

**SANTA ROSA SUBREGIONAL WATER
RECLAMATION SYSTEM**

**INCREMENTAL RECYCLED WATER
PROGRAM**

INITIAL STUDY

July 16, 2002

Prepared by Parsons

TABLE OF CONTENTS

BACKGROUND	1
Background and Introduction	2
Public Involvement.....	2
Scoping Meeting and Comments.....	2
Purpose and Need.....	3
Program Purpose	3
Program Objectives	3
Project Description	4
Introduction	4
Project Location	5
Future System Requirements.....	5
Existing System	9
Program Alternatives	12
Alternative 1 – Indoor Water Conservation.....	15
Alternative 2 – Infiltration and Inflow Reduction	15
Alternative 3 – Urban Reuse	16
Alternative 4 – Agricultural Reuse	17
Alternative 5 – Industrial Reuse	18
Alternative 6 – Geysers Expansion	18
Alternative 7 – Additional Treatment and Reuse Alternative.....	19
Alternative 8 – Discharge Alternative	20
Alternative 9 – No Project Alternative	20
Program Components	21
Cumulative Projects	28
Other Required Agency Approvals.....	30
Federal Agency Permits and Approvals.....	31
State of California Agency Permits and Approvals	31
Regional Agency Permits and Approvals.....	33
County and City Agency Permits and Approvals.....	33
EVALUATION OF ENVIRONMENTAL IMPACTS	35
I. Aesthetics.....	36
II. Agriculture Resources	41
III. Air Quality	44
IV. Biological Resources	47
V. Cultural Resources	51
VI. Geology and Soils	54
VII. Hazards/Hazardous Materials.....	58
VIII. Hydrology and Water Quality.....	63
IX. Land Use and Planning.....	69
X. Mineral Resources.....	73
XI. Noise.....	76
XII. Population and Housing.....	79
XIII. Public Services.....	81
XIV. Recreation.....	82
XV. Transportation/Traffic	83
XVI. Utilities and Service Systems	87
XVII. Mandatory Findings of Significance	89

DETERMINATION..... 91

PREPARERS AND REFERENCES..... 92

Preparers 92

 Parsons..... 92

 Merritt-Smith Consulting..... 92

 LSA Associates 92

 Illingworth & Rodkin 92

References 92

BACKGROUND

Project Title	Incremental Recycled Water Program
Lead Agency Name and Address	City of Santa Rosa Department of Public Utilities 69 Stony Circle Santa Rosa, CA 95401
Contact Person and Phone Number	Dan Carlson Santa Rosa Utilities Department 69 Stony Circle Santa Rosa, CA 95401 (707) 543-3930
Project Location	Central Sonoma County from Rohnert Park to Cloverdale and eastern portion of Lake County
Assessor's Parcel Number	Numerous
Project Sponsor's Name and Address	City of Santa Rosa P.O. Box 1678 Santa Rosa, CA 95402
General Plan Designation	Various
Zoning	Various

BACKGROUND AND INTRODUCTION

The project proponent, the City of Santa Rosa (managing partner of the Santa Rosa Subregional Water Reclamation System), proposes to implement an Incremental Recycled Water Program (IRWP). The City of Santa Rosa, as the lead agency, has decided to prepare an Environmental Impact Report (EIR) for the proposal. This Initial Study, therefore, has been prepared and circulated to notify the public and interested agencies of the proposal, solicit comments about the environmental impacts of the project, and request assistance in identifying key issues the EIR should evaluate.

The EIR is proposed to be a Program EIR under Section 15168 of the California Environmental Quality Act (CEQA) Guidelines. In recognition of this, the alternatives and components of the Program have been developed at a conceptual level and environmental review will also be at a conceptual level. The Program EIR is intended to take advantage of this opportunity to consider cumulative impacts, facilitate the analysis of a wide range of alternatives, and allow the City to consider broad policy alternatives and programwide mitigation measures at an early time in the development of the Program.

PUBLIC INVOLVEMENT

Three public “pre-scoping” meetings have been held to advise the public of the Program as it is being developed. These meetings were well attended and took place on October 3 and 10, 2001, and May 1, 2002. The IRWP website is available at www.recycledwaterprogram.com to publicize meetings, advise regarding the schedule, and provide ways in which the project proponent can be contacted.

SCOPING MEETING AND COMMENTS

A public scoping meeting is scheduled to receive public input regarding the content of the EIR, potential alternatives, and information relevant to the environmental review of the Program. The meeting is tentatively scheduled for July 31, 2002 at the Finley Community Center located at 2060 West College Avenue in Santa Rosa at 6:30 pm. Written scoping comments will be accepted until August 14, 2002. For more information, please contact Pat Fruiht – Community Affairs at 707-543-3023. Written comments should be mailed or faxed to:

City of Santa Rosa
Santa Rosa City Manager’s Office
P.O. Box 1678
Santa Rosa, CA 95402
Fax: 707-543-3030

PURPOSE AND NEED

The Incremental Recycled Water Program is necessary to provide for treatment, recycling, and/or disposal of the wastewater generated by the Subregional Reclamation System members in a manner that is reliable and in compliance with regulatory requirements. The volume of wastewater the Program must treat and dispose/reuse is based upon population in the Subregional Reclamation System service area, and population with growth projections consistent with the General Plans (in effect as of July, 2002) of the communities making up the System.

Also, regulatory requirements applicable to reclaimed water discharge into the Russian River and its tributaries have increased since the Geysers Recharge Project was selected, and additional regulatory requirements are anticipated. Treatment and disposal/reuse capacity is not available to accommodate the General Plan population growth in compliance with regulatory requirements.

Program Purpose

The purpose of the IRWP is to provide treatment, reuse and disposal of wastewater in a reliable, practicable manner that provides the best use of water resources, while protecting public health and the environment. Thus, the City's purpose for the Program is not only to dispose of recycled water, but to do so in a manner that maximizes reuse opportunities particularly where recycled water will increase the availability of potable water supplies.

Program Objectives

Primary Program Objectives

- Provide wastewater treatment, recycling and disposal for the Santa Rosa Subregional Reclamation System to accommodate projected growth as indicated in the adopted General Plans in effect as of July 2002 of each of the Subregional members.
- Develop and operate the wastewater treatment and disposal system in ways that protect public health and safety, protect natural resources including the Russian River and its watersheds, promote use of recycled water, meet current requirements, and provide flexibility to meet future regulatory requirements.
- Maintain a system and system components that can continue to be successfully financed and that are economically feasible.

Supporting Program Objectives

- Maximize use of recycled water.
- Maximize reuse opportunities where recycled water will increase the availability of potable water supplies.
- Dispose of reclaimed water in a manner that protects beneficial uses of receiving waters.

- Optimize water conservation.
- Maintain the level of weather-independence (as defined by the North Coast Regional Water Quality Board) that is provided by the addition of the Geysers Recharge Project to the Subregional Reclamation System.
- Maximize the use of existing infrastructure.
- Maintain a disposal system that is manageable and reliable.
- Provide flexibility to accommodate use of recycled water made available by neighboring agencies as deemed appropriate by the City of Santa Rosa.

PROJECT DESCRIPTION

Introduction

The City of Santa Rosa has undertaken the Incremental Recycled Water Program to provide reliable treatment, recycling and disposal of the wastewater volume from growth anticipated in the General Plans of the communities making up the Subregional System (Santa Rosa, Rohnert Park, Cotati, and Sebastopol). The Program will define and evaluate nine alternatives that include a range of components to achieve the Program's objectives.

After the Program EIR is completed and certified by the City of Santa Rosa, alternatives that have been considered in the Program EIR can be selected for implementation by the City. At the time that additional reuse or disposal capacity is needed, the City intends to implement a portion of one or more alternatives that meet the Program Purpose and Need. For example, an urban irrigation project that uses only a portion of the urban irrigation lands identified in the Program EIR could be selected for implementation by the City soon after the Program EIR is certified, while a portion of the agricultural irrigation alternative in the Program EIR could be implemented several years later when additional capacity is needed. Additionally, other entities (e.g., an irrigation district) could propose to implement projects that are evaluated in the Program EIR, and the City could decide to make recycled water available to that other entity (if other entities have complied with CEQA).

Each time that the City of Santa Rosa proposes to proceed with a project, the City will consider all Program EIR alternatives and select a project that is evaluated in the Program EIR. Each of these projects could require a project-specific EIR or other CEQA document, depending on the project selected for implementation.

The Project Description for the IRWP included in this Initial Study has been developed at a conceptual or program-level in keeping with the programmatic nature of the EIR which the City proposes to prepare. Because the alternatives of the IRWP have only been defined at a preliminary level and have not been defined at a project level of detail, the locations and design characteristics of the project components are general or conceptual.

Project Location

The alternatives proposed as part of the IRWP are located primarily in Sonoma County, California as shown on Figure 1 on the following page. The program area is focused on the central portion of the County within and adjacent to the member communities of the Subregional System, but also extends to the north through the Alexander and Dry Creek valleys, and includes portions of the Russian River Valley from Mirabel to north of Healdsburg. A small area lies across the border in Lake County.

Future System Requirements

In order to achieve the objectives of the IRWP, the future system must:

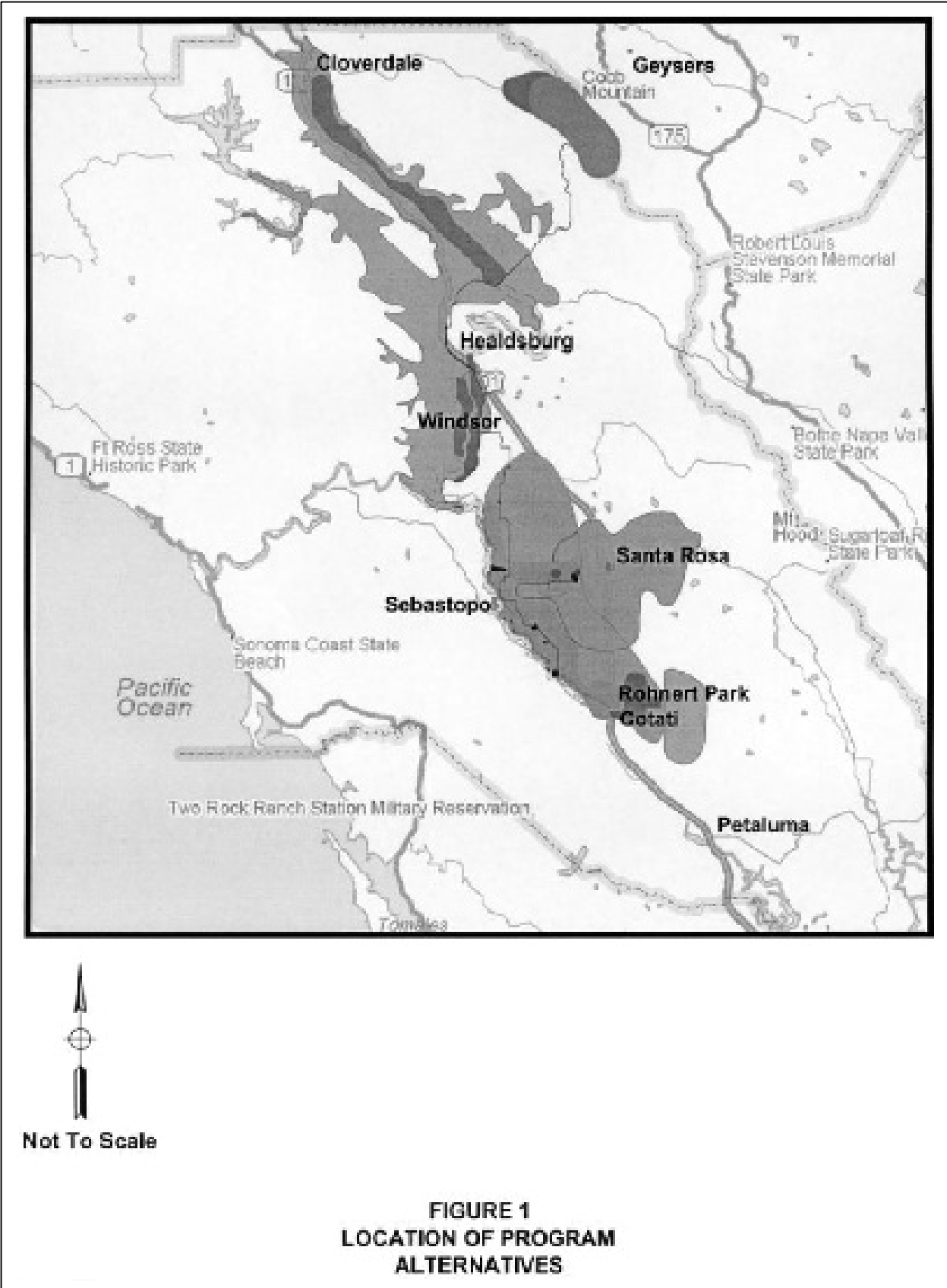
- Provide adequate reliable capacity to accommodate future flows generated by population and employment growth of the member entities, and
- Achieve the quality of recycled water that will be required by regulatory agencies. Discharge of recycled water is subject to the California Toxics Rule (CTR), compliance with which may require additional treatment.

Future Recycled Water Flows

The future flow generation for the Subregional System is based upon the population, housing, and employment growth projected by the General Plans of the Subregional System members.

The General Plan of each member has a horizon year for which the plan projects population, housing, and employment growth. The General Plan horizon year differs among the four members: Santa Rosa and Rohnert Park share a horizon year of 2020; Sebastopol is 2013 and Cotati is 2010. The General Plans in effect in each of the member jurisdictions in July 2002 have been used.

Because the individual jurisdictions determine growth through their general plans, planning for new capacity of the Subregional System responds directly to the growth anticipated through the horizon year of each general plan. Population, housing, and employment projections are shown in Table 1.



**FIGURE 1
LOCATION OF PROGRAM
ALTERNATIVES**

Table 1

Population, Housing, and Employment Projections of Subregional System
Members

Jurisdiction	General Plan Horizon Year	Population Projection	Dwelling Unit Projection	Employee Projection
Santa Rosa	2020	195,300	82,100	139,400
Rohnert Park & SSU				
Rohnert Park	2020	50,400	19,990	37,720
Sonoma State Univ.	buildout	10,000	3,458	1,516
Sebastopol	2013	10,417	4,359	7,390
Cotati	2010	9,109	3,333	3,760
Total		275,226	113,240	189,786

Source: Parsons 2002

To facilitate comparison with the EIR for the Santa Rosa Subregional Long-Term Wastewater Project, Table 2 presents the increase in population projections since the Long-Term EIR was certified in 1997. The Long-Term EIR relied upon General Plans in effect in April 1994.

Table 2

Increase in Population Projections since the Certified Long-Term EIR

Jurisdiction	General Plan Population Projections in April 1994 ^a	General Plan Population Projections in June 2002	Population Increase
Santa Rosa	174,500	195,300	20,800
Rohnert Park			
Rohnert Park	40,000	50,400	10,400
Sonoma State Univ.	10,000	10,000	0
Sebastopol	10,417	10,417	0
Cotati	8,793	9,109	316
Total	243,710	275,226	31,516

Source: Parsons 2002

Notes: a. Santa Rosa Subregional Long-Term Wastewater Project EIR, certified 1997

Based upon these General Plan projections, the future flow at the Laguna Plant was determined using a 30-day average daily dry weather flow, which is defined as the minimum flow occurring over a period of 30 consecutive days. This approach is consistent with the stipulations contained in the Subregional System's National Pollution Discharge Elimination System (NPDES) permit.

Using the estimates of future number of employees and dwelling units based upon the General Plans, flow generation estimates were calculated using year 2000 per capita and per employee generation data.

The resulting estimated future flow is 25.9 million gallons per day (mgd), as shown in Table 3 below.

Table 3

Projected Wastewater Flows for Subregional System Members

Member Entity	Permitted Flows with Geysers Recharge Project (mgd) ^a	Projected Flows per General Plans in June 2002 (mgd)
Santa Rosa	16.31	19.14
Rohnert Park & SSU	3.43	5.15
Sebastopol	0.84	0.84
Cotati	0.76	0.76
Total	21.34	25.89

Source: Parsons 2002

Notes: a. Santa Rosa Subregional Long-Term Wastewater Project EIR, certified 1997

The California Toxics Rule and State Implementation Policy

The U.S. Environmental Protection Agency has promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters in the State of California. The U.S. EPA promulgated this rule (the California Toxics Rule or CTR, 40CFR §131.38) based on the determination that the numeric criteria are necessary in the State of California to protect human health and the environment.

The rule fills a gap in California water quality standards that was created in 1994 when a state court overturned the state's water quality control plans containing water quality criteria for priority toxic pollutants. Thus, the State of California has been without numeric water quality criteria for many priority toxic pollutants as required by the Clean Water Act, necessitating this action by EPA. These federal criteria are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the Clean Water Act (CCR Title 23, §2914).

The final rule promulgated:

- Ambient aquatic life criteria for 23 priority toxics;
- Ambient human health criteria for 57 priority toxics; and
- A compliance schedule provision that authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal criteria when certain conditions are met.

The State must use the criteria together with the State's existing water quality standards when controlling pollution in inland waters and enclosed bays and estuaries. The CTR will remain in place unless the State adopts its own numeric criteria for toxics and U.S. EPA approves those criteria.

The State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy) establishes a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters. The State Implementation Policy is a tool to be used to ensure achievement of water quality standards such as the priority pollutant criteria promulgated through the CTR.

Current interpretation of the CTR regulations and current information regarding effluent quality indicates that discharge would not comply with the CTR. The effect of the CTR for the Subregional System is that additional treatment of recycled water (beyond the level of treatment now provided) will be required for any recycled water that is discharged to any inland surface water. The schedule for compliance with the CTR is likely to require that the Subregional System determine its methods of compliance by 2005 and implement these methods by 2010. The CTR does not apply to either land application or groundwater.

Existing System

In order to understand the IRWP alternatives, a brief explanation of the existing system and Geysers Recharge Project are provided here. The Santa Rosa Subregional Reclamation System utilizes recycled water that is treated to a tertiary level at the Laguna Plant. Year 2000 flow was 17.9 mgd, and the System disposes of recycled water by means of a combination of methods, including discharge to the Russian River via the Laguna de Santa Rosa, urban irrigation, created wetlands in the Santa Rosa Plain, and agricultural irrigation. The System treats the solids removed from the wastewater (sludge) and the resulting sludge is applied to agricultural lands or disposed of at the Sonoma County Central Landfill. The principal components of the existing system and Geysers Recharge Project now under construction are described in the following sections and are considered part of the No Project Alternative.

Laguna Subregional Reclamation Facility (Laguna Plant)

The Laguna Plant is located on Llano Road in the Santa Rosa Plain west of the City of Santa Rosa and adjacent to the Laguna de Santa Rosa. The plant is an activated sludge tertiary treatment plant. It is permitted to treat 19.2 mgd ADWF currently, and will be permitted to treat 21.34 mgd once the Geysers Recharge Project is operational.

Table 4

Average Annual Volume of Flows
(billions of gallons, in average water year)

	Existing NPDES Permit at 19.2 mgd	Geysers Recharge Project at 21.3 mgd	IRWP Projected Flow at 25.9 mgd
Irrigation	3.8	2.1	Minimum of 2.1
Discharge	4.0	2.6	To Be Determined
Geysers	0	4.0	Minimum of 4.0
New recycling alternatives	0	0	To Be Determined
	7.8	8.7	10.5

Source: Merritt-Smith Consulting 2002

Recycled Water Storage

The reclamation system includes a series of storage ponds, which are connected through pipelines to the Laguna Plant and to transmission pipelines supplying the irrigation system. Total available storage is approximately 1,700 million gallons (MG). Recycled water storage is targeted to meet reuse needs (irrigation contracts) and at the end of the irrigation season in September, the operational target is to essentially empty the storage ponds. Increases in recycled water storage occur in the fall when the irrigation demand decreases. During discharge months recycled water storage is managed to meet a target storage curve and recycled water is discharged to the Russian River via the Laguna de Santa Rosa based upon the river flow and the allowable dilution percentage. Recycled water storage is increased in the spring to provide adequate water for reuse during the summer irrigation season.

Recycled Water Disposal and Reuse

Disposal and reuse of recycled water is through agricultural and urban irrigation, operation of wetland areas, and discharge to the Russian River via the Laguna de Santa Rosa.

Irrigation

The existing reclamation system is composed of a large network of pipelines, pump stations, and storage ponds that distributes the recycled water to approximately 6,400 acres (personal communication, Randy Piazza, June 2002) of irrigated land. Both agricultural and urban irrigation sites are included in the system, although the majority are agricultural. During the irrigation season, typically from April through October, recycled water comes directly from the Laguna Plant, supplemented by water stored in ponds. (A Winter Irrigation Program can be implemented when weather during the winter season is dry, and less water than expected can be discharged to the Laguna).

Wetlands

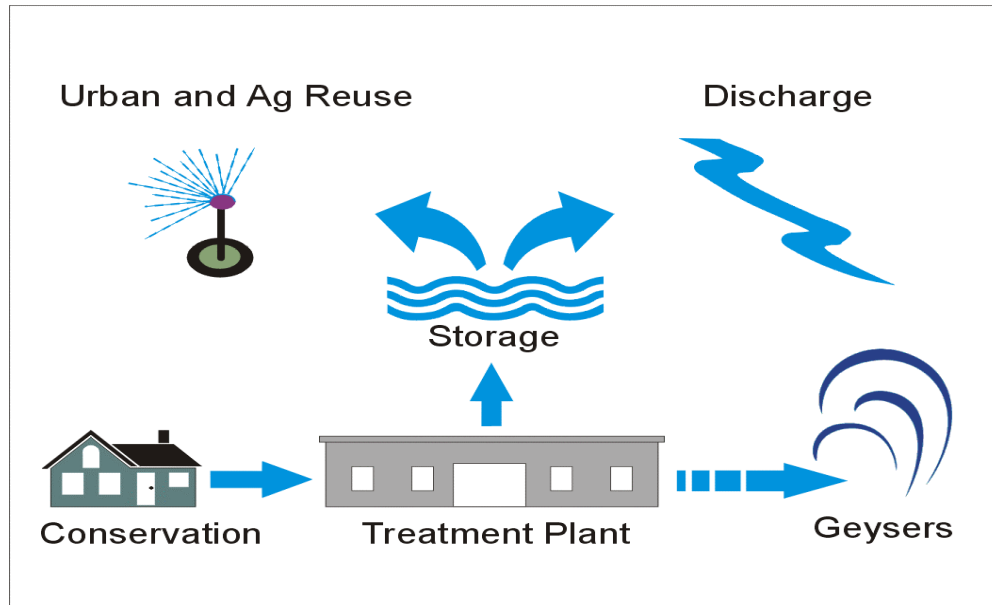
The reclamation system operates and manages wetland areas that use recycled water. These are the Kelly Farm wetland, constructed in 1992, and the LaFranchi marsh. An additional wetland is located on the southerly portion of the Laguna Plant property. This wetland, jointly developed with the County of Sonoma, has a reclaimed water pond and other site enhancement features similar to the Kelly Farm wetland.

Discharge to the Russian River

Reclaimed water which is not stored or directly conveyed for irrigation or wetlands use is discharged to the Russian River via the Laguna de Santa Rosa in compliance with the System's permit from the North Coast Regional Water Quality Control Board. Treated wastewater may be discharged to the Laguna de Santa Rosa or Santa Rosa Creek from numerous points. The two principal discharge locations are at the Meadowlane Ponds west of Llano Road and at Delta Pond located south of Guerneville Road. The volume and frequency of discharge at any given location varies due to operational and seasonal considerations, including irrigation needs, storage levels, and weather.

Geysers Recharge Project

The Geysers Recharge Project is now under construction and is scheduled for completion in late 2002. A schematic of the System is provided below.



The Project will deliver 11 mgd for steamfield recharge at the Geysers, to be utilized for electricity generation. The Geysers pipeline consists of 48-inch diameter buried pipeline from the Laguna Plant to Alexander Valley and 30-inch diameter buried pipeline from Alexander Valley up Pine Flat Road to the Geysers.

Four high-pressure pump stations transport recycled water about 40 miles from the Laguna Plant to the Geysers area northeast of Healdsburg. The first station is located at the Laguna Plant. Three more pump stations along Pine Flat Road lift the water 3,000 feet to a storage tank on a ridge above the Geysers steamfield.

Once the recycled water reaches the Geysers steamfield, a system of distribution pipelines, a pump station and tank convey water to injection wells distributed around the central and northwest portion of the Geysers geothermal fields.

Program Alternatives

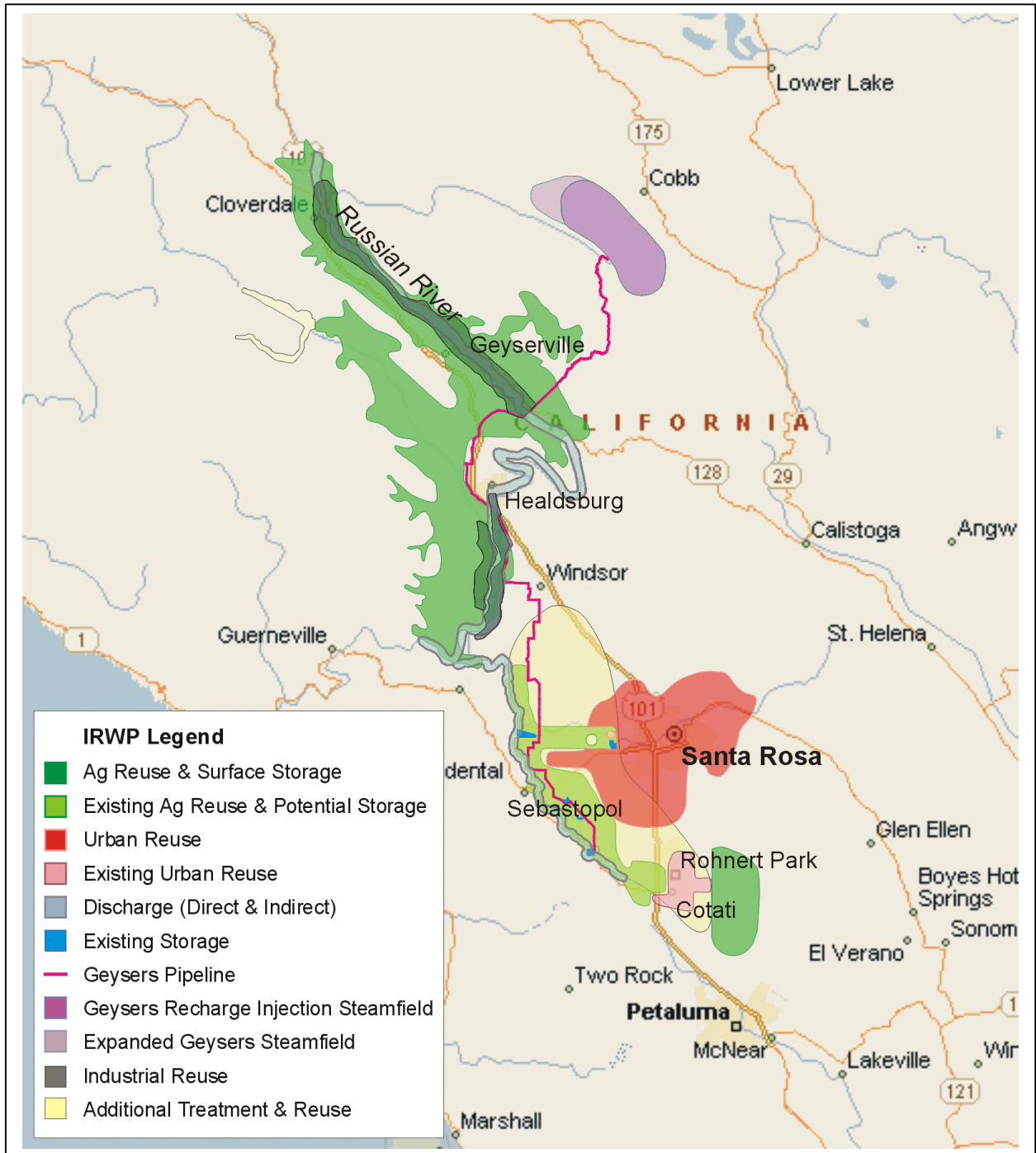
The EIR will evaluate the impacts of the following alternatives:

- Alternative 1 – Indoor Water Conservation
- Alternative 2 – Infiltration and Inflow Reduction
- Alternative 3 – Urban Reuse
- Alternative 4 – Agricultural Reuse
- Alternative 5 – Industrial Reuse
- Alternative 6 – Geysers Expansion
- Alternative 7 – Additional Treatment and Reuse
- Alternative 8 – Discharge
- Alternative 9 – No Project

Each of the IRWP alternatives includes upgrading the Laguna Plant to provide a treatment capacity of 25.9 mgd ADWF. This upgrade would include additional pumping capacity (through additional or upgraded pumps) as well as upgrades to in-plant processes. The upgrade would be necessary for any alternative or combination of alternatives, in order to accommodate the anticipated increase in future flows.

The nine alternatives are described briefly in the following sections and the general location of the alternatives is shown on Figure 2, Concept-level Map of Program Alternatives. Also, the ability of each alternative to achieve the objectives of the Program is discussed, namely reliable capacity for the additional future flows and compliance with water quality regulations, especially the California Toxics Rule for water that is discharged. Implementation of any of the alternatives may require the City of Santa Rosa to purchase property or easements, or acquire needed property through the use of eminent domain.

Figure 2 – Concept-level Map of Program Alternatives



For example, projected growth will generate 10.5 billion gallons (BG) of recycled water annually, instead of 8.7 BG that the Geysers Recharge Project was designed to accommodate. An additional 1.8 BG of recycled water flow must be accommodated in a normal water year; 4.4 BG in a wet water year. For example, an alternative that uses 1.0 BG of recycled water annually achieves 23% of the flow requirement.

Potential components of each alternative are identified in Table 5 following the descriptions of alternatives.

Alternative 1 – Indoor Water Conservation

This alternative will look at future conservation programs for the Subregional Partners as a way to reduce indoor water usage and hence, sewage flows into the Laguna Plant.

Each of the Subregional Partners currently implements water conservation activities and programs. These programs, which include residential water surveys, residential plumbing retrofit, and metered water sales, have resulted in an estimated reduction of 1.5 million gallons per day in sewage flows into the treatment plant. In addition, some activities that are being undertaken, such as public information and school education programs, do not have quantifiable savings, but by changing attitudes and behavior concerning water use, assist with the implementation of the other programs.

Potential reductions in future sewage flows from continuation of these activities and programs, as well as implementation of new water conservation measures (such as front loading washing machines) identified by the State of California will be analyzed as part of the IRWP. The City of Santa Rosa has already implemented all of the state-designated measures applying to indoor water usage, resulting in about a 10% reduction in sewer flow, and therefore, the additional water savings in the future will decrease over time. However, implementation of all of the state-designated measures by the other Subregional Partners would result in a potential reduction in sewer flow of as much as 0.7 mgd by 2020.

This alternative would reduce the additional capacity needed under the IRWP by about 0.3 BG, a small portion of the additional capacity needed. It would not, however, provide compliance with the requirements for recycled water quality under the California Toxics Rule, and therefore implementation of one or more of the other alternatives would be required.

Alternative 2 – Infiltration and Inflow (I&I) Reduction

Each of the Subregional Partners currently has a program to maintain and replace sewers to reduce the amount of groundwater infiltrating the sewers (infiltration) and to reduce the amount of stormwater flowing into the sewers (inflow). I&I control reduces the quantity of water that needs to be treated and reused or disposed. This alternative involves repair or replacement of existing sewage collection system pipe and appurtenances that are buried in the Subregional System service areas.

Under the IRWP, an aggressive I&I control program primarily by the City of Santa Rosa will be formulated and evaluated. Such a program could reduce I&I by as much as 50 percent, or 0.5 BG flow reduction in an average water year. This alternative would not provide sufficient capacity by itself to accommodate the projected recycled water flows under the IRWP, nor would it be able to provide compliance with the requirements for recycled water quality under the California Toxics Rule, and therefore implementation of one or more of the other alternatives would be required.

Alternative 3 – Urban Reuse

Use of recycled water for urban irrigation provides dual benefits of irrigation and replacement of potable water currently used for urban irrigation that could be used for other purposes. Currently, many irrigated parks, playgrounds and industrial campuses within Rohnert Park are supplied with recycled water for irrigation, and the Subregional System provides recycled water for all of the irrigation for Sonoma State University.

The expanded use of recycled water under this alternative will focus on its use to replace other water sources for existing irrigated areas within Santa Rosa such as the Fairgrounds, Bennett Valley, Fountaingrove and Country Club golf courses, as well as numerous parks and playgrounds throughout the city. There are currently approximately 1,500 irrigation customers of the City of Santa Rosa that could be served by this system. . Supplying recycled water to this entire area would replace existing irrigation sources (720 MG/yr of City-supplied water as well as 590 MG/yr of groundwater), and would also forestall the need to supply an additional 660 MG/yr, either from City-supplied or ground water, to irrigate future development.

New developments in southeast and southwest Santa Rosa will be considered for dual piping systems that will provide recycled water to new landscaped areas as well as to industrial users as a replacement for water use in industrial processes. Recycled water would be available also to commercial buildings for use for indoor plumbing such as fire sprinklers and toilets. . The use of grey water systems will be considered.

Additional storage facilities will be needed to store recycled water produced during the winter for use during summer. Approximately 1,800 million gallons of storage capacity in the Santa Rosa Plain would be needed for full implementation of the urban reuse alternative. Other components that will be developed as part of this alternative are:

- A network of pipelines to carry recycled water from the Laguna Plant to the irrigation sites; a series of equalization tanks may be installed as part of the pipeline system;
- A new pump station at the West College Ponds and additional pumps at the Laguna Plant; and
- Booster pumps throughout the City.

This alternative, at maximum, could utilize up to 2 BG annually on 1,800 acres. At this maximum size, urban reuse could provide much of the additional disposal capacity needed

under the IRWP; it would not, however, provide compliance with the requirements for recycled water quality under the California Toxics Rule. Therefore, implementation of one or more of the other alternatives would be required in addition to this alternative.

Alternative 4 – Agricultural Reuse

This alternative will evaluate providing recycled water for agricultural irrigation within the following areas of Sonoma County.

- The area east of Rohnert Park
- The Russian River area between Windsor and Healdsburg, and the Alexander Valley
- The Dry Creek Valley area

Agricultural lands within each of these areas are currently irrigated with water from other sources; this alternative proposes to replace current sources of irrigation with recycled water. In addition, this alternative includes irrigation of lands which may be converted to crops or pasture when recycled water becomes available. In portions of the County, this alternative is being developed in coordination with local agricultural groups and individual operators that may be interested in the use of recycled water for agricultural crops in the future. Recycled water would be potentially available to a wide variety of agricultural uses, including vineyards, pasture, and silviculture (redwoods cultivation).

As part of the agricultural irrigation alternative, storage facilities are needed to store recycled water that is produced during the winter for use during summer. Sufficient agricultural land has been identified to support use of approximately 1.4 billion gallons of recycled water annually in the area east of Rohnert Park and approximately 12.3 billion gallons in the Russian River, Alexander Valley and Dry Creek Valley areas. However, there is insufficient supply of recycled water to serve all of these areas.

It is estimated that approximately 0.5 BG of storage could be needed to support full development of irrigation in the area east of Rohnert Park, and 1.8 BG of storage would be used to support irrigation in the Russian River, Alexander Valley and Dry Creek Valley areas, if storage is filled in 50 percent of years. Additional storage could be built up to 2.6 BG, but it would be filled in less than 50 percent of years. Both surface or subsurface storage of recycled water will be considered in meeting these needs. For the area east of Rohnert Park, surface storage could occur in the southern part of the Santa Rosa plain or in east of Rohnert Park. For the Russian River/Alexander Valley and Dry Creek Valley areas, surface storage options will be identified in the vicinity of the potential irrigation areas. Subsurface storage (groundwater injection and extraction) options in the Santa Rosa plain will be considered to meet the storage needs for any of the irrigation areas.

Other components that will be developed as part of this alternative are:

- Expansion of the Llano pump station and construction of two additional pump stations with storage tanks along the Geysers Pipeline;

- Distribution pipelines from the existing Geysers Pipeline to carry recycled water to Russian River/Alexander Valley and Dry Creek Valley irrigation sites;
- Extensions of the existing pipeline serving Sonoma State University to carry recycled water to the irrigation area east of Rohnert Park;
- Several smaller pump stations along the distribution system in the Russian River/Alexander Valley, Dry Creek Valley, and east of Rohnert Park areas.

This alternative, at maximum, could utilize up to 6.4 BG annually. At maximum development, agricultural reuse could provide most of the additional disposal capacity needed under the IRWP; it would not, however, be a feasible approach to provide compliance with the requirements for recycled water quality under the California Toxics Rule. Therefore, implementation of one or more of the other alternatives would be required in addition to this alternative.

Alternative 5 – Industrial Reuse

Under this alternative, recycled water would be provided for use by gravel processors in the Russian River area near the Geysers pipeline. The portions of their gravel processing operations for which recycled water use is appropriate will be evaluated; these include dust control and gravel washing. A new pipeline or pipelines from the existing Geysers Pipeline and one or more pump stations could be required to carry recycled water to the industrial reuse sites.

This alternative would utilize up to 0.5 BG annually and would not provide sufficient capacity by itself to accommodate the projected recycled water flows under the IRWP, nor would it be able to provide compliance with the requirements for recycled water quality under the California Toxics Rule. Therefore, implementation of one or more of the other alternatives would be required.

Alternative 6 – Geysers Expansion

The pipeline and pump stations installed as part of the Geysers Recharge Project have capacity to provide operational flexibility above the average daily flow rate of 11 million gallons per day of recycled water which is currently contracted between the City of Santa Rosa and Calpine, the steamfield operator. The operational flexibility was provided to allow for "off peak" pumping during times when electrical demand and power costs were less and to provide flexibility in the event deliveries to the Geysers were behind schedule.

This alternative involves increasing the amount of water supplied to the Geysers steamfield. One option would utilize the existing capacity available in the Geysers pipeline (currently under construction) to increase the flow to the Geysers to up to 16 mgd. This flow rate would correspond with the maximum capacity of the conveyance system being installed.

Another option is to increase recycled water delivery to the Geysers steamfield beyond the current constructed pipeline capacity, which is limited by the current pumps. The three

existing pump stations along Pine Flat Road would need to be upgraded with construction of a new building at each site. No modifications to the pipeline would be required. Water delivery to the Geysers under this alternative could range from 11 mgd (current contract) up to 27 mgd.

Although the system of injection wells at the Geysers already has some capacity to accept additional flow, this alternative includes expanding the geographic area for injection to accommodate the additional flow, along with new pipe, pumps, tanks and discharge at the area of injection.

Expansion to 16 mgd capacity would utilize about 1.8 BG annually; expansion to 27 mgd capacity would utilize up to 4.6 BG of recycled water in a wet water year. The 27 mgd option would accommodate most of the projected growth of recycled water flows under the IRWP, but would not provide compliance with the requirements for recycled water quality under the California Toxics Rule. Therefore, implementation of one or more of the other alternatives would be required.

Alternative 7 – Additional Treatment and Reuse Alternative

The California Toxics Rule is expected to result in new requirements on the quality of recycled water that is directly and possibly indirectly discharged to surface waters. Under this alternative, various options will be developed for additional treatment methodologies to improve the quality of Plant effluent, including:

- Physical and chemical treatment methods to address the CTR (for example, Microfiltration and Reverse Osmosis (MFRO)) ;
- Additional limits on discharge of pollutants by industry into the sewer (pretreatment limits);
- Constructed wetlands to provide additional treatment or “polishing” of recycled water; and
- Other measures (e.g., oxygenation).

Also under this alternative, because the additional treatment and resulting improved quality of the recycled water would open up additional reuse opportunities, the following options are considered:

- Surface recharge of groundwater through the use of spreading basins;
- Groundwater recharge by percolation ponds, infiltration basins, or injection; and
- Discharge into Lake Sonoma, which could augment potable water supplies in the Russian River and improve habitat for endangered fish species.

If water receives additional treatment, but is discharged rather than reused, then it is included in the Alternative 8, Discharge; please see that alternative description below. Other components that may need to be developed as part of this alternative are:

- Expansion of the Llano pump station and construction of two additional pump stations with storage tanks along the Geysers Pipeline;
- Pipelines from the existing Geysers Pipeline to carry recycled water to the points of treatment and reuse;
- One or more smaller pump stations along the pipelines carrying recycled water to the points of treatment and reuse;
- Groundwater injection and extraction using wells and pumps; and
- Storage, either surface or subsurface.

This alternative could provide both the quantity of recycled water disposal required under the IRWP and the water quality required under the California Toxics Rule. No other alternatives would be needed.

Alternative 8 – Discharge Alternative

This alternative evaluates the need for an effluent discharge option providing for the release of recycled water when supply exceeds storage capacity during winter months so that the volume, timing and location of the discharge is in compliance with existing and anticipated regulations. This alternative will address the discharge to the Russian River and/or tributaries of the Russian River. One option is to construct new outfalls in the Laguna. A second option is to construct one or more additional outfalls along the Russian River. Potential locations for these discharge points would be along Mark West Creek or along the Russian River between Alexander Valley and Mirabel.

In addition to the construction of new discharge points and outfall structures, other components that may be needed under the Russian River discharge option would be:

- Expansion of the Llano pump station and construction of up to two additional pump stations with storage tanks along the Geysers Pipeline;
- Pipelines to carry recycled water from the Geysers Pipeline to the discharge point;
- One or more smaller pump stations along the pipelines carrying recycled water to the discharge points;
- Indirect discharge into the Russian River or its tributaries via percolation ponds, infiltration basins, or injection wells located along the waterway;
- Additional treatment methodologies; and
- Storage, either surface or subsurface.

This alternative would provide sufficient capacity by itself to accommodate the projected recycled water flows under the IRWP, but would not be able to provide compliance with the requirements for recycled water quality under the California Toxics Rule. Therefore, implementation of one or more of the other alternatives would be required.

Alternative 9 – No Project Alternative

As required by CEQA, the No Project Alternative will evaluate what would happen if the Incremental Recycled Water Program were not implemented. Under this alternative, the

Subregional System would include only facilities that were existing or under construction as of July 2002. Therefore, the System under the No Project Alternative would include the Laguna Plant with a capacity of 21.3 mgd; the existing storage ponds; the existing points of discharge to the Laguna; the existing agricultural and urban irrigation systems; and the Geysers Recharge Project, including the pipeline, pump stations, and steamfield facilities now under construction.

Program Components

The IRWP alternatives include numerous components. These components are the individual elements or building blocks that make up the Program. Some components, such as pipelines, are common to several alternatives, while others such as I&I reduction or the expansion of the Geysers steamfield may be part of only one alternative.

The components of the existing system and the Geysers Pipeline and related improvements that make up the No Project Alternative (Alternative 9) have been described above. The components that comprise the IRWP Alternatives 1 through 8 are described below in the following order. Table 5 identifies the components associated with each of the IRWP alternatives.

1. Laguna Plant Upgrade
2. Conservation
3. I&I Reduction
4. Urban Reuse
5. Agricultural Irrigation
6. Industrial Reuse
7. Pipelines
8. Storage
9. Pump Stations
10. Geysers Steamfield
11. Discharge
12. Additional Treatment
13. Additional Reuse
14. No Project

TABLE 5 - COMPONENTS BY ALTERNATIVE

Components	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8	Alt 9
	Indoor Water Conservation	I&I Reduction	Urban Reuse	Agricultural Reuse	Industrial Reuse	Geysers Expansion	Additional Treatment & Reuse	Discharge	No Project
1. Laguna Plant Upgrade									
2. Conservation									
3. I&I Reduction									
4. Urban Reuse									
5. Agricultural Reuse									
6. Industrial Reuse									
7. Pipelines									
8. Storage									
9. Pump Stations									
10. Geysers Steamfield									
11. Discharge									
12. Additional Treatment									
13. Additional Reuse									
14. No Project									

1. Laguna Plant Upgrade – Alternatives 1 through 8

The Laguna Plant would be upgraded to accommodate 25.9 mgd ADWF. This upgrade would consist of additional or upgraded pumps and expansion of several in-plant processes within the existing footprint of the site.

2. Conservation – Alternative 1

This component is intended to reduce sewer flows through conservation in the indoor use of water, thereby reducing the need treat, reuse, or dispose of recycled water. The Best Management Practices (BMPs) recommended by the State of California Urban Water Conservation Council, but not yet implemented by the member agencies, constitute the Conservation Component. The list of BMPs is given in Table 6 below.

Table 6

Best Management Practices

BMP No.	Description
1	Residential Water Surveys
2	Residential Plumbing Retrofit
3	Leak Detection and Repair
4	Metered Water Sales
6	High-Efficiency Washing Machine Rebates
7	Public Information Programs
8	School Education Program
9	Conservation Programs for Commercial/Industrial/Institutional (CII) Accounts
11	Conservation Pricing
12	Conservation Coordinator
13	Water Waste Prohibition
14	Residential Ultra-Low Flow Toilet Replacement Program

The City of Santa Rosa has implemented all of the appropriate BMPs that apply to indoor water conservation. The other Subregional System partners have implemented some of these BMPs (primarily Residential Plumbing Retrofit and Metered Water Sales).

3. I&I Reduction – Alternative 2

I&I is storm and/or groundwater that enters the sanitary sewer system through cracked pipes, leaky manholes, or improperly connected storm drains, down spouts and sump

pumps. Most inflow comes from stormwater and most infiltration comes from groundwater. I&I increases the volume of wastewater that must be treated and recycled. Under this component, measures to reduce and control I&I in the sanitary sewer collection systems in Santa Rosa, Rohnert Park, Cotati and Sebastopol would be evaluated, with particular emphasis on Santa Rosa's collection system.

Many methods and technologies are available to reduce and control I&I. One primary method focuses on fixing the broken pipelines, manholes, and joints where they are below the water table. Other methods focus on limiting the amount of I&I that enters the sanitary sewer system from storm events through manhole lids, stormwater catch basins, house drains, and other direct connections.

4. Urban Reuse – Alternative 3

Recycled water supplied to urban irrigators can replace existing water sources (either City-supplied water or groundwater) used for irrigating turf and landscaped areas. The existing Subregional System includes urban irrigation in Rohnert Park, at Sonoma State University, and a small amount in Santa Rosa. Under this component, additional areas in the Santa Rosa urban area would be evaluated for urban irrigation

In addition to turf and landscape irrigation, the use of recycled water for indoor use will be evaluated under this component. Dual plumbing in new commercial and industrial buildings would allow the use of recycled water for toilets and fire protection. The use of grey water systems will be considered, that is the reduction of sewage flows by reusing or disposing of residential wash water at the residence.

5. Agricultural Reuse – Alternative 4

The Subregional System now provides recycled water for irrigation of approximately 6,400 acres of agricultural land in the Santa Rosa Plain. This component will evaluate providing recycled water for agricultural irrigation to additional land within the following areas of Sonoma County.

- The area east of Rohnert Park
- The Russian River area between Windsor and Healdsburg, and the entire Alexander Valley
- The Dry Creek Valley area

Some of the agricultural lands within each of these areas are currently irrigated with water from other sources, and this component will be developed to include irrigation with recycled water of those lands that are currently being irrigated, as well as lands that are not currently being irrigated.

Recycled water that is delivered to these areas would be distributed by additional local distribution pipelines to irrigation systems operated by individual users. The specific lands to be irrigated, and the location and design of the local distribution system pipelines and the irrigation systems have not been determined.

The Subregional System would likely not be directly responsible for application of the recycled water or management of the farming operations. However, Irrigation Management Guidelines will be developed as part of the IRWP to identify the procedures and practices for proper management of agricultural lands for which the Subregional System furnishes recycled water.

6. Industrial Reuse - Alternative 5

This component will evaluate the provision of recycled water for industrial use by gravel processors in the Russian River area near the Geysers pipeline. The portions of their gravel processing operations for which recycled water use is appropriate will be evaluated, for example, dust control and gravel washing.

7. Pipelines – Alternatives 3, 4, 5, 7 and 8

New transmission and distribution pipelines, typically in the one- to four-foot diameter range, would be required to convey recycled water to the storage reservoirs, agricultural and urban irrigation areas, industrial reuse sites, discharge points at the Russian River, or to additional treatment and reuse sites (such as a reverse osmosis facility or percolation ponds adjacent to the Russian River).

The location of the pipelines has not been determined. However, pipelines would most likely follow public rights-of-way. To reach some sites pipelines may follow private roads or cross-country alignments. In general, pipes would be buried with about 3 feet of cover and would be constructed in one lane or shoulder of the road, typically at 10 feet off the road centerline. Pipelines for the urban reuse system may include up to ten equalization storage tanks, located above ground, and the same elevation around the City of Santa Rosa. Tanks would be about one million gallons.

All pipelines would have intermediate isolation valves at points along the pipeline. The number and spacing of these valves would vary depending upon the type of pipeline. At each valve location, a valve would be located in a below ground vault atop the pipe, and an air/vacuum release valve would also be at these locations. Pipeline air/vacuum release valve stations would be located at all local high points along the pipeline alignment, and at the isolation valve stations with a vent above grade. Pipeline blowoff valve stations would also be located at all local low points, to allow the draining of pipelines for maintenance, with a drain outlet above grade.

8. Storage - Alternatives 3, 4, 6, 7, and 8

Storage facilities are needed to store recycled water that is produced during the winter, for use during summer.

Two types of storage options have been identified, surface and subsurface.

Surface

Specific locations for storage reservoirs have not been determined. However, surface storage reservoir options will be identified in the vicinity of agricultural irrigation areas to meet this need for the Russian River/Alexander Valley and Dry Creek Valley areas, while options in the southern part of the Santa Rosa Plain will be identified to meet storage needs for urban irrigation. Storage options in either the Santa Rosa plain or east of Rohnert Park could serve agricultural irrigation in the area east of Rohnert Park.

Reservoirs would typically be constructed by damming a natural drainage or valley by means of an earth filled embankment dam, or by building berms on flatter land. Reservoirs may require lining or drainage diversion structures around them, or smaller back dams. Acquisition of property would likely be required for the reservoirs and appurtenant facilities, including inlet and outlet pipelines and access roads.

Subsurface

A series of wells would be located in the Santa Rosa Plain in an area identified in Figure 2. The most important parameter determining suitability of the area is its specific capacity, which expresses how well water can be moved in and out of the aquifer. Within the site, recycled water would be injected into the aquifer through a series of wells and pumps for storage until required for reuse or discharge. The exact number of wells would be determined by the volume of storage required, the specific capacity of each well, and the transmissivity of the soil. Water would then be extracted from the aquifer through the wells and distributed to the reuse sites. If extraction wells are located at some distance from injection wells, some treatment of recycled water would occur while traveling in the aquifer.

9. Pump Stations – Alternatives 3 through 8

New pump stations may be required to convey recycled water to the reuse, discharge or treatment sites. These pump stations typically would have pumps located above ground within enclosed structures ranging in size from 100 to 1,200 square feet. The buildings would be single-story masonry or concrete construction with peaked metal roofing panels, and would house pump control panels, instrumentation and pumps. The structures may include insulation and other features for noise attenuation, as well as storage tanks. Typically, there would be two to five pumps at each pump station, and the pump motors would range between 5 and 2,000 horsepower each, depending upon the required pumping capacity for each station. Each pump station would need appropriate electrical facilities for its operation.

The location of the new pump station sites has not yet been determined. Acquisition of property would likely be required for construction of the proposed pump station, although some pump stations may be able to be constructed on City owned sites or sites to be acquired for reservoirs. The anticipated area of the site to be acquired for each pump station would be 1-3 acres.

In conjunction with the maximum capacity of Alternative 6, Geysers Expansion, the three existing Geysers pump stations along Pine Flat Road would need to be upgraded with additional pumps in new buildings.

10. Geysers Steamfield – Alternative 6

Under this component, the area of the Geysers steamfield used for injection of recycled water would be expanded by converting additional wells from production to recharge. This component may require expansion of the existing storage facilities at the end of the transmission pipeline; construction of an additional storage tank and pump station; or construction of additional distribution pipelines to convey water from the storage tank(s) to additional injection wells. The area of injection would be expanded to provide sufficient wells to accommodate the expansion of recharge from 11 mgd to as much as 27 mgd. The additional injection wells would be provided through conversion of existing steam extraction wells. This component would provide water to the operators of the Geysers steamfield. The private steamfield operators would manage the discharge of the recycled water for electricity production.

11. Discharge – Alternatives 7 and 8

This component includes options for discharging recycled water into the Russian River and its tributaries. Currently, recycled water that is not reused or stored for future reuse is discharged between October 1 through May 14 from the Subregional System's storage ponds or directly from the Laguna Plant. The two primary discharge points are from the Meadowland Ponds adjacent to the Laguna Plant (discharging to the Laguna de Santa Rosa) or from Delta Pond (discharging to Santa Rosa Creek), although there are numerous other permitted discharge points along the Laguna de Santa Rosa and Santa Rosa Creek and their tributaries.

Options to be evaluated under this component for achieving compliance with the discharge regulations are:

- New outfalls in the Laguna or Santa Rosa Creek;
- One or more additional discharge points directly to the Russian River or its tributaries. Potential locations for these discharge points would be north of Healdsburg, at Mirabel below the confluence of the Laguna, or at points in between. Outfall structures would need to be constructed for the new discharge points on the Russian River; and
- Indirect discharge into the Russian River or its tributaries via percolation pond, infiltration basins, or injection wells located along the waterway.

12. Additional Treatment – Alternatives 7 and 8

To meet the requirements of the California Toxics Rule, recycled water that is discharged into surface waters (namely the Russian River or any of its tributaries), or is reused will

require additional treatment beyond the treatment now provided at the Laguna Plant. Under this component, the following options for additional treatment will be evaluated:

- Physical or chemical treatment to address the CTR;
- Additional limits on discharge of pollutants by industry into the sewer (pretreatment limits);
- Percolation ponds, infiltration basins, or injection wells;
- Constructed wetlands to provide additional treatment or “polishing” of recycled water; and
- Other measures (such as oxygenation).

13. Additional Reuse – Alternative 7

With additional treatment as described in Component 12, recycled water that meets the requirements of the CTR may have additional reuse opportunities that are not available for recycled water currently produced by the Laguna Plant. This component will evaluate the opportunities for additional reuse of recycled water meeting the CTR requirements, including:

- Surface recharge of groundwater through the use of spreading basins;
- Groundwater recharge by injection, using a series of wells and pumps; and
- Discharge into Lake Sonoma.

14. No Project

This component is the continued operation of the existing system and Geysers Recharge Project. It is expected that the ADWF of 21.34 mgd permitted under the Geysers project would allow growth to continue in the member cities until about 2010. At that time, the Regional Water Quality Control Board could place a building moratorium on the cities in the Subregional System.

Cumulative Projects

In addition to considering project-related impacts, the Program EIR will consider potential cumulative impacts resulting from the IRWP. Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). In addition to the General Plans of Sonoma County and the cities near the program alternatives, several projects have been identified as having potential cumulative impacts (see Table 7).

Table 7

Cumulative Projects

Project Title/Description	Location	Reporting Agency
<p>SCWA South Transmission System Project – Consists of construction, operation and maintenance of a water transmission pipeline, water storage tanks and one to two booster pumping stations along the pipeline route.</p>	<p>Between Cotati and the southern Petaluma (near Highway 101 and Kastania Road).</p>	<p>Sonoma County Water Agency</p>
<p>SCWA Water Supply and Transmission System Project – Consists of construction and operation of water transmission pipeline, additional Ranney collectors in the Russian River, pump stations, and a storage tank. The SCWA is in the process of a Section 7 Consultation with the National Marine Fisheries Service regarding potential impacts of their water supply project upon endangered fish species in Dry Creek and the Russian River.</p>	<p>Russian River and the Santa Rosa Plain and potentially applicable throughout the SCWA service area.</p>	<p>Sonoma County Water Agency</p>
<p>Healdsburg Wastewater Outfall Relocation – Consists of approximately 130 feet of new pipeline, replacing a portion of the existing outfall line, and running from the treatment plant to an outlet structure at an existing pond (Syr Phase V) at the southwest corner of the treatment plant.</p>	<p>One mile southwest of Healdsburg, between Westside Road and the Russian River at Foreman Lane.</p>	<p>City of Healdsburg</p>
<p>Airport-Larkfield-Wikiup Sanitation Zone (ASZ) Storage, Reclamation and Treatment Facilities – Consists of expansion of the ASZ's storage and reclamation facilities, including upgrading of the ASZ treatment plant to a tertiary level of treatment, and disposing into the City of Santa Rosa's Geysers Pipeline; 200 million gallons of additional storage; and additional irrigation land to be added on an as-available basis.</p>	<p>North and West of the Sonoma County Airport.</p>	<p>Sonoma County Water Agency</p>
<p>Update of Agency Water Policy Statement – The Sonoma County Water Agency (SCWA) is updating its policy statement regarding: Water supply activities and obligations;</p>	<p>Potentially applicable throughout the SCWA service area.</p>	<p>Sonoma County Water Agency</p>

Table 7

Cumulative Projects

Project Title/Description	Location	Reporting Agency
Wastewater Management Program and Activities; Flood Control Programs and Activities; Recreational Activities on Agency Property; Security, Safety and Preparedness; and Natural Resources Protection, Recovery and Enhancement.		
Sonoma County Integrated Waste Management Plan (IWMP) Update – The Sonoma County Waste Management Agency (SCWMA) intends to update the IWMP to include the following recommendations from the SCWMA’s Solid Waste Management Alternatives Analysis (2000): A pipeline carrying leachate from the Central Landfill to the Laguna Plant	Potentially applicable throughout the County; Central Landfill located on Mecham Road.	Sonoma County Waste Management Agency
North Sonoma County Agricultural Reuse Project – Consists of construction of: Several water storage facilities providing 10,000 acre-feet of capacity; Distribution pipelines and lateral lines to connect the Geysers Pipeline to storage facilities and potential irrigation lands; and Ancillary features including pump stations, fencing, gates and landscaping.	Three areas located in the Alexander Valley, along with one area in the Russian River Valley and the valley floor of Dry Creek Valley.	Sonoma County Water Agency

The evaluation of potential cumulative impacts is presented in the following checklist analysis of the Initial Study.

OTHER REQUIRED AGENCY APPROVALS

The following agencies may be state and local Responsible Agencies under CEQA. They may need to issue approvals for the project, and thus need to rely upon the EIR. Federal agencies and their potential permit and environmental certification requirements are also listed.

Federal Agency Permits and Approvals

U.S. Army Corps of Engineers

A Section 404 permit under the federal Clean Water Act is required for fill of jurisdictional wetlands and other waters of the United States. The U.S. Army Corps of Engineers (Corps) grants the Section 404 permits. The general conditions for these permits include consultation by the Corps under Section 7 of the Endangered Species Act for listed species, which may be affected by the proposed action, with either the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service, depending on the resources potentially affected. Conditions for the Section 404 permit also include water quality certification or waiver under Section 401 of the Clean Water Act by the Regional Water Quality Control Board and clearance under Section 106 of the National Historic Preservation Act by the Office of Historic Preservation (i.e., State Historic Preservation Officer).

U.S. Fish and Wildlife Service/National Marine Fisheries Service

If there are endangered species or endangered migratory fish listed under the federal Endangered Species Act, then a consultation under Section 7 of the Endangered Species Act may be required.

Advisory Council on Historic Preservation/State Office of Historic Preservation

Before granting a permit, the Corps will ask this agency to concur with their decision to issue the permit. The City will need to manage the historical and archaeological resources on the property in accordance with Section 106 of the National Historic Preservation Act, as implemented by the State Historic Preservation Officer.

U.S. Bureau of Land Management (BLM)

A permit would be necessary in order to cross land owned or leased by BLM with a pipeline, road, or other facility.

U.S. Department of Agriculture, Forest Service

A Timber Harvest Plan may be required for the sale or disposal of timber resources that may be cleared for development.

State of California Agency Permits and Approvals

California Department of Transportation (Caltrans)

Work within the right-of-way along state freeways and roads would require an Encroachment Permit from Caltrans. In addition, a Transportation Permit will be required for the transport of heavy or oversized loads on state roads during construction.

State Lands Commission

A Land Use Lease would be necessary if placement of fill or structures occurs in navigable waterways or Section 16 or 36 lands.

State Water Resources Control Board

A Water Rights Permit would need to be obtained for reservoirs without diversion structures for existing streamflow. A Petition for Change would be necessary if a change in location or amount of current wastewater discharge were to occur.

California Department of Water Resources, Division of Safety of Dams (DSOD)

Approval of plans and specifications would be necessary for any construction or enlargement of a dam or reservoir.

California Department of Health Services (DHS)

A public drinking system using a source augmented with recycled water is required to obtain an amended water supply permit from DHS to address changes to the source water.

California Occupational Safety and Health Administration (CalOSHA)

Permits for construction, trench excavations, and demolition would be necessary for construction of trenches or excavations five feet or deeper into which a person is required to descend. Permits would also be needed with the construction or demolition of any building, structure, scaffolding or falsework more than three stories high. Lastly, a permit may be required if there is any underground use of diesel engines such as in creating tunnels for pipeline.

California Department of Fish and Game

A Section 1601 Streambed Alteration Permit is required from the California Department of Fish and Game for work within the bed and banks of jurisdictional waterways.

The California Department of Fish and Game also has jurisdiction over state-listed plants and animals under the California Endangered Species Act. A Section 2081 Management Agreement may be required for take of state-listed species.

State Office of Historic Preservation (SHPO)

The SHPO will need to provide clearance for any state or federal approvals impacting historic, archaeological or paleontologic resources, or traditional cultural properties affected by the project, as specified by Section 106 of the National Historic Preservation Act.

Regional Agency Permits and Approvals

North Coast Regional Water Quality Control Board

The North Coast Regional Water Quality Control Board will have permit authority over recycled water application and disposal to surface waters or groundwater for their site-specific requirements, and for compliance with Title 22 of the California Code of Regulations. These would include minimum setback, signage and public notification requirements to protect groundwater and surface waters.

The Board may issue a Section 401 water quality certification for discharge into wetlands and other waters of the United States. This would require a 404 permit, a Section 402 Point Source National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Discharge Permit, a NPDES Construction Permit, and a Temporary Authority to Discharge into the waters of the U.S. Waste Discharge Requirements would be necessary if the project affects groundwater.

Bay Area Air Quality Management District

An Authority to Construct and Permit to Operate must be obtained for any project that emits criteria pollutants. The Authority to Construct permit is also required for control of dust emissions during construction. Projects are also subject to reporting under the Toxic Hot Spots legislation (AB 2588).

County and City Agency Permits and Approvals

Sonoma County Permit and Resource Management Department (PRMD)

The Sonoma County PRMD is responsible for reviewing and determining the issuance of numerous permits with the implementation of the proposed plan; merger or subdivision of parcels would require a Subdivision or merger of parcels permit pursuant to the Subdivision Map Act; development of proposed facilities on leased land would require a Use Permit; construction or destruction of wells would necessitate a Well Drilling Permit; acquisition of land and easements for Project facilities would require a General Plan Consistency Review, non-renewal of any Williamson Act Contract would result in the cancellation of the contract and require the approval of the PRMD; stream crossings would need a 3836R Stream Crossing Permit; and new transmission, water, or gas line crossings, or construction on or across county roads would require a Road Encroachment Permit.

Sonoma County Public Works Department

Certain grading activities would require a Grading Permit from the Sonoma County Public Works Department. If heavy or oversized loads were transported across county roads, and Transportation Permit would be required.

Sonoma County Airport Land Use Commission

Land Use Approval from the Sonoma County Airport Land Use Commission would be necessary if the program proposed change in existing land uses on airport property and in “referral areas” around airports.

City of Santa Rosa Public Works Department

An Encroachment Permit would be necessary for the use of local jurisdictions right-of-way for installation of pipeline across roadways. A Transportation Permit would be required to transport heavy or oversized loads on city streets. Building Permits, Street Improvement Permits and Grading Permits would need to be issued for construction activities within the City of Santa Rosa.

City of Santa Rosa Fire Department

All facilities where hazardous materials are stored above or below ground in amounts greater than quantities acceptable by the Fire Department will require approval from the Fire Department. They may require a Hazardous Materials Management Plan, a Hazardous Materials Storage Permit, and a Hazardous Materials Inventory.

City of Cotati Public Works Department

The use of Cotati’s right-of-way for installation of pipeline along roadways would require an Encroachment Permit. In addition, the transportation of heavy or oversized loads on city streets would require a Transportation Permit.

City of Sebastopol Public Works Department

The use of Sebastopol’s right-of-way for installation of pipeline along roadways would require an Encroachment Permit. In addition, the transportation of heavy or oversized loads on city streets would require a Transportation Permit.

City of Rohnert Park Public Works Department

The use of Rohnert Park’s right-of-way for installation of pipeline along roadways would require an Encroachment Permit. In addition, the transportation of heavy or oversized loads on city streets would require a Transportation Permit.

City of Healdsburg Public Works Department

The use of Healdsburg’s right-of-way for installation of pipeline along roadways would require an Encroachment Permit. In addition, the transportation of heavy or oversized loads on city streets would require a Transportation Permit.

EVALUATION OF ENVIRONMENTAL IMPACTS

The following checklist is used to evaluate the potential of the project for significant environmental impacts. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as program-level, indirect as well as direct, and construction as well as operational impacts.

The references section contains a list of sources used to prepare this initial study. References are available for review at the City of Santa Rosa.

This checklist has been adapted from the form in Appendix G of the 2001 CEQA Guidelines.

The Incremental Recycled Water Program (IRWP) includes nine alternatives. These are:

- Alternative 1 – Indoor Water Conservation
- Alternative 2 – Infiltration and Inflow Reduction
- Alternative 3 – Urban Reuse
- Alternative 4 – Agricultural Reuse
- Alternative 5 – Industrial Reuse
- Alternative 6 – Geysers Expansion
- Alternative 7 – Additional Treatment and Reuse
- Alternative 8 – Discharge
- Alternative 9 – No Project

Each of the IRWP alternatives includes one or more components. The components may occur only under one alternative, or may be part of several alternatives. To eliminate the need for repetitive discussion of the impacts of each component under each alternative, the evaluation of impacts is presented by component for each of the topics in the checklist. Table 5 on page 24 identifies the components that are included under each alternative.

Because the lead agency has decided to prepare an Environmental Impact Report (EIR), mitigation is not defined herein, but will be developed and specified in the Mitigation Monitoring Program as part of the EIR process. Many of the potential significant impacts identified in this checklist could be avoided through changes in design or mitigation, both of which will be developed during preparation of the EIR.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant	No Impact
I. AESTHETICS				
Would the Project:				
a. Have a substantial adverse effect on a scenic vista?	✓			
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	✓			
c. Substantially degrade the existing visual character or quality of the site and its surrounding?	✓			
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	✓			

Analysis

a-d. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Plant may include the construction of additional pumps or expansion of process equipment within the existing footprint of the site. However, this would not substantially alter the exterior appearance of the facility or site, and there would be no impact on scenic vistas or resources. No additional sources of light or glare would be created.
2. *Conservation – Alternative 1.* This component entails future conservation programs for the Subregional Partners as a way to reduce indoor water usage. Because the programs will affect indoor water conservation, they will not change the visual character of any site or affect any scenic vista or resources and will not create any additional sources of light or glare.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. Construction activities along the sewer collection system could involve removal of vegetation, grading and trenching within the public right-of-way, and could result in a bare or scarred appearance within portions of the construction areas. However, because all of the activity involves existing facilities in public

rights-of-way and no new above ground structures would be constructed, there would be no permanent obstruction of scenic vistas or views of scenic resources. In addition, construction disturbance would be revegetated, thereby neutralizing the visual effects of construction resulting in no permanent impact. Construction activities would take place during daylight hours and no new sources of light or glare would be created.

4. *Urban Reuse – Alternative 3.* This component involves the use of recycled water for urban irrigation and for fire sprinklers and toilets. Irrigation of urban sites, such as golf courses, landscaping, and school grounds would involve underground irrigation systems and while installation of the irrigation systems on the sites could result in temporary visual impacts to scenic vistas, scenic resources and visual character due to construction (involve removal of vegetation, grading and trenching), revegetation of the sites would neutralize the visual effects of construction resulting in no permanent impact. Also, because this component would involve the substitution of recycled water for other existing water sources, there would be no alteration of the overall landscape character of the sites. The indoor use of recycled water for toilets and fire protection as an alternative to other sources would not alter the external appearance of any of the structures or sites. Construction activities would take place during daylight hours, and no new sources of light or glare would be created.
5. *Agricultural Reuse – Alternative 4.* This component would expand the use of recycled water for agricultural irrigation in the project area, and could involve provision of irrigation water to lands not now irrigated, as well as the provision of recycled water to replace existing water sources. Irrigation of new agricultural lands could involve the use of aboveground or underground irrigation systems, and installation of the irrigation systems on the sites could result in temporary visual impacts to scenic vistas, scenic resources and visual character due to construction (involve removal of vegetation, grading and trenching). These construction impacts would be temporary. The provision of recycled water for irrigation could result in permanent alteration of the landscape character of the sites, if the provision of recycled water would result in a change from one agricultural type to another (e.g. from grazing land to vineyards) or from native vegetation to tilled land. This change could substantially alter scenic vistas or other specific visual resources and therefore would be considered significant. There would be no new sources of light or glare created under this component.
6. *Industrial Reuse – Alternative 5.* The use of recycled water for dust control and gravel washing would not alter the processes involved or the external appearance of any of the structures or sites associated with the use of recycled water, and no new sources of light or glare would be created. Therefore, no impacts on aesthetics would be expected.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of new pipelines to distribute recycled water to reuse sites or for discharge. Construction activities could involve removal of vegetation, grading and trenching primarily within the public right-of-way, and could result in a bare or scarred appearance within portions of the construction areas. However, because no new above ground structures would be constructed, there would be no permanent obstruction of scenic vistas or views of scenic resources. Construction could occur at night resulting in light and glare impacts to nearby residents.

8. *Storage – Alternatives 3, 4, 6, 7, and 8.*

Surface: Under this component, additional storage reservoirs would be constructed. Construction of storage reservoirs and associated facilities would visually change the landforms, vegetation, and spatial characteristics of any reservoir site. The main visual component of the reservoir site would be the earthen dams that would block a valley and anchor into adjoining hillsides or earthen berms built up from a valley floor. Such dams may be the equivalent of several stories in height, the dam face will be a geometric, non-undulating slope, and the dam ridgeline will be flat. No vegetation other than grasses is typically allowed on the dam face, due to concerns about invasive roots undermining the dam's structural integrity. In addition, viewpoints from above a reservoir site would be affected by the fluctuations in water levels during different times of the year, with a bare, dry appearance when the reservoir is empty. For these reasons, it is likely that any storage reservoir could have significant adverse impacts on the visual characteristics of the site and surrounding areas. Also, while the specific locations of potential reservoir sites have not yet been determined, a reservoir site in the vicinity of a scenic vista or other specific scenic resources could have significant adverse impacts.

Subsurface: This component would provide a subsurface storage option in the Santa Rosa Plain and includes a series of wells, pumps and buried pipelines. While the individual pumps and wells would be relatively small in size, the potential number of pumps and wells involved, along with the level topography of the Santa Rosa Plain could potentially impact the visual character of the site and surrounding areas, as well as any scenic vistas within the viewshed.

9. *Pump Stations – Alternatives 3 through 8.*

Alternatives 3 and 5 – This component would add pump stations along the distribution system conveying recycled water to reuse sites. The new pump station structures would be relatively small in size (typically 20 feet by 20 feet), and those at the West College Ponds and the Llano Pump Station would be sited far enough from any public viewpoint or adjacent residence to avoid any significant visual impacts. However, the locations for the other pump stations have not been determined, and even though the structures would be small, locations along scenic roadways, adjacent to residences or within the viewshed of scenic vistas could result in visual impacts to sensitive areas. Low intensity lights may be provided at pump stations for use during maintenance. However, these would be shielded to avoid casting light on adjacent properties and will only be activated by maintenance personnel when needed. Therefore, these light sources would not be expected to have a significant impact.

Alternatives 4, 7 and 8 – This component includes modification of the Llano pump and construction of additional pump stations along the Geysers Pipeline or Rohnert Park Pipeline to provide pressurized recycled wastewater for agricultural reuse. In addition, pump stations along the distribution system to convey recycled water to reuse sites or discharge points could be required. Construction of pump stations along the Geysers Pipeline could have potentially significant visual impacts. Construction of new pump stations would require structures similar in size to the existing Geysers pump stations. These structures, including the building housing the pumps and a storage tank could potentially impact views from residences as well as scenic

roadways, vistas, and other scenic resources. The smaller pump station structures along the distribution systems would have the same impacts as those described for Alternatives 3 and 5.

Alternative 6 – The three Geysers pump stations along Pine Flat Road would need to be upgraded by replacing existing pump equipment and construction of a new building and possibly including new storage tank capacity to accommodate a 27 mgd alternative. Modification or construction of pump stations along the Geysers Pipeline, whether involving modification of existing facilities or construction of new facilities, could have potential significant visual impacts. Construction of new pump stations would require structures similar in size to the existing Geysers pump stations. These structures, including the building housing the pumps and a storage tank could potentially impact views from residences as well as scenic roadways, vistas, and other scenic resources.

10. *Geysers Steamfield – Alternative 6.* The Geysers Steamfield is not visible from any residences or public viewpoint, does not contain any scenic resources and is not within the viewshed of any scenic vista. No new sources of light or glare would be created.
11. *Discharge – Alternatives 7 and 8.* A new outfall structure may be built to Santa Rosa Creek or the Laguna which may alter external appearance of the discharge site. Also, under this component new discharge points may be established at the Russian River for disposal of recycled wastewater. The discharge of recycled water into the Russian River would not be expected to change any visual characteristics, but the new discharge points would require the construction of outfalls and associated facilities. While locations for the new discharge points have not been determined, potential visibility of the new facilities from recreational boating traffic along the River may occur. Indirect discharge via infiltration ponds could also be visible from waterways and from public viewpoints on land. No new sources of light or glare would be created under this component.
12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address the California Toxics Rule, industrial pretreatment, using wetlands as treatment, and other measures. The additional treatment of wastewater could involve the construction of new structures for the treatment processes. If these treatment processes were located at the existing Laguna Plant, there would likely be no significant impacts on aesthetics, as the processes could be accommodated on existing developed portion of the site. However, if the processes were to be located at one or more of the sites where recycled water is to be reused or discharged, new structures could be required. These structures would likely be relatively small in size, and could likely be screened from public viewpoints in agricultural or industrial areas to avoid significant visual impacts. However, the locations for these facilities have not been determined, and even though the structures would likely be small, locations along scenic roadways, adjacent to residences or within the viewshed of scenic vistas could result in visual impacts to sensitive areas. Low intensity lights may be required at these new facilities for use during maintenance. However, these would be shielded to avoid casting light on adjacent properties and will only be activated by maintenance personnel when needed. Therefore, these new light sources would not be expected to have a significant impact.

13. *Additional Reuse – Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and discharge into Lake Sonoma. Construction of facilities necessary for additional reuse, such as spreading basins could alter the existing landscape character of the reuse site. While the locations of these facilities have not been determined, locations along scenic roadways, adjacent to residences, or within the viewsheds of scenic vistas could have potentially adverse impacts on views. In addition, construction of the facilities could result in alteration of scenic resources on the reuse sites. It is not anticipated that the additional reuse would involve any new sources of light or glare.
14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore would have no additional aesthetic impacts.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant	No Impact
<p>II. AGRICULTURE RESOURCES</p> <p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:</p> <p>a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? ✓</p> <p>b. Conflict with existing zoning for agricultural use, or a Williamson Act? ✓</p> <p>c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? ✓</p>				

Analysis

a.-c. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Water Reclamation Facility may include the construction of additional pumps. However, this would be accommodated on the existing Laguna plant site, and would not result in the conversion of status farmland or conflict with Williamson Act lands.

2. *Conservation – Alternative 1.* This component entails future conservation programs for the Subregional Partners as a way to reduce indoor water usage and sewage flows into the Subregional Treatment Plant. It would not convert status farmlands to a non-agricultural use, or conflict with agricultural zoning or Williamson Act lands.

3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. It would not affect existing farmland, agricultural zoning or Williamson Act lands because it would only replace existing infrastructure in urban areas.
4. *Urban Reuse – Alternative 3.* This component involves the use of recycled water for urban irrigation, fire protection, and toilets. Although urban irrigation would primarily be utilized on urban areas only (such as golf courses, landscaping, and school grounds), it may occur on status farmlands, or in an agricultural zone, or on Williamson Act lands. Indoor use of recycled water would not affect agricultural resources.
5. *Agricultural Reuse – Alternative 4.* This component would expand the use of recycled water for agricultural irrigation in the project area, and would be beneficial to agriculture. The use of recycled water for agricultural irrigation could allow for new land to be brought into agricultural production, and provide irrigation for existing agricultural land, which could potentially raise the value of production value.
6. *Industrial Reuse – Alternative 5.* Use of recycled water at existing gravel processing plants would not affect agricultural resources.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of new pipelines conveying recycled water to reuse sites and discharge points. Construction of the underground pipelines would have temporary impacts to agricultural properties.
8. *Storage – Alternatives 3, 4, 6, 7, and 8*

Surface: Under this component, additional storage reservoirs would be constructed. Storage reservoirs may be sited on productive farmland and lands protected by the Williamson Act. Reservoirs may conflict with agricultural zoning.

Subsurface: This component would provide a subsurface storage option in the Santa Rosa Plain, including a series of wells, pumps. Status farmlands may be impacted by the facilities incorporated in this component, or the facilities may conflict with agricultural zone or Williamson Act lands.

9. *Pump Stations – Alternatives 3 through 8.*

Alternatives 3 and 5 – Pump stations may be constructed along the distribution system that would convey recycled water to reuse sites on status farmlands, within agricultural zones, or on Williamson Act lands.

Alternatives 4, 7 and 8 – This component includes construction of additional pump stations along the Geysers Pipeline to provide pressurized recycled water for agricultural reuse. In addition, several pump stations along the distribution system (to reuse areas or discharge points) may be necessary. Status farmlands may be impacted by the construction of pump stations and conflicts with agricultural zones or Williamson Act lands may occur.

Alternative 6 – The three existing pump stations along the pipeline would need to be upgraded with construction of a new building and new storage tank capacity. These pump stations are not located on status farmlands or Williamson Act lands, but the Pine Flat and Mayacmas stations are located in areas historically used for grazing.

10. *Geysers Steamfield – Alternative 6.* No Status Farmlands, agricultural zones or Williamson Act lands are located in the Geysers Steamfield area.
11. *Discharge – Alternatives 7 and 8.* Discharge of recycled water will not affect agricultural resources. Construction of new outfall structures may occur on agricultural land, but would not conflict with agricultural practices or zoning. Indirect discharge may require construction of new facilities such as percolation ponds. This could have significant impacts on status farmlands, or conflict with agricultural zones or Williamson Act lands.
12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address the California Toxics Rule, industrial pretreatment, using wetlands as treatment, and other measures. The additional treatment of wastewater in and of itself would not affect status farmland, agricultural zones or Williamson Act lands. However, the construction of additional treatment facilities could result in impacts to status farmlands or conflicts with agricultural zones or Williamson Act lands.
13. *Additional Reuse – Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and discharge into Lake Sonoma. These additional reuse opportunities would require construction of new facilities such as spreading basins, which could have significant impacts on Status Farmlands and conflict with agricultural zoning and Williamson Act lands.
14. *No Project – Alternative 9.* Under this alternative, the system as it currently exists would continue to be operated. No impacts to agricultural lands, zoning or Williamson Act lands would occur.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
<p>III. AIR QUALITY</p> <p>Where available, the significance criteria established by the applicable Air Quality Management or Air Pollution Control District may be relied upon to make the following determinations. Would the proposal:</p> <p>a. Conflict with or obstruct implementation of the applicable air quality plan? ✓</p> <p>b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ✓</p> <p>c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ✓</p> <p>d. Expose sensitive receptors to substantial pollutant concentrations? ✓</p> <p>e. Create objectionable odors affecting a substantial number of people? ✓</p>				

Analysis

a-e. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade - Alternatives 1 through 8* – Processing of additional wastewater through the Laguna Plant will cause an increase in a number of pollutants, including potentially toxic compounds that could become airborne. Increases of criteria air pollutants (i.e., ozone precursors and PM₁₀) would be small. Odors at the Laguna Plant may increase due to an increase in process units and sludge management activities. Nearby sensitive receptors (e.g. land uses frequented by young, sick or elderly) could be affected by both increased pollutants and odors.
2. *Conservation – Alternative 1* – No construction emissions nor operational emissions are expected from indoor water conservation initiatives.

3. *I&I Reduction – Alternative 2* – Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
4. *Urban Reuse – Alternative 3* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
5. *Agricultural Reuse – Alternative 4* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. To the extent that availability of recycled water encourages conversion of native vegetation to agricultural production, ongoing agricultural practices will result in additional emissions. Nearby sensitive receptors could be impacted during construction and operation. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
6. *Industrial Reuse – Alternative 5* – No construction activities are foreseen, and use of recycled water in existing processes will not increase emissions during operation of the gravel plants. Nearby sensitive receptors could be impacted during construction. No odor generation is expected.
7. *Pipelines – Alternatives 3, 4, 5, 7, and 8* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
8. *Storage – Alternatives 3, 4, 6, 7, and 8* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
9. *Pump Stations – Alternatives 3 through 8* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected.
10. *Geysers Steamfield – Alternative 6* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted

during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.

11. *Discharge – Alternatives 7 and 8* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected. Construction impacts could conflict with adopted air quality plans and be cumulatively considerable.
12. *Additional Treatment – Alternative 8* – Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. Processing of wastewater through additional treatment methodologies may increase pollutant emissions during operation. Nearby sensitive receptors could be impacted during construction and operation. No odor generation is expected. These impacts could conflict with adopted air quality plans and be cumulatively considerable.
13. *Additional Reuse – Alternative 8* - Construction will result in dust (PM₁₀ and PM_{2.5}) emissions as well as a range of pollutants from equipment and vehicle exhaust. No emissions are expected after construction is complete. Nearby sensitive receptors could be impacted during construction. No odor generation is expected.
14. *No Project – Alternative 9*. Under the No Project Alternative the system as it currently exists would continue to be operated. There would be no new odor impacts created.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES				
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✓			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✓			
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	✓			
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery site?	✓			
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	✓			
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

Analysis

a-e. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Plant may include the construction of additional pumps or expansion of in-plant processes within the existing

footprint of the site. Although the potential impacts would be confined to the existing facility footprint, additional investigation is warranted to determine if biological resources would be impacted. . Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.

2. *Conservation – Alternative 1.* Because conservation programs will affect only indoor water conservation, they would not be expected to have any impacts on biological resources.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. Although construction activities would be located primarily in urban areas, they could result in potentially significant impacts to biological resources due to ground disturbance associated with excavation, and heavy equipment. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
4. *Urban Reuse – Alternative 3.* This component involves the use of recycled water for urban irrigation and as replacement for water use in industrial processes. Irrigation of urban sites, such as golf courses, landscaping, and school grounds could involve construction of new underground irrigation systems. Although construction activities would be located primarily in urban areas, they could result in potentially significant impacts to biological resources due to ground disturbance associated with excavation, and heavy equipment. No impacts are expected during the operation of the irrigation areas. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
5. *Agricultural Reuse – Alternative 4.* Replacement of existing water sources with recycled water will not impact biological resources, either temporarily or permanently. To the extent that availability of recycled water for irrigation encourages existing agricultural operators to install irrigation systems or convert native vegetation to crops or pasture, significant impacts may occur to both vegetation and wildlife, including wetlands, riparian areas, and special status species. These impacts could be both temporary and permanent. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
6. *Industrial Reuse – Alternative 5.* The use of recycled wastewater for gravel processing may alter the processes involved or the physical characteristics of the structures or sites associated with the use of recycled water. These impacts may have an impact on salmonid habitat.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of new pipelines conveying recycled water to reuse sites and discharge points. Construction activities could result in potentially significant impacts to biological resources due to ground disturbance associated with excavation, and heavy equipment. Permanent changes to the vegetation on top of the buried pipelines may create permanent changes to wetlands or other biological resources present along the pipeline alignments. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
8. *Storage – Alternatives 3, 4, 6, 7 and 8*

Surface: Construction activities at storage reservoir sites could result in potentially significant impacts to biological resources due to ground disturbance associated with removal of vegetation, alteration of existing streams, excavation and construction of the reservoir structures, as well as effects of heavy equipment activity. Impacts would be permanent. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.

Subsurface: This component would provide a subsurface storage option in the Santa Rosa Plain, including a series of wells, pumps and pipelines to accommodate the reuse of recycled wastewater. Construction activities and heavy equipment could result in potentially significant impacts to biological resources due to ground disturbance associated with drilling of wells and installation of pumps and related equipment and the acreage of land that would be dedicated to well and pump housing. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.

9. *Pump Stations – Alternatives 3 through 8.* Construction activities at pump station sites could result in potentially significant impacts to biological resources due to ground disturbance associated with site clearing, construction of structures, and effects of heavy equipment. Permanent impacts could occur for 0.1 to 3 acres per pump station. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
10. *Geysers Steamfield – Alternative 6.* Construction activities for modifications at the Geysers Steamfield could result in potentially significant impacts to biological resources due to ground disturbance associated with modifications of existing wells, drilling of new wells, excavation for new pipelines, and effects of heavy equipment. Impacts from pipeline construction would be temporary, but 1-3 acres may be dedicated to pumps or storage tanks. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
11. *Discharge – Alternatives 7 and 8.* Construction of outfalls could permanently affect biological resources on 1-3 acres of land adjacent to the Laguna de Santa Rosa, the Russian River, or its tributaries at the point of discharge. Indirect discharge via new percolation ponds or infiltration basins could affect up to 100 acres or more for each pond. Outfall locations or ponds are necessarily adjacent to waterways, and could impact wetlands, aquatic ecosystems, and likely riparian communities. Discharge may also impact aquatic vegetation and wildlife due to water quality changes. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address the California Toxics Rule, industrial pretreatment, using wetlands as treatment, and other measures. The additional treatment of wastewater could involve the construction of new structures for the treatment processes. If these treatment processes were confined to the Laguna Plant, additional investigation is warranted to determine if biological resources would be impacted. However, if the processes were to be located at one or more of the sites where recycled water is to be reused or discharged, construction of new structures on 1-5 acres could result in potentially significant

impacts to biological resources due to ground disturbance associated with site clearing and construction of new facilities, as well as effects of heavy equipment activity. Construction of treatment wetlands could occur over hundreds of acres, replacing native vegetation and wildlife with a managed aquatic ecosystem maintained for wastewater treatment. However, this system could serve as a wetlands bank, and could be considered a beneficial impact. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.

13. *Additional Reuse – Alternative 7.* Construction of facilities necessary for additional reuse, such as spreading basins could result in potentially significant impacts to biological resources due to ground disturbance associated with site clearing, excavation and construction of new facilities, and heavy equipment. Spreading basins could affect 100 acres or more for each pond. Existing vegetation and wildlife would be replaced with improvements that may support some values of an aquatic ecosystem. Impacts would be permanent. Discharge into Lake Sonoma may impact biological resources due to construction of the outfall structure, as well as impacts to aquatic vegetation and wildlife due to water quality changes. Construction activities could conflict with local plans or ordinances regarding trees or other biological resources.
 14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore would not be expected to have any impacts on biological resources.
- f. *Alternatives 1-9* – No known Habitat Conservation Plans have been adopted within the project area, however new plans may be adopted during the course of the project, and the Sonoma County Water Agency is in the process of obtaining a Section 7 consultation approval regarding endangered fish species (refer to the Cumulative Projects List in the Project Description), which may result in future Conservation Plans.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant	No Impact
V. CULTURAL RESOURCES				
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	✓			
b. Cause a substantial adverse change in the significance of an archeological resource pursuant to §15064.5?	✓			
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	✓			
d. Disturb any human remains, including those interred outside of formal cemeteries?	✓			

Analysis

a-d. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Plant will be limited to construction in the existing footprint of the site, but may still impact unknown cultural resources or paleontologic resources.
2. *Conservation – Alternative 1.* Indoor water conservation options will not create ground disturbance and therefore will not impact cultural resources or paleontological resources.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. Construction activities could result in potentially significant impacts to known or unknown cultural or paleontologic resource sites due to ground disturbance associated with excavation, as well as effects of heavy equipment activity
4. *Urban Reuse – Alternative 3.* Irrigation of urban sites, such as golf courses, landscaping, and school grounds could involve construction of new underground irrigation systems. These construction activities could result in potentially significant impacts to known or unknown cultural resource sites or paleontologic sites due to ground disturbance associated with excavation, as well as effects of heavy equipment activity.

5. *Agricultural Reuse – Alternative 4.* This component would expand the use of recycled water for agricultural irrigation in the project area, and could involve provision of irrigation water to lands not now irrigated, as well as the provision of recycled water to replace other existing water sources. Irrigation of new agricultural lands, as well as conversion of native vegetation to crops or pasture, could involve grading and installation of irrigation systems with significant impacts to cultural and paleontologic resource sites.
6. *Industrial Reuse – Alternative 5.* Dust control and gravel washing would not result in ground disturbance, and therefore, no impacts on cultural or paleontologic resources would be expected.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* Pipeline construction and maintenance activities could result in potentially significant impacts to known or unknown cultural resource sites due to ground disturbance associated with excavation. as well as effects of heavy equipment activity.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Reservoir construction activities could result in significant impacts to known or unknown cultural resource sites due to ground disturbance associated with excavation, as well as effects of heavy equipment activity. In addition, significant impacts due to the physical or chemical alteration of faunal, botanical and lithic remains as a result of inundation by the water in the reservoirs could occur. Additional impacts could occur to historic or archaeological settings if permanent above ground structures are sited near existing cultural resource sites.

Subsurface: Construction activities for this component could result in significant impacts to cultural resource sites due to ground disturbance associated with excavation, as well as effects of heavy equipment activity.

9. *Pump Stations – Alternatives 3 through 8.* Construction activities could result in significant impacts to cultural resource sites or paleontologic sites due to ground disturbance. If permanent above ground structures are sited near existing cultural resource sites, the setting of the sites could be impacted.
10. *Geysers Steamfield – Alternative 6.* Construction activities for modifications at the Geysers Steamfield could result in significant impacts to cultural resource sites or paleontologic sites due to ground disturbance associated with excavation.
11. *Discharge – Alternatives 7 and 8 and 8.* Construction activities outfalls could result in significant impacts to known or unknown cultural resource or paleontologic sites due to ground disturbance. Construction of facilities percolation ponds for indirect discharge could result in direct cultural resource impacts. Impacts could also occur as a result of the physical or chemical alteration of faunal, botanical and lithic remains as a result of inundation by the water in the spreading basins or percolation ponds. Additional impacts could occur if permanent above ground structures are sited near existing cultural resource sites.

12. *Additional Treatment – Alternatives 7.* Construction activities for these facilities could result in significant impacts to known or unknown cultural resource sites due to ground disturbance. In addition, significant impacts due to the physical or chemical alteration of faunal, botanical and lithic remains as a result of inundation by the water in the constructed wetlands could occur. Additional impacts could occur if permanent above ground structures are sited near existing cultural resource sites.
13. *Additional Reuse – Alternative 7.* Construction of facilities necessary for additional reuse, such as spreading basins could result in significant impacts to cultural resource sites due to ground disturbance. In addition, significant impacts due to the physical or chemical alteration of faunal, botanical and lithic remains as a result of inundation by the water in the spreading basins or percolation ponds could occur. Additional impacts could occur if permanent above ground structures are sited near existing cultural resource sites.
14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore would not be expected to have any impacts on cultural resources.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VI. GEOLOGY AND SOILS				
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	✓			
ii. Strong seismic ground shaking?	✓			
iii. Seismic-related ground failure, including liquefaction?	✓			
iv. Landslides?	✓			
b. Result in substantial soil erosion or the loss of topsoil?	✓			
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	✓			
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	✓			
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems?	✓			

Analysis

a-d. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* This component would provide for additional capacity at the Laguna Plant. The Plant is located in a seismically active area. Thus, any new facilities might expose people or property to significant risk from ground

rupture, seismic ground shaking, or seismic-related ground failure. The site is level and would not present a high risk of soil erosion. The vicinity of the Plant is mapped as having a high potential for liquefaction (City of Santa Rosa 1999), but site specific studies done at the time the Plant was constructed showed that gravels susceptible to liquefaction do not present a significant risk to the Plant's improvements (CH2MHill 1994). The site is level and is not a high risk for geologic instability. Soils mapping shows there is not a high rating for expansive soils (City of Santa Rosa, 1999). Therefore, no impact is expected.

2. *Conservation – Alternative 1.* This component entails future conservation programs for the Subregional Partners as a way to reduce indoor water usage. Because the programs will affect indoor water conservation, they will not expose people or property to significant risk from geologic hazards. No exposures to risks from soil failures would be created. Also, no exposures to risks from expansive soils would be created.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems within the jurisdictions of the Subregional Partners. Replacement or rehabilitation of existing facilities would reduce risks of earthquake damage. Temporary erosion during construction is possible. Instability would be unlikely, because sewers are already in the ground. Expansive soils occur throughout the area of the four Subregional Partners, and therefore could be present where I&I activities will take place.
4. *Urban Reuse – Alternative 3.* This component involves the use of treated wastewater for urban irrigation, and dual use in commercial buildings. Some portions of the urban reuse system would be subject to ground rupture, ground shaking, and liquefaction due to earthquakes. Erosion due to irrigation is a potential impact, as is geologic instability and expansive soils. Expansive soils occur throughout the area, and could be present where urban reuse activities will take place.
5. *Agricultural Reuse – Alternative 4.* This component would expand the use of treated wastewater for agricultural irrigation in the project area. Damage to irrigation equipment or conveyance pipeline breaks could occur during an earthquake due to ground failure, shaking, or liquefaction. The use of reclaimed water for agricultural irrigation could impact unstable slopes if excessive amounts of water were applied. Expansive soils occur throughout the area, and could be present where agricultural reuse activities will take place.
6. *Industrial Reuse – Alternative 5.* This component would provide recycled water for industrial reuse - specifically for dust control, gravel washing, etc. at existing aggregate operations, replacing existing water sources. The substitution of recycled water for other water sources would not create any new risks due to seismic activity. It would not change the physical characteristics of the structures or site, and therefore no new impacts related to unstable geologic units or soils, or to shrink-swell potential would occur.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of pipelines to convey recycled water to reuse sites and discharge points. The project is located in a seismically active area. Any new facilities might be subject to damage from seismic events. Pipelines installed in areas underlain by alluvial soils where shallow groundwater is present could be vulnerable to liquefaction. Erosion potential would be significant. Routes could also have landslide, lateral spreading, subsidence or collapse potential and cross areas rated as having a Moderate to High shrink-swell potential.

8. *Storage – Alternatives 3, 4, 6, 7, and 8.*

Surface: The project is located in a seismically active area. Facilities might be subject to damage from earthquake-related events, depending upon the specific location of the new facilities. In addition to geologic conditions that may affect stability of the structures, operation of a storage reservoir may create seasonal fluctuations in water levels that reactivate existing landslides or create new landslides. Construction could cause substantial erosion. The potential for impacts due to slope failure or to expansive soils would be dependent upon the location of the reservoir(s). Soils throughout the County are rated as having a Moderate to High shrink-swell rating.

Subsurface: Under this component a series of wells and pumps would be installed to inject treated wastewater into the aquifer for subsequent extraction and reuse or discharge. The project is located in a seismically active area and could be subject to damage in the event of an earthquake. Depending upon location, injection of water could cause changes in the water table and affect liquefaction risk and soil stability. Soils may have a Moderate to High shrink-swell rating.

9. *Pump Stations – Alternatives 3 through 8.* This component includes pump stations as part of the transmission and distribution systems to convey recycled water to reuse sites and discharge points. Pump stations will be located in a seismically active area, and may be subject to damage in the event of an earthquake. Pump station sites could be subject to damage from landslides, erosion, and expansive soils.

10. *Geysers Steamfield – Alternative 6.* This component would include new pipe, pump, tank and discharge facilities in the Geysers leasehold. None of the geothermal steamfield facilities are located in an Alquist-Priolo fault zone, but could be subject to strong groundshaking due to earthquakes. Injection of reclaimed water into deep geothermal wells and extraction of steam and hot water could result in increased seismic activity. Based on modeling performed at the site for the Geysers Recharge Project (City of Santa Rosa, 1997), impacts from induced seismicity were determined to be less than significant. No determination has been made concerning induced seismicity under expanded recharge (increase from 11 mgd to 27 mgd). Therefore this component is considered to have a potentially significant impact.

None of the Geysers Steamfield facilities are located in an area that is rated High for liquefaction potential. Erosion potential is high, however.

11. *Discharge – Alternatives 7 and 8.* Outfall locations and percolation ponds could be located in areas subject to ground failure, ground shaking, or liquefaction in case of an earthquake. Improvements could also be subject to landslides, cause erosion, or be located in expansive soils. Percolation ponds could increase the risk of liquefaction in the vicinity of the pond.

12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO, industrial pretreatment, the use of wetlands as treatment, and other measures. The project is located in a seismically active area. Thus, any new facilities may be subject to damage from ground failure, strong groundshaking, liquefaction or landslides. Construction of these facilities could cause erosion and take place within areas of expansive soils.

13. *Additional Reuse - Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and discharge to Lake Sonoma. The project is located in a seismically active area. Thus, any new facilities might be subject to damage in the case of an earthquake. Groundwater recharge or percolation ponds could increase the risk of localized liquefaction. Construction could cause erosion. Facilities could be installed in areas of landslides or expansive soils.
 14. *No Project – Alternative 9.* Under this alternative the system as it currently exists would continue to be operated. There would be no impacts from seismic risks. There would also be no impacts from soil stability risks or from expansive soils risks.
- e. *Alternatives 1 through 9.* None of the alternatives include the use of septic tanks or alternate wastewater disposal systems other than those proposed as part of the Program. Therefore, no impacts are identified.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VII. HAZARDS/HAZARDOUS MATERIALS				
Would the proposal involve:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	✓			
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	✓			
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	✓			
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	✓			
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	✓			
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	✓			

Analysis

a-d. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the

alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade - Alternatives 1 through 8.* Although recycled water is disinfected using a UV system, some increased use of chlorine products would still be expected. The current Laguna Plant Hazardous Materials Management Plan addresses the storage and handling of chlorine and other hazardous materials during the operation of the water reclamation plant and maintenance facilities. The Laguna Plant is not located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, but it is possible that the Plant would be on one of the lists.
2. *Conservation - Alternative 1.* This component would implement a variety of indoor water conservation measures. No hazardous materials will be utilized in this component. Therefore, there will be no hazards/hazardous materials impacts.
3. *I&I Reduction - Alternative 2.* This component would provide for the replacement or rehabilitation of existing inadequate sewer collection systems within the jurisdictions of the Subregional Partners. Improvements would reduce the potential for an accidental release of effluent, and therefore could be considered beneficial. However, there is potential for accidental release during construction. The Hazardous Materials Sites lists have not yet been consulted, but it is possible that existing pipelines would be on one of the lists.
4. *Urban Reuse - Alternative 3.* This component involves the use of recycled water for urban irrigation and dual use in commercial buildings. Irrigation or indoor use with reclaimed water potentially could expose persons using these facilities to any chemicals or microorganisms in reclaimed water via inhalation, dermal absorption, or inadvertent ingestion of spray irrigation.

Exposure to chemicals and microorganisms via contact with recycled water is regulated by Title 22 of the State Code. The potential for adverse health effects from reclaimed water is controlled by State regulations that restrict the use of reclaimed water for reuse in areas where food is handled and drinking water fountains are located. Compliance with these regulations will ensure that the risk is no greater than that of normal operational use.

Specific locations will likely be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

5. *Agricultural Reuse - Alternative 4.* This component would expand the use of recycled water for agricultural irrigation. The use of reclaimed water could expose persons to any chemicals or microorganisms in the reclaimed water via inhalation, dermal absorption, or inadvertent ingestion of spray irrigation or residues on crops. Persons could be temporarily exposed to ponded reclaimed water from an accidental release, pipe break, or overwatering. Exposure to chemicals and microorganisms via contact with recycled water is regulated by Title 22 of the State Code. The potential for adverse health effects from reclaimed water is controlled by State regulations that restrict the use of reclaimed water for irrigation in areas where food is handled and drinking water fountains are located. Compliance with these regulations will ensure that the risk is no greater than that of normal operational use.

Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

6. *Industrial Reuse - Alternative 5.* This component would provide treated wastewater for industrial reuse - specifically for dust control, gravel washing, etc. at existing aggregate operations in the project area. Use of the water for dust control, etc. at gravel mining sites would have impacts similar to urban and agricultural irrigation, but the potential for exposure to recycled water is greater because gravel is hand-washed.

Temporary exposure to the public from runoff from a discharge of recycled water could result in impacts similar to urban irrigation, but for a very brief time period. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of pipelines to convey recycled water to reuse sites and discharge points. Construction and operation of the pipeline may use minor quantities of hazardous materials, but would not release recycled water to the environment. Temporary exposure to the public from runoff from a pipeline break could result in impacts similar to urban irrigation, but for a very brief time period. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Under this component one or more additional storage reservoirs would be constructed. Operation of this component would not result in foreseeable upset or accident conditions that could result in the release of hazardous materials into the environment because any accidental releases of reclaimed water would be confined to the immediate vicinity of the reservoir. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

Subsurface: Under this component a series of wells and pumps would be installed to inject treated wastewater into the aquifer for subsequent extraction and reuse. Temporary exposure to the public from accidental release of recycled water could result in exposure of the public to chemicals or microorganisms that may be present in reclaimed water. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

9. *Pump Stations – Alternatives 3, 4, 5, 6, 7 and 8.* This component includes pump stations as part of the transmission and distribution systems to convey recycled water to reuse sites and discharge points. Construction and operation of the pump stations may use minor quantities of hazardous materials, but would not release recycled water to the environment. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.
10. *Geysers Steamfield - Alternative 6.* This component would include new pipe, pump, tank and discharge facilities within the Geysers leasehold. Recycled water would be injected to depths

in excess of 3,000 feet, and thus will not impact groundwater used as a domestic water source nor be released into the surface environment. Construction and operation of the facilities may use minor quantities of hazardous materials, but would not release recycled water to the environment. Temporary exposure to workers from runoff from a pipeline break could result in impacts similar to urban irrigation, but for a very brief time period. Facilities are not located close to a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.

11. *Discharge – Alternatives 7 and 8.* Under this component the timing and location of treated wastewater discharge into Laguna de Santa Rosa, Russian River, or tributaries thereto would be managed to reduce the percentage of discharge. These actions would not have hazards/hazardous materials impacts. While accidental release of recycled water could result in exposure of the public to chemicals or microorganisms that may be present in reclaimed water, this impact would be less than significant due to the limited duration, pathways of exposure, and quantity. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.
12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address CTR, industrial pretreatment, using wetlands as treatment, and other measures. Construction and operation of the additional treatment facilities utilizing reverse osmosis may involve the use of hazardous materials. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.
13. *Additional Reuse – Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and indirect potable reuse of treated wastewater. Impacts resulting from recharge activities under this component would be similar to those for urban and agricultural irrigation. Some of these facilities may be located within one-quarter mile of a school. The Hazardous Materials Sites lists have not yet been consulted, so it is not known if the facilities are on the list.
14. *No Project - Alternative 9 -* Under this alternative the system as it currently exists would continue to be operated. There would be no hazards/hazardous materials impacts.
 - e-f. *Alternatives 1 through 9.* Any facilities that may be sited near public or private airports would consist of either low-rise buildings and equipment, be located at ground level, or underground, and therefore, there would be no safety hazards created.
 - g. *Alternatives 1 through 8.* Construction could interfere with emergency access, including emergency response plans
Alternative 9. Under this alternative the system as it currently exists would continue to be operated. No physical interference with an adopted emergency response plan or emergency evacuation of another agency or private concern would occur.
 - h. *Alternatives 1 through 8.* Construction activity may expose people or structures in wildlands to wildland fires or increase the risk of creating fires. During the operational phase, no facilities will be combustion sources. Many facilities located in wildlands will be

largely underground (such as pipelines), or not be susceptible to fire damage (such as reservoirs).

Alternative 9. Under this alternative the system as it currently exists would continue to be operated. No new facilities would be subject to effects of wildfires.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY				
Would the project:				
a. Cause a violation of any water quality standards or waste discharge requirements, or worsen any existing such violations?	✓			
b. Substantially deplete groundwater supplies or interfere substantial with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	✓			
c. Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of stream or river in a manner which would result in substantial erosion or siltation on- or off-site?	✓			
d. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	✓			
e. Otherwise substantially degrade water quality?	✓			
f. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
g. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	✓			
h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	✓			
i. Be subject to inundation by seiche, tsunami, or mudflow?	✓			

Analysis

a-e. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Construction of additional pumps or expansion of process units at the Laguna Plant will take place within the existing footprint of the site. Effluent leaving the plant is subject to water quality requirements, as discussed under the Discharge Component below. Construction at the plant may cause erosion, alter drainage, and require a Storm Water Pollution Prevention Plan. Groundwater recharge may be reduced due to the increased size of impervious surfaces at expanded process units. During operation, runoff may increase in quality and quantity, but additional pollution in runoff is not expected.
2. *Conservation – Alternative 1.* This component entails future conservation programs for the Subregional Partners as a way to reduce indoor water usage. Because the programs will affect indoor water conservation, they will not be the subject of water quality requirements, nor will they alter drainage, affect groundwater recharge, or change the quality or quantity of runoff.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing inadequate sewer collection systems in four cities. Construction activities along the sewer collection system could involve removal of vegetation, grading and trenching, and could result in temporary groundwater impacts, sediment in stormwater runoff, and alteration of drainage. After construction, no change in above ground structures would occur, and no water impacts are expected.
4. *Urban Reuse – Alternative 3.* This component involves the use of recycled water for urban irrigation and indoor use for sprinkler systems and toilets. Irrigation of urban sites, such as golf courses, landscaping, and school grounds would involve underground irrigation systems and installation of the irrigation systems on the sites could result in temporary groundwater impacts, sediment in stormwater runoff, and alteration of drainage. However, revegetation of the sites could mitigate the effects of construction. Use of recycled water for irrigation would affect runoff quality and quantity, increase groundwater recharge, and affect the quality of groundwater. The indoor use of recycled water for toilets and fire protection as an alternative to other sources would not affect water quality.
5. *Agricultural Reuse – Alternative 4.* This component would expand the use of recycled water for agricultural irrigation in the project area, and could involve provision of irrigation water to lands not now irrigated, as well as the provision of recycled water to replace other existing water sources. Irrigation of agricultural areas could require installation of underground irrigation systems which could result in temporary groundwater impacts, impacts to runoff quality and quantity, and alteration of drainage. Use of recycled water for irrigation could also affect runoff quality and quantity, increase groundwater recharge, and affect the quality of groundwater. Because provision of recycled water may encourage landowners to plant new acres of crops or pasture, land with existing native vegetation or streams may be subject to drainage alterations, changes in runoff quality and quantity, and reduced groundwater recharge could occur.
6. *Industrial Reuse: – Alternative 5.* The use of recycled wastewater for industrial processes such as dust control and gravel washing as an alternative to other sources of water may cause water quality impacts to runoff from the sites and discharge from holding ponds. No impacts

to surface water drainage patterns are expected. Groundwater could be affected by percolation of recycled water from the holding ponds into the aquifer.

7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of new pipelines to distribute recycled water to reuse sites. Construction activities could involve removal of vegetation, grading and trenching, and could result in a bare or scarred appearance within portions of the construction areas. However, because no new above ground structures would be constructed, there would be no permanent impacts to water quality, surface drainage, or groundwater recharge. Potential impacts to water quality could occur in case of leaks from the pipeline.

8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Under this component, additional storage reservoirs would be constructed. Construction of storage reservoirs and associated facilities would require substantial grading, removal of vegetation, and building of berms or dams. Drainage structures may be required around the perimeter of the reservoirs. Construction would alter surface drainage (potentially including existing streams), impact runoff quantity and quality, and affect groundwater flow. Groundwater recharge would likely be increased, and groundwater quality could be affected by recycled water leaking from the bottom of the reservoir. Overtopping of the reservoir during storms or seepage from the bottom of the dam could also affect water quality of surface waters in the vicinity.

Subsurface: This component would provide a subsurface storage option in the Santa Rosa Plain, including a series of wells, pumps and pipelines to accommodate the reuse of recycled wastewater. Construction of the wells, pumps and pipelines will require removal of vegetation, and grading, which would result in temporary impacts to water quality and quantity of runoff, changes in surface water drainage, and impacts to groundwater recharge and quality. These impacts will cease once construction is complete and the surface is restored to original contours and vegetation. Significant impacts to groundwater quality may occur, however, from the ongoing injection and withdrawal of recycled water during storage operations.

9. *Pump Stations – Alternatives 3 through 8.* New pump station construction will require grading that could result in water quality impacts to runoff, alteration of surface drainage, and temporary changes to groundwater. Pump stations are not expected to result in long-term water quality impacts to either surface waters or groundwater during the operation stage.
10. *Geysers Steamfield – Alternative 6.* Construction of additional pipelines, pumps, or storage tanks within the Geysers leasehold could cause temporary changes to runoff water quality and quantity, and surface water drainage patterns. During operation of the project, leaks from the pipelines could affect groundwater quality. Discharge into the Geysers is via existing wells at several thousand feet below the surface; no interaction with shallow aquifers occurs and therefore no impacts to beneficial uses of such aquifers result.

11. *Discharge – Alternatives 7 and 8.* Under this component the timing and location of discharge into Laguna de Santa Rosa would be managed to comply with discharge requirements. New outfall structures may be constructed, resulting in temporary water quality impacts at the point of construction in the Laguna. Also under this component, a new discharge point(s) could be established at the Russian River for disposal of recycled wastewater, and a new outfall(s) would be constructed. The outfall would result in temporary water quality impacts at the point of construction in the Russian River. In addition, indirect discharge via percolation ponds may be needed adjacent to the Russian River or its tributaries. Ongoing water quality impacts to the Laguna, the River or its tributaries could result from the recycled water being discharged.
12. *Additional Treatment – Alternatives 7.* This component would include a variety of measures such as Micro Filtration/Reverse Osmosis treatment to address the California Toxics Rule at point of reuse, industrial pretreatment, using wetlands as treatment, and other measures at the point of reuse. The additional treatment of wastewater could involve the construction of new structures for the treatment processes, resulting in temporary construction impacts on runoff quality and quantity, groundwater, or surface water drainage patterns. Depending upon the size and location of the facility, groundwater recharge could be affected. Use of ponds or wetlands for treatment could permanently affect drainage patterns.
13. *Additional Reuse – Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and discharge into Lake Sonoma. Construction of facilities necessary for additional reuse, such as spreading basins, wells, pumps, and outfall structures could result in the removal of vegetation and grading. Such construction could have temporary affects on surface water drainage patterns, existing streams, groundwater recharge, runoff quality and quantity and the water quality of Lake Sonoma at the point of outfall construction. Ongoing impacts from operation of these reuse options could include changes to water quality of both surface waters and groundwater, changes in drainage, and changes to groundwater recharge.
14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction, therefore would have no water quality impacts.

f. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

None of the components include housing, therefore there would be no housing placed within a 100-year flood zone.

h-i. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Portions of the Laguna Plant may lie within the 100-year flood zone, so expansion of project facilities may affect flooding. New facilities could potentially be damaged by flooding. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
2. *Conservation – Alternative 1.* This component occurs indoors and will not cause flooding, nor be subject to increased risk of flooding. No increased hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
3. *I&I Reduction – Alternative 2.* Portions of the existing sewage collection systems of the Subregional System members may be located within 100-year flood zones. Improvements to these sewers will not cause flooding, but may be at risk of damage from floods. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
4. *Urban Reuse – Alternative 3.* Portions of the urban irrigation reuse area may be located within 100-year flood zones. Irrigation systems installed as part of this component will not cause flooding, but may be at risk of damage from floods. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
5. *Agricultural Reuse – Alternative 4.* Portions of the agricultural irrigation reuse area may be located within 100-year flood zones. Irrigation systems installed as part of this component will not cause flooding, but may be at risk of damage from floods. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
6. *Industrial Reuse – Alternative 5.* The use of recycled wastewater for industrial processes such as dust control and gravel washing as an alternative to other sources of water will not increase the potential for flooding, however, facilities may be located within 100-year flood zones. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* New pipelines may be located within 100-year flood zones; leakage or a break in a pipeline may cause temporary flooding. Pipelines may be subject to damage from flooding. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
8. *Storage – Alternatives 3, 4, 6, 7, and 8.*

Surface: Under this component, reservoirs may be located within 100-year flood zones, and thus may be at risk of damage due to flooding. Increased runoff from drainage facilities around the reservoirs could also increase localized flooding. If a dam were to break, risk of loss to people and structures could occur in the inundation zone downstream of the break. In an earthquake, a seiche could potentially occur in a large reservoir; impacts from tsunami or mudflows are not expected.

Subsurface: This component could be located within a 100-year flood zone, and above ground structures such as well heads or pumps could be subject to damage from flooding. Continued injection without sufficient extraction could result in localized flooding. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.

9. *Pump Stations – Alternatives 3 through 8.* New pump stations could be located within 100-year flood zones and therefore could be subject to damage from flooding. No hazards from dams breaking or tsunami, have been identified. Depending on the location, mudflow or seiche could damage pump stations.
10. *Geysers Steamfield – Alternative 6.* This component is not located with any flood hazard zones. A break in the pipeline could cause temporary localized flooding. No hazards from dams breaking, seiche, tsunami, or mudflows have been identified.
11. *Discharge – Alternatives 7 and 8.* Under this component the timing and location discharge into Laguna de Santa Rosa would be managed to comply with discharge requirements. New outfall structures would be located within the 100-year flood zone, but would be constructed to withstand floods. Increased discharge may contribute to flooding in the Laguna. Also under this component, new discharge points may be established at the Russian River for disposal of recycled wastewater. New outfall structures would be located within the 100-year flood zone, but would be constructed to withstand floods. Increased discharge may contribute to flooding in the Russian River. Indirect discharge via percolation ponds adjacent to the Russian River or its tributaries could be subject flooding and may contribute to flooding. Although unlikely, seiches could occur in the percolation ponds. Mudflows or tsunamis are not expected.
12. *Additional Treatment – Alternatives 7.* The structures necessary for additional treatment may be located within the 100-year flood zone, and thus be subject to damage due to flooding. Some facilities being considered (e.g., treatment wetlands), may be large enough to increase flooding in an area. If wetland berms were to break, risk of loss to people and structures could occur in the inundation zone downstream of the break. In an earthquake, a seiche could potentially occur in a large wetland. Impacts from tsunami or mudflows are not expected.
13. *Additional Reuse – Alternative 7.* This component also includes ponds that may be located within the 100-year flood zone, and could be subject to damage due to flooding. Dams could break and contribute to localized flooding. If pond embankments were to fail, risk of loss to people and structures could occur in the inundation zone downstream of the break. In an earthquake, a seiche could potentially occur in a large pond. Impacts from tsunami or mudflows are not expected.
14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore would have impacts relative to flooding.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
IX. LAND USE AND PLANNING				
Would the project:				
a. Physically divide an established community?				✓
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	✓			
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	✓			

Analysis

a,b,c. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a list of the components that make up each of the alternative, please refer to Table 3 on page xx of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* The treatment plant is located in an unincorporated area of Sonoma County and the upgrade will be carried out within the existing footprint. Therefore it would not physically divide an established community. The upgrade would not conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project. The upgrade is not expected to conflict with any natural community conservation plan.
2. *Conservation – Alternative 1.* This component involves development of future conservation activities and programs for the Subregional partners as a way to reduce indoor water usage and hence, sewage flows into the Laguna Plant. It would not physically divide an established community since no new construction is involved. Conservation activities would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. Because the conservation programs will affect only indoor water conservation, they would not be expected to conflict with any conservation plan.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. It would not physically divide an established community because it would be replacing existing infrastructure. It would not cause a conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project because it involves replacement or rehabilitation of an existing

system. It could involve construction activities with potentially significant impacts to biological resources addressed in conservation plans.

4. *Urban Reuse – Alternative 3.* This component involves the use of recycled wastewater for urban irrigation and dual use in commercial buildings. Irrigation or indoor use of recycled water would not physically divide an established community. It would not change the use of land and would not be expected to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. It could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.
5. *Agricultural Reuse – Alternative 4.* This component would expand the use of recycled wastewater for agricultural irrigation in the project area. It would include the area east of Rohnert Park, the Russian River area between Windsor and Healdsburg, the Alexander Valley, and the Dry Creek Valley area. This expanded use would not physically divide an established community. Agricultural irrigation will not result in a land use change or loss of open space, as the construction of distribution pipelines and provision of reclaimed water for irrigation will result in the continuation of agricultural use. Therefore, it would not be expected to cause a conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project. It could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.
6. *Industrial Reuse – Alternative 5.* This component involves the use of recycled waste water as a replacement water source for industrial processes such as dust control and gravel washing. The use of recycled water for these processes would not physically divide an established community. It would not change the use of land and would not be expected to conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project. It would not significantly alter the processes involved or the physical characteristics of any of the structures or sites associated with the use of recycled water. No impacts on conservation plans would be expected.
7. *Pipelines – Alternatives 3, 4, 5 7 and 8.* This component includes the construction and operation of new pipelines to carry recycled water to reuse sites and discharge points. These pipelines will be underground and therefore will not physically divide an established community. All of the pipelines will be contained within existing public right-of-ways, except for short segments of the main transmission lines approaching the storage reservoirs or agricultural irrigation areas. Easements will be purchased as part of the project to accommodate these pipeline segments. The pipelines will not result in land use impacts, as there will be no change in surface land use. Construction activities could create potentially significant impacts to biological resources addressed in conservation plans.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Under this component, additional surface storage reservoir options will be developed. Because the locations of these facilities would be in undeveloped, primarily agricultural areas, they would not physically divide an established community.

Reservoir sites would probably be located within unincorporated Sonoma County. Storage reservoirs for agricultural irrigation are not specifically addressed in the Sonoma County General Plan or the Zoning Ordinance. However, such uses are an integral part of agricultural practices for pasture, row crops, and viticulture. There are existing agricultural reservoirs and ponds located within the Land Extensive Agriculture category on the Sonoma County General Plan Land Use Maps, which are classified for agricultural use under existing Sonoma County zoning. While these reservoirs and ponds are considerably smaller in scale, they serve the same function as the proposed reservoirs in supplying water for agricultural use. Construction activities could create potentially significant impacts to biological resources addressed in conservation plans.

Subsurface: Under this component a series of wells and pumps would be installed through which recycled wastewater is injected into an aquifer for storage and then withdrawn through the wells for irrigation use. Because the locations of these facilities would be in undeveloped, primarily agricultural areas, they would not physically divide an established community. Depending on their location and size, construction of a series of wells and pumps could conflict with an applicable land use plan, policy or regulation by an agency with jurisdiction over the project. Therefore, this is considered a potentially significant impact. This could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.

9. *Pump Stations – Alternatives 3 through 8.* Because the pump station sites will be less than one acre in size they would not physically divide an established community. Pump stations and other similar public service facilities are considered compatible with and allowed in agricultural, residential, and commercial land use classifications under the Santa Rosa and Sonoma County General Plans and existing Santa Rosa and Sonoma County zoning. Existing facilities of this type are located adjacent to agricultural, residential, and commercial land uses within the Project area.

However, depending on their location, pump stations could conflict with applicable land use plans, policies or regulations of an agency with jurisdiction over the project. Construction activities could create potentially significant impacts to biological resources addressed in conservation plans.

10. *Geysers Steamfield – Alternative 6.* This component would include new pipe, pump, tank and discharge facilities in the Geysers steamfield. This is an industrial area and would not physically divide an established community. Also, it would not conflict with an applicable land use plans, policies or regulations of any agency with jurisdiction over the project since this type of activity is already occurring in the Geysers steamfield. This component could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.
11. *Discharge – Alternatives 7 and 8.* Discharge or percolation ponds would not involve construction that would physically divide an established community. Because the specific locations for new discharge facilities have not been determined, it is possible that there could be a conflict with applicable land use plans, policies or regulations of an agency with

jurisdiction over the project. These alternatives could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.

12. *Additional Treatment – Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address the California Toxics Rule, industrial pretreatment, using wetlands as treatment, and other measures. The additional treatment of water may physically divide an established community, and any facilities necessary for additional treatment in urban areas would be located on relatively large sites that may physically divide an established community. Because the specific locations for additional treatment facilities have not been determined, it is possible that there could be a conflict with applicable land use plans, policies or regulations of an agency with jurisdiction over the project. Therefore this component is considered to have a potentially significant impact. Also, it could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.
13. *Additional Reuse – Alternative 7.* This component would provide for the surface recharge of groundwater, groundwater recharge by injection, and discharge into Lake Sonoma. Any facilities for additional reuse, such as spreading basins would be located outside of established community areas. Because the specific locations for additional reuse facilities have not been determined, it is possible that there could be a conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project, and therefore this component is considered to have a potentially significant impact. Also it could involve construction activities that would create potentially significant impacts to biological resources addressed in conservation plans.
14. *No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore would not divide an established community. Also, it would not conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project or create potentially significant impacts to biological resources addressed in conservation plans.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
<p>X. MINERAL RESOURCES</p> <p>Would the project:</p> <p>a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?</p> <p>b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?</p>	<p>✓</p> <p>✓</p>			

Analysis

a-b. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Water Reclamation Facility may include the construction of additional pumps. The area surrounding the facility does not include known mineral resources or designated mineral resource recovery sites.
2. *Conservation – Alternative 1.* This component entails future conservation programs for the Subregional Partners as a way to reduce indoor water usage and hence, sewage flows into the Subregional Treatment Plant. It will not affect any mineral resources.
3. *I&I Reduction – Alternative 2.* This component would provide for the replacement or rehabilitation of existing sewer collection systems in four cities. It would not affect mineral resources or designated mineral resource recovery sites because it would replace existing infrastructure.
4. *Urban Reuse – Alternative 3.* The Urban Reuse component would only provide water for irrigation within landscaped areas, where economically productive mineral resources would be very unlikely. No mineral resource recovery sites have been identified within the component project area.
5. *Agricultural Reuse – Alternative 4.* Although unlikely, agricultural irrigation areas could overlap with mineral resource sites or designated mineral resource recovery areas.

6. *Industrial Reuse – Alternative 5.* Mineral resources will not be impacted by the use of recycled water for industrial processes such as dust control and gravel washing.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* This component includes the construction and operation of new pipelines to convey recycled water to reuse sites. There are potential quarry resource areas (ARM 1994) in areas of potential pipeline construction that may be impacted by the construction of new transmission pipelines.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Under this component, additional storage reservoirs would be constructed in the Santa Rosa Plain or in agricultural irrigation areas. The Sonoma County Aggregate Resources Management Plan (ARM 1994) delineates potential mineral resource areas east of Santa Rosa as well as well as in the Russian River, Alexander and Dry Creek Valleys. Construction and operation of storage reservoirs in these areas may have a significant impact on mineral resources.

Subsurface – This component would provide a subsurface storage option including a series of wells, pumps and pipelines to accommodate the agricultural reuse of recycled wastewater. The ARM Plan (1994) delineates potential quarry resource areas east and south of Santa Rosa, which could be affected by this component.

9. *Pump Stations – Alternatives 3 through 8.*

Alternative 3 - No known mineral resources occur in the areas where urban reuse pump stations may be constructed.

Alternatives 4, 5, 7 and 8 - This component would implement booster pump stations to provide recycled water for reuse or discharge. Although the locations for the pump stations have not yet been determined, mineral resources known to occur in areas where pump stations may be located could be impacted by the construction of the booster pump stations.

Alternative 6 - Modification of the existing pump stations would not be expected to impact mineral resources.

10. *Geysers Steamfield – Alternative 6.* No known mineral resources occur in the Geysers Steamfield area.
11. *Discharge – Alternatives 7 and 8.* The ARM Plan (1994) identifies mineral resource areas in the Russian River valley, so discharge outfalls or percolation ponds along the river could interfere with quarrying activities.
12. *Additional Treatment – Alternatives 7 and 8.* There are potential mineral resource areas (ARM, 1994) that may be impacted by construction of new treatment facilities or constructed wetlands.

- 13. Additional Reuse – Alternative 7.* There are potential mineral resource areas (ARM 1994) that may be impacted by construction of additional reuse facilities.
- 14. No Project – Alternative 9.* The No Project Alternative would involve no new construction or facilities and therefore there would be no impacts to mineral resources.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XI. NOISE				
Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	✓			
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	✓			
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	✓			
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	✓			
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	✓			

Analysis

a-f. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade - Alternatives 1 through 8.* The new treatment equipment and pumps would be located within the existing footprint at the Laguna Plant. Construction equipment would increase ambient noise levels at nearby sensitive receptors, and noise from construction traffic will increase in the vicinity as well. Operation of new pumps and expansion of process units may increase noise levels permanently, exceed standards, and expose sensitive receptors to increased ambient noise levels. Neither construction nor operation of this component will generate significant groundborne vibration impacts. This component is not near a public or private airstrip.

2. *Conservation - Alternative 1.* This part of the Program will not cause ground disturbance, and therefore, there will be no noise or vibration impacts.
3. *I&I Reduction - Alternative 2.* This component would provide for the replacement or rehabilitation of existing inadequate sewer collection systems within the jurisdictions of the Subregional Partners. During construction, equipment would be operating in the urban area adjacent to sensitive receptors, creating the potential for significant noise and vibration impacts. This impact would be temporary and will cease in the operational phase.
4. *Urban Reuse - Alternative 3.* Replacement of existing sources of water with reclaimed water would not require new construction and would not be expected to create any noise or vibration impacts. However, installation of new on-site irrigation infrastructure would involve construction in the urban area adjacent to sensitive receptors, creating the potential for significant noise and vibration impacts. This impact would be temporary and will cease in the operational phase. Irrigation activities would cause minor noise impacts during the operational phase.
5. *Agricultural Reuse - Alternative 4.* Construction equipment and traffic for installation of on-site irrigation systems could cause significant noise impacts to sensitive receptors, depending upon location. The operation of the agricultural component would include the operation of small pumps, pipelines, and drip or spray irrigation systems. Pumps will be located on private land and would have impacts similar to those of pump stations. Pipelines and sprinklers used for agricultural irrigation do not produce significant noise impacts. In addition, availability of recycled water may encourage conversion of native vegetation to crops or pasture, causing both noise impacts during conversion activities and ongoing agricultural operations.
6. *Industrial Reuse - Alternative 5.* This component does not include ground disturbing activities, and therefore would not cause noise or vibration impacts.
7. *Pipelines - Alternatives 3, 4, 5, 7 and 8.* Construction of pipelines would involve the use of construction equipment and generation of construction traffic, resulting in temporary noise impacts. These could exceed noise standards, increase ambient noise levels, and affect sensitive receptors in the vicinity of the construction. During operation of the pipelines, the potential for noise exists due to pressurized water flow in the pipelines. Generally, noise is caused by high velocity water turbulence, water surge or thrust and water hammering. The pipeline systems will be buried, which will provide a noise barrier and reduce impacts to less than significant. Other pipeline noise sources include air relief valves and surge tanks. Relief valves do not produce significant noise impacts; water surge would only occur on an emergency basis and would not create a significant impact.
8. *Storage – Alternatives 3, 4, 6, 7, and 8.*

Surface: Construction of storage reservoirs would result in temporary noise impacts that exceed noise standards, increase ambient noise levels, and affect sensitive receptors in the vicinity of the construction. With the exception of pump stations, there are no mechanical noise sources associated with operation of storage reservoirs. Pump station noise is discussed under the pump station component. This component could occur near a public or private airstrip, cumulatively impacting noise levels during construction of the reservoirs.

Subsurface: Construction of the wells, pumps and pipelines for this component could result in temporary noise impacts that may exceed noise criteria. Pumps would be the only source of operational noise. Pumps are discussed under the pump stations component. This component could occur near a public or private airstrip, cumulatively impacting noise levels during construction.

9. *Pump Station - Alternatives 3 through 8.* Construction of the facilities could result in temporary noise impacts to sensitive receptors that may exceed noise criteria. During the operation of the component, pumps could cause significant noise impacts, increasing ambient noise levels, exceeding standards, and affecting nearby sensitive receptors. This would depend on pump size, location, and pattern of use.
10. *Geysers Steamfield - Alternative 6.* The nearest sensitive receptor to the Geysers Steamfield facilities is several miles away. Therefore, no significant construction phase or operational noise or vibration impacts are expected.
11. *Discharge – Alternatives 7 and 8.* Construction of outfalls or percolation ponds could cause an increase in ambient noise levels and affect nearby sensitive receptors. Discharge of water, however, would not substantially affect noise levels in the area.
12. *Additional Treatment - Alternatives 7 and 8.* This component would include a variety of measures such as MFRO treatment to address CTR, industrial pretreatment, using wetlands as treatment, and other measures reuse. Construction of treatment facilities or wetlands would involve the use of construction equipment and generation of construction traffic, resulting in elevated ambient noise levels. Operational phase noise impacts are expected to be less than significant, however, since treatment processes will be enclosed and wetlands do not generate noise.
13. *Additional Reuse – Alternative 7.* Spreading basins or outfall structure at Lake Sonoma will require construction near sensitive receptors or near recreational areas. This construction and associated construction traffic will cause ambient noise levels to increase and may exceed standards. These components, however, will not generate significant noise during operation.
14. *No Project - Alternative 9 -* Under this alternative the system as it currently exists would continue to be operated. There would be no noise or vibration impacts.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING				
Would the Project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	✓			
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	✓			
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	✓			

Analysis

a. *Alternatives 1 through 8.* The IRWP does not directly cause population growth, as the alternatives provide no housing and very little permanent employment. The development of additional wastewater treatment capacity using any individual alternative or combination of alternatives will indirectly foster economic and population growth by providing needed infrastructure and removing an impediment to growth within the cities of the Subregional System. The treatment facilities would serve the projected population described in the general plans of the Subregional System member cities. Although this growth was anticipated in these general plans and there are plans and programs established in order to address the potential impacts, these may not reduce impacts to less than significant. Impacts of this growth and adopted mitigation measures are described in the general plan EIRs of the Subregional Partners.

No Project - Alternative 9 - Under this alternative the system as it currently exists would continue to be operated. Population growth would not be directly or indirectly induced, in fact it could be curtailed.

b-c. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this document.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* This component would be built within the existing footprint of the Laguna Plant and will not displace existing housing or people.

2. *Conservation – Alternative 1.* This component does not involve ground disturbance and would not displace existing housing or people.
3. *I&I Reduction – Alternative 2.* I&I control will occur along existing sewer lines and will not displace existing housing or people.
4. *Urban Reuse – Alternative 3.* Urban irrigation will occur on landscaped land, and therefore would not displace substantial numbers of housing or people.
5. *Agricultural Reuse – Alternative 4.* Agricultural irrigation, or conversion of land to agriculture would not displace either existing housing or people.
6. *Industrial Reuse – Alternative 5.* This component will not cause ground disturbance and therefore will not displace either existing housing or people.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* Construction of pipelines will not require displacement of either existing housing or people.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Although unlikely, reservoirs may be sited on land with existing housing, so that dwellings and outbuildings would need to be replaced, and residents would need to be relocated.

Subsurface: This component requires little acreage and potential locations are flexible enough so that no housing nor people will need to be relocated.

9. *Pump Stations – Alternatives 3 through 8.* Pump stations are small and can be sited to avoid impacts to existing housing or people.
10. *Geysers Steamfield – Alternative 6.* There is no housing within the Geysers leasehold area that could be affected by this component.
11. *Discharge - Alternatives 7 and 8.* Discharge facilities are small and can be easily sited to avoid impacts to existing housing or people.
12. *Additional Treatment – Alternatives 7 and 8.* Treatment facilities are expected to be small enough to avoid impacts to existing housing. Although unlikely, constructed wetlands require large acreage and may need to be sited on land with existing housing, so that dwellings and outbuildings would need to be replaced, and residents would need to be relocated.
13. *Additional Reuse – Alternative 7.* Spreading basin and outfall structures are small enough that impacts to existing housing could be avoided.
14. *No Project - Alternative 9 -* Under this alternative the system as it currently exists would continue to be operated. This would not displace substantial numbers of housing or people.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XIII. PUBLIC SERVICES				
<p>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</p>				
a. Fire protection?			✓	
b. Police protection?			✓	
c. Schools?			✓	
d. Parks?			✓	
e. Other public facilities?			✓	

Analysis

a-e. *Alternatives 1-9* – Construction of the IRWP alternatives could temporarily increase the need for fire or police protection. A demand for additional schools, parks, and other public facilities would not occur from construction or operational activities. Such temporary impacts will not, however, cause the provision of new, physically altered facilities with significant impacts. Operation of IRWP alternatives would generate a small need for fire and police oversight, but not sufficient to require physical changes to public facilities. Permanent employment growth due to IRWP alternatives will be small, probably less than 10 employees, therefore, no operational phase impacts to public services are identified.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less Than Significant	No Impact
XIV. RECREATION				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	✓			
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	✓			

Analysis

a-b. *Alternatives 1-9* – Construction of the IRWP alternatives would not generate a demand for additional recreational facilities, as none of the alternatives creates housing and or directly causes population growth. Several of the alternatives may be located at recreational facilities such as parks or Lake Sonoma.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC				
Would the project:				
a. Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	✓			
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				✓
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d. Substantially increase hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	✓			
e. Result in inadequate emergency access?	✓			
f. Result in inadequate parking capacity?	✓			
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	✓			

Analysis

a,d,e,f,g. The following analysis is presented by components of the Incremental Recycled Water Program (IRWP). For a description of the components that make up each of the alternatives, please refer to the Program Components section of the Project Description starting on page 16 of this.

1. *Laguna Plant Upgrade – Alternatives 1 through 8.* Upgrading the Laguna Plant may include the construction of additional pumps and expansion of process units. Construction traffic could cause congestion along Llano Road, including traffic hazards for through travelers and nearby residents. Emergency access could be affected for nearby residents. Parking at the existing Plant would be adequate. Construction traffic could interfere with bicycle and

pedestrian access. Llano Road is not generally used by transit vehicles. No traffic impacts are expected after construction.

2. *Conservation – Alternative 1.* Water conservation options will not generate either construction or operational traffic.
3. *I&I Reduction – Alternative 2.* Construction traffic could cause congestion along urban streets, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff would be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
4. *Urban Reuse – Alternative 3.* Construction traffic could cause congestion along adjacent city streets, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
5. *Agricultural Reuse – Alternative 4.* Construction traffic could cause congestion along rural roads, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
6. *Industrial Reuse – Alternative 5.* Dust control and gravel washing with recycled water does not require construction. Therefore, no impacts on traffic volumes or hazards would be expected.
7. *Pipelines – Alternatives 3, 4, 5, 7 and 8.* Construction traffic could cause congestion along rural roads or city streets, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff would be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
8. *Storage – Alternatives 3, 4, 6, 7 and 8.*

Surface: Construction of storage reservoirs and associated facilities would generate vehicle trips for both workers and construction equipment, and potentially for the importation of fill for dam construction as well. The construction period for a typical reservoir would be 12 months or longer, and there could be over 400 vehicle trips per day at a construction site for a large dam and reservoir. Because the construction workers would travel before the typical peak commute times (typically being on the construction site by 7 am and leaving before 4 pm) and trips to deliver equipment and fill would typically occur during mid-day, the construction traffic would not be likely to affect the level of service on any roadways. Although the increases in trips would be temporary, occurring only during the construction period, the increases in traffic volumes on some local roads could be substantial in relation to

existing volumes. Therefore, this component is considered to have potentially significant impacts. Traffic hazards for through travelers and nearby residents could increase. Emergency access could be affected. Parking for construction staff would be adequate. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.

Subsurface: Construction traffic could cause congestion along rural roads or city streets, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.

9. *Pump Stations – Alternatives 3 through 8.* Construction traffic could cause congestion along rural roads or city streets, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
10. *Geysers Steamfield – Alternative 6.* Construction could generate as many as 200 trips per day along Pine Flat Road or Socrates Mine Road in Lake County, and while this increase would not impact the level of service, it could constitute a substantial increase over of traffic volumes. Traffic hazards for through travelers and nearby residents could increase. Emergency access could be affected. Parking for construction staff would be adequate. Construction traffic could interfere with bicycle, transit, and pedestrian use. No traffic impacts are expected after construction.
11. *Discharge – Alternatives 7 and 8.* Outfall or percolation pond construction traffic could cause congestion along rural roads, including traffic hazards for through travelers and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle and pedestrian use. No traffic impacts are expected after construction.
12. *Additional Treatment – Alternatives 7 and 8.* Construction traffic for treatment facilities could cause congestion along rural roads, including traffic hazards for through travelers and nearby residents. Constructed wetlands would require a large amount truck traffic. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit and pedestrian use. No traffic impacts are expected after construction.
13. *Additional Reuse – Alternative 7.* Construction traffic for spreading basins or an outfall at Lake Sonoma could cause congestion along rural roads, including traffic hazards for through travelers, recreational users, and nearby residents. Emergency access could be affected. Parking for construction staff could be limited. Construction traffic could interfere with bicycle, transit and pedestrian use. No traffic impacts are expected after construction.

14. No Project – Alternative 9. The No Project Alternative would involve no new construction or facilities and therefore would not generate any additional traffic.

b, c. Alternative 1-9 – The County Congestion Management Agency is no longer funded and there are no standards to be met by the Program. None of the alternatives will require a change in air traffic patterns, regarding either an increase in air traffic levels or change in location.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS				
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	✓			
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	✓			
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	✓			
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	✓			
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	✓			
g. Comply with federal, state, and local statutes and regulations related to solid waste?				✓

Analysis

a,b,d,e. *Alternatives 1 through 8.* It is the adopted objective of the IRWP meet the wastewater treatment requirements of the North Coast Regional Water Quality Control Board. It is, however, unknown at this time, which alternatives will meet their requirements for both treating the increase in future flows and meeting quality requirements of the California Toxics Rule. The IRWP alternatives do not require sources of water other than recycled water to operate, therefore no impacts on potable or other water supplies will occur. In fact, several reuse alternatives will make additional potable water supply available by using recycled water instead.

Alternative 9. Under this alternative the system as it currently exists would continue to operate. As population continues to grow, the existing wastewater treatment system

could exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board because the existing system would become inadequate to meet the quantity or quality needs of the Regional Board.

- c. *Alternatives 1 through 8.* Conservation and Industrial Reuse components do not require ground disturbance and would not need new storm drain facilities. I&I Reduction, Pipelines, and Discharge components involve construction that may require temporary drainage improvements, but no permanent facilities. The Laguna Plant Upgrade, Urban Reuse, Agricultural Reuse, Storage, Pump Stations, Geysers Steamfield, Additional Treatment, and Additional Reuse components will have permanent facilities or operations that may require new storm drain improvements.

Alternative 9. The No Project Alternative would not result in the construction of stormwater drainage facilities or expansion of existing facilities.

- f-g. *Alternatives 1 through 8.* Sludge generation could increase in proportion to the capacity increase of the treatment plant and this could result in increased demand on the existing landfill capacity. The alternatives can be successfully operated while adhering to regulations regarding solid waste.

Alternative 9. The No Project Alternative would not change the demand on the landfills' capacity to accommodate solid waste.

	Potentially Significant Impact	Less than significant with Mitigation Incorporation	Less than Significant	No Impact
XVII. MANDATORY FINDINGS OF SIGNIFICANCE				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✓			
b. Does the project have impacts which are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	✓			
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	✓			

Analysis

- a. As discussed in Sections I through XVI above, the IRWP would have potentially significant impacts on environmental quality. These would include potentially significant impacts on fish or wildlife habitat, fish or wildlife populations, plant or animal communities and important examples of California history or prehistory. (For additional discussion of these impacts, please see Sections IV and V of this report.)
- b. As discussed in Sections I through XVI of this report, the IRWP would have potentially significant impacts, as well as less than significant impacts, related to the construction of new facilities (pipelines, reservoirs for storage of recycled water, pump stations and expansion of treatment facilities at the Laguna Plant). The Project Description section of this Initial Study identifies several other major projects in the IRWP area that would involve construction of similar kinds of facilities during the time that the IRWP would be implemented. Because these projects have similar kinds of facilities as the IRWP, it would be expected that the other projects would also have similar kinds of impacts within the IRWP project area, and that when combined with the potential impacts identified for the IRWP, the cumulative effects could be considerable.

- c. As discussed in Sections I through XV of this report, the IRWP would have potentially significant impacts on environmental quality. These would include potentially significant impacts on human beings including impacts related to air quality, seismic safety, noise, and public services. (For additional discussion of these impacts please see Sections III, VI, VII and IX of this report.)

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are impose upon the proposed project, nothing is required.

Signature

Date

Printed Name

For

PREPARERS AND REFERENCES

PREPARERS

Parsons

Pat Collins, Project Manager
Bob Duchek, Technical Director
Dennis Brown, Ph.D.
Kelly Heidecker
Fred Kintzer, R.G., C.E.G.
Barbara Stagg
Teresa Zwillinger

Merritt-Smith Consulting

Dave Smith, Ph.D.
Marcie Commins, Ph.D.

LSA Associates

Roger Harris

Illingworth & Rodkin

Rich Rodkin, P.E.
James Reyff

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