensitive areas that include hazardous soils areas; and critical slope stability areas.

Hazardous Soils. Hazardous soil areas are located within the project area. Hazardous soils areas exhibits severe limitations for homesite and related construction activities. The soil characteristics most responsible in limiting residential development include shrink-swell behavior, erosion potential, strength, porosity, and depth.

Critical Slope Stability Areas. Critical slope stability areas were developed from soils, geologic, and topographic information. They are related to those elements discussed under soils. In general, these areas are found throughout the Russian River Area. Erosion can be a severe hazard during any construction project on most all soil areas where the slope exceeds five percent. [25] The TUPP would not be constructed on critical slope stability areas. See Section III E. "Geology" and Figure 2 "TUPP Site Plan."

xiii. **National Natural Landmarks** [National Park Service]

Not applicable. There are no National Natural Landmarks in Sonoma County. [26]

[25] J.B. Gilbert and Associates. *February 1976 Environmental Impact Report, Wastewater Collection Treatment and Disposal Facilities, Russian River County Sanitation District.* February 1976.
[26] Phone conversation with Jonathan Bayless, National Park Service on May 13, 2002.

xiv. **Historic, Prehistoric, Architectural, Archaeological, and Cultural Sites** [SHPO]

In complying with NEPA funding requirements the RRCSD has complied with the National Historic Preservation Act (16 U.S.C. 470), Section 106. Coordination between the State Water Resources Control Board (SWRCB) and the EPA occurred to help fulfill the RRCSD's Section 106 requirements. In complying with Section 106, the RRCSD did the following:

1) A Northwest Information Center (NWIC) review of records and literature was performed. The NWIC review did not find recorded Native American or historic cultural resources within the Historical Resources Information System for the RRCSD treatment facility. NWIC review included the following: no historic properties were listed for the property; the entire treatment facility has been studied for cultural resources; the project area has been previously surveyed for the presence of cultural resources with negative results; and there is a low possibility of identifying Native American and historic cultural resources in the project area, therefore, no further archival and field study by an archaeologist is recommended at this time (See Appendix G). [27]

2) The RRCSD contacted the Native American Heritage Commission (NAHC). A NAHC record search of the sacred land file failed to indicate the presence of Native American cultural resources in the immediate TUPP area. However, the absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. NAHC recommended that other sources of cultural resources should also be contacted for information regarding known and recorded sites (See Appendix H)[28]. A list of Native American individuals/organizations who may have knowledge of cultural resources in the project area was given to the RRCSD by the NAHC. The RRCSD contacted all of the listed Native Americans individuals/organizations indicated by the NAHC, by letter and followed up with telephone calls, to ensure that the project information was received.

3) The RRCSD forwarded all cultural resources information for Section 106 requirements to the SWRCB, whom was the main contact with the State Historic Preservation Office (SHPO). The SWRCB sent a letter to SHPO requesting concurrence on Section 106 compliance and a finding of no historic properties affected for the TUPP. SHPO responded by letter to SWRCB, giving Section 106 clearance for the TUPP (See Appendix I).

xv. **Aesthetic Resources**

The Russian River area has many aesthetic resources. Mountains, redwood forests and riparian habitat surround the RRCSD's treatment facility and disposal/irrigation sites.

[27] Northwest Information Center. *Russian River County Sanitation District Third Unit Process Project.* June 2002.
[28] Native American Heritage Commission. *Proposed Russian River County Sanitation District Third Unit Processes Project, Sonoma County.* August 20, 2002.

xvi. **Hazardous Materials**

The RRCSD's treatment facility uses hazardous materials that include a diesel fuel tank, chlorine, and sulfur dioxide. An aboveground dual-contained diesel fuel tank is located on the RRCSD's property to power the RRCSD's emergency generator. The diesel storage tank is in accordance with the Uniform Fire Code (UFC) and the Certified Unified Program Agency (CUPA). The chlorine is stored in one-ton containers in the chlorine room. The sulfur dioxide is stored in 150-pound cylinders in a separate room. Both hazardous chemicals are stored in accordance to the UFC, the Uniform Building Code (UBC), the California Occupational Health Safety Association (OSHA), the Process Safety Management (PSM), the Environmental Protection Agency's Risk Management Program (RMP), and the SCWA's Safety and Health Program, which includes Safe Work Practices, and Standard Operating Process.

The TUPP tertiary filters may use chlorine solution to initially clean the new filters. All other hazardous materials are utilized for the treatment facility.

H. Present Facilities

H1. Wastewater Projects

i. Present Facilities (including condition) for treatment, collection, conveyance, disposal and/or reclamation

Existing facilities include a gravity collection system, a tertiary-standard treatment facility, disposal season discharge to the Russian River, and reclamation season discharge to the Burch property and Northwood Golf Course. The existing facilities are described below:

Existing Collection System: The RRCSD provides service to approximately 3,318 parcels, of which 2,434 parcels use a gravity collection system. The remaining 884 parcels are within the RRCSD however, they are not connected to the system. Most of these lots are unbuildable, vacant land, or utilized as parking lots. The RRCSD has a mandatory connection ordinance; and very few, if any, buildable units are not connected. The collection system consists of approximately 35 miles of gravity pipeline, approximately 4 miles of various sizes of pressure main, and a total of 11 lift stations with capacities between 20 and 3,000 gallons per minute (gpm). The lift stations consist of pumps, valves, and electrical control equipment enclosed in a structure to pump water from lower elevations to higher elevation.

Existing Treatment Facility: The RRCSD's treatment process produces treated wastewater which meets tertiary treatment standards. Tertiary treatment removes some nutrients, such as phosphorus and nitrogen, and a high percentage of suspended solids. The RRCSD's treatment facility was designed to provide tertiary treatment for an ADWF [29] of up to 0.71 mgd, although all the equipment necessary to treat this capacity has not been constructed.

[29] ADWF is the lowest 30-day running average dry weather flow in a year, outside the influence of rain, and hopefully, infiltration.

The RRCSD is allowed to discharge to the Russian River in the wet season under the current NPDES permit. This is called the discharge season and runs from October 1 to May 14 of each year. The RRCSD discharge to the Russian River is limited by the RRCSD's NPDES permit to 1 percent of the river's flow at Guerneville. To determine compliance, the RRCSD uses flow data from the Hacienda Bridge gauging station, located upstream of the river discharge point. The river's average monthly flow during the discharge season for water years 1940 to 2001 ranged from 307 to 6,998 cubic feet per second (cfs). Therefore, the average allowed discharge rate would have ranged from approximately 2 to 45 mgd. The highest average monthly flow discharged in (December) 2001 was less than 1 mgd.

The RRCSD may not discharge to the river during the summer and must dispose of its wastewater by irrigating land under the current land disposal NPDES permit. This is called the reclamation season and runs from May 15 to September 30 of each year. The RRCSD's maximum permitted ADWF is 0.51, due to limits of reclamation system capacity. The highest average monthly flow recycled through irrigation in the summer of 2001 was 0.381mgd.

The RRCSD's treatment facility can treat a maximum month flow[30] of 1.2 mgd and maximum sustained peak flow[31] of 1.8 mgd. The RRCSD's treatment facility currently treats approximately 0.28 to 0.35 mgd ADWF. The variation in the ADWF is both weather and tourism dependent.

The treatment facility includes a headworks, flood overflow pipeline, two extended aeration/activated sludge basins, four blowers, two secondary clarifiers, two tertiary filters, disinfection and dechlorination equipment, two storage reservoirs, and biosolids handling equipment. Appendix J contains a mass balance that shows flow rates for various conditions to the existing treatment processes.

Headworks: This is the first point of contact for wastewater in the treatment process where initial solids are removed and influent flows are measured. The headworks include an automated screen, a Parshall flume, and a grit chamber. The automated screen catches large debris such as rags, paper, and other items larger than 1/4-inch in diameter which have been flushed into the waste stream. The Parshall flume measures the influent flowing through the headworks. The grit chamber slows down the flow of wastewater and allows inorganic solids such as sand, silt, eggshells, glass, and metal fragments to be removed.

Flood Overflow Pipeline: In the Fall of 1997, the RRCSD added a flood overflow pipeline to protect the biological treatment process and increase the reliability of the treatment facility during flood events. The flood overflow pipeline is used during flood events when the inflow, which consists of co-mingled floodwater and wastewater, exceeds the capacity of the treatment facility. The flood overflow pipeline begins at the headworks and chlorine is added in the pipeline. Influent then is transferred directly to the one-million-gallon storage reservoir where it is stored and solids are allowed to settle. Under these conditions, the one-million-gallon storage reservoir operates as an equalization storage reservoir. As inflows to the treatment facility

[30] Maximum month flow is the maximum running 30-day influent flow.
[31] Maximum sustained peak flow is the maximum running 4-day influent flow.

subside and treatment capacity becomes available, influent is pumped back to the headworks to receive full treatment through the facility. In extreme cases, during winter discharge season to the Russian River, if treatment capacity does not become available before the equalization storage reservoir overfills, the primary treated and disinfected effluent is dechlorinated, and then blended with tertiary-treated recycled water before being discharged to the Russian River. All flows are metered so that accurate data can be reported.

Aeration Basins: This is the second step in the treatment process, where large amounts of air are mechanically supplied to a mixture of wastewater, beneficial bacteria, and other microorganisms. Oxygen in the air speeds the growth of beneficial microorganisms, which biologically consume harmful organic matter in the wastewater.

The RRCSD's treatment facility currently utilizes two extended aeration activated sludge basins. Each has a volume of approximately 0.5 million gallons. The RRCSD currently utilizes four 500-cubic feet per minute (cfm) blowers that supply up to 2866 pounds per day (lbs/d) of oxygen to the influent at an average depth of twelve feet in the aeration basins.

The existing sludge transfer pumps pump aerated wastewater from the aeration basins to the secondary clarifier. The pumping capacity of these pumps is limited to 2 mgd. Details of existing aeration basin capacity are included in Appendix J.

Secondary Clarifiers: This is the third step in the treatment process. Microorganisms and stabilized organic matter form clumps that settle out of the wastewater in the clarifiers. The settled materials are referred to as biosolids. The RRCSD's treatment facility currently utilizes two secondary 40-foot diameter clarifiers. As shown in Appendix J the combined secondary clarifiers' capacity is exceeded when flows exceed 2 mgd.

Tertiary Filters: In the tertiary treatment process, water is filtered prior to disinfection. The tertiary filter consists of sand and activated carbon. This process removes a high percentage of remaining solids. As shown in Appendix J the tertiary filtration capacity is exceeded when flows exceed 2 mgd. The filters clog easily at high flow rates, requiring frequent backwashing. The amount of time required for backwashing, further delays and restricts the ability to fully treat the wastewater.

Disinfection: This is the final step in the treatment process. The RRCSD currently utilizes chlorine gas to disinfect and sulfur dioxide to remove residual chlorine before the recycled water is discharged, stored for reclamation, or used as process water. Chlorinators inject chlorine from 1-ton cylinders into the chlorine contact tank to disinfect the treated effluent stream. The rotometers in the chlorinators limit the existing chlorine injection system to 400 lb/day. To maintain a chlorine concentration of 15 mg/L in a 3.5 mgd effluent stream requires a chlorine injection rate of 440 lb/day.

Storage Reservoirs: The storage reservoirs hold treated effluent until it is discharged to the land disposal areas during the reclamation season or to the Russian River during the discharge season. The RRCSD currently utilizes a large and small storage reservoir. The large storage reservoir has a capacity of 3.5 million gallons (mg) and can store five days of effluent under the ADWF design capacity. The small reservoir has a capacity of 1 mg and can be used for influent or

effluent storage. If effluent is stored in the reservoir, it is retreated prior to going to the large effluent storage reservoir.

Biosolids Handling: Biosolids is a term used to describe the organic solids which have settled from the wastewater during the treatment process. The biosolids treatment process can include the following components:

- *Stabilization* is the process in which raw biosolids are allowed to decompose in the aeration basins and secondary clarifiers. The stabilized biosolids have minimal odor and are free of potential pathogens.

- *Dewatering* is the process which removes most of the water from the biosolids. The treatment facility uses belt filter presses to dewater the biosolids extracted from the aeration basins to a minimum concentration of 15 percent solids.

- *Utilization* describes dried biosolids, or "cake," disposal. The RRCSD disposes of treated biosolids at an approved landfill.

ii. Describe Present Capacity of Facilities (In terms of wastewater ADWF and PWWF)

The RRCSD's treatment facility was designed to provide tertiary treatment for an ADWF of up to 0.71 mgd, although all the equipment necessary to reliably treat this capacity has not been constructed. The treatment facility also can treat a maximum month flow of 1.2 mgd and maximum sustained peak flow of 1.8 mgd. The RRCSD's treatment facility currently treats approximately 0.28 to 0.35 mgd ADWF. The RRCSD's treatment facility currently utilizes two aeration basins, two clarifiers, two tertiary filters, and chlorine disinfection. Appendix C shows the treatment capabilities of each unit processes after implementation of this project's modifications. The existing treatment capabilities of each unit process are included in Appendix J. In order to reliably treat maximum sustained peak inflows anticipated at design capacity, construction of a third aeration basin, a third secondary clarifier, and a new tertiary filtration system would be required. Construction of the facilities would provide the RRCSD with required efficiency and reliability under DHS Title 22[32] for the existing design capacity.

iii. Present Flow from Service Area (Provide per capita flow)

In 2000, the estimated per capita flow was approximately 37.1 gallons per capita per day. This number was calculated by dividing the 2000 ADWF (0.284) by the number of ESDs (3,134),[33] and by the estimated occupancy rate of 2.44 persons per ESD.[34]

[32] California Department of Health Services Code of Regulations, *Title 22, Division 4, Chapter 2, Articles 8 and 10.* June 2001.
[33] Sonoma County Water Agency. *Report of Waste Discharge for Russian River County Sanitation District Sonoma County, California.* January 2002.
[34] Sonoma County Planning Department. *Sonoma County General Plan.* March 23, 1991.

iv. Effluent Quality

The Russian River is the primary source of domestic water for Sonoma County's urban areas.[35] The Russian River is one of 26 California streams included in the Primary Water Quality Monitoring Network Program conducted by the SWRCB. Russian River water quality was summarized by the NCRWQCB in the Basin Plan The Basin Plan summarized Russian River water quality data collected from 1972 to 1992. The data included nutrients, bacteria, physio-chemical, toxic chemicals, and biological water quality parameters. Significant improvements had been made in Russian River water quality since the early 1970s. Significant decreases in the levels of nutrients (nitrates and phosphates) and bacteria in the Russian River and its tributaries were attributed to increased levels of pollution control at municipal, industrial, and agricultural facilities; seasonal prohibitions on discharges to the Russian River during low-flow periods; increased public awareness of water quality issues; and construction of wastewater treatment facilities, including the RRCSD's treatment facility, which have reduced surface water pollution from septic tanks and cesspools.

The Basin Plan specifies that treated wastewater may only be discharged to the Russian River or its tributaries between October 1 and May 14 and/or when the Russian River flow is greater than 100 times the waste flow. The objectives further require that treated wastewater discharged to the Russian River or its tributaries be advanced treated wastewater in accordance with the water quality requirements in the NPDES permits.

The RRCSD holds a NPDES permit (Permit No. CA0024058) administered by the NCRWQCB, pursuant to Section 402 of the Clean Water Act and Division 7 of the California Water Code. For the RRCSD, the NPDES permit regulates wet-weather discharge to the Russian River and dry-weather land disposal. The RRCSD's NPDES permit requires that the quality of the water used for irrigation meets standards established by the DHS under Title 22.

The following parameters were obtained from the 2001 monthly discharge (winter) monitoring summary report required by the NPDES permit. The BOD average range was less-than 5 to 7; the total suspended solids (TSS) average range was less-than .01 to 3.3 mg/L; the settleable solids (SS) average was less-than .01 mg/L; the pH average range was 6.9 to 7.8; the turbidity average range was .02 to 2.7 nephelometric turbidity units (NTU); the coliform median was less-than 2 to 30 most probable number (MPN)/1000 ml; the zinc average was 47 to 87 micrograms (mg)/liter (L); and the chloroform average was less-than .05 to 48 mg/L. The RRCSD's effluent quality is in compliance with the NPDES permit.

v. Disposal Method

Existing Disposal System: The RRCSD, through its NPDES permit (Permit No. CA0024058) issued by the NCRWQCB, is permitted to discharge to the Russian River between October 1 and May 14, and is required to discharge through land disposal, during the reclamation season, May 15 to September 30. The Russian River discharge is limited to 1 percent of the river's flow as measured at Guerneville. The overall permitted capacity of the RRCSD is limited to 0.51 mgd

[35] Sonoma County Planning Department. *Sonoma County General Plan.* March 23, 1994.

due to reclamation system capacity constraints. During certain periods of the reclamation season, the RRCSD is utilizing the maximum amount of reclamation season disposal capacity that is available.

The RRCSD's land disposal area consists of three sites, two of which are located on land currently leased from private property owners, Roger and Michele Burch. The Burch sites consist of an approximately 77-acre parcel located immediately southeast of the RRCSD's treatment facility along the northern bank of the Russian River. The RRCSD irrigates approximately 16 acres of the lower area and approximately 2 acres of the upper area on the ridges of the Burch property. The RRCSD's third disposal site is the Northwood Golf Course, located south of the RRCSD's treatment facility. The Northwood Golf Course includes approximately 40 acres of turf and uses an average of 0.10 mgd of the RRCSD's recycled water for irrigation.

H2. Water Projects

Not applicable, because the TUPP is a wastewater project not a (potable) water project.

K. Quality of Present Receiving Waters

The following Russian River water quality parameters were obtained from the 2001 Self Monthly Monitoring Summary Report required by the NPDES permit. During the months that monitoring took place (January through May and October through December), the BOD of the Russian River was less-than .5 mg/L; the pH range was 7.5 to 8.7; the turbidity range was 1.2 to 70.6 NTU; the dissolved oxygen (DO) range was 7.2 to 13.4 mg/L; and the hardness range was 78 to 150 mg/L. These results are for Russian River water samples collected upstream of the RRCSD's discharge location.

L. Water Quality Problems

(Describe any violations of health department violations, cease and desist order, non-conformance with basin plan or 208 plan, etc. Violation of NPDES permit is not sufficient)

The following are violations of the RRCSD's NPDES permit received by the NCRWQCB:

Cease and Desist Order No. (CDO) 97-09 and 97-76: The RRCSD was discharging to the Russian River at its normal rate prior to May 15, 1996. May 15 of each year is the beginning of the reclamation season during which the RRCSD may only discharge the tertiary treated wastewater to land through irrigation. The RRCSD is not allowed to discharge to the Russian River again until October 1. See Section H1. i. "Present Facilities" for information on the existing discharge.

Significant, unseasonable rainfall occurred during the period of May 14 to May 18, 1996. This unseasonable rainfall increased influent flow levels; the influent was treated to Advanced Wastewater Treatment (AWT) standard, and stored in the effluent storage basin; awaiting land discharge. On May 19, 1996, with continued high influent flow levels, effluent storage became severely limited. More unseasonably heavy rains were forecast, and discharge to the Russian River was prohibited. The RRCSD began to irrigate under unfavorable weather and soil conditions. A second significant, unseasonable period of rain began on May 20, 1996. RRCSD

staff observed surface runoff from the leased irrigation areas into the Russian River on May 21, 1996 and irrigation was ceased.

The May 1996 discharge violation occurred during unexpected, late-season rains during the reclamation season. The RRCSD's disposal area was saturated from the rain and the existing storage reservoirs were full. RRCSD staff decided to irrigate the rain-saturated disposal area in a controlled manner rather than have the storage pond overfill, which would have resulted in an uncontrolled discharge.

RRCSD operators contacted the NCRWQCB immediately after the indirect discharge was observed to report the incident and to get direction from NCRWQCB staff on whether or not sampling for constituents was necessary at the upstream and downstream sampling points. The operators were not required to perform sampling. The RRCSD estimated that approximately 0.2 mg of co-mingled AWT standard reclaimed water and rainwater was indirectly discharged to the Russian River on May 21, 1996. The RRCSD notes that the quality of AWT standard reclaimed water is near that of potable water. The RRCSD attributes the May 21, 1996 violation to a combination of several factors. These factors include: unseasonable weather conditions, saturated soils, inadequate storage, and inadequate land disposal area.

On January 23, 1997, the NCRWQCB issued CDO 97-09. The CDO was issued for May 21, 1996 violation. CDO 97-09 required the RRCSD to submit a report detailing short-term and long-term solutions and a schedule of key actions regarding the issue of inadequate storage.

The NCRWQCB issued CDO No. 97-76 on August 28, 1997, for a discharge violation that occurred on May 21, 1996. CDO No. 97-76 superseded CDO 97-09. Since CDO 97-76 superseded CDO 97-09, CDO 97-76 also required that the RRCSD prepare and submit a report that outlined the short-term and long-term actions to prevent future discharge violations. Report on Order No. 97-09 was originally submitted on March 15, 1997 and resubmitted on March 25, 1997. The report stated that the long-term solutions would be presented through the CEQA process in an EIR.

The 1997 NOP and Initial Study for the Facility Upgrades and Disposal Expansion Project were attached to the March 25, 1997 report. The short-term solutions included increased irrigation during wet periods, notification procedures to the NCRWQCB, and testing of the Russian River if discharge occurred during a similar late-rain event.

The CDO No. 97-76, included a time schedule to complete an EIR and implement the project. The CDO's schedule allowed until May 1, 1999 for the Final EIR to be certified; March 1, 2000 for the design, bidding process, and funding process to be completed; and March 1, 2001 for the construction to begin. The Russian River County Sanitation RRCSD Board of Directors did not certify this EIR. The Russian River County Sanitation RRCSD Board of Directors requested staff to come back with a preferred project. The RRCSD then began looking at other solutions, primarily the TUPP, to comply with the CDO 97-76. The RRCSD proposed that construction of the TUPP would satisfy the requirements of CDO No. 97-09 and CDO No. 97-76 because the volume of storage in the third aeration basin would be sufficient to store the volume of effluent that was the subject of the May 1996 reclamation season permit violation. The NCRWCQB agreed that the TUPP would meet the requirements of the long-term actions to prevent future discharge violations.

CDO No. 98-57 and Administrative Civil Liability (ACL) Order No. 98-56 and ACL Order No. 98-83: During the month of February 1998, 29 inches of rain fell in Guerneville, making it the highest February rainfall in the last 93 years. On February 3, 1998, the Board of Supervisors declared a disaster due to the winter storms and flood conditions and on February 9, 1998, President Clinton declared a major disaster for 27 California counties, including Sonoma County. On February 6, 1998, a mudslide occurred that sent approximately 50 cubic yards of mud and debris into the RRCSD's 3.5 million gallon storage reservoir. The mudslide originated above the RRCSD's property and caused operational problems with the access roads, 3.5 mg storage reservoir, storm drains, and pumps. This mudslide severely impacted the RRCSD's ability to treat wastewater through a combination of reduced storage; a lack of process water for the chlorination, dechlorination, and biosolids handling process; and loss of access to the treatment facility. During the flood event of February 1998, approximately 30 million gallons of floodwater received primary treatment and disinfection before being blended with tertiary-treated and disinfected effluent prior to being discharged to the Russian River.

On May 28, 1998, the NCRWQCB issued CDO No. 98-57 for violations to the NPDES permit resulting from transfer operations during the month of February 1998, and accompanying Administrative Civil Liabilities (ACL) Order No. 98-56 which established fines against the RRCSD. On July 30, 1998, the RRCSD requested a hearing by the NCRWQCB to reconsider ACL Order No. 98-56. The NCRWQCB reassigns new Order No.s when appealing an ACL. ACL Order No. 98-56 was assigned a new Order No., ACL Order No. 98-83. ACL Order No. 98-83required the RRCSD to pay a $25,000 fine and required the SCWA to pay a $100,000 fine. The SCWA's $100,000 fine would be rescinded upon completion of two separate reports; one report that detailed short-term actions to prevent future discharge violations was submitted on August 1, 1998; a second report detailed long-term actions to prevent future discharge violations, was submitted on December 1, 1998.

Administrative Civil Liability (ACL) No. 99-51 and ACL 99-69: Early February 1999, high rainfall levels and flooding caused high inundation inflows to the RRCSD. The high inflows caused approximately 1.41 million gallons of influent to bypass the full tertiary treatment process between February 7 and February 10, 1999. Approximately 1.125 mg of the bypassed influent was partially disinfected, blended with tertiary treated wastewater, and then discharged to the Russian River. The discharge of less-than-tertiary treated wastewater to the Russian River is a violation of the Basin Plan and the RRCSD's NPDES permit.

On July 22, 1999 the NCRWQCB issued Administrative Civil Liability (ACL) 99-51 for the bypass and discharge of partially treated and disinfected wastewater from the RRCSD's treatment facility into the Russian River that occurred between February 7 and February 10, 1999. The NCRWQCB fined the RRCSD $140,000, of which, $100,000 of the fine was suspended pending the completion of Supplemental Environment Projects. Eight Supplemental Environment Projects were completed on time per ACL Order No. 99-69 schedule (August to December 2000). The RRCSD appealed ACL No. 99-51 to the NCRWQCB on September 23, 1999; however, the fines were upheld. ACL Order No. 99-51 was reassigned a new Order No. by the NCRWQCB, ACL 99-69.

The legal decision regarding the appeal of ACL No. 99-69 is pending at the SWRCB.

ACL No. 99-52: ACL No. 99-52 was issued for two separate events. The first event occurred on February 7, 1999 when approximately 2,400 gallons of sewage was discharged from the Watson Road lift station. This occurred due to a faulty pump gasket seal compounded by an illegal sewer connection that together created higher than normal flows.

The second event related to ACL 99-52 is familiarly known as the Drake Road Spill. The discharge occurred between April 22 -27, 1999 when approximately 99,000 gallons of sewage seeped from a manhole, a private sewer lateral and a lateral stub. The leak was caused by mistakenly leaving the pump control valve in the diagnostic mode, rather than automatic mode, causing the pumps and alarms to be turned off. The pump station was left in the diagnostic mode for five days. This caused sewage to build up in the collection system and seep from three locations.

The NCRWQCB issued ACL 99-52 on July 22, 1999 for the violation discharge of sewage from the Watson Road lift station on February 7, 1999; and for the violation discharge of sewage during the Drake Road Spill between April 22 and April 27, 1999. The NCRWQCD fined the RRCSD $50,000, of which, $45,000 was suspended upon completion of a supplemental environmental project. The supplemental environmental project consisted of the completion of a comprehensive spill response and notification plan. The spill response and notification plan includes provisions for public notification, education, and outreach as well as employee training and communications. The plan was completed on July 31, 2002.

M. Characteristics of Air Basin

(State if the area is considered a non-attainment area, if so list for what parameter [O_3, NO_2, SO_2, CO, Particulates Pb])

The Bay Area Air Quality Management District (BAAQMD) and the Northern Sonoma County Air Pollution Control District (NSCAPCD) are the regional agencies responsible for regulating sources of air pollution in Sonoma County. The BAAQMD has jurisdiction over the southern portion of Sonoma County, while the NSCAPCD has jurisdiction over Sonoma County coastal areas, north of Windsor, and along the Russian River, including the proposed project area.

The TUPP is located within the California North Coast Air Basin, in the Northern Sonoma Air District. The RRCSD is designated attainment for all federal standards [i.e., ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), suspended particulates (fugitive dust), and lead (Pb)]. The RRCSD is designated as a non-attainment area for two state standards, ozone: smog, and particulate matter (PM10). All areas in the State of California are either

designated attainment or unclassified for nitrogen dioxide, sulfur dioxide, lead and visibility reducing particles.[36]

[36] Phone conversation with Alex Saschin, NSCAPCD on April 12, 2002.

IV. Evaluation of Direct and Indirect Impacts as a Result of the Proposed Action and No Action Alternatives, as well as Mitigation Measures Considered

(Direct impacts are caused by construction and operation of the facilities; indirect impacts are those resulting from population growth)

A. Description of Impact and Mitigation Measures

Describe the Impact and Mitigation Measures (If impact expected) for alternative on the following areas:

The following consist of potential construction and operational impacts and mitigation measures identified in the 1976 EIR, and current project specifications required by the contractor.

i. **Wetlands**

Project Action. Not applicable. No impact expected.

No Action Alternative. The No Action Alternative would not impact wetlands because no wetland disruption would occur.

ii. **Floodplain**

Project Action. Not applicable. The TUPP area is outside of 500-year floodplain.

No Action Alternative. Not applicable. The TUPP area is outside of 500-year floodplain.

iii. **Significant and/or Important Farmlands**

Project Action. Not applicable. The TUPP area is not designated as Important/Significant Agricultural Land.

No Action Alternative. Not applicable. The TUPP area is not designated as Important/Significant Agricultural Land.

iv. **Coastal Zones**

Project Action. Not applicable. The TUPP is not designated as a Coastal Zone.

No Action Alternative. Not applicable. The TUPP is not designated as a Coastal Zone.

v. **Wild and Scenic Rivers**

Project Action. Not applicable. There are no Wild and Scenic Rivers designated in Sonoma County.

No Action Alternative. Not applicable. There are no Wild and Scenic Rivers designated in Sonoma County.

vi. **Coastal Barrier Resources**

Project Action. Not applicable. The TUPP is not a Coastal Barrier and is not a coastal project.

No Action Alternative Not applicable. The TUPP is not a Coastal Barrier and is not a coastal project.

vii. **Air Quality**

Project Action

Construction Impacts

- Air quality would be affected locally by construction activities since air pollutants such as dust, smoke, and exhaust fumes (carbon monoxide, etc.) are generated by earth-moving operations and engine exhaust. These created air pollutants may cause problems in those areas of the RRCSD which contain residences bordering construction sites.
- Increased traffic congestion due to construction would compound this (air quality) problem.
- Total impact of the project on air quality would be dependent upon the types of construction equipment and the amount of time they are used.
- Dust generation during the sewer and outfall construction could pose a potential problem during summer months.
- Dust generation and emission of air pollutants from construction equipment.

Measures to Minimize Construction Impacts

- To prevent dust, all construction sites should be watered down as often as necessary to keep aerial dust to a minimum.
- Smaller construction equipment should be used where possible.
- Burning strips of vegetation should be prohibited.

Current Project Specifications

- Contractor shall perform periodic cleaning to ensure that any streets and other Owner and public properties are maintained free from accumulation of waste materials, dust, mud, and debris.
- Where required, Contractor shall wet down surfaces to lay dust and prevent the blowing of dust to nearby residences or public properties.

- Contractor shall keep all paved roads clean and free of dust, mud, and debris resulting from Contractor's operations. Daily cleanup throughout the job would be necessary as Contractor progresses with its work, but extra attention to cleanup shall be made prior to weekends and holidays. Without limiting the foregoing, Contractor shall remove trench spoil along traveled ways daily; grade and vacuum broom surfaces initially where applicable and later water flush with high-pressure sprays, being careful to avoid downstream contamination.

- All dust, mud, spoils, and construction debris shall be removed daily from all roadways, ditches, shoulders, and private property (fills or spoils placed on private property at private property owner's written request excepted).

- Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed interior and exterior finished surfaces.

- Ensure that idling time for all heavy equipment is minimized to reduce on-site emissions.

No Action Alternative. The No Action Alternative would not impact air quality because no construction activities would occur.

viii. **Important Vegetation Types**

Vegetation

Project Action

Construction Impacts

- Construction from the treatment facility would involve the loss of grasses, shrubs, trees, microflora, and associated fauna in the immediate area of construction activities.

- Additional vegetation is sometimes lost as a result of the operation of construction equipment and storage of construction material.

- Trenching may also destroy the root system of trees near construction sites, which could result in the death of some specimens creating reservoirs for disease and parasites. The soils in these areas would become compacted and any removal of topsoil would retard the revegetation of the area. Revegetation can be further retarded by the dumping or leaking of equipment maintenance fluids, fuels, and parts at the construction sites. Additional damage may result from the layering of dust on vegetation, which not only reduces the plant's potential to survive but also reduces its food and habitat value to wildlife species.

- The clearing of construction work area of vegetation removes habitat for food and cover.

- Temporary disturbance or loss of flora and fauna during construction of all proposed facilities.

- Permanent loss of vegetation.

Measures to Minimize Construction Impacts

- Constraints on the contractor to mitigate these impacts should be contained in the design specifications. The location of storage areas and temporary roads should be restricted to the smallest area compatible with effective work. Location of these areas should be restricted to areas that require the least destruction of native vegetation, especially riparian and tree species.

- The construction roads should be scarified and all areas seeded, fertilized, and planted to localized native vegetation. Other measures should include:

    - An alignment should be selected that interferes or destroys the minimum number of trees and shrubs.

    - Periodic inspection of trees along construction corridors may be necessary to remove those trees which are diseased or dying.

Current Project Specifications

- Protect trees, plant growth, and features designated to remain.

- Limb Protection: Small construction equipment shall be used as necessary to minimize removal of or avoid damage to overhanging tree branches. Limb removal shall be performed only when directed by owner. All limb removal, if authorized, shall be performed in accordance with the International Society of Arboriculture's Tree Pruning Guidelines, adopted in 1995. Owner would provide a copy of the guidelines on request. If limbs are pruned, the finish cut shall be made in accordance with the Tree Pruning Guidelines. "Heading" of any tree would not be permitted.

- Do not store construction materials in the dripline of any tree.

- Root protection: No storage of materials or equipment would be allowed within the dripline. Whenever possible, excavation shall be on a radial line, diverging from the tree trunk.

- Exposure to harmful substances: No storage or dumping of any substances that may be harmful to trees shall occur at any location on the site.

- Where construction is to be performed in the vicinity of trees and shrubbery, the work shall be carried on in a manner that would cause minimum damage. Owner would designate trees that are to be removed. Under no circumstances are additional trees to be removed without written permission from Owner. Trees and

shrubbery that are not to be removed shall be protected from injury or damage resulting from Contractor's operations.

- All damage shall be immediately reported to owner, who would file a report so that penalties may be determined.

- Any tree that is removed without owner's permission or is irreparably damaged, in the opinion of owner, shall cost contractor $27.00 per square inch of cross section, measured at 4 ½ feet above ground, but not less than $250.00, such cost to be deducted from monies due or to become due under the contract. If tree protection is not performed or is not performed adequately, and owner determines that a tree has been irreparably damaged, owner would impose the same penalty as for unauthorized removal of a tree.

- Valley Oak Protection: All oaks removed, authorized or unauthorized, shall be mitigated for in accordance with the County of Sonoma Valley Oak Protection Ordinance (Sonoma County Code, Chapter 26, Article 67, Sections 26-67-005 to 26-67-050). Requirements may include planting of Valley Oaks within the Site and/or fees paid to County for planting programs. Retention, replacement, or payment requirements of the Valley Oak Protection Ordinance vary depending upon the size of trees removed.

No Action Alternative. The No Action Alternative would not impact vegetation because no vegetation disruption would occur.

ix. **Endangered or Threatened Species and Critical Habitat**

Project Action. Not applicable. No impact expected.

There were no federally endangered or threatened species identified in the 1976 EIR. After the publication of the 1976 EIR three fish species and one bird species were listed as threatened. There are no species listed as endangered in the TUPP area. Pre-construction surveys would be performed for nesting birds if construction activities are scheduled to take place during the nesting bird season (late February to the end of July). See Section III.,G., x. Endangered or Threatened Species for discussion.

There is no suitable habitat present for listed fish species within the proposed project area. Remnant stands of mixed evergreen forest within the project area provide minimal marginal habitat for northern spotted owl. However, it is unlikely that tree stands present within the project area would be used for nesting as the stands are surrounded by the existing treatment facility. See Section III.,G., xi. "Critical Habitat" for discussion.

No Action Alternative. No Action Alternative could have potential impacts to fish species, due to potential future discharge violations resulting from discharge of non-tertiary treated effluent during storm events and inadequate disinfection time for effluent.

x. **Topography**

Project Action. Not applicable, no impact expected.

No Action Alternative. The No Action Alternative would not impact topography because no topographical disruption would occur.

xi. **Groundwater**

Project Action. Not applicable, no impact expected.

No Action Alternative. The No Action Alternative would not impact groundwater because no groundwater disruption would occur.

xii. **Hazardous Materials**

Project Action. Not applicable, no impact expected.

No Action Alternative. The No Action Alternative would not impact hazardous materials because no hazardous material disruption would occur.

xiii. **Environmental Sensitive Areas**

Project Action. Not applicable, no impact expected.

No Action Alternative. The No Action Alternative would not impact environmental sensitive areas because no construction activities would occur.

xiv. **Geology/Seismic Considerations/Soils**

Project Action

Soil and Erosion.

Construction Impacts

- Alteration of soil profile on the along pipeline routes and the treatment plant site.
- There are numerous developed parcels within the RRCSD, which are located on steep hillsides. In these areas, the potential hazard of construction-induced erosion is greatest. Construction activities in these areas should be undertaken during the dry period of the year, and appropriate precautions should be employed.
- Excavation and backfill of the pipeline trenches would destroy the existing soil column. In non-roadway areas, the productivity of the backfill soil would be greatly reduced if subsoil is replaced on the surface. To avoid this effect, topsoil should be set aside and replaced as the top section of the backfill.
- Erosion of soils during wet weather conditions.

Measures to Minimize Construction Impacts

- Alignments that cross over steep or easily erodible areas should be avoided wherever possible.
- Topsoil should be segregated from excavated material, stored, and used for final cover of pipelines.
- Trenching spoils should be stored or disposed of in a manner that prevents their erosion.
- The disposal of equipment maintenance fluids, fuels, and parts should be in proper off-site locations.

No Action Alternative. The No Action Alternative would not impact soil or erosion because no construction activities would occur.

xv. **National Natural Landmarks**

Project Action. Not applicable. There are no National Natural Landmarks in Sonoma County.

No Action Alternative. Not applicable. There are no National Natural Landmarks in Sonoma County.

xvi. **Historical, Architectural, Archaeological, and Cultural Sites**

Project Action

Construction Impacts

- The proposed project should not affect any unique archaeological, historical, scientific, or cultural area, as none have been identified in the immediate vicinity of the project's elements (See Appendix H). However, the possibility exists that the project's excavation may reveal materials of archaeological or historic interest.
- The uniqueness of the redwood trees should afford special consideration for its protection during the construction phase of the project.

Current Project Specifications

- If discovery is made of items of historical archaeological or paleontological interest, immediately cease all work in the area of discovery. Archaeological indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, human bones, and fossils. After cessation of excavation, immediately contact Owner. Do not resume work until authorization is received from Owner. When resumed, excavation or other activities shall be as directed by Owner.

No Action Alternative. The No Action Alternative would not impact historical, architectural, archaeological, and cultural sites because no construction activities would occur.

xvii. **Aesthetic Resources**

Project Action

Construction Impacts

- Aesthetic values of the general area would be temporarily altered during construction and excavation activities.
- Adverse impacts of local aesthetic values due to exposed soils, equipment operation, noise, and storage of construction materials.

Measures to Minimize Construction Impacts

- Construction should be accomplished as expeditiously as possible.
- Equipment and truck traffic should be planned to result in minimum interference with local traffic flows.
- All road closures should be kept to minimum time periods.
- Traffic diversion and control should be done in cooperation and accordance with state and local regulations.

No Action Alternative. The No Action Alternative would not impact aesthetics because no construction activities would occur.

xviii. **Land Use and Zoning**

Project Action. Not applicable. Land Use and zoning would not be changed.

No Action Alternative. Not applicable. Land Use and zoning would not be changed.

xix. **Socioeconomic Impacts**

Project Action. Not applicable, no impact expected.

No Action Alternative. No Action Alternative could have potential economic impacts to RRCSD's service area customers, due to potential future discharge violations resulting from discharge of non-tertiary treated effluent during flood events and inadequate disinfection time for effluent. These future discharge violations could lead to fines from RWQCB, which could result in increased service fees.

xx. **Utilities**

Project Action

Construction Impacts

- As many of the underground utility services are inadequately mapped, many services may be cut during trenching operations. These utility disruptions, however, should be temporary.

- Temporary utility service disruptions.

Current Project Specifications

- The project design would avoid utilities whenever feasible to minimize service interruption. The contractor would coordinate with the appropriate utility companies to minimize interruptions in utility services. To avoid accidental service interruptions, Underground Service Alert would be contacted at least 24 hours prior to excavation, digging, or trenching activities. The duration of contractor related disruptions to utility services would be kept to a minimum (less than one week), and all services would be restored by the end of each workday. Residents in the construction area would be notified prior to any known service interruptions resulting from the project.

No Action Alternative. The No Action Alternative would not impact utilities because no construction activities would occur.

xxi. **Transportation and Access**

Traffic

Project Action

Construction Impact

- Import of construction materials such as concrete and equipment would result in increase truck traffic on local roadways which would cause temporary disruption of traffic circulation.

- The extent of this impact would be dependent upon the total amount of construction taking place at any one time.

Current Project Specifications

Traffic Control Measures:

- Pay for all costs for traffic signage, including flagging.

- Provide safe passage for vehicular and pedestrian traffic through the work at all times.

- Traffic on two-lane streets may be reduced to one lane provided that, with all restriction of traffic flow, flaggers, cones, signs, and barricades are furnished as required by owner. Permit the traffic equal flow time in each direction.

- Maintain access to public and private buildings, businesses and driveways. Emergency vehicles and personnel shall be provided immediate access at all times.

- Restore access to all residences for all non-working hours, holidays, and weekends.

Maintain traffic control measures:

- Maintain traffic control through the site and provide local access as specified herein regardless of rain or other causes, either within or beyond the control of contractor that may force suspension or delay of the work. At all times keep on the site such materials, labor forces, and equipment as may be necessary to keep the streets and driveways within the site open to traffic and in good repair. Expedite the passage of such traffic, using such labor forces and equipment as may be necessary.

No Action Alternative. The No Action Alternative would not impact traffic because no construction activities would occur.

xxii. **Climate**

Project Action. Not applicable, no impact expected.

No Action Alternative. The No Action Alternative would not impact climate because no climate disruption would occur.

xxiii. **Noise Considerations**

Project Action. The proposed blower building would be constructed to enclose existing blowers and an additional blower. This structure will have acoustic paneling to minimize noise produced from the blowers.

Construction Impacts

- The acoustical quality of the construction areas would be affected primarily by heavy equipment noises and movement of personnel and materials associated with construction activities.

- Heavy equipment used in the excavation of the aeration basin would generate noise at a level estimated to average 88+ 7dB(A) within 50 feet of work site. As nose residences are located within 50 feet of streets, noise levels attained during construction may be unacceptable.

- Increase of ambient noise levels in immediate construction area.

- Wildlife in areas adjacent to construction sites may be affected.
- Increased construction noise levels of extended duration could pose a threat to animals that rely upon their auditory system for courtship, mating behavior, prey location, predator protection, homing, and other vital activities.

Measures to Minimize Construction Impacts

Noise impacts, although adverse, would be only temporary and can be mitigated to some extent.

- Construction noise should be controlled my methods such as work scheduling and the use of quieter equipment. Substitution of nonimpact tools offers the best practical abatement potential. Equipment should be muffled or restricted in size.

No Action Alternative. The No Action Alternative would not impact noise because no construction activities would occur. If the proposed blower building is not constructed the noise produced from the existing blowers would not be reduced.

xxiv. **Environmental Justice Considerations**

Project Action. Not applicable, no impact.

No Action Alternative. The No Action Alternative would not impact environmental justice because no construction activities would occur.

xxv. **Tribal Issues**

Project Action. Not applicable. No impact expected. See Appendix H.

No Action Alternative. The No Action Alternative would not impact tribal issues because no construction activities would occur.

xxvi. **Other**

Energy

Project Action

Construction Impact

- The construction activity and excavation would require the use of fuels for operating equipment and transporting materials.
- Use of fuels (energy) for operation of construction equipment.

Operation Impact

- Increased energy usage for pumping and treatment of wastewater.

Measures to Minimize Impacts of Operation at Treatment Facility

- Careful selection of equipment to minimize energy requirements.

Current Project Specifications

- The project specifications would require that the contractor use energy efficient equipment and energy saving devices in the construction of the project to the extent feasible.

- The project design would incorporate energy efficient equipment and energy saving devices to the extent feasible.

No Action Alternative. The No Action Alternative would not impact energy because no construction activities would occur. However, efficiency of newer equipment could offset the increase in energy consumption of the new equipment.

Wildlife

Project Action

Construction Impacts

- The activities of construction, such as mechanical machinery movement, noise, and human activity, would disturb resident animals causing them to move out of the immediate area.

- Open trenches and construction equipment may entrap local fauna or prevent species, which depend on the Russian River for food and cover from reaching the River.

Mitigation Measures to Minimize Construction Impacts

- No open trenches should be left to entrap local fauna.

- No Action Alternative. No Action Alternative could have potential impacts to fish species, due to potential future discharge violations resulting from discharge of non-tertiary treated effluent during storm events and inadequate disinfection time for effluent.

Recreation

Project Action

Construction Impacts

- Disruption of recreational activities in area.

- Recreation activities such as fishing, boating, and swimming along the Russian River could be temporarily hampered by construction activities. Major work should take place during periods of low recreational usage.

No Action Alternative. The No Action Alternative would not impact recreation because no construction activities would occur.

Odor

Project Action

Operational Impact

- Increase in potential for odors originating from wastewater systems.

Measures to Minimize Impacts of Operation at Treatment Facility

- Prechlorination would be done with care or other oxidants would be employed for odor control since the organisms responsible for nitrification are particularly sensitive to chlorine.

No Action Alternative. The No Action Alternative would not impact odor because no additional odors originating from wastewater would occur.

Water Quality

Project Action

Operational Impact

- Enhancement in water quality.

No Action Alternative. No Action Alternative could have potential impacts to human health, due to potential future discharge violations resulting from discharge of non-tertiary treated effluent during storm events and inadequate disinfection time for effluent.

Indirect Impacts

The RRCSD has an ADWF treatment capacity to serve additional areas outside of the existing RRCSD service area; however, the TUPP would not include expansion of the RRCSD's service area or increase in overall permitted capacity as project components. The project would not have any growth-inducing impacts because the project would only provide treatment for permitted flows.

B. Summary of Significant Impacts and Mitigation Measures

The adverse and beneficial impacts associated with implementation of the proposed project are both short and long-term in duration and effect. The long-term impacts are mostly indirect such

as the use of energy. Primary impacts from the proposed project result largely from construction and partially from operations.

The construction activities would cause short-term unavoidable impacts by creating noise and air pollution from construction equipment, interfering with traffic circulation, changing landscape, disrupting flora and fauna, possible erosion hazards, and a permanent loss of vegetation at the location for the TUPP. Operational adverse direct impacts would include increased consumption of energy. Beneficial impacts include improved effluent water quality.

The degree of environmental degradation that would occur is greatly dependent upon the precautions taken during the construction period. Care should be exercised during excavation activities, equipment operation, and other construction associated activities to minimize all environmental disturbances. Specific measures to accomplish this objective are discussed above in Section IV. A. "Impacts and Mitigation Measures."

C. Water Quality Benefits of the Proposed Project

The purpose of the TUPP is to reliably treat and adequately dispose of treated wastewater flows during high influent flow periods; particularly during lower Russian River flood events. The TUPP would comply with DHS Title 22 requirements, reduce potential for NPDES permit violations, and improve effluent water quality, resulting in a beneficial impact to hydrology and water quality.

D. Short-term Use of the Environment versus Long-term Productivity

Construction of the proposed project would mark a step towards the long-term solution to provide tertiary treatment to all influent under most conditions for the Russian River County Sanitation RRCSD. The short-term use of the environment would cause construction-related temporary impacts, which would alter some existing land uses, disturb natural conditions, and cause inconvenience to local human and animal residents. Thus, the short-term construction impacts would be highly noticeable, significantly adverse, and somewhat capable of being mitigated. These short-term adverse effects would ultimately lead to the long-range goal deemed necessary to protect the beneficial uses and long-term productivity of the Russian River.

The long-range effects of the project may result in enhancement of the local environment and allow for a more healthful use of surface waters and terrestrial resources.

E. Irreversible and Irretrievable Commitment of Resources

The following is a description of the impacts that would result in irreversible and irretrievable commitment of resources. Construction, operation, and maintenance of the project would require the irreversible use of construction materials such as cement, aggregate, wood, steel, and other building materials as well as the irreversible commitment of financial and energy (labor and natural) resources. The TUPP would require the irreversible use of land for construction of the third aeration basin, secondary clarifier, tertiary filters, and appurtenances.

V. CUMULATIVE IMPACTS

A. Combined Impacts of Other Activities

(Identify the combined impacts of other activities besides those recommended by the proposed project (the activities do not have to be necessarily federally funded))

There are no combined impacts of other activities besides those recommended by the proposed project. As of December 2002, the only proposed activity is a Notice Intent of Preparation of the Burch Property Timer Harvest Plan (THP), which is outside of the RRCSD's treatment facility. The Burch THP is not a water or wastewater project, and the location and geographic features of the Burch property is not linked to the TUPP. Therefore, there are no cumulative impacts associated with the two proposed projects.

B. Impacts from Multiple Activities Which Are Greater Than The Sum of The Impacts of The Individual Activities

(Identify impacts from multiple activities which are greater than the sum of the impacts of the individual activities)

Not applicable. No impact from multiple activities, which are greater that the sum of the impacts of the individual activities would occur. See above Section. V. A. "Combined Impacts of Other Activities."

C. Impacts Resulting from The Interaction of Two Activities

Not applicable. No impacts resulting from the interaction of two activities would occur. See above Section. V. A. "Combined Impacts of Other Activities."

VI. Documentation and Sources

Website:

National Park Service. http://www.nps.gov/rivers/wildriverslist.html#ca. April 26, 2002

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J.B. Gilbert and Associates. *February 1976 Environmental Impact Report, Wastewater Collection Treatment and Disposal Facilities, Russian River County Sanitation District*. February 1976. Pages I-14, I-18, II-1, II-3-II-10, II-40-II-51, III-2-III-17, VII-6-VII-8, VIII-1-VIII-17, X-1-X-6, and IX-9-IX-13.

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Russian River County Sanitation District. *Russian River County Sanitation District, Sonoma County California, Project Report on Wastewater Collection, Treatment and Disposal Facilities*. December 1975.

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U.S. Fish and Wildlife Service. *National Wetland Inventory Maps*. Guerneville, and Camp Meeker quadrangles. March 25, 2002.

VIII. List of Agencies and Persons Consulted

Phone Conversation:

Jonathan Bayless
National Park Service
One Jackson Center
1111 Jackson Street, Suite 700
Oakland, CA 94607
(510) 817-1427
Regarding: National Natural Landmarks
Date: May 13, 2002

Chester Gin
U.S. Department of Agriculture
Natural Resources Conservation Service
1301 Redwood Way, Suite 170
Petaluma, California 94954-1136
(707) 794-1242
Date: April 30, 2002

Chris Kern
North Central Coast California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219
(415) 904-5260
Regarding: Coastal Zones and Coastal Barriers
Date: April 26, 2002

Alex Saschin
Northern Sonoma County Air Pollution Control District
150 Matheson St.
Healdsburg, CA 95448
(707) 433-5911
Date: April 26, 2002

Debbie Webster
Sonoma County Water Agency
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Date: June 20, 2002

IX. List of Preparers

- Michael Bendik, Safety Officer/ Risk Management Analyst II
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- Pam Jeane, Deputy Chief Engineer
  Sonoma County Water Agency
  (707) 521-1864

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  Sonoma County Water Agency
  (707) 547-1979

- Debbie Webster, Principal Engineer
  Sonoma County Water Agency
  (707) 521-1808

- Paul Welsand, Water Agency Operations Superintendent
  Sonoma County Water Agency
  (707) 521-1848

FIGURE 1

RUSSIAN RIVER COUNTY SANITATION DISTRICT
SERVICE AREA AND REGIONAL LOCATION MAP

FIGURE 2

RUSSIAN RIVER COUNTY SANITATION DISTRICT
THIRD UNIT PROCESSES PROJECT SITE PLAN

APPENDIX A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 9
SUGGESTED GUIDELINES FOR THE PREPARATION OF
ENVIRONMENTAL ASSESSMENTS
(FOR WATER AND WASTEWATER PROJECTS)

APPENDIX B

THIRD UNIT PROCESSES PROJECT
HISTORY TIMELINE

THIRD UNIT PROCESSES PROJECT
HISTORY TIMELINE

February 1976
Environmental Impact Report, Wastewater Collection Treatment and Disposal Facilities, Russian River County Sanitation District.

January 23, 1997
Cease and Desist Order (CDO) No. 97-09.

August 28, 1997
CDO No. 97- 76 (CDO No. 97-76 superseded CDO 97-09).

March 25, 1997
Report on CDO No. 97-09 - Short-Term and Long-Term Actions To Prevent Future Discharge Violations.

May 28, 1998
CDO No. 98-57 and Administrative Civil Liability (ACL) Order No. 98-56 and ACL Order No. 98-83.

August 1, 1998
Short-Term Actions To Prevent Future Discharge Violations Report For CDO No. 98-57 and ACL Order No. 98-83.

December 1, 1998
Long-Term Actions To Prevent Future Discharge Violations Report For CDO No. 98-57 and ACL Order No. 98-83.

April 25, 1999
Environmental Analysis of A Proposed Project To Address High Winter Inflows And Flood Related Issues At The Russian River County Sanitation District Treatment Facility Report.

July 22, 1999
ACL Order No. 99-51 and ACL Order No. 99-69.

Eight Supplemental Environment Projects were completed on time per ACL Order No. 99-69 schedule (August to December 2000).

July 22, 1999
ACL Order No. 99-52

July 31, 2002
Spill response and notification plan was completed per ACL Order No. 99-52.

APPENDIX C

SUMMARY PROCESSES FOR THE
RUSSIAN RIVER COUNTY SANITATION DISTRICT'S TREATMENT FACILITY
FOLLOWING COMPLETION OF THE
THIRD UNIT PROCESSES PROJECT

APPENDIX D

LIST OF SENSITIVE PLANT SPECIES
WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE
RUSSIAN RIVER COUNTY SANTIATION DISTRICT'S
THIRD UNIT PROCESSES PROJECT AREA

List of Sensitive Plant Species With Potential to Occur in The Vicinity of The Russian River County Sanitation District's Proposed Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status[1]**	**Habitat**	**Potential To Occur Within Project Area**
Agrostis blasdalei var. *blasdalei* Blasdale's bent grass	SC, 1B	Coastal dunes, coastal bluff scrub, coastal prairie	No suitable habitat present within project area.
Alopecurus aequalis var. *sonomensis* Sonoma alopecurus	FE, 1B	Freshwater marshes and swamps, riparian scrub	No suitable habitat present within project area.
Amorpha californica var. napensis Napa false indigo	1B	Broadleaf upland forest, chaparral, cismontane woodland	No suitable habitat present within project area.
Arctostaphylos bakeri ssp. *bakeri* Baker's manzanita	SC, SR, 1B	Broadleaf upland forest, chaparral	No suitable habitat present within project area.
Arctostaphylos densiflora Vine Hill manzanita	SC, SE, 1B	Chaparral	No suitable habitat present within project area.
Arctostaphylos stanfordiana ssp. *decumbens* Rincon Ridge manzanita	1B	Openings in cismontane woodland, chaparral	No suitable habitat present within project area.
Calamagrostis bolanderi Ibolander's reed grass	SLC	Bogs, ferns, freshwater marsh, coastal scrub, and closed-cone conifer forest.	No suitable habitat present within project area.

List of Sensitive Plant Species With Potential to Occur in The Vicinity of The Russian River County Sanitation District's Proposed Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status[1]**	**Habitat**	**Potential To Occur Within Project Area**
Calamagrostis crassiglumis Thurber's reed grass	SLC, 2	Coastal scrub, freshwater marsh	No suitable habitat present within project area.
Calystegia purpurata ssp. saxicola Coastal bluff morning-glory	SLC	Coastal scrub	No suitable habitat present within project area.
Campanula californica swamp harebell	SC, 1B	Bogs and fens, closed-cone coniferous forest, coastal prairie	No suitable habitat present within project area.
Carex albida white sedge	FE, SE, 1B	Bogs and fens, freshwater marshes	No suitable habitat present within project area.
Carex comosa bristly sedge	2	Marshes and swamps	No suitable habitat present within project area.
Ceanothus confusus Rincon Ridge ceanothus	SC, 1B	Closed-cone coniferous forest, chaparral, cismontane woodland	No suitable habitat present within project area.
Cordylanthus tenuis ssp. *capillaris* Penell's bird's beak	FE, SR, 1B	Closed-cone coniferous forest, chaparral	No suitable habitat present within project area.

List of Sensitive Plant Species With Potential to Occur in The Vicinity of The Russian River County Sanitation District's Proposed Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Delphinium bakeri Baker's larkspur	FE, SR, 1B	Coastal scrub	No suitable habitat present within project area.
Delphinium luteum yellow larkspur	FE, SR, 1B	Coastal scrub	No suitable habitat present within project area.
Erigeron angustatus narrow-leaved daisy	SLC, 1B	Serpentine chaparral	No suitable habitat present within project area.
Eriogonum caninum Tiburon buckwheat	SLC	Chaparral, coastal prairie, valley and foothill grassland (serpentine)	No suitable habitat present within project area.
Fritillaria lilacea fragrant fritillary	SC, 1B	Coastal scrub, valley and foothill grassland, coastal prairie	No suitable habitat present within project area.
Gilia capitata ssp. Tomentosa woody-headed gilia	SC	Coastal scrub	No suitable habitat present within project area.
Hemizonia multicaulis ssp. *Vernalis* Tiburon tarplant	SC	Coastal prairie, serpentine	No suitable habitat present within project area.

List of Sensitive Plant Species
With Potential to Occur in The Vicinity of The
Russian River County Sanitation District's Proposed Third Unit Processes Project Area
(Camp Meeker and Duncans Mills Quadrangles)

Species Name	Status[1]	Habitat	Potential To Occur Within Project Area
Horkelia tenuiloba thin-lobed horkelia	SLC, 1B	Chaparral	No suitable habitat present within project area.
Lasthenia macrantha ssp. *macrantha* perennial goldfields	SLC	Coastal prairie	No suitable habitat present within project area.
Lessingia arachnoidea Crystal Springs lessingia	SC, 1B	Coastal sage scrub, valley and foothill grassland, cismontane woodland (serpentine grassland)	No suitable habitat present within project area.
Limnanthes vinculans Sebastopol meadowfoam	FE, SE, 1B	Mesic meadows, vernal pools	No suitable habitat present within project area.
Lupinus tidestromii var. *tidestromii* Tidestrom's lupine	FE, SE, 1B	Coastal dunes	No suitable habitat present within project area.
Pleuropogon hooverianus north coast semaphore grass	SC, SCE, SR, 1B	Broadleaf upland forest	No suitable habitat present within project area.
Sidalcea calycosa ssp. *rhizomata* Point Reyes checkerbloom	SLC, 1B	Marshes and swamps	No suitable habitat present within project area.

List of Sensitive Plant Species With Potential to Occur in The Vicinity of The Russian River County Sanitation District's Proposed Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Stellaria littoralis seashore starwort	SC	Moist dunes	No suitable habitat present within project area.
Trifolium amoenum showy Indian clover	FE, 1B	Valley and foothill grassland, sometimes serpentine	No suitable habitat present within project area.
Trifolium depauperatum var. *hydrophilum* water sack clover	SC	Salt marshes, open areas in alkaline soils	No suitable habitat present within project area.
Usnea longissima long-beard lichen	--	North coast coniferous forest, broad leafed upland forest.	No suitable habitat present within project area.

List of Sensitive Plant Species
With Potential to Occur in The Vicinity of The
Russian River County Sanitation District's Proposed Third Unit Processes Project Area

(Camp Meeker and Duncans Mills Quadrangles)

Species Name	Status[1]	Habitat	Potential To Occur Within Project Area

[1] Status

FE:	Endangered under federal Endangered Species Act (ESA).	SE:	Endangered under California ESA.
FT:	Threatened under federal ESA.	ST:	Threatened under California ESA.
FPE:	Proposed endangered under federal ESA.	SR:	Listed as rare under the California Native Plant Protection Act.
FC:	Candidate for listing under federal ESA.	1A:	California Native Plant Society List 1A: Plants presumed extinct in California.
SC:	U.S. Fish and Wildlife Service Species of Concern.		
SLC	Species of Local Concern – Other species of concern to the Sacramento U.S.Fish and Wildlife Service Office.	1B:	California Native Plant Society List 1B: Plants rare, threatened or endangered in California.
SCE	State candidate for listing, endangered under state ESA.	2:	California Native Plant Society List 2: Plants rare, threatened, or endangered in California, but more common elsewhere.
--	None. Listed on NNDB Duncans Mills and Camp Meeker quadrangles.		

APPENDIX E

THIRD UNIT PROCESSES PROJECT
EROISON CONTROL PLAN AND DETAILS

APPENDIX F

SPECIAL STATUS WILDLIFE SPECIES
WITH POTENTIAL TO OCCUR IN THE VICINITY OF THE
RUSSIAN RIVER COUNTY SANTIATION DISTRICT'S
THIRD UNIT PROCESSES PROJECT AREA

Special Status Wildlife Species
With Potential to Occur in the Vicinity of the
Russian River County Sanitation District's Third Unit Processes Project Area

(Camp Meeker and Duncans Mills Quadrangles)

Species Name	Status [1]	Habitat	Potential To Occur Within Project Area
Invertebrates			
Carterocephalus palaemon ssp Sonoma srtic skipper	SC	Grasses including purple reedgrass (*Calamagrostis purpurascens*) host caterpillars. Adults found in glades and openings in heavily forested woods, moist meadows, and streamsides.	No suitable habitat present within project area. No documented local occurrence.
Cicindela hirticollis gravida sandy beach tiger beetle	SC	Areas adjacent to non-brackish water along California coast from San Francisco Bay to northern Mexico. Inhabits clean, dry, light-colored sand in the upper zone.	No suitable habitat present within project area. No documented local occurrence.
Coelus globosus globose dune beetle	SC	Coastal sand dunes from Bodega Head in Sonoma County south to Ensenada, Mexico. Inhabits dunes and sand hummocks, burrows beneath sand.	No suitable habitat present within project area. No documented local occurrence.
Lichnanthe ursina bumblebee scarab beetle	SC	Coastal sand dunes from Sonoma County to San Mateo County.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Speyeria zerene myrtleae Myrtle's silverspot butterfly	FE	Coastal dunes, coastal terrace, coastal bluff scrub and associated grasslands with western dog violet (*Viola adunca*) in Sonoma and Marin counties. Females deposit eggs only on western dog violets.	No suitable habitat present within project area. No documented local occurrence.
Syncaris pacifica California freshwater shrimp	FE, SE	Shallow pools away from main streamflows, with undercut banks with exposed roots in winter and leafy branches touching water in summer	No suitable habitat present within project area. Documented occurrences in Austin and Big Austin creeks (NDDB 2002).
Danaus plexippus (wintering sites) monarch butterfly	--	Winter roosts extend along coast from northern Mendocino to Baja California. Roosts in wind-protected tree groves with nectar and water sources nearby.	No suitable habitat present within project area. No documented local occurrence.
Fish			
Eucyclogobius newberryi tidewater goby	FE, FPD, CSC	Shallow lagoon and lower stream reaches where water is brackish to fresh and slow-moving to still (not stagnant).	No suitable habitat present within project area. No documented local occurrence.
Hysterocarpus traski pomo Russian River tule perch	SC, CSC	Russian River; large, low-elevation stream with beds of emergent aquatic plants or overhanging banks.	No suitable habitat present within project area

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Lampetra tridetata Pacific lamprey	SC	Spawn in areas with moderate velocities and gravel or cobble substrates. Juvenile rear in low velocity habitats with silt or sand substrate.	No suitable habitat present within project area. Migrates through the Russian River.
Lavinia symmetricus parvipinnis navarroensis Navarro Roach	CSC	Habitat generalists; found in small, warm intermittent streams; cold, well-oxygenated streams; and main channels of rivers.	Not expected. No suitable habitat present within project area. Found year-round in the Russian River.
Oncorhynchus kisutch coho salmon, central CA coast	FT, SE,	Spawning areas typically at head of riffles or tails of pools with beds of loose, silt-free coarse gravels and cover nearby for adults. Juveniles require deep, well-shaded pools with plenty of overhead cover.	Not expected. No suitable habitat present within project area. Migrates through the Russian River.
Oncorhynchus mykiss central California steelhead	FT	Spawn and rear in cool, clear, well-oxygenated streams.	No suitable habitat present within project area. Migrates through the Russian River.
Oncorhynchus tshawytscha southern OR/CA coastal chinook salmon	FT	Adults spawn in areas of moderate velocities and gravel to small cobble substrates. Juveniles rear along stream margins in riffle and run habitats.	No suitable habitat present within project area. Migrates through Russian River.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Pogonichthys macrolepidotus Sacramento splittail	FT, CSC	Slow-moving rivers and sloughs with flooded vegetation for spawning and foraging areas.	No suitable habitat present within project area. Does not occur in the Russian River watershedf. No documented local occurrence.
Amphibians			
Ambystoma californiense California tiger salamander	FE, CSC, P	Grasslands & valley foothill hardwood habitats with appropriate subterranean (mammal burrows) refuge sites. Breeds in temporary pools (e.g. vernal pools).	No suitable habitat present within project area and outside of species range.
Rana aurora aurora northern red-legged frog	SC, CSC, P	Permanent or temporary water bordered by dense, grassy or shrubby vegetation. Requires 4-6 months of permanent water for larval development.	No suitable habitat present within project area. Documented occurrence is Willow Creek (NDDB 2002).
Rana boylii foothill yellow-legged frog	SC, CSC, P	Shallow, flowing water in small to moderately-sized streams with at least some cobble-sized substrates.	No suitable habitat present within project area. Nearest documented occurrence is Green Valley Creek (NDDB 2002).

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Reptiles			
Clemmys marmorata marmorata northwestern pond turtle	SC, CSC, P	Slack or slow-moving aquatic habitat with available aerial and aquatic basking sites. Upland oviposition sites are typically on unshaded, south facing slopes with soils of high clay or silt composition.	Filtration pond within project area may provide marginal aerial and aquatic basking sites. Nearest documented occurrences are a tributary to Jonive Creek, an unnamed tributary to Redwood Creek, and an unknown location in Duncan Mills (NNDB 2002).
Phrynosoma coronatum frontale California horned lizard	SC, CSC, P	Areas with exposed gravelly-sandy substrates with scattered shrubs; clearings in riparian woodlands; dry uniform chamise chaparral; and annual grassland with scattered perennial seepweed (*Suadea fruticosa*) or saltbush (*Atriplex polycarpa*).	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Birds			
Accipiter cooperii Cooper's hawk	CSC	Riparian, oak woodland, or other forest habitats near water. Occurs in variety of habitats during migration.	No suitable habitat present within project area. No documented local occurrence.
Accipiter striatus Sharp-shined hawk	CSC	Nests in dense, pole and small-tree stands of conifers, which are cool, moist, well-shaded, with little ground cover, near water. Forages in openings at woodland edges, hedgerows, brushy pastures, and shorelines.	No suitable habitat present within project area. No documented local occurrence.
Agelaius tricolor tricolored blackbird	SC	Nest located over or near fresh water, especially in emergent wetland. Usually nests in dense cattails or tules; also nests in thickets of willow, blackberry, wild rose, tall herbs.	No suitable habitat present within project area. No documented local occurrence.
Ammodramus savannarum grasshopper sparrow	SC	Dense, dry or well-drained, grassland with scattered shrubs for perching.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Asio flammeus short-eared owl	SC	Found in open, treeless areas with elevated sites for perches, and dense vegetation for roosting and nesting, including fresh and saltwater marshes, bogs, dunes, prairies, grassy plains, old fields, tundra, moorlands, river valleys, meadows, savanna, open woodland, and heathland. Nests on dry ground in a depression concealed with vegetation, and lined with grasses, forbs, sticks, and feathers; occasionally nest in burrows. Local abundance varies with vole abundance.	No suitable habitat present within project area. No documented local occurrence.
Buteo regalis ferruginous hawk (wintering)	SC, CSC	Open country, usually prairies and plains. Nests in coniferous trees with expansive view. Typically only winters in California.	No suitable nesting habitat present within project area. No documented local occurrence.
Brachyramphus marmoratus marbled murrelet (nesting)	FT, SE, CSC	Dense coniferous forest near the coast or inland lakes. Usually nests in depressions on north-facing, open ground on islands or well inland. Also nests in rock crevices and high in trees.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Cerorhinca monocerata rhinoceros auklet (nesting colony)	CSC	Breeds on rocky, shrub- or grass-covered slopes on islands. Ground nests on slopes are usually ocean facing or wooded, turf-covered banks.	No suitable habitat present within project area. Nearest documented occurrence is Arched Rock (NDDB 2002).
Chaetura vauxi Vaux's swift	SC	Prefers redwood and Douglas fir habitats with nest-sites in large hollow trees and snags, especially tall burned-out stubs. Also known to nest in chimneys and buildings	Potential habitat present within project area. No large snags present.
Charadrius alexandrinus nivosus western snowy plover (nesting, coastal population)	FT, CSC	Beaches and dry mud or salt flats, sandy margins of rivers, lakes and ponds. Nests in scrapes on the ground.	No suitable habitat present within project area. No documented local occurrence.
Coccyzus americanus occidentails western yellow-billed cuckoo	C, SE	Open woodlands, especially with dense undergrowth, riparian woodlands, and thickets. Nests in deciduous trees or shrubs approximately one to two meters from the ground.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Dendroica occidentalis hermit warbler	SC	During breeding, older stands of coniferous forests in higher and cooler elevations. During migration, mixed deciduous woodland and scrub habitats.	Suitable migration habitat present within project area. No documented local occurrence.
Dendroica petechia brewsteri yellow warbler	CSC	Riparian; open to medium-density woodlands and forests with a heavy brush understory.	No suitable habitat present within project area. No documented local occurrence.
Elanus leucurus white-tailed kite (nesting)	FP, SC, CSC,	Nests in dense-canopied woodlands adjacent to grasslands, agricultural fields, and wetlands.	No suitable habitat present within project area. No documented local occurrence.
Empidonax traillii brewsterii Little willow flycatcher (nesting)	SC	Swamps, willow thickets, riparian woodland. Nests in the forks of trees or shrubs, approximately 0.5 to 3 m above ground.	No suitable habitat present within project area. Outside of species breeding range. No documented local occurrence.
Falco peregrinus anatum American peregrine falcon (nesting)	DFE, SE, FP	In open habitats from tundra, savanna, and coasts to high mountains. Known to occur in urban areas on tall buildings. Usually nests in scrapes on cliff ledges.	No suitable nesting habitat present within project area. Nearest documented occurrence is Lake Sonoma.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Fratercula cirrhata Tufted puffin (nesting colony)	CSC	Found on coastal slopes, headland, rocky islands with cliffs. Nests either on turf-covered ground or on cliffs.	No suitable habitat present within project area. Nearest documented occurrence is Arched Rock (NDDB 2002).
Haliaeetus leucocephalus bald eagle (nesting & wintering)	FT, SE, FPD	Found on coasts, rivers, and large lakes in open areas. Nests primarily in coniferous trees and on cliffs.	No suitable nesting habitat present within project area. No documented local occurrence.
Histrionicus histrionicus harlequin duck (nesting)	SC, CSC	Rocky coastal islets, forested mountain streams with fast-flowing water and occasionally on open tundra. Nests usually under shrubs, occasionally in rock crevices among boulders, in tree cavities, or puffin burrows.	No suitable habitat present within project area. No documented local occurrence.
Icteria virens yellow-breasted chat	CSC	Dense brushy thickets and tangles near water and thick understory in riparian woodland.	No suitable habitat present within project area. No documented local occurrence.
Lanius ludovicianus loggerhead shrike	SC	Open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Numenius americanus long-billed curlew	SC	Upland shortgrass prairies and wet meadows used for nesting; coastal estuaries, open grasslands, and croplands used in winter. Species does not breed in Sonoma County.	No suitable habitat present within project area. No documented local occurrence.
Oceanodroma homochroa ashy storm-petrel	SC	Found on ocean. Breeds on coastal islands off central and southern CA.	No suitable habitat present within project area. Outside of species range. No documented local occurrence.
Pandion haliaetus osprey (nesting)	CSC	Found along rivers, lakes, and coasts. Nests in deciduous or coniferous trees (occasionally power poles) near or over water.	No suitable habitat present within project area. Nearest documented occurrence is on the Burch property, adjacent to project area. (Checkal 1998). Other documented occurrence Freezeout Road (NDDB 2002). Observed by Agency staff in1998 in the vicinity of Wohler Bridge.
Pelecanus occidentalis californicus California brown pelican (nesting colony)	FE, SE, FP	Open coastal habitat on islands without mammalian predators. Nests primarily in mangrove trees, also in scrapes on cliffs and ground.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Strix occidentalis caurina northern spotted owl	FT, CSC	Dense coniferous and deciduous forests. Nests primarily in coniferous trees, occasionally on cliffs in heavily wooded canyons.	No suitable habitat present within project area. Suitable habitat identified on Burch property adjacent to the project area, but no individuals observed (Checkal 1998).
Toxostoma redivivum California thrasher	SC	Cismontane foothills and lowlands; moderate to dense chaparral and, less commonly, extensive thickets of California blackberry and California wild grape in young or open valley foothill riparian habitat.	No suitable habitat present within project area. Outside of species range. No documented local occurrence.
Mammals			
Antrozous pallidus *pallid bat*	CSC	Grasslands, shrublands, woodlands, and forests from sea level to mixed conifer forest. Most common in open, dry habitats with a rocky areas for roosting.	No suitable habitat present within project area. Documented occurrence is west of Joy Road, northwest of Joy School, and southwest of Occidental (NDDB 2002).
Aplodontia rufa phaea Point Reyes mountain beaver	SC, CSC	Creekside thickets along north coast. Occasionally common on brush-covered hillsides near water.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species With Potential to Occur in the Vicinity of the Russian River County Sanitation District's Third Unit Processes Project Area (Camp Meeker and Duncans Mills Quadrangles)			
Species Name	**Status [1]**	**Habitat**	**Potential To Occur Within Project Area**
Arborimus pomo California red tree vole	SC, CSC	Douglas fir, redwood and montane hardwood-conifer forests in north coast fog belt from Oregon border to Sonoma County.	No suitable habitat is present within the project area. Documented occurrence is Upper Green Valley Creek (NDDB 2002).
Corynorhinus townsendii townsendii Pacific western big-eared bat	SC, CSC	Forages in variety of habitats, but prefers mesic sites. Roosts in caves, mines, tunnels, and buildings.	No suitable habitat present within project area. No documented local occurrence.
Eumops perotis californicus greater western mastiff-bat	SC	Arid to semi-arid habitats, e.g. conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, and desert scrub. Requires extensive open areas with abundant roost locations provided by crevices in rock outcrops, trees, tunnels and high buildings.	No suitable habitat present within project area. No documented local occurrence.
Myotis evotis long-eared myotis bat	SC	Coniferous forests and woodlands preferred, but found in nearly all brush, woodland and forested habitats. Does not roost colonially.	No suitable habitat present within project area. No documented local occurrence.
Myotis thysanodes fringed myotis bat	SC	Pinyon-juniper, valley foothill hardwood, and hardwood-conifer habitats at 4,000-7,000 feet are optimal, but occurs in a wide variety of habitats Breeds in caves and old buildings.	No suitable habitat present within project area. No documented local occurrence.

Special Status Wildlife Species
With Potential to Occur in the Vicinity of the
Russian River County Sanitation District's Third Unit Processes Project Area

(Camp Meeker and Duncans Mills Quadrangles)

Species Name	Status [1]	Habitat	Potential To Occur Within Project Area
Myotis volvans long-legged myotis bat	SC	Forages in chaparral, coastal scrub, early successional woodlands and forests. Roosts in trees, buildings, and crevices in cliffs.	No suitable habitat present within project area. No documented local occurrence.
Myotis yumanensis Yuma myotis bat	SC, CSC	Commonly occurs along wooded canyon bottoms with sources of water to forage over. Roosts in caves and old buildings.	No suitable habitat present within project area. No documented local occurrence.

[1] Status

FE	Listed as endangered under the federal Endangered Species Act.
FT	Listed as threatened under the federal Endangered Species Act.
PT	Proposed for listing as threatened under the federal Endangered Species Act.
FPD	Federally proposed for delisting.
C	A candidate for listing under the federal Endangered Species Act.
SC	A U.S. Fish and Wildlife Service Species of Concern (formerly a category 2 candidate for listing).
CA	Listed by the State of California but not by Fish and Wildlife Service.
SE	Listed as endangered under the California Endangered Species Act.
ST	Listed as threatened under the California Endangered Species Act.
CSC	A California Department of Fish and Game Species of Special Concern.
FP	Fully protected under California Fish and Game Code.
P	Protected under California Code of Regulations Title 14, Chapter 5, Section 41 (native amphibians) and Section 42 (native reptiles).
D	Federal delisted species that will be monitored for 5 years.
--	None. Listed on NNDB Duncans Mills quadrangle.

APPENDIX G

NORTHWEST INFORMATION CENTER
RUSSIAN RIVER COUNTY SANTIATION DISTRICT
THIRD UNIT PROCESSES PROJECT
CULTURAL RESOUCE RECORD SEARCH

APPENDIX H

NATIVE AMERICAN HERITAGE COMMISSION
RUSSIAN RIVER COUNTY SANTIATION DISTRICT
THIRD UNIT PROCESSES PROJECT, SONOMA COUNTY

APPENDIX I

STATE HISTORICAL PRESERVATION OFFICE
SECTION 106 CLEARANCE LETTER

APPENDIX J

SUMMARY PROCESSES FOR THE
RUSSIAN RIVER COUNTY SANITATION DISTRICT'S
EXISTING TREATMENT FACILITY