



**SONOMA VALLEY COUNTY SANITATION DISTRICT**

*In association with*

*Sonoma County Water Agency,  
Valley of the Moon Water District,  
and City of Sonoma*

SONOMA VALLEY

**recycled water  
financial/economic  
analysis**

AUGUST 2009

  
Engineers...Working Wonders With Water™

**Sonoma Valley County Sanitation District  
in association with  
Sonoma County Water Agency,  
Valley of the Moon Water District, and City of Sonoma**

**SONOMA VALLEY RECYCLED WATER FINANCIAL ANALYSIS**

**FINAL**

**August 2009**



August 26, 2009



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# SONOMA VALLEY RECYCLED WATER FINANCIAL ANALYSIS

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## EXECUTIVE SUMMARY

This report presents the development and findings of the Sonoma Valley Recycled Water Project Financial/Economic Analysis (Financial Analysis). The Financial Analysis was conducted to define and quantify the financial and economic benefits and costs of the Sonoma Valley Recycled Water Project (Recycled Water Project). It is the goal of the Financial Analysis to compare the construction of the Recycled Water Project to that of not increasing current recycled water usage.

### ES.1 INTRODUCTION

The Sonoma Valley County Sanitation District (SVCSD) evaluated the economic feasibility of the Recycled Water Project in collaboration with the Sonoma County Water Agency (SCWA), City of Sonoma (City), and Valley of the Moon Water District (VOMWD). The SVCSD is the sole publicly owned wastewater treatment facility within Sonoma Valley. The SVCSD is operated by the SCWA.

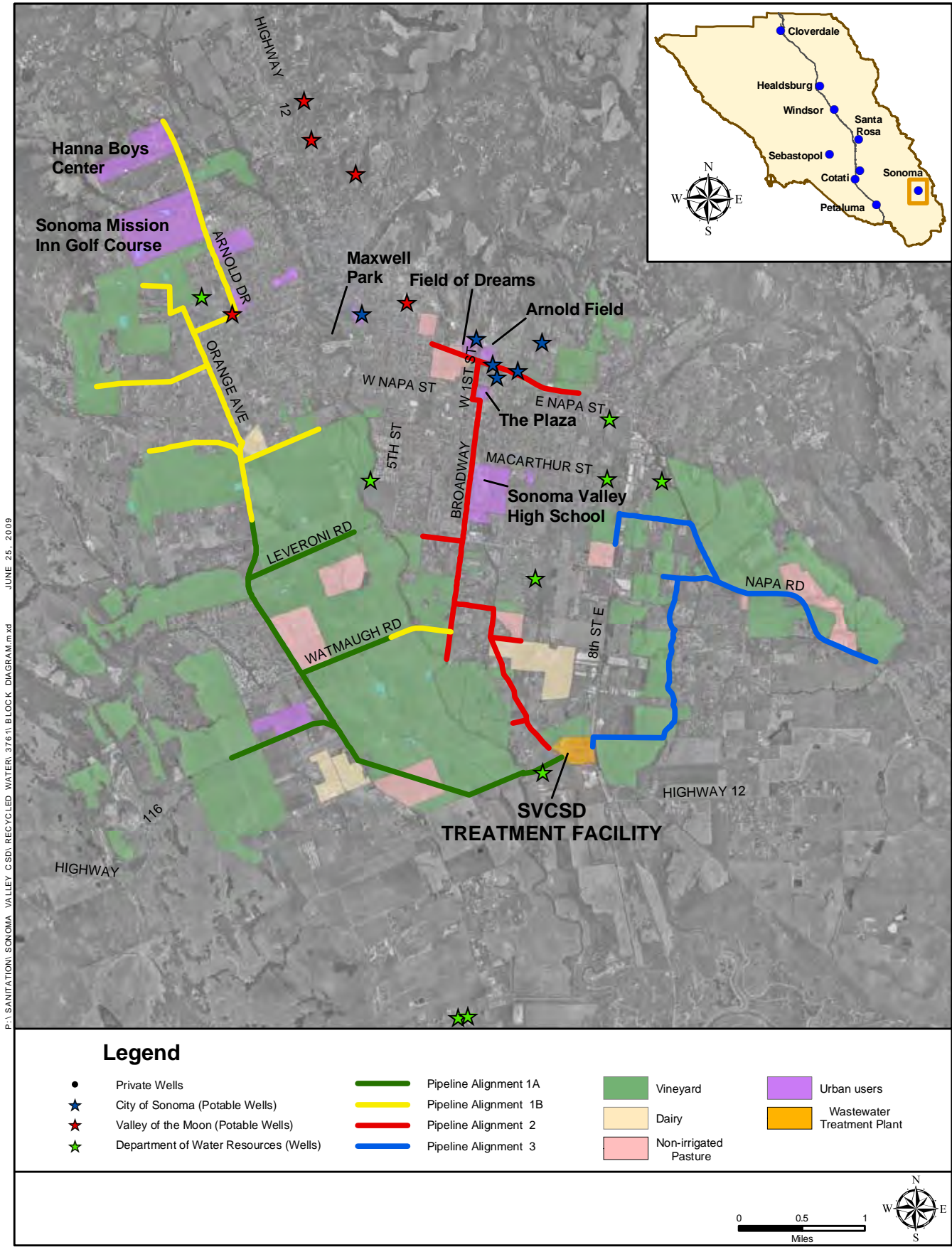
The need for the Recycled Water Project and the Financial Analysis arose as a result of several preceding studies and reports developed by the SVCSD, SCWA and other agencies. The SVCSD developed the Sonoma Valley Recycled Water Feasibility Study (Feasibility Study) in December 2005 to evaluate the expansion of the existing recycled water system in the Sonoma Valley to augment existing water supplies. The Environmental Impact Report for the Feasibility Study was completed in December 2006.

The SCWA conducted a study of the groundwater basin underlying the Sonoma Valley in December 2007 and published the Sonoma Valley Groundwater Management Plan (Groundwater Plan). The Groundwater Plan recommended implementation of the Recycled Water Project along with other water supply enhancement projects.

This Financial Analysis is a follow up study to the Feasibility Study and Groundwater Plan. This Financial Analysis evaluates the benefits and costs of the recommended Recycled Water Project by considering the environmental, social, and financial impacts of implementing the project.

### ES.2 ALIGNMENT RANKING

The Feasibility Study evaluated options for expanding recycled water use in Sonoma Valley. The study identified and recommended construction of four recycled water alignments in Sonoma Valley. These alignments are presented in Figure ES.1. Table ES.1 presents a summary of the alignments. The proposed Recycled Water Project consists of construction of all four alignments.



**Figure ES.1**  
**PROPOSED PIPELINE ALIGNMENTS**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT

Source:  
 Sonoma Valley Recycled Water Feasibility Study  
 (SCWA, 2005)  
 son709f7-7965.ai

<b>Table ES.1 Recycled Water Alignment Summary            Sonoma Valley Recycled Water Project Financial/Economic Analysis            Sonoma Valley County Sanitation District</b>				
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
<b>Financial Measures</b>				
Total Cost <sup>(1)</sup>	\$11.2 million	\$37.5 million	\$9.0 million	\$7.2 million
Annual cost				
Capital (ac-ft/yr)	\$680	\$3,310	\$1,360	\$1,030
O&M (ac-ft/yr)	\$150	\$210	\$220	\$230
<b>Usage Measures</b>				
Pipe Length	6.2 miles	6.0 miles <sup>(2)</sup>	5.7 miles	5.1 miles
Recycled Water Demand (ac-ft/yr)	1,094	751	438	464
Current Potable Water Source Replaced by Recycled Water	Groundwater/ Creek Water	Groundwater/ VOMWD Water	Groundwater/City Water/Creek Water	Groundwater
Percentage of GW Replaced	77%	92%	73%	100%
Percentage of City/VOMWD Water Replaced	0%	8% (VOMWD potable water)	20% (City potable water)	0%
Percentage of Creek Water Replaced	23%	0%	7%	0%
Customer Class Served	Agricultural users only	Agricultural and some urban users	Agricultural and some urban users	All agricultural
<b>Notes:</b>				
(1) Includes pump stations, storage, pipeline and O&M (present value factor of 10.39). Costs are in February 2008 dollars (ENRCCI 9,155). Detailed costs for each alignment are presented in Appendix A.				
(2) Alignment 1B requires construction of Alignment 1A.				

For the purposes of the financial and economic analysis, the alignments were ranked to determine the alignment construction order. Construction order was needed to quantify the value of benefits and costs of implementing the Recycled Water Project. The order does not necessarily represent the recommended order of project construction, but reflects the conditions at the time.

The alignment ranking was conducted with the use of screening criteria and input from SVCS, SCWA, the City, and VOMWD. The criteria served as a tool to prioritize and assign comparative 'values' to the Recycled Water Project.

Over 30 possible screening criteria were considered with 11 selected as the shortlist of criteria to be used. The criteria were selected based on known information, known differentiators, important factors (even if equal for all alignments), and internal stakeholder acceptance. The alignments were then assigned a score from one to four, with one being the most favorable and four being the least favorable, for each criterion.

A Triple Bottom Line (TBL) approach was used for the screening, where environmental, social, and financial criteria are evaluated. The potential screening criteria were categorized under several key groups. The groups were:

- Technical/Functional Criteria - Reliability, Implementation, Flexibility.
- Financial Criteria - Costs, Rate impacts.
- Social Criteria - Neighborhood impacts, Community benefits.
- Environmental Criteria - Local environmental impacts, Ecological sustainability.

The alignment ranking order, based on totaling the criteria values assigned, is ranked from most to least preferred. This ranking represents the understood project conditions (i.e. political, social, environmental, etc.) at the time the ranking was conducted. The alignment rankings were solely used for analysis purposes and does not represent recommended construction order.

### **ES.3 FINANCIAL AND ECONOMIC ANALYSIS**

Although recycled water is often more expensive than some traditional options for providing water, recycled water provides some benefits that other sources do not. Therefore, a clear distinction must be made between financial and economic analysis.

- A financial analysis of water reuse is based solely on cash flows of expenses and revenues in and out of the District.
- An economic analysis provides a benefit/cost perspective by considering a broader view of the value of the recycled water.

Therefore, the financial analysis of a recycled water project focuses solely on the monetary benefits and costs of the recycled water system. The financial analysis looks at the internal monetary bottom line and project's projected cash flows of the relevant agencies, and disregards any impact or values from environmental and social benefits/costs. The economic analysis, explores the potential types of environmental, social, financial, and other benefits that may accrue from implementation of the Recycled Water Project.

In order to compare the financial and economic benefits and costs, the 'with project' alternative, i.e. construction of the four alignments, was compared to the 'without project' baseline.

### **ES.3.1 Without Project Baseline**

The Without Project Baseline consists of implications to both the water supply system as well as the wastewater treatment/effluent discharge systems.

In the Without Project Baseline, existing water users would continue to use their current water sources (groundwater pumped from private and public wells, water supplied by SCWA [mix of imported water and groundwater pumped by SCWA], and local creek water). Without the Recycled Water Project, existing service area demands would continue to be supplied from the water sources outlined above<sup>1</sup> and treated recycled water would continue to be discharged to San Pablo Bay.

Without any expansion of the recycled water systems, it is assumed that existing recycled water demand would remain near the current recycled water demand of approximately 1,200 acre-feet per year. Therefore, as flows at SVCSD increase in the future, additional storage, and effluent discharge capacity would need to be constructed to comply with dry weather discharge regulations.

### **ES.3.2 Recycled Water Project**

The proposed recycled water project consists of construction of the four alignments over the next decade for delivery of approximately 2,800 acre-feet (ac-ft) per year of recycled water to urban landscape irrigation, vineyards, and pasturelands. The current water supply that would be offset by the recycled water consists of purchased water, groundwater wells, and local creek water. The offset of potable supplies could potentially be made available for alternate beneficial use.

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<sup>1</sup> As the Sonoma Valley grows, water demands will increase, and without the Recycled Water Project, additional/new water sources would need to be developed in the future. The Sonoma Valley Groundwater Management Plan (SCWA, 2007) identifies additional supply options including increased imported water from the Russian River, stormwater recharge, and increased conservation as potential alternate water supply options. The method in which these supply options will be used to supplement the water demands of the users identified in the Recycled Water Project has not yet been determined. Therefore, the costs associated with obtaining these additional water supplies are not considered in the Financial Analysis.

With the addition of the recycled water project, an additional 2,800 acre-feet per year (ac-ft/yr) of recycled water would be reused by 2020. Based on the projected flows at SVCSD, no additional storage or effluent conveyance would therefore be required to comply with dry weather discharge regulations.

### ES.3.3 Financial Analysis

The financial analysis cash flows were projected using capital and O&M costs from the Feasibility Study. The costs from the Feasibility Study were updated to the April 2008 San Francisco ENRCCI of 9,155. Table ES.1 presents the updated capital, O&M, and annualized costs for each alignment.

The cost associated with construction and operation of the recycled water alignments through 2040 were modeled using a cash flow model. These total costs were allocated to each of the project stakeholders using recycled water demand within stakeholder service area for the with- and without project alternatives.

The “with project” cash flow model consists of the costs associated with implementing the four recycled water alignments. Table ES.2 presents a cash flow summary of implementing the Recycled Water Project in escalated dollars.

<b>Table ES.2 With Project Cost Summary (2008 to 2040)</b> <b>Sonoma Valley Recycled Water Project Financial/Economic Analysis</b> <b>Sonoma Valley County Sanitation District</b>				
	<b>Capital Cost <sup>(1) (2)</sup></b> <b>(Future Dollars)</b>	<b>Percent of</b> <b>Total</b>	<b>O&amp;M Cost <sup>(1) (3)</sup></b> <b>(Future Dollars)</b>	<b>Percent of</b> <b>Total</b>
SVCSD/SCWA	\$76,278,720	93.1%	\$23,408,161	80.5%
Other				
City of Sonoma	\$1,588,200	1.9%	\$2,960,959	10.2%
VOMWD	\$4,024,080	4.9%	\$2,696,800	9.3%
<b>Total</b>	<b>\$81,891,000</b>	<b>100%</b>	<b>\$29,065,920</b>	<b>100%</b>
<u>Notes:</u>				
(1) All costs in future dollars in the year of expenditures.				
(2) Capital costs inflated at 4 percent annually.				
(3) O&M costs inflated at 3 percent annually.				

Without implementing the recycled water project, it is understood that stakeholders would continue to supply potable water to its customers for irrigation use. In addition, SVCSD would be required to construct and operate additional storage and conveyance infrastructure to meet seasonal effluent guidelines. The cost associated with continuing to produce and purchase potable water, as well as the cost of constructing and operating additional storage is summarized in Table ES.3.

<b>Table ES.3 With-Out Project Baseline Cost Summary Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
	<b>Capital Cost <sup>(1) (2)</sup> (Future Dollars)</b>	<b>Percent of Total</b>	<b>O&amp;M Cost <sup>(1) (3)</sup> (Future Dollars)</b>	<b>Percent of Total</b>
SCWA <sup>(4)</sup>	\$0	0.0%	\$1,484,234	23.3%
SVCSD <sup>(5)</sup>	\$8,112,979	100.0%	\$1,833,479	28.7%
City of Sonoma <sup>(4)</sup>	\$0	0.0%	\$1,872,565	29.4%
VOMWD <sup>(4)</sup>	\$0	0.0%	\$1,187,887	18.6%
<b>Total</b>	<b>\$8,112,979</b>	<b>100.0%</b>	<b>\$6,378,166</b>	<b>100.0%</b>
<b>Notes:</b>				
(1) All costs in future dollars for the year of expenditure.				
(2) Capital costs inflated at 4 percent annually.				
(3) O&M costs inflated at 3 percent annually.				
(4) Cost of increased water supply to the Sonoma Valley that would provide water supply reliability in the absence of the Recycled Water Project is not included as these costs have not yet been allocated to the various stakeholders.				
(5) Capital and O&M costs represent those associated with increased storage and conveyance required to meet seasonal discharge limits.				

### **ES.3.4 Economic Analysis**

The economic analysis, explores the potential types of environmental, social, financial, and other benefits that may accrue from implementation of the Recycled Water Project. These TBL benefits are then compared to the without project baseline. Some of the TBL benefits are easily quantified and monetized while others are qualitative. The benefits and costs for the project were identified and agreed upon through a workshop process with SVCSD, SCWA, the City, and VOMWD. During the workshop it was generally confirmed whether benefits could be monetized based on existing information or would best be qualitatively assessed. Qualitatively assessed benefits and costs were rated on a five-point scale, with + or ++ representing increasing benefits, “U” indicating that the net effect on the analysis result is uncertain, and – or – – indicating increasingly higher costs.

Table ES.4 and Table ES.5 summarize the monetized and qualitative benefits and costs, respectively.



<b>Table ES.4 Monetized Benefit Cost Analysis Overview (in Millions of 2008 dollars) Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Benefit or Cost Category</b>	<b>Present Value<sup>(1)</sup> (\$ Millions)<sup>(2)</sup></b>	<b>Stakeholder Accruing Cost or Benefit</b>
<b>Costs – Total</b>		
Capital and O&M costs	\$68.14	To be determined
<b>Monetized Benefits</b>		
<u>Financial Benefits</u>		
Avoided wastewater storage costs	5.37	SVCS
Avoided effluent conveyance costs	1.77	SVCS
Avoided costs SCWA Russian River and groundwater <sup>(3)</sup>	1.04	SCWA
Avoided costs VOMWD groundwater <sup>(4)</sup>	0.01	VOMWD
Avoided costs for City of Sonoma groundwater <sup>(5)</sup>	0.02	City
Salvage value for remaining recycled water assets	2.14	SCWA, VOMWD, City, SVCS
Revenue from recycled water sales to new agricultural users <sup>(6)</sup>	1.24	SCWA
<u>Social Benefits</u>		
Increased water supply reliability SCWA <sup>(7)</sup>	6.69	SCWA
Increased water supply reliability VOMWD <sup>(8)</sup>	0.23	VOMWD
Increased water supply reliability for City of Sonoma <sup>(9)</sup>	0.24	City of Sonoma
Avoided fertilizer costs for municipal irrigation users	0.35	Municipal irrigation users
Avoided fertilizer costs for agricultural users	1.64	Agricultural users
Avoided pumping costs for agricultural users	0.05	Agricultural users
<u>Environmental Benefits</u>		
Enhanced riparian habitat for salmon and steelhead	41.35	Public
<b>Total Monetizable Benefits</b>	<b>\$62.1</b>	
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>	<b>\$(6.0)</b>	
<u>Notes:</u>		
(1) Assume 2.5 percent real discount rate and 30-year project life for each alignment.		
(2) All values in millions of dollars.		
(3) Based on imported Russian River water offset that reaches 133 AF per year by 2018 and imported groundwater of 7 AF per year by 2018.		
(4) Based on assumption that 5% of the water delivered by VOMWD is groundwater, and the remaining 95% is supplied wholesale by SCWA, 3 AF per year of groundwater deliveries is avoided.		
(5) Based on assumption that 5% of the water delivered the City is groundwater, and the remaining 95% is supplied wholesale by SCWA, 4.85 AF per year of groundwater deliveries is avoided.		
(6) Assuming \$25 per AF initial price for recycled water delivered to agricultural users multiplied by recycled water deliveries that reach 2,246 AF per year by 2020.		
(7) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 166,000 households by 2020 in SCWA service area that are not in the City or VOMWD service area, and 178,631 households by 2040.		
(8) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 9,707 households by 2020 in VOMWD service area, and 9,987 householders by 2040.		
(9) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 4,996 households by 2020 in City's service area, and 5,092 households by 2040.		

**Table ES.5 Qualitative Benefit Cost Analysis Overview  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

Qualitative Benefits and Costs	Relative Magnitude <sup>(1)</sup>	
<u>Financial Benefits</u>		
Avoided increased groundwater pumping costs	+	SCWA, VOMWD, City, Agricultural users
Source water protection for water providers	+	SCWA, VOMWD, City
<u>Environmental Benefits</u>		
Enhanced downstream water bodies from increased streamflow in Sonoma Creek	+	Public
Benefit to riparian and aquatic species from increased streamflow	+	Public
Reduced seawater intrusion	+	Public
Increased in-stream and near-stream recreation	+	Public
Water projects leveraging other community projects	++	SCWA, VOMWD, City, SVCSD
<u>Social Benefits</u>		
Local control over water resources	++	SCWA, VOMWD, City
Increased demonstration of “green ethic”	++	SCWA, VOMWD, City, SVCSD
Aesthetic values, including fountains with recycled water	++	SCWA, VOMWD, City
Increased water use reliability for agricultural users (quantity and quality)	++	Agricultural users
Short-term construction impacts	–	Public
Public perception of recycled water use by agricultural users	+	Agricultural users
Public perception of recycled water use by municipal users	– –	Municipal users
<u>Notes:</u>		
(1) Magnitude of likely effect on net benefits: ++ = Likely to increase net benefits significantly. + = Likely to increase net benefits relative to quantified estimates. U = Uncertain effect on net benefits relative to quantified estimates. – = Likely to decrease net benefits. – – = Likely to decrease benefits significantly.		

## **ES.4 PROJECT FUNDING**

Implementation of recycled water projects requires large up-front capital. Rarely does a city or agency have sufficient revenue to fund large capital improvements directly from user fees, which is the case with pay-as-you-go financing. Therefore, it is common practice to use financing instruments to meet necessary funding requirements.

The main financing instruments available to SVCSD, SCWA, the City, and VOMWD for funding the capital costs include pay-as-you-go financing, debt financing, grants, and loans, and market based programs.

In addition to financing the Recycled Water Project capital costs, SVCSD and internal stakeholders would need to finance operations and maintenance (O&M) cost of the project. SVCSD and internal stakeholders can recover O&M costs in several methods. These include cost recovery through a combination of wastewater rates, water rates, and or recycled water rates.

## **ES.5 PROJECT IMPLEMENTATION STRATEGY**

Execution of a multi-phase project, such as the proposed phases of the Recycled Water Project, requires coordination between multiple internal and external stakeholders, which requires an implementation strategy to ensure project success.

The tentative alignment implementation schedule includes a technical and institutional track. The technical track focuses on the planning, design and construction of the alignments; while the institutional track focuses mainly on public outreach and obtaining stakeholder support, funding and permitting. The two tracks were developed in recognition of the importance of planning for, and synchronization of the development of the project design details with the development of joint powers and customer agreements, development of permitting documentation, funding acquisition, and stakeholder outreach, to project success.

### **ES.5.1 Technical Track**

The technical track consists of pre-planning, planning, design, and construction. The pre-planning phase of the Recycled Water Project is projected to be completed by the end of 2009. This phase of the project includes alignment prioritization, funding analysis, economic analysis, and developing financial governance principles. For each alignment, the planning phase has been assumed to extend over approximately eight months, the design phase over twelve months, and the bid/award phase over four months. The bid/award phase depends upon market conditions, the number of bids, and the quality of bids. The length of time for construction of the pipelines varies due to pipeline length and terrain.

## **ES.5.2 Institution Track**

The institutional track focuses primarily on obtaining available funding and necessary permitting documents. The institutional track also focuses on the dissemination information to the agricultural and urban customers as well as the public.

## **ES.6 CONCLUSIONS AND NEXT STEPS**

Based on the results of the financial and economic analysis of the Recycled Water Project, it is recommended that the SVCSD plan, design, and construct the four recycled water alignments. The order of alignment implementation should be determined based on the conditions at the time of project implementation.

During the Financial Analysis, Alignments 1A and 2 were identified as the projects to be implemented first while Alignments 1B and 3 were identified as projects to be constructed later. Taking into account ease of implementation and project cost and benefit, implementation of Alignments 1A and 2 or a combination thereof would provide the largest upfront benefit for the investment made.

Based on the assumption that Alignments 1A and 2, or a combination thereof, would be planned, designed, and constructed starting in 2010, the following next steps are recommended:

1. Apply for grant funding from the state of California and/or Federal sources. An important requirement for receiving grant funding from these sources is that project benefits accrue not just to the local water agency, but also to a range of stakeholders including the general public. This analysis shows that public benefits from this project are large and provide the necessary documentation to apply for the grants.
2. Consider allocating project costs, excluding those that would be targeted to be covered by grant funding, according to the share of benefits to project stakeholders.
3. Start formulation of intergovernmental agreements between SVCSD, SCWA, the City, and VOMWD.
4. Conduct follow-up meetings with the Basin Advisory Panel (BAP) and the growers associations and provide an update of the results of this analysis. Contact the potential customers that provided letters of support for the Recycled Water Project and begin to draft agreements with the customers on Alignments 1A and 2 that are to be constructed in the near term. Contact the customers on the alignments that would be constructed in the latter years to inform them of the process and communicate the project phasing.
5. Evaluate recycled water pricing strategies and existing ordinances to determine potential policy changes in cost recovery strategies. Conduct a cost of service analysis to determine innovative, cost of service based recycled water rates that are in accordance with California state laws.

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## INTRODUCTION AND PURPOSE

The Sonoma Valley County Sanitation District (SVCS D) is evaluating the economic feasibility of the Sonoma Valley Recycled Water Project (Recycled Water Project) in collaboration with the Sonoma County Water Agency (SCWA), City of Sonoma (City), and Valley of the Moon Water District (VOMWD). As water demand increases, the SCWA, City, and VOMWD are striving to make efficient use of the limited supply of fresh water available. Together with local water purveyors, SVCS D is working to increase recycled water use there by reducing demands on the local water supplies.

### 1.1 INTRODUCTION

The need for the Recycled Water Project and the work contained herein, which is referred to as the Financial/Economic Analysis (Financial Analysis), arose as a result of several preceding studies and reports developed by the SVCS D, SCWA and other agencies and consultants.

The SVCS D developed the Sonoma Valley Recycled Water Feasibility Study (Feasibility Study) in December 2005 to evaluate the expansion of the existing recycled water system in the Sonoma Valley to augment existing water supplies. The Environmental Impact Report for the Feasibility Study was completed in December 2006. Following development of the Feasibility Study, the SCWA conducted a study of the groundwater basin underlying the Sonoma Valley, and in December of 2007 published the Sonoma Valley Groundwater Management Plan (Groundwater Plan).

This Financial Analysis is a follow up study to these two previous reports. This Financial Analysis combines and analyses the benefits and costs of the recommended Recycled Water Project from the Feasibility Study by considering the environmental, social, and financial impacts of implementing the Recycled Water Project.

#### 1.1.1 Groundwater Management Plan

The Groundwater Plan was prepared to serve as a guiding document for the SCWA, stakeholders and other interested parties, of the importance of maintaining a sustainable, high-quality groundwater resource for the users of the groundwater basin underlying the Sonoma Valley. The Groundwater Plan identified a series of actions to increase the quantity of Sonoma Valley groundwater resources over the next decade, and provided best management practice implementation strategies for the identified actions. The water management options suggested in the Groundwater Plan are:

- Stormwater recharge - diversion of wet-season floodwaters into recharge ponds and/or wetlands along Sonoma Creek beginning in 2015.

- Groundwater banking of imported winter surplus water - recharge of any surplus imported water into aquifers beginning in 2015.
- Increase recycled water use - implement the southwestern portion of Alignment 1 from the Feasibility Study in 2010.
- Increase conservation and demand reduction - reduce agricultural, domestic and urban demands through conservation.

The future water supply and demand projections indicate future demands on the Sonoma Valley Groundwater resources exceed existing supply. The Groundwater Plan expects that without management actions, the losses from overall groundwater storage will likely result in downward trending groundwater levels, and associated potential adverse impacts including increased extraction costs, possible well deepening or replacement costs, possible groundwater quality degradation including salinity intrusion, potential land subsidence, decreases in streamflow, and environmental damage.

### **1.1.2 Sonoma Valley Recycled Water Feasibility Study**

The Feasibility Study was conducted by the SVCSD on behalf of the SCWA, the VOMWD, and the City. The Feasibility Study was developed in consultation with the Sonoma Ecology Center and State Water Resources Control Board (SWRCB).

The Feasibility Study evaluated options for expanding recycled water use in the Sonoma Valley. The expanded use of recycled water in the Sonoma Valley is expected to result in significant water supply and environmental benefits.

## **1.2 PURPOSE OF STUDY (FINANCIAL ANALYSIS)**

The purpose of this study is to evaluate the financial and economic benefits and costs of the Recycled Water Project from the Feasibility Study. It is the goal of the Financial Analysis to compare the selected Feasibility Study alternative to that of not increasing current recycled water usage levels. The Recycled Water Project developed four recycled water alignments, each with different benefits and costs. These alignments are further discussed in Chapter 3.

For financial and economic evaluation, the four alignments were ranked using screening criteria to determine alignment phasing. Through this process, an implementation schedule was developed for the Recycled Water Project, including necessary planning, design and construction phasing, as well as stakeholder outreach, funding acquisition, and permitting requirements. The implementation schedule was developed for analysis purposes only and does not represent the recommended order of construction.

The alignments were then analyzed to determine the monetary costs on an annual basis, and non-monetary benefits and costs such as environmental and social impacts. The Financial Analysis allocated the benefits and costs of implementing the Recycled Water

Project to each internal stakeholder and identified potential funding sources, and provided examples of Joint Powers and Inter-Agency agreements that can be used to help facilitate project implementation.

### **1.3 PROJECT DRIVERS**

There are several drivers for developing the Financial Analysis of the recommended alternative from the Feasibility Study and comparing it to the alternative of not constructing the Recycled Water Project. In order to sustainably manage the Sonoma Valley's water supplies and support the areas \$15 billion wine industry, the Community will need to use the existing resources more efficiently and identify new sources of water. Through the 2005 Urban Water Management Plan, the 2005 Sonoma Valley Recycled Water Feasibility Study, and the Groundwater Management Plan, the project stakeholders have identified methods to meet these future demands. The methods ranged from increasing recycled water use, increase in conservation, import of Russian River water, and groundwater recharge.

The SVCSD therefore needs to support the SCWA, the VOMWD, and the City by ensuring that its recycled water helps meet the varying demands in the Valley. In order to ensure that these needs are met, the SVCSD, SCWA, VOMWD, and the City have all initiated conservation programs, promoting resource efficiency. However, the City and VOMWD still face the challenge of declining groundwater supplies. The groundwater aquifers underlying the Sonoma Valley have been identified as insufficient to meet future water supply needs. It is expected that continued increase in groundwater use will result in increased extraction costs, salinity intrusion, land subsidence, decreases in streamflow, environmental damage, and economic damage. In order to minimize the groundwater impacts, these internal stakeholders will need to implement identified groundwater offset mechanisms, such as increased irrigation with SVCSD produced recycled water.

In addition to groundwater, the area's vineyards use local creek water from Sonoma Creek and other surface water bodies for irrigation. The use of this surface water results in reduced habitat for salmon and steelhead. By providing alternate irrigation supplies such as recycled water, the SVCSD has an opportunity to help offset the use of the creek water and enhance species habitat; these environmental benefits are known to generate considerable revenue through tourism and other recreational activities for the entire region.

In order to implement the selected alternative from the Feasibility Study, an economic evaluation is required to determine the true benefits and costs of the project when compared to increasing surface water rights and building infrastructure to deliver the water. This will allow the SVCSD, SCWA, City, and VOMWD (internal stakeholders) to assess the most effective method of implementing the Recycled Water Project and will clearly define both monetary and non-monetary benefits and costs of the project, facilitating cost sharing with the stakeholders, and maximizing the opportunities to acquire federal and state funding.



## 1.4 REFERENCES

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## 1.5 REPORT ORGANIZATION

The Financial Analysis has been organized into seven chapters, with appendices, as follows:

- Executive Summary: Provides a condensed discussion of the purpose of the financial and economic analysis and its results.
- Chapter 1 - Introduction and Purpose: Presents an introduction to the Financial Analysis with a brief discussion of the previous studies that led to the Financial Analysis, purpose of project, project drivers, references and report organization.
- Chapter 2 - Key Stakeholders and Existing System: Presents a brief description of the project location and discussion of the growing demands of the key internal stakeholders, the relationship amongst them, as well as the existing recycled water system.
- Chapter 3 - Recycled Water Alignments Screening and Ranking: Provides a discussion of the alignments developed in the Feasibility Study, screening criteria used for the ranking, and the results of the alignment screening.
- Chapter 4 - Financial Analysis: Presents the basis of costs for the alignments, the capital costs, the operation and maintenance (O&M) costs, costs in dollars per acre-foot, and the annualized costs for the complete project. This chapter also provides the results of the 30-year financial projection and discusses the potential revenue generated using assumed recycled water rates.
- Chapter 5 - Economic Analysis: Provides an overview of economic analysis, the triple bottom line approach, and the results of the economic analysis on the financial, environmental, and social benefits and costs accrued by each stakeholder.
- Chapter 6 - Funding: Provides a discussion of the project funding mechanisms available for the Recycled Water Project with an detailed discussion of the applicable local, state and federal grant and loan programs.
- Chapter 7 - Implementation Strategy: Provides a discussion of the need for an implementation strategy, the implementation schedule on a technical and institution track, and the financial governance mechanisms necessary for implementation.
- Chapter 8 - Conclusions: Provides a brief conclusion of the Financial Analysis and summarizes key findings.

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## KEY STAKEHOLDERS AND EXISTING SYSTEM

The Sonoma Valley is located in the heart of Northern California's wine country and is surrounded by several communities that depend largely on agriculture for its economic viability. One reason for the success of Sonoma Valley's agricultural industry has been the availability of irrigation water. However, growing water demands have stressed the available surface and groundwater sources, prompting a diverse group of stakeholders in the area to collectively evaluate and implement voluntary management programs to ensure a sustainable supply. This chapter provides a discussion of the internal stakeholders and their role in the Sonoma Valley Recycled Water Project (Recycled Water Project), as well as a brief description of the existing recycled water system.

### 2.1 PROJECT LOCATION

The Sonoma Valley is located to the north of San Francisco Bay, about 17 miles southeast of the City of Santa Rosa, as shown in Figure 2.1. The Sonoma Valley is bordered on the west by the Sonoma Mountains, on the east by the Mayacamas Mountains, and to the south by San Pablo Bay. The topographic divide near the unincorporated community of Kenwood is considered to delineate the northern boundary of Sonoma Valley. Sonoma Valley encompasses an area of approximately 160 square miles. Sonoma Creek is the main surface water tributary.

The Sonoma Valley Recycled Water Feasibility Study (Feasibility Study) boundaries were Highway 121 to the south, Arrowhead Mountains to the east, the Petaluma Mountains to the west, and the unincorporated community of Kenwood to the north. Figure 2.2 presents the Feasibility Study area. The Sonoma Valley Groundwater Management Plan (Groundwater Plan) area encompassed the Sonoma Creek Watershed and included the Sonoma Valley and the southern portion of the Kenwood Valley. Figure 2.3 presents the Groundwater Plan study area.

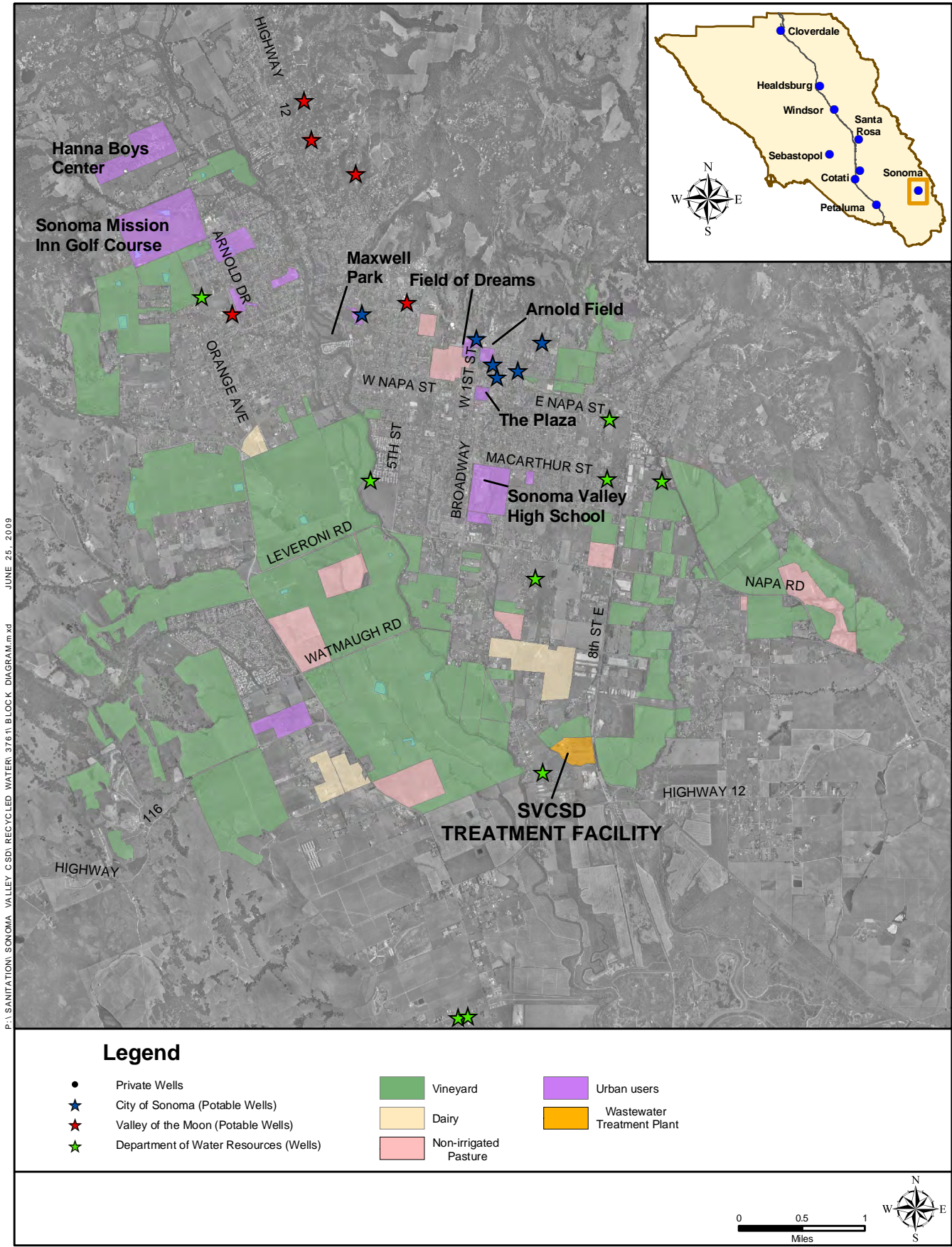
### 2.2 PROJECT STAKEHOLDERS

The Recycled Water Project includes both internal and external stakeholders. The internal stakeholders include:

- Sonoma Valley County Sanitation District (SVCS).
- Sonoma County Water Agency (SCWA).
- City of Sonoma (City).
- Valley of the Moon Water District (VOMWD).



**Figure 2.1**  
**LOCATION OF SONOMA VALLEY**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT



**Figure 2.2**  
**SONOMA VALLEY RECYCLED WATER FEASIBILITY STUDY AREA**  
**SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS**  
**SONOMA VALLEY COUNTY SANITATION DISTRICT**

Source:  
 Sonoma Valley Recycled  
 Water Feasibility Study  
 (SCWA, 2005)



Source:  
Groundwater Management Plan  
(SCWA, 2007)

**Figure 2.3**  
**GROUNDWATER MANAGEMENT PLAN STUDY AREA**  
**SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS**  
**SONOMA VALLEY COUNTY SANITATION DISTRICT**

The external stakeholders include:

- Agricultural and Urban Customers.
- Basin Advisory Panel (BAP).
- Home Owners Associations (HOAs).
- Growers Associations (Sonoma Valley Growers Association/North Bay Agricultural Land Users).
- Future Developers.

### 2.2.1 Sonoma Valley County Sanitation District

Wastewater treatment is provided to the City and VOMWD by the SVCSD. The SVCSD is managed and operated by the SCWA; however, ownership of its assets is retained by SVCSD. The SVCSD service area extends from the unincorporated communities of Glen Ellen in the north to Schellville in the South.

The wastewater collection system consists of approximately 188 miles of pipeline and three lift stations. The collection system conveys wastewater to SVCSD's wastewater treatment plant (WWTP) located in the southern portion of the Sonoma Valley.

As currently operated, effluent from the WWTP is discharged to the waters of the United States, from November through May, and is used for local agricultural operations and wetlands enhancement during the remainder of the year. The SVCSD permitted average dry weather flow is 3 million gallons per day (mgd) during the months of June through October.

The SVCSD is a Title 22 unrestricted use tertiary facility as of December 2007. Currently, the WWTP disinfects approximately 2.8 mgd of average dry weather flow (ADWF). Average dry and peak wet weather capacities of the plant are 4.4 and 16.0 mgd respectively.

Current wet weather and dry weather flows are summarized in Table 2.1.

<b>Table 2.1 Wet and Dry Weather Flows at SVCSD Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>						
<b>Parameter</b>	<b>Dry Season Flow (mgd)</b>	<b>Seasonal Average (mgd)</b>	<b>Maximum Month (mgd)</b>	<b>Maximum Week (mgd)</b>	<b>Maximum Day (mgd)</b>	<b>Peak Flow (mgd)</b>
Wet Season Influent Flow	–	4.45	8.66	12.05	16.97	20.17
Dry Season Influent Flow	2.85	2.95	3.44	3.72	4.03	7.85
<b>Note:</b>						
(1) Source: Technical Memorandum: Dry Weather Flow Capacity Analysis (HDR, March 2004).						



## 2.2.2 Sonoma County Water Agency

The SCWA is a special district providing wholesale potable water to several cities and water districts in Sonoma and Marin Counties. The 1949 State law that created SCWA gives it the authority to produce and furnish surface water and groundwater for beneficial uses, control floodwater, generate electricity, and provide recreation in connection with its facilities. Legislation in 1994 added the treatment, disposal, and reuse of wastewater to SCWA's powers and duties.

Retailers of SCWA water include:

- Water Contractors:
  - City of Cotati.
  - North Marin Water District.
  - City of Petaluma.
  - City of Rohnert Park.
  - City of Santa Rosa.
  - City of Sonoma.
  - Valley of the Moon Water District.
  - Town of Windsor.
- Other Customers:
  - California American Water Company.
  - Forestville Water District.
  - Kenwood Water Company.
  - Lawndale Mutual Water Company.
  - Penngrove Water Company.
  - Marin Municipal Water District.

The primary source of SCWA water supply is naturally filtered Russian River water that is conveyed via a transmission system to retail customers. The SCWA supplements its surface water supplies with three groundwater wells, which are located in the Santa Rosa Plain. SCWA currently has appropriate surface water rights to 75,000 acre-feet per year (ac-ft/yr) of Russian River water; however, SCWA has requested an increase in diversion/re-diversion water rights of 101,000 ac-ft/yr to meet future needs. SCWA estimates completion of this process by 2016. Table 2.2 summarizes SCWA's water supplies. Figure 2.4 illustrates the SCWA service area.

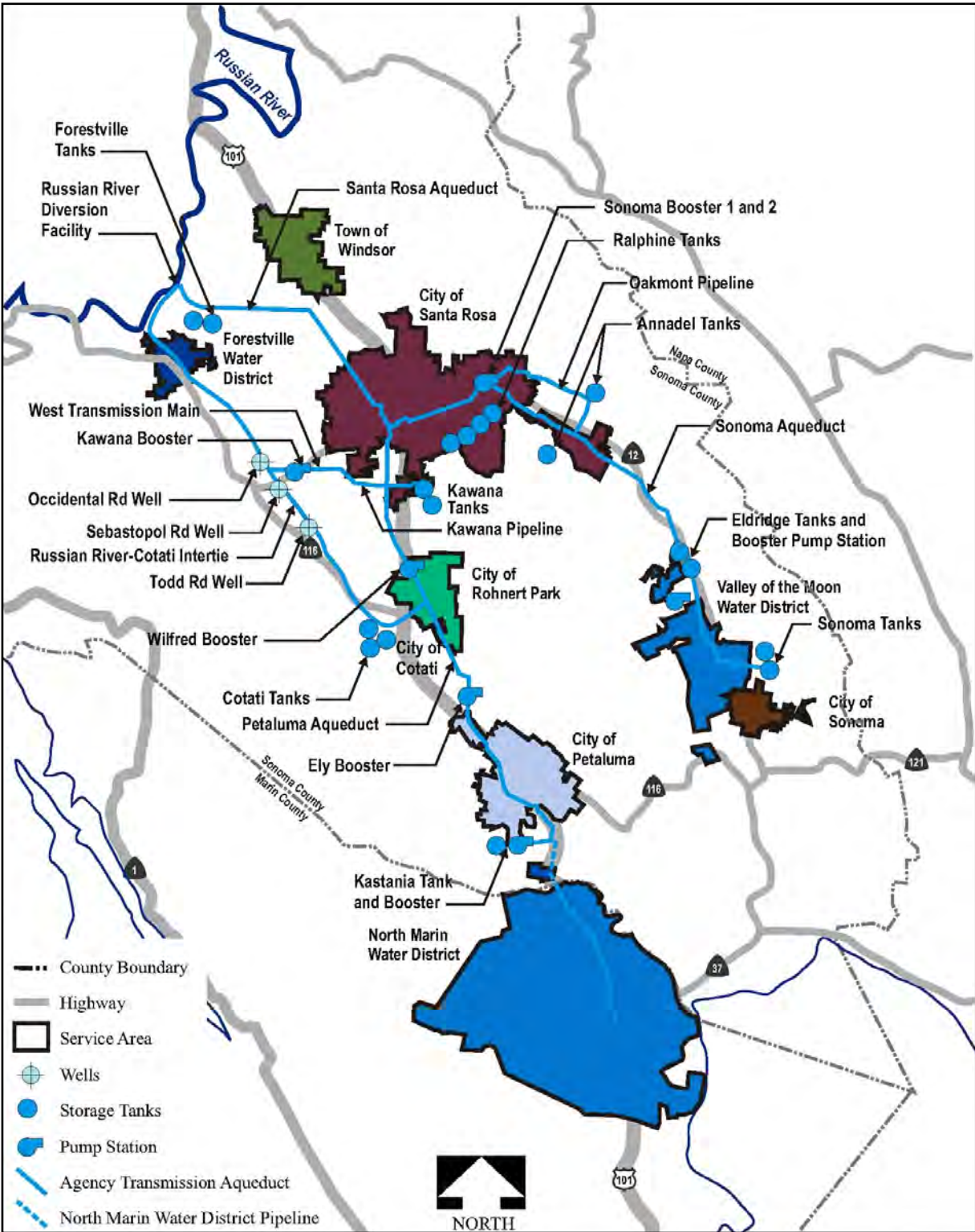
<b>Table 2.2 SCWA Water Supply Sources Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>					
<b>Water Supply Source</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Wholesale Provider	-	-	-	-	-
Agency Produced Groundwater	3,870	3,870	3,870	3,870	3,870
Agency Surface Diversions	75,000	75,000	101,000 <sup>(1)</sup>	101,000	101,000
Transfer In/Out	-	-	-	-	-
Exchanges In/Out	-	-	-	-	-
Recycled Water	-	-	-	-	-
Desalination	-	-	-	-	-
Other	-	-	-	-	-
<b>Total</b>	<b>78,870</b>	<b>78,870</b>	<b>104,870</b>	<b>104,870</b>	<b>104,870</b>
<b>Notes:</b>					
(1) SCWA expects an increase in water rights for imported Russian River water up to 101,000 ac-ft/yr by 2016.					
(2) Source: 2005 Urban Water Management Plan (Brown and Caldwell, December 2006).					

Currently, SCWA has a Restructured Agreement for Water Supply among the water contractors, defining the maximum amounts of water that it can supply with the increased water rights. This allocation to each water contractor is summarized in Table 2.3. The City and VOWMD are expected to receive 3,000 and 3,200 ac-ft/yr of SCWA water following the increase in water rights.

### 2.2.3 City of Sonoma

The City is located in the southern portion of Sonoma Valley in southeast Sonoma County. The City spans approximately 2.2 square miles and provides potable water to a population of approximately 10,700 people (Brown and Caldwell, 2008). Figure 2.4 illustrates the City of Sonoma service area.

The Restructured Agreement provides for the City to receive up to 3,000 ac-ft/yr of SCWA water through the Sonoma Aqueduct. In addition to SCWA water, the City also relies on groundwater to supplement water it receives from SCWA assuming SCWA obtains increased water rights. Most of the City's potable water is provided by SCWA. Table 2.4 summarizes water demand projections for the City of Sonoma.



Source:  
 Sonoma County Water Agency WWMP  
 (Brown and Caldwell, 2005)

**Figure 2.4**  
**SONOMA COUNTY WATER AGENCY SERVICE AREA**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT

**Table 2.3 SCWA Restructured Water Allotments  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma County Valley Sanitation District**

City/District	Restructured Agreement		Temporary Impairment MOU Peak Month <sup>(1)</sup> mgd
	Annual ac-ft/yr	Maximum Monthly mgd	
City of Cotati	1,520	3.8	1.9
North Marin Water District	14,100	19.9	15.7
City of Petaluma	13,400	21.8	17.1
City of Rohnert Park	7,500	15	5.4
City of Santa Rosa	29,100	56.6	39.1
<b>City of Sonoma</b>	<b>3,000</b>	<b>6.3</b>	<b>3.8</b>
<b>Valley of the Moon Water District</b>	<b>3,200</b>	<b>8.5</b>	<b>4.9</b>
Town of Windsor	4,725/900	7.2/1.5	1.5
Other Agency Customers	---	2.7	1.7
Forestville Water District	---	---	0.9
Marin Municipal Water District	14,300	12.8	---

**Notes:**

- (1) During “summer months” of June through September.
- (2) MOU - Memorandum of Understanding.
- (3) Source: 2005 Urban Water Management Plan (Brown and Caldwell, December 2006).

**2.2.4 Valley of the Moon Water District**

The VOMWD service area extends from the Trinity Oaks Subdivision, located north of the town of Glen Ellen, to the Temelec Subdivision, located at the southern end of the Sonoma Valley. The service area spans 9 miles and encompasses a total area of about 12 square miles. The VOMWD provides potable water to approximately 23,000 customers. Figure 2.4 illustrates the VOMWD service area.

VOMWD receives most of its water supply from the SCWA through the Sonoma Aqueduct. VOMWD also maintains a local source of groundwater. Table 2.4 summarizes demand projections for VOMWD.

**Table 2.4 City of Sonoma and Valley of the Moon Water District Water Demands  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

<b>Demands <sup>(1)</sup></b>	<b>2000</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
<b>CITY OF SONOMA <sup>(2)</sup></b>				
<i>Raw Gross Demands</i>	2,482 <sup>(3)</sup>	2,939	3,088	3,397
Conservation Savings	<sup>(3)</sup>	156	282	326
Recycled Water <sup>(4)</sup>	0	0	30	50
Local Groundwater	0	324	285	21
Water from the Sonoma County Water Agency	2,482	2,459	2,491	3,000
<b>VALLEY OF THE MOON WATER DISTRICT <sup>(5)</sup></b>				
<i>Raw Gross Demands</i>	3,459 <sup>(3)</sup>	3,953	4,196	4,322
Conservation Savings	<sup>(6)</sup>	205	409	504
Recycled Water <sup>(7)</sup>	1,500	2,500	3,000	4,005
Local Groundwater	774	436	428	83
Water from the Sonoma County Water Agency	2,685	3,312	3,360	3,729
Total Local Groundwater Supplies	774	760	713	104

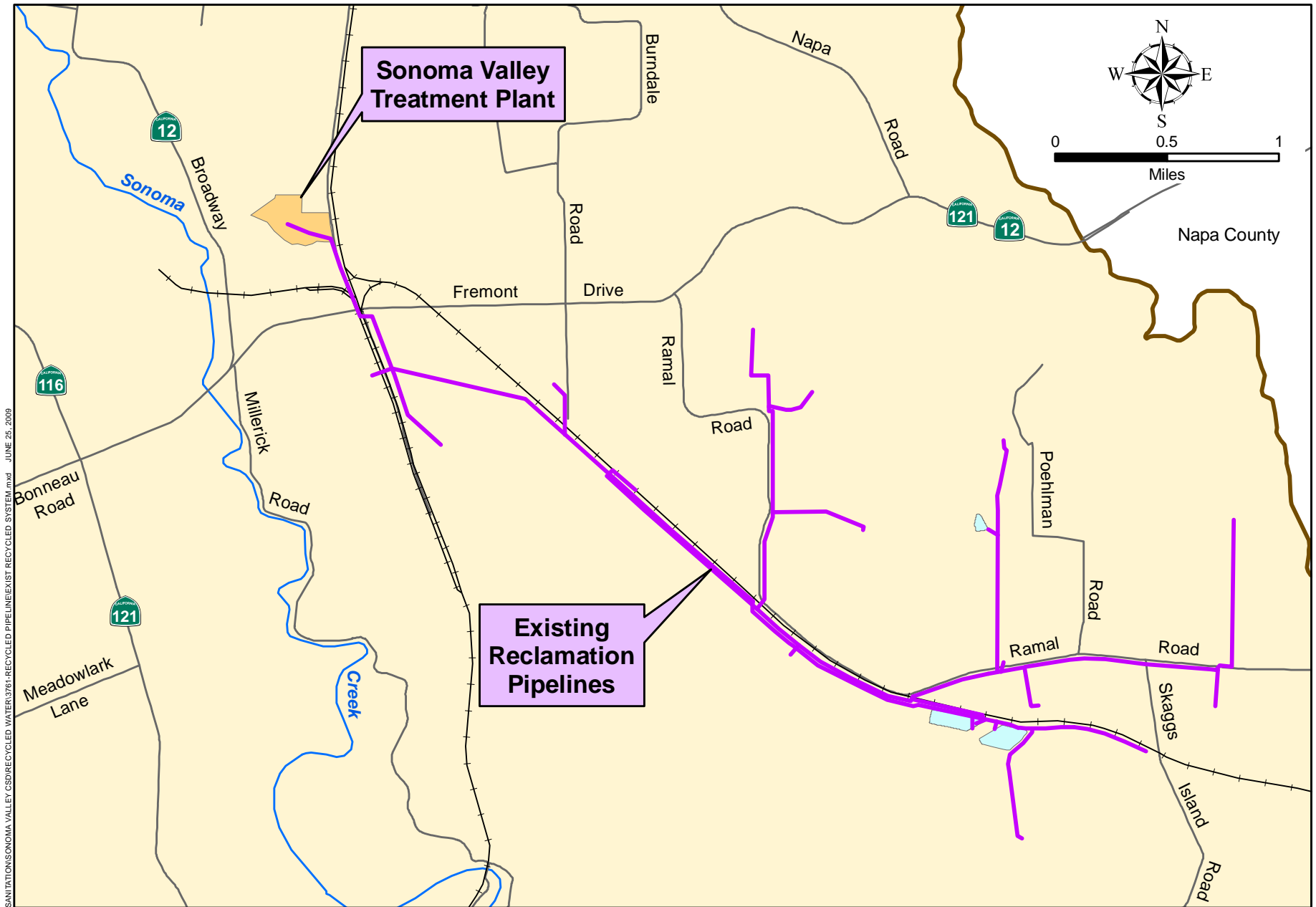
**Notes:**

- (1) All demand projection values in acre-feet per year.
- (2) Source: 2005 Urban Water Management Plan (Brown and Caldwell, March 2008).
- (3) Raw demand shown for 2000 is the net demand after conservation.
- (4) Recycled water use is projected urban use only. The City of Sonoma service area does not currently include identified agricultural reuse.
- (5) Source: 2005 Urban Water Management Plan (Brown and Caldwell, February 2007).
- (6) Conserved water imbedded in Raw Gross Demand.
- (7) Projected recycled water use is for both urban and agricultural reuse.

## **2.3 EXISTING RECYCLED WATER SYSTEM**

The SVCSO currently provides recycled water to a limited number of agricultural users - all of which are located at the southern end of the Sonoma Valley in the Carernos Region. The Carernos Region is located south of Highway 121, north of Hudeman Slough, east of Schell Slough, and west of the Napa River. Figure 2.5 illustrates the existing recycled water system.

The SVCSO began providing recycled water in 1993. During May to October, which are dry weather months, the recycled water use ranges from 1,000 to 1,200 ac-ft/yr. The existing agricultural users are comprised of vineyards, dairies, and pastureland.



SANITATION SONOMA VALLEY CSD RECYCLED WATER 3761 - RECYCLED PIPELINE EXIST SYSTEM.mxd JUNE 25, 2009

**Figure 2.5**  
**EXISTING SVCSD RECYCLED WATER SYSTEM**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT

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## RECYCLED WATER ALIGNMENT SCREENING AND RANKING

In December 2005, the Sonoma Valley County Sanitation District (SVCS D) published the Sonoma Valley Recycled Water Feasibility Study (Feasibility Study) on behalf of the Sonoma County Water Agency (SCWA), the City of Sonoma (City), and the Valley of the Moon Water District (VOMWD), in consultation with the Sonoma Ecology Center and the State Water Resources Control Board (SWRCB). The purpose of this study was to evaluate options for expanded recycled water use in Sonoma Valley. This chapter summarizes the recommended project alternative from the Feasibility Study and discusses the screening and ranking process used to prioritize the alignments of the selected alternative to create a complete phased recycled water project for analysis in the Financial and Economic Analysis.

### 3.1 ALIGNMENT BACKGROUND

The SVCS D identified preliminary pipeline alignments for the proposed recycled water system by considering sites that utilize the City's or VOMWD water for large-scale irrigation, and large agricultural users using a high volume of groundwater. Potential recycled water users identified include vineyards, dairies, pasturelands, and large urban users. In addition, the recommended pipeline alignments were developed to minimize traffic impacts and impacts to wildlife and habitat.

In total, four alignments were identified. Alignment 1A and 1B extends northwest of the SVCS D wastewater treatment plant (WWTP), Alignment 2 extends north of the treatment facility and Alignment 3 extends northeast of the treatment facility. Alignment 1B requires the construction of 1A to be connected to the treatment facility. All other alignments are independent of each other. Table 3.1 summarizes the financial, usage, and constructability measures of each alternative.

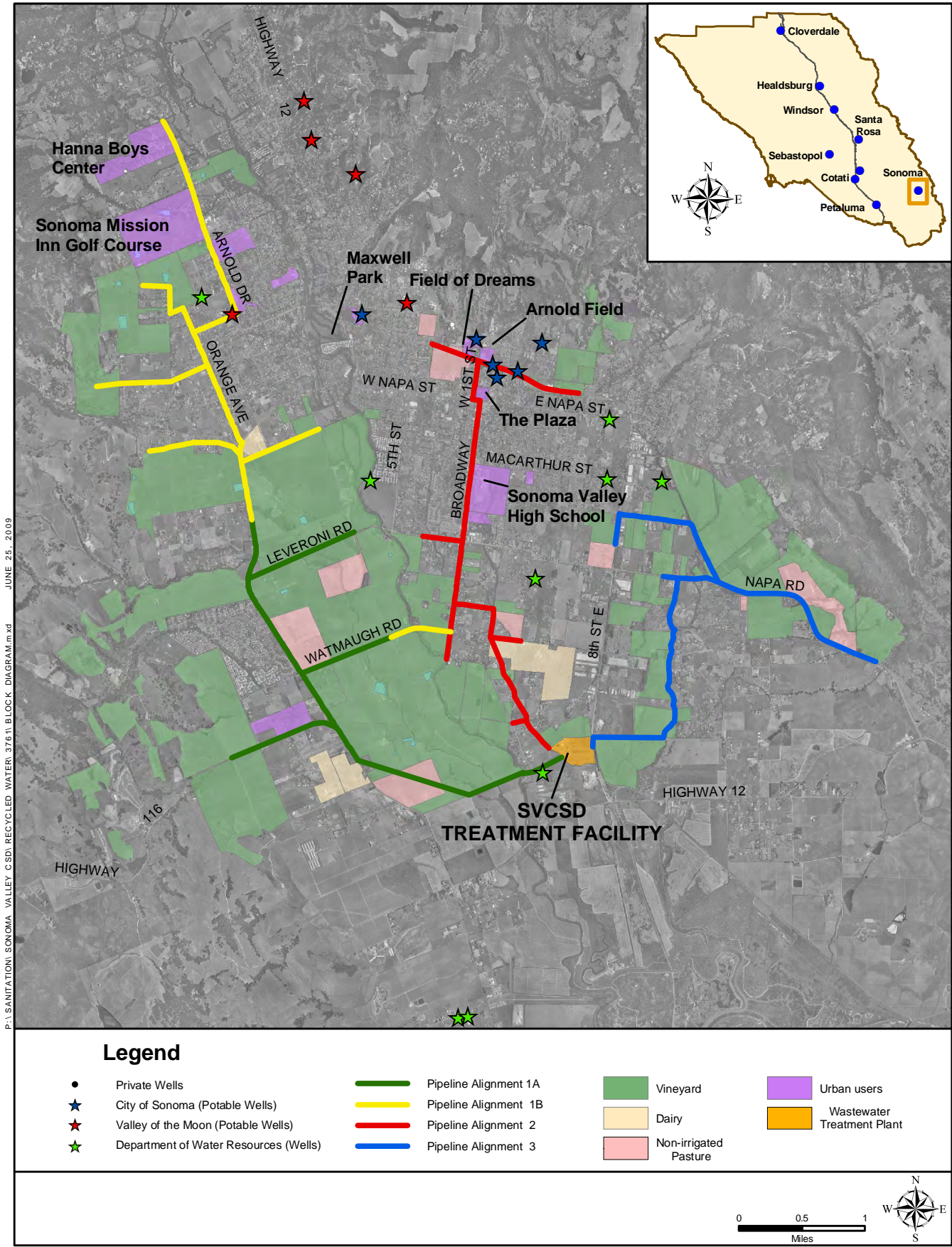
Alignment 1A has the highest recycled water demand, followed by Alignments 1B, 3, and 2, respectively. Alignment 1A has the least annual cost while Alignment 1B has the highest annual cost. Alignment 1B is the only alignment identified as requiring additional storage beyond what currently exists. Alignment 2 provides the largest potable water offsets. Alignments 1A and 3 serve agricultural users only. (See Figure 3.1.)

In total, the four alignments will require approximately an average annual volume of 2,800 acre feet per year (ac-ft/yr) of recycled water. The current SVCS D treatment facility provides tertiary treated recycled water that meets Title 22 unrestricted use requirements. The treatment facility is expected to be able to meet this recycled water need with the construction of storage as planned. It is assumed that large volume users will have additional on-site storage.



<b>Table 3.1 Recycled Water Alignment Summary Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
	<b>Alignment 1A</b>	<b>Alignment 1B</b>	<b>Alignment 2</b>	<b>Alignment 3</b>
<b>Financial Measures</b>				
Total Cost <sup>(1)</sup>	\$11.2 million	\$37.5 million	\$9.0 million	\$7.2 million
Annual cost				
Capital (ac-ft/yr)	\$680	\$3,310	\$1,360	\$1,030
O&M (ac-ft/yr)	\$150	\$210	\$220	\$230
<b>Usage Measures</b>				
Pipe Length	6.2 miles	6.0 miles <sup>(2)</sup>	5.7 miles	5.1 miles
Recycled Water Demand (ac-ft/yr)	1,094	751	438	464
Current Potable Water Source Replaced by Recycled Water	Groundwater/ Creek Water	Groundwater/ VOMWD Water	Groundwater/City Water/Creek Water	Groundwater
Percentage of Groundwater Replaced	77%	92%	73%	100%
Percentage of City/VOMWD Water Replaced	0%	8% (VOMWD potable water)	20% (City potable water)	0%
Percentage of Creek Water Replaced	23%	0%	7%	0%
Customer Class Served	Agricultural users only	Agricultural and some urban users	Agricultural and some urban users	All agricultural

<b>Table 3.1 Recycled Water Alignment Summary (Continued)                  Sonoma Valley Recycled Water Project Financial/Economic Analysis                  Sonoma Valley County Sanitation District</b>				
	<b>Alignment 1A</b>	<b>Alignment 1B</b>	<b>Alignment 2</b>	<b>Alignment 3</b>
<b>Constructability Measures</b>				
Direction from WWTP	Southwest and Northwest to just North of Leveroni Road	Southwest and Northwest to Hanna Boys Center	North of plant	Northeast of plant
Storage Requirements	No additional capacity storage required	Needs additional capacity storage (825 ac-ft)	No additional capacity storage required	No additional capacity storage required
Technical Feasibility	Needs pressure storage of 65 ac-ft Technically feasible	Needs pressure storage of 65 ac-ft Technically feasible Needs additional storage (more engineering, right of way and environmental documentation)	Needs pressure storage of 65 ac-ft Technically feasible	Needs pressure storage of 65 ac-ft Technically feasible
Environmental Impacts	No significant impacts with mitigation	No significant impacts with mitigation	No significant impacts with mitigation	No significant impacts with mitigation
Operational Issues	No operation issues	No operational issues	No operational issues	No operational issues
<b>Notes:</b>				
(1) Includes pump stations, storage, pipeline and O&M (present value factor of 10.39). Costs are in April 2008 dollars (ENRCCI 9,155). Detailed costs for each alignment are presented in Appendix A.				
(2) Alignment 1B requires construction of Alignment 1A.				
(3) Refer to the <i>Sonoma Valley Recycled Water Project Draft Environmental Impact Report</i> (ESA, 2006) for further detail on the project impacts.				
Source: Sonoma Valley Recycled Water Feasibility Study (SVCSD, December 2005).				



**Figure 3.1**  
**PROPOSED PIPELINE ALIGNMENTS**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT

Source:  
 Sonoma Valley Recycled Water Feasibility Study  
 (SCWA, 2005)  
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## 3.2 SCREENING CRITERIA

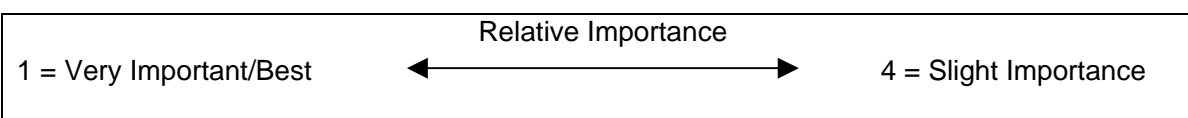
The use of screening criteria for ranking the various alignments served as a tool to prioritize and assign comparative 'values' to the Recycled Water Project. The selection of the screening criteria and assignment of the rankings was an iterative process involving the internal stakeholders (i.e. SVCSD, SCWA, City, and VOMWD). In order to be consistent with the Triple Bottom Line (TBL) approach for the screening - where environmental, social and financial criteria are evaluated - the potential screening criteria were categorized under several key groups. They were:

- Technical/Functional Criteria - Reliability, implementation, flexibility.
- Financial Criteria - Costs, rate impacts.
- Social Criteria - Neighborhood impacts, community benefits.
- Environmental Criteria - Local environmental impacts, ecological sustainability.

In a meeting with the SVCSD and at a subsequent workshop with the internal stakeholders, held in April 2008, over 30 possible screening criteria were reviewed and considered. These criteria were preliminarily ranked to develop a shortlist of screening criteria. The shortlist was developed with the goal of having no more than two to three screening criteria in each category in order to focus attention on the criteria most applicable to the Recycled Water Project. The criteria were selected based on known information, known differentiators, important factors (even if equal for all alignments), and internal stakeholder acceptance. No additional or new information was developed for the alignments in order to screen them. Some of the screening criteria overlapped categories. For example, volume of use or groundwater offsets appeared in both technical/functional criteria and environmental criteria. In such cases, the criterion was eliminated from the category to which it was least applicable, thereby allowing selection of a more diverse set of screening criteria. Following discussion with all internal stakeholders, eleven screening criteria were selected, keeping in mind the interests of all the stakeholders, as well as stakeholder equity. The selected screening criteria and their descriptions are listed in Table 3.2.

## 3.3 SCREENING RESULTS/ALIGNMENT RANKING

A ranking of one was assigned to the best alignment for the selected criteria (i.e., least cost, most important) and a ranking of four was assigned to the alignment that is the least favorable for that criteria (i.e., most expensive, least important).



<b>Table 3.2 Selected Criteria Description Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>	
<b>Selected Criteria</b>	<b>Description</b>
<b>Technical/Functional Criteria</b>	
Constructability issues	Traffic impacts, business/city center disruption, construction duration, etc.
Storage and pumping requirements	Comparison of volume of storage required and pumping requirements such as pump station size and energy consumption
Purchased water offsets	Volume of potable water offset through alignment
<b>Financial Criteria</b>	
Upfront capital costs	Initial project costs with contingencies as presented in the Recycled Water Feasibility Study
Cost per acre foot	Project cost per acre foot of recycled water delivered as presented in the Recycled Water Feasibility Study (includes both annualized capital and operation and maintenance cost)
External funding available	State and grant funding available for the alignment
<b>Social Criteria</b>	
Internal stakeholder buy-in	Comparatively preferred alignment by SVCSO, SCWA, VOMWD, and City
External stakeholder buy-in	Comparatively preferred alignment by customers and other external stakeholders such as the Basin Advisory Panel and the Growers Associations
<b>Environmental Criteria</b>	
Reduced discharge to Slough/Bay	Volume of treated wastewater recycled and not discharged into the Slough/Bay
Benefits to groundwater	Volume of groundwater pumping offset/mitigated by alignment resulting in improved groundwater quantity and quality
Enhanced streamflow through reduced groundwater use	Volume of groundwater pumping offset near Sonoma Creek and other surface water bodies whose baseflow may be positively impacted

Table 3.3 provides a summary of the screening criteria and ranking applied to each alignment. An initial ranking was developed with SVCSO for the technical and financial criteria. Some of the alignments had no clear distinctions that set them apart from the others. In these cases, the alignments were given an equal ranking. The rankings were finalized through a group workshop with the internal stakeholders.

<b>Table 3.3 Alignment Ranking Results Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
<b>Criteria</b>	<b>Alignment 1A</b>	<b>Alignment 1B</b>	<b>Alignment 2</b>	<b>Alignment 3</b>
<b>Technical/Functional Criteria</b>				
Constructability issues	1	3	4	2
Storage and pumping requirements	2	4	1	3
Potable water offsets	4	3	1	4
<b>Financial Criteria</b>				
Upfront capital costs	3	4	1	2
Cost per acre foot	1	4	2	3
External funding available	1	1	2	4
<b>Social Criteria</b>				
Internal stakeholder buy-in	1	1	1	1
Customer/other stakeholder buy-in	2	3	4	1
<b>Environmental Criteria</b>				
Reduced discharge to Slough/Bay	1	2	3	4
Benefits to groundwater	1	2	2	3
Enhanced streamflow through reduced groundwater use	1	1	2	2
<b>ALIGNMENT TOTAL</b>	<b>18</b>	<b>28</b>	<b>23</b>	<b>29</b>
<u>Note:</u>				
(1) Alignment rankings decided during an internal stakeholder workshop held on May 21, 2008 where a ranking of 1 represents the comparatively most favorable alignment for that criteria and a ranking of 4 represents the comparatively least favorable alignment for that criteria. The rankings were used for analysis purposes only and do not represent recommended order of construction.				

### 3.4 ALTERNATIVES FOR FURTHER ANALYSIS

As can be seen from the total score of the ranking in Table 3.3, the prioritization of the alignments is Alignment 1A, followed by Alignment 2, Alignment 1B, and Alignment 3. This prioritization is important because it provides the order that the recycled water projects are assumed to be constructed for the economic and financial comparison against the “no recycled water project” alternative. This alignment ranking indicates the current understood conditions (i.e. political, social, environmental) at the time of the ranking only and should be revisited when project implementation is closer and/or when a condition clearly changes.

The alternatives for consideration in the financial/economic analysis of the Sonoma Valley Recycled Water Project are:

- No recycled water system (Without Project Baseline).
- Construction and operation of the proposed recycled water system (i.e., the Recycled Water Project).

Each of these two scenarios, the water supply/use and wastewater treatment/effluent discharge are discussed below. The benefits and costs associated with each alternative are presented in greater detail in Chapters 4 and 5.

### **3.4.1 Without Project Baseline**

The Without Project Baseline consists of implications to both the water supply system as well as the wastewater treatment/effluent discharge systems.

#### **3.4.1.1 Water Supply and Use**

In the Without Project Baseline, existing water users would continue to use their current water sources:

- Groundwater pumped from private and public wells.
- Water supplied by SCWA (mix of imported water and groundwater pumped by SCWA).
- Local creek water.

It is assumed that in the absence of the Recycled Water Project, existing service area demands would continue to be supplied from the water sources outlined above and treated recycled water will continue to be discharged to San Pablo Bay. Therefore, in the Without Project Baseline, the capital and operating costs of supplying recycled water are avoided.

However, as the Sonoma Valley grows, water demands will increase, and without the Recycled Water Project, additional/new water sources will need to be developed in the future. The Sonoma Valley Groundwater Management Plan (SCWA, 2007) identifies additional supply options including increased imported water from the Russian River, stormwater recharge, and increased conservation as potential alternate water supply options. The method in which these supply options will be used to supplement the water demands of the users identified in the Recycled Water Project has not yet been determined. Therefore, the costs associated with obtaining these additional water supplies are not considered in the Financial Analysis. The costs considered are those associated with continuing to use the current sources.

### 3.4.2 Wastewater Production, Storage and Discharge

Regardless of the alternative selected, the projected wastewater flow at the SVCSD WWTP is expected to increase with time as a result of area growth. Without any expansion of the recycled water systems, it can safely be assumed that existing recycled water demand will remain near the current recycled water demand of 1,200 acre-feet per year (ac-ft/yr).

Currently, the SVCSD treats approximately 2.8 million gallons per day (mgd), or 3,160 ac-ft/yr, of average annual dry weather flow (ADWF). From May 1 to October 31, treated tertiary effluent is stored in treated water storage reservoirs R1 through R4, with a total storage capacity of 210 million gallons (MG) or approximately 645 acre-feet. This stored water is distributed for agricultural reuse along the existing recycled water distribution line to the southeast of the treatment plant. From November 1 to April 30, the treated effluent is discharged to Schell and Hudeman Slough. The current permitted discharge capacity is 3.0 mgd ADWF (3,360 ac-ft/yr) during the dry weather period. There is no discharge limitation during the remaining part of the year.

Table 3.4 summarizes the projected treatment plant flow, expected recycled water use and required slough discharge for the baseline alternative. As seen from the table, the Slough discharge under the baseline alternative will become higher than the currently permitted 3.0 mgd (3,360 acre-feet/year) average dry weather flow (ADWF) in future years.

<b>Table 3.4 Projected Treatment Plant Flow and Expected Recycled Water Use Under the Baseline Alternative Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>							
	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>
Projected Flow <sup>(1)</sup>	4,500	4,500	4,750	5,000	5,250	5,500	5,550
Recycled Water Use							
Existing Customers	1,200	1,200	1,200	1,200	1,200	1,200	1,200
New Customers	–	–	–	–	–	–	–
Slough Discharge	3,300	3,300	3,550	3,800	4,050	4,300	4,350
<b>Note:</b>							
(1) CWA 2005 Urban Water Management Plan (Brown and Caldwell, 2006).							

Obtaining an increased discharge allowance to the National Pollution Discharge Elimination System (NPDES) permit may require an extensive Environmental Impact Report (EIR) process. In order to avoid increasing the permitted discharge allowance, it will be necessary to construct additional storage to store the flows in excess of 3 mgd to adhere to the seasonal limitations. The construction of this storage would not only require capital for storage, but also requires capital for land acquisition.



Since the SVCSD already treats its wastewater to Title 22 tertiary quality, the without-project baseline assumes that no additional treatment will be required for future (and increased) discharges.

### **3.4.3 Recycled Water Project**

In the alternative in which the recycled water alignments are constructed, there are again implications on the water supply system and the wastewater discharge system.

#### **3.4.3.1 Water Supply and Use**

The proposed recycled water project consists of construction of the four alignments over the next decade for delivery of approximately 2,800 ac-ft/yr of recycled water to urban landscape irrigation, vineyards, pasturelands, and dairies. The current water supply that would be offset by the recycled water consists of purchased water, private groundwater wells, and local creek water, as identified in the Recycled Water Feasibility Study (SCWA, 2005). The purchased water is provided by SCWA and distributed for use by the City and VOMWD.

If the recycled water project is implemented, in addition to cost associated with construction of the alignments, there will be additional costs for annual operation and maintenance of the system, staffing, and public outreach.

### **3.4.4 Wastewater Production, Storage and Discharge**

As previously discussed, SVCSD treats approximately 4,500 acre-feet per year, but is limited to discharge of no more than 3 mgd between May 1 and October 31. As shown in Table 3.4, without the Recycled Water Project, the SVCSD effluent discharge requirement increases beyond 3 mgd in the future, even with operation of the existing recycled water system. With the addition of the recycled water project alignments however, an additional 2,800 acre-feet per year of water will be reused by 2020. Table 3.5 presents the projected flow to the WWTP, and the expected recycled water demand with the implementation of the Recycled Water Project. Over the planning horizon, volume of discharge will decrease by about 1/2 of the current discharge volumes.

Similar to the without-project alternative, it is assumed that no additional treatment will be required at the wastewater treatment plant since all the flow is currently treated to Title 22 tertiary water quality.

**Table 3.5 Projected Treatment Plant Flow and Expected Recycled Water Use Under the Recycled Water Alternative  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>	<b>(ac-ft/yr)</b>
Projected Flow <sup>(1)</sup>	4,500 <sup>(2)</sup>	4,500	4,750	5,000	5,250	5,500	5,550
Recycled Water Use (Existing Customers)	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Recycled Water Use (New Customers)	–	–	1,095	1,998	2,750	2,750	2,750
Alignment 1A	–	–	1,095	1,095	1,095	1,095	1,095
Alignment 1B	–	–	–	–	752	752	752
Alignment 2	–	–	–	439	439	439	439
Alignment 3	–	–	–	464	464	464	464
Slough Discharge	3,300	3,300	2,455	1,802	1,300	1,550	1,600

Notes:

(1) SCWA Urban Water Management Plan (Brown and Caldwell, 2006).

(2) 1 mgd is equivalent to 1,120 ac-ft/yr.

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## FINANCIAL ANALYSIS

An important distinction for evaluating recycled water is the difference between a financial analysis and an economic analysis. The financial analysis focuses on the monetary benefits and costs while the economic analysis analyzes a broader spectrum of benefits and costs (of which many have not been monetized or are intangibles). This chapter provides an overview of the financial analysis and presents the results.

### 4.1 FINANCIAL ANALYSIS OVERVIEW

As stated previously, the financial analysis of a recycled water project focuses solely on the monetary benefits and costs of the recycled water system. In other words, the financial analysis looks at the internal monetary bottom line and projected cash flows of the relevant agencies, and disregards any impact or values from environmental and social benefits/costs.

The financial analysis reveals how much each alignment will cost with consideration of both capital and operation and maintenance (O&M) costs. The costs provided in the Feasibility Study were based on the 1998 Bay Area Regional Water Recycling Program (BARWRP) Study, "Cost Criteria for Development of Alternatives." The costs provided in the Feasibility Study were updated to an April 2008 San Francisco Engineering News Record Construction Cost Index (ENRCCI) of 9,155.

### 4.2 CAPITAL COSTS

Recycled water systems are often relatively expensive in terms of the direct financial implications of installing and operating the required treatment processes, transmission pipelines, and related infrastructure. The capital costs include pipelines, pump station(s), appurtenant facilities, and internal facilities. The capital costs also include the cost for construction, engineering, planning, administration, and contingencies related to building recycled water treatment facilities. The engineering, planning, administration, and contingency costs - often referred to as indirect or "soft" costs - are estimated to be 65 percent of the construction costs for the purpose of this study.

#### 4.2.1 Pipeline Costs

Pipeline costs in the Feasibility Study were based on land use, pipe diameter, and length of pipe. The total costs for each pipeline segment were updated to the April 2008 San Francisco ENRCCI of 9,155.

## **4.2.2 Pump Station**

Pump station costs in the Feasibility Study were based on pipe length, pipe diameter, flow, velocity, and change in elevation factors. The estimates assumed that there would be one pump station per alignment and that it would be located at the treatment facility. The total costs for any pump stations were updated to the April 2008 San Francisco 2008 ENRCCI of 9,155.

## **4.2.3 Storage**

Of the proposed alignments, only Alignment 1B was identified in the Feasibility Study to require additional storage. The Feasibility Study estimated storage costs to be approximately \$17,000 per acre-foot. The total costs required for storage were updated to the April 2008 San Francisco ENRCCI of 9,155.

## **4.2.4 Internal Facilities**

The costs associated with “internal” capital improvements for converting or constructing new facilities for irrigation on potential user’s property are difficult to quantify at the feasibility stage. Distances from a distribution header to the centroid of the parcels were calculated and the cost to deliver recycled water to the parcel centroid was estimated to be the cost of site retrofit. The Feasibility Study estimated total internal capital costs for Alignment 1A, 1B, 2 and 3 at \$3.2, \$1.3, \$1.5 and \$1.1 million, respectively. These costs were also updated to the April 2008 San Francisco ENRCCI of 9,155. Since these costs are typically allocated to the customers (as these costs are often the responsibility of the property owner), these costs are not considered in the cash flow analysis.

## **4.3 O&M COSTS**

The O&M costs of the Feasibility Study were based on the results of the BARWRP study. These O&M costs have also included annual inspection and maintenance of the pipeline. The O&M costs were also updated to the April 2008 San Francisco ENRCCI of 9,155.

In addition to the O&M costs associated with the operation of the recycled water alignments, additional O&M costs associated with public outreach and additional staffing were also recognized. A one-time outreach cost of \$50,000 was estimated for each year in which a recycled water alignment would come on line. Also, an annual cost of \$37,500 per alignment was estimated for staffing needs.

## **4.4 ANNUALIZED COST**

The cost per acre foot per year (\$/ac-ft/yr) were calculated for each of the alignments by amortizing the costs for 40 years at 6 percent interest and dividing the total annual cost by the usage volume of the alignment. A summary of the capital, O&M, and annualized costs

for each alignment are presented in Table 4.1. The original tables from the Feasibility Study and the updated tables are provided in Appendix B.

Using the screening criteria discussed in Chapter 3, the completed recycled project was developed. The Recycled Water Project requires construction of the alignments in the determined phases, as discussed in Chapter 3. In order to estimate the required annual cost required for construction of the recycled water system, a standard Carollo S-Curve was applied as an estimate for anticipated expenditures over the construction duration.

The S-Curve has been developed using historical projects and the percentage of total project costs spent each year based on project duration. For example, a project with a three-year duration would spend 10 percent of its project costs in the first year, followed by 45 percent of the project costs in the second and third year.

## **4.5 CASH FLOW MODEL**

A cash flow model was developed as part of this Financial Study to evaluate the with-project and without project cash flows. The cash flow model was developed based on several assumptions. These assumptions and the details of recycled water demand, cash flow allocation, and cash flow model summary are discussed below.

### **4.5.1 Assumptions**

The cash flow start year was assumed to be 2008 since all project costs are available in 2008 dollars. The expected capital and O&M costs associated with the with-project alternative and the without project alternative are further discussed below.

#### **4.5.1.1 Capital Costs**

The capital costs associated with the with-project alternative include the cost of construction of the four alignments and cost of required storage. The capital cost associated with the without project alternative includes the cost of additional land for dry weather storage of treated effluent, the cost of construction of storage, and the cost of construction of conveyance of the stored treated effluent. The preliminary calculations used to size the required storage and effluent conveyance is presented in Appendix C.

The construction costs do not include estimating contingencies, contractor's overhead and profit, construction contingencies or costs to the owner, such as engineering, legal, administrative, project contingencies, and construction management costs. These costs are added to construction costs to obtain total project costs. A project cost factor of 65 percent was applied to the construction costs to arrive at the estimated total project capital cost. A 65 percent project delivery factor is consistent with the recommendations of the Association of the Advancement of Cost Engineering International guidelines for planning level estimates.

<b>Table 4.1 Alignment Summary Table<sup>(1)</sup></b> <b>Sonoma Valley Recycled Water Project Financial/Economic Analysis</b> <b>Sonoma Valley County Sanitation District</b>							
Alignment	Total Usage (acre-feet)	Estimated Storage Requirement <sup>(2)</sup> (acre-feet)	Estimated Total Capital Cost <sup>(3)</sup> (\$)	Estimated Cost <sup>(4)</sup> (\$/acre-foot)	Estimated Present Worth O & M (\$/year)	Estimated Present Worth O & M (\$/acre-foot)	Total Estimated Cost (\$/acre-foot)
1-A	1,095	65	\$11,213,000	\$681	\$159,413	\$146	\$827
1-B	752	825	\$37,482,000	\$3,314	\$154,723	\$206	\$3,520
1 (A+B)	1,847	890	\$48,695,000	\$1,753	\$314,136	\$351	\$2,104
2	439	65	\$8,986,000	\$1,362	\$94,809	\$216	\$1,578
3	464	65	\$7,169,000	\$1,028	\$104,906	\$226	\$1,254

**Notes:**

(1) Capital costs are in April 2008 dollars.

(2) The estimated Storage requirement Unit Cost is based upon the total cost per storage capacity at Oceanview Reservoir (SCWA) and R4 Reservoirs (SVCSD).

(3) Total Estimated Capital Cost includes a base construction cost and an additional 65 percent to account for contingencies, planning, engineering, administration, and permitting cost. Costs are in April 2008 dollars (ENRCCI of 9,155).

(4) Estimated annual cost is based upon amortizing the capital cost for 40 years at 6 percent.

A capital project cost escalation of four percent was used annually to estimate the future dollars of the proposed alignment constructions. This escalation rate, inflated to the mid-point of construction, was used to adjust capital cost estimates for the financial analysis.

#### **4.5.1.2 O&M Costs**

The O&M costs associated with the with-project alternative include the O&M costs presented in Table 4.1. The O&M costs associated with the without project alternative include the cost of conveyance of the treated effluent to the effluent storage structure, the cost of conveyance of the effluent from the storage structure to the discharge slough, and the general O&M associated with the storage structure and effluent pipelines.

The cost of O&M is also provided in 2008 dollars. This cost will also increase with time. Fixed O&M costs such as salaries, overhead and equipment, as well as variable O&M costs such as utilities, were all assumed to increase at three percent per year. This escalation was assumed to apply to the additional staffing needs and the outreach costs of the with-project alternative.

#### **4.5.1.3 Discount Rate**

The nominal discount/capitalization rate, or the rate used to determine the present value of future earnings was assumed to be 5.5 percent. The rate of inflation was assumed to equal three percent for O&M costs, resulting in a real interest rate of 2.5 percent.

#### **4.5.1.4 Useful Life**

Although various elements of the recycled water system have different useful lives, the majority of the system pipelines and pump stations were estimated to have a useful life of 30 years. Thus, the cash flow model was run to 2040 to capture the full useful life of most of the assets. Structural assets are expected to have a useful life of up to 50 years.

### **4.5.2 Recycled Water Demand**

The recycled water demand of the system varies as alignments come on line. The alignment construction order was determined from the alignment ranking and prioritization workshop, as discussed in Chapter 3. The order of construction, construction duration, and year of start-up/operation are summarized in Table 4.2.

The total recycled water demand, and the current source and volume offset are presented in Table 4.3. Appendix D provides annual recycled water demands per alignment, per usage category and per service area.



<b>Table 4.2 Alignment Phasing and Schedule Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>			
	<b>First Year of Construction</b>	<b>Construction Duration</b>	<b>First Year of Operation</b>
Alignment 1A	2010	2	2012
Alignment 1B	2015	3	2018
Alignment 2	2012	3	2015
Alignment 3	2018	2	2020
<b>Note:</b>			
(1) Alignment schedule based on ranking received during the internal stakeholder workshop held on July 9, 2008.			

### 4.5.3 Cash Flow Allocation

Cash flow allocations were developed once the total project cash flow was developed for the recycled water alignments. The allocations were based purely on the recycled water demands of each stakeholder, and do not consider benefits or costs accrued by each of the stakeholders. The economic analysis presented in Chapter 5 analyzes the benefits and costs to each stakeholder based on monetized triple bottom line benefits and costs.

<b>Table 4.3 Total Recycled Water Demand and Volume of Potable Offsets Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
	<b>Alignment 1A</b>	<b>Alignment 1B</b>	<b>Alignment 2</b>	<b>Alignment 3</b>
<b>Recycled Water Demand</b>				
Agricultural Demand	1,081	400	301	464
Urban Demand	14	352	138	0
<b>Total Recycled Water Demand</b>	<b>1,095</b>	<b>752</b>	<b>439</b>	<b>464</b>
<b>Potable Water Offsets</b>				
Private Well Water Offset	840	692	320	464
City of Sonoma Water Offset	0	0	87	0
VOMWD Water Offset	0	60	0	0
Local Creek Water Offset	255	0	32	0
<b>Total Potable Water Offset</b>	<b>1,095</b>	<b>752</b>	<b>439</b>	<b>464</b>
Source: Sonoma Valley Recycled Water Feasibility Study (SCWA, December 2005).				

#### **4.5.3.1 Capital Cost Allocation**

Capital costs were allocated based on recycled water demand and volume of potable water offset per service area. The private well and creek water volume offset was termed “other” since no one owner of this supply exists to whom benefits or costs can be directly associated.

As presented in Table 4.3, for Alignment 1A, the total volume of recycled water demand corresponds to offsets in private well water and local creek water. Therefore, 100 percent of the capital costs associated with this alignment are allocated to the “other” category and are not directly allocated to SVCSD, SCWA, VOMWD or the City. In Alignment 1B, 60 acre-feet per year (ac-ft/yr) of the recycled water demand corresponds to an offset of potable water supplied by VOMWD. This volume corresponds to eight percent of the total recycled water demand along this alignment. Therefore, eight percent of the Alignment 1B costs were allocated to VOMWD. Similarly, in Alignment 2, 87 ac-ft/yr of the recycled water demand corresponds to offsets to the City of Sonoma potable system. This volume is 20 percent of the total Alignment 2 recycled water demand. Therefore, 20 percent of the capital costs of Alignment 2 were allocated to City of Sonoma.

A summary of the capital allocations (and resulting cash flows) per year is presented in Appendix E. It must be noted that these allocations are purely based on recycled water demands and the service area, and do not consider the benefit/cost associated with the construction of the alignments. The economic analysis evaluates the benefits and costs to each internal and external stakeholder in Chapter 5.

Without-project costs, which are the costs associated with the increased storage required, and the conveyance of this storage from the SVCSD treatment facility and to the slough are directly allocated to SVCSD.

#### **4.5.3.2 O&M Cost Allocation**

The O&M costs with the recycled water alignments are associated primarily with the cost of delivery of recycled water. In addition to the cost of delivery, there are costs associated with operating staff and cost associated with public outreach.

All parties agreed to divide the staffing and the public outreach costs equally amongst SVCSD, VOMWD, and the City during Workshop 2 because these costs are fixed costs, which would not be impacted by volume of recycled water delivered. A third of these costs were allocated to each internal stakeholder. The annual O&M cash flow allocations are provided in Appendix E with the capital allocations.

The O&M cost associated with delivery and system maintenance were allocated based on recycled water flow. These costs are directly related to flow and thus are allocated as they are incurred. Therefore, as alignments come into operation, the O&M allocation varies. Appendix E summarizes the O&M cash flow allocations.

Without-project costs, which are the costs associated with the increased storage required, and the conveyance of this storage from the SVCSD treatment facility and to the slough are directly allocated to SVCSD.

#### **4.5.4 Stakeholder O&M Savings and Loss in Revenue**

Implementation of the Recycled Water Project results in changes to current expenditures and revenues of the internal stakeholders.

The City and VOMWD currently supply potable water to some municipal/urban customers who will switch to use of recycled water with implementation of the Recycled Water Project. Since the City and VOMWD would no longer be providing potable water service to these customers, both agencies will observe a loss in revenue corresponding to this flow. However, since 90 percent of City potable water, and 85 percent of VOMWD potable water is purchased from SCWA, the City and VOMWD will also observe O&M cost savings corresponding to this volume of water.

Although SCWA does not directly supply potable water to any of the customers projected to offset potable sources with recycled water, it does sell potable water (through wholesale agreements) to the City and VOMWD. Both the City and VOMWD then sell this water (as retailers) to its customers. Since some of these customers will now switch to the recycled water system, SCWA will observe an O&M savings associated with the cost of production of the volume of potable water supplied to the City of Sonoma and VOMWD. SCWA will also observe a loss in revenue associated with the reduced sales of this potable water.

#### **4.5.5 Recycled Water Sales**

Contractual stipulations are in place to allow SVCSD to charge its existing customers recycled water service fees. Although a recycled water pricing strategy has not been established, the capacity to evaluate the potential recovery of costs using recycled water sales was added to the cash flow model.

Since cost recovery or pricing mechanisms have not been established, the capability to apply a service fee by service area, as well as by usage type was developed as part of the model. Therefore, based on the per acre foot cost charged for recycled water, the potential cost recovered can be calculated for the volume of potable water offset in the City, VOMWD, private wells, and creek water. In addition, should a pricing strategy be established whereby customers are charged a cost per acre-foot fee based on usage (i.e. agricultural rate vs. urban/municipal rate), the cost recovery using this pricing strategy was also built into the cash flow model.

A further discussion of funding and cost recovery strategies is presented in Chapter 6.

## 4.5.6 Cash Flow Model Summary

Using the assumptions discussed above and the modules developed in the cash flow model, the cash flow projections were developed for the with-project and without project alternatives. The results of these to cash flows from 2008 to 2040 are summarized below.

### 4.5.6.1 With-Project Cash Flow

The with project cash flow model consist of the costs associated with implementing the four recycled water alignments. Table 4.4 presents a cash flow summary of implementing the Recycled Water Project in escalated dollars. Appendix F presents the net present value calculation of project implementation, as well as the net present value of cash flows allocated to each internal stakeholder.

<b>Table 4.4 With Project Cost Summary (2008 to 2040) Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
	<b>Capital Cost <sup>(1) (2)</sup> (Future Dollars)</b>	<b>Percent of Total</b>	<b>O&amp;M Cost <sup>(1) (3)</sup> (Future Dollars)</b>	<b>Percent of Total</b>
City of Sonoma	\$1,468,400	1.9%	\$3,127,349	10.2%
VOMWD	\$3,720,480	4.9%	\$2,852,719	9.3%
SVCSO/SCWA				
Other	\$70,525,120	93.1%	\$24,789,644	80.6%
<b>Total</b>	<b>\$75,714,000</b>	<b>100%</b>	<b>\$30,769,711</b>	<b>100%</b>
<b>Notes:</b>				
(1) All costs in future dollars.				
(2) Capital costs inflated at 4 percent.				
(3) O&M costs inflated at 3 percent.				

The escalated cost of implementing the Recycled Water Project is approximately \$75 million (in future dollars). The escalated cost of operation of the system over 30 years is approximately \$30 million (in future dollars).

### 4.5.6.2 Without Project Cash Flow

Without implementing the recycled water project, the internal stakeholders will continue to supply potable water to its customers for irrigation use. In addition, SVCSO will be required to construct and operate additional storage and conveyance infrastructure to meet seasonal effluent guidelines. The cost associated with continuing to produce and purchase potable water, as well as the cost of constructing and operating additional storage is summarized in Table 4.5. Appendix F presents the net present value of the without project alternative.

**Table 4.5 With-Out Project Baseline Cost Summary  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

	<b>Capital Cost <sup>(1) (2)</sup> (Future Dollars)</b>	<b>Percent of Total</b>	<b>O&amp;M Cost <sup>(1) (3)</sup> (Future Dollars)</b>	<b>Percent of Total</b>
City of Sonoma <sup>(4)</sup>	\$0	0.0%	\$1,872,565	29.4%
VOMWD <sup>(4)</sup>	\$0	0.0%	\$1,187,887	18.6%
SCWA <sup>(4)</sup>	\$0	0.0%	\$1,484,234	23.3%
SVCSD <sup>(5)</sup>	\$8,112,979	100.0%	\$1,833,479	28.7%
<b>Total</b>	<b>\$8,112,979</b>	<b>100.0%</b>	<b>\$6,378,166</b>	<b>100.0%</b>

Notes:

- (1) All costs in future dollars.
- (2) Capital costs inflated at 4 percent.
- (3) O&M costs inflated at 3 percent.
- (4) Cost of increased water supply to the Sonoma Valley that will provide water supply reliability in the absence of the Recycled Water Project is not included as these costs have not yet been allocated to the various stakeholders.
- (5) Capital and O&M costs represent those associated with increased storage and conveyance required to meet seasonal discharge limits.

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## ECONOMIC ANALYSIS

As an extension to the financial analysis, which was presented in Chapter 4, this chapter further analyzes the Recycle Water Project within an economic framework to assess the underlying benefits (and costs) that may not be directly attributed to immediate project cash flows. The economic analysis, as presented herein, explores the potential types of environmental, social, financial, and other benefits that may accrue to the Sonoma Valley County Sanitation District (SVCS), Sonoma County Water Agency (SCWA), Valley of the Moon Water District (VOMWD), and the City of Sonoma (City) from the construction of all four alignments of the Recycled Water Project.

### 5.1 OVERVIEW OF THE TRIPLE BOTTOM LINE APPROACH

Although recycled water is often more expensive than some traditional options for providing water, recycled water provides some benefits that these other alternatives do not.

Therefore, a clear distinction must be made between financial and economic analysis.

- A financial analysis of water reuse is based solely on the cash flows of expenses and revenues in and out of the agency.
- An economic analysis provides a benefit/cost perspective by considering a broader view of the value of the recycled water.

Financial analysis provides a narrow perspective of the “value” of the waters provided. For example, a financial analysis does not include benefits to the environment and social costs avoided when reuse enables a community to forego developing alternative water supply options. Therefore, it is important to consider the benefits and costs of each option, rather than considering only costs.

Historically, water and wastewater programs have been evaluated using “cost-effectiveness” (C-E) analysis. Using a C-E analysis, the least expensive alternative is identified for obtaining a specific outcome. This assumes that the level of benefits from the various options is identical and the only important distinction is cost or monetary commitment.

In contrast, the benefit-cost analysis (BCA) looks at relevant options and explores how the benefits and costs compare to each other, providing a method of evaluating the full social impact of the project. The BCA approach helps identify if an objective is worth pursuing and/or which options provide the greatest net benefit to society. The Triple Bottom Line (TBL) approach is a variant of the BCA approach.

## 5.2 ECONOMIC FRAMEWORK

### 5.2.1 TBL Approach

The TBL is a planning tool that helps agencies track progress toward promoting sustainability and is a streamlined version of a social BCA. The TBL consists of:

- A financial bottom line that reflects the cash flow accounting stance of the agency.
- The social impacts that reflect impacts on societal values.
- The environmental impacts that reflect effects on the natural environment.

Each of these is discussed further below.

#### 5.2.1.1 Financial

Although recycled water can be expensive relative to some traditional water supply options, it can also provide some financial benefits in terms of avoided costs and cost offsets in other water resource management options.

For example, in many parts of the country including the Sonoma Valley, increasingly stringent National Pollution Discharge Elimination System (NPDES) permits and increases in land, chemical, and monitoring costs are driving up the compliance costs of municipal wastewater treatment and discharge. By converting some of the effluent stream into recycled water, many agencies are able to avoid or postpone additional investments in wastewater treatment and discharge expenses, while at the same time creating more value by developing a new water resource for the region. Although developing recycled water requires treatment expenses of its own, these costs may be offset in part by avoided additional costs that would have to be incurred for wastewater treatment and discharge.

Avoided costs can also arise when recycled water offsets the demand for potable water, which is in limited supply and/or expensive to produce and deliver. In many parts of the country, as in the Sonoma Valley, potable supplies are stretched thin, especially in peak demand periods such as the summer or dry months. Adding new potable supplies is very expensive, as is transporting water long distances and/or treating the water to potable standards. By avoiding or postponing the need to expand potable supplies, the use of recycled water can provide considerable cost savings to a water user.

Recycled water can also offer financial return in the form of revenue from sales. According to the California Water Code (Section 13580.7), public agencies that are water retailers can establish a rate for recycled water that has a reasonable relationship to their costs of obtaining and producing the recycled water, conveying the recycled water, and their overhead expenses for providing recycled water service, and is comparable to or less than the retail suppliers rate for potable water.

### **5.2.1.2 Social**

Recycled water can provide a range of social and related reliability benefits for the region. Social benefits take numerous forms, including adherence to a widely shared “environmental ethic” for recycling and the use of “green” approaches to local resource management challenges.

Social benefits can be more tangible and economic than the “good citizen” motives noted above. For example, recycled water yields are not linked to the hydrologic cycle and annual precipitation patterns; instead, the yield from recycled water is driven by a stable supply of regionally generated wastewater. As a climate-independent water supply option, recycled water offers some added economic reliability values to the region compared to traditional sources that depend on snow pack, precipitation, and storage.

In addition, recycled water can be used for public services that would otherwise be unavailable or costly, such as irrigation of public parks, highway corridors, and dust control, by providing additional social benefits that are not directly related to the direct consumption of recycled water by residents of the community.

### **5.2.1.3 Environmental**

Recycled water can generate environmental benefits in several ways. One of the prevalent impacts is enhancing stream flows, which can arise when recycled water use offsets demands on potable supplies that directly or indirectly draw down flows of inland rivers and streams such as the Russian River. Recycled water can likewise be used to recharge aquifers, and develop or enhance wetlands that are hydrologically connected to surface waters that are flow-sensitive. Environmental benefits can also arise by postponing the need to build or expand water supply reservoirs, other potable water storage facilities, and possibly large conveyance pipelines. Benefits to the environmental can also be generated when recycled water reduces the volume of wastewater discharges to sensitive surface waters such as San Pablo Bay.

Environmental benefits can include many of the ecological services and values associated with enhanced stream flows, improved instream water quality, and lower summertime water temperatures. These benefits also include improved fisheries and enhanced riparian ecosystems resulting from added flows, moderated temperatures, and/or reduced pollutant loadings.

In addition, the use of recycled water is consistent with the commitment to sustainability the SVCSD, SCWA, VOMWD, and the City adhere to. According to the California Sustainability Alliance publication *The Role of Recycled Water in Energy Efficiency and Greenhouse Gas Reduction* (May, 2008), every gallon of recycled water that is not used to offset potable water use is a missed opportunity for California to increase water and energy supplies and to reduce carbon emissions. Although producing and distributing recycled water can be a relatively energy intensive process, the potential increase in energy use and emission of



green house gases (GHGs) is less than that of developing alternate supplies, including increased import of irrigation supplies from the Russian River. In increasing its Sonoma Valley recycled water use, SVCSD is supporting statewide initiatives to reduce GHG emissions.

## **5.3 ECONOMIC ANALYSIS RESULTS**

Performing an economic analysis of a project involves several major steps, including:

- Defining the baseline for the analysis, and making assumptions to set up the analysis including selecting the appropriate discount rate to use and the appropriate useful life to assume for the project.
- Performing the analysis of benefits and costs to produce monetary values where appropriate, and qualitative values when monetization is not possible or appropriate.
- Comparing monetized benefits to costs and performing sensitivity analysis to understand key uncertainties associated with the analysis.
- Assessing the relative share of benefits held by different stakeholders to understand better who gains from the project and to suggest possible cost-sharing arrangements for the investment.

### **5.3.1 Defining the Baseline and Setting Up the Analysis**

In order to identify and assess the types of benefits that may arise from the Recycled Water Project, it is important to determine the actions and conditions that would be present in the absence of the proposed project. In this analysis, this is the Without Project Baseline established in Chapter 3.

Without the proposed Recycled Water Project, the following scenarios are possible:

- Expansion of imported water supplies, increased groundwater pumping, increased conservation, or a combination of these.
- Existing conditions continue with degradation of downstream water bodies, such as estuaries fed by Sonoma Creek.

As seen above, often a baseline has a component that is water quantity-driven and another component that is water quality-driven.

Some benefits of the project follow directly from the definition of the Without Project Baseline. Examples include:

- Benefit of avoiding alternate projects to supply the amount of water that will be supplied by the project.
- Avoiding water quality degradation that could occur without the project.

- Avoiding actions needed to ensure that a SVCSD will comply with its seasonal discharge requirements in the future.

The water quantity and water quality aspects of the baseline are detailed in the following sections.

#### **5.3.1.1 Water Quantity Aspects**

Implementation of the Recycled Water Project Recycled water is expected to be delivered to agricultural and municipal customers that currently use either groundwater, local creek water, or water supplied by the City or VOMWD, which is wholesale by SCWA. The Recycled Water Project will offset approximately 2,800 acre-feet per year (ac-ft/yr) of existing water sources when all four alignments are in operation.

There are several benefits to the offset of current water sources, including:

- Avoided cost of pumping and delivering the existing supplies. The avoided cost applies to the avoided groundwater pumping costs for agricultural water users, VOMWD, and the City, as well as avoided Russian River water delivery costs for SCWA. Benefit of avoided Russian River water delivery is also realized by VOMWD and the City, who purchase this water from SCWA.
- Augmenting local stream water. The local stream water use that is offset by the Recycled Water Project will act to increase stream flows in Sonoma Creek, which is reported to be a gaining stream (i.e., one that gains water from groundwater rather than lose water to the groundwater aquifer) in the vicinity of the project and downstream (Farrar et al., 2006). Increased stream flow result in improved habitat for special status species fish in Sonoma Creek – namely steelhead and Chinook salmon.
- Augmenting groundwater supplies. The avoided groundwater use that stays in the aquifer, reduced groundwater pumping helps with reduced saline water intrusion and management of groundwater levels in the Sonoma Valley.
- Water Supply Flexibility. Increased recycled water supplies in Sonoma Valley provide an additional water source that provides flexibility in matching growing demands for water with available supplies.

This analysis assumes that offset existing water sources would be left in the ground or in the local stream. However, if the decision is made to use the offset water to meet water demands elsewhere, instead of leaving the offset water in the ground or in the local streams, then benefits such as improved habitat for special status fish species and reduced seawater intrusion would be replaced by the benefit of using the offset water in other applications.

### **5.3.1.2 Water Quality Aspects**

The main water quality component is that SVCS D will need to install additional storage for treated wastewater in order to comply with the seasonal discharge permit requirements while experiencing growing wastewater influent over the next 30 years. Without the project, SVCS D would need to install storage to hold increased effluent production during the May through October period when discharge is limited. Projected dry-year effluent flows indicate that storage would be needed in 2013.

A second component of the water quality aspect is that without the project, winter discharges of treated effluent to Sonoma Creek, which flows to Shell Slough and San Pablo Bay, will continue. Although discharges of treated effluent in the winter to Shell Slough are permitted by the San Francisco Bay Regional Water Quality Control Board (RWQCB), reducing or eliminating these discharges is desired to help enhance water quality in the San Francisco-Bay Delta estuary.

Also, without the Recycled Water Project continued pumping of groundwater increases the risk of saltwater intrusion. Saltwater intrusion results when excessive groundwater pumping depletes the aquifer and draws saltwater to the area from San Pablo Bay. Use of recycled water that results in reduced groundwater pumping could potentially slow the rate of seawater intrusion. However, there currently is insufficient data to determine whether the other recycled water projects in Sonoma Valley has slowed seawater intrusion in that area (Farrar, 2006).

### **5.3.1.3 Choice of Discount Rate and Analysis Period**

The BCA is performed in real dollars, meaning that cost escalation is only used if the rate of escalation exceeds the general rate of inflation. Otherwise, costs and benefits are presented in constant dollars. A base year of 2008 was chosen, i.e., all dollar values reported in the economic analysis would be in 2008 dollars, including present value calculations where all benefits and costs into the future are summed and presented in current dollars.

A discount rate is chosen for the analysis to translate dollars gained or spent in future years into today's dollars. When performing analyses in real dollars, a real discount rate is chosen. The real discount rate chosen was 2.5 percent. This is consistent with using the current cost of capital for the agencies involved, and with an adjustment for inflation to get the discount rate in real terms (Discount Rate = Cost of Capital - Inflation Rate). The general cost of capital was assumed to be 5.5 percent and the expected rate of general inflation was 3 percent, roughly leaving a real discount rate of 2.5 percent.

Another key component of the analysis is the choice of the analysis period. An analysis period is chosen to match the expected useful life of the assets to be installed. The idea is to match life-cycle costs for the project with the benefits accrued over the useful life of the project. An analysis period of 30 years was chosen as an average useful life of the recycled

water producing assets to be installed. In the economic analysis, each alignment was assumed to accrue benefits from the year that alignment is brought online and continue to accrue benefits for 30 years. With construction of different alignments at different times, the useful lives of the alignments are staggered to start and end at different times, resulting in a period of greater than 30 years over which the economic analysis is conducted (38 years in total).

### 5.3.2 Assessment of Benefits and Costs

The benefits and costs for the project were identified and agreed upon through a workshop process with SVCSD, SCWA, VOMWD, and the City. During the workshop, it was generally confirmed whether benefits could be monetized based on existing information and should be monetized, or would best be qualitatively assessed. Qualitatively assessed benefits and costs were rated on a five-point scale, with + or ++ representing increasing benefits, “U” showing that the net effect on the analysis result is uncertain, and – or – – indicating increasingly higher costs. The following discussion summarizes the assessment of costs and benefits from the project.

#### 5.3.2.1 Recycled Water Project Costs

Table 5.1 summarizes the monetized results of the BCA. Table 5.2 summarizes the qualitative results. Total costs for the project is estimated at \$68.14 million in present value 2008 dollars. Capital costs are incurred from years 2010 to 2019 as construction of each alignment is undertaken. Capital costs total \$56.2 million in present value. Operations and maintenance (O&M) costs are \$515,000 per year when all alignments are operational. The present value of O&M costs over the useful life of the project is \$9.1 million. Other costs, including additional staff and outreach, total \$150,000 per year, or \$2.9 million in present value 2008 dollars. The cash flows (in present value) are found in Appendix G.

<b>Table 5.1 Monetized Benefit Cost Analysis Overview (in Millions of 2008 dollars) Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Benefit or Cost Category</b>	<b>Present Value<sup>(1)</sup> (\$ Millions)<sup>(2)</sup></b>	<b>Stakeholder Accruing Cost or Benefit</b>
<b>Costs – Total</b>		
Capital and O&M costs	\$68.14	To be determined
<b>Monetized Benefits</b>		
<u>Financial Benefits</u>		
Avoided wastewater storage costs	5.37	SVCSD
Avoided effluent conveyance costs	1.77	SVCSD
Avoided costs SCWA Russian River and groundwater <sup>(3)</sup>	1.04	SCWA

<b>Table 5.1 Monetized Benefit Cost Analysis Overview (in Millions of 2008 dollars) Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Benefit or Cost Category</b>	<b>Present Value<sup>(1)</sup> (\$ Millions)<sup>(2)</sup></b>	<b>Stakeholder Accruing Cost or Benefit</b>
Avoided costs VOMWD groundwater <sup>(4)</sup>	0.01	VOMWD
Avoided costs for City of Sonoma groundwater <sup>(5)</sup>	0.02	City
Salvage value for remaining recycled water assets	2.14	SCWA, VOMWD, City, SVCS
Revenue from recycled water sales to new agricultural users <sup>(6)</sup>	1.24	SCWA
<b><u>Social Benefits</u></b>		
Increased water supply reliability SCWA <sup>(7)</sup>	6.69	SCWA
Increased water supply reliability VOMWD <sup>(8)</sup>	0.23	VOMWD
Increased water supply reliability for City of Sonoma <sup>(9)</sup>	0.24	City of Sonoma
Avoided fertilizer costs for municipal irrigation users	0.35	Municipal irrigation users
Avoided fertilizer costs for agricultural users	1.64	Agricultural users
Avoided pumping costs for agricultural users	0.05	Agricultural users
<b><u>Environmental Benefits</u></b>		
Enhanced riparian habitat for salmon and steelhead	41.35	Public
<b><u>Total Monetizable Benefits</u></b>	<b>\$62.1</b>	
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>	<b>\$(6.0)</b>	
<b>Notes:</b>		
(1) Assume 2.5 percent real discount rate and 30-year project life for each alignment.		
(2) All values in millions of dollars.		
(3) Based on imported Russian River water offset that reaches 133 ac-ft/yr by 2018 and imported groundwater of 7 ac-ft/yr by 2018.		
(4) Based on assumption that 5% of the water delivered by VOMWD is groundwater, and the remaining 95% is supplied wholesale by SCWA, 3 ac-ft/yr of groundwater deliveries is avoided.		
(5) Based on assumption that 5% of the water delivered the City is groundwater, and the remaining 95% is supplied wholesale by SCWA, 4.85 ac-ft per year of groundwater deliveries is avoided.		
(6) Assuming \$25 per ac-ft initial price for recycled water delivered to agricultural users multiplied by recycled water deliveries that reach 2,246 ac-ft/yr by 2020.		
(7) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 166,000 households by 2020 in SCWA service area that are not in the City or VOMWD service area, and 178,631 households by 2040.		
(8) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 9,707 households by 2020 in VOMWD service area, and 9,987 householders by 2040.		
(9) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 4,996 households by 2020 in City's service area, and 5,092 households by 2040.		

**Table 5.2 Qualitative Benefit Cost Analysis Overview  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

Qualitative Benefits and Costs	Relative Magnitude <sup>(1)</sup>	
<u>Financial Benefits</u>		
Avoided increased groundwater pumping costs	+	SCWA, VOMWD, City, Agricultural users
Source water protection for water providers	+	SCWA, VOMWD, City
<u>Environmental Benefits</u>		
Enhanced downstream water bodies from increased streamflow in Sonoma Creek	+	Public
Benefit to riparian and aquatic species from increased streamflow	+	Public
Reduced seawater intrusion	+	Public
Increased in-stream and near-stream recreation	+	Public
Water projects leveraging other community projects	++	SCWA, VOMWD, City, SVCSD
<u>Social Benefits</u>		
Local control over water resources	++	SCWA, VOMWD, City
Increased demonstration of “green ethic”	++	SCWA, VOMWD, City, SVCSD
Aesthetic values, including fountains with recycled water	++	SCWA, VOMWD, City
Increased water use reliability for agricultural users (quantity and quality)	++	Agricultural users
Short-term construction impacts	–	Public
Public perception of recycled water use by agricultural users	+	Agricultural users
Public perception of recycled water use by municipal users	--	Municipal users
<u>Notes:</u>		
(1) Magnitude of likely effect on net benefits: ++ = Likely to increase net benefits significantly. + = Likely to increase net benefits relative to quantified estimates. U = Uncertain effect on net benefits relative to quantified estimates. – = Likely to decrease net benefits. -- = Likely to decrease benefits significantly.		

### **5.3.2.2 Monetized Benefits**

The sum of monetizable benefits is \$62.1 million, assuming a 2.5 percent discount rate. The present value of the total benefits is approximately 9 percent less than the present value costs at this discount rate. A discussion of some of the specific monetized benefits by category follows.

#### ***5.3.2.2.1 Financial Benefits***

There are several financial benefits that result from implementation of the Recycled Water Project.

#### **Avoided Cost of Wastewater Storage**

The largest category of financial benefits is the avoided cost of additional wastewater storage. Use of recycled water via the proposed project would avoid the need for SVCSD to install additional effluent storage capacity in order to meet seasonal NPDES permit requirements. Avoided wastewater storage capital costs are \$5,495,000 and under the Without Project Baseline would be incurred in 2012 and 2013. Avoided O&M costs for the storage are \$13,815 per year. The present value of total wastewater storage capital and O&M costs avoided over the lifetime of the project is \$5,366,350.

#### **Revenue from Recycled Water Sales**

Another category of financial benefits is the revenue from recycled water sales to agricultural users. Such revenue is only counted as a benefit when performing BCA from a societal perspective if the recycled water sales are to entities that were not previously purchasing water from any supplier (thus they are new revenues, not revenues transferred from another type of water delivery or another supplier). In this case, agricultural users for the proposed project were previously pumping their own groundwater. SVCSD would provide recycled water to the new agricultural customers. SVCSD's contracts with its existing agricultural customers stipulate a minimum user charge of \$25/ac-ft when SVCSD begins to charge for recycled water. SVCSD has determined that it likely intends to charge agricultural users for recycled water from the proposed project. The \$25/ac-ft price is used in this analysis as a conservative estimate, given that SVCSD's existing agricultural contracts set \$25/ac-ft as the initial price. Revenue to SVCSD for sales to agricultural customers of the proposed project is projected to reach \$56,150 when all alignments are operating. The present value of revenue to SCWA over the projected useful life of the project is expected to total \$1,236,170 in 2008 dollars.

#### **Salvage Value of Assets**

Another category of financial benefits is the salvage value of remaining recycled water assets. Salvage value comes from the value of structures that were expected to last 50 years instead of the assumed 30-year project lifetime. Salvage value from the proposed project totals \$2.1 million in present value 2008 dollars. This benefit was divided between

SCWA, the City, VOMWD, and SVCSD using the proportion of overall project benefits for these entities. To overcome the circularity of this calculation (proportion of overall benefits depends in part on the division of salvage value), three iterations of the calculation were made with a starting assumption that the salvage value was shared equally between the four entities, and then the resulting proportion of total benefits for the project became the rule for division of the salvage value benefit in the next iteration. After three iterations, the difference between starting proportions of total benefits and ending portions was very small – indicating the solution had converged.

### **Other Financial Benefits**

Other monetized financial benefits include avoided effluent conveyance costs, avoided costs for SCWA of Russian River, and groundwater pumping, avoided costs of VOMWD groundwater pumping, and avoided costs of City groundwater pumping. A complete description of these benefits can be found in Appendix H to this report.

#### **5.3.2.2.2 Social Benefits**

There are several societal benefits that result from implementation of the Recycled Water Project.

### **Water Supply Reliability**

The largest category of social benefits is increased water supply reliability for the Sonoma Valley. The project increases water supply reliability for SCWA, VOMWD, and the City, allowing flexibility to use the offset potable supply for alternate uses.

The project would increase water supply reliability for SCWA, which provides wholesale water deliveries for the Sonoma Valley. SCWA projects a 15 percent deficit of supplies compared to demand for a single year drought event according to the 2005 Urban Water Management Plan. The additional water made available by the Recycled Water Project is expected to be 2 percent of annual demand (2,800 ac-ft out of 113,880 ac-ft)<sup>1</sup> by the year 2018 when all four alignments are operational. For the proposed project, to adjust for the partial increase in reliability associated with the relatively small amount of new water supply for SCWA relative to total demands, we adjust the lower bound of the literature values downward from \$88 per household per year to approximately \$2.10 per household for years in which the project is delivering the full amount of water for all four alignments. When multiplied by the 166,000 households<sup>2</sup> in the region by 2020, the potential benefit from increased reliability is over \$342,100 per year by 2020, and almost \$374,000 per year by 2040. Assuming a 2.5 percent discount rate, the present value of improved reliability for SCWA over the 30-year project life is \$6.7 million in 2008 dollars.

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<sup>1</sup> Total deliveries for SCWA taken from SCWA's 2005 Urban Water Management Plan (SCWA, 2006).



Water supply reliability would increase in a similar manner for the City and VOMWD, which project single dry year supply deficiencies of 19 percent for the City and 5 percent for VOMWD. The present value of improved reliability for the City over the 30-year project life is \$239,900 in 2008 dollars. The present value of improved reliability for VOMWD over the 30-year project life is approximately \$234,000.

### **Other Societal Benefits**

Other monetized social benefits include avoided fertilizer costs due to the existing nutrient value of recycled water applied for agricultural and municipal irrigation, and avoided pumping costs for agricultural users. A complete description of these benefits can be found in Appendix H of this report.

#### **5.3.2.2.3 Environmental Benefits**

The groundwater offset from the proposed project is expected to total 2,315 ac-ft/yr. A United States Geological Survey (USGS) model of Sonoma Creek hydrology and water use shows that the percentage of offset annual groundwater pumping that will become stream flow will grow to 90 percent over three years, and remain at that level thereafter<sup>3</sup>. This means that approximately 2,150 ac-ft of the offset groundwater pumping will become stream flow from the third year the project is fully implemented onward. The project also will offset 287 ac-ft/yr of local creek water use. Sonoma Creek is a gaining system from the project location and all the way downstream. Therefore, it is assumed that 100 percent of the offset local creek water use will become stream flow. In total, the annual contribution to stream flows at the project site and downstream is estimated to reach a maximum of 2,437 ac-ft/yr.

The Agua Caliente gauge is located on Sonoma Creek, near the furthest upstream extent of parcels associated with the proposed project. Records at this gauge from 1971 to 2006 show an average annual flow of 55,235 ac-ft. Most of the agricultural groundwater pumping and local creek water use offset by the project is expected to be immediately downstream of this gauge. Only approximately 10 ac-ft of the 2,150 ac-ft/yr contribution to stream flow from offset groundwater pumping is expected to come from land upstream of the gauge, according to the Sonoma Creek model when parcels associated with the project are registered with it.

Contributions to Sonoma Creek flow will benefit fish from the Agua Caliente gauge downstream to the terminus of Sonoma Creek into San Pablo Bay. Flow into San Pablo Bay has not been measured historically. The Sonoma Creek model shows the future base flow in Sonoma Creek, at its terminus after accounting for likely changes in water demand

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<sup>2</sup> Estimated number of households over time in the SCWA service area comes from the 2005 SCWA Urban Water Management Plan. The number of households in the City and VOMWD service areas has been subtracted from the total because reliability for those entities is handled separately.

<sup>3</sup> Results from the USGS model are unofficial, and are based on a modified version of the Sonoma Valley model used in the official USGS report (Farrar et al. 2006).

not associated with the proposed project, should total 36,500 ac-ft/yr. Total flow in the creek is the sum of base flow plus runoff. The model does not include runoff, so the ratio of base flow to total stream flow of 0.49 (which reflects the period of record for the creek from 1971 to 2006) was used to calculate total stream flow to San Pablo Bay without the project, resulting in an estimate of 74,490 ac-ft/yr of total stream flow (36,500 ac-ft/0.49).

This means that the Recycled Water Project is likely to contribute an additional flow of 4.4 percent of the current average annual flows (2,437/55,235 ac-ft/yr) at the Agua Caliente gauge, and 3.3 percent of the projected future average annual flows into San Pablo Bay (2,437/74,490 ac-ft/yr).

The literature on the value of increased habitat for salmon and steelhead shows the public's willingness to pay (WTP) to protect salmon and steelhead ranges from \$47 to \$325 per household (after adjustment to 2008 dollars using the Consumer Price Index). We selected the lower bound of this range for the analysis because some of the higher values from the literature included other values such as fishing and other recreation that are not applicable to the Sonoma Creek recreation uses. Those studies usually target a doubling of stream flows and, although an increase in stream flow and cooler stream temperatures have been identified as being very important to increasing the health of the fishery, they are not the only factors that contribute to recovery of the fishery. Because the project is estimated to increase stream flows by 4.41 percent, we take that percentage of the WTP value – or \$2.08 per household per year – as an appropriate value to use in this study (4.41 percent x \$47.19 per household).

The yearly total WTP value for increased stream flow can be calculated by multiplying the number of households assumed willing to pay the estimated \$2.08 per household. Studies have shown that members of the public hold value for actions to benefit endangered anadromous fish, even if they do not live in the immediate area of the project. Loomis (1996) shows that the public that does not live in the immediate vicinity of a project has an average WTP that declines to approximately 80 percent for those that reside on the impacted coast of the United States (e.g., residents on the east coast valuing a west coast project).<sup>4</sup> For residents within several hundred miles, the public holds 93 percent of the WTP value of residents in the immediate vicinity of the project (Loomis, 1999). For this analysis we apply the full WTP value to residents in the SCWA service area, which is expected to grow to 193,700 by 2030. We apply 93 percent of the WTP value to the residents of Sonoma and Marin counties that are not in the SCWA service area, and to the residents of the other counties surrounding Sonoma County.<sup>5</sup> In total, the WTP through the proximate counties for increased stream flows for salmon and steelhead is up to

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<sup>4</sup> One fact supporting an assertion that there is WTP value outside of the SCWA service area is that Sonoma County receives over 7 million tourist visitors per year. These visitors enjoy Sonoma Creek and the products that are in part enabled by the Sonoma Creek watershed, including locally made wine.

<sup>5</sup> Counties surrounding Sonoma County include Lake, Marin, Mendicino, Napa, Contra Costa and Solano.

\$2.5 million per year by 2030, or \$41.3 million in present value over the assumed project lifetime in 2008 dollars assuming a 2.5 percent discount rate (and would be higher if any values were included from other northern California or state-wide households).

### **5.3.2.3 Qualitative Benefits and Costs**

One of the key qualitatively valued benefits is the increase in agricultural water use reliability as a result of using recycled water for irrigation. This benefit was assessed as potentially having a significant effect on the net benefits for the project – a rating of ++. Much of the agricultural water use is for vineyards, which without recycled water have relied on groundwater use and captured runoff for irrigation. There are disadvantages to using existing water sources that make using recycled water attractive. For groundwater use, agricultural users understand the need to reduce pumping of groundwater for long-term sustainable groundwater management. Recent efforts on a regional groundwater management plan have shown that reduced pumping is a high-priority goal.

In addition to water quantity concerns with pumping groundwater, there also are water quality concerns. In particular, high levels of boron have been recorded in the project area. Plants and vegetation require small amounts of boron for growth, but excess boron can be toxic. Boron in irrigation water at concentrations as low as 0.7 milligrams per liter (mg/L) can be toxic to sensitive plants such as grapes (Ayers and Westcot, 1985). High boron affects growers that do not have access to an alternate source for irrigation water blending. There are many factors that make it very difficult to estimate the impacts of boron on grape yields in Sonoma. Those include highly variable boron levels in groundwater from year to year, variation in rainfall from year to year, variation in soil type, and management practices where the grapes produced are “thinned” in order to meet production targets (i.e., not all grapes grown are used). However, the presence of boron has been identified as a significant factor that could influence some vineyards to desire recycled water as an alternate irrigation water source (Smith, 2008).

Using captured runoff water by vineyards is reported to consume capital, require land that could otherwise be used for grape production, and reduce stream flows. Reliance on runoff in dry years has reduced crop yields and limited the amount of acreage planted. One grower that already receives recycled water from the other recycled water project in the area reports avoiding costs of constructing an additional new storage reservoir, saving several hundred thousand dollars. No data are currently available on whether vineyards that would receive recycled water from the proposed project would have similar avoided costs.

Other benefits with a qualitative rating of ++ are aesthetic values, including use of recycled water in fountains, increased demonstration of a “green ethic” of environmental stewardship, and recycled water project leveraging other community projects.

Benefits rated as having a positive effect on net benefits (a rating of +) include:

- Avoided increased groundwater pumping costs.
- Source water protection for water providers.
- Enhanced downstream water bodies from increased flow in Sonoma Creek.
- Benefits to riparian and aquatic species from increased Sonoma Creek flows.
- Reduced seawater intrusion.
- Increased in-stream and near-stream recreation.
- Public perception of recycled water use by agricultural users.

Qualitatively rated costs include:

- Short-term construction impacts (rating of –).
- Public perception of recycled water use by municipal users (rating of – –).

Appendix H of this report provides a full description of all of the qualitatively described benefits and costs.

#### **5.3.2.4 Relative Proportion of Project Benefits**

One of the values of estimating the full range of benefits incurred by the stakeholders associated with a proposed project is that the ratio of the total benefits assigned to different stakeholders can suggest shares for cost-sharing agreements. Three views of proportion of benefits are presented in Table 5.3. The first view, titled “Share of Total,” shows the relative proportion of total monetized project benefits for each stakeholder or type of stakeholder, including agricultural users, municipal irrigation users, and the general public. The second view, titled “Non-Public Share,” excludes the monetized benefits from increased stream flows that were assigned to the general public, and then calculates the proportion of remaining total monetized project benefits assigned to each remaining stakeholder. The third view, titled “Agencies-only Share,” excludes monetized benefits assigned to the general public, agricultural users, and municipal irrigation users, and then calculates the proportion of remaining total project benefits assigned to the four main agency stakeholders for the project.

The “Share of Total” view shows the proportion of total monetized project benefits assigned to each stakeholder. This view shows that 66.6 percent of the total monetized benefits generated by the project have been assigned to the general public. This share assigned to the general public comes from the enhanced riparian habitat for salmon and steelhead from increased stream flows in Sonoma Creek. This benefit is \$41.4 million of the \$62.1 million in total benefits generated by the project (assuming a 2.5 percent real discount rate). That a large share of benefits from this project can be assigned to the general public may be a good justification for seeking grant funding from the State of California and/or Federal sources.

**Table 5.3 Stakeholder Shares of Total Project Benefits, Assuming a 2.5 Percent Real Discount Rate (No Agricultural Water Reliability) Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District <sup>(1)</sup>**

Stakeholder	Share of Total	Non-Public Share	Agencies-Only Share <sup>(8)</sup>
Sonoma County Water Agency <sup>(2)</sup>	16.2%	48.6%	54.0%
City of Sonoma <sup>(3)</sup>	0.5%	1.4%	1.5%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.3%	1.5%
Sonoma Valley County Sanitation District <sup>(5)</sup>	13.0%	38.8%	43.0%
Agricultural users <sup>(6)</sup>	2.7%	8.2%	–
Municipal irrigation users <sup>(7)</sup>	0.6%	1.7%	–
Public <sup>(8)</sup>	66.6%	–	–
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Notes:**

- (1) Table shows percentage of total monetizable benefits by stakeholder
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets
- (6) Agricultural users share is under-estimated because increased agricultural water use reliability could not be monetized.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of the those agencies combined

The share of monetized benefits assigned to agricultural users is an underestimate due to the fact that an important benefit for agricultural users – increased reliability of water use – could not be monetized with the information available. Having a monetized estimate would affect the proportions calculated in the “Share of Total” and “Non-Public Share” views from Table 5.3.

### 5.3.2.5 Sensitivity Analyses

#### 5.3.2.5.1 *Discount Rate*

The net benefits for the project are sensitive to the choice of discount rate. Rules for recent analyses for Integrated Regional Water Management implementation grants from the State of California have stipulated the use of a 6 percent real discount rate. This choice of discount rate means that costs and benefits incurred in the early project years are relatively much more highly valued than when the cost of capital for water and wastewater utilities and the prevailing rate of inflation are used to calculate a real discount rate. The effect of using a 6 percent real discount rate instead of 2.5 percent real discount rate on the analysis for the proposed project can be seen in Table 5.4.

<b>Table 5.4 Monetized Benefit Cost Analysis Overview – Sensitivity Analysis When Using 6.0 Percent Real Discount Rate Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
Benefit or Cost Category	Present Value <sup>(1)</sup>	Stakeholder Accruing Cost or Benefit
<b>Costs – Total</b>		
Capital and O&M costs	\$50.64	To be determined
<b>Monetized Benefits</b>		
<u>Financial Benefits</u>		
Avoided wastewater storage costs	4.37	SVCSD
Avoided effluent conveyance costs	1.32	SVCSD
Avoided costs SCWA Russian River and groundwater <sup>(3)</sup>	0.55	SCWA
Avoided costs VOMWD groundwater <sup>(4)</sup>	0.00	VOMWD
Avoided costs for City of Sonoma groundwater <sup>(5)</sup>	0.01	City of Sonoma
Salvage value for remaining recycled water assets	0.58	SCWA, VOMWD, City, SVCSD
Revenue from recycled water sales to new agricultural users <sup>(6)</sup>	0.65	SCWA
<u>Social Benefits</u>		
Increased water supply reliability SCWA <sup>(7)</sup>	3.61	SCWA
Increased water supply reliability VOMWD <sup>(8)</sup>	0.11	VOMWD
Increased water supply reliability for City of Sonoma <sup>(9)</sup>	0.13	City
Avoided fertilizer costs for municipal irrigation users	0.18	Municipal irrigation users
Avoided fertilizer costs for agricultural users	0.89	Agricultural users
Avoided pumping costs for agricultural users	0.02	Agricultural users

<b>Table 5.4 Monetized Benefit Cost Analysis Overview – Sensitivity Analysis When Using 6.0 Percent Real Discount Rate Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Benefit or Cost Category</b>	<b>Present Value<sup>(1)</sup></b>	<b>Stakeholder Accruing Cost or Benefit</b>
<u>Environmental Benefits</u>		
Enhanced riparian habitat for salmon and steelhead	21.71	Public
<u>Total Monetizable Benefits</u>	<u>\$34.2</u>	
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>	<b>\$(16.5)</b>	
<u>Notes:</u>		
(1) All values in millions of dollars.		
(2) Assume 6 percent real discount rate and 30-year project life for each alignment.		
(3) Based on imported Russian River water offset that reaches 133 ac-ft/yr by 2018 and imported groundwater of 7 ac-ft/yr by 2018.		
(4) Based on assumption that 5% of the water delivered by VOMWD is groundwater, and the remaining 95% is supplied wholesale by SCWA, 3 ac-ft/yr of groundwater deliveries is avoided.		
(5) Based on assumption that 5% of the water delivered the City is groundwater, and the remaining 95% is supplied wholesale by SCWA, 4.85 ac-ft/yr of groundwater deliveries is avoided.		
(6) Assuming \$25 per AF initial price for recycled water delivered to agricultural users multiplied by recycled water deliveries that reach 2,246 ac-ft/yr by 2020.		
(7) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 166,000 households by 2020 in SCWA service area that are not in the City or VOMWD service area, and 178,631 households by 2040.		
(8) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 9,707 households by 2020 in VOMWD service area, and 9,987 householders by 2040.		
(9) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 4,996 households by 2020 in City's service area, and 5,092 households by 2040.		

Table 5.5 shows the impact on relative shares of total monetized project benefits assigned to stakeholder under the alternate discount rate assumption of a 6 percent real rate. The relative shares for some of the stakeholders shift, as monetized benefits assigned to the general public shrinks from 66.6 percent to 63.6 percent under the “Share of Total” view compared to the 2.5 percent discount rate assumption. Similarly, the share of benefits to SCWA shrinks from 16.2 percent under the 2.5 percent discount rate assumption to 14.8 percent under the 6 percent discount rate assumption. SVCSD’s share grows from 13.0 percent under the 2.5 percent discount rate, to 17.6 percent under the 6 percent discount rate.

<b>Table 5.5 Stakeholder Shares of Total Project Benefits With a 6 Percent Discount Rate<sup>(1)</sup></b>			
<b>Sonoma Valley Recycled Water Project Financial/Economic Analysis</b>			
<b>Sonoma Valley County Sanitation District</b>			
<b>Stakeholder</b>	<b>Share of Total</b>	<b>Non-Public Share</b>	<b>Agencies-Only Share<sup>(9)</sup></b>
Sonoma County Water Agency <sup>(2)</sup>	14.8%	40.8%	44.8%
City of Sonoma <sup>(3)</sup>	0.4%	1.2%	1.3%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.0%	1.1%
Sonoma Valley County Sanitation District <sup>(5)</sup>	17.6%	48.2%	52.8%
Agricultural users <sup>(6)</sup>	2.7%	7.4%	–
Municipal irrigation users <sup>(7)</sup>	0.5%	1.4%	–
Public <sup>(8)</sup>	63.6%	–	–
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Notes:**

(1) Percentages shown are based on a 6.0 percent real discount rate. Table shows percentage of total monetizable benefits by stakeholder.

(2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets.

(3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets.

(4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets.

(5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets.

(6) Agricultural users share is under-estimated because increased agricultural water use reliability could not be monetized.

(7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users.

(8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations.

(9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of those agencies combined.

### **5.3.2.5.2 Agricultural Water Use Reliability**

Data were not sufficiently available to estimate the value of increased water supply reliability from the use of recycled water by agricultural customers. That value comes from:

- Switching away from groundwater use, which has an uncertain future,
- Switching away from high boron levels in localized areas, and
- Switching away from captured runoff, which can be capital intensive to manage, takes land out of production, reduces stream flows, and means less water availability in dry years.

As stated previously, one vineyard estimated that recycled water from the other project in the area allowed it to avoid installing an additional storage tank for captured runoff, saving



several hundred thousand dollars. Given the number of vineyards likely to take recycled water from the project, it seems likely that avoided costs such as these and theoretical WTP for removed uncertainty regarding existing water sources could add to significant reliability benefits for agricultural users. It does not seem improbable that the sum of reliability benefits could be sufficient to make total project benefits equal project costs when a discount rate of 2.5 percent is used for the analysis. This break-even reliability value for agricultural users totals approximately \$6 million in present value 2008 dollars over the 30-year life of the project.

Table 5.6 shows the revised stakeholder shares of project benefits if \$6 million were used to represent the present value of increased agricultural water use reliability, assuming a 2.5 percent discount rate.

<b>Table 5.6 Stakeholder Shares of Total Project Benefits With a 2.5 Percent Discount Rate (With Agricultural Water Reliability) <sup>(1)</sup> Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>			
<b>Stakeholder</b>	<b>Share of Total</b>	<b>Non-Public Share</b>	<b>Agencies-Only Share <sup>(9)</sup></b>
Sonoma County Water Agency <sup>(2)</sup>	14.8%	37.8%	54.0%
City of Sonoma <sup>(3)</sup>	0.4%	1.1%	1.5%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.0%	1.5%
Sonoma Valley County Sanitation District <sup>(5)</sup>	11.8%	30.1%	43.0%
Agricultural users <sup>(6)</sup>	11.3%	28.7%	–
Municipal irrigation users <sup>(7)</sup>	0.6%	1.3%	–
Public <sup>(8)</sup>	60.7%	–	–
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Notes:**

- (1) Percentages shown are assuming a 2.5 percent real discount rate.
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets.
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets.
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets.
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets.
- (6) Agricultural users share is based on assumption that agricultural water use reliability is worth \$6 million in present value.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users.
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations.
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of those agencies combined.

### **5.3.2.5.3 Value of Increased Stream Flow for Steelhead and Chinook Salmon**

As stated previously, the chosen WTP value per household for enhanced stream flows for steelhead and salmon comes from the lower bound of the range of values in the literature, which is \$47.19 per household in 2008 dollars. This estimate is deemed reasonable because this estimate only includes public non-use value, and does not include factors such as fishing use (there is little fishing on Sonoma Creek).

The WTP value has been adjusted downward using the percent increase in flows expected in Sonoma Creek as a result of the project because most WTP estimates in the literature are based on a doubling of stream flows or fish populations. Flows at the Agua Caliente gauge were used to compare the expected increase in stream flow to total stream flow, and a WTP of \$2.08 per household per year was estimated. This estimate is considered reasonable since most of the land where pumping would be offset by the proposed project is much closer to the gauge than to the terminus of Sonoma Creek into San Pablo Bay.

In order to explore the sensitivity of the benefits from increased stream flow, the lower bound of the WTP value can be applied to the expected increase in stream flow to the flow at the furthest downstream point of Sonoma Creek as it empties into San Pablo Bay. The USGS model of Sonoma Creek shows that average projected stream flows into the bay are 74,490 ac-ft/yr (after making adjustment for the fact that modeled base flow is 49 percent of total flow, on average). The projected increase in stream flows from the Recycled Water Project, as a percentage of total flow into San Pablo Bay, is 3.27 percent (for comparison, the increase was 4.41 percent when compared to average stream flow at the Agua Caliente gauge). The WTP value using the adjustment to the 3.27 percent increase in flows is \$1.54 per household per year (3.27 percent x \$47.19 per household per year). Using the lower value in the BCA results in a present value of fish benefits of \$30.61 million in 2008 dollars using a 2.5 percent discount rate, and \$16.07 million using a 6 percent discount rate (shown in Table 5.6). The net benefits from the project as a whole would then be \$(16.8) million using a 2.5 percent discount rate, and \$(22.1) million using a 6 percent discount rate (shown in Table 5.7).

Adjusting the WTP value from the literature using the percent increase in stream flow, as was done in this analysis, implies that the WTP value increases in a linear fashion with an increase in stream flow. Evidence from the literature on the shape of the WTP curve is sparse, and so a linear assumption was used because it is relatively conservative.

<b>Table 5.7 Sensitivity Analysis on WTP Value for Stream Flow Increase Benefiting Anadromous Fish Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Sensitivity Analysis Scenario</b>	<b>Real Discount Rate<sup>(1)</sup></b>	
	<b>2.5 Percent Rate (\$ Million)</b>	<b>6 Percent Rate (\$ Million)</b>
4.41 percent Stream Flow Increase <sup>(2)</sup>	\$41.35	\$21.71
3.27 percent Stream Flow Increase <sup>(3)</sup>	\$30.61	\$16.07
4.4 percent Stream Flow Increase Non-linear WTP Curve <sup>(4)</sup>	\$93.82	\$49.26
Exclude Contra Costa and Solano Counties from accounting of those surrounding Sonoma County <sup>(5)</sup>	\$16.25	\$8.58
<b>Notes:</b>		
(1) All values in millions of 2008 dollars.		
(2) Using a linear WTP curve and flow measured at Agua Caliente Gauge.		
(3) Using a linear WTP curve and flow measured at Sonoma Creek Terminus into San Pablo Bay.		
(4) Using a non-linear WTP curve and 10 percent of WTP.		
(5) Used in calculating number of households willing to pay for stream flow benefits to salmon and steelhead. Assumes 4.41 percent stream flow increase.		

However, at least one study shows that the WTP function may not be linear in terms of the projected increase in fish population. Layton et al. (1999) shows that the relationship between WTP and increase in number of fish in the stream is non-linear, with as much as half of the WTP applying to the first 5 percent increase in fish in the stream, if the maximum WTP value cited is for a 50 percent increase in fish population. If considering a doubling in fish population, approximately one-quarter of the WTP value would come in the first 5 percent increase in fish in the stream. The precise effect on fish populations in Sonoma Creek with an increase in stream flows is very uncertain, and so using 25 percent of the \$47.19 per household estimate would likely not be justifiable. However, assuming that 10 percent of the value comes in the first 4.4 percent increase in stream flow might be reasonable (4.4 percent is the percent stream flow increase at the Agua Caliente gauge). In that case, the WTP value would be \$4.72 per household per year (10 percent x \$47.19 per household per year). Using this assumption in the BCA results in a present value of fish benefits of \$93.82 million in 2008 dollars using a 2.5 percent discount rate, and \$49.26 million using a 6 percent discount rate (shown in Table 5.7). The net benefits from the project as a whole would then be \$46.5 million using a 2.5 percent discount rate, and \$11.1 million using a 6 percent discount rate (shown in Table 5.8).

<b>Table 5.8 Sensitivity Analysis on Total Project Net Benefits by Varying WTP Value for Stream Flow Increase Benefiting Anadromous Fish Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Sensitivity Analysis Scenario</b>	<b>Real Discount Rate</b>	
	<b>2.5 Percent Rate (\$ Million)</b>	<b>6 Percent Rate (\$ Million)</b>
4.41 percent Stream Flow Increase <sup>(2)</sup>	\$(6.0)	\$(16.5)
3.27 percent Stream Flow Increase <sup>(3)</sup>	\$(16.8)	\$(22.1)
4.4 percent Stream Flow Increase Non-linear WTP Curve <sup>(4)</sup>	\$46.5	\$11.1
Exclude Contra Costa and Solano Counties from accounting of those surrounding Sonoma County <sup>(5)</sup>	\$(31.1)	\$(29.6)
<b>Notes:</b>		
(1) All values in millions of 2008 dollars.		
(2) Using a linear WTP curve and flow measured at Agua Caliente Gauge.		
(3) Using a linear WTP curve and flow measured at Sonoma Creek Terminus into San Pablo Bay.		
(4) Using a non-linear WTP curve and 10 percent of WTP.		
(5) Used in calculating number of households willing to pay for stream flow benefits to salmon and steelhead. Assumes 4.41 percent stream flow increase.		

Adjusting the number of households used to calculate total willingness to pay for stream flow increases also has an effect. Households in all six counties surrounding Sonoma County were used for the calculation. Those counties include Lake, Marin, Mendocino, Napa, Contra Costa and Solano. If Contra Costa and Solano Counties are excluded because they are on the other side of the San Francisco Bay-Delta from Sonoma County, then total calculated willingness to pay for stream flow increases drops to \$16.5 million assuming a 2.5 percent discount rate, and \$8.58 million assuming a 6 percent discount rate. Total net benefits of the project would drop to \$(31.1) million assuming a 2.5 percent discount rate, and \$(29.6) million assuming a 6 percent discount rate. However, as discussed in the section describing stream flow benefits, use of all six counties surrounding Sonoma County is already a conservative assumption given that the literature shows that even if they do not reside in the immediate area, the members of the public have non-use value for stream flow increases that enhance steelhead and salmon populations. Those across the country were shown to have approximately 80 percent of the value of those in the immediate project area (Loomis, 1996). That residents outside the six-county area value environmental improvement in Sonoma Creek also is supported by the fact that approximately 7 million tourists per year visit Sonoma County for the amenities enabled by Sonoma Creek and Sonoma Valley's water resources generally. Households in all six counties in 2010 were projected to be approximately 835,000.

## 5.4 CONCLUSIONS

The Recycled Water Project will provide recycled water to offset existing use of groundwater, local creek water, and Russian River water by agricultural and municipal irrigation users. The project also will allow SVCSD to meet its treated wastewater discharge requirements into the future.

The net benefits from the project are \$(6.0) million, when analyzed using a 2.5 percent discount rate. Using this discount rate, benefits for the project are approximately 91 percent of the costs. The largest benefit category is environmental benefits from increased Sonoma Creek flow (67 percent of total benefits). A majority of the offset by the project of groundwater pumping and local creek water usage is expected to result in increased flows in Sonoma Creek, benefiting steelhead and Chinook salmon in the stream. The fact that such a large share of expected benefits from the Recycled Water Project comes from environmental benefits to be enjoyed by the general public suggests that pursuing grant funding from State of California or Federal sources would be justified and would provide sound argument.

There are significant and diverse non-monetized benefits from the proposed project. Those non-monetized benefits rated to significantly increase net benefits of the project if they could be monetized include:

- Increased water use reliability for agricultural users,
- Increased local control over water resources,
- The recycled water project leveraging other community projects,
- Increased demonstration of a “green ethic” by the wastewater and water agencies involved, and
- Increased aesthetic values including fountains with recycled water.

Additional benefits that were also rated as contributing to net benefits include:

- Reduced seawater intrusion,
- Avoided increased groundwater pumping costs,
- Increased source water protection for water providers,
- Enhanced downstream water bodies from increased stream flow in Sonoma Creek,
- Benefit to riparian and aquatic species from increased stream flow, and
- Increased in-stream and near-stream recreation.

Consideration together of all of the monetized and non-monetized benefits identified for the project clearly indicates that the total value of the project is significantly in excess of its costs.

Sensitivity analysis showed that the result for the economic assessment was sensitive to the choice of discount rate. When a 6 percent discount rate is used, which is consistent with recent practice for analyzing grant applications for Proposition 50 Integrated Regional Water Management implementation grants from the State of California, the net benefits for the project become “more negative” – monetized benefits are less than costs for the project by \$16.5 million.

Sensitivity analysis also showed that the result for the economic assessment is very sensitive to assumptions made to calculate benefits to steelhead and salmon from increased flows in Sonoma Creek. Key assumptions involve which point on the creek against which to compare increases in stream flow due to the project (Agua Caliente gauge or terminus into San Pablo Bay), and the assumed relationship of WTP values to relative increases in stream flows or fish populations (linear or non-linear). The total value for fish habitat enhancement over the assumed 30-year project lifetime at a 2.5 percent discount rate ranged from \$16.25 million to \$93.82 million in present value 2008 dollars, with a “best” estimate of \$41.35 million. Fish values at a 6 percent discount rate ranged from \$8.58 million to \$49.26 million in present value 2008 dollars, with a best estimate of \$21.71 million.

One of the largest benefit categories that could not be monetized is increased agricultural water use reliability. Recycled water would be a consistent water source for irrigators that have been relying on groundwater or captured runoff. Data were not available to allow estimating the potential value to agricultural irrigators from the increase in source water reliability with recycled water; however, anecdotal evidence suggests that there may be significant avoided costs for vineyards in switching from using captured runoff or groundwater to recycled water. These avoided costs combined with WTP for a more stable source suggest that the increased water use reliability could be a significant benefit. It seems possible that the potential agricultural water use reliability benefit could be enough to make the net benefits for the project turn positive when analyzed using a 2.5 percent discount rate (i.e., the agricultural water use reliability benefit totals at least \$6 million in present value over the assumed 30-year life of the project).

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The adequate funding of capital costs is a primary constraint in implementing any construction project, especially water recycling projects. However, the financial and economic benefits, as presented within Chapter 5, of the Recycled Water Project provide unique funding opportunities. This chapter describes potential funding opportunities and financing mechanisms, including an outline of current applicable grants and loan opportunities.

## **6.1 FUNDING OPTIONS**

The term “funding” refers to the method of collecting funds; the term “financing” refers to methods of addressing cash flow needs. Several instruments can be utilized to fund the capital and operation and maintenance (O&M) costs of the recycled water project.

### **6.1.1 Capital Cost Recovery**

Implementation of expansive recycled water projects requires large up-front capital. Rarely does a city or an agency have sufficient revenue to fund large capital improvements directly from user fees, which is the case with pay-as-you-go financing. Therefore, it is common to use financing instruments to meet necessary funding requirements. The main financing instruments available to Sonoma Valley County Sanitation District (SVCSD), Sonoma County Water Agency (SCWA), Valley of the Moon Water District (VOMWD), and the City of Sonoma (City) for funding the capital costs include:

- Pay-as-you-go financing.
- Debt financing.
- Grants and loans.
- Market based programs.

Pay-as-you-go financing refers to upfront collection of project costs from existing and new users for future capital improvement projects. Pay-as-you-go financing generally requires large rate increases and creates cash flow problems.

Debt financing refers to the acquisition of funds through borrowing mechanisms. Debt financing requires the borrower to raise money for working capital or capital expenditures by selling bonds, bills, or notes to individual and/or institutional investors. In return for borrowed money, the individuals or institutions become creditors and receive a promise to repay principal and interest on the debt.



Grants and loans provide an alternate source of funds at no or minimal cost. Federal, State, and local grants provide funding at no cost for projects that meet select criteria. Grant funding is limited and is generally not a long-term solution to meet financing needs. State and Federal loan programs provide low-cost methods of borrowing for projects that meet select criteria. Most projects receiving grant and loan funding generally will need to secure supplemental funding sources.

Market based programs refer to financing through funds obtained from tax credits, purchase agreements, voluntary programs and trading and offset programs.

All of these funding sources are discussed in additional detail in the following sections.

### **6.1.2 Pay-As-You-Go Financing**

Pay-as-you-go financing involves periodic collection of capital charges or assessments from customers within the municipality's jurisdiction for funding future capital improvements. These revenues are accumulated in a capital reserve fund and are used for capital projects in future years. Pay-as-you-go financing can be used to finance 100 percent or only a portion of a given project.

One of the primary advantages of pay-as-you-go financing is that it avoids the transaction costs (e.g., legal fees, underwriters' discounts, etc.) associated with debt financing alternatives, such as revenue bonds. However, there are two common disadvantages associated with this method. First, it is difficult to raise the required capital within the allowable time without charging existing users elevated rates. Second, it may result in inequities in that existing residents would be paying for facilities that would be utilized by, and benefit, future residents.

Several existing funding sources can be utilized to pay-as-you-go finance the Sonoma Valley Recycled Water Project (Recycled Water Project) costs. These are the current utility fees, existing general funds, existing reserve funds, and connection fees.

#### **6.1.2.1 Utility Fees and Benefit Assessment Fees**

Utility fees or benefit assessments, sometimes called service fees or user fees, consist of a fee imposed on each property in proportion to the service provided to that property. They are inherently flexible in that the SVCSO can select any assessment method that equitably relates the amount charged to the service provided. Benefit assessment fees are usually included as a separate line item on the annual property tax bill sent to each property owner.

Utility fees are usually billed on a monthly or bi-monthly interval. In all other respects, benefit assessments, utility fees and service charges are essentially identical. A utility has the authority to collect a benefit assessment fee, but only after approval by a majority of the voters, affected property owners, or rate payers.

### **6.1.2.2 General Fund**

General funds are one type of federal funds whose receipt account is credited with federal revenues and offsetting receipts not earmarked by law for a specific purpose. General fund money comes largely from property taxes and sales taxes. Usually, the demand for funds by all departments exceeds the supply available, and therefore, these funds will likely be less available than other potential funding sources.

### **6.1.2.3 Development Charges/Connection Fees**

The system development charges/connection fees/impact fees represent the cost of providing regional conveyance and treatment facilities to serve the new recycled water customers. They are one-time fees charged to customers at the time of system connection approval or permit/contract issuance. The charges for individual properties may be based on whatever assessment measures the SVCSD desires for equity.

A disadvantage to utilizing impact fees is that the fees cannot be collected until the system constructions permit stage at the earliest. The amount collected each year depends solely on the rate of growth of the recycled water system. Consequently, funds may not be available to construct new capacity at the time it is needed.

## **6.1.3 Debt Financing**

There are several different options for debt financing of recycled water projects, such as issuance of bonds. Bonds used for financing public works projects are generally local government tax-exempt bonds.

### **6.1.3.1 Revenue Bonds**

Revenue bonds are historically the principal method of incurring long-term debt. This method of debt obligation requires specific non-tax revenues pledged to guarantee repayment. Because non-tax revenues, such as user charges, facility income, and other funds are the bondholder's sole source of repayment, revenue bonds are not considered general obligations of the issuer. Revenue bonds are secured solely by a pledge of revenues. Usually the SVCSD's revenues are derived from the facility that the bonds are used to acquire, construct, or improve. There is no legal limitation on the amount of authorized revenue bonds that may be issued, but from a practical standpoint, the size of the issue must be limited to an amount where annual interest and principal payments are well within the revenues available for debt service on the bonds. Revenue bond covenants generally include coverage provisions, which require that revenue from fees minus operating expenses be greater than debt service costs.

In the case of the Recycled Water Project, based on policy decisions made regarding cost of service, any revenue bonds obtained would require proof of financial capacity to repay using the SCWA's and other internal stakeholders' revenue sources that do not inequitably burden existing customers and/or customers who do not consume any recycled water.

### **6.1.3.2 Certificates of Participation**

Certificates of participation provide long-term financing through a lease agreement that does not require voter approval. The legislative body of the issuing agency is required to approve the lease arrangement by a resolution. The lesser may be a redevelopment agency, a non-profit organization, a joint powers authority, a for-profit corporation or other agency. The lessee is required to make payments typically from revenues derived from the operation of the leased facilities. The amount financed may include reserves and capitalized interest for the period that facilities will be under construction. One disadvantage with certificates of participation, as compared with revenue bonds, is that interest rates can be slightly higher than with revenue bonds due to the insecurity associated with the obligation to make lease payments.

### **6.1.3.3 General Obligation Bonds**

General obligation (GO) bonds are municipal securities secured by the issuer's pledge of its full faith, credit, and taxing power. GO bonds are backed by the general taxing authority of local governments and are often repaid using utility revenues when issued in support of a sewer or water enterprise fund.

### **6.1.3.4 Assessment District Bonds**

Financing by this method involves initiating assessment proceedings. Assessment proceedings are documents in "Assessment Acts" and "Bond Acts".

An assessment act specifies a procedure for the formation of a district (boundaries), the ordering, and making of an acquisition or improvement, and the levy and confirmation of an assessment secured by liens on land. A bond act provides the procedure for issuance of bonds to represent liens resulting from proceedings taken under an assessment act. Procedural acts include the Municipal Improvements Acts of 1911 and 1913. The commonly used bond acts are the 1911 Act and the Improvement Bond Act of 1915. The procedure most prevalent currently is a combination of the 1913 Improvement Act with the 1915 Bond Act. Charges for debt service can be included as a special assessment on the annual property tax bill. The procedure necessary to establish an assessment district may vary depending on the acts under which it is established and the district size.

### **6.1.3.5 Marks-Roos Bonds**

The Marks-Roos Local Bond Pooling Act of 1985 has proven to be one of the more useful and flexible financing devices. It expands the types of projects and programs that can be financed by joint powers authorities, facilitates regional projects and pool financing, and may offer significant economies of scale and convenience.

Marks-Roos bonds generally refer to bonds issued by a joint powers authority to make loans to or entering financing leases with or acquire bonds from two or more public entities

or to a single entity for more than one project. Starting in 1989, public entities in California have been making increasing use of Marks-Roos bonds.

Advantages of Marks-Roos bonds are the ability to lock in current interest rates, and the cost savings of financing multiple projects with one bond issue versus separate stand alone bond issues for each project's financing. Disadvantages include higher interest rates if rates decrease after bonds are issued, greater legal and administrative complexity and risk, and additional costs resulting from the complexity and size of the bonds if proceeds are not entirely used to acquire obligations.

#### **6.1.4 Grants and Loans**

Several grant and loan programs can be utilized to finance the Recycled Water Project. These grants and loans are further discussed as local, state, and federal funding sources in the succeeding sections. Table 6.1 provides a summary table of these grants and loans. The grant and loan options presented here in are accurate as of December 2008. Please refer to the contact or website for the most up to date information for each of these grants and loans. It is possible that some of these grant and loan programs are discontinued and/or that new programs become available.

##### **6.1.4.1 Local Funding**

Local funding sources include the Sonoma County Agricultural Preservation and Open Space District.

###### ***6.1.4.1.1 Sonoma County Agricultural Preservation and Open Space District***

The Sonoma County Agricultural Preservation and Open Space District offers matching grants to agencies and non-profits within Sonoma County to conserve natural areas and promote open space for public recreation. On March 11, 2008, the District held a workshop in Santa Rosa to distribute the 2008 application and guidelines and to field questions about the program. Non-attendees are also invited to apply via the district's webpage.

Eligibility requirements and conditions of the grant were to be released at the workshop. However, past grants have ranged in amount from \$50,000 to \$2.5 million. The focus of past projects has been on protecting heritage farms, pedestrian and bicycle trails, outdoor spaces, and river parkway. Recycled water projects may conform to District's goals of promoting open space by ensuring the livelihood of local farmers by providing reliable water supply. The district preserves land through outright purchase or through conservation easements. Sonoma County could negotiate easements for recycled water application sites or land hosting recycled water facilities.

##### **6.1.4.2 State Funding**

Several state funding sources are applicable to the Recycled Water Project. These are discussed further below.

#### **6.1.4.2.1 Water Recycling Funding Program**

One option for financing the Recycled Water Project is the Water Recycling Funding Program administered by the State Water Resources and Control Board. The program offers funding for research, feasibility studies, planning, and construction. The program is financed through Propositions 13, 50, and the State Revolving Fund (SRF).

Recycling projects are categorized by their potential benefits to state and local communities, which in turn determines which funding sources are applicable. Category I projects will offset state water supplies and increase water to the Delta. Category II projects will offset state water use, but do not provide benefits to the Delta. Category III projects use recycled water to supplement local water supplies but have no impact on the state water supply or the Delta. Category IV projects will treat and reuse groundwater contaminated by human activity. Category V projects will treat and dispose wastewater to meet waste discharge regulations. Category VI captures miscellaneous projects that do not fall into other categories and have no benefits to state or local water supplies. Recycled water projects within Sonoma Valley will likely fall into this Category III and/or Category V.

Category I projects may utilize all types of funding including Prop 13, 50, and the SRF. Prop 50 funds may only be used to achieve the objectives of the CALFED Bay-Delta program, thus only Category I projects are eligible. If Sonoma County can demonstrate that the project has a positive effect on the Delta, then the county can receive favorable ranking under Category I. Categories II-IV may compete for SRF loans and Prop 13 grants, as funds are available. Prop 13 funding for water recycling was initiated by the 2000 Bond Law and all initial funds have been exhausted. However, the program remains active due to loan repayments. For fiscal year 2007/2008, Prop 13 has \$5 million still available for construction grants. Program administrators estimate that for fiscal year 2008/2009, \$22 million will be available for construction grants, \$10 million for planning grants, and \$1.3 million for research. Construction costs can also be retroactively funded if projects meet program requirements but can't be issued a funding commitment due to program shortfalls. The maximum award for construction grants is the lower of \$5 million per project or 25 percent of construction costs.

Categories V and VI are only eligible for SRF loans. The loans may be used for the construction of publicly owned wastewater treatment facilities, local sewers, sewer interceptors, water reclamation facilities, and expanded use projects. Loans are capped at \$50 million per agency per year. Thus, to fully finance the Recycled Water Project, SVCSD would need to stagger the funding requests over multiple years (i.e., with the different phases). The SRF also offers retroactive funding for projects that meet program requirements, received approval by the State Water Board, and submitted required documentation but could not be issued a loan agreement.

<b>Table 6.1 Applicable Grants and Loans Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>							
<b>Organization</b>	<b>Program</b>	<b>Type</b>	<b>Description</b>	<b>Eligibility</b>	<b>Max Award</b>	<b>Contact or Website</b>	<b>Status</b>
<b>Local</b>							
Sonoma County Agricultural Preservation and Open Space District	<b>Matching Grant</b>	Grant	The District offers grants that allow partner entities to enhance natural areas and to provide urban open spaces for public recreation. The focus of past projects has been on protecting heritage farms, pedestrian and bicycle trails, outdoor spaces, and river parkways.	Unknown.	Past projects range from \$50,000 to \$2.5 million.	<a href="http://www.sonomaopenspace.org/Content/10157/whats_new.html#cresta">http://www.sonomaopenspace.org/Content/10157/whats_new.html#cresta</a>	Application available online.
<b>State</b>							
State Water Resources and Control Board	<b>Water Recycling Funding Program (SRF, Prop 13, Prop 50)</b>	Grant/Loan	Grants and loans for feasibility studies, planning, research, and construction for recycled water projects. Project benefits determine what funding is available. Projects that benefit State water supplies and the Delta get first priority and access to grants. Projects without benefits to State water supplies or the Delta will be given grants as funds are available. All projects are eligible for a State Revolving Fund loan. The interest rate is set at half of the State's General Obligation Bond rate and should be approximately 2.5%.	Public agencies.	\$5 million for grants, \$50 million for loans.	<a href="http://www.swrcb.ca.gov/recycling/index.html">http://www.swrcb.ca.gov/recycling/index.html</a>	Ongoing applications.
California Resources Agency	<b>River Parkways Grants Program (Prop 84)</b>	Grant	Projects must meet two of the following statutory conditions: provide public recreation, develop public facilities for interpretive programs, convert developed riverfront property into public open space, improve riparian habitat including benefits to wildlife habitat and water quality, and "maintain or restore the open-space character of lands along rivers and streams so that they are compatible with periodic flooding as part of a flood management plan or project."	Local public agencies, non-profits, state agencies, and citizens' groups.	\$1 million.	<a href="http://www.resources.ca.gov/bonds_riverparkways.html">http://www.resources.ca.gov/bonds_riverparkways.html</a>	Due date not yet established. Anticipated due date in November 2008. Program will likely have \$28 million available (contingent upon 08/09 budget).
California Department of Parks and Recreation	<b>Habitat Conservation Fund Program</b>	Grant	Annually the programs disburses \$2 million in grants to projects that restore or acquire land for one of five habitat types: deer and mountain lion habitat, rare, endangered, threatened, or fully protected species habitat, wetlands, salmon and trout habitat, riparian habitat, and for projects that develop trails or programs to provide access to wildlife.	Public agencies.	\$200,000.	<a href="http://www.parks.ca.gov/?page_id=21361">http://www.parks.ca.gov/?page_id=21361</a>	Due October 1 of each year.
Department of Water Resources	<b>Water Use Efficiency Grant Program (Prop 50)</b>	Grant	This grant program will primarily fund projects that are not locally cost effective, and that provide water savings or in-stream flows that are beneficial to the Bay-Delta or the rest of the State. Consideration will also be given to projects that address water quality and energy efficiency. Eligible uses of funds include the development of best management practices and demonstration projects. Water treatment or storage are not eligible but capital outlays for conservation equipment or facilities are eligible.	Cities, counties, joint power authorities, public water districts, tribes, nonprofit organizations, and other political subdivisions of the State.	\$3 million.	<a href="http://www.owue.water.ca.gov/docs/2008wuePSP4.doc">http://www.owue.water.ca.gov/docs/2008wuePSP4.doc</a>	Deadline has past.
Department of Water Resources	<b>Agricultural Water Conservation Loan Program (Prop 13)</b>	Loan	Offers loans for lining canals or ditches, repairing reservoirs, covering or lining reservoirs, capital outlays for conservation programs, and major repair or replacement of leaking agricultural distribution systems. The interest rate is set at half of the State's General Obligation Bond rate and should be approximately 2.5%.	Public agencies.	\$5 million.	<a href="http://www.owue.water.ca.gov/docs/AgLoanApp-07-20-07.doc">http://www.owue.water.ca.gov/docs/AgLoanApp-07-20-07.doc</a>	Ongoing applications.

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<b>Table 6.1 Applicable Grants and Loans Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>							
<b>Organization</b>	<b>Program</b>	<b>Type</b>	<b>Description</b>	<b>Eligibility</b>	<b>Max Award</b>	<b>Contact or Website</b>	<b>Status</b>
Department of Water Resources	<b>New Local Water Supply Program (Prop 82)</b>	Loan	Loans for the construction of facilities to increase local water supplies. Eligible projects include canals, dams, reservoirs, desalination facilities, groundwater extraction facilities, or distribution facilities that will improve existing water supply problems. The interest rate is set at the State's General Obligation Bond rate (typically around 5%).	Public agencies.	\$5 million.	<a href="http://www.grantsloans.water.ca.gov/loans/construction.cfm">http://www.grantsloans.water.ca.gov/loans/construction.cfm</a>	Ongoing applications.
California Statewide Communities Development Authority	<b>CaLease Program</b>	Master Lease	Offers low cost Master Lease Agreements for agencies with the intent to purchase. The program offers competition among multiple lending institutions to get lower rates and offers a management program to manage leases, reducing staff commitments.	Public agencies that are members of California Communities. Any California local agency can become a member of California Communities simply by having its governing board adopt a resolution and execute the joint powers agreement.	The program has no maximum.	<a href="https://www.psacommunities.org/fs/apps/?app=4">https://www.psacommunities.org/fs/apps/?app=4</a>	Ongoing applications.
<b>Federal</b>							
Bureau of Reclamation	<b>Water Reclamation and Reuse Program (Title XVI)</b>	Grant	Funds for recycled water feasibility, demonstration, and construction projects. Projects must be authorized by Congress, recommended by the Bureau of Reclamation, and then appropriated by Congress.	Public agencies.	\$20 million.	<a href="http://www.usbr.gov/pmts/writing/guidelines/">http://www.usbr.gov/pmts/writing/guidelines/</a>	Program is currently active.
Bureau of Reclamation	<b>Water for America Initiative Challenge Grant</b>	Grant	Funds for projects that will improve water efficiency, demonstrate advanced water treatment technologies, and to benefit federally listed species and help to prevent the decline of candidate species.	Irrigation districts, water districts, federally recognized tribal water authorities, and other governmental entities created under State law with water delivery authority in the 17 Western States and the U.S. Territories.	\$300,000.	<a href="http://www.doi.gov/initiatives/water.html">http://www.doi.gov/initiatives/water.html</a>	USBR requested \$11 million from Congress for this program.
Bureau of Reclamation	<b>American Recovery and Reinvestment Act of 2009</b>	Grant	Influx of funding for existing programs: \$450.9 million for meeting future water supply needs (including water reuse and rural water supply projects). \$236.6 million for environmental and ecosystem restoration. \$40 million for water conservation initiatives. \$40 million for emergency drought relief. It has not yet been determined how this funding will be allocated amongst U.S. Bureau of Reclamation programs.	Public agencies in the 17 Western States and the U.S. Territories.	Not yet determined	<a href="http://recovery.doi.gov/">http://recovery.doi.gov/</a>	USBR is developing grant solicitations.



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The SRF interest rate is set at one half of the state general obligation bond rate and has historically averaged around 2.5 percent. SVCSO also has the option of applying for a zero interest SRF by using a local match loan. The local match loan requires the SVCSO to pay 16.667 percent of total eligible project costs through another source.

The SWRCB provides one application package for both construction grants and SRF recycled water loans (see Appendix I). The application package consists of:

- Financial Assistance Application.
- Facilities Plan composed of:
  - Project report.
  - Environmental documents including CEQA documents.
  - Construction Financing Plan.
  - Recycled Water Market Assurances documenting user participation in the project.
  - Authorized Representative Resolution (Legal Authority).
- Water Conservation Plan demonstrating that the applicant has a water conservation program in effect or has signed onto the California Urban Water Conservation Council's Memorandum of Understanding.

The SWRCB will review the application package and assess eligibility. Eligible projects will be issued a preliminary funding commitment with due dates for either the submittal of final construction plans and specifications or the issuance of a "Notice-to-Proceed". Once the SWRCB receives and reviews the final plans and specs, it will issue project performance standards. Once performance standards are agreed to and the applicant chooses a contractor, the parties sign a funding agreement. The applicant must also have an Urban Water Management Plan filed with the Department of Water Resources to receive funds.

#### **6.1.4.2.2 New Local Water Supply Program**

Proposition 82 authorized the New Local Water Supply Program to offer grants for feasibility studies and loans for the construction of facilities to increase local water supplies. Eligible projects include canals, dams, reservoirs, desalination facilities, groundwater extraction facilities, or distribution facilities that will improve existing water supply problems. Construction loans are capped at \$5 million per project with repayment term of 20 years. The interest rate is set at the State's rate on the most recent General Obligation bond sale. Thus, using this program instead of outright selling a bond would save the county issuance costs. Currently, \$20 million has been authorized for the program and \$10.9 million is available for loans. Applications are accepted continuously and available on the State Water Board's website.

#### **6.1.4.2.3 Agricultural Water Conservation Loan Program**

Agricultural Water Conservation Loans are similar to New Local Water Supply Loans in that both programs cap loans at \$5 million with a 20-year term. The agricultural loans, however, are set an interest rate of half of the State's General Obligation rate and apply to different project types. Agricultural Conservation loans cannot be used for water or wastewater supply or treatment. But, eligible projects include lining canals or ditches, repairing reservoirs, covering or lining reservoirs, capital outlays for conservation programs, and major repair or replacement of leaking agricultural distribution systems. SVCSD may be successful in arguing that the Recycled Water Project will both conserve water and improve the efficiency of delivery systems. The program currently has \$31.7 million available for loans. Applications are available on the State Water Board's website and evaluated on an ongoing basis.

#### **6.1.4.2.4 Water Use Efficiency Grant Program**

The Department of Water Resources offers grants of up to \$200,000 for the implementation of water conservation best management practices. The goal of the program is to provide both agricultural and urban communities with funds needed to improve in-stream flow and water quality. The majority of funding (85 percent) will go to projects that conserve water for the Bay-Delta or develop best management practices. The remaining funds will be applied to research projects, demonstration projects, public outreach, and technical assistance. However, construction and improvements exclusively for water conservation may be eligible. Total program funding available for FY 2008 is \$38.5 million. Concept proposals were due in the spring of 2008, but the program is likely to have funding available in the future.

#### **6.1.4.2.5 Integrated Regional Water Management Grants Program**

As part of the North Coast Integrated Regional Water Management Plan, Sonoma County and the City of Santa Rosa have been successful in working with the Department of Water Resources (DWR) to receive Integrated Regional Water Management Implementation funds. The North Coast region is eligible to receive further funding under this program via Proposition 84. In transitioning from Prop 50 funding to Prop 84 funding, the DWR altered several of the standards it uses to evaluate regions including: governance requirements, acknowledgement of water conflicts, and potential climate change requirements. Therefore, the DWR is allowing regions that received funds under Prop 50 to also receive funds under Prop 84 to comply with the new standards. Last year the DWR did not receive an appropriation for the Integrated Regional Water Management Program, but currently, the DWR has a budget request of \$450 million before the CA legislature.

#### **6.1.4.2.6 River Parkways Grants Program**

The benefits of the recycled water projects on the Russian River may qualify the county for the California Resources Agency's River Parkways Program. Via Prop 84, the River Parkways program offers grants to local public agencies and nonprofits for the protection and restoration of rivers. Projects must meet two of the following statutory conditions: provide public recreation, develop public facilities for interpretive programs, convert developed riverfront property into public open space, improve riparian habitat including benefits to wildlife habitat and water quality, and "maintain or restore the open-space character of lands along rivers and streams so that they are compatible with periodic flooding as part of a flood management plan or project." Reducing diversions to the Russian River clearly benefits salmon and trout habitat and the county could argue that agricultural open space provides flood management benefits. River Parkways is a new program that will release further guidelines in the fall of 2008.

#### **6.1.4.2.7 Habitat Conservation Fund Program**

The California Department of Parks and Recreation offers grants for the protection of wildlife habitat through the Habitat Conservation Fund Program. Annually, the programs disburses \$2 million in grants to projects that restore or acquire land for one of five habitat types: deer and mountain lion habitat, rare, endangered, threatened, or fully protected species habitat, wetlands, salmon and trout habitat, riparian habitat, and for projects that develop trails or programs to provide access to wildlife. Again, SVCSD may tie the use of recycled water to the enhancement and restoration of the Russian River to demonstrate the benefit to water quality and fish habitat. Applicants must demonstrate land tenure of 10 years for projects requesting less than \$100,000 and 20 years for projects requesting greater than \$100,000. The program discourages grants requests of more than \$200,000 and requires 50 percent non-state cost matching. The grant application is available in Appendix I and is due by October 1 of each year.

#### **6.1.4.2.8 CaLease Program**

The CaLease Program, administered by the California Statewide Communities Development Authority, offers low cost Master Lease Agreements for agencies with the intent to purchase. The program offers competition among multiple lending institutions to get lower rates and offers a management program to manage leases, reducing staff commitments. Equipment leases valued at over \$500,000 and real estate leases valued over \$1 million are eligible. No maximum project sizes are given. To date, over 40 agencies have participated in the program including Santa Clara, Santa Barbara, and Solano Counties. The California Statewide Communities Development Authority also offers bond financing; however, lease agreements can be advantageous because, depending on local ordinances, they often do not qualify as long-term debt and do not impact debt ratios.

The CaLease Program is only available to members of the California Statewide Communities Development Authority. Any city, county, special district or other California local agency can become a member of California Communities simply by having its governing board adopt a resolution and execute the joint powers agreement. CaLease utilizes an online application system available on the California Communities website.

#### **6.1.4.3 Federal Funding**

In addition to local and State grants and loans, there are several highly competitive Federal grant and loan programs that provide financial resources to projects similar to the Recycled Water Project. Moreover, American Recovery and Reinvestment Act of 2009 (ARRA) has provided an influx of funding for these programs.

##### **6.1.4.3.1 *Title XVI***

The U.S. Bureau of Reclamation administers funds for recycled water feasibility, demonstration, and construction projects through the Water Reclamation and Reuse Program authorized by the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 (Title XVI) and its amendments. The program provides as much as 25 percent of construction costs with a maximum of \$20 million. To meet eligibility requirements a project must have a feasibility study, comply with environmental regulations, and demonstrate the ability to pay the remainder of the construction costs. Projects are authorized by Congress and recommended in the President's annual budget request by the Bureau of Reclamation. Congress then appropriates funds and the Bureau ranks and prioritizes projects and disburses the money. Prioritized projects are those that postpone the development of new water supplies, reduce diversions from natural watercourses, reduce demand on federal water supply facilities, or that have a regional or watershed perspective.

In 2008, Representative George Miller used Title XVI to gain authorization to finance seven Bay Area water recycling projects. Representative Miller sponsored H.R. 1526, amended and passed as S. 2739, to amend the Reclamation Wastewater and Groundwater Study and Facilities Act to authorize the Bay Area Regional Water Recycling Program. The following organizations were authorized, allowing them to receive federal appropriation financing in the future:

- The Cities of Palo Alto and Mountain View.
- The City of Pittsburg and the Delta Diablo Sanitation District.
- The City of Antioch and the Delta Diablo Sanitation District.
- North Coast County Water District.
- Redwood City.
- South County Regional Wastewater Authority and the Santa Clara Valley Water District.

- The City of San Jose and the Santa Clara Valley Water District.

In May of 2009, another water recycling bill was introduced into the House of Representatives, which would provide funding to six additional projects:

- CCCSD-Concord Recycled Water Project
- Central Dublin Recycled Water Distribution and Retrofit Project
- Petaluma Recycled Water Project
- Central Redwood City Recycled Water Project
- Palo Alto Recycled Water Pipeline Project
- Ironhouse Sanitary District-Antioch Recycled Water Project

As of July 2009, this bill is being discussed in Committee.

To submit a project to the Water Reclamation and Reuse Program, the SVCSO should contact its Congressional Representatives and the Bureau of Reclamation.

#### ***6.1.4.3.2 Water for America Initiative***

The Water for America Initiative reflects the U.S. Bureau of Reclamation's new approach to ameliorating water scarcity and ecological degradation in the West. The initiative is being used as an opportunity for the U.S. Bureau of Reclamation to revise its grant programs' funding priorities. Of note is the Challenge Grant Program, which grants up to \$300,000 per project for water conservation projects, demonstrations of advanced water treatment technologies, and projects that benefit federally listed species and candidate species. The Water for America Initiative has been presented to Congress in the President's annual budget request for FY 2009. The U.S. Bureau of Reclamation requested \$11 million requested for the Challenge Grant Program specifically. If Congress does not approve the request, only a fraction of the FY 2008 funding will be available for grant programs in 2009.

#### ***6.1.4.3.3 American Recovery and Reinvestment Act (ARRA) of 2009***

ARRA has provided an influx of funding to existing federal programs. The U.S. Bureau of Reclamation was allocated \$945.3 million from ARRA. Of this allotment, the following are the funding categorizations applicable to water reuse projects:

- \$450.9 million for meeting future water supply needs (including water reuse and rural water supply projects). \$135 million will be dedicated exclusively to water recycling programs.
- \$236.6 million for environmental and ecosystem restoration.
- \$40 million for water conservation initiatives.
- \$40 million for emergency drought relief.

The U.S. Bureau of Reclamation is in the process of developing new grant solicitations for this funding.

### **6.1.5 Operating Cost Recovery**

In addition to financing the Recycled Water Project capital costs, SVCSD and internal stakeholders will need to finance operations and maintenance (O&M) cost of the project. SVCSD can recover O&M costs in several methods. These include cost recovery through a combination of wastewater rates, water rates, and or recycled water rates.

There are however, some key considerations that must be maintained when determining financing mechanisms for recycled water O&M. Some recycled water users may not receive additional benefit from using recycled water in place of potable water. Users who replace potable water use with recycled water generally will not pay more for the same or lesser benefit, which results in placing a cap on the price of recycled water and further impeding the possibility of operating a financially self-sufficient system. The appropriate cost recovery amount, therefore, is generally a policy decision.

In the case of the Recycled Water Project, the economic cost/benefit analysis has clearly shown advantages to all stakeholders, including water and wastewater customers. It can be argued, therefore, that evaluation of policy that considers cost recovery through a combination of water, wastewater and recycled water customers is warranted. The following sections explore the precedent in recovering costs through these methods.

#### **6.1.5.1 Cost Recovery Through Wastewater Rates**

Some wastewater drivers and circumstances may indicate that wastewater rates are the appropriate method to recover all or part of the cost of a recycled water project. Examples cases where cost recovery through wastewater rates is appropriate are as follows:

- Reducing volume of effluent discharged or using advanced treatment to help meet discharge limitations.
- Avoiding or delaying upgrades to wastewater treatment and disposal facilities (for example, delaying or avoiding outfall expansion or avoiding the necessity of purchasing more land on which to dispose of effluent).
- Using recycled water for treatment plant processes and onsite irrigation.

Where effluent disposal or permit limitations are at issue, as they are in this project, end-user recycled water service charges and fees are often set at a flat monthly rate that is lower than the potable water rate in order to encourage high usage. Some agencies provide recycled water free or pay users to take delivery of the water. Such pricing strategies encourage customers to use more water.

As was seen from the Without Project Baseline analysis, if the Recycled Water Project is not implemented, the SVCSD would be required to construct additional wastewater storage as well as a larger effluent pipeline to manage future flows at the plant. Although treatment upgrades are not necessary to meet water quality regulations, flow restrictions the SVCSD may face warrants consideration of passing on some of the avoided treatment plant projects costs to wastewater customers in order to finance the O&M costs associated with the Recycled Water Project.

#### **6.1.5.2 Cost Recovery Through Potable Water Rates**

Pricing of recycled water is most often associated with potable water pricing. Potable water pricing policies can greatly impact revenues generated from recycled water sales.

Recycled water customers may not perceive that recycled water provides greater benefit than does potable water, and may not be willing to pay more for recycled water even though it usually costs more to provide. Recycled water, therefore, is often priced lower than potable water in order to promote customer acceptance and use. However, according to the Environmental Protection Agency (EPA), many utilities that started with pricing strategies designed to promote high usage are now shifting to volume-based rates as augmenting water supply with recycled water grows in importance.

As existing potable water customers convert from potable water supplies to recycled water, wastewater reclamation facilities effectively create a water resource, and thus water capacity. Water supply agencies may also be interested in using recycled water as a form of water resource mitigation to retain or gain water rights. Costs to treat poor quality sources may be avoided or postponed, and reductions in average day or peak day water demand can result in substantial savings when sizing potable water infrastructure. Potable water customers may benefit from the following:

- Increased capacity in the potable water supply system to serve future development.
- Savings resulting from deferring augmentation of potable water supply infrastructure.
- Avoided cost of peaking capacity caused by seasonal irrigation and cooling needs.
- Avoided O&M costs for transmission, treatment, and distribution of potable water.
- Avoided cost for supplying higher quality water than the use requires.
- Avoided increased groundwater pumping costs from declining groundwater levels.
- Local control over water resources (for example, not relying on imported water).

In such cases, the cost savings incurred by developing the recycled water system results in saving to all potable customers and therefore, all or part of the cost savings can be allocated to water rates to finance the recycled water system.



As illustrated by the left graph in Figure 6.1, capacity of the potable water system must be increased in time to meet projected future demands. Conversely, the graph on the right in Figure 6.1 shows how the implementation of a recycled water program could eliminate or delay the expansion of a potable water system as the projected demand for potable water shifts downward as some water demands are met using recycled water. Water use efficiency measures can similarly delay or eliminate the need to increase system capacity.

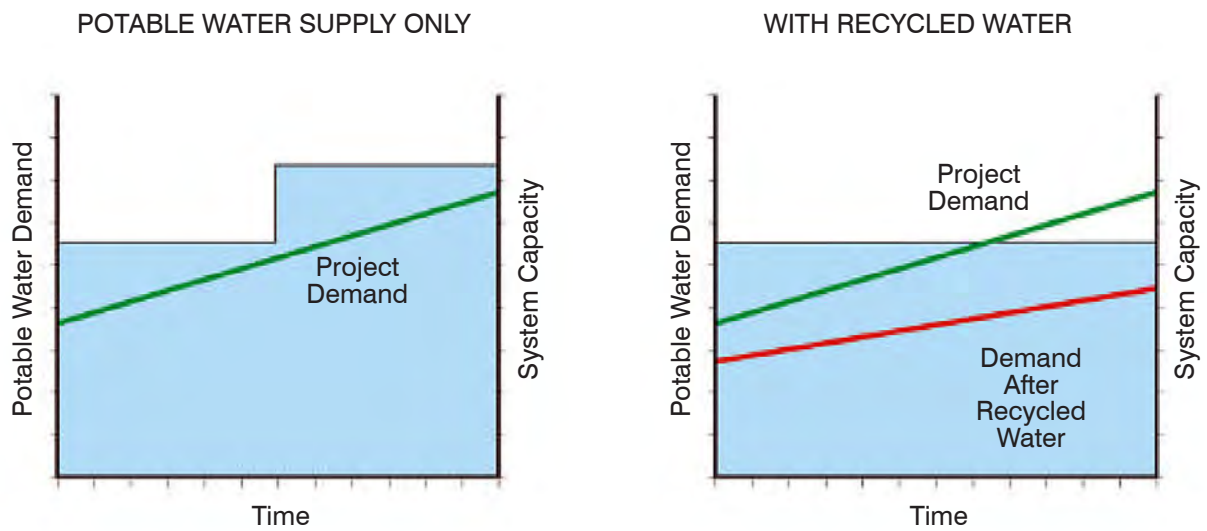
As regulations for water withdrawals and wastewater discharges become more stringent, recycled water may play a more important and cost-effective role in mitigating impacts. System capacity can represent not only the physical limitations of the constructed infrastructure but also of the water supply or a community's water rights. For example, the use of recycled water could be used for indirect streamflow augmentation to offset groundwater pumping as water demands increase. Under this example, recycled water costs could be directly attributable to future potable water users if stream augmentation is necessary in order to supply the next increment of water.

The Recycled Water Project provides many of the benefits to the potable water presented above. Construction of the recycled water alignments will result in reduced potable water demand from the SCWA, VOMWD and the City systems, allowing these agencies to defer costs associated with obtaining new water rights and freeing current potable sources for alternate use. In addition, it will offset a large volume of groundwater and creek water. Though the cost of consumption of groundwater and creek water are significantly lower than the cost of potable water, and the true cost of recycled water, the economic analysis identifies large monetary benefits in preserving groundwater and creek water supplies. The "value" of this water provides a sound basis for evaluating cost recovery of some of these savings through potable water rates.

### **6.1.5.3 Cost Recovery Through Recycled Water Rates**

As seen from the information in Chapter 4 and the financial analysis, the unit cost of recycled water is higher than the unit cost of potable water, and the unit cost of other water sources in the Sonoma Valley.

The unit cost of recycled water is often highest initially when costs are high and demand is low. At the same time, utilities usually need to build demand over time by setting prices that will attract customers. As the demand for recycled water increases and the available capacity is used, the per-unit cost decreases.



**Figure 6.1**  
**RELATIONSHIP BETWEEN SYSTEM CAPACITY,**  
**POTABLE WATER DEMAND, AND RECYCLED WATER**  
 SONOMA VALLEY RECYCLED WATER FINANCIAL/ECONOMIC ANALYSIS  
 SONOMA VALLEY COUNTY SANITATION DISTRICT

The financial analysis shows that even by setting the cost of recycled water at a fraction of the potable water rate, or by setting agricultural and municipal/urban recycled water rates that are below the cost of current agricultural rates or municipal/urban rates, a portion of the cost of operation of the system can be recovered. Because implementing the Recycled Water Project provides numerous benefits to agricultural and urban stakeholders, including guaranteed drought-resilient supply. Therefore, discussion of price setting of recycled water appears defensible. Determining recycled water prices will require additional discussion of pricing strategies and development of pricing policy. A recycled water rate study would also be required to ensure equitability to all customers.

## **6.2 FUNDING SUMMARY**

As evident from the preceding discussion, there are multiple cost recovery mechanisms available to the SVCSD for financing the Recycled Water Project capital and O&M costs.

In order to minimize the costs to SVCSD and all other internal and external stakeholders, SVCSD should apply for as many of the Local, State and Federal grants and loans (as practically possible) if it moves forward with the Recycled Water Project. Since the largest cost component to be recovered consist of the capital costs, financing these costs with what is essentially “free money” will reduce the cost SVCSD and stakeholders have to recover using alternate methods.

Payment of O&M costs will require that SVCSD and internal stakeholders make policy decisions regarding methods of cost recovery. Guidelines are in place that allow cost recovery through recycled water user fees and if SVCSD and the internal stakeholders choose to fully or partially recover the costs of operation of the recycled water system through water, wastewater rates, recycled water rates, or a combination thereof, there are many examples/case studies and legal precedents for this approach.

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## IMPLEMENTATION STRATEGY

Execution of a multi-phase project, such as the proposed phases of the Sonoma Valley Recycled Water Project (Recycled Water Project) that requires coordination between multiple internal and external stakeholders requires an implementation strategy to ensure project success. This chapter presents different implementation needs of the Recycled Water Project and potential proposed strategies for completion of the project with internal and external stakeholder support.

### 7.1 NEED FOR IMPLEMENTATION STRATEGY

The Recycled Water Project involves both internal and external stakeholders. The internal stakeholders include:

- Sonoma Valley County Sanitation District (SVCS).
- Sonoma County Water Agency (SCWA).
- City of Sonoma.
- Valley of the Moon Water District (VOMWD).

The external stakeholders include:

- Basin Advisory Panel (BAP).
- Grower's Groups.
- Agricultural/Urban Customers.

Because the costs and benefits of the project may be borne by each stakeholder (in an equitable solution), it is imperative that there be stakeholder buy-in on the approach and strategy of implementation of the Recycled Water Project.

### 7.2 IMPLEMENTATION SCHEDULE

The tentative alignment implementation schedule includes a technical and institutional track. The technical track focuses on the planning, design and construction of the alignments; while the institutional track focuses mainly on public outreach and obtaining stakeholder support, funding and permitting. The two tracks were developed in recognition of the importance of planning for, and synchronization of the development of the project design details with the development of joint powers and customer agreements, development of permitting documentation, funding acquisition, and stakeholder outreach, to project success.

## **7.2.1 Technical Track**

The technical track consists of pre-planning, planning, design, and construction. Each of these stages is further discussed below.

### **7.2.1.1 Alignment Pre-Planning**

The pre-planning phase of the Recycled Water Project has been projected to be completed by the end of 2009. This phase of the project includes alignment prioritization, funding analysis, economic analysis, and developing financial governance principles.

Alignment pre-planning should involve the agricultural stakeholders via two public meetings and analysis workshops. The BAP should hold meetings during this period to develop a monitoring program and public outreach plan, discuss residential and agricultural conservation updates, and provide a Recharge Mapping and Pilot Project Conservation Program Summary. The Technical Advisory Committee should support the activities of the BAP through monthly meetings.

### **7.2.1.2 Planning, Design and Construction**

For each alignment, the planning phase has been assumed to extend over approximately eight months, the design phase over twelve months, and the bid/award phase over four months. The bid/award phase depends upon market conditions, the number of bids and the quality of bids.

The length of time for construction of the pipelines varies due to pipeline length and terrain. It is assumed that trenching will primarily be used for constructing the pipelines, and jack and bore or directional drilling will be used for the numerous water crossings. Each water crossing is estimated to require approximately one to two weeks. Trenching construction varies from 100 feet per day in developed areas with a high volume of traffic and utilities and up to 400 feet per day over undeveloped land.

Alignment 1A passes through primarily agricultural land and, thus, can expect rapid construction lasting approximately 8 to 12 months. Alignment 1B passes through mixed rural residential, urban residential, recreational land, and public lands and may be completed in approximately 12 to 18 months. Alignment 2 passes through the dense urban areas of the City after passing through the agricultural area to the north of the SVCSD treatment facility. It is likely that Alignment 2 could be completed in 8 to 12 months. Alignment 3 passes through primarily agricultural land in addition to some limited industrial areas and could be completed in 8 to 12 months.

In addition to the pipeline alignments, the project will require operational storage, capacity storage, a booster pump station, and a distribution pump station. Each pump station will require approximately six months to complete. The operational storage reservoir is estimated to take eight months to construct and each storage tank is expected to be encapsulated in one to two months. The phasing of these project components will depend

upon the phasing of the pipeline alignments. Alignment 1B requires additional capacity storage. Therefore, a longer planning, design, and construction duration is expected for this alignment in comparison to the others. Figure 7.1 provides a tentative implementation schedule.

## **7.2.2 Institutional Track**

The institutional track focuses primarily on obtaining available funding and necessary permitting documents. The institutional track also focuses on the dissemination information to the agricultural and urban customers as well as the public.

### **7.2.2.1 Funding**

Although potential funding sources have been identified for this project within Chapter 6, not all the grant and loan programs are likely to be available into the future, particularly for the alignments to be constructed in the later years. Generally, proposition monies are used until funds are exhausted and due to the political process, their associated programs may not be extended through the enactment of further propositions.

However, in the near term, the internal stakeholders group has many funding opportunities available (see Figure 7.2). Programs requirements and timing vary, but most programs have multiple deadlines and application workshops that the recycled water project manager should take note of and plan on attending. Proposition-backed grant programs typically have a two-step application with a pre-application or concept proposal and a full application. Only accepted pre-applications are invited to submit a full application with complete project documentation. Application workshops should be attended as they give applicants a better understanding of grant program eligibility and criteria.

Other programs, such as the State Board's Water Recycling Funding Program and the federal Title XVI program have longer term funding cycles with more flexible timetables. The Water Recycling Funding Program monies can be requested within three years of construction. The Title XVI program has no deadlines but requires the endorsement of the Bureau of Reclamation and Congressional authorization and appropriation. Thus, the SCWA should plan the Title XVI application process over multiple years and around Congressional budgeting cycles. Figure 7.2 presents the tentative near-term schedule, including funding requirements.







### **7.2.2.2 Permitting**

The permitting process should be completed concurrently with the design phase of the project. This will allow the SVCSD to have permits ready when construction begins.

All transmission mains will require a variety of permits including:

- National Pollution Discharge Elimination System (NPDES) permit.
- Department of Public Health recycled water permit.
- CA Fish and Game Code section 1600 permit from the CA Department of Fish and Game.
- Section 7 consultation with the US Fish and Wildlife Service and with the National Marine Fisheries Service.
- Compliance with relevant provisions of the California Coastal Act relating to the protection of Environmentally Sensitive Habitat Areas.
- Army Corps of Engineers Section 404 permit.
- Air Pollution Control district authority to construct and permit to emit, and county permits.
- Federal Clean Water Act Section 401 water quality certification from the Regional Water Quality Control Board.
- Federal consistency certification from the CA Coastal Commission.

Alignment 1A and Alignment 2 will also require Caltrans Encroachment Permits to construct along Highway 116 and Highway 12. Most of these permits will be negotiated over a few months. In addition, a Stormwater Pollution Prevention Plan will need to be approved by the California State Water Resources Control Board for construction of all alignments. Attaining the Army Corps Section 404 permit, U.S Fish and Wildlife Service consultation, and the California Department of Fish and Game permit could span the entire planning phase due to the status of ecosystems and water resources in the area of pipeline construction.

### **7.2.2.3 CEQA**

The California Environmental Quality Act (CEQA) process consists of both a programmatic and project environmental impact review. The programmatic review was complete with the finalization of the Sonoma Valley Recycled Water Project Environmental Impact Report. This report explains the overall goals of the pipeline with respect to water supply reliability and quality. Project environmental impact reviews could also be required for each pipeline and will span approximately eight months towards the end of the design phase.

#### **7.2.2.4 Public Involvement**

Public involvement will take place at various project milestones and involve the general public, agricultural producers/recycled water customers, and internal stakeholders.

The internal stakeholders group will include the VOMWD, City, SCWA, and SVCSD personnel. Internal stakeholder meetings should occur before public outreach to coordinate project management goals.

The agricultural/urban recycled water customer workshops should occur towards the end of planning and at the middle of the design phase. These workshops will facilitate dialogue regarding customer expectations of water quality, pressure, and on-site storage. These workshops will provide a forum for customers to express their concerns and have their questions answered.

General outreach should occur towards the end of design and throughout construction to notify those who will be incidentally affected by construction, such as commuters and tourists. During the grape growing season, public notification will be especially important to facilitate alternate traffic routes. Moreover, the joint power authority will have the opportunity to explain the effect of the recycled water pipeline on sewer rates.

#### **7.2.2.5 Agreements and Contractual Arrangements**

Implementation of the Recycled Water Project will require coordination amongst both internal and external stakeholders, and the development of agreements between each to ensure complete understanding of responsibilities. Customer contracts will confirm that water demand is consistent with the pipeline, storage, and pump station design. Obtaining customer contracts provides some guarantee of usage, ensuring that the alignment design is not over estimated, resulting in redundant capital expenses.

Since multiple agencies are responsible for the financial governance of the Recycled Water Project, it is necessary to develop intergovernmental agreements between internal stakeholders. The SVCSD, SCWA, VOMWD, and the City will negotiate roles and responsibilities for the construction phase of the project as well as ongoing operations and maintenance. The agreements should be developed towards the beginning of the planning phase and customer contracts should be issued towards the beginning of design. Thus, once the pipeline is operational the SVCSD, SCWA, VOMWD, and the City can easily share costs and manage cash flow.

Intergovernmental agreements can take multiple forms and result in various governance structures. They are:

- Joint Powers Agreements.
- Supply Agreements.
- Distribution Agreements.

Joint powers agreements (JPAs) can be used when multiple agencies collaborate to operate and manage a treatment system. Supply agreements delineate the roles and responsibilities of recycled water wholesalers and retailers. Distribution agreements contain methodologies for how recycled water is allotted amongst multiple retailer agencies. All types of agreements contain member recycled water policies, water quality parameters, and procedures for dealing with unexpected shortages and dispute resolution. Table 7.1 summarizes several sample intergovernmental agreements for recycled water.

#### **7.2.2.5.1 Joint Powers Agreements**

Joint powers agreements involve multiple agencies collaborating to form a new entity to manage jointly owned facilities and to issue debt on its behalf. A Governing Board is established comprising representatives from each member agency. Agreements vary in regards to the number of votes each agency receives and whether or not the Board requires officers and which agencies will fill these positions. Common voting structures include one-vote-per-agency or representative governance, in which each agency receives a number of votes proportional to its contribution to joint facilities. Contributions may be tabulated based on financial commitment to the JPA, expected flows and loads, or a combination of the two.

The primary benefit of the JPA is that members do not solely shoulder the burden of managing and financing the construction of facilities. The Governing Board becomes the debt-issuing entity, providing some legal protection to member agencies. Debt service payment varies across agreements, but most commonly, debt is accrued to agencies based on expected flows. This is also a commonly used cost allocation metric for O&M.

Rate setting within a JPA is a two-tiered process. Governing Boards most often set a base rate for services provided to members, and agencies may add additional fees for customers in their respective service areas.

Agreements have detailed terms of dissolution to allow agencies to protect their interests and allow the Governing Board to maintain its debt obligations. A common way to achieve these goals is to allow agencies to withdraw with reasonable cause. What constitutes reasonable cause differs across agreements but can include situations in which:

- Construction bids significantly exceed estimated costs.
- Design documents are not approved.
- Jointly owned facilities fail to meet regulations.
- Extenuating circumstances arise such as unforeseen legal disputes and settlements.

Once bonds are issued, dissolution of the JPA is typically not permitted until after all debt has retired.

<b>Table 7.1 Sample Intergovernmental Agreements Sonoma Valley Recycled Water Financial/Economic Analysis Sonoma Valley County Sanitation District</b>								
<b>State</b>	<b>Description</b>	<b>Agencies Involved</b>	<b>Type</b>	<b>Governance Structure</b>	<b>Capital Financing</b>	<b>O&amp;M</b>	<b>Rate Setting</b>	<b>Dissolution</b>
CA	JPA Creating South County Regional Wastewater Authority	City of Gilroy and City of Morgan Hill	Joint Powers Agreement	Governing Board of 5:3 will be City Council members of Gilroy, 2 will be City Council members of Morgan Hill; Treasurer will be Gilroy City Treasurer.	The Board may issue bonds. Members are required to pay treatment revenues not used for O&M costs to repay the debt.	Gilroy will pay 58% of expenses, Morgan Hill - 42% for first year, thereafter cost distribution will be determined by the Board. The Board will operate the facility or hire a contractor.	The Board sets the base rate and members set fees for their respective service areas.	The JPA may be terminated by written agreement but not if there is outstanding debt. Funds contributed by members for construction of JPA facilities will be distributed back to them.
CA	Producer-Wholesaler Agreement for Supply of Recycled Water	South County Regional Wastewater Authority (Producer) and Santa Clara Valley Water District (Wholesaler)	Supply Agreement	No Governing Board, wholesaler/retailer agreement.	Producer will finance a treatment expansion and distribution system. Wholesaler will finance facilities beyond the point of connection. Producer and Wholesaler have the option to co-finance.	Producer pays for treatment O&M. Wholesaler pays Producer for recycled water reservoir O&M, distribution O&M, and delivered water.	Producer sets the rates for Wholesaler. Wholesaler sets the rates for customers. Both agencies must confer when setting rates.	Either agency has the option to withdraw at any time. Producer has option to purchase Wholesaler's facilities.
CA	Southbay Water Recycling Program Wholesaler-Retailer Agreement	City of San Jose (Wholesaler) and City of Milpitas (Retailer)	Supply Agreement	No Governing Board, wholesaler/retailer agreement.	Wholesaler will fund and construct the treatment and distribution system. Retailer will install meters. Retailer can request expansions. Wholesaler will rank and finance expansions if within CIP budget at its discretion.	Wholesaler owns and operates the distribution system up to the point of connection. Retailer owns and operates the meters.	Wholesaler sets rates, must confer with Retailer. Retailer sets customer rates.	Either agency may terminate the agreement with "reasonable cause." "Reasonable cause" is not defined.
CA	Southbay Water Recycling Program Wholesaler-Retailer Agreement	City of San Jose (Wholesaler) and City of Santa Clara (Retailer)	Supply Agreement	No Governing Board, wholesaler/retailer agreement.	Wholesaler will fund and construct the treatment and distribution system. Retailer will install meters. Retailer can request expansions. Wholesaler will rank and finance expansions if within CIP budget at its discretion.	Wholesaler owns and operates the distribution system up to the point of connection. Retailer owns and operates the meters.	Wholesaler sets rates, must confer with Retailer. Retailer sets customer rates.	Wholesaler retains the right to cease recycled water service.
CA	Southbay Water Recycling Program Wholesaler-Retailer Agreement	City of San Jose (Wholesaler) and San Jose Water Company (Retailer)	Supply Agreement	No Governing Board, wholesaler/retailer agreement.	Wholesaler will fund and construct the treatment and distribution system. Retailer will install meters. Retailer can request expansions. Wholesaler will rank and finance expansions if within CIP budget at its discretion.	The Wholesaler owns and operates the treatment and distribution system up to the point of connection; the Retailer owns and operates water meters.	The Wholesaler sets the rates but must confer with the Retailer. The Retailer sets rates for the customers, must confer with the Public Utilities Com. and the Wholesaler.	5-year contract term, automatically renewed for another 5 years unless parties wish to terminate.

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**Table 7.1 Sample Intergovernmental Agreements (Continued)  
Sonoma Valley Recycled Water Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

State	Description	Agencies Involved	Type	Governance Structure	Capital Financing	O&M	Rate Setting	Dissolution
CO	City of Brighton, Metro Wastewater Reclamation District and South Adams County Water and Sanitation District	City of Brighton, Metro Wastewater Reclamation District and South Adams County Water and Sanitation District	Joint Powers Agreement	Governing Board with 9 members, 3 from each agency. Each Board member gets 1 vote for the first five years; thereafter, voting will be weighted based each member's respective flow to the plant. The Board will appoint a manager to oversee construction and O&M.	Members pay initial capital costs (about half the project cost) weighted by initial flows to the plant. The remaining half will be paid through Board-issued bonds. Member bond repayments will be determined by future flows. Expansion costs will be distributed using member single-family equivalent units, which can be traded among members.	Phase I, members pay an equal, flat rate for O&M. Phase II, O&M allocations are based on member single family residential equivalents. Phase III O&M will be allotted by member flows and loads.	The Board will hire a rate consultant to determine connection fees. Members set fees for services within their jurisdictions.	Prior to the issuance of bonds, members can withdraw from the JPA if the constructions bids are greater than 20 % over the estimate, if design documents are rejected by the state, if the facility cannot meet its regulations, or if all parties consent. Metro has special contingencies for withdrawal prior to the issuance of bonds due to pre-existing agreements and pending legal rulings.
WA	City of Lacey, City of Olympia, City of Tumwater, and Thurston County	City of Lacey, City of Olympia, City of Tumwater, and Thurston County	Joint Powers Agreement	Governing Board of 4 representatives, one from each agency. Each Board member gets one vote.	Board will issue debt and members shall pay their "attributable costs."	The Board will contract with Olympia to operate joint facilities initially, and then make future determinations. Members pay O&M for their local facilities.	Board sets the rates for service and connection fees; members then set fees in their service areas.	The agreement will last for 35 years or as long as it takes to pay outstanding debts. Members may only withdraw after all debt is paid off and remaining members consent.
WA	City of Lacey, City of Olympia, City of Tumwater, and Thurston County	LOTT Wastewater Alliance, Thurston County and Cities of Lacey, Olympia and Tumwater	Distribution Agreement	Subordinate agreement to the LOTT Alliance JPA. Recycled water distribution proportions based on population and employment projections converted to equivalent residential units.	See Agreement. <sup>(1)</sup>	See Agreement. <sup>(1)</sup>	See Agreement. <sup>(1)</sup>	Members may withdraw with written notice. The remaining members will dispose of the withdrawing member's share using the recycled water distribution proportions. The withdrawing member must also withdraw from the supply agreement.
WA	LOTT Wastewater Alliance and City of Olympia	LOTT Wastewater Alliance and City of Olympia	Supply Agreement	Subordinate agreement to the LOTT Alliance JPA. LOTT Alliance agrees to supply Olympia with 460,000 gal/day.	See Agreement. <sup>(1)</sup>	See Agreement. <sup>(1)</sup>	See Agreement. <sup>(1)</sup>	Supply allotments may be adjusted as new recycled water becomes available.

**Note:**  
(1) Select intergovernmental agreements are found in Appendix J.

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#### **7.2.2.5.2 Supply Agreements**

Supply agreements between recycled water wholesalers and retailers are more streamlined than JPAs. They usually involve two agencies, do not create Governing Boards, and do not utilize joint financing. Within a supply agreement, the wholesaler agency is a wastewater treatment operator that typically agrees to own, operate, and finance reclamation facilities. The retailer is a water agency that owns and operates facilities past the point of connection including customer water meters. Although wholesalers own the distribution facilities, some agencies maintain cooperative policies for pipeline expansions. For example, the City of San José, the wholesaler, allows retailers to submit pipeline expansion requests. If projects are within the CIP budget, the City will finance them at its discretion.

In regards to rate setting, the wholesaler sets wholesale recycled water rates and the retailer can add additional charges to arrive at the customer rate. At both stages of rate setting, the agencies must confer and come to agreement.

Supply agreements provide more flexibility than JPAs in their terms of dissolution. Supply agreements usually recognize the wholesaler's top priority as treating wastewater and maintaining compliance with NPDES permits. Thus, supplying recycled water is a secondary priority and the agency has the option to cancel the agreement with written notice. Retailer agencies are not obligated to accept recycled water and may also cancel with written notice. Some agreements grant the wholesaler the option to purchase customer meters at the time of dissolution.

#### **7.2.2.5.3 Distribution Agreements**

Distribution agreements can be practical when the wholesaler provides recycled water from one water recycling facility to multiple retailers. Distribution agreements are subordinate to supply agreements as they present baseline or default recycled water allotments. Supply agreements are used to amend distribution allotments and can allow trading between agencies. If supply agreements fail to materialize in a given year, agencies are granted water according to the distribution agreement. If and when retailers withdraw from distribution agreements, remaining retailers can dispose of the withdrawing members' share via the methodology used for the initial allocation.

A distribution agreement has proven useful for the LOTT Alliance, made up of the cities of Lacey, Olympia, and the counties of Tumwater and Thurston. The LOTT Alliance developed a JPA for the construction and operation of reclamation facilities and utilized a distribution agreement for initial allocations of recycled water. Supply agreements are negotiated between agencies to record the allocation of new recycled water supply.



#### **7.2.2.5.4 Recommendations**

The Recycled Water Project is distinct from the case study agencies presented in this report because the SVCSD solely financed and operates the treatment plant and thus no JPA is needed. Currently, the SVCSD provides recycled water directly to customers through the SCWA. Thus, no supply or distribution agreements are needed as the wholesale agency is providing water directly to the customer without the need for a retailer. The SVCSD could recoup both capital and O&M costs through both wastewater and recycled water fees. The other stakeholders could purchase equity in the system based on their share of benefits.

Once the Recycled Water Project is complete, the SVCSD may implement recycled water supply agreements with the City and VOMWD. Agreements should specify the quantity and quality of water provided and how wholesale and retail rates will be set. Since the Recycled Water Project is for the benefit of the City and VOMWD, SVCSD could enter into a distribution agreement with these agencies to codify their baseline allotments of recycled water.

### **7.3 FINANCIAL GOVERNANCE**

Construction and operation of a recycled water system of this size, with numerous stakeholders, require clearly delineated financial governance principles. The intergovernmental agreements will address all the key considerations such as volume of flow to be delivered, recycled water cost recovery strategies, O&M responsibilities, debt coverage repayment responsibility, etc. However, in developing these agreements and assigning these responsibilities, it is imperative that equity and benefit/cost allocation be a key consideration. Formation of financial governance agreements and contractual obligations will result from implementation decisions outlined within Section 7.2.2.5.

#### **7.3.1 Equity Perspectives**

Because there are numerous stakeholders involved in the Recycled Water Project, equity to all must be foremost in order to assure smooth implementation of the project. Based on the cost sharing agreed upon, each stakeholder may purchase equity in the recycled water system. For example, if SCWA were to contribute the 38 percent of the system capital cost based on the SCWA benefits accrued (Table 5.6), then SCWA in theory would own 38 percent of the system. The financial governance principles will need to address the financial responsibilities associated with this purchased equity. Moving forward, and in the case of the above example, SCWA is then responsible for 38 percent of the future capital costs for this system such as annual repair and replacement (R&R) costs.

In case of system expansion, the stakeholders benefiting from the expansion could directly be responsible for the associated costs. In this situation, the system would be revalued based on the depreciated overall system value, and the system equity re-distributed to each

stakeholder. The financial governance principles would need to address this re-distribution of system equity with the addition of new system value through expansion.

In addition, the financial governance principles will need to address the purchase and sale of stakeholder equity (if permitted). Stipulations must be in place for the method in which the system value would be assessed, the rights of purchase and system equity re-distribution for the other stakeholders in cases where either a new stakeholder joins the system or an existing stakeholder sells their share of the equity.

### **7.3.2 Benefit Cost Allocation**

The financial and economic analysis discussed in Chapters 4 and 5, respectively, presented the costs and the benefits of the Recycled Water Project, as well as the anticipated cash flows. As discussed in these chapters, although the cash flows may appear daunting and the cost of the project is high, the benefits could outweigh the costs (when considering the qualitative benefits). However, the benefit and cost to each stakeholder are not equal, and in order to ensure equity, cost must be allocated based on benefit received.

For the purposes of this report and due to the nature of staffing and community outreach requirements for implementation of the Recycled Water Project, the SVCSD, SCWA, the City, and VOMWD agreed to share cost equally. This arrangement was agreed to during the third internal stakeholder meeting held on August 13, 2008. However, for the capital and O&M costs, allocations may be based directly on the benefits received by each stakeholder.

Using the results of the economic analysis, it was clear that all stakeholders benefit greatly from implementation of the project. In developing cost sharing mechanisms, the SVCSD, SCWA, the City and VOMWD should consider the formation of a strategic partnership with the agricultural customers to promulgate the sharing of costs. However, assuming that up-front cost sharing with external stakeholders is not possible or achievable, the internal stakeholders may consider an equal split of the remaining percentage of the project implementation costs on a weighted basis. The capital cost sharing should be re-calculated for each phase, or the actual first projects selected, to maximize opportunities to allow new developers and customers to be more involved in the cost sharing process.

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## CONCLUSIONS

The Sonoma Valley Recycled Water Project Financial/Economic Analysis (Financial Analysis) shows that using both a financial and economic analysis reveals the extent to which the various stakeholders benefit from a regional recycled water project. This chapter summarizes the results of the Financial Analysis and provides recommendations to develop a road map to implementing the Sonoma Valley Recycled Water Project (Recycled Water Project). This road map is based on the information available at the time of the study and could change in the future as conditions change.

### 8.1 RECYCLED WATER PROJECT ALTERNATIVE

The Recycled Water Project alternative currently consists of constructing the four recycled water alignments over the next 10 years according to the schedule presented in Table 8.1. The capital and O&M costs for construction of each alignment is presented in Table 8.2.

<b>Table 8.1 Alignment Phasing and Schedule Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>			
	<b>First Year of Construction</b>	<b>Construction Duration</b>	<b>First Year of Operation</b>
Alignment 1A	2010	2	2012
Alignment 1B	2015	3	2018
Alignment 2	2012	3	2015
Alignment 3	2018	2	2020
<u>Note:</u>			
(1) Alignment schedule based on ranking developed during the internal stakeholder workshop held in July 2008.			

### 8.2 WITHOUT PROJECT BASELINE ALTERNATIVE

The Without Project Baseline alternative consists of the internal stakeholders continuing to supply potable water using groundwater, creek water, and imported Russian River water to its customers for irrigation use. In addition, the Sonoma Valley County Sanitation District (SVCSO) would construct and operate additional storage and conveyance infrastructure to meet seasonal effluent guidelines. SVCSO would be required to spend nearly \$7 million in costs for land acquisition and construction of the storage and conveyance facilities. In addition, SVCSO would be required to expend nearly \$40,000 annually for operation and maintenance (O&M) costs.

**Table 8.2 Alignment Summary Table  
 Sonoma Valley Recycled Water Project Financial/Economic Analysis  
 Sonoma Valley County Sanitation District**

<b>Alignment</b>	<b>Total Usage (acre-feet)</b>	<b>Estimated Storage Requirement<sup>(1)</sup> (acre-feet)</b>	<b>Estimated Total Capital Cost<sup>(2)</sup> (\$)</b>	<b>Estimated Annual Cost<sup>(3)</sup> (\$/acre-foot)</b>	<b>Estimated Present Worth O&amp;M (\$/year)</b>	<b>Estimated Present Worth O&amp;M (\$/acre-foot)</b>	<b>Total Estimated Cost (\$/acre-foot)</b>
1-A	1,095	65	\$11,213,000	\$681	\$159,413	\$146	\$827
1-B	752	825	\$37,482,000	\$3,314	\$154,723	\$206	\$3,520
1 (A+B)	1,847	890	\$48,695,000	\$1,753	\$314,136	\$351	\$2,104
2	439	65	\$8,986,000	\$1,362	\$94,809	\$216	\$1,578
3	464	65	\$7,169,000	\$1,028	\$104,906	\$226	\$1,254

Notes:

- (1) The estimated Storage requirement unit cost is based on the total cost per storage capacity at Oceanview Reservoir (SCWA) and R4 Reservoir (SVCSD).
- (2) Total estimated capital cost includes a base construction cost and an additional 65 percent to account for contingencies, planning, engineering, administration, and permitting cost. Costs are in April 2008 dollars (ENRCCI of 9,155).
- (3) Estimated annual cost is based on amortizing the capital cost for 40 years at 6 percent.

### 8.3 FINANCIAL AND ECONOMIC ANALYSIS RESULTS

The financial analysis revealed the cash flow projections over 30 years with and without implementation of the Recycled Water Project. The cost of acquiring additional water sources was not conducted as part of the analysis since the newly acquired water sources are not earmarked to offset existing uses offset by the Recycled Water Project.

Table 8.3 summarizes the with- and without project costs to each internal stakeholder. As seen from the Table 8.3, a large percentage of the costs are attributed to the “other” category of stakeholders that includes agricultural customers and the general public when considering cash flows only. Table 8.4 summarizes the allocation of benefits and costs based on an economic analysis that considers social, environmental, and financial considerations. As seen from Table 8.4, use of this approach more clearly and equitably allocates the benefits and costs of a regional system than a pure financial perspective.

<b>Table 8.3 With and Without Project Cost Summary Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>				
	<b>With-Project Alternative</b>		<b>Without Project Alternative</b>	
	<b>Capital Cost<sup>(2)</sup> (Future Dollars)</b>	<b>O&amp;M Cost<sup>(3)</sup> (Future Dollars)</b>	<b>Capital Cost<sup>(2)</sup> (Future Dollars)</b>	<b>O&amp;M Cost<sup>(3)</sup> (Future Dollars)</b>
City of Sonoma	\$1,468,400	\$3,127,349	\$0	\$1,872,565
VOMWD	\$3,720,480	\$2,852,719	\$0	\$1,187,887
Other	\$70,525,120	\$24,789,644	\$0	
SCWA				\$1,484,234
SVCSD			\$8,112,979	\$1,833,479
<b>Total</b>	<b>\$75,714,000</b>	<b>\$30,769,711</b>		<b>\$6,378,166</b>
<u>Notes:</u>				
(1) All costs in future dollars.				
(2) Capital costs inflated at 4 percent.				
(3) O&M costs inflated at 3 percent.				

**Table 8.4 Stakeholder Shares of Total Project Benefits, Assuming a 2.5 Percent Real Discount Rate (No Agricultural Water Reliability)  
Sonoma Valley Recycled Water Project Financial/Economic Analysis  
Sonoma Valley County Sanitation District**

<b>Stakeholder</b> <sup>(1)</sup>	<b>Share of Total</b>	<b>Non-Public Share</b>	<b>Agencies-Only Share</b> <sup>(9)</sup>
Sonoma County Water Agency <sup>(2)</sup>	16.2%	48.6%	54.0%
City of Sonoma <sup>(3)</sup>	0.5%	1.4%	1.5%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.3%	1.5%
Sonoma Valley County Sanitation District <sup>(5)</sup>	13.0%	38.8%	43.0%
Agricultural users <sup>(6)</sup>	2.7%	8.2%	–
Municipal irrigation users <sup>(7)</sup>	0.6%	1.7%	–
Public <sup>(8)</sup>	66.6%	–	–
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Notes:**

- (1) Table shows percentage of total monetizable benefits by stakeholder
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets
- (6) Agricultural users share is under-estimated because increased agricultural water use reliability could not be monetized.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of the those agencies combined

## 8.4 NEXT STEPS

In order to ensure that the implementation of the Recycled Water Project moves forward, there are several suggested next steps. These next steps elaborate on the steps outlined in the implementation schedules presented in Chapter 7, and provide some additional considerations.

1. Given the relatively large share of project benefits to be enjoyed by the public from increased stream flows that would benefit steelhead and salmon populations, the internal stakeholders should apply for grant funding from the state of California and/or Federal sources. An important requirement for receiving grant funding from these sources is that project benefits accrue not just to the local water agency, but also to a range of stakeholders including the general public. This analysis shows that public benefits from this project are large and provide the necessary documentation to apply for the grants.

Further discussion between project stakeholders, including agricultural users, should occur to further explore the possible “value” to agricultural users of increased agricultural water use reliability from switching its irrigation water source to recycled water from runoff water or groundwater.

2. Consider allocating project costs, excluding those that would be targeted to be covered by grant funding, according to the share of benefits to project stakeholders. After agreeing on an approximate value for agricultural water use reliability, use tables similar to Table 5.3 or Table 5.6 to divide project costs according to share of benefits.
3. Start formulation of an intergovernmental agreement using the provided examples. In this case, the internal stakeholders have several options on the method in which the agreements could be developed. The most simple would consist of SVCSD acting as a wholesaler of recycled water to SCWA, the City of Sonoma (City), and Valley of the Moon Water District (VOMWD). In addition to wholesaler-retailer agreements, SVCSD would need to draft supply agreements with the City and VOMWD for the volume of water to be delivered that would offset their current potable supply.
4. Conduct follow-up meetings with the Basin Advisor Panel (BAP) and the growers associations and provide an update of the results of this analysis. Contact the customers that provided letters of support for the Recycled Water Project and draft customer agreements with the customers on Alignment 1A and Alignment 2 that are planned to be constructed in the near future. Contact the customers on the alignments that would be constructed in the latter years to inform them of the process and communicate the project phasing.



5. Evaluate recycled water pricing strategies and existing ordinances to determine potential policy changes in cost recovery strategies. Conduct a cost of service analysis to determine innovative, cost of service based recycled water rates that are in accordance with California state laws.

## **8.5 CONCLUSIONS**

The Financial Analysis of the Recycled Water Project revealed the benefits and costs of implementing the project to internal and external stakeholders of the project. The relative share of project benefits assigned to the project stakeholders suggests an equitable method to share costs for the project. Table 8.4 show the proportion of benefits for each major stakeholder - if agricultural water use reliability provides a benefit over the life of the project and is equal to \$6 million in present value 2008 dollars.

Based on the analysis, the quantitative and qualitative benefits and costs, when combined, can be argued to outweigh the project costs. There are numerous benefits of implementing the project not only to the internal stakeholders, but also to the general public at large. Over 50 percent of the benefits of the project would be accrued by the general public. Therefore, there are arguments for the project to receive federal and state funding, as well as reasons for forming strategic partnerships with all stakeholders to finance the Recycled Water Project.

Using the identified next steps and the implementation schedules, the stakeholders are provided with an initial “roadmap” to develop the necessary recycled water system governance structures, obtain the required funding using a combination of federal and state resources, and an equitable basis for stakeholder cost sharing. Again, this road map is based on present conditions and should be revisited as time grows closer to implementing the first project. Using a phased approach to Recycled Water Project implementation, SVCSD, SCWA, the City, and VOMWD has developed a framework for future discussions and negotiations to achieve stakeholder support and project success.

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**APPENDIX A - DETAILED ALIGNMENT COST INFORMATION**

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**Table 2**  
**Existing Storage Ponds Per Alignment**  
**Sonoma Valley Recycled Water Feasibility Study**

Alignment 1A																
Alignment	RESERVOIR SITE			Surface Area	From Node	Total Length	Pipe Size	Land Use Factors	Freeways/Highways/Railroads Factors	Hydrography Factors	Existing Utilities Corridors	Total Factor Adjustment	Total PW cost	Estimated Cost	Accum Total Cost	
	Storage Required	Unit Cost <sup>2</sup>	Total Reservoir Cost													
	(ac-ft/day)	(\$/acre-foot)	(\$)													
1A				1.59	3	1600	4	1	1	1	1	1	63	\$100,628	\$100,628	
				1.89	19	2800	6	1	1	1	1	1	77	\$214,382	\$315,010	
				4.01	7	2400	6	1	1	1	1	1	77	\$183,756	\$498,765	
				0.14	26	1400	4	1	1	1	1	1	63	\$88,050	\$586,815	
				1.06	25-26	1200	4	1	1	1	1	1	63	\$75,471	\$662,286	
				2	1	800	6	1	1	1	1	1	77	\$61,252	\$723,538	
Storage	65.0	23,177	1,506,523												\$2,230,061	

Alignment 1B																
Alignment	RESERVOIR SITE			Surface Area	From Node	Total Length	Pipe Size	Land Use Factors	Freeways/Highways/Railroads Factors	Hydrography Factors	Existing Utilities Corridors	Total Factor Adjustment	Total PW cost	Estimated Cost	Accum Total Cost	
	Storage Required	Unit Cost <sup>2</sup>	Total Reservoir Cost													
	(acre-feet)	(\$/acre-foot)	(\$)													
1B				2.61	29	500	6	1	1	1	1	1	77	\$38,282	\$38,282	
				2.21	29	4800	6	1	1	1	1	1	77	\$367,511	\$405,794	
				0.31	35	2400	4	1	1	1	1	1	63	\$150,942	\$556,736	
				4.07	41	2800	6	1	1	1	1	1	77	\$214,382	\$771,118	
				0.86	45	1600	4	1	1	1	1	1	63	\$100,628	\$871,746	
				1.81	43	500	4	1	1	1	1	1	63	\$31,446	\$903,192	
				1.01	45	4000	4	1	1	1	1	1	63	\$251,570	\$1,154,762	
				0.74	50	2000	4	1	1	1	1	1	63	\$125,785	\$1,280,547	
				1.15	45	2000	4	1	1	1	1	1	63	\$125,785	\$1,406,333	
				1.86	45	1500	6	1	1	1	1	1	77	\$114,847	\$1,521,180	
				2.01	50	1600	6	1	1	1	1	1	77	\$122,504	\$1,643,684	
Storage	825.0	23,177	19,121,255												\$20,764,938	

**Table 2 (continued)**  
**Existing Storage Ponds per Alignment**  
**Sonoma Valley Recycled Water Feasibility Study**

Alignment 2																
Alignment	RESERVOIR SITE			Surface Area (acres)	From Node	Total Length (feet)	Pipe Size (inch)	Land Use Factors	Freeways/Highways/Railroads Factors	Hydrography Factors	Existing Utilities Corridors	Total Factor Adjustment	Total PW cost (\$/linear-foot)	Estimated Cost (\$)	Accum Total Cost	
	Storage Required (acre-feet)	Unit Cost <sup>2</sup> (\$/acre-foot)	Total Reservoir Cost (\$)													
	2															
				1.2	7											
				0.75	7	2800	4	1	1	1	1	1	63	\$176,099	\$207,545	
				0.42	9-11											
				0.24	9-11	500	4	1	1	1	1	1	63	\$31,446	\$238,992	
				0.68	13											
				1.62	13											
				1.08	13	4800	4	1	1	1	1	1	63	\$301,884	\$540,876	
				0.15	22											
				0.5	22											
				0.04	22											
				0.15	22	1600	4	1	1	1	1	1	63	\$100,628	\$641,504	
Storage	65.0	23,177	1,506,523												\$2,148,027	

Alignment 3																
Alignment	RESERVOIR SITE			Surface Area (acres)	From Node	Total Length (feet)	Pipe Size (inch)	Land Use Factors	Freeways/Highways/Railroads Factors	Hydrography Factors	Existing Utilities Corridors	Total Factor Adjustment	Total PW cost (\$/linear-foot)	Estimated Cost (\$)	Accum Total Cost	
	Storage Required (acre-feet)	Unit Cost <sup>2</sup> (\$/acre-foot)	Total Reservoir Cost (\$)													
	3															
				0.28	5-7	1200	4	1	1	1	1	1	63	\$75,471	\$150,942	
				0.43	7	2000	4	1	1	1	1	1	63	\$125,785	\$276,727	
				0.23	7-9	300	4	1	1	1	1	1	63	\$18,868	\$295,595	
				5.23	13	2800	6	1	1	1	1	1	77	\$214,382	\$509,977	
				1.38	19	2800	4	1	1	1	1	1	63	\$176,099	\$686,076	
				2.12	21	6400	6	1	1	1	1	1	77	\$490,015	\$1,176,091	
				0.88	21		4	1	1	1	1	1	63	\$0	\$1,176,091	
				0.88	21	4000	4	1	1	1	1	1	63	\$251,570	\$1,427,661	
				0.14	23	800	4	1	1	1	1	1	63	\$50,314	\$1,477,975	
				0.35	23	1200	4	1	1	1	1	1	63	\$75,471	\$1,553,446	
				0.25	23	1000	4	1	1	1	1	1	63	\$62,893	\$1,616,339	
				0.77	25-27	1800	4	1	1	1	1	1	63	\$113,207	\$1,729,546	
Storage	65.0	23,177	1,506,523												\$3,236,069	

**NOTE:**

- 1) The "Total PW Cost" for pipe sizes other than 6, 8, 12, 18, & 24" were extrapolated from Table 2 in Appendix A of the Cost Criteria for Development of Alternatives report by BARWRP
- 2) The Storage Unit Cost is based upon the total cost per storage capacity of comparable Agency reservoir projects.
- 3) All costs have been adjusted for February 2008 using an ENR adjustment of the 1998 costs.

**Table 3**  
**Alignment 1A, Flow Per Pipeline Segment**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Segment Pipe Diameter (inches)	Length (feet)	Total Length (feet)	Replacement Source (acre-feet)			Accumulative Project Usage (acre-feet)
				Groundwater	City & VOMWD*	Local Creek	
Segment: WWTP - Point 1	14	3400	3400	0.00	0	81.2	81.20
Segment: Point 1 - Point 3	14	2800	6200	6.48	0	81.2	87.68
Segment: Point 3 - Point 5	14	3400	9600	111.48	0	122.8	234.28
Segment: Point 5 - Point 7	14	800	10400	111.48	0	165.6	277.08
Segment: Point 7 - Point 9	8	1800	12200	125.48	0	165.6	291.08
Segment: Point 9 - Point 11	8	1500	13700	359.88	0	165.6	525.48
Segment: Point 7 - Point 13	12	1300	15000	361.48	0	165.6	527.08
Segment: Point 13 - Point 15	12	1400	16400	397.48	0	165.6	563.08
Segment: Point 15 - Point 17	6	2300	18700	459.88	0	208.8	668.68
Segment: Point 17 - Point 19	4	1700	20400	500.68	0	254.8	755.48
Segment: Point 15 - Point 21	10	2700	23100	530.28	0	254.8	785.08
Segment: Point 21 - Point 23	10	1700	24800	637.08	0	254.8	891.88
Segment: Point 23 - Point 25	10	400	25200	662.68	0	254.8	917.48
Segment: Point 25 - Point 26	6	2500	27700	692.28	0	254.8	947.08
Segment: Point 26 - Point 30	6	2200	29900	802.14	0	254.8	1056.94
Segment: Point 25 - Point 27	10	2800	32700	839.72	0	254.8	1094.52

\*Note: City = City of Sonoma; VOMWD = Valley of the Moon Water District

**Table 4**  
**Alignment 1B, Flow Per Pipeline Segment**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Segment Pipe Diameter (inches)	Pipe Segment Length (feet)	Total Length (feet)	Replacement Source (acre-feet)			Accumulative Project Usage (acre-feet)
				Groundwater	City & VOMWD*	Local Creek	
Altrnernative 1-A ends @ Pt. 27		32,700					1094.52
Segment: Point 27 - Point 29	10	1200	1200	56.40	0	0	56.40
Segment: Point 29 - Point 31	10	400	1600	56.40	0	0	56.40
Segment: Point 31 - Point 32	4	500	2100	153.60	0	0	153.60
Segment: Point 31 - Point 33	8	3500	5600	153.60	0	0	153.60
Segment: Point 33 - Point 35	4	3800	9400	236.40	0	0	236.40
Segment: Point 33 - Point 37	8	3800	13200	236.40	0	0	236.40
Segment: Point 37 - Point 38	4	4100	17300	295.20	0	0	295.20
Segment: Point 37 - Point 39	8	1500	18800	295.20	0	0	295.20
Segment: Point 39 - Point 41	4	1000	19800	295.20	0	0	295.20
Segment: Point 41 - Point 43	4	1600	21400	324.40	0	0	324.40
Segment: Point 43 - Point 45	4	1200	22600	399.60	0	0	399.60
Segment: Point 39 - Point 47	6	2000	24600	399.72	0	0	399.72
Segment: Point 47 - Point 49	6	3300	27900	406.12	28.3	0	434.42
Segment: Point 49 - Point 50	6	2200	30100	692.12	28.3	0	720.42
Segment: Point 50 - Point 51	4	1600	31700	692.12	59.6	0	751.72
				Total Recycled Water Demand for Alternative I =			1846.24

\*Note: City = City of Sonoma; VOMWD = Valley of the Moon Water District

**Table 5**  
**Alignment 2, Flow Per Pipeline Segment**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Pipe Segment Diameter (inches)	Pipe Segment Length (feet)	Total Length (feet)	Replacement Source (acre-feet)			Accumulative Project Usage (acre-feet)
				Groundwater	City & VOMWD*	Local Creek	
Segment: WWTP - Point 1	10	1000	1,000	14.4	0	0	14.4
Segment: Point 1 - Point 3	10	1000	2,000	14.4	0	0	14.4
Segment: Point 3 - Point 5	4	600	2,600	14.4	0	9.6	24
Segment: Point 3 - Point 7	10	1100	3,700	21.6	0	9.6	31.2
Segment: Point 7 - Point 9	10	1000	4,700	23.6	0	9.6	33.2
Segment: Point 9 - Point 11	10	1600	6,300	23.6	0	9.6	33.2
Segment: Point 11 - Point 13	6	1200	7,500	158.78	0	9.6	168.38
Segment: Point 11 - Point 15	8	1000	8,500	163.18	0	9.6	172.78
Segment: Point 15 - Point 17	8	1600	10,100	197.98	0	9.6	207.58
Segment: Point 17 - Point 19	4	2400	12,500	218.9	0	32.4	251.3
Segment: Point 17 - Point 21	6	1700	14,200	223.3	0	32.4	255.7
Segment: Point 21 - Point 22	6	800	15,000	223.3	0	32.4	255.7
Segment: Point 22 - Point 24	4	1700	16,700	234.5	0	32.4	266.9
Segment: Point 22 - Point 23	6	1900	18,600	234.5	34.46	32.4	301.36
Segment: Point 23 - Point 25	6	3900	22,500	234.5	56.06	32.4	322.96
Segment: Point 25 - Point 27	6	2000	24,500	254.8	86.5	32.4	373.7
Segment: Point 27 - Point 29	4	2100	26,600	255.6	86.5	32.4	374.5
Segment: Point 29 - Point 31	4	1700	28,300	288.4	86.5	32.4	407.3
Segment: Point 27 - Point 33	4	2000	30,300	319.6	86.5	32.4	438.5

\*Note: City = City of Sonoma; VOMWD = Valley of the Moon Water District



**Table 6**  
**Alignment 3, Flow Per Pipeline Segment**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Pipe Segment Diameter	Pipe Segment Length	Total Length	Replacement Source (acre-feet)			Accumulative Project Usage
	(inches)	(feet)	(feet)	Groundwater	City & VOMWD*	Local Creek	(acre-feet)
Segment: WWTP - Point 1	10	650	650	60	0	0	60
Segment: Point 1 - Point 3	10	2900	3550	60	0	0	60
Segment: Point 3 - Point 5	10	3000	6550	81.2	0	0	81.2
Segment: Point 5 - Point 7	8	1850	8400	110	0	0	110
Segment: Point 7 - Point 9	8	2200	10600	112.64	0	0	112.64
Segment: Point 9 - Point 29	4	800	11400	135.24	0	0	135.24
Segment: Point 9 - Point 11	8	1600	13000	163.36	0	0	163.36
Segment: Point 11 - Point 13	6	1500	14500	213.96	0	0	213.96
Segment: Point 13 - Point 15	6	2200	16700	277.16	0	0	277.16
Segment: Point 15 - Point 17	4	1800	18500	286.72	0	0	286.72
Segment: Point 17 - Point 19	4	2100	20600	323.12	0	0	323.12
Segment: Point 11 - Point 21	6	2400	23000	414.6	0	0	414.6
Segment: Point 21 - Point 23	4	1800	24800	432.2	0	0	432.2
Segment: Point 23 - Point 25	4	1200	26000	440.48	0	0	440.48
Segment: Point 25 - Point 27	4	1100	27100	463.68	0	0	463.68

\*Note: City = City of Sonoma; VOMWD = Valley of the Moon Water District

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**APPENDIX B - ORIGINAL AND UPDATED ALIGNMENT COSTS**

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**Total Estimated Cost Summary**  
**Sonoma Valley Recycled Water Feasibility Study**

Alignment	Total Usage (acre-feet)	Estimated Storage Requirement (acre-feet)	Transmission System					Percentage of Usage (%)	
			Estimated Total Capital Cost (\$)	Estimated Cost (\$/acre-foot)	Estimated Present Worth O & M (\$/year)	Estimated Present Worth O & M (\$/acre-foot)	Total Estimated Cost (\$/acre-foot)	Agricultural	Muni/Urban
1-A	1094.5	65	\$11,213,000	\$681	\$159,413	\$146	\$827	100.0	0.0
1-B	751.7	825	\$37,482,000	\$3,314	\$154,723	\$206	\$3,520	92.1	7.9
1 (A+B)	1846.2	890	\$48,695,000	\$1,753	\$314,136	\$351	\$2,104	96.8	3.2
2	438.5	65	\$8,986,000	\$1,362	\$94,809	\$216	\$1,578	80.3	19.7
3	463.7	65	\$7,169,000	\$1,028	\$104,906	\$226	\$1,254	100.0	0.0

**Table 10**  
**Alignment 1A, Estimated Total Cost**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Segment Pipe Diameter (inches)	Capital Cost							Present Worth O&M <sup>3</sup> (\$/year)	Replacement Source (acre-feet/year)			Total Project Usage (acre-feet/year)
		Pipeline Cost (\$)	Pump Station Cost (\$)	Storage <sup>1</sup> (\$)	Service Laterals <sup>2</sup> (\$)	Total Segment Capital Cost (\$)	Accumulative Capital Cost (\$)	Total Capital Cost per acre-foot (\$/acre-foot)		Groundwater	City & VOMWD <sup>4</sup>	Local Creek	
Segment: WWTP - Point 1	14	\$488,430	\$1,125,765	\$1,704,005	\$69,281	\$3,387,482	\$3,387,482	\$41,718	\$73,104	0.00	0	81.2	81.20
Segment: Point 1 - Point 3	14	\$411,974	\$193,261	\$0	\$113,819	\$719,054	\$4,106,536	\$46,835	\$12,550	6.48	0	81.2	87.68
Segment: Point 3 - Point 5	14	\$488,430	\$253,422	\$0		\$741,852	\$4,848,388	\$20,695	\$16,457	111.48	0	122.8	234.28
Segment: Point 5 - Point 7	14	\$101,942	\$155,669	\$0	\$207,843	\$465,455	\$5,313,842	\$19,178	\$10,109	111.48	0	165.6	277.08
Segment: Point 7 - Point 9	8	\$187,856	\$82,545	\$0		\$270,400	\$5,584,243	\$19,185	\$5,360	125.48	0	165.6	291.08
Segment: Point 9 - Point 11	8	\$157,738	\$99,592	\$0		\$257,331	\$5,841,573	\$11,117	\$6,467	359.88	0	165.6	525.48
Segment: Point 7 - Point 13	12	\$238,520	\$88,964	\$0		\$327,484	\$6,169,057	\$11,704	\$5,777	361.48	0	165.6	527.08
Segment: Point 13 - Point 15	12	\$192,688	\$132,185	\$0		\$324,873	\$6,493,930	\$11,533	\$8,584	397.48	0	165.6	563.08
Segment: Point 15 - Point 17	6	\$199,183	\$47,720	\$0		\$246,903	\$6,740,833	\$10,081	\$3,099	459.88	0	208.8	668.68
Segment: Point 17 - Point 19	4	\$151,735	\$47,537	\$0	\$242,484	\$441,756	\$7,182,589	\$9,507	\$3,087	500.68	0	254.8	755.48
Segment: Point 15 - Point 21	10	\$296,455	\$154,472	\$0		\$450,927	\$7,633,515	\$9,723	\$10,031	530.28	0	254.8	785.08
Segment: Point 21 - Point 23	10	\$186,657	\$58,864	\$0		\$245,521	\$7,879,036	\$8,834	\$3,822	637.08	0	254.8	891.88
Segment: Point 23 - Point 25	10	\$43,919	\$4,827	\$0	\$85,364	\$134,111	\$8,013,147	\$8,734	\$313	662.68	0	254.8	917.48
Segment: Point 25 - Point 26	6	\$254,002	\$0	\$0	\$99,592	\$353,593	\$8,366,740	\$8,834	\$0	692.28	0	254.8	947.08
Segment: Point 26 - Point 30	6	\$265,520	\$0	\$0		\$265,520	\$8,632,260	\$8,167	\$0	802.14	0	254.8	1056.94
Segment: Point 25 - Point 27	10	\$354,977	\$10,038	\$0		\$365,016	\$8,997,276	\$8,220	\$652	839.72	0	254.8	1094.52
	Total Flow of 1095 ac-ft		\$2,454,861			Total =	\$8,997,276		\$159,413	839.72	0	254.8	1094.52

Note:  
1) Storage cost for Alignment 1A is allocated to first pipeline segment  
2) Cost for service laterals connecting transmission pipeline to private storage (From Table 2)  
3) O&M = labor and power for pump station  
4) City = City of Sonoma; VOMWD = Valley of the Moon Water District

1998 ENR	5920
2008 ENRCCI (CDM)	9155
ENR Ratio	1.55

**Table 11**  
**Alignment 1B, Estimated Total Cost**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Segment Pipe Diameter	Pipeline Cost	Pump Station Cost	Storage <sup>1</sup>	Service Laterals <sup>2</sup>	Total Segment Cost	Accumulative Cost	Total Capital Cost per acre-foot	Present Worth O&M <sup>3</sup>	Replacement Source (acre-feet/year)			Total Project Usage
	(inches)	(\$)	(\$)			(\$)	(\$)	(\$/acre-foot)	(\$/year)	Groundwater	City & VOMWD <sup>4</sup>	Local Creek	(acre-feet/year)
Alternative 1-A ends @ Pt. 27													
Segment: Point 27 - Point 29	10	\$105,406	\$263,719	\$1,441,851	\$458,987	\$2,269,963	\$2,269,963	\$40,248	\$17,125	56.40	0	0	56.40
Segment: Point 29 - Point 31	10	\$35,135	\$76,201	\$1,441,851	\$0	\$1,553,187	\$3,823,149	\$67,786	\$4,948	56.40	0	0	56.40
Segment: Point 31 - Point 32	4	\$223,825	\$0	\$1,441,851	\$0	\$1,665,676	\$5,488,825	\$35,735	\$0	153.60	0	0	153.60
Segment: Point 31 - Point 33	8	\$42,064	\$129,023	\$1,441,851	\$0	\$1,612,937	\$7,101,762	\$46,235	\$8,378	153.60	0	0	153.60
Segment: Point 33 - Point 35	4	\$216,256	\$141,592	\$1,441,851	\$170,728	\$1,970,427	\$9,072,189	\$38,376	\$9,195	236.40	0	0	236.40
Segment: Point 33 - Point 37	8	\$319,683	\$273,723	\$1,441,851	\$0	\$2,035,257	\$11,107,446	\$46,986	\$17,775	236.40	0	0	236.40
Segment: Point 37 - Point 38	4	\$233,329	\$155,070	\$1,441,851	\$0	\$1,830,249	\$12,937,695	\$43,827	\$10,070	295.20	0	0	295.20
Segment: Point 37 - Point 39	8	\$151,429	\$280,243	\$1,441,851	\$0	\$1,873,522	\$14,811,217	\$50,173	\$18,198	295.20	0	0	295.20
Segment: Point 39 - Point 41	4	\$68,291	\$47,973	\$1,441,851	\$242,484	\$1,800,599	\$16,611,816	\$56,273	\$3,115	295.20	0	0	295.20
Segment: Point 41 - Point 43	4	\$115,697	\$115,272	\$1,441,851	\$35,568	\$1,708,388	\$18,320,204	\$56,474	\$7,485	324.40	0	0	324.40
Segment: Point 43 - Point 45	4	\$68,291	\$58,183	\$1,441,851	\$670,542	\$2,238,867	\$20,559,071	\$51,449	\$3,778	399.60	0	0	399.60
Segment: Point 39 - Point 47	6	\$166,275	\$147,068	\$1,441,851	\$0	\$1,755,193	\$22,314,264	\$55,825	\$9,550	399.72	0	0	399.72
Segment: Point 47 - Point 49	6	\$274,353	\$403,463	\$1,441,851	\$0	\$2,119,667	\$24,433,931	\$56,245	\$26,200	406.12	28.3	0	434.42
Segment: Point 49 - Point 50	6	\$222,600	\$291,123	\$1,441,851	\$280,836	\$2,236,409	\$26,670,340	\$37,021	\$18,905	692.12	28.3	0	720.42
Segment: Point 50 - Point 51	4	\$177,016	\$0	\$1,441,851	\$0	\$1,618,867	\$28,289,207	\$37,633	\$0	692.12	59.6	0	751.72
						<b>Total =</b>	<b>\$28,289,207</b>	<b>\$37,633</b>	<b>\$154,723</b>	<b>692.12</b>	<b>59.6</b>	<b>0</b>	<b>751.72</b>

Note:  
1) Storage cost for Alternative 1B is allocated over entire alternative  
2) Cost for service laterals connecting transmission pipeline to private storage (From Table 2)  
3) O&M = labor and power for pump station  
4) City = City of Sonoma; VOMWD = Valley of the Moon Water District

1998 ENR	5920
2008 ENRCCI (CDM)	9155
ENR Ratio	1.55

**Table 12**  
**Alignment 2, Estimated Total Cost**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Pipe Segment Diameter	Pipeline Cost	Pump Station Cost	Storage	Service Laterals <sup>1</sup>	Total Segment Capital Cost	Accumulative Capital Cost	Total Capital Cost per acre-foot	Present Worth O&M <sup>2</sup>	Replacement Source (acre-feet/year)			Total Project Usage
										(inches)	(\$)	(\$)	
Segment: WWTP - Point 1	10	\$87,839	\$598,097	\$1,704,005	\$35,568	\$2,425,509	\$2,425,509	\$168,438	\$38,839	14.4	0	0	14.4
Segment: Point 1 - Point 3	10	\$87,839	\$103,899	\$0		\$191,737	\$2,617,247	\$181,753	\$6,747	14.4	0	0	14.4
Segment: Point 3 - Point 5	4	\$73,484	\$344	\$0		\$73,828	\$2,691,075	\$112,128	\$22	14.4	0	9.6	24
Segment: Point 3 - Point 7	10	\$96,622	\$0	\$0	\$199,183	\$295,805	\$2,986,880	\$95,733	\$0	21.6	0	9.6	31.2
Segment: Point 7 - Point 9	10	\$87,839	\$36,487	\$0		\$124,326	\$3,111,206	\$93,711	\$2,369	23.6	0	9.6	33.2
Segment: Point 9 - Point 11	10	\$216,610	\$132,826	\$0	\$35,568	\$385,004	\$3,496,210	\$105,308	\$8,625	23.6	0	9.6	33.2
Segment: Point 11 - Point 13	6	\$178,918	\$5,414	\$0	\$341,457	\$525,789	\$4,021,999	\$23,886	\$352	158.78	0	9.6	168.38
Segment: Point 11 - Point 15	8	\$84,127	\$59,475	\$0		\$143,602	\$4,165,601	\$24,109	\$3,862	163.18	0	9.6	172.78
Segment: Point 15 - Point 17	8	\$134,603	\$46,516	\$0		\$181,120	\$4,346,721	\$20,940	\$3,021	197.98	0	9.6	207.58
Segment: Point 17 - Point 19	4	\$136,583	\$15,118	\$0		\$151,701	\$4,498,422	\$17,901	\$982	218.9	0	32.4	251.3
Segment: Point 17 - Point 21	6	\$117,778	\$92,108	\$0		\$209,886	\$4,708,308	\$18,413	\$5,981	223.3	0	32.4	255.7
Segment: Point 21 - Point 22	6	\$55,425	\$43,950	\$0	\$113,819	\$213,194	\$4,921,502	\$19,247	\$2,854	223.3	0	32.4	255.7
Segment: Point 22 - Point 24	4	\$121,388	\$2,710	\$0		\$124,098	\$5,045,599	\$18,904	\$176	234.5	0	32.4	266.9
Segment: Point 22 - Point 23	6	\$201,400	\$85,206	\$0		\$286,606	\$5,332,205	\$17,694	\$5,533	234.5	34.46	32.4	301.36
Segment: Point 23 - Point 25	6	\$413,400	\$102,580	\$0		\$515,981	\$5,848,186	\$18,108	\$6,661	234.5	56.06	32.4	322.96
Segment: Point 25 - Point 27	6	\$212,000	\$70,926	\$0		\$282,926	\$6,131,112	\$16,407	\$4,606	254.8	86.5	32.4	373.7
Segment: Point 27 - Point 29	4	\$119,510	\$34,903	\$0		\$154,413	\$6,285,524	\$16,784	\$2,266	255.6	86.5	32.4	374.5
Segment: Point 29 - Point 31	4	\$96,746	\$29,439	\$0		\$126,185	\$6,411,710	\$15,742	\$1,912	288.4	86.5	32.4	407.3
Segment: Point 27 - Point 33	4	\$113,819	\$0	\$0		\$113,819	\$6,525,529	\$14,881	\$0	319.6	86.5	32.4	438.5
						Total =	\$6,525,529	\$14,881	\$94,809	319.6	86.5	32.4	438.5

Note:

- 1) Storage cost for Alignment 2 is allocated to first pipeline segment
- 2) Cost for service laterals connecting transmission pipeline to private storage (From Table 2)
- 3) O&M = labor and power for pump station
- 4) City = City of Sonoma; VOMWD = Valley of the Moon Water District

1998 ENR	5920
2008 ENRCCI (CDM)	9155
ENR Ratio	1.55

**Table 13**  
**Alignment 3, Estimated Total Cost**  
**Sonoma Valley Recycled Water Feasibility Study**

Segment (See Plate 9)	Pipe Segment Diameter (inches)	Pipeline Cost (\$)	Pump Station Cost (\$)	Storage	Service Laterals <sup>1</sup>	Total Segment Capital Cost (\$)	Accumulative Capital Cost (\$)	Total Capital Cost per acre-foot (\$/acre-foot)	Present Worth O&M <sup>2</sup> (\$/year)	Replacement Source (acre-feet/year)			Total Project Usage (acre-feet/year)
										Groundwater	City & VOMWD <sup>3</sup>	Local Creek	
Segment: WWTP - Point 1	10	\$57,095	\$617,533	\$1,704,005	\$0	\$2,378,633	\$2,378,633	\$39,644	\$40,101	60			60
Segment: Point 1 - Point 3	10	\$254,732	\$73,440	\$0	\$0	\$328,171	\$2,706,805	\$45,113	\$4,769	60			60
Segment: Point 3 - Point 5	10	\$263,516	\$149,412	\$0	\$0	\$412,927	\$3,119,732	\$38,420	\$9,702	81.2			81.2
Segment: Point 5 - Point 7	8	\$151,429	\$147,028	\$0	\$170,728	\$469,185	\$3,588,917	\$32,627	\$9,548	110			110
Segment: Point 7 - Point 9	8	\$231,349	\$167,155	\$0	\$163,615	\$562,119	\$4,151,035	\$36,852	\$10,855	112.64			112.64
Segment: Point 9 - Point 29	4	\$45,528	\$0	\$0	\$0	\$45,528	\$4,196,563	\$31,030	\$0	135.24			135.24
Segment: Point 9 - Point 11	8	\$171,030	\$83,037	\$0	\$0	\$254,068	\$4,450,631	\$27,244	\$5,392	163.36			163.36
Segment: Point 11 - Point 13	6	\$103,922	\$63,763	\$0	\$242,484	\$410,169	\$4,860,799	\$22,718	\$4,141	213.96			213.96
Segment: Point 13 - Point 15	6	\$152,418	\$92,459	\$0	\$0	\$244,878	\$5,105,677	\$18,421	\$6,004	277.16			277.16
Segment: Point 15 - Point 17	4	\$127,079	\$50,332	\$0	\$0	\$177,411	\$5,283,088	\$18,426	\$3,268	286.72			286.72
Segment: Point 17 - Point 19	4	\$119,510	\$79,735	\$0	\$199,183	\$398,428	\$5,681,516	\$17,583	\$5,178	323.12			323.12
Segment: Point 11 - Point 21	6	\$196,273	\$78,719	\$0	\$838,796	\$1,113,789	\$6,795,305	\$16,390	\$5,112	414.6			414.6
Segment: Point 21 - Point 23	4	\$102,437	\$10,611	\$0	\$213,410	\$326,459	\$7,121,764	\$16,478	\$689	432.2			432.2
Segment: Point 23 - Point 25	4	\$68,291	\$2,272	\$0	\$0	\$70,563	\$7,192,327	\$16,328	\$148	440.48			440.48
Segment: Point 25 - Point 27	4	\$62,600	\$0	\$0	\$128,046	\$190,647	\$7,382,974	\$15,923	\$0	463.68			463.68
						Total =	\$7,382,974	\$15,923	\$104,906	463.68			463.68

- Note:
- 1) Storage cost for Alignment 3 is allocated to first pipeline segment
  - 2) Cost for service laterals connecting transmission pipeline to private storage (From Table 2)
  - 3) O&M = labor and power for pump station
  - 4) City = City of Sonoma; VOMWD = Valley of the Moon Water District

1998 ENR	5920
2008 ENRCCI (CDM)	9155
ENR Ratio	1.55





Sonoma Valley County Sanitation District

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**APPENDIX C – WITHOUT PROJECT ALTERNATIVE  
STORAGE SIZING AND COSTS**

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**Effluent Storage**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Plant Influent (MG)	123.4	138.9	187.0	235.1	272.0	257.2	161.6	138.6	123.7	118.2	117.9	117.7	1991.3
Discharge Limit (MG)	90	0	0	0	0	0	0	90	90	90	90	90	
Net	33.42							48.60	33.69	28.19	27.94	27.69	199.53

Storage Required w. No Reuse (MG) 199.53

Annual Recycled Water Use (AFY) 1200

Monthly Recycled Water Use (AF) 100

Monthly Recycled Water Use (MG) 32.6

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Storage Required w. Existing Reuse (MG)	0.85							16.03	1.12	0.00	0.00	0.00	17.99

Storage Required (MG) 17.99

Safety Factor 1.5

Sotrage Required (MG) 27.0

Assumes no ET/Rainfall/Seepage/Etc.

Assumes all existing storage will be required for storage of recycled water delivered to customers.



## **Effluent Pipe Diameter**

Flow Requiring Storage (MG)	27
Unlimited Discharge Period (months)	6
Unlimited Discharge Period (years)	0.5
Flow Volume (MG/Year)	53.97
Flow Volume (gal/day)	147,872
Flow Volume (cfs)	0.229
Assumed Flow Rate (ft/s)	3
Pipe Area (sq. ft)	0.07626411
Diameter (ft)	0.31
Diameter (in)	3.74
Selected Diameter (in)	4

## Effluent Pumping

### Stored Flow

Flow Rate (gal/day)	147,872
Flow Rate (gpm)	103
Length (ft)	528
Hazen Williams C Factor	120
Diameter (in)	4
Estimated Conveyance Loss (ft)	5
Percentage for Other Losses	50%
Total Head	7
Cost of Electricity (\$/kwh)	\$ 0.10
Pump Efficiency	70%
Flow (acy)	92
Flow (gal/min)	57.0
Hydraulic Horsepower (hp)	0.10
Hydraulic Horsepower (Kw)	0.08
Hours of Operation/Day (hrs/day)	8
Days of Operation (days/week)	4
Days per month (days/month)	16
Number of Months (months/yr)	6
Operation Time (hrs/yr)	768
Cost of Pumping (\$/yr)	\$ 85.44
Cost of Pumping (\$/yr/af)	\$ 0.93

## Groundwater Pumping

	<u>Alignment 1A</u>	<u>Alignment 1B</u>	<u>Alignment 2</u>	<u>Alignment 3</u>
Aquifer Elevation (ft)	38	75	38	30
Ground Surface Elevation (ft)	43	135	43	86
Elevation Head	5	60	5	56
Percentage for Conveyance/Other Losses	50%	50%	50%	50%
Total Head	7.5	90	7.5	84
Cost of Electricity (\$/kwh)	\$ 0.10			
Pump Efficiency	70%	70%	70%	70%
Flow (acy)	840	692	320	464
Flow (gal/min)	520.4	428.7	198.3	287.5
Hydraulic Horsepower (hp)	0.99	9.75	0.38	6.10
Hydraulic Horsepower (Kw)	0.74	7.27	0.28	4.55
Hours of Operation/Day (hrs/day)	24	24	24	24
Days of Operation (days/week)	7	7	7	7
Days per month (days/month)	28	28	28	28
Number of Months (months/yr)	6	6	6	6
Operation Time (hrs/yr)	4032	4032	4032	4032
Cost of Pumping (\$/yr)	\$ 424	\$ 4,189	\$ 161	\$ 2,622





Sonoma Valley County Sanitation District

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**APPENDIX D - PROJECTED ANNUAL RECYCLED  
WATER DEMANDS**

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**Sonoma Valley Recycled Water Financial Analysis  
Sonoma County Water Agency**

**Estimated Recycled Water Demand**

Alignment	Service Area	Total Use	Agricultural	Urban	Private Wells	City/ VOMWD	Local Creek
1A	Private Wells VOMWD	1,095	1,081	14	840	-	255
1B	VOMWD	752	400	352	692	60	-
2	City of Sonoma	439	301	138	320	87	32
3	City of Sonoma Private Wells	464	464	0	464	-	-

\*Private Wells Only

**Total Demand Per Alignment**

Year	Total Demand (AFY)	Demand (AFY)			
		Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	0	0	0	0	0
2009	0	0	0	0	0
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	1,095	1,095	0	0	0
2013	1,095	1,095	0	0	0
2014	1,095	1,095	0	0	0
2015	1,534	1,095	0	439	0
2016	1,534	1,095	0	439	0
2017	1,534	1,095	0	439	0
2018	2,286	1,095	752	439	0
2019	2,286	1,095	752	439	0
2020	2,750	1,095	752	439	464
2021	2,750	1,095	752	439	464
2022	2,750	1,095	752	439	464
2023	2,750	1,095	752	439	464
2024	2,750	1,095	752	439	464
2025	2,750	1,095	752	439	464
2026	2,750	1,095	752	439	464
2027	2,750	1,095	752	439	464
2028	2,750	1,095	752	439	464
2029	2,750	1,095	752	439	464
2030	2,750	1,095	752	439	464
2031	2,750	1,095	752	439	464
2032	2,750	1,095	752	439	464
2033	2,750	1,095	752	439	464
2034	2,750	1,095	752	439	464
2035	2,750	1,095	752	439	464
2036	2,750	1,095	752	439	464
2037	2,750	1,095	752	439	464
2038	2,750	1,095	752	439	464
2039	2,750	1,095	752	439	464
2040	2,750	1,095	752	439	464

**Offsets per Alignment**

Year	Alignment 1A		Alignment 1B		Alignemnt 2			Alignment 3
	Private Wells	Local Creek	VOMWD	Private Wells	Private Wells	City of Sonoma	Local Creek	Private Wells
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	840	255	0	0	0	0	0	0
5	840	255	0	0	0	0	0	0
6	840	255	0	0	0	0	0	0
7	840	255	0	0	320	87	32	0
8	840	255	0	0	320	87	32	0
9	840	255	0	0	320	87	32	0
10	840	255	60	692	320	87	32	0
11	840	255	60	692	320	87	32	0
12	840	255	60	692	320	87	32	464
13	840	255	60	692	320	87	32	464
14	840	255	60	692	320	87	32	464
15	840	255	60	692	320	87	32	464
16	840	255	60	692	320	87	32	464
17	840	255	60	692	320	87	32	464
18	840	255	60	692	320	87	32	464
19	840	255	60	692	320	87	32	464
20	840	255	60	692	320	87	32	464
21	840	255	60	692	320	87	32	464
22	840	255	60	692	320	87	32	464
23	840	255	60	692	320	87	32	464
24	840	255	60	692	320	87	32	464
25	840	255	60	692	320	87	32	464
26	840	255	60	692	320	87	32	464
27	840	255	60	692	320	87	32	464
28	840	255	60	692	320	87	32	464
29	840	255	60	692	320	87	32	464
30	840	255	60	692	320	87	32	464
31	840	255	60	692	320	87	32	464
32	840	255	60	692	320	87	32	464

**Total Offsets**

<b>Year</b>	<b>Private Wells</b>	<b>City of Sonoma</b>	<b>VOMWD</b>	<b>Local Creek</b>
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	840	0	0	255
5	840	0	0	255
6	840	0	0	255
7	1,160	87	0	287
8	1,160	87	0	287
9	1,160	87	0	287
10	1,852	87	60	287
11	1,852	87	60	287
12	2,316	87	60	287
13	2,316	87	60	287
14	2,316	87	60	287
15	2,316	87	60	287
16	2,316	87	60	287
17	2,316	87	60	287
18	2,316	87	60	287
19	2,316	87	60	287
20	2,316	87	60	287
21	2,316	87	60	287
22	2,316	87	60	287
23	2,316	87	60	287
24	2,316	87	60	287
25	2,316	87	60	287
26	2,316	87	60	287
27	2,316	87	60	287
28	2,316	87	60	287
29	2,316	87	60	287
30	2,316	87	60	287
31	2,316	87	60	287
32	2,316	87	60	287

**Offset By Service Area**

Year	Alignment 1A			Alignment 1B			Alignment 2			Alignment 3		
	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	1,095	0	0	0	0	0	0	0	0	0
5	0	0	1,095	0	0	0	0	0	0	0	0	0
6	0	0	1,095	0	0	0	0	0	0	0	0	0
7	0	0	1,095	0	0	0	87	0	352	0	0	0
8	0	0	1,095	0	0	0	87	0	352	0	0	0
9	0	0	1,095	0	0	0	87	0	352	0	0	0
10	0	0	1,095	0	60	692	87	0	352	0	0	0
11	0	0	1,095	0	60	692	87	0	352	0	0	0
12	0	0	1,095	0	60	692	87	0	352	0	0	464
13	0	0	1,095	0	60	692	87	0	352	0	0	464
14	0	0	1,095	0	60	692	87	0	352	0	0	464
15	0	0	1,095	0	60	692	87	0	352	0	0	464
16	0	0	1,095	0	60	692	87	0	352	0	0	464
17	0	0	1,095	0	60	692	87	0	352	0	0	464
18	0	0	1,095	0	60	692	87	0	352	0	0	464
19	0	0	1,095	0	60	692	87	0	352	0	0	464
20	0	0	1,095	0	60	692	87	0	352	0	0	464
21	0	0	1,095	0	60	692	87	0	352	0	0	464
22	0	0	1,095	0	60	692	87	0	352	0	0	464
23	0	0	1,095	0	60	692	87	0	352	0	0	464
24	0	0	1,095	0	60	692	87	0	352	0	0	464
25	0	0	1,095	0	60	692	87	0	352	0	0	464
26	0	0	1,095	0	60	692	87	0	352	0	0	464
27	0	0	1,095	0	60	692	87	0	352	0	0	464
28	0	0	1,095	0	60	692	87	0	352	0	0	464
29	0	0	1,095	0	60	692	87	0	352	0	0	464
30	0	0	1,095	0	60	692	87	0	352	0	0	464
31	0	0	1,095	0	60	692	87	0	352	0	0	464
32	0	0	1,095	0	60	692	87	0	352	0	0	464



**Agricultural vs. Urban Offset**

Year	Alignment 1A		Alignment 1B		Alignment 2		Alignment 3		Total	
	Agricultural	Urban	Agricultural	Urban	Agricultural	Urban	Agricultural	Urban	Agricultural	Urban
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	1081	14	0	0	0	0	0	0	1081	14
5	1081	14	0	0	0	0	0	0	1081	14
6	1081	14	0	0	0	0	0	0	1081	14
7	1081	14	0	0	301	138	0	0	1382	152
8	1081	14	0	0	301	138	0	0	1382	152
9	1081	14	0	0	301	138	0	0	1382	152
10	1081	14	400	352	301	138	0	0	1782	504
11	1081	14	400	352	301	138	0	0	1782	504
12	1081	14	400	352	301	138	464	0	2246	504
13	1081	14	400	352	301	138	464	0	2246	504
14	1081	14	400	352	301	138	464	0	2246	504
15	1081	14	400	352	301	138	464	0	2246	504
16	1081	14	400	352	301	138	464	0	2246	504
17	1081	14	400	352	301	138	464	0	2246	504
18	1081	14	400	352	301	138	464	0	2246	504
19	1081	14	400	352	301	138	464	0	2246	504
20	1081	14	400	352	301	138	464	0	2246	504
21	1081	14	400	352	301	138	464	0	2246	504
22	1081	14	400	352	301	138	464	0	2246	504
23	1081	14	400	352	301	138	464	0	2246	504
24	1081	14	400	352	301	138	464	0	2246	504
25	1081	14	400	352	301	138	464	0	2246	504
26	1081	14	400	352	301	138	464	0	2246	504
27	1081	14	400	352	301	138	464	0	2246	504
28	1081	14	400	352	301	138	464	0	2246	504
29	1081	14	400	352	301	138	464	0	2246	504
30	1081	14	400	352	301	138	464	0	2246	504
31	1081	14	400	352	301	138	464	0	2246	504
32	1081	14	400	352	301	138	464	0	2246	504

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**APPENDIX E - CAPITAL AND O&M COST ALLOCATIONS**

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**CAPITAL COST ALLOCATION (BY ALIGNMENT AND SERVICE AREA OFFSET VOLUME)**

Year	Alignment 1A			Alignment 1B			Alignment 2			Alignment 3		
	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other	City of Sonoma	VOMWD	Other
2008	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2009	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2010	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2011	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2012	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2013	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2014	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2015	0%	0%	100%	0%	0%	0%	20%	0%	80%	0%	0%	0%
2016	0%	0%	100%	0%	0%	0%	20%	0%	80%	0%	0%	0%
2017	0%	0%	100%	0%	0%	0%	20%	0%	80%	0%	0%	0%
2018	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	0%
2019	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	0%
2020	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2021	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2022	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2023	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2024	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2025	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2026	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2027	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2028	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2029	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2030	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2031	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2032	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2033	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2034	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2035	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2036	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2037	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2038	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2039	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
2040	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%
	0%	0%	100%	0%	8%	92%	20%	0%	80%	0%	0%	100%

**O&M COST ALLOCATION (BASED ON TOTAL RECYCLED WATER SYSTEM Demand)**

<b>Year</b>	<b>City of Sonoma</b>	<b>VOMWD</b>	<b>Other</b>	<b>Total</b>
2008	0.0%	0.0%	0.0%	0.0%
2009	0.0%	0.0%	0.0%	0.0%
2010	0.0%	0.0%	0.0%	0.0%
2011	0.0%	0.0%	0.0%	0.0%
2012	0.0%	0.0%	100.0%	100.0%
2013	0.0%	0.0%	100.0%	100.0%
2014	0.0%	0.0%	100.0%	100.0%
2015	5.7%	0.0%	94.3%	100.0%
2016	5.7%	0.0%	94.3%	100.0%
2017	5.7%	0.0%	94.3%	100.0%
2018	3.8%	2.6%	93.6%	100.0%
2019	3.8%	2.6%	93.6%	100.0%
2020	3.2%	2.2%	94.7%	100.0%
2021	3.2%	2.2%	94.7%	100.0%
2022	3.2%	2.2%	94.7%	100.0%
2023	3.2%	2.2%	94.7%	100.0%
2024	3.2%	2.2%	94.7%	100.0%
2025	3.2%	2.2%	94.7%	100.0%
2026	3.2%	2.2%	94.7%	100.0%
2027	3.2%	2.2%	94.7%	100.0%
2028	3.2%	2.2%	94.7%	100.0%
2029	3.2%	2.2%	94.7%	100.0%
2030	3.2%	2.2%	94.7%	100.0%
2031	3.2%	2.2%	94.7%	100.0%
2032	3.2%	2.2%	94.7%	100.0%
2033	3.2%	2.2%	94.7%	100.0%
2034	3.2%	2.2%	94.7%	100.0%
2035	3.2%	2.2%	94.7%	100.0%
2036	3.2%	2.2%	94.7%	100.0%
2037	3.2%	2.2%	94.7%	100.0%
2038	3.2%	2.2%	94.7%	100.0%
2039	3.2%	2.2%	94.7%	100.0%
2040	3.2%	2.2%	94.7%	100.0%

**Additional Outreach and Staffing Allocation**

<b>Year</b>	<b>City of Sonoma</b>	<b>VOMWD</b>	<b>Other</b>	<b>Total</b>
2008	33.3%	33.3%	33.3%	100.0%
2009	33.3%	33.3%	33.3%	100.0%
2010	33.3%	33.3%	33.3%	100.0%
2011	33.3%	33.3%	33.3%	100.0%
2012	33.3%	33.3%	33.3%	100.0%
2013	33.3%	33.3%	33.3%	100.0%
2014	33.3%	33.3%	33.3%	100.0%
2015	33.3%	33.3%	33.3%	100.0%
2016	33.3%	33.3%	33.3%	100.0%
2017	33.3%	33.3%	33.3%	100.0%
2018	33.3%	33.3%	33.3%	100.0%
2019	33.3%	33.3%	33.3%	100.0%
2020	33.3%	33.3%	33.3%	100.0%
2021	33.3%	33.3%	33.3%	100.0%
2022	33.3%	33.3%	33.3%	100.0%
2023	33.3%	33.3%	33.3%	100.0%
2024	33.3%	33.3%	33.3%	100.0%
2025	33.3%	33.3%	33.3%	100.0%
2026	33.3%	33.3%	33.3%	100.0%
2027	33.3%	33.3%	33.3%	100.0%
2028	33.3%	33.3%	33.3%	100.0%
2029	33.3%	33.3%	33.3%	100.0%
2030	33.3%	33.3%	33.3%	100.0%
2031	33.3%	33.3%	33.3%	100.0%
2032	33.3%	33.3%	33.3%	100.0%
2033	33.3%	33.3%	33.3%	100.0%
2034	33.3%	33.3%	33.3%	100.0%
2035	33.3%	33.3%	33.3%	100.0%
2036	33.3%	33.3%	33.3%	100.0%
2037	33.3%	33.3%	33.3%	100.0%
2038	33.3%	33.3%	33.3%	100.0%
2039	33.3%	33.3%	33.3%	100.0%
2040	33.3%	33.3%	33.3%	100.0%



Sonoma Valley County Sanitation District

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**APPENDIX F - NET PRESENT VALUE OF THE WITH- AND  
WITHOUT PROJECT ALTERNATIVES**



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## Assumptions

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
Inflation Rate (Variable O&M)	3.0%
Discount Rate (Hurdle rate)	5.5%
Project Cost Factor	65%
Fixed O&M Cost	75%
Variable O&M Cost	25%

Legend
User Input
Feed From Worksheet
Calculation

	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
First Year of Project	2010	2015	2012	2018	
Years of Planning/Design/Construction	2	3	3	2	
First Year of Operation	2012	2018	2015	2020	
Construction Cost (Current Year)	\$6,795,477	\$22,716,259	\$4,034,110	\$4,345,119	
Adjusted CC to Midpoint of Construction	\$7,067,296	\$28,185,139	\$4,449,703	\$6,184,459	
Project Cost (Current Year)	\$11,213,000	\$37,482,000	\$6,656,000	\$7,169,000	
Adjusted PC to Midpoint of Construction	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	
Land Acquisition Cost	\$0	\$0	\$0	\$0	
Annual Operation and Maintenance (\$ O&M/AFY)	\$146	\$206	\$216	\$226	
Fixed Operation and Maintenance (\$ O&M/AFY)	\$110	\$155	\$162	\$170	
Variable Operation and Maintenance (\$ O&M/AFY)	\$37	\$52	\$54	\$57	
Additional Staffing Cost (\$/YR)	\$37,500	\$37,500	\$37,500	\$37,500	
Additional Outreach Cost (\$)	\$50,000	\$50,000	\$50,000	\$50,000	
Percent Mechanical	25%	25%	25%	25%	Useful Life 20 year life
Percent Structural	50%	50%	50%	50%	50 year life
Percent Electrical & Instrumentation	25%	25%	25%	25%	20 year life
Percent Other	0%	0%	0%	0%	

\*Cost of land included in above costs

Notes:

- 1) Capital Costs from SVRWP Costs File - CDM Estimate at 2008 ENRCCI of 9155.
- 2) O&M costs based on ENRCCI adjustment of O&M costs in Recycled Water Feasibility Study (ENRCCI 9155).
- 3) Additional staffing of 1.5 FTE estimated annually for management of the recycled water project/system. 1 FTE is assumed to cost \$100,000/year.
- 4) Additional outreach cost estimate of \$200,000 spread out evenly across the 4 alignments. Cost provided by SCWA.

**Net Present Value**

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
Inflation Rate (Variable O&M)	3.0%
Discount Rate (Hurdle rate)	5.5%
Project Cost Factor	65.0%
Fixed O&M Cost	75.0%
Variable O&M Cost	25.0%

Legend	
User Input	
Feed From Worksheet	
Calculation	

	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
<b>First Year of Project</b>	2010	2015	2012	2018	
<b>Years of Planning/Design/Construction</b>	2	3	3	2	
<b>First Year of Operation</b>	2012	2018	2015	2020	
<b>Construction Cost (Current Year)</b>	\$6,795,477	\$22,716,259	\$4,034,110	\$4,345,119	
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<b>Land Acquisition Cost</b>	\$0	\$0	\$0	\$0	
<b>Annual Operation and Maintenance (\$ O&amp;M/AFY)</b>	\$146	\$206	\$216	\$226	
Fixed Operation and Maintenance (\$ O&M/AFY)	\$110	\$155	\$162	\$170	
Variable Operation and Maintenance (\$ O&M/AFY)	\$37	\$52	\$54	\$57	
<b>Additional Staffing Cost (\$/YR)</b>	\$37,500	\$37,500	\$37,500	\$37,500	
<b>Additional Outreach Cost (\$)</b>	\$50,000	\$50,000	\$50,000	\$50,000	
<b>Percent Mechanical</b>	25%	25%	25%	25%	<b>Useful Life</b>
<b>Percent Structural</b>	25%	25%	25%	25%	20 year life
<b>Percent Electrical &amp; Instrumentation</b>	25%	25%	25%	25%	50 year life
<b>Percent Other</b>	0%	0%	0%	0%	20 year life

Year	Total Demand (AFY)	Demand (AFY)				Capital Costs				Land Acquisition Costs			
		Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	0	0	0	0	0	\$3,498,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011	0	0	0	0	0	\$8,163,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	1,095	1,095	0	0	0	\$0	\$0	\$734,200	\$0	\$0	\$0	\$0	\$0
2013	1,095	1,095	0	0	0	\$0	\$0	\$3,303,900	\$0	\$0	\$0	\$0	\$0
2014	1,095	1,095	0	0	0	\$0	\$0	\$3,303,900	\$0	\$0	\$0	\$0	\$0
2015	1,534	1,095	0	439	0	\$0	\$4,650,600	\$0	\$0	\$0	\$0	\$0	\$0
2016	1,534	1,095	0	439	0	\$0	\$20,927,700	\$0	\$0	\$0	\$0	\$0	\$0
2017	1,534	1,095	0	439	0	\$0	\$20,927,700	\$0	\$0	\$0	\$0	\$0	\$0
2018	2,286	1,095	752	439	0	\$0	\$0	\$0	\$3,061,200	\$0	\$0	\$0	\$0
2019	2,286	1,095	752	439	0	\$0	\$0	\$0	\$7,142,800	\$0	\$0	\$0	\$0
2020	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2021	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2022	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2023	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2024	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2025	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2026	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2027	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2028	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2029	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2030	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2031	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2032	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2033	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2034	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2035	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2036	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2037	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2038	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2039	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2040	2,750	1,095	752	439	464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
					<b>Total</b>	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$0	\$0	\$0	\$0
					<b>Equip. Salvage Value</b>	\$0	\$0	\$0	\$0				
					<b>Structures Salvage Value</b>	\$777,403	\$3,945,919	\$556,213	\$927,669				
					<b>Electical/I&amp;C Salvage Value</b>	\$0	\$0	\$0	\$0				

Year	O&M Costs								Additional Outreach Costs			
	Alignment 1A Fixed	Alignment 1B Fixed	Alignment 2 Fixed	Alignment 3 Fixed	Alignment 1A Variable	Alignment 1B Variable	Alignment 2 Variable	Alignment 3 Variable	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,045	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$134,951	\$0	\$0	\$0	\$44,984	\$0	\$0	\$0	\$0	\$0	\$0	\$56,275
2013	\$139,000	\$0	\$0	\$0	\$46,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$143,170	\$0	\$0	\$0	\$47,723	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$147,465	\$0	\$87,466	\$0	\$49,155	\$0	\$29,155	\$0	\$0	\$0	\$61,494	\$0
2016	\$151,889	\$0	\$90,090	\$0	\$50,630	\$0	\$30,030	\$0	\$0	\$0	\$0	\$0
2017	\$156,446	\$0	\$92,793	\$0	\$52,149	\$0	\$30,931	\$0	\$0	\$0	\$0	\$0
2018	\$161,139	\$156,142	\$95,577	\$0	\$53,713	\$52,047	\$31,859	\$0	\$0	\$0	\$0	\$67,196
2019	\$165,973	\$160,826	\$98,444	\$0	\$55,324	\$53,609	\$32,815	\$0	\$0	\$0	\$0	\$0
2020	\$170,952	\$165,651	\$101,397	\$112,133	\$56,984	\$55,217	\$33,799	\$37,378	\$0	\$0	\$0	\$0
2021	\$176,081	\$170,620	\$104,439	\$115,497	\$58,694	\$56,873	\$34,813	\$38,499	\$0	\$0	\$0	\$0
2022	\$181,363	\$175,739	\$107,572	\$118,962	\$60,454	\$58,580	\$35,857	\$39,654	\$0	\$0	\$0	\$0
2023	\$186,804	\$181,011	\$110,800	\$122,531	\$62,268	\$60,337	\$36,933	\$40,844	\$0	\$0	\$0	\$0
2024	\$192,408	\$186,441	\$114,124	\$126,207	\$64,136	\$62,147	\$38,041	\$42,069	\$0	\$0	\$0	\$0
2025	\$198,181	\$192,034	\$117,547	\$129,993	\$66,060	\$64,011	\$39,182	\$43,331	\$0	\$0	\$0	\$0
2026	\$204,126	\$197,795	\$121,074	\$133,893	\$68,042	\$65,932	\$40,358	\$44,631	\$0	\$0	\$0	\$0
2027	\$210,250	\$203,729	\$124,706	\$137,910	\$70,083	\$67,910	\$41,569	\$45,970	\$0	\$0	\$0	\$0
2028	\$216,557	\$209,841	\$128,447	\$142,047	\$72,186	\$69,947	\$42,816	\$47,349	\$0	\$0	\$0	\$0
2029	\$223,054	\$216,136	\$132,300	\$146,308	\$74,351	\$72,045	\$44,100	\$48,769	\$0	\$0	\$0	\$0
2030	\$229,746	\$222,621	\$136,269	\$150,698	\$76,582	\$74,207	\$45,423	\$50,233	\$0	\$0	\$0	\$0
2031	\$236,638	\$229,299	\$140,358	\$155,219	\$78,879	\$76,433	\$46,786	\$51,740	\$0	\$0	\$0	\$0
2032	\$243,737	\$236,178	\$144,568	\$159,875	\$81,246	\$78,726	\$48,189	\$53,292	\$0	\$0	\$0	\$0
2033	\$251,049	\$243,263	\$148,905	\$164,671	\$83,683	\$81,088	\$49,635	\$54,890	\$0	\$0	\$0	\$0
2034	\$258,581	\$250,561	\$153,372	\$169,612	\$86,194	\$83,520	\$51,124	\$56,537	\$0	\$0	\$0	\$0
2035	\$266,338	\$258,078	\$157,974	\$174,700	\$88,779	\$86,026	\$52,658	\$58,233	\$0	\$0	\$0	\$0
2036	\$274,328	\$265,821	\$162,713	\$179,941	\$91,443	\$88,607	\$54,238	\$59,980	\$0	\$0	\$0	\$0
2037	\$282,558	\$273,795	\$167,594	\$185,339	\$94,186	\$91,265	\$55,865	\$61,780	\$0	\$0	\$0	\$0
2038	\$291,035	\$282,009	\$172,622	\$190,899	\$97,012	\$94,003	\$57,541	\$63,633	\$0	\$0	\$0	\$0
2039	\$299,766	\$290,469	\$177,801	\$196,626	\$99,922	\$96,823	\$59,267	\$65,542	\$0	\$0	\$0	\$0
2040	\$308,759	\$299,183	\$183,135	\$202,525	\$102,920	\$99,728	\$61,045	\$67,508	\$0	\$0	\$0	\$0
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196

Year	Additional Staffing Costs				Capital Expenditures	O&M Expenditure	Total Expenditure	Capital Present Worth	O&M Present Worth	Present Worth
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3						
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	(\$3,498,600)	(\$53,045)	(\$3,551,645)	(\$3,143,326)	(\$47,658)	(\$3,190,984)
2011	\$0	\$0	\$0	\$0	(\$8,163,400)	\$0	(\$8,163,400)	(\$6,952,063)	\$0	(\$6,952,063)
2012	\$42,207	\$0	\$0	\$0	(\$734,200)	(\$278,417)	(\$1,012,617)	(\$592,659)	(\$224,743)	(\$817,401)
2013	\$43,473	\$0	\$0	\$0	(\$3,303,900)	(\$228,806)	(\$3,532,706)	(\$2,527,927)	(\$175,067)	(\$2,702,995)
2014	\$44,777	\$0	\$0	\$0	(\$3,303,900)	(\$235,670)	(\$3,539,570)	(\$2,396,140)	(\$170,919)	(\$2,567,058)
2015	\$46,120	\$0	\$46,120	\$0	(\$4,650,600)	(\$466,976)	(\$5,117,576)	(\$3,196,994)	(\$321,016)	(\$3,518,010)
2016	\$47,504	\$0	\$47,504	\$0	(\$20,927,700)	(\$417,646)	(\$21,345,346)	(\$13,636,466)	(\$272,138)	(\$13,908,604)
2017	\$48,929	\$0	\$48,929	\$0	(\$20,927,700)	(\$430,176)	(\$21,357,876)	(\$12,925,560)	(\$265,689)	(\$13,191,249)
2018	\$50,397	\$50,397	\$50,397	\$0	(\$3,061,200)	(\$768,863)	(\$3,830,063)	(\$1,792,120)	(\$450,116)	(\$2,242,236)
2019	\$51,909	\$51,909	\$51,909	\$0	(\$7,142,800)	(\$722,717)	(\$7,865,517)	(\$3,963,615)	(\$401,043)	(\$4,364,658)
2020	\$53,466	\$53,466	\$53,466	\$53,466	\$0	(\$947,375)	(\$947,375)	\$0	(\$498,302)	(\$498,302)
2021	\$55,070	\$55,070	\$55,070	\$55,070	\$0	(\$975,797)	(\$975,797)	\$0	(\$486,494)	(\$486,494)
2022	\$56,722	\$56,722	\$56,722	\$56,722	\$0	(\$1,005,070)	(\$1,005,070)	\$0	(\$474,966)	(\$474,966)
2023	\$58,424	\$58,424	\$58,424	\$58,424	\$0	(\$1,035,223)	(\$1,035,223)	\$0	(\$463,710)	(\$463,710)
2024	\$60,176	\$60,176	\$60,176	\$60,176	\$0	(\$1,066,279)	(\$1,066,279)	\$0	(\$452,722)	(\$452,722)
2025	\$61,982	\$61,982	\$61,982	\$61,982	\$0	(\$1,098,268)	(\$1,098,268)	\$0	(\$441,994)	(\$441,994)
2026	\$63,841	\$63,841	\$63,841	\$63,841	\$0	(\$1,131,216)	(\$1,131,216)	\$0	(\$431,520)	(\$431,520)
2027	\$65,756	\$65,756	\$65,756	\$65,756	\$0	(\$1,165,152)	(\$1,165,152)	\$0	(\$421,295)	(\$421,295)
2028	\$67,729	\$67,729	\$67,729	\$67,729	\$0	(\$1,200,107)	(\$1,200,107)	\$0	(\$411,311)	(\$411,311)
2029	\$69,761	\$69,761	\$69,761	\$69,761	\$0	(\$1,236,110)	(\$1,236,110)	\$0	(\$401,565)	(\$401,565)
2030	\$71,854	\$71,854	\$71,854	\$71,854	\$0	(\$1,273,193)	(\$1,273,193)	\$0	(\$392,049)	(\$392,049)
2031	\$74,009	\$74,009	\$74,009	\$74,009	\$0	(\$1,311,389)	(\$1,311,389)	\$0	(\$382,759)	(\$382,759)
2032	\$76,230	\$76,230	\$76,230	\$76,230	\$0	(\$1,350,731)	(\$1,350,731)	\$0	(\$373,689)	(\$373,689)
2033	\$78,517	\$78,517	\$78,517	\$78,517	\$0	(\$1,391,253)	(\$1,391,253)	\$0	(\$364,833)	(\$364,833)
2034	\$80,872	\$80,872	\$80,872	\$80,872	\$0	(\$1,432,990)	(\$1,432,990)	\$0	(\$356,188)	(\$356,188)
2035	\$83,298	\$83,298	\$83,298	\$83,298	\$0	(\$1,475,980)	(\$1,475,980)	\$0	(\$347,748)	(\$347,748)
2036	\$85,797	\$85,797	\$85,797	\$85,797	\$0	(\$1,520,259)	(\$1,520,259)	\$0	(\$339,507)	(\$339,507)
2037	\$88,371	\$88,371	\$88,371	\$88,371	\$0	(\$1,565,867)	(\$1,565,867)	\$0	(\$331,462)	(\$331,462)
2038	\$91,022	\$91,022	\$91,022	\$91,022	\$0	(\$1,612,843)	(\$1,612,843)	\$0	(\$323,607)	(\$323,607)
2039	\$93,753	\$93,753	\$93,753	\$93,753	\$0	(\$1,661,228)	(\$1,661,228)	\$0	(\$315,939)	(\$315,939)
2040	\$96,566	\$96,566	\$96,566	\$96,566	\$0	(\$1,711,065)	(\$1,711,065)	\$0	(\$308,452)	(\$308,452)
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	(\$75,714,000)	(\$30,769,711)	(\$106,483,711)	(\$51,126,868)	(\$10,648,500)	(\$61,775,369)

Present Salvage Value

\$6,207,204

Total Present Value

(\$55,568,165)

Cost Allocation for the City of Sonoma

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
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Fixed O&M Cost	75.0%
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Legend	
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	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
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Land Acquisition Cost	\$0	\$0	\$0	\$0	
Annual Operation and Maintenance (\$ O&M/AFY)	\$146	\$206	\$216	\$226	
Fixed Operation and Maintenance (\$ O&M/AFY)	\$110	\$155	\$162	\$170	
Variable Operation and Maintenance (\$ O&M/AFY)	\$37	\$52	\$54	\$57	
Additional Staffing Cost (\$/YR)	\$37,500	\$37,500	\$37,500	\$37,500	
Additional Outreach Cost (\$)	\$50,000	\$50,000	\$50,000	\$50,000	
Percent Mechanical	25%	25%	25%	25%	Useful Life 20
Percent Structural	50%	50%	50%	50%	50
Percent Electrical & Instrumentation	25%	25%	25%	25%	20
Percent Other	0%	0%	0%	0%	





Year	Total Demand (AFY)	Demand (AFY)				Capital Costs				Land Acquisition Costs				
		Private Wells	City of Sonoma	VOMWD	Local Creek	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
2008	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2009	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2010	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2011	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2012	1,095	840	0	0	255	\$0	\$0	\$146,840	\$0	\$0	\$0	\$0	\$0	
2013	1,095	840	0	0	255	\$0	\$0	\$660,780	\$0	\$0	\$0	\$0	\$0	
2014	1,095	840	0	0	255	\$0	\$0	\$660,780	\$0	\$0	\$0	\$0	\$0	
2015	1,534	1,160	87	0	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2016	1,534	1,160	87	0	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2017	1,534	1,160	87	0	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2018	2,286	1,852	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2019	2,286	1,852	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2020	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2021	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2022	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2023	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2024	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2025	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2026	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2027	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2028	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2029	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2030	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2031	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2032	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2033	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2034	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2035	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2036	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2037	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2038	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2039	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2040	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
						\$0	\$0	\$1,468,400	\$0	\$0	\$0	\$0	\$0	
						VOMWD Allocation	-	3,720,480	-	-	115,545	111,962	68,534	70,158
						Other Allocation	11,662,000	42,785,520	5,873,600	10,204,000	5,793,408	4,792,938	3,188,847	3,043,700
						Total	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$5,908,953	\$4,904,900	\$3,257,381	\$3,113,858
						Total Cost	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$0	\$0	\$0	\$0
						Difference	\$0	\$0	\$0	\$0	(\$5,908,953)	(\$4,904,900)	(\$3,257,381)	(\$3,113,858)

Year	O&M Costs								Additional Outreach Costs			
	Alignment 1A Fixed	Alignment 1B Fixed	Alignment 2 Fixed	Alignment 3 Fixed	Alignment 1A Variable	Alignment 1B Variable	Alignment 2 Variable	Alignment 3 Variable	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,682	\$0	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,758	\$0
2013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$8,363	\$0	\$4,961	\$0	\$2,788	\$0	\$1,654	\$0	\$0	\$20,498	\$0	\$0
2016	\$8,614	\$0	\$5,109	\$0	\$2,871	\$0	\$1,703	\$0	\$0	\$0	\$0	\$0
2017	\$8,873	\$0	\$5,263	\$0	\$2,958	\$0	\$1,754	\$0	\$0	\$0	\$0	\$0
2018	\$6,133	\$5,942	\$3,637	\$0	\$2,044	\$1,981	\$1,212	\$0	\$0	\$0	\$0	\$22,399
2019	\$6,317	\$6,121	\$3,747	\$0	\$2,106	\$2,040	\$1,249	\$0	\$0	\$0	\$0	\$0
2020	\$5,408	\$5,241	\$3,208	\$3,547	\$1,803	\$1,747	\$1,069	\$1,182	\$0	\$0	\$0	\$0
2021	\$5,571	\$5,398	\$3,304	\$3,654	\$1,857	\$1,799	\$1,101	\$1,218	\$0	\$0	\$0	\$0
2022	\$5,738	\$5,560	\$3,403	\$3,764	\$1,913	\$1,853	\$1,134	\$1,255	\$0	\$0	\$0	\$0
2023	\$5,910	\$5,727	\$3,505	\$3,876	\$1,970	\$1,909	\$1,168	\$1,292	\$0	\$0	\$0	\$0
2024	\$6,087	\$5,898	\$3,610	\$3,993	\$2,029	\$1,966	\$1,203	\$1,331	\$0	\$0	\$0	\$0
2025	\$6,270	\$6,075	\$3,719	\$4,113	\$2,090	\$2,025	\$1,240	\$1,371	\$0	\$0	\$0	\$0
2026	\$6,458	\$6,258	\$3,830	\$4,236	\$2,153	\$2,086	\$1,277	\$1,412	\$0	\$0	\$0	\$0
2027	\$6,652	\$6,445	\$3,945	\$4,363	\$2,217	\$2,148	\$1,315	\$1,454	\$0	\$0	\$0	\$0
2028	\$6,851	\$6,639	\$4,064	\$4,494	\$2,284	\$2,213	\$1,355	\$1,498	\$0	\$0	\$0	\$0
2029	\$7,057	\$6,838	\$4,186	\$4,629	\$2,352	\$2,279	\$1,395	\$1,543	\$0	\$0	\$0	\$0
2030	\$7,268	\$7,043	\$4,311	\$4,768	\$2,423	\$2,348	\$1,437	\$1,589	\$0	\$0	\$0	\$0
2031	\$7,486	\$7,254	\$4,440	\$4,911	\$2,495	\$2,418	\$1,480	\$1,637	\$0	\$0	\$0	\$0
2032	\$7,711	\$7,472	\$4,574	\$5,058	\$2,570	\$2,491	\$1,525	\$1,686	\$0	\$0	\$0	\$0
2033	\$7,942	\$7,696	\$4,711	\$5,210	\$2,647	\$2,565	\$1,570	\$1,737	\$0	\$0	\$0	\$0
2034	\$8,181	\$7,927	\$4,852	\$5,366	\$2,727	\$2,642	\$1,617	\$1,789	\$0	\$0	\$0	\$0
2035	\$8,426	\$8,165	\$4,998	\$5,527	\$2,809	\$2,722	\$1,666	\$1,842	\$0	\$0	\$0	\$0
2036	\$8,679	\$8,410	\$5,148	\$5,693	\$2,893	\$2,803	\$1,716	\$1,898	\$0	\$0	\$0	\$0
2037	\$8,939	\$8,662	\$5,302	\$5,863	\$2,980	\$2,887	\$1,767	\$1,954	\$0	\$0	\$0	\$0
2038	\$9,207	\$8,922	\$5,461	\$6,039	\$3,069	\$2,974	\$1,820	\$2,013	\$0	\$0	\$0	\$0
2039	\$9,484	\$9,189	\$5,625	\$6,221	\$3,161	\$3,063	\$1,875	\$2,074	\$0	\$0	\$0	\$0
2040	\$9,768	\$9,465	\$5,794	\$6,407	\$3,256	\$3,155	\$1,931	\$2,136	\$0	\$0	\$0	\$0
	\$193,391	\$162,345	\$114,706	\$101,729	\$64,464	\$54,115	\$38,235	\$33,910	\$17,682	\$20,498	\$18,758	\$22,399
	115,545	111,962	68,534	70,158	38,515	37,321	22,845	23,386	17,682	20,498	18,758	22,399
	5,793,408	4,792,938	3,188,847	3,043,700	1,931,136	1,597,646	1,062,949	1,014,567	17,682	20,498	18,758	22,399
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Year	Additional Staffing Costs				Capital	O&M	Total	Capital	O&M Present	
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Expenditures	Expenditure	Expenditure	Present Worth	Worth	Present Worth
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	(\$17,682)	(\$17,682)	\$0	(\$15,886)	(\$15,886)
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$14,069	\$0	\$0	\$0	(\$146,840)	(\$32,827)	(\$179,667)	(\$118,532)	(\$26,499)	(\$145,030)
2013	\$14,491	\$0	\$0	\$0	(\$660,780)	(\$14,491)	(\$675,271)	(\$505,585)	(\$11,088)	(\$516,673)
2014	\$14,926	\$0	\$0	\$0	(\$660,780)	(\$14,926)	(\$675,706)	(\$479,228)	(\$10,825)	(\$490,053)
2015	\$15,373	\$0	\$15,373	\$0	\$0	(\$69,010)	(\$69,010)	\$0	(\$47,440)	(\$47,440)
2016	\$15,835	\$0	\$15,835	\$0	\$0	(\$49,968)	(\$49,968)	\$0	(\$32,559)	(\$32,559)
2017	\$16,310	\$0	\$16,310	\$0	\$0	(\$51,467)	(\$51,467)	\$0	(\$31,787)	(\$31,787)
2018	\$16,799	\$16,799	\$16,799	\$0	\$0	(\$93,745)	(\$93,745)	\$0	(\$54,881)	(\$54,881)
2019	\$17,303	\$17,303	\$17,303	\$0	\$0	(\$73,487)	(\$73,487)	\$0	(\$40,779)	(\$40,779)
2020	\$17,822	\$17,822	\$17,822	\$17,822	\$0	(\$94,494)	(\$94,494)	\$0	(\$49,702)	(\$49,702)
2021	\$18,357	\$18,357	\$18,357	\$18,357	\$0	(\$97,328)	(\$97,328)	\$0	(\$48,524)	(\$48,524)
2022	\$18,907	\$18,907	\$18,907	\$18,907	\$0	(\$100,248)	(\$100,248)	\$0	(\$47,374)	(\$47,374)
2023	\$19,475	\$19,475	\$19,475	\$19,475	\$0	(\$103,256)	(\$103,256)	\$0	(\$46,252)	(\$46,252)
2024	\$20,059	\$20,059	\$20,059	\$20,059	\$0	(\$106,353)	(\$106,353)	\$0	(\$45,156)	(\$45,156)
2025	\$20,661	\$20,661	\$20,661	\$20,661	\$0	(\$109,544)	(\$109,544)	\$0	(\$44,086)	(\$44,086)
2026	\$21,280	\$21,280	\$21,280	\$21,280	\$0	(\$112,830)	(\$112,830)	\$0	(\$43,041)	(\$43,041)
2027	\$21,919	\$21,919	\$21,919	\$21,919	\$0	(\$116,215)	(\$116,215)	\$0	(\$42,021)	(\$42,021)
2028	\$22,576	\$22,576	\$22,576	\$22,576	\$0	(\$119,702)	(\$119,702)	\$0	(\$41,025)	(\$41,025)
2029	\$23,254	\$23,254	\$23,254	\$23,254	\$0	(\$123,293)	(\$123,293)	\$0	(\$40,053)	(\$40,053)
2030	\$23,951	\$23,951	\$23,951	\$23,951	\$0	(\$126,992)	(\$126,992)	\$0	(\$39,104)	(\$39,104)
2031	\$24,670	\$24,670	\$24,670	\$24,670	\$0	(\$130,801)	(\$130,801)	\$0	(\$38,177)	(\$38,177)
2032	\$25,410	\$25,410	\$25,410	\$25,410	\$0	(\$134,725)	(\$134,725)	\$0	(\$37,273)	(\$37,273)
2033	\$26,172	\$26,172	\$26,172	\$26,172	\$0	(\$138,767)	(\$138,767)	\$0	(\$36,389)	(\$36,389)
2034	\$26,957	\$26,957	\$26,957	\$26,957	\$0	(\$142,930)	(\$142,930)	\$0	(\$35,527)	(\$35,527)
2035	\$27,766	\$27,766	\$27,766	\$27,766	\$0	(\$147,218)	(\$147,218)	\$0	(\$34,685)	(\$34,685)
2036	\$28,599	\$28,599	\$28,599	\$28,599	\$0	(\$151,635)	(\$151,635)	\$0	(\$33,863)	(\$33,863)
2037	\$29,457	\$29,457	\$29,457	\$29,457	\$0	(\$156,184)	(\$156,184)	\$0	(\$33,061)	(\$33,061)
2038	\$30,341	\$30,341	\$30,341	\$30,341	\$0	(\$160,869)	(\$160,869)	\$0	(\$32,277)	(\$32,277)
2039	\$31,251	\$31,251	\$31,251	\$31,251	\$0	(\$165,695)	(\$165,695)	\$0	(\$31,513)	(\$31,513)
2040	\$32,189	\$32,189	\$32,189	\$32,189	\$0	(\$170,666)	(\$170,666)	\$0	(\$30,766)	(\$30,766)
	\$636,178	\$545,175	\$592,692	\$511,073	-\$1,468,400	-\$3,127,349	-\$4,595,749	-\$1,103,345	-\$1,101,613	-\$2,204,958
	636,178	545,175	592,692	511,073	(3,720,480)	(2,852,719)	(6,573,199)	(2,380,722)	(995,067)	(3,375,788)
	636,178	545,175	592,692	511,073	(70,525,120)	(24,789,644)	(95,314,764)	(47,642,802)	(8,551,821)	(56,194,623)
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	-\$75,714,000	-\$30,769,711	-\$106,483,711	-\$51,126,868	-\$10,648,500	-\$61,775,369
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	(\$75,714,000)	(\$30,769,711)	(\$106,483,711)	(\$51,126,868)	(\$10,648,500)	(\$61,775,369)
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



**Cost Allocation for VOMWD**

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
Inflation Rate (Variable O&M)	3.0%
Discount Rate (Hurdle rate)	5.5%
Project Cost Factor	65.0%
Fixed O&M Cost	75.0%
Variable O&M Cost	25.0%

<b>Legend</b>
User Input
Feed From Worksheet
Calculation

	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
First Year of Project	2010	2015	2012	2018	
Years of Planning/Design/Construction	2	3	3	2	
First Year of Operation	2012	2018	2015	2020	
Construction Cost (Current Year)	\$6,795,477	\$22,716,259	\$4,034,110	\$4,345,119	
Adjusted CC to Midpoint of Construction	\$7,067,296	\$28,185,139	\$4,449,703	\$6,184,459	
Project Cost (Current Year)	\$11,213,000	\$37,482,000	\$6,656,000	\$7,169,000	
Adjusted PC to Midpoint of Construction	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	
Land Acquisition Cost	\$0	\$0	\$0	\$0	
Annual Operation and Maintenance (\$ O&M/AFY)	\$146	\$206	\$216	\$226	
Fixed Operation and Maintenance (\$ O&M/AFY)	\$110	\$155	\$162	\$170	
Variable Operation and Maintenance (\$ O&M/AFY)	\$37	\$52	\$54	\$57	
Additional Staffing Cost (\$/YR)	\$37,500	\$37,500	\$37,500	\$37,500	
Additional Outreach Cost (\$)	\$50,000	\$50,000	\$50,000	\$50,000	
Percent Mechanical	25%	25%	25%	25%	Useful Life 20
Percent Structural	50%	50%	50%	50%	50
Percent Electrical & Instrumentation	25%	25%	25%	25%	20
Percent Other	0%	0%	0%	0%	



Year	Total Demand (AFY)	Demand (AFY)				Capital Costs				Land Acquisition Costs			
		Private Wells	City of Sonoma	VOMWD	Local Creek	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	1,095	840	0	0	255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2013	1,095	840	0	0	255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	1,095	840	0	0	255	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	1,534	1,160	87	0	287	\$0	\$372,048	\$0	\$0	\$0	\$0	\$0	\$0
2016	1,534	1,160	87	0	287	\$0	\$1,674,216	\$0	\$0	\$0	\$0	\$0	\$0
2017	1,534	1,160	87	0	287	\$0	\$1,674,216	\$0	\$0	\$0	\$0	\$0	\$0
2018	2,286	1,852	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	2,286	1,852	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2020	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2021	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2022	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2023	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2024	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2025	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2026	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2027	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2028	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2029	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2030	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2031	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2032	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2033	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2034	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2035	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2036	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2037	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2038	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2039	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2040	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
						\$0	\$3,720,480	\$0	\$0	\$0	\$0	\$0	\$0
								1,468,400					
						11,662,000	42,785,520	5,873,600	10,204,000				
						\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$0	\$0	\$0	\$0
										\$0	\$0	\$0	\$0
										\$0	\$0	\$0	\$0
										\$0	\$0	\$0	\$0



Year	O&M Costs								Additional Outreach Costs			
	Alignment 1A Fixed	Alignment 1B Fixed	Alignment 2 Fixed	Alignment 3 Fixed	Alignment 1A Variable	Alignment 1B Variable	Alignment 2 Variable	Alignment 3 Variable	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,682	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,758	\$0
2013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,498	\$0	\$0
2016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$4,229	\$4,098	\$2,509	\$0	\$1,410	\$1,366	\$836	\$0	\$0	\$0	\$0	\$22,399
2019	\$4,356	\$4,221	\$2,584	\$0	\$1,452	\$1,407	\$861	\$0	\$0	\$0	\$0	\$0
2020	\$3,730	\$3,614	\$2,212	\$2,447	\$1,243	\$1,205	\$737	\$816	\$0	\$0	\$0	\$0
2021	\$3,842	\$3,723	\$2,279	\$2,520	\$1,281	\$1,241	\$760	\$840	\$0	\$0	\$0	\$0
2022	\$3,957	\$3,834	\$2,347	\$2,596	\$1,319	\$1,278	\$782	\$865	\$0	\$0	\$0	\$0
2023	\$4,076	\$3,949	\$2,417	\$2,673	\$1,359	\$1,316	\$806	\$891	\$0	\$0	\$0	\$0
2024	\$4,198	\$4,068	\$2,490	\$2,754	\$1,399	\$1,356	\$830	\$918	\$0	\$0	\$0	\$0
2025	\$4,324	\$4,190	\$2,565	\$2,836	\$1,441	\$1,397	\$855	\$945	\$0	\$0	\$0	\$0
2026	\$4,454	\$4,316	\$2,642	\$2,921	\$1,485	\$1,439	\$881	\$974	\$0	\$0	\$0	\$0
2027	\$4,587	\$4,445	\$2,721	\$3,009	\$1,529	\$1,482	\$907	\$1,003	\$0	\$0	\$0	\$0
2028	\$4,725	\$4,578	\$2,802	\$3,099	\$1,575	\$1,526	\$934	\$1,033	\$0	\$0	\$0	\$0
2029	\$4,867	\$4,716	\$2,887	\$3,192	\$1,622	\$1,572	\$962	\$1,064	\$0	\$0	\$0	\$0
2030	\$5,013	\$4,857	\$2,973	\$3,288	\$1,671	\$1,619	\$991	\$1,096	\$0	\$0	\$0	\$0
2031	\$5,163	\$5,003	\$3,062	\$3,387	\$1,721	\$1,668	\$1,021	\$1,129	\$0	\$0	\$0	\$0
2032	\$5,318	\$5,153	\$3,154	\$3,488	\$1,773	\$1,718	\$1,051	\$1,163	\$0	\$0	\$0	\$0
2033	\$5,477	\$5,308	\$3,249	\$3,593	\$1,826	\$1,769	\$1,083	\$1,198	\$0	\$0	\$0	\$0
2034	\$5,642	\$5,467	\$3,346	\$3,701	\$1,881	\$1,822	\$1,115	\$1,234	\$0	\$0	\$0	\$0
2035	\$5,811	\$5,631	\$3,447	\$3,812	\$1,937	\$1,877	\$1,149	\$1,271	\$0	\$0	\$0	\$0
2036	\$5,985	\$5,800	\$3,550	\$3,926	\$1,995	\$1,933	\$1,183	\$1,309	\$0	\$0	\$0	\$0
2037	\$6,165	\$5,974	\$3,657	\$4,044	\$2,055	\$1,991	\$1,219	\$1,348	\$0	\$0	\$0	\$0
2038	\$6,350	\$6,153	\$3,766	\$4,165	\$2,117	\$2,051	\$1,255	\$1,388	\$0	\$0	\$0	\$0
2039	\$6,540	\$6,338	\$3,879	\$4,290	\$2,180	\$2,113	\$1,293	\$1,430	\$0	\$0	\$0	\$0
2040	\$6,737	\$6,528	\$3,996	\$4,419	\$2,246	\$2,176	\$1,332	\$1,473	\$0	\$0	\$0	\$0
	\$115,545	\$111,962	\$68,534	\$70,158	\$38,515	\$37,321	\$22,845	\$23,386	\$17,682	\$20,498	\$18,758	\$22,399
	193,391	162,345	114,706	101,729	64,464	54,115	38,235	33,910	17,682	20,498	18,758	22,399
	5,793,408	4,792,938	3,188,847	3,043,700	1,931,136	1,597,646	1,062,949	1,014,567	17,682	20,498	18,758	22,399
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Year	O&M Costs								Additional Outreach Costs			
	Alignment 1A Fixed	Alignment 1B Fixed	Alignment 2 Fixed	Alignment 3 Fixed	Alignment 1A Variable	Alignment 1B Variable	Alignment 2 Variable	Alignment 3 Variable	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,682	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,758	\$0
2013	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,498	\$0	\$0
2016	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2017	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018	\$4,229	\$4,098	\$2,509	\$0	\$1,410	\$1,366	\$836	\$0	\$0	\$0	\$0	\$22,399
2019	\$4,356	\$4,221	\$2,584	\$0	\$1,452	\$1,407	\$861	\$0	\$0	\$0	\$0	\$0
2020	\$3,730	\$3,614	\$2,212	\$2,447	\$1,243	\$1,205	\$737	\$816	\$0	\$0	\$0	\$0
2021	\$3,842	\$3,723	\$2,279	\$2,520	\$1,281	\$1,241	\$760	\$840	\$0	\$0	\$0	\$0
2022	\$3,957	\$3,834	\$2,347	\$2,596	\$1,319	\$1,278	\$782	\$865	\$0	\$0	\$0	\$0
2023	\$4,076	\$3,949	\$2,417	\$2,673	\$1,359	\$1,316	\$806	\$891	\$0	\$0	\$0	\$0
2024	\$4,198	\$4,068	\$2,490	\$2,754	\$1,399	\$1,356	\$830	\$918	\$0	\$0	\$0	\$0
2025	\$4,324	\$4,190	\$2,565	\$2,836	\$1,441	\$1,397	\$855	\$945	\$0	\$0	\$0	\$0
2026	\$4,454	\$4,316	\$2,642	\$2,921	\$1,485	\$1,439	\$881	\$974	\$0	\$0	\$0	\$0
2027	\$4,587	\$4,445	\$2,721	\$3,009	\$1,529	\$1,482	\$907	\$1,003	\$0	\$0	\$0	\$0
2028	\$4,725	\$4,578	\$2,802	\$3,099	\$1,575	\$1,526	\$934	\$1,033	\$0	\$0	\$0	\$0
2029	\$4,867	\$4,716	\$2,887	\$3,192	\$1,622	\$1,572	\$962	\$1,064	\$0	\$0	\$0	\$0
2030	\$5,013	\$4,857	\$2,973	\$3,288	\$1,671	\$1,619	\$991	\$1,096	\$0	\$0	\$0	\$0
2031	\$5,163	\$5,003	\$3,062	\$3,387	\$1,721	\$1,668	\$1,021	\$1,129	\$0	\$0	\$0	\$0
2032	\$5,318	\$5,153	\$3,154	\$3,488	\$1,773	\$1,718	\$1,051	\$1,163	\$0	\$0	\$0	\$0
2033	\$5,477	\$5,308	\$3,249	\$3,593	\$1,826	\$1,769	\$1,083	\$1,198	\$0	\$0	\$0	\$0
2034	\$5,642	\$5,467	\$3,346	\$3,701	\$1,881	\$1,822	\$1,115	\$1,234	\$0	\$0	\$0	\$0
2035	\$5,811	\$5,631	\$3,447	\$3,812	\$1,937	\$1,877	\$1,149	\$1,271	\$0	\$0	\$0	\$0
2036	\$5,985	\$5,800	\$3,550	\$3,926	\$1,995	\$1,933	\$1,183	\$1,309	\$0	\$0	\$0	\$0
2037	\$6,165	\$5,974	\$3,657	\$4,044	\$2,055	\$1,991	\$1,219	\$1,348	\$0	\$0	\$0	\$0
2038	\$6,350	\$6,153	\$3,766	\$4,165	\$2,117	\$2,051	\$1,255	\$1,388	\$0	\$0	\$0	\$0
2039	\$6,540	\$6,338	\$3,879	\$4,290	\$2,180	\$2,113	\$1,293	\$1,430	\$0	\$0	\$0	\$0
2040	\$6,737	\$6,528	\$3,996	\$4,419	\$2,246	\$2,176	\$1,332	\$1,473	\$0	\$0	\$0	\$0
	\$115,545	\$111,962	\$68,534	\$70,158	\$38,515	\$37,321	\$22,845	\$23,386	\$17,682	\$20,498	\$18,758	\$22,399
	193,391	162,345	114,706	101,729	64,464	54,115	38,235	33,910	17,682	20,498	18,758	22,399
	5,793,408	4,792,938	3,188,847	3,043,700	1,931,136	1,597,646	1,062,949	1,014,567	17,682	20,498	18,758	22,399
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Year	Additional Staffing Costs				Capital Expenditures	O&M Expenditure	Total Expenditure	Capital Present Worth	O&M Present Worth	Present Worth
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3						
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	(\$17,682)	(\$17,682)	\$0	(\$15,886)	(\$15,886)
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$14,069	\$0	\$0	\$0	\$0	(\$32,827)	(\$32,827)	\$0	(\$26,499)	(\$26,499)
2013	\$14,491	\$0	\$0	\$0	\$0	(\$14,491)	(\$14,491)	\$0	(\$11,088)	(\$11,088)
2014	\$14,926	\$0	\$0	\$0	\$0	(\$14,926)	(\$14,926)	\$0	(\$10,825)	(\$10,825)
2015	\$15,373	\$0	\$15,373	\$0	(\$372,048)	(\$51,245)	(\$423,293)	(\$255,759)	(\$35,228)	(\$290,987)
2016	\$15,835	\$0	\$15,835	\$0	(\$1,674,216)	(\$31,669)	(\$1,705,885)	(\$1,090,917)	(\$20,636)	(\$1,111,553)
2017	\$16,310	\$0	\$16,310	\$0	(\$1,674,216)	(\$32,619)	(\$1,706,835)	(\$1,034,045)	(\$20,147)	(\$1,054,191)
2018	\$16,799	\$16,799	\$16,799	\$0	\$0	(\$87,244)	(\$87,244)	\$0	(\$51,075)	(\$51,075)
2019	\$17,303	\$17,303	\$17,303	\$0	\$0	(\$66,790)	(\$66,790)	\$0	(\$37,063)	(\$37,063)
2020	\$17,822	\$17,822	\$17,822	\$17,822	\$0	(\$87,292)	(\$87,292)	\$0	(\$45,914)	(\$45,914)
2021	\$18,357	\$18,357	\$18,357	\$18,357	\$0	(\$89,911)	(\$89,911)	\$0	(\$44,826)	(\$44,826)
2022	\$18,907	\$18,907	\$18,907	\$18,907	\$0	(\$92,608)	(\$92,608)	\$0	(\$43,764)	(\$43,764)
2023	\$19,475	\$19,475	\$19,475	\$19,475	\$0	(\$95,386)	(\$95,386)	\$0	(\$42,727)	(\$42,727)
2024	\$20,059	\$20,059	\$20,059	\$20,059	\$0	(\$98,248)	(\$98,248)	\$0	(\$41,714)	(\$41,714)
2025	\$20,661	\$20,661	\$20,661	\$20,661	\$0	(\$101,195)	(\$101,195)	\$0	(\$40,726)	(\$40,726)
2026	\$21,280	\$21,280	\$21,280	\$21,280	\$0	(\$104,231)	(\$104,231)	\$0	(\$39,761)	(\$39,761)
2027	\$21,919	\$21,919	\$21,919	\$21,919	\$0	(\$107,358)	(\$107,358)	\$0	(\$38,818)	(\$38,818)
2028	\$22,576	\$22,576	\$22,576	\$22,576	\$0	(\$110,579)	(\$110,579)	\$0	(\$37,899)	(\$37,899)
2029	\$23,254	\$23,254	\$23,254	\$23,254	\$0	(\$113,896)	(\$113,896)	\$0	(\$37,000)	(\$37,000)
2030	\$23,951	\$23,951	\$23,951	\$23,951	\$0	(\$117,313)	(\$117,313)	\$0	(\$36,124)	(\$36,124)
2031	\$24,670	\$24,670	\$24,670	\$24,670	\$0	(\$120,832)	(\$120,832)	\$0	(\$35,268)	(\$35,268)
2032	\$25,410	\$25,410	\$25,410	\$25,410	\$0	(\$124,457)	(\$124,457)	\$0	(\$34,432)	(\$34,432)
2033	\$26,172	\$26,172	\$26,172	\$26,172	\$0	(\$128,191)	(\$128,191)	\$0	(\$33,616)	(\$33,616)
2034	\$26,957	\$26,957	\$26,957	\$26,957	\$0	(\$132,037)	(\$132,037)	\$0	(\$32,819)	(\$32,819)
2035	\$27,766	\$27,766	\$27,766	\$27,766	\$0	(\$135,998)	(\$135,998)	\$0	(\$32,042)	(\$32,042)
2036	\$28,599	\$28,599	\$28,599	\$28,599	\$0	(\$140,078)	(\$140,078)	\$0	(\$31,282)	(\$31,282)
2037	\$29,457	\$29,457	\$29,457	\$29,457	\$0	(\$144,280)	(\$144,280)	\$0	(\$30,541)	(\$30,541)
2038	\$30,341	\$30,341	\$30,341	\$30,341	\$0	(\$148,609)	(\$148,609)	\$0	(\$29,817)	(\$29,817)
2039	\$31,251	\$31,251	\$31,251	\$31,251	\$0	(\$153,067)	(\$153,067)	\$0	(\$29,111)	(\$29,111)
2040	\$32,189	\$32,189	\$32,189	\$32,189	\$0	(\$157,659)	(\$157,659)	\$0	(\$28,421)	(\$28,421)
	\$636,178	\$545,175	\$592,692	\$511,073	-\$3,720,480	-\$2,852,719	-\$6,573,199	-\$2,380,722	-\$995,067	-\$3,375,788
	636,178	545,175	592,692	511,073	(1,468,400)	(3,127,349)	(4,595,749)	(1,103,345)	(1,101,613)	(2,204,958)
	636,178	545,175	592,692	511,073	(70,525,120)	(24,789,644)	(95,314,764)	(47,642,802)	(8,551,821)	(56,194,623)
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	-\$75,714,000	-\$30,769,711	-\$106,483,711	-\$51,126,868	-\$10,648,500	-\$61,775,369
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	(\$75,714,000)	(\$30,769,711)	(\$106,483,711)	(\$51,126,868)	(\$10,648,500)	(\$61,775,369)
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Cost Allocation for Other

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
Inflation Rate (Variable O&M)	3.0%
Discount Rate (Hurdle rate)	5.5%
Project Cost Factor	60.0%
Fixed O&M Cost	75.0%
Variable O&M Cost	25.0%

Legend	
User Input	
Feed From Worksheet	
Calculation	

	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	
First Year of Project	2010	2015	2012	2018	
Years of Planning/Design/Construction	2	3	3	2	
First Year of Operation	2012	2018	2015	2020	
Construction Cost (Current Year)	\$6,795,477	\$22,716,259	\$4,034,110	\$4,345,119	
Adjusted CC to Midpoint of Construction	\$7,067,296	\$28,185,139	\$4,449,703	\$6,184,459	
Project Cost (Current Year)	\$11,213,000	\$37,482,000	\$6,656,000	\$7,169,000	
Adjusted PC to Midpoint of Construction	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	
Land Acquisition Cost	\$0	\$0	\$0	\$0	
Annual Operation and Maintenance (\$ O&M/AFY)	\$146	\$206	\$216	\$226	
Fixed Operation and Maintenance (\$ O&M/AFY)	\$110	\$155	\$162	\$170	
Variable Operation and Maintenance (\$ O&M/AFY)	\$37	\$52	\$54	\$57	
Additional Staffing Cost (\$/YR)	\$37,500	\$37,500	\$37,500	\$37,500	
Additional Outreach Cost (\$)	\$50,000	\$50,000	\$50,000	\$50,000	
Percent Mechanical	25%	25%	25%	25%	Useful Life 20
Percent Structural	50%	50%	50%	50%	50
Percent Electrical & Instrumentation	25%	25%	25%	25%	20
Percent Other	0%	0%	0%	0%	



Year	Total Demand (AFY)	Demand (AFY)				Capital Costs				Land Acquisition Costs			
		Private Wells	City of Sonoma	VOMWD	Local Creek	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
2008	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	0	0	0	0	0	\$3,498,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2011	0	0	0	0	0	\$8,163,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	1,095	840	0	0	255	\$0	\$0	\$587,360	\$0	\$0	\$0	\$0	\$0
2013	1,095	840	0	0	255	\$0	\$0	\$2,643,120	\$0	\$0	\$0	\$0	\$0
2014	1,095	840	0	0	255	\$0	\$0	\$2,643,120	\$0	\$0	\$0	\$0	\$0
2015	1,534	1,160	87	0	287	\$0	\$4,278,552	\$0	\$0	\$0	\$0	\$0	\$0
2016	1,534	1,160	87	0	287	\$0	\$19,253,484	\$0	\$0	\$0	\$0	\$0	\$0
2017	1,534	1,160	87	0	287	\$0	\$19,253,484	\$0	\$0	\$0	\$0	\$0	\$0
2018	2,286	1,852	87	60	287	\$0	\$0	\$0	\$3,061,200	\$0	\$0	\$0	\$0
2019	2,286	1,852	87	60	287	\$0	\$0	\$0	\$7,142,800	\$0	\$0	\$0	\$0
2020	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2021	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2022	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2023	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2024	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2025	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2026	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2027	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2028	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2029	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2030	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2031	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2032	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2033	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2034	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2035	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2036	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2037	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2038	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2039	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2040	2,750	2,316	87	60	287	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
						\$11,662,000	\$42,785,520	\$5,873,600	\$10,204,000	\$0	\$0	\$0	\$0
						City Allocation	-	-	1,468,400	-	-	-	-
						VOMWD Allocation	-	3,720,480	-	-	-	-	-
						<b>Total</b>	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$0	\$0	\$0
						<b>Total Cost</b>	\$11,662,000	\$46,506,000	\$7,342,000	\$10,204,000	\$0	\$0	\$0
						<b>Difference</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Other Allocation

Year	O&M Costs								Additional Outreach Costs			
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3
	Fixed	Fixed	Fixed	Fixed	Variable	Variable	Variable	Variable				
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,682	\$0	\$0	\$0
2011	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$134,951	\$0	\$0	\$0	\$44,984	\$0	\$0	\$0	\$0	\$0	\$18,758	\$0
2013	\$139,000	\$0	\$0	\$0	\$46,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2014	\$143,170	\$0	\$0	\$0	\$47,723	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2015	\$139,102	\$0	\$82,506	\$0	\$46,367	\$0	\$27,502	\$0	\$0	\$20,498	\$0	\$0
2016	\$143,275	\$0	\$84,981	\$0	\$47,758	\$0	\$28,327	\$0	\$0	\$0	\$0	\$0
2017	\$147,573	\$0	\$87,530	\$0	\$49,191	\$0	\$29,177	\$0	\$0	\$0	\$0	\$0
2018	\$150,777	\$146,101	\$89,431	\$0	\$50,259	\$48,700	\$29,810	\$0	\$0	\$0	\$0	\$22,399
2019	\$155,300	\$150,484	\$92,114	\$0	\$51,767	\$50,161	\$30,705	\$0	\$0	\$0	\$0	\$0
2020	\$161,814	\$156,796	\$95,977	\$106,139	\$53,938	\$52,265	\$31,992	\$35,380	\$0	\$0	\$0	\$0
2021	\$166,669	\$161,500	\$98,856	\$109,323	\$55,556	\$53,833	\$32,952	\$36,441	\$0	\$0	\$0	\$0
2022	\$171,669	\$166,345	\$101,822	\$112,603	\$57,223	\$55,448	\$33,941	\$37,534	\$0	\$0	\$0	\$0
2023	\$176,819	\$171,335	\$104,877	\$115,981	\$58,940	\$57,112	\$34,959	\$38,660	\$0	\$0	\$0	\$0
2024	\$182,123	\$176,475	\$108,023	\$119,461	\$60,708	\$58,825	\$36,008	\$39,820	\$0	\$0	\$0	\$0
2025	\$187,587	\$181,769	\$111,264	\$123,044	\$62,529	\$60,590	\$37,088	\$41,015	\$0	\$0	\$0	\$0
2026	\$193,215	\$187,222	\$114,602	\$126,736	\$64,405	\$62,407	\$38,201	\$42,245	\$0	\$0	\$0	\$0
2027	\$199,011	\$192,839	\$118,040	\$130,538	\$66,337	\$64,280	\$39,347	\$43,513	\$0	\$0	\$0	\$0
2028	\$204,981	\$198,624	\$121,581	\$134,454	\$68,327	\$66,208	\$40,527	\$44,818	\$0	\$0	\$0	\$0
2029	\$211,131	\$204,583	\$125,228	\$138,488	\$70,377	\$68,194	\$41,743	\$46,163	\$0	\$0	\$0	\$0
2030	\$217,465	\$210,720	\$128,985	\$142,642	\$72,488	\$70,240	\$42,995	\$47,547	\$0	\$0	\$0	\$0
2031	\$223,989	\$217,042	\$132,855	\$146,921	\$74,663	\$72,347	\$44,285	\$48,974	\$0	\$0	\$0	\$0
2032	\$230,708	\$223,553	\$136,840	\$151,329	\$76,903	\$74,518	\$45,613	\$50,443	\$0	\$0	\$0	\$0
2033	\$237,629	\$230,260	\$140,946	\$155,869	\$79,210	\$76,753	\$46,982	\$51,956	\$0	\$0	\$0	\$0
2034	\$244,758	\$237,168	\$145,174	\$160,545	\$81,586	\$79,056	\$48,391	\$53,515	\$0	\$0	\$0	\$0
2035	\$252,101	\$244,283	\$149,529	\$165,361	\$84,034	\$81,428	\$49,843	\$55,120	\$0	\$0	\$0	\$0
2036	\$259,664	\$251,611	\$154,015	\$170,322	\$86,555	\$83,870	\$51,338	\$56,774	\$0	\$0	\$0	\$0
2037	\$267,454	\$259,160	\$158,636	\$175,432	\$89,151	\$86,387	\$52,879	\$58,477	\$0	\$0	\$0	\$0
2038	\$275,478	\$266,934	\$163,395	\$180,695	\$91,826	\$88,978	\$54,465	\$60,232	\$0	\$0	\$0	\$0
2039	\$283,742	\$274,942	\$168,296	\$186,116	\$94,581	\$91,647	\$56,099	\$62,039	\$0	\$0	\$0	\$0
2040	\$292,254	\$283,191	\$173,345	\$191,699	\$97,418	\$94,397	\$57,782	\$63,900	\$0	\$0	\$0	\$0
	\$5,793,408	\$4,792,938	\$3,188,847	\$3,043,700	\$1,931,136	\$1,597,646	\$1,062,949	\$1,014,567	\$17,682	\$20,498	\$18,758	\$22,399
	193,391	162,345	114,706	101,729	64,464	54,115	38,235	33,910	17,682	20,498	18,758	22,399
	115,545	111,962	68,534	70,158	38,515	37,321	22,845	23,386	17,682	20,498	18,758	22,399
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$6,102,344	\$5,067,245	\$3,372,087	\$3,215,587	\$2,034,115	\$1,689,082	\$1,124,029	\$1,071,862	\$53,045	\$61,494	\$56,275	\$67,196
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Year	Additional Staffing Costs				Capital Expenditures	O&M Expenditure	Total Expenditure	Capital Present Worth	O&M Present Worth	Present Worth
	Alignment 1A	Alignment 1B	Alignment 2	Alignment 3						
2008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2010	\$0	\$0	\$0	\$0	(\$3,498,600)	(\$17,682)	(\$3,516,282)	(\$3,143,326)	(\$15,886)	(\$3,159,212)
2011	\$0	\$0	\$0	\$0	(\$8,163,400)	\$0	(\$8,163,400)	(\$6,952,063)	\$0	(\$6,952,063)
2012	\$14,069	\$0	\$0	\$0	(\$587,360)	(\$212,762)	(\$800,122)	(\$474,127)	(\$171,745)	(\$645,872)
2013	\$14,491	\$0	\$0	\$0	(\$2,643,120)	(\$199,824)	(\$2,842,944)	(\$2,022,342)	(\$152,892)	(\$2,175,234)
2014	\$14,926	\$0	\$0	\$0	(\$2,643,120)	(\$205,819)	(\$2,848,939)	(\$1,916,912)	(\$149,269)	(\$2,066,181)
2015	\$15,373	\$0	\$15,373	\$0	(\$4,278,552)	(\$346,721)	(\$4,625,273)	(\$2,941,234)	(\$238,349)	(\$3,179,583)
2016	\$15,835	\$0	\$15,835	\$0	(\$19,253,484)	(\$336,010)	(\$19,589,494)	(\$12,545,548)	(\$218,944)	(\$12,764,492)
2017	\$16,310	\$0	\$16,310	\$0	(\$19,253,484)	(\$346,090)	(\$19,599,574)	(\$11,891,515)	(\$213,755)	(\$12,105,270)
2018	\$16,799	\$16,799	\$16,799	\$0	(\$3,061,200)	(\$587,874)	(\$3,649,074)	(\$1,792,120)	(\$344,159)	(\$2,136,279)
2019	\$17,303	\$17,303	\$17,303	\$0	(\$7,142,800)	(\$582,439)	(\$7,725,239)	(\$3,963,615)	(\$323,202)	(\$4,286,816)
2020	\$17,822	\$17,822	\$17,822	\$17,822	\$0	(\$765,590)	(\$765,590)	\$0	(\$402,686)	(\$402,686)
2021	\$18,357	\$18,357	\$18,357	\$18,357	\$0	(\$788,557)	(\$788,557)	\$0	(\$393,144)	(\$393,144)
2022	\$18,907	\$18,907	\$18,907	\$18,907	\$0	(\$812,214)	(\$812,214)	\$0	(\$383,828)	(\$383,828)
2023	\$19,475	\$19,475	\$19,475	\$19,475	\$0	(\$836,581)	(\$836,581)	\$0	(\$374,732)	(\$374,732)
2024	\$20,059	\$20,059	\$20,059	\$20,059	\$0	(\$861,678)	(\$861,678)	\$0	(\$365,852)	(\$365,852)
2025	\$20,661	\$20,661	\$20,661	\$20,661	\$0	(\$887,528)	(\$887,528)	\$0	(\$357,183)	(\$357,183)
2026	\$21,280	\$21,280	\$21,280	\$21,280	\$0	(\$914,154)	(\$914,154)	\$0	(\$348,719)	(\$348,719)
2027	\$21,919	\$21,919	\$21,919	\$21,919	\$0	(\$941,579)	(\$941,579)	\$0	(\$340,455)	(\$340,455)
2028	\$22,576	\$22,576	\$22,576	\$22,576	\$0	(\$969,826)	(\$969,826)	\$0	(\$332,388)	(\$332,388)
2029	\$23,254	\$23,254	\$23,254	\$23,254	\$0	(\$998,921)	(\$998,921)	\$0	(\$324,511)	(\$324,511)
2030	\$23,951	\$23,951	\$23,951	\$23,951	\$0	(\$1,028,889)	(\$1,028,889)	\$0	(\$316,821)	(\$316,821)
2031	\$24,670	\$24,670	\$24,670	\$24,670	\$0	(\$1,059,755)	(\$1,059,755)	\$0	(\$309,314)	(\$309,314)
2032	\$25,410	\$25,410	\$25,410	\$25,410	\$0	(\$1,091,548)	(\$1,091,548)	\$0	(\$301,984)	(\$301,984)
2033	\$26,172	\$26,172	\$26,172	\$26,172	\$0	(\$1,124,294)	(\$1,124,294)	\$0	(\$294,828)	(\$294,828)
2034	\$26,957	\$26,957	\$26,957	\$26,957	\$0	(\$1,158,023)	(\$1,158,023)	\$0	(\$287,841)	(\$287,841)
2035	\$27,766	\$27,766	\$27,766	\$27,766	\$0	(\$1,192,764)	(\$1,192,764)	\$0	(\$281,021)	(\$281,021)
2036	\$28,599	\$28,599	\$28,599	\$28,599	\$0	(\$1,228,547)	(\$1,228,547)	\$0	(\$274,361)	(\$274,361)
2037	\$29,457	\$29,457	\$29,457	\$29,457	\$0	(\$1,265,403)	(\$1,265,403)	\$0	(\$267,860)	(\$267,860)
2038	\$30,341	\$30,341	\$30,341	\$30,341	\$0	(\$1,303,365)	(\$1,303,365)	\$0	(\$261,512)	(\$261,512)
2039	\$31,251	\$31,251	\$31,251	\$31,251	\$0	(\$1,342,466)	(\$1,342,466)	\$0	(\$255,315)	(\$255,315)
2040	\$32,189	\$32,189	\$32,189	\$32,189	\$0	(\$1,382,740)	(\$1,382,740)	\$0	(\$249,265)	(\$249,265)
	\$636,178	\$545,175	\$592,692	\$511,073	-\$70,525,120	-\$24,789,644	-\$95,314,764	-\$47,642,802	-\$8,551,821	-\$56,194,623
	636,178	545,175	592,692	511,073	(1,468,400)	(3,127,349)	(4,595,749)	(1,103,345)	(1,101,613)	(2,204,958)
	636,178	545,175	592,692	511,073	(3,720,480)	(2,852,719)	(6,573,199)	(2,380,722)	(995,067)	(3,375,788)
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	-\$75,714,000	-\$30,769,711	-\$106,483,711	-\$51,126,868	-\$10,648,500	-\$61,775,369
	\$1,908,533	\$1,635,524	\$1,778,077	\$1,533,218	-\$75,714,000	-\$30,769,711	-\$106,483,711	-\$51,126,868	-\$10,648,500	-\$61,775,369
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



**Without Project NPV**

Today	12/17/2008
Current Year	2008
Planning Period	2040
Current ENR CCI (San Francisco)	9155
Inflation Rate (Capital)	4.0%
Inflation Rate (Fixed O&M)	3.0%
Inflation Rate (Variable O&M)	3.0%
Discount Rate (Hurdle rate)	5.5%
Project Cost Factor	65%
Fixed O&M Cost	75%
Variable O&M Cost	25%

	Effluent Storage	Effluent Conveyance	
<b>First Year of Project</b>	2013	2013	
<b>Years of Planning/Design/Construction</b>	2	2	
<b>First Year of Operation</b>	2015	2015	*Assumes new reservoir would be connected to the existing effluent pipeline downstream of the current meter and constriction. Estimated length of 0.5 mile. Additional 0.1 miles for conveyance from plant to new reservoir. Assume 20 inch line.
<b>Construction Cost (Current Year)</b>	\$2,421,281	\$836,352	*Estimated cost for 30MG storage and 7000 ft pipeline
<b>Adjusted CC to Midpoint of Construction</b>	\$2,832,556	\$978,414	*Pipe length based on current effluent pipeline length of approximately 0.6 miles. It is assumed that a line will connect the reservoir and existing effluent line.
<b>Project Cost (Current Year)</b>	\$3,995,000	\$1,380,000	*20 inch pipe estimated as necessary pipe diameter. Construction cost estimated \$11/in-diameter/LF. A 65 percent escalation was added to develop project cost.
<b>Adjusted PC to Midpoint of Construction</b>	\$4,674,000	\$1,614,000	
<b>Land Acquisition Cost</b>	\$1,500,000		*Assumed land of 20 ac for pump station and additional storage
<b>Annual Operation and Maintenance (\$ O&amp;M/AFY)</b>	\$150	\$250	*Estimated O&M cost for 30MG pumping and conveyance pumping
<b>Fixed Operation and Maintenance (\$ O&amp;M/AFY)</b>	\$113	\$188	*Cost associated with checking, daily inspection, etc for storage. For pumping, pipe inspection, maintenance for conveyance
<b>Variable Operation and Maintenance (\$ O&amp;M/AFY)</b>	\$38	\$63	
			<b>Useful Life</b>
<b>Percent Mechanical</b>	25%	10%	20 year life
<b>Percent Structural</b>	50%	80%	50 year life
<b>Percent Electrical &amp; Instrumentation</b>	25%	10%	20 year life
<b>Percent Other</b>	0%	0%	
<b>Storage/Conveyance Volume</b>	30 MG		
	92 AF		

Year	Volume	Capital Cost			O&M Costs				Capital Expenditures	O&M Expenditure	Total Expenditure	Present Worth
		Effluent Storage	Effluent Conveyance	Land Purchase	Effluent Storage		Effluent Conveyance					
					Fixed	Variable	Fixed	Variable				
2008	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2009	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2010	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2011	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2012	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2013	92	\$1,402,200	\$484,200	\$1,824,979	\$12,012	\$4,004	\$20,019	\$6,673	(\$3,711,379)	(\$42,708)	(\$3,754,087)	(\$2,872,381)
2014	92	\$3,271,800	\$1,129,800	\$0	\$12,372	\$4,124	\$20,620	\$6,873	(\$4,401,600)	(\$43,989)	(\$4,445,589)	(\$3,224,145)
2015	92	\$0	\$0	\$0	\$12,743	\$4,248	\$21,238	\$7,079	\$0	(\$45,309)	(\$45,309)	(\$31,147)
2016	92	\$0	\$0	\$0	\$13,125	\$4,375	\$21,876	\$7,292	\$0	(\$46,668)	(\$46,668)	(\$30,409)
2017	92	\$0	\$0	\$0	\$13,519	\$4,506	\$22,532	\$7,511	\$0	(\$48,068)	(\$48,068)	(\$29,688)
2018	92	\$0	\$0	\$0	\$13,925	\$4,642	\$23,208	\$7,736	\$0	(\$49,510)	(\$49,510)	(\$28,985)
2019	92	\$0	\$0	\$0	\$14,342	\$4,781	\$23,904	\$7,968	\$0	(\$50,995)	(\$50,995)	(\$28,298)
2020	92	\$0	\$0	\$0	\$14,773	\$4,924	\$24,621	\$8,207	\$0	(\$52,525)	(\$52,525)	(\$27,627)
2021	92	\$0	\$0	\$0	\$15,216	\$5,072	\$25,360	\$8,453	\$0	(\$54,101)	(\$54,101)	(\$26,973)
2022	92	\$0	\$0	\$0	\$15,672	\$5,224	\$26,121	\$8,707	\$0	(\$55,724)	(\$55,724)	(\$26,333)
2023	92	\$0	\$0	\$0	\$16,142	\$5,381	\$26,904	\$8,968	\$0	(\$57,396)	(\$57,396)	(\$25,709)
2024	92	\$0	\$0	\$0	\$16,627	\$5,542	\$27,711	\$9,237	\$0	(\$59,117)	(\$59,117)	(\$25,100)
2025	92	\$0	\$0	\$0	\$17,126	\$5,709	\$28,543	\$9,514	\$0	(\$60,891)	(\$60,891)	(\$24,505)
2026	92	\$0	\$0	\$0	\$17,639	\$5,880	\$29,399	\$9,800	\$0	(\$62,718)	(\$62,718)	(\$23,925)
2027	92	\$0	\$0	\$0	\$18,169	\$6,056	\$30,281	\$10,094	\$0	(\$64,599)	(\$64,599)	(\$23,358)
2028	92	\$0	\$0	\$0	\$18,714	\$6,238	\$31,189	\$10,396	\$0	(\$66,537)	(\$66,537)	(\$22,804)
2029	92	\$0	\$0	\$0	\$19,275	\$6,425	\$32,125	\$10,708	\$0	(\$68,533)	(\$68,533)	(\$22,264)
2030	92	\$0	\$0	\$0	\$19,853	\$6,618	\$33,089	\$11,030	\$0	(\$70,589)	(\$70,589)	(\$21,736)
2031	92	\$0	\$0	\$0	\$20,449	\$6,816	\$34,081	\$11,360	\$0	(\$72,707)	(\$72,707)	(\$21,221)
2032	92	\$0	\$0	\$0	\$21,062	\$7,021	\$35,104	\$11,701	\$0	(\$74,888)	(\$74,888)	(\$20,718)
2033	92	\$0	\$0	\$0	\$21,694	\$7,231	\$36,157	\$12,052	\$0	(\$77,135)	(\$77,135)	(\$20,227)
2034	92	\$0	\$0	\$0	\$22,345	\$7,448	\$37,242	\$12,414	\$0	(\$79,449)	(\$79,449)	(\$19,748)
2035	92	\$0	\$0	\$0	\$23,015	\$7,672	\$38,359	\$12,786	\$0	(\$81,832)	(\$81,832)	(\$19,280)
2036	92	\$0	\$0	\$0	\$23,706	\$7,902	\$39,510	\$13,170	\$0	(\$84,287)	(\$84,287)	(\$18,823)
2037	92	\$0	\$0	\$0	\$24,417	\$8,139	\$40,695	\$13,565	\$0	(\$86,816)	(\$86,816)	(\$18,377)
2038	92	\$0	\$0	\$0	\$25,149	\$8,383	\$41,916	\$13,972	\$0	(\$89,420)	(\$89,420)	(\$17,942)
2039	92	\$0	\$0	\$0	\$25,904	\$8,635	\$43,173	\$14,391	\$0	(\$92,103)	(\$92,103)	(\$17,517)
2040	92	\$0	\$0	\$0	\$26,681	\$8,894	\$44,468	\$14,823	\$0	(\$94,866)	(\$94,866)	(\$17,101)
Total		\$4,674,000	\$1,614,000	\$1,824,979	\$515,666	\$171,889	\$859,443	\$286,481	(\$8,112,979)	(\$1,833,479)	(\$9,946,458)	(\$6,706,341)

<b>Equip. Salvage Value</b>	\$0	\$0								Present Salvage Value	\$0
<b>Structures Salvage Value</b>	\$1,168,500	\$161,400									\$1,329,900
<b>Electical/I&amp;C Salvage Value</b>	\$0	\$0									\$0
										NPV	(\$5,376,441)



Sonoma Valley County Sanitation District

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**APPENDIX G – ECONOMIC ANALYSIS OF THE PROPOSED  
SONOMA VALLEY RECYCLED WATER PROJECT**

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## Assumptions for Economic Analysis

Variable	Assumption	
<b>Escalation and Discounting</b>		
Discount Rate (real)	2.5%	
Capital Escalation Rate (real)	1.0%	
<b>Costs</b>		
Project Cost Factor	65%	
<b>Benefits</b>		
Cost of Avoided SCWA water	\$454	per AF
Cost of VOMWD GW	\$195	per AF
Cost of City of Sonoma GW	\$195	per AF
Cost of electricity for agricultural pumping	\$0.20	per kWh
Supply reliability estimate from literature	\$90	per HH
Adjusted \$ for increased flows for salmon/steelhead	\$2.08	per HH
Price for RW charged to new ag users	\$25	per AF
<b>Flow</b>		
Total RW water flow at full implementation	2,750	AFY
Alignment 1A flow	1,095	AFY
Alignment 1B flow	752	AFY
Alignment 2 flow	439	AFY
Alignment 3 flow	464	AFY

## Economic Analysis Summary

(millions of dollars)

Total Costs	\$68.14
Total Benefits	\$62.12
Net Benefits (Benefits - Costs)	<b>-\$6.02</b>

2.08 per hh w/flows at gauge, 1.54 per hh w/flows at SPB, 4.72 for 10% of 47.19

## Benefit Identification and Classification

### Benefit identification

(Mark with an "x" in the appropriate cell)

(Categories not checked assumed not applicable)

<b>Financial Benefits</b>	<b>Quantitatively</b>	<b>Qualitatively</b>	<b>Very small or mitigated – no analysis</b>
Avoided capital costs of additional recycled water storage to meet discharge requirements	x		
Avoided O&M costs of additional recycled water storage to meet discharge requirements	x		
Avoided capital costs of effluent conveyence	x		
Avoided O&M costs of effluent conveyence	x		
Avoided pumping costs from SCWA imported groundwater	x		
Avoided pumping costs for Valley of the Moon groundwater	x		
Avoided pumping costs for City of Sonoma groundwater	x		
Avoided puming costs for SCWA imported water	x		
Avoided increased groundwater pumping costs with declining groundwater levels/avoided capital costs from well deepening		x	
Recycled water sales revenue	x		
Salvage value of recycled water assets	x		
<b>Environmental Benefits</b>			
Source water protection for water providers (e.g. SCWA, Valley of the Moon, City of Sonoma)		x	
Enhanced downstream water bodies from increased streamflow in Sonoma Creek		x	
Benefit to riparian and aquatic species from increased streamflow		x	
Benefit to threatened and endangered species from increased streamflow		x	
Reduced seawater intrusion		x	
Reduced subsidence risk from reduced decline in groundwater levels			x

<b>Social Benefits</b>	<b>Quantitatively</b>	<b>Qualitatively</b>	<b>Very small or mitigated – no analysis</b>
Increased supply reliability for SCWA	x		
Increased supply reliability for Valley of the Moon	x		
Increased supply reliability for City of Sonoma	x		
Increased supply reliability for agricultural users	x		
Increased water quality reliability for agricultural users	x		
Savings in fertilizer usage for agricultural users	x		
Savings in fertilizer usage for golf course uses	x		
Savings in fertilizer for usage for municipal irrigation users	x		
Avoided pumping costs for low elevation agricultural users	x		
Avoided pumping costs for high elevation agricultural users	x		
Instream recreation (Sonoma Creek)		x	
Near-stream recreation (Sonoma Creek)		x	
Creation of green belts for recreational use/flexibility to meet General Plan/new growth			x
Water projects leveraging other community projects		x	
Local control over water resources (not relying on imported water)		x	
Demonstration of commitment to "green" water use ethic		x	
Aesthetic values (e.g. fountains at vineyards, in City or other public locations)		x	
Energy and carbon dioxide savings from avoided pumping costs for importing water		x	



## Cost Identification and Classification

### Cost Identification

(Mark with an "x" in the appropriate cell)

(Categories not checked assumed to be not applicable)

	Quantitatively	Qualitatively	Very small or mitigated – no analysis
<b>Financial Costs</b>			
Capital costs for recycled water infrastructure/project components	x		
O&M costs for recycled water infrastructure/project components	x		
Capital costs for recycled water distribution	x		
O&M costs for recycled water distribution	x		
Capital costs for customer retrofits, training and inspection	x		
O&M costs for customer retrofits, training and inspection	x		
Capital costs for storage	x		
O&M costs for storage	x		
Loss of potable water sales	x		
Increased administrative costs/new FTEs	x		
Public information campaign costs	x		
Financing costs	x		
Opportunity cost for already owned land	x		
<b>Environmental Costs</b>			
Short-term construction impacts		x	
<b>Social Costs</b>			
Salinity impacts from landscape irrigation on grass and plants/ag irrigation		x	
Agricultural users		x	
Municipal users		x	

**Benefit Monetization: Financial Benefits**

Discount rate 2.50%  
 Capital escalation 1.00%

Project	Years	Avoided capital costs of additional recycled water storage to meet discharge requirements		Avoided O&M costs of additional recycled water storage to meet discharge requirements		Avoided capital costs of effluent conveyence		Avoided O&M costs of effluent conveyence	
		Monetized Benefit	PV of Benefit	Monetized Benefit	PV of Benefit	Monetized Benefit	PV of Benefit	Monetized Benefit	PV of Benefit
2010	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2011	3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2012	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2013	5	\$ 2,698,500	\$ 2,506,744	\$ 13,815	\$ 12,210	\$ 414,000	\$ 384,581	\$ 23,025	\$ 20,351
2014	6	\$ 2,796,500	\$ 2,559,764	\$ 13,815	\$ 11,913	\$ 966,000	\$ 884,224	\$ 23,025	\$ 19,854
2015	7	\$ -	\$ -	\$ 13,815	\$ 11,622	\$ -	\$ -	\$ 23,025	\$ 19,370
2016	8	\$ -	\$ -	\$ 13,815	\$ 11,339	\$ -	\$ -	\$ 23,025	\$ 18,898
2017	9	\$ -	\$ -	\$ 13,815	\$ 11,062	\$ -	\$ -	\$ 23,025	\$ 18,437
2018	10	\$ -	\$ -	\$ 13,815	\$ 10,792	\$ -	\$ -	\$ 23,025	\$ 17,987
2019	11	\$ -	\$ -	\$ 13,815	\$ 10,529	\$ -	\$ -	\$ 23,025	\$ 17,548
2020	12	\$ -	\$ -	\$ 13,815	\$ 10,272	\$ -	\$ -	\$ 23,025	\$ 17,120
2021	13	\$ -	\$ -	\$ 13,815	\$ 10,022	\$ -	\$ -	\$ 23,025	\$ 16,703
2022	14	\$ -	\$ -	\$ 13,815	\$ 9,777	\$ -	\$ -	\$ 23,025	\$ 16,295
2023	15	\$ -	\$ -	\$ 13,815	\$ 9,539	\$ -	\$ -	\$ 23,025	\$ 15,898
2024	16	\$ -	\$ -	\$ 13,815	\$ 9,306	\$ -	\$ -	\$ 23,025	\$ 15,510
2025	17	\$ -	\$ -	\$ 13,815	\$ 9,079	\$ -	\$ -	\$ 23,025	\$ 15,132
2026	18	\$ -	\$ -	\$ 13,815	\$ 8,858	\$ -	\$ -	\$ 23,025	\$ 14,763
2027	19	\$ -	\$ -	\$ 13,815	\$ 8,642	\$ -	\$ -	\$ 23,025	\$ 14,403
2028	20	\$ -	\$ -	\$ 13,815	\$ 8,431	\$ -	\$ -	\$ 23,025	\$ 14,051
2029	21	\$ -	\$ -	\$ 13,815	\$ 8,225	\$ -	\$ -	\$ 23,025	\$ 13,709
2030	22	\$ -	\$ -	\$ 13,815	\$ 8,025	\$ -	\$ -	\$ 23,025	\$ 13,374
2031	23	\$ -	\$ -	\$ 13,815	\$ 7,829	\$ -	\$ -	\$ 23,025	\$ 13,048
2032	24	\$ -	\$ -	\$ 13,815	\$ 7,638	\$ -	\$ -	\$ 23,025	\$ 12,730
2033	25	\$ -	\$ -	\$ 13,815	\$ 7,452	\$ -	\$ -	\$ 23,025	\$ 12,419
2034	26	\$ -	\$ -	\$ 13,815	\$ 7,270	\$ -	\$ -	\$ 23,025	\$ 12,117
2035	27	\$ -	\$ -	\$ 13,815	\$ 7,093	\$ -	\$ -	\$ 23,025	\$ 11,821
2036	28	\$ -	\$ -	\$ 13,815	\$ 6,920	\$ -	\$ -	\$ 23,025	\$ 11,533
2037	29	\$ -	\$ -	\$ 13,815	\$ 6,751	\$ -	\$ -	\$ 23,025	\$ 11,251
2038	30	\$ -	\$ -	\$ 13,815	\$ 6,586	\$ -	\$ -	\$ 23,025	\$ 10,977
2039	31	\$ -	\$ -	\$ 13,815	\$ 6,426	\$ -	\$ -	\$ 23,025	\$ 10,709
2040	32	\$ -	\$ -	\$ 13,815	\$ 6,269	\$ -	\$ -	\$ 23,025	\$ 10,448
2041	33	\$ -	\$ -	\$ 13,815	\$ 6,116	\$ -	\$ -	\$ 23,025	\$ 10,193
2042	34	\$ -	\$ -	\$ 13,815	\$ 5,967	\$ -	\$ -	\$ 23,025	\$ 9,945
2043	35	\$ -	\$ -	\$ 13,815	\$ 5,821	\$ -	\$ -	\$ 23,025	\$ 9,702
2044	36	\$ -	\$ -	\$ 13,815	\$ 5,679	\$ -	\$ -	\$ 23,025	\$ 9,465
2045	37	\$ -	\$ -	\$ 13,815	\$ 5,541	\$ -	\$ -	\$ 23,025	\$ 9,235
2046	38	\$ -	\$ -	\$ 13,815	\$ 5,406	\$ -	\$ -	\$ 23,025	\$ 9,009
2047	39	\$ -	\$ -	\$ 13,815	\$ 5,274	\$ -	\$ -	\$ 23,025	\$ 8,790
2048	40	\$ -	\$ -	\$ 13,815	\$ 5,145	\$ -	\$ -	\$ 23,025	\$ 8,575
2049	41	\$ -	\$ -	\$ 13,815	\$ 5,020	\$ -	\$ -	\$ 23,025	\$ 8,366
2050	42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		\$ 5,066,507.57		\$ 299,842.80		\$ 1,268,804.80		\$ 499,738.00	

Project	Years	Avoided pumping costs from SCWA imported groundwater					Avoided pumping costs for Valley of the Moon groundwater				Avoided pumping costs for City of Sonoma groundwater			
		Cost of SCWA water (\$/AF)	% groundwater of total supply	Groundwater offset (af)	Monetized Benefit	PV of Benefit	Cost of groundwater (\$/AF)	Groundwater offset (af)	Monetized Benefit	PV of Benefit	Cost of groundwater (\$/AF)	Groundwater offset (af)	Monetized Benefit	PV of Benefit
2010	2	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -
2011	3	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -
2012	4	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -
2013	5	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -
2014	6	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -
2015	7	\$ 454	5%	4.13	\$ 1,876.16	\$ 1,578.34	\$ 195	-	\$ -	\$ -	\$ 195	4.35	\$ 848.25	\$ 713.60
2016	8	\$ 454	5%	4.13	\$ 1,876.16	\$ 1,539.85	\$ 195	-	\$ -	\$ -	\$ 195	4.35	\$ 848.25	\$ 696.20
2017	9	\$ 454	5%	4.13	\$ 1,876.16	\$ 1,502.29	\$ 195	-	\$ -	\$ -	\$ 195	4.35	\$ 848.25	\$ 679.22
2018	10	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,476.44	\$ 195	3.00	\$ 585.00	\$ 457.00	\$ 195	4.35	\$ 848.25	\$ 662.65
2019	11	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,416.04	\$ 195	3.00	\$ 585.00	\$ 445.85	\$ 195	4.35	\$ 848.25	\$ 646.49
2020	12	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,357.11	\$ 195	3.00	\$ 585.00	\$ 434.98	\$ 195	4.35	\$ 848.25	\$ 630.72
2021	13	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,299.62	\$ 195	3.00	\$ 585.00	\$ 424.37	\$ 195	4.35	\$ 848.25	\$ 615.34
2022	14	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,243.53	\$ 195	3.00	\$ 585.00	\$ 414.02	\$ 195	4.35	\$ 848.25	\$ 600.33
2023	15	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,188.81	\$ 195	3.00	\$ 585.00	\$ 403.92	\$ 195	4.35	\$ 848.25	\$ 585.69
2024	16	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,135.43	\$ 195	3.00	\$ 585.00	\$ 394.07	\$ 195	4.35	\$ 848.25	\$ 571.40
2025	17	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,083.34	\$ 195	3.00	\$ 585.00	\$ 384.46	\$ 195	4.35	\$ 848.25	\$ 557.47
2026	18	\$ 454	5%	6.98	\$ 3,170.06	\$ 2,032.53	\$ 195	3.00	\$ 585.00	\$ 375.08	\$ 195	4.35	\$ 848.25	\$ 543.87
2027	19	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,982.96	\$ 195	3.00	\$ 585.00	\$ 365.93	\$ 195	4.35	\$ 848.25	\$ 530.60
2028	20	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,934.59	\$ 195	3.00	\$ 585.00	\$ 357.01	\$ 195	4.35	\$ 848.25	\$ 517.66
2029	21	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,887.41	\$ 195	3.00	\$ 585.00	\$ 348.30	\$ 195	4.35	\$ 848.25	\$ 505.04
2030	22	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,841.37	\$ 195	3.00	\$ 585.00	\$ 339.81	\$ 195	4.35	\$ 848.25	\$ 492.72
2031	23	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,796.46	\$ 195	3.00	\$ 585.00	\$ 331.52	\$ 195	4.35	\$ 848.25	\$ 480.70
2032	24	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,752.65	\$ 195	3.00	\$ 585.00	\$ 323.43	\$ 195	4.35	\$ 848.25	\$ 468.98
2033	25	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,709.90	\$ 195	3.00	\$ 585.00	\$ 315.54	\$ 195	4.35	\$ 848.25	\$ 457.54
2034	26	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,668.19	\$ 195	3.00	\$ 585.00	\$ 307.85	\$ 195	4.35	\$ 848.25	\$ 446.38
2035	27	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,627.51	\$ 195	3.00	\$ 585.00	\$ 300.34	\$ 195	4.35	\$ 848.25	\$ 435.49
2036	28	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,587.81	\$ 195	3.00	\$ 585.00	\$ 293.01	\$ 195	4.35	\$ 848.25	\$ 424.87
2037	29	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,549.08	\$ 195	3.00	\$ 585.00	\$ 285.87	\$ 195	4.35	\$ 848.25	\$ 414.51
2038	30	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,511.30	\$ 195	3.00	\$ 585.00	\$ 278.89	\$ 195	4.35	\$ 848.25	\$ 404.40
2039	31	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,474.44	\$ 195	3.00	\$ 585.00	\$ 272.09	\$ 195	4.35	\$ 848.25	\$ 394.53
2040	32	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,438.48	\$ 195	3.00	\$ 585.00	\$ 265.46	\$ 195	4.35	\$ 848.25	\$ 384.91
2041	33	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,403.39	\$ 195	3.00	\$ 585.00	\$ 258.98	\$ 195	4.35	\$ 848.25	\$ 375.52
2042	34	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,369.16	\$ 195	3.00	\$ 585.00	\$ 252.66	\$ 195	4.35	\$ 848.25	\$ 366.36
2043	35	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,335.77	\$ 195	3.00	\$ 585.00	\$ 246.50	\$ 195	4.35	\$ 848.25	\$ 357.43
2044	36	\$ 454	5%	6.98	\$ 3,170.06	\$ 1,303.19	\$ 195	3.00	\$ 585.00	\$ 240.49	\$ 195	4.35	\$ 848.25	\$ 348.71
2045	37	\$ 454	5%	3.00	\$ 1,362.00	\$ 546.25	\$ 195	3.00	\$ 585.00	\$ 234.62	\$ 195	0	\$ -	\$ -
2046	38	\$ 454	5%	3.00	\$ 1,362.00	\$ 532.93	\$ 195	3.00	\$ 585.00	\$ 228.90	\$ 195	0	\$ -	\$ -
2047	39	\$ 454	5%	3.00	\$ 1,362.00	\$ 519.93	\$ 195	3.00	\$ 585.00	\$ 223.32	\$ 195	0	\$ -	\$ -
2048	40	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	0	\$ -	\$ -
2049	41	\$ 454	5%	-	\$ -	\$ -	\$ 195	-	\$ -	\$ -	\$ 195	0	\$ -	\$ -
2050	42				\$ -	\$ -		-	\$ -	\$ -			\$ -	\$ -

\$55,626.13

\$ 9,804.30

\$ 15,309.32

Project	Years	Avoided pumping costs for SCWA imported Russian River water					Salvage value of recycled water assets		Revenue from agricultural sales			Total PV benefits
		Cost of SCWA water (\$/AF)	% imported water of total supply	Imported water offset (af)	Monetized Benefit	PV of Benefit	Monetized Benefit	PV of Benefit	RW use (AF)	Monetized Benefit	PV of Benefit	
2010	2	\$ 454	95%	-	\$ -	\$ -	\$ -	\$ -	0	0	\$ -	\$ -
2011	3	\$ 454	95%	-	\$ -	\$ -	\$ -	\$ -	0	0	\$ -	\$ -
2012	4	\$ 454	95%	-	\$ -	\$ -	\$ -	\$ -	1,081	27025	\$ 25,477.44	\$ 25,477.44
2013	5	\$ 454	95%	-	\$ -	\$ -	\$ -	\$ -	1,081	27025	\$ 25,104.60	\$ 2,948,990.73
2014	6	\$ 454	95%	-	\$ -	\$ -	\$ -	\$ -	1,081	27025	\$ 24,737.21	\$ 3,500,491.67
2015	7	\$ 454	95%	78.52	\$ 35,646.95	\$ 29,988.54	\$ -	\$ -	1,382	34550	\$ 31,162.38	\$ 94,435.07
2016	8	\$ 454	95%	78.52	\$ 35,646.95	\$ 29,257.11	\$ -	\$ -	1,382	34550	\$ 30,706.34	\$ 92,435.80
2017	9	\$ 454	95%	78.52	\$ 35,646.95	\$ 28,543.52	\$ -	\$ -	1,382	34550	\$ 30,256.98	\$ 90,480.84
2018	10	\$ 454	95%	132.67	\$ 60,231.05	\$ 47,052.40	\$ -	\$ -	1,782	44550	\$ 38,443.49	\$ 117,871.33
2019	11	\$ 454	95%	132.67	\$ 60,231.05	\$ 45,904.78	\$ -	\$ -	1,782	44550	\$ 37,880.90	\$ 115,371.48
2020	12	\$ 454	95%	132.67	\$ 60,231.05	\$ 44,785.15	\$ -	\$ -	2,246	56150	\$ 47,045.69	\$ 122,646.25
2021	13	\$ 454	95%	132.67	\$ 60,231.05	\$ 43,692.83	\$ -	\$ -	2,246	56150	\$ 46,357.22	\$ 120,113.86
2022	14	\$ 454	95%	132.67	\$ 60,231.05	\$ 42,627.15	\$ -	\$ -	2,246	56150	\$ 45,678.82	\$ 117,636.52
2023	15	\$ 454	95%	132.67	\$ 60,231.05	\$ 41,587.46	\$ -	\$ -	2,246	56150	\$ 45,010.35	\$ 115,212.99
2024	16	\$ 454	95%	132.67	\$ 60,231.05	\$ 40,573.13	\$ -	\$ -	2,246	56150	\$ 44,351.66	\$ 112,842.04
2025	17	\$ 454	95%	132.67	\$ 60,231.05	\$ 39,583.55	\$ -	\$ -	2,246	56150	\$ 43,702.61	\$ 110,522.49
2026	18	\$ 454	95%	132.67	\$ 60,231.05	\$ 38,618.09	\$ -	\$ -	2,246	56150	\$ 43,063.06	\$ 108,253.19
2027	19	\$ 454	95%	132.67	\$ 60,231.05	\$ 37,676.19	\$ -	\$ -	2,246	56150	\$ 42,432.87	\$ 106,033.00
2028	20	\$ 454	95%	132.67	\$ 60,231.05	\$ 36,757.26	\$ -	\$ -	2,246	56150	\$ 41,811.90	\$ 103,860.80
2029	21	\$ 454	95%	132.67	\$ 60,231.05	\$ 35,860.74	\$ -	\$ -	2,246	56150	\$ 41,200.02	\$ 101,735.53
2030	22	\$ 454	95%	132.67	\$ 60,231.05	\$ 34,986.09	\$ -	\$ -	2,246	56150	\$ 40,597.09	\$ 99,656.13
2031	23	\$ 454	95%	132.67	\$ 60,231.05	\$ 34,132.77	\$ -	\$ -	2,246	56150	\$ 40,002.99	\$ 97,621.56
2032	24	\$ 454	95%	132.67	\$ 60,231.05	\$ 33,300.26	\$ -	\$ -	2,246	56150	\$ 39,417.58	\$ 95,630.82
2033	25	\$ 454	95%	132.67	\$ 60,231.05	\$ 32,488.06	\$ -	\$ -	2,246	56150	\$ 38,840.74	\$ 93,682.93
2034	26	\$ 454	95%	132.67	\$ 60,231.05	\$ 31,695.67	\$ -	\$ -	2,246	56150	\$ 38,272.34	\$ 91,776.91
2035	27	\$ 454	95%	132.67	\$ 60,231.05	\$ 30,922.60	\$ -	\$ -	2,246	56150	\$ 37,712.25	\$ 89,911.84
2036	28	\$ 454	95%	132.67	\$ 60,231.05	\$ 30,168.39	\$ -	\$ -	2,246	56150	\$ 37,160.37	\$ 88,086.79
2037	29	\$ 454	95%	132.67	\$ 60,231.05	\$ 29,432.58	\$ -	\$ -	2,246	56150	\$ 36,616.56	\$ 86,300.87
2038	30	\$ 454	95%	132.67	\$ 60,231.05	\$ 28,714.71	\$ -	\$ -	2,246	56150	\$ 36,080.70	\$ 84,553.21
2039	31	\$ 454	95%	132.67	\$ 60,231.05	\$ 28,014.35	\$ -	\$ -	2,246	56150	\$ 35,552.69	\$ 82,842.94
2040	32	\$ 454	95%	132.67	\$ 60,231.05	\$ 27,331.07	\$ -	\$ -	2,246	56150	\$ 35,032.41	\$ 81,169.24
2041	33	\$ 454	95%	132.67	\$ 60,231.05	\$ 26,664.46	\$ -	\$ -	2,246	56150	\$ 34,519.74	\$ 79,531.28
2042	34	\$ 454	95%	57.00	\$ 25,878.00	\$ 11,176.85	\$ 679,547.72	\$ 411,656.76	1,165	29125	\$ 17,643.36	\$ 458,376.54
2043	35	\$ 454	95%	57.00	\$ 25,878.00	\$ 10,904.24	\$ -	\$ -	1,165	29125	\$ 17,385.16	\$ 45,752.41
2044	36	\$ 454	95%	57.00	\$ 25,878.00	\$ 10,638.28	\$ -	\$ -	1,165	29125	\$ 17,130.74	\$ 44,806.11
2045	37	\$ 454	95%	0.00	\$ -	\$ -	\$ 403,410.96	\$ 233,805.92	864	21600	\$ 12,518.77	\$ 261,880.87
2046	38	\$ 454	95%	0.00	\$ -	\$ -	\$ -	\$ -	864	21600	\$ 12,335.57	\$ 27,512.33
2047	39	\$ 454	95%	0.00	\$ -	\$ -	\$ -	\$ -	864	21600	\$ 12,155.05	\$ 26,961.65
2048	40	\$ 454	95%		\$ -	\$ -	\$ 2,271,625.92	\$ 1,259,613.05	464	11600	\$ 6,432.18	\$ 1,279,765.57
2049	41	\$ 454	95%		\$ -	\$ -	\$ -	\$ -	464	11600	\$ 6,338.05	\$ 19,723.75
2050	42				\$ -	\$ -	\$ 434,511.87	\$ 233,935.96	0	0	\$ -	\$ 233,935.96

\$ 983,078.26

\$ 2,139,011.69

\$ 1,236,167.90

**Total financial benefits \$ 11,573,890.77**

**Benefit Monetization: Social Benefits**

Discount rate 2.5%

Project Years	Increased supply reliability for SCWA				Increased supply reliability for Valley of the Moon				Increased supply reliability for City of Sonoma			
	Physical units *	\$ per unit =	Monetized Benefit	PV of Benefit	Physical units	\$ per unit =	Monetized Benefit	PV of Benefit	Physical units	\$ per unit =	Monetized Benefit	PV of Benefit
	Households	HH WTP (scaled)			Households	HH WTP (scaled)			Households	HH WTP (scaled)		
2010	2											
2011	3											
2012	4	149,515	\$ 1.13	\$ 168,741.70								
2013	5	149,515	\$ 1.13	\$ 168,741.70								
2014	6	149,515	\$ 1.13	\$ 168,741.70								
2015	7	158,852	\$ 1.44	\$ 228,900.25					4,958	\$ 2.76	\$ 13,700.85	\$ 11,526.05
2016	8	158,852	\$ 1.44	\$ 228,900.25					4,958	\$ 2.77	\$ 13,754.56	\$ 11,289.00
2017	9	158,852	\$ 1.44	\$ 228,900.25					4,958	\$ 2.77	\$ 13,754.56	\$ 11,013.66
2018	10	158,852	\$ 2.13	\$ 338,329.59	9,433	\$ 1.43	\$ 13,447.73	\$ 10,505.34	4,958	\$ 2.77	\$ 13,754.56	\$ 10,745.04
2019	11	158,852	\$ 2.13	\$ 338,329.59	9,433	\$ 1.43	\$ 13,447.73	\$ 10,249.12	4,958	\$ 2.77	\$ 13,754.56	\$ 10,482.96
2020	12	166,268	\$ 2.06	\$ 342,106.16	9,707	\$ 1.43	\$ 13,837.94	\$ 10,289.28	4,996	\$ 2.77	\$ 13,861.18	\$ 10,306.56
2021	13	166,268	\$ 2.06	\$ 342,106.16	9,707	\$ 1.42	\$ 13,805.14	\$ 10,014.53	4,996	\$ 2.77	\$ 13,826.69	\$ 10,030.16
2022	14	166,268	\$ 2.06	\$ 342,106.16	9,707	\$ 1.42	\$ 13,805.14	\$ 9,770.27	4,996	\$ 2.77	\$ 13,826.69	\$ 9,785.52
2023	15	166,268	\$ 2.06	\$ 342,106.16	9,707	\$ 1.42	\$ 13,805.14	\$ 9,531.97	4,996	\$ 2.77	\$ 13,826.69	\$ 9,546.85
2024	16	166,268	\$ 2.06	\$ 342,106.16	9,707	\$ 1.42	\$ 13,805.14	\$ 9,299.49	4,996	\$ 2.77	\$ 13,826.69	\$ 9,314.00
2025	17	173,540	\$ 2.10	\$ 364,275.07	9,847	\$ 1.42	\$ 14,003.69	\$ 9,203.15	5,035	\$ 2.77	\$ 13,933.05	\$ 9,156.73
2026	18	173,540	\$ 2.10	\$ 364,275.07	9,847	\$ 1.41	\$ 13,930.31	\$ 8,931.64	5,035	\$ 2.54	\$ 12,762.51	\$ 8,182.88
2027	19	173,540	\$ 2.10	\$ 364,275.07	9,847	\$ 1.41	\$ 13,930.31	\$ 8,713.80	5,035	\$ 2.54	\$ 12,762.51	\$ 7,983.30
2028	20	173,540	\$ 2.10	\$ 364,275.07	9,847	\$ 1.41	\$ 13,930.31	\$ 8,501.26	5,035	\$ 2.54	\$ 12,762.51	\$ 7,788.59
2029	21	173,540	\$ 2.10	\$ 364,275.07	9,847	\$ 1.41	\$ 13,930.31	\$ 8,293.92	5,035	\$ 2.54	\$ 12,762.51	\$ 7,598.62
2030	22	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 8,206.67	5,092	\$ 2.54	\$ 12,907.65	\$ 7,497.60
2031	23	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 8,006.51	5,092	\$ 2.54	\$ 12,907.65	\$ 7,314.73
2032	24	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 7,811.23	5,092	\$ 2.54	\$ 12,907.65	\$ 7,136.32
2033	25	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 7,620.71	5,092	\$ 2.54	\$ 12,907.65	\$ 6,962.26
2034	26	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 7,434.84	5,092	\$ 2.54	\$ 12,907.65	\$ 6,792.45
2035	27	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 7,253.50	5,092	\$ 2.54	\$ 12,907.65	\$ 6,626.78
2036	28	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 7,076.59	5,092	\$ 2.54	\$ 12,907.65	\$ 6,465.15
2037	29	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 6,903.99	5,092	\$ 2.54	\$ 12,907.65	\$ 6,307.47
2038	30	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 6,735.60	5,092	\$ 2.54	\$ 12,907.65	\$ 6,153.63
2039	31	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 6,571.32	5,092	\$ 2.54	\$ 12,907.65	\$ 6,003.54
2040	32	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 6,411.04	5,092	\$ 2.54	\$ 12,907.65	\$ 5,857.11
2041	33	178,631	\$ 2.09	\$ 373,914.69	9,987	\$ 1.41	\$ 14,128.37	\$ 6,254.67	5,092	\$ 2.54	\$ 12,907.65	\$ 5,714.25
2042	34	178,631	\$ 1.21	\$ 216,650.78	9,987	\$ 1.41	\$ 14,128.37	\$ 6,102.12	5,092	\$ 2.54	\$ 12,907.65	\$ 5,574.88
2043	35	178,631	\$ 1.21	\$ 216,650.78	9,987	\$ 1.41	\$ 14,128.37	\$ 5,953.29	5,092	\$ 2.54	\$ 12,907.65	\$ 5,438.91
2044	36	178,631	\$ 1.21	\$ 216,650.78	9,987	\$ 1.41	\$ 14,128.37	\$ 5,808.09	5,092	\$ 2.54	\$ 12,907.65	\$ 5,306.25
2045	37	178,631	\$ 0.93	\$ 166,024.73	9,987	\$ 1.41	\$ 14,128.37	\$ 5,666.42	\$ -	\$ -	\$ -	\$ -
2046	38	178,631	\$ 0.93	\$ 166,024.73	9,987	\$ 1.41	\$ 14,128.37	\$ 5,528.22	\$ -	\$ -	\$ -	\$ -
2047	39	178,631	\$ 0.93	\$ 166,024.73	9,987	\$ 1.41	\$ 14,128.37	\$ 5,393.38	\$ -	\$ -	\$ -	\$ -
2048	40	178,631	\$ 0.37	\$ 66,639.68		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2049	41	178,631	\$ 0.37	\$ 66,639.68		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2050	42		\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

\$ 6,686,252.20

\$ 234,041.97

\$ 239,901.28

Savings in fertilizer usage for agricultural users								Savings in fertilizer usage for golf course uses									
		Physical units *		\$ per unit =		Monetized Benefit		PV of Benefit		Physical units *		\$ per unit =		Monetized Benefit		PV of Benefit	
RW Alignment 1A (AF)	RW Alignment 1B (AF)	RW Alignment 2 (AF)	RW Alignment 3 (AF)	Total RW (AF)	Fertilizer savings (per AF)					RW water (AF)	Fertilizer savings (per AF)						
				-													
				-													
1,081				1,081	\$ 40.54	\$ 43,818.62	\$ 39,697.51										
1,081				1,081	\$ 40.54	\$ 43,818.62	\$ 38,729.28										
1,081				1,081	\$ 40.54	\$ 43,818.62	\$ 37,784.66										
1,081			301	1,382	\$ 40.54	\$ 56,019.74	\$ 47,127.46										
1,081			301	1,382	\$ 40.54	\$ 56,019.74	\$ 45,978.01										
1,081			301	1,382	\$ 40.54	\$ 56,019.74	\$ 44,856.59										
1,081	400		301	1,782	\$ 40.54	\$ 72,233.84	\$ 56,428.96		286	\$ 40.54	\$ 11,593.09	\$ 9,056.50					
1,081	400		301	1,782	\$ 40.54	\$ 72,233.84	\$ 55,052.65		286	\$ 40.54	\$ 11,593.09	\$ 8,835.61					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 67,694.97	286	\$ 40.54	\$ 11,593.09	\$ 8,620.11					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 66,043.87	286	\$ 40.54	\$ 11,593.09	\$ 8,409.86					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 64,433.05	286	\$ 40.54	\$ 11,593.09	\$ 8,204.74					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 62,861.51	286	\$ 40.54	\$ 11,593.09	\$ 8,004.63					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 61,328.30	286	\$ 40.54	\$ 11,593.09	\$ 7,809.39					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 59,832.49	286	\$ 40.54	\$ 11,593.09	\$ 7,618.92					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 58,373.16	286	\$ 40.54	\$ 11,593.09	\$ 7,433.09					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 56,949.42	286	\$ 40.54	\$ 11,593.09	\$ 7,251.80					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 55,560.41	286	\$ 40.54	\$ 11,593.09	\$ 7,074.92					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 54,205.28	286	\$ 40.54	\$ 11,593.09	\$ 6,902.36					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 52,883.20	286	\$ 40.54	\$ 11,593.09	\$ 6,734.01					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 51,593.37	286	\$ 40.54	\$ 11,593.09	\$ 6,569.77					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 50,334.99	286	\$ 40.54	\$ 11,593.09	\$ 6,409.53					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 49,107.31	286	\$ 40.54	\$ 11,593.09	\$ 6,253.20					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 47,909.57	286	\$ 40.54	\$ 11,593.09	\$ 6,100.68					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 46,741.04	286	\$ 40.54	\$ 11,593.09	\$ 5,951.89					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 45,601.02	286	\$ 40.54	\$ 11,593.09	\$ 5,806.72					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 44,488.80	286	\$ 40.54	\$ 11,593.09	\$ 5,665.09					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 43,403.71	286	\$ 40.54	\$ 11,593.09	\$ 5,526.92					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 42,345.08	286	\$ 40.54	\$ 11,593.09	\$ 5,392.12					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 41,312.27	286	\$ 40.54	\$ 11,593.09	\$ 5,260.60					
1,081	400		301	464	2,246	\$ 40.54	\$ 91,042.21	\$ 40,304.66	286	\$ 40.54	\$ 11,593.09	\$ 5,132.29					
	400		301	464	1,165	\$ 40.54	\$ 47,223.58	\$ 20,396.12	286	\$ 40.54	\$ 11,593.09	\$ 5,007.12					
	400		301	464	1,165	\$ 40.54	\$ 47,223.58	\$ 19,898.65	286	\$ 40.54	\$ 11,593.09	\$ 4,884.99					
	400		301	464	1,165	\$ 40.54	\$ 47,223.58	\$ 19,413.32	286	\$ 40.54	\$ 11,593.09	\$ 4,765.84					
	400			464	864	\$ 40.54	\$ 35,022.47	\$ 14,046.36	286	\$ 40.54	\$ 11,593.09	\$ 4,649.60					
	400			464	864	\$ 40.54	\$ 35,022.47	\$ 13,703.76	286	\$ 40.54	\$ 11,593.09	\$ 4,536.20					
	400			464	864	\$ 40.54	\$ 35,022.47	\$ 13,369.53	286	\$ 40.54	\$ 11,593.09	\$ 4,425.56					
				464	464	\$ 40.54	\$ 18,808.36	\$ 7,004.81									
				464	464	\$ 40.54	\$ 18,808.36	\$ 6,833.96									

\$ 1,643,629.12

\$ 194,294.08

Savings in fertilizer for usage for municipal irrigation users							Avoided pumping costs for agricultural users						Total PV benefits
Physical units *		\$ per unit =		Monetized Benefit	PV of Benefit	Physical units *		\$ per unit =		Monetized Benefit	PV of Benefit		
RW Alignment 1A (AF)	RW Alignment 1B (AF)	RW Alignment 2 (AF)	RW Alignment 3 (AF)	Total muni RW use (AF)	Fertilizer savings (per AF)	Annual pumping cost - Alignment 1A (\$/yr)	Annual pumping cost - Alignment 1B (\$/yr)	Annual pumping cost - Alignment 2 (\$/yr)	Annual pumping cost - Alignment 3 (\$/yr)				
												\$ -	
												\$ -	
14				14	\$ 40.54	\$ 567.49	\$ 514.12	\$ 168.17		\$ 168.17	\$ 152.35	\$ 193,235.63	
14				14	\$ 40.54	\$ 567.49	\$ 501.58	\$ 168.17		\$ 168.17	\$ 148.64	\$ 188,522.57	
14				14	\$ 40.54	\$ 567.49	\$ 489.35	\$ 168.17		\$ 168.17	\$ 145.01	\$ 183,924.46	
14		138		152	\$ 40.54	\$ 6,161.36	\$ 5,183.34	\$ 168.17	\$ 64.06	\$ 232.23	\$ 195.37	\$ 256,598.03	
14		138		152	\$ 40.54	\$ 6,161.36	\$ 5,056.92	\$ 168.17	\$ 64.06	\$ 232.23	\$ 190.61	\$ 250,383.63	
14		138		152	\$ 40.54	\$ 6,161.36	\$ 4,933.58	\$ 168.17	\$ 64.06	\$ 232.23	\$ 185.96	\$ 244,276.71	
14	66	138		218	\$ 40.54	\$ 8,836.69	\$ 6,903.21	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,894.71	\$ 359,421.73	
14	66	138		218	\$ 40.54	\$ 8,836.69	\$ 6,734.84	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,894.71	\$ 350,655.35	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 6,570.57	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 360,038.96	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 6,410.31	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 351,208.71	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 6,253.96	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 342,642.64	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 6,101.43	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 334,285.51	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,952.61	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 326,132.20	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,807.43	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 332,947.44	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,665.78	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 324,029.21	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,527.59	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 316,126.06	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,392.77	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 308,415.67	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,261.24	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 300,893.34	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,132.92	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 299,353.14	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 5,007.73	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 292,051.84	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,885.59	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 284,928.63	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,766.43	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 277,979.15	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,650.17	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 271,199.17	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,536.75	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 264,584.56	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,426.10	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 258,131.28	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,318.15	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 251,835.39	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,212.83	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 245,693.06	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,110.07	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 239,700.55	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 4,009.83	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 233,854.20	
14	66	138	0	218	\$ 40.54	\$ 8,836.69	\$ 3,912.03	\$ 168.17	\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 228,150.43	
	66	138	0	204	\$ 40.54	\$ 8,269.19	\$ 3,571.51		\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 135,419.43	
	66	138	0	204	\$ 40.54	\$ 8,269.19	\$ 3,484.40		\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 132,116.52	
	66	138	0	204	\$ 40.54	\$ 8,269.19	\$ 3,399.41		\$ 1,662.47	\$ 64.06	\$ 1,040.41	\$ 128,894.17	
	66		0	66	\$ 40.54	\$ 2,675.33	\$ 1,072.99		\$ 1,662.47	\$ 1,040.41	\$ 2,702.88	\$ 93,106.46	
	66		0	66	\$ 40.54	\$ 2,675.33	\$ 1,046.82		\$ 1,662.47	\$ 1,040.41	\$ 2,702.88	\$ 90,835.57	
	66		0	66	\$ 40.54	\$ 2,675.33	\$ 1,021.28		\$ 1,662.47	\$ 1,040.41	\$ 2,702.88	\$ 88,620.07	
			0	0	\$ 40.54	\$ -	\$ -			\$ 1,040.41	\$ 1,040.41	\$ 387.48	
			0	0	\$ 40.54	\$ -	\$ -			\$ 1,040.41	\$ 1,040.41	\$ 378.03	
												\$ -	

\$ 156,825.63

\$ 48,883.44

**Total social benefits \$ 9,203,827.71**

**Benefit Monetization: Environmental Benefits**

Discount rate 2.5%

Population set

1

Adjustment for outside service area

0.93

Project	Years	SCWA WTP for increased streamflows for T&E fish		Non-SCWA Surrounding Counties WTP		% of total project flow	Monetized benefit	PV of Benefit
		Physical units *	\$ per unit =	Physical units	\$ per unit =			
		households	\$ per HH	households	\$ per HH			
2010	2							
2011	3							
2012	4	163,518	2.08	834,876	1.93	40%	\$ 778,486	\$ 705,269
2013	5	163,518	2.08	834,876	1.93	40%	\$ 778,486	\$ 688,068
2014	6	163,518	2.08	834,876	1.93	40%	\$ 778,486	\$ 671,286
2015	7	173,243	2.08	887,243	1.93	56%	\$ 1,158,380	\$ 974,505
2016	8	173,243	2.08	887,243	1.93	56%	\$ 1,158,380	\$ 950,737
2017	9	173,243	2.08	887,243	1.93	56%	\$ 1,158,380	\$ 927,548
2018	10	173,243	2.08	887,243	1.93	83%	\$ 1,726,244	\$ 1,348,539
2019	11	173,243	2.08	887,243	1.93	83%	\$ 1,726,244	\$ 1,315,648
2020	12	180,971	2.08	941,929	1.93	100%	\$ 2,198,486	\$ 1,634,697
2021	13	180,971	2.08	941,929	1.93	100%	\$ 2,198,486	\$ 1,594,827
2022	14	180,971	2.08	941,929	1.93	100%	\$ 2,198,486	\$ 1,555,929
2023	15	180,971	2.08	941,929	1.93	100%	\$ 2,198,486	\$ 1,517,979
2024	16	180,971	2.08	941,929	1.93	100%	\$ 2,198,486	\$ 1,480,955
2025	17	188,421	2.08	1,006,107	1.93	100%	\$ 2,338,129	\$ 1,536,607
2026	18	188,421	2.08	1,006,107	1.93	100%	\$ 2,338,129	\$ 1,499,129
2027	19	188,421	2.08	1,006,107	1.93	100%	\$ 2,338,129	\$ 1,462,565
2028	20	188,421	2.08	1,006,107	1.93	100%	\$ 2,338,129	\$ 1,426,892
2029	21	188,421	2.08	1,006,107	1.93	100%	\$ 2,338,129	\$ 1,392,090
2030	22	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,443,180
2031	23	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,407,981
2032	24	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,373,640
2033	25	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,340,136
2034	26	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,307,450
2035	27	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,275,561
2036	28	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,244,450
2037	29	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,214,097
2038	30	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,184,485
2039	31	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,155,595
2040	32	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,127,410
2041	33	193,710	2.08	1,076,107	1.93	100%	\$ 2,484,538	\$ 1,099,912
2042	34	193,710	2.08	1,076,107	1.93	60%	\$ 1,495,240	\$ 645,802
2043	35	193,710	2.08	1,076,107	1.93	60%	\$ 1,495,240	\$ 630,051
2044	36	193,710	2.08	1,076,107	1.93	60%	\$ 1,495,240	\$ 614,684
2045	37	193,710	2.08	1,076,107	1.93	44%	\$ 1,098,617	\$ 440,619
2046	38	193,710	2.08	1,076,107	1.93	44%	\$ 1,098,617	\$ 429,872
2047	39	193,710	2.08	1,076,107	1.93	44%	\$ 1,098,617	\$ 419,388
2048	40	193,710	2.08	1,076,107	1.93	17%	\$ 419,209	\$ 156,126
2049	41	193,710	2.08	1,076,107	1.93	17%	\$ 419,209	\$ 152,318
2050	42							

**Total environmental benefits \$ 41,346,027**



## Cost Monetization

Discount rate 2.50%  
Capital escalation 1.00%

	Project Year	Project Costs						Total PV Project Costs
		Capital Costs	PV Capital Costs	O&M Costs	PV O&M Costs	Other Costs	PV Other Costs	
2009	1	\$0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2010	2	\$3,363,900	\$ 3,266,165	\$ -	\$ -	\$ 50,000.00	\$ 47,591	\$ 3,313,756
2011	3	\$7,849,100	\$ 7,509,524	\$ -	\$ -	\$ -	\$ -	\$ 7,509,524
2012	4	\$665,600	\$ 627,485	\$ 159,870.00	\$ 144,834	\$ 87,500.00	\$ 79,271	\$ 851,590
2013	5	\$2,995,200	\$ 2,782,360	\$ 159,870.00	\$ 141,302	\$ 37,500.00	\$ 33,145	\$ 2,956,807
2014	6	\$2,995,200	\$ 2,741,643	\$ 159,870.00	\$ 137,855	\$ 37,500.00	\$ 32,336	\$ 2,911,834
2015	7	\$3,748,200	\$ 3,380,690	\$ 254,694.00	\$ 214,265	\$ 125,000.00	\$ 105,158	\$ 3,700,113
2016	8	\$16,866,900	\$ 14,990,473	\$ 254,694.00	\$ 209,039	\$ 75,000.00	\$ 61,556	\$ 15,261,068
2017	9	\$16,866,900	\$ 14,771,100	\$ 254,694.00	\$ 203,941	\$ 75,000.00	\$ 60,055	\$ 15,035,096
2018	10	\$2,150,700	\$ 1,855,901	\$ 409,606.00	\$ 319,984	\$ 162,500.00	\$ 126,945	\$ 2,302,830
2019	11	\$5,018,300	\$ 4,267,065	\$ 409,606.00	\$ 312,179	\$ 112,500.00	\$ 85,741	\$ 4,664,985
2020	12	\$0	\$ -	\$ 514,470.00	\$ 382,537	\$ 150,000.00	\$ 111,533	\$ 494,071
2021	13	\$0	\$ -	\$ 514,470.00	\$ 373,207	\$ 150,000.00	\$ 108,813	\$ 482,020
2022	14	\$0	\$ -	\$ 514,470.00	\$ 364,104	\$ 150,000.00	\$ 106,159	\$ 470,263
2023	15	\$0	\$ -	\$ 514,470.00	\$ 355,224	\$ 150,000.00	\$ 103,570	\$ 458,794
2024	16	\$0	\$ -	\$ 514,470.00	\$ 346,560	\$ 150,000.00	\$ 101,044	\$ 447,604
2025	17	\$0	\$ -	\$ 514,470.00	\$ 338,107	\$ 150,000.00	\$ 98,579	\$ 436,686
2026	18	\$0	\$ -	\$ 514,470.00	\$ 329,861	\$ 150,000.00	\$ 96,175	\$ 426,036
2027	19	\$0	\$ -	\$ 514,470.00	\$ 321,815	\$ 150,000.00	\$ 93,829	\$ 415,644
2028	20	\$0	\$ -	\$ 514,470.00	\$ 313,966	\$ 150,000.00	\$ 91,541	\$ 405,507
2029	21	\$0	\$ -	\$ 514,470.00	\$ 306,308	\$ 150,000.00	\$ 89,308	\$ 395,616
2030	22	\$0	\$ -	\$ 514,470.00	\$ 298,837	\$ 150,000.00	\$ 87,130	\$ 385,967
2031	23	\$0	\$ -	\$ 514,470.00	\$ 291,549	\$ 150,000.00	\$ 85,005	\$ 376,553
2032	24	\$0	\$ -	\$ 514,470.00	\$ 284,438	\$ 150,000.00	\$ 82,931	\$ 367,369
2033	25	\$0	\$ -	\$ 514,470.00	\$ 277,500	\$ 150,000.00	\$ 80,909	\$ 358,409
2034	26	\$0	\$ -	\$ 514,470.00	\$ 270,732	\$ 150,000.00	\$ 78,935	\$ 349,667
2035	27	\$0	\$ -	\$ 514,470.00	\$ 264,129	\$ 150,000.00	\$ 77,010	\$ 341,139
2036	28	\$0	\$ -	\$ 514,470.00	\$ 257,687	\$ 150,000.00	\$ 75,132	\$ 332,818
2037	29	\$0	\$ -	\$ 514,470.00	\$ 251,402	\$ 150,000.00	\$ 73,299	\$ 324,701
2038	30	\$0	\$ -	\$ 514,470.00	\$ 245,270	\$ 150,000.00	\$ 71,511	\$ 316,781
2039	31	\$0	\$ -	\$ 514,470.00	\$ 239,288	\$ 150,000.00	\$ 69,767	\$ 309,055
2040	32	\$0	\$ -	\$ 514,470.00	\$ 233,451	\$ 150,000.00	\$ 68,066	\$ 301,517
2041	33	\$0	\$ -	\$ 514,470.00	\$ 227,757	\$ 150,000.00	\$ 66,405	\$ 294,163
2042	34	\$0	\$ -	\$ 354,600.00	\$ 153,154	\$ 150,000.00	\$ 64,786	\$ 217,939
2043	35	\$0	\$ -	\$ 354,600.00	\$ 149,418	\$ 112,500.00	\$ 47,404	\$ 196,822
2044	36	\$0	\$ -	\$ 354,600.00	\$ 145,774	\$ 112,500.00	\$ 46,248	\$ 192,022
2045	37	\$0	\$ -	\$ 259,776.00	\$ 104,188	\$ 112,500.00	\$ 45,120	\$ 149,308
2046	38	\$0	\$ -	\$ 259,776.00	\$ 101,646	\$ 75,000.00	\$ 29,346	\$ 130,993
2047	39	\$0	\$ -	\$ 259,776.00	\$ 99,167	\$ 75,000.00	\$ 28,631	\$ 127,798
2048	40	\$0	\$ -	\$ 104,864.00	\$ 39,055	\$ 75,000.00	\$ 27,932	\$ 66,987
2049	41	\$0	\$ -	\$ 104,864.00	\$ 38,102	\$ 37,500.00	\$ 13,626	\$ 51,728
2050	42	\$0	\$ -	\$ -	\$ -	\$ 37,500.00	\$ 13,293	\$ 13,293
			\$ 56,192,405.60		\$ 9,087,631.82		\$ 2,864,833.80	\$ 68,144,871.22

## Summary of Benefits and Costs

### Benefit-Cost Summary for Source Water Protection Project (Millions of Dollars)

	Present Value <sup>1</sup>	Stakeholder Accruing Cost or Benefit
<b>Costs – Total</b>		
Capital and O&M costs	68.14	Utilities
<b>Monetized Benefits</b>		
Avoided wastewater storage costs	5.37	SVCSD
Avoided effluent conveyance costs	1.77	SVCSD
Avoided costs SCWA Russian River & ground water	1.04	SCWA
Avoided costs VOMWD groundwater	0.01	VOMWD
Avoided costs City of Sonoma groundwater	0.02	City of Sonoma
Salvage value for remaining reclaimed water assets	2.14	SCWA, VOMWD, City, SVCSD
Revenue from RW sales to new ag users	1.24	SCWA
Increased water supply reliability SCWA	6.69	SCWA
Increased water supply reliability VOMWD	0.23	VOMWD
Increased water supply reliability City of Sonoma	0.24	City of Sonoma
Avoided fertilizer costs for municipal irrigation users	0.35	Municipal irrigation users
Avoided fertilizer costs for agricultural users	1.64	Agricultural users
Avoided pumping costs for agricultural users	0.05	Agricultural users
Enhanced riparian habitat for salmon and steelhead	41.35	Public
<b>Total Monetizable Benefits</b>	<b>\$62.1</b>	
<b>Qualitative Benefits and Costs</b>	<b>Relative Magnitude*</b>	
Avoided increased groundwater pumping costs	+	SCWA, VOMWD, City, Ag users
Source water protection for water providers	+	SCWA, VOMWD, City
Enhanced downstream water bodies from increased streamflow in	+	Public
Benefit to riparian and aquatic species from increased streamflow	+	Public
Reduced seawater intrusion	+	Public
Increased in-stream and near-stream recreation	+	Public
Water projects leveraging other community projects	++	SCWA, VOMWD, City, SVCSD
Local control over water resources	++	SCWA, VOMWD, City
Increased demonstration of "green ethic"	++	SCWA, VOMWD, City, SVCSD
Aesthetic values, including fountains with recycled water	++	SCWA, VOMWD, City
Increased reliability for agricultural users (supply and WQ)	++	Agricultural users
Short-term construction impacts	–	Public
Public perception of recycled water use by agricultural users	+	Agricultural users
Public perception of recycled water use by municipal users	--	Municipal users
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>	<b>-\$6.0</b>	

(allocation between the 4 stakeholders of salvage value based three iterations of calculations using 'share of benefits, agencies only' percentages as shown below )

M = Millions

<sup>1</sup> Assume 2.5% real discount rate and 30-year project life for each alignment

\* Magnitude of effect on net benefits:

++ = Likely to increase net benefits significantly.

+ = Likely to increase net benefits relative to quantified estimates.

U = Uncertain effect on net benefits relative to quantified estimates

– = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

## Individual Agency Perspectives

### SCWA

Benefits		
Avoided costs SCWA Russian River & ground water	1.04	
Increased water supply reliability SCWA	6.69	
Revenues from RW sale to agricultural users	1.24	
Salvage value for remaining reclaimed water assets	1.15	0.5395, 0.448
Avoided increased groundwater pumping costs	+	
Source water protection for water providers	+	
Water projects leveraging other community projects	++	
Local control over water resources	++	
Increased demonstration of "green ethic"	++	
Aesthetic values, including fountains with recycled water	++	
<b>Total Monetized Benefits</b>	<b>\$10.12</b>	

### City of Sonoma

Benefits		
Avoided costs City of Sonoma groundwater	0.02	
Increased water supply reliability City of Sonoma	0.24	
Salvage value for remaining reclaimed water assets	0.03	0.0157, 0.0128
Avoided increased groundwater pumping costs	+	
Source water protection for water providers	+	
Water projects leveraging other community projects	++	
Local control over water resources	++	
Increased demonstration of "green ethic"	++	
Aesthetic values, including fountains with recycled water	++	
<b>Total Monetized Benefits</b>	<b>\$0.29</b>	

### Valley of the Moon Water District

Benefits		
Avoided costs VOMWD groundwater	0.01	
Increased water supply reliability VOMWD	0.23	
Salvage value for remaining reclaimed water assets	0.03	0.015, 0.011
Avoided increased groundwater pumping costs	+	
Source water protection for water providers	+	
Water projects leveraging other community projects	++	
Local control over water resources	++	
Increased demonstration of "green ethic"	++	
Aesthetic values, including fountains with recycled water	++	
<b>Total Monetized Benefits</b>	<b>\$0.28</b>	

### Preliminary Share of Benefits

Stakeholder	Share	Non-public Share	Agencies only share
SCWA	16.28%	48.68%	53.99%
City of Sonoma	0.46%	1.39%	1.54%
VOMWD	0.44%	1.33%	1.47%
SVCSD	12.96%	38.76%	42.99%
Agricultural users*	2.72%	8.15%	
Municipal irrig users	0.57%	1.69%	
Public	66.55%		

\* Ag users share is under-estimated because increased ag reliability could not be monetized (will likely examine this with sensitivity analysis)

**Sonoma Valley County Sanitation District**

Avoided wastewater storage costs	5.37	
Avoided effluent conveyance costs	1.77	
Salvage value for remaining reclaimed water assets	0.92	0.4297, 0.5282
Water projects leveraging other community projects	++	
Increased demonstration of "green ethic"	++	
Total Monetized Benefits	\$8.05	

**Agricultural users**

Avoided fertilizer costs for agricultural users	1.64	
Avoided pumping costs for agricultural users	0.05	
Public perception of recycled water use by agricultural users	+	
Increased reliability for agricultural users (supply and WQ)	++	
Total Monetized Benefits	\$1.69	

**Municipal Irrigation users**

Avoided fertilizer costs for municipal irrigation users	0.35	
Public perception of recycled water use by municipal users	--	
Total Monetized Benefits	\$0.35	

**Omissions, Biases and Uncertainties**

**Five point scale:**

- ++ = Likely to increase net benefits relative to quantified estimates.
- + = Likely to increase net benefits relative to quantified estimates
- U = Uncertain, could be + or -.
- = Likely to decrease benefits.
- = Likely to decrease net benefits significantly.

Benefit or cost category	Likely Impact on Net Benefits	Comment
Enhanced riparian habitat for salmon and steelhead	+	There are several factors affecting this benefit: 1)The value used per household for enhanced riparian habitat for salmon and steelhead was the low end of the range of values from the literature. The value was adjusted downward to \$2.08 per household based on the fact that most studies are based on a doubling of stream flow, and to account for the fact that there are other determinants of fishery health than the increase in stream flow and decrease in water temperature that will result from the project. Flow increases from the project were compared to average annual flows at the stream gauge at the northernmost extent of the project. The adjusted WTP value is lower (\$1.58 per household) if compared to flows into San Pablo Bay. 2) The literature shows that even if they do not reside in the immediate area, the members of the public have non-use value for stream flow increases that enhance steelhead and salmon populations. Those across the country were shown to have approximately 80% of the value of those in the immediate project area (Loomis, 1996). We only assigned WTP value to residents of Sonoma Co
Increased reliability for agricultural water users (water supply and water quality)	++	Values for increased reliability of agricultural water use could not be monetized with the information available. However, it is believed that agricultural users will gain significant water quantity and water quality benefits. Use of recycled water will remove uncertainty for agricultural users about rights to local creek water and uncertainty over future management of groundwater in the basin. Use of recycled water also will allow ag users to replace groundwater that has high levels of boron in some locations. High boron level in irrigation water is toxic to grapes and prevents grape growth in young vines.
Revenue for recycled water delivery to agricultural customers	+	Revenue from recycled water sales is counted as a benefit in benefit-cost analyses if the revenue is from customers that did not purchase water that is offset without the project from the supplier. Projected agricultural customers would be new customers for SCWA. The contracts between SCWA and agricultural customers state that the minimum price per AF to be charged for recycled water delivery is \$25. This minimum value is used in this analysis. However, the existing contracts state that this value could be higher.

**Reliability Calculations - SCWA**

**Assumptions**

Discount rate	2.5%
Persons per household	2.55

<b>Water Supply Sources</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>Contractor/Other customers</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Wholesale Provider	0	0	0	0	0	City of Cotati	7,105	7,453	7,800	8,100	8,400	8,500
Agency produced groundwater	3870	3870	3870	3870	3870	North Marin Water District	58,816	60,674	64,072	66,271	67,569	68,669
Agency surface diversions	75000	75000	101000	101000	101000	City of Petaluma	57,277	64,000	69,000	70,390	74,000	74,000
Transfers in or out	0	0	0	0	0	City of Rohnert	41,640	43,764	45,997	48,343	49,740	49,740
Exchanges in or out	0	0	0	0	0	City of Santa Rosa	153,790	165,535	176,627	187,067	197,507	206,294
Recycled water (projected use)	0	0	0	0	0	Town of Windsor	22,909	25,409	26,409	27,809	28,809	31,339
Desalination	0	0	0	0	0	California American Water Company	8,295	8,562	8,829	9,096	9,228	9,370
Other	0	0	0	0	0	Forestville Water District	2,166	2,266	2,367	2,467	2,558	2,649
Contractors and other customers local supply, including groundwater	7,633	9,865	6,503	3,414	2,887	Kenwood	999	1,031	1,062	1,094	1,115	1,132
Contractors and other customers recycled water	818	1,673	2,507	3,343	4,183	Lawndale	312	331	350	369	415	432
<b>Total</b>	<b>87,321</b>	<b>90,408</b>	<b>113,880</b>	<b>111,627</b>	<b>111,940</b>	Penngrove	1,655	2,238	2,559	2,977	3,185	3,385
Source: SCWA UWMP						<b>Total</b>	<b>354,964</b>	<b>381,263</b>	<b>405,072</b>	<b>423,983</b>	<b>442,526</b>	<b>455,510</b>
						Source: SCWA UWMP						

Project year	Population	Households	WTP per household	RW Water Supply	Total supply (AFY)	RW water % of existing supply	Scaled WTP per hh	Scaled WTP (total benefit)	PV of benefit
2010	2	381,263	149,515	90	0	87,321	-	-	-
2011	3	381,263	149,515	90	0	87,321	-	-	-
2012	4	381,263	149,515	90	1,095	87,321	0.013	1.129	168,741.70
2013	5	381,263	149,515	90	1,095	87,321	0.013	1.129	168,741.70
2014	6	381,263	149,515	90	1,095	87,321	0.013	1.129	168,741.70
2015	7	405,072	158,852	90	1,448	90,408	0.016	1.441	228,900.25
2016	8	405,072	158,852	90	1,448	90,408	0.016	1.441	228,900.25
2017	9	405,072	158,852	90	1,448	90,408	0.016	1.441	228,900.25
2018	10	405,072	158,852	90	2,140	90,408	0.024	2.130	338,329.59
2019	11	405,072	158,852	90	2,140	90,408	0.024	2.130	338,329.59
2020	12	423,983	166,268	90	2,604	113,880	0.023	2.058	342,106.16
2021	13	423,983	166,268	90	2,604	113,880	0.023	2.058	342,106.16
2022	14	423,983	166,268	90	2,604	113,880	0.023	2.058	342,106.16
2023	15	423,983	166,268	90	2,604	113,880	0.023	2.058	342,106.16
2024	16	423,983	166,268	90	2,604	113,880	0.023	2.058	342,106.16
2025	17	442,526	173,540	90	2,604	111,627	0.023	2.099	364,275.07
2026	18	442,526	173,540	90	2,604	111,627	0.023	2.099	364,275.07
2027	19	442,526	173,540	90	2,604	111,627	0.023	2.099	364,275.07
2028	20	442,526	173,540	90	2,604	111,627	0.023	2.099	364,275.07
2029	21	442,526	173,540	90	2,604	111,627	0.023	2.099	364,275.07
2030	22	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2031	23	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2032	24	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2033	25	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2034	26	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2035	27	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2036	28	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2037	29	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2038	30	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2039	31	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2040	32	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2041	33	455,510	178,631	90	2,604	111,940	0.023	2.093	373,914.69
2042	34	455,510	178,631	90	1,509	111,940	0.013	1.213	216,650.78
2043	35	455,510	178,631	90	1,509	111,940	0.013	1.213	216,650.78
2044	36	455,510	178,631	90	1,509	111,940	0.013	1.213	216,650.78
2045	37	455,510	178,631	90	1,156	111,940	0.010	0.929	166,024.73
2046	38	455,510	178,631	90	1,156	111,940	0.010	0.929	166,024.73
2047	39	455,510	178,631	90	1,156	111,940	0.010	0.929	166,024.73
2048	40	455,510	178,631	90	464	111,940	0.004	0.373	66,639.68
2049	41	455,510	178,631	90	464	111,940	0.004	0.373	66,639.68

6,686,252.20

**Reliability Calculations - Valley of the Moon**

**Assumptions**

Discount rate	2.5%
Persons per household	2.55

<b>Water Supply Sources</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Sonoma County Water Agency	3312	3185	3360	3488	3,729
Supplier produced groundwater	436	566	428	309	83
Supplier surface diversions	0	0	0	0	0
Transfers in or out	0	0	0	0	0
Exchanges in or out	0	0	0	0	0
Recycled water (projected use)	0	0	0	0	5
Desalination	0	0	0	0	0
Other	0	0	0	0	0
<b>Total</b>	<b>3,748</b>	<b>3,751</b>	<b>3,788</b>	<b>3,797</b>	<b>3,817</b>

Source: Valley of the Moon  
UWMP

**Population estimates**

2005	22,665
2010	23,359
2015	24,055
2020	24,753
2025	25,109
2030	25,466

Source: Valley of the Moon UWMP from Sonoma County  
General Plan (Draft)



Project year	Population	Households	WTP per household	RW Water Supply (AFY)	Total supply (AFY)	RW water % of existing supply	Scaled WTP (per hht)	Scaled WTP (benefit)	PV of benefit	
2010	2	23,359	9,160	90	3,748	-	-	-	-	
2011	3	23,359	9,160	90	3,751	-	-	-	-	
2012	4	23,359	9,160	90	3,751	-	-	-	-	
2013	5	23,359	9,160	90	3,751	-	-	-	-	
2014	6	23,359	9,160	90	3,751	-	-	-	-	
2015	7	24,055	9,433	90	3,751	-	-	-	-	
2016	8	24,055	9,433	90	3,788	-	-	-	-	
2017	9	24,055	9,433	90	3,788	-	-	-	-	
2018	10	24,055	9,433	90	60	3,788	0.016	1.426	13,447.73	10,505.34
2019	11	24,055	9,433	90	60	3,788	0.016	1.426	13,447.73	10,249.12
2020	12	24,753	9,707	90	60	3,788	0.016	1.426	13,837.94	10,289.28
2021	13	24,753	9,707	90	60	3,797	0.016	1.422	13,805.14	10,014.53
2022	14	24,753	9,707	90	60	3,797	0.016	1.422	13,805.14	9,770.27
2023	15	24,753	9,707	90	60	3,797	0.016	1.422	13,805.14	9,531.97
2024	16	24,753	9,707	90	60	3,797	0.016	1.422	13,805.14	9,299.49
2025	17	25,109	9,847	90	60	3,797	0.016	1.422	14,003.69	9,203.15
2026	18	25,109	9,847	90	60	3,817	0.016	1.415	13,930.31	8,931.64
2027	19	25,109	9,847	90	60	3,817	0.016	1.415	13,930.31	8,713.80
2028	20	25,109	9,847	90	60	3,817	0.016	1.415	13,930.31	8,501.26
2029	21	25,109	9,847	90	60	3,817	0.016	1.415	13,930.31	8,293.92
2030	22	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	8,206.67
2031	23	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	8,006.51
2032	24	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	7,811.23
2033	25	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	7,620.71
2034	26	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	7,434.84
2035	27	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	7,253.50
2036	28	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	7,076.59
2037	29	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,903.99
2038	30	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,735.60
2039	31	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,571.32
2040	32	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,411.04
2041	33	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,254.67
2042	34	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	6,102.12
2043	35	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	5,953.29
2044	36	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	5,808.09
2045	37	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	5,666.42
2046	38	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	5,528.22
2047	39	25,466	9,987	90	60	3,817	0.016	1.415	14,128.37	5,393.38
2048	40	25,466	9,987							
2049	41	25,466	9,987							
2050	42	25,466	9,987							

234,041.97

**Reliability Calculations - City of Sonoma**

**Assumptions**

Discount rate	2.5%
Persons per household	2.55

<b>Water Supply Sources</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
Sonoma County Water Agency	2459	2393	2491	2586	3,000
Supplier produced groundwater	324	404	285	187	21
Supplier surface diversions	0	0	0	0	0
Transfers in or out	0	0	0	0	0
Exchanges in or out	0	0	0	0	0
Recycled water (projected use)	0	20	30	40	50
Desalination	0	0	0	0	0
Other	0	0	0	0	0
<b>Total</b>	<b>2,783</b>	<b>2,817</b>	<b>2,806</b>	<b>2,813</b>	<b>3,071</b>

Source: City of Sonoma UWMP

**Population estimates**

2005	10,733
2010	12,348
2015	12,642
2020	12,740
2025	12,838
2030	12,984

Source: City of Sonoma UWMP from Sonoma County General Plan (Draft)

Project year	Population	Households	WTP per household	RW Water Supply (AFY)	Total supply (AFY)	RW water % of existing supply	Scaled WTP (benefit)	PV of benefit		
2010	2	12,348	4,842	90	2,783	-	-	-		
2011	3	12,348	4,842	90	2,817	-	-	-		
2012	4	12,348	4,842	90	2,817	-	-	-		
2013	5	12,348	4,842	90	2,817	-	-	-		
2014	6	12,348	4,842	90	2,817	-	-	-		
2015	7	12,642	4,958	90	86.5	2,817	0.03	2.76	13,700.85	11,526.05
2016	8	12,642	4,958	90	86.5	2,806	0.03	2.77	13,754.56	11,289.00
2017	9	12,642	4,958	90	86.5	2,806	0.03	2.77	13,754.56	11,013.66
2018	10	12,642	4,958	90	86.5	2,806	0.03	2.77	13,754.56	10,745.04
2019	11	12,642	4,958	90	86.5	2,806	0.03	2.77	13,754.56	10,482.96
2020	12	12,740	4,996	90	86.5	2,806	0.03	2.77	13,861.18	10,306.56
2021	13	12,740	4,996	90	86.5	2,813	0.03	2.77	13,826.69	10,030.16
2022	14	12,740	4,996	90	86.5	2,813	0.03	2.77	13,826.69	9,785.52
2023	15	12,740	4,996	90	86.5	2,813	0.03	2.77	13,826.69	9,546.85
2024	16	12,740	4,996	90	86.5	2,813	0.03	2.77	13,826.69	9,314.00
2025	17	12,838	5,035	90	86.5	2,813	0.03	2.77	13,933.05	9,156.73
2026	18	12,838	5,035	90	86.5	3,071	0.03	2.54	12,762.51	8,182.88
2027	19	12,838	5,035	90	86.5	3,071	0.03	2.54	12,762.51	7,983.30
2028	20	12,838	5,035	90	86.5	3,071	0.03	2.54	12,762.51	7,788.59
2029	21	12,838	5,035	90	86.5	3,071	0.03	2.54	12,762.51	7,598.62
2030	22	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	7,497.60
2031	23	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	7,314.73
2032	24	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	7,136.32
2033	25	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,962.26
2034	26	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,792.45
2035	27	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,626.78
2036	28	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,465.15
2037	29	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,307.47
2038	30	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,153.63
2039	31	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	6,003.54
2040	32	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	5,857.11
2041	33	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	5,714.25
2042	34	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	5,574.88
2043	35	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	5,438.91
2044	36	12,984	5,092	90	86.5	3,071	0.03	2.54	12,907.65	5,306.25
2045	37	12,984	5,092	90						
2046	38	12,984	5,092	90						
2047	39	12,984	5,092	90						
2048	40	12,984	5,092	90						
2049	41	12,984	5,092	90						239,901.28
2050	42	12,984	5,092	90						



**Sonoma Valley RW project - total fertilizer cost savings**

	<b>RW water (AFY)</b>	<b>Annual savings</b>
Agricultural irrigation	2,246	\$ 91,042.21
Municipal irrigation	218	\$ 8,836.69
Golf course irrigation	286	\$ 11,593.09
<b>Total annual savings</b>	<b>2,750</b>	<b>\$ 111,471.98</b>

Source: Carollo financial model

Note: This assumes that of the 720 AF of Mission Inn Golf course irrigation use, 692 was classified as ag use in the Carollo model as opposed to urban use. This is the portion that currently comes from groundwater. 28.3 AF was classified as urban/municipal use - this is the amount of total use currently supplied by VOMWD/City.

This also assumes that the remainder of urban/municipal use (504 total AF - 28.3 AF of golf course use) is all used for irrigation - not fountains or other uses.

		<b>Total production (AF)</b>	<b>Ag use</b>	<b>Urban</b>	<b>Golf Course</b>
Alignment 1A	Private Wells and VOMWD	1,095	1,081	14	0
Alignment 1B	VOMWD Customers	752	400	66	286
Alignment 2	City of Sonoma Customers	439	301	138	0
Alignment 3	City of Sonoma and Private Wells	464	464	0	0
<b>Total</b>		<b>2,750</b>	<b>2,246</b>	<b>218</b>	<b>286</b>

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**APPENDIX H – PRESENT VALUE CASH FLOW PROJECTION**

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# ECONOMIC ANALYSIS OF THE PROPOSED SONOMA VALLEY RECYCLED WATER PROJECT

## H.1 INTRODUCTION

This appendix contains an economic analysis of the proposed Sonoma Valley Recycled Water Project. This is the complete version referenced from the summary of the analysis presented in Chapter 5.

Several standard assumptions were made to frame this analysis. The economic analysis is performed in real dollars, meaning that benefit and cost values are shown to change over time only if they are projected to increase or decrease at a rate different from the expected rate of inflation (3%). A real discount rate of 2.5% was used in the analysis, based on a general cost of capital for water utilities of around 5.5%. The real discount rate can roughly be calculated by subtracting the expected rate of inflation (3%) from the nominal cost of capital (5.5%). The analysis period was set to 30 years in order to match the average expected life of the assets to be installed with the project. Some assets associated with the project are expected to last longer than this, while other assets have shorter expected lifetimes. A section containing sensitivity analysis is included at the end of the analysis (Section H.12). The effect of alternate assumptions regarding the appropriate discount rate and other key assumptions is explored in that section.

## H.2 PROJECT SUMMARY

The Sonoma Valley Recycled Water Project involves installation of four recycled water distribution alignments in Sonoma, California, to deliver recycled water starting with the first alignment in 2012 to agricultural and municipal water users. The Sonoma Valley County Sanitation District (SVCSD) produces tertiary-treated effluent that is currently discharged to the Schell Slough in San Pablo Bay. The project would deliver up to a total of 2,750 acre-feet (AF) of recycled water to users. A majority of the water currently used by agricultural customers is pumped from private groundwater wells. In addition, water from Sonoma Creek and its tributaries, and water currently delivered by the City of Sonoma (City) and the Valley of the Moon Water District (VOMWD) to municipal irrigation customers would be offset by recycled water delivery. The project also involves the construction of a pump station, service turnouts to connect to private users, and storage necessary to maintain pressure in the system.

Table H.1 summarizes the result of the benefit-cost analysis (BCA), including monetized and qualitative benefits, and the stakeholders that accrue those benefits. This table shows that the net benefits for the project are slightly negative when a 2.5% discount rate is used. Benefits are less than costs by \$6.0 million, or 88% of the costs. The section on sensitivity analysis shows that the net benefits of the project are very sensitive to the choice of discount rate, however. When analyzed with a 6% real discount rate, the benefits are less than the costs for the project by \$16.5 million, or, stated another way, benefits are 68% of the costs.



**Table H.1. BCA Overview – Using 2.5% Real Discount Rate  
(values in millions of 2008 dollars)**

Benefit or Cost Category	Present Value <sup>(1)</sup>	Stakeholder Accruing Cost or Benefit
<b>Costs – Total</b>		
Capital and O&M costs	68.14	To be determined
<b>Monetized Benefits</b>		
<u>Financial Benefits</u>		
Avoided wastewater storage costs	5.37	SVCSD
Avoided effluent conveyance costs	1.77	SVCSD
Avoided costs SCWA Russian River and groundwater <sup>(2)</sup>	1.04	SCWA
Avoided costs VOMWD groundwater <sup>(3)</sup>	0.01	VOMWD
Avoided costs City of Sonoma groundwater <sup>(4)</sup>	0.02	City
Salvage value for remaining reclaimed water assets	2.14	SCWA, VOMWD, City, SVCSD
Revenue from recycled water sales to new agricultural users <sup>(5)</sup>	1.24	SCWA
<u>Social Benefits</u>		
Increased water supply reliability SCWA <sup>(6)</sup>	6.69	SCWA
Increased water supply reliability VOMWD <sup>(7)</sup>	0.23	VOMWD
Increased water supply reliability for City of Sonoma <sup>(8)</sup>	0.24	City
Avoided fertilizer costs for municipal irrigation users	0.35	Municipal irrigation users
Avoided fertilizer costs for agricultural users	1.64	Agricultural users
Avoided pumping costs for agricultural users	0.05	Agricultural users
<u>Environmental Benefits</u>		
Enhanced riparian habitat for salmon and steelhead	41.35	Public
<b>Total Monetizable Benefits</b>		<b>\$62.1</b>
<b>Qualitative Benefits and Costs</b>		<b>Relative Magnitude*</b>
<u>Financial Benefits</u>		
Avoided increased groundwater pumping costs	+	SCWA, VOMWD, City, Agricultural users
Source water protection for water providers	+	SCWA, VOMWD, City
<u>Environmental Benefits</u>		
Enhanced downstream water bodies from increased stream flow in Sonoma Creek	+	Public
Benefit to riparian and aquatic species from increased stream flow	+	Public
Reduced seawater intrusion	+	Public
<u>Social Benefits</u>		
Increased in-stream and near-stream recreation	+	Public
Water projects leveraging other community projects	++	SCWA, VOMWD, City, SVCSD
Local control over water resources	++	SCWA, VOMWD, City
Increased demonstration of “green ethic”	++	SCWA, VOMWD, City, SVCSD
Aesthetic values, including fountains with recycled water	++	SCWA, VOMWD, City
Increased water use reliability for agricultural users (quantity and quality)	++	Agricultural users

**Table H.1. BCA Overview – Using 2.5% Real Discount Rate  
(values in millions of 2008 dollars)**

Qualitative Benefits and Costs	Relative Magnitude*	
Short-term construction impacts	–	Public
Public perception of recycled water use by agricultural users	+	Agricultural users
Public perception of recycled water use by municipal users	– –	Municipal users
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>		<b>\$(6.0)</b>

Monetized values in millions of dollars  
O&M – operations and maintenance  
SCWA – Sonoma County Water Agency  
SVCSD – Sonoma Valley County Sanitation District  
VOMWD – Valley of the Moon Water District  
City – City of Sonoma

- (1) Assume 2.5% real discount rate and 30-year project life for each alignment
- (2) Based on imported Russian River water offset that reaches 133 AF per year by 2018 and imported groundwater of 7 AF per year by 2018.
- (3) Based on assumption that 5% of the water delivered by VOMWD is groundwater, and the remaining 95% is supplied wholesale by SCWA, 3 AF per year of groundwater deliveries is avoided.
- (4) Based on assumption that 5% of the water delivered the City is groundwater, and the remaining 95% is supplied wholesale by SCWA, 4.85 AF per year of groundwater deliveries is avoided.
- (5) Assuming \$25 per AF initial price for recycled water delivered to agricultural users multiplied by recycled water deliveries that reach 2,246 AF per year by 2020.
- (6) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 166,000 households by 2020 in SCWA service area that are not in the City or VOMWD service area, and 178,631 households by 2040.
- (7) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 9,707 households by 2020 in VOMWD service area, and 9,987 householders by 2040.
- (8) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 4,996 households by 2020 in City’s service area, and 5,092 households by 2040.

\* Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

– = Likely to decrease net benefits

– – = Likely to decrease benefits significantly

### H.3 COSTS

Total costs for the project total approximately \$68.14 million in present value 2008 dollars. Capital costs total \$56.2 million in present value. Operations and maintenance (O&M) costs are expected to total up to \$515,000 per year, or \$9.1 million in present value over the assumed project lifetime. Additional costs, including staffing costs of \$150,000 per year and outreach costs of \$200,000 dollars (in total) also are included in total project costs. Staffing and outreach costs total \$2.9 million in present value 2008 dollars.

## **H.4 BASELINE**

There are water quantity and water quality aspects to the without-project baseline. The main driver from a water quality standpoint is that without the project, treated effluent from the SVCSD treatment plant would continue to be discharged to San Pablo Bay, which is part of the San Francisco-Bay Delta estuary. From a water quantity standpoint, without the project, irrigation uses targeted by the project would continue to use their existing water sources, which are largely groundwater, with some water delivered by the City and VOMWD, and some drawn from surface water in Sonoma Creek and its tributaries.

### **H.4.1 Water Quantity Baseline Aspects**

Existing uses of groundwater from private wells, surface water from Sonoma Creek, and potable water delivered from the City and VOMWD would continue without the proposed project. Groundwater pumping from private wells is the largest water source to be offset by the project. Private well pumping offsets reach a maximum of 2,316 AF per year when all alignments are in operation. City potable water delivery offsets total 87 AF per year while VOMWD offsets total 60 AF per year. A maximum of 287 AF per year of local creek water usage is offset when all alignments are in operation.

A study by the U.S. Geological Survey (USGS) of groundwater in the Sonoma Creek watershed determined that the aquifer is being depleted in localized areas (Farrar et al., 2006). Without the project, pumping to be offset by the project would instead continue, resulting in increased localized declines in groundwater levels and lower flows in Sonoma Creek. Continued groundwater level declines also will result in increased pumping costs for current users in the long run.

### **H.4.2 Water Quality Baseline Aspects**

Although discharges of treated effluent in winter to Shell Slough are permitted by the San Francisco Bay Regional Water Quality Control Board (RWQCB), reducing or eliminating these discharges is desired to help enhance water quality in the bay. The SVCSD currently budgets approximately \$160,000 per year to maintain compliance with its National Pollutant Discharge Elimination System permit with the RWQCB. Without the project, winter discharges of treated effluent to the bay will continue.

Effluent production is projected to increase over the next 30 years, which will affect SVCSD's capacity to meet its effluent discharge permit requirements. Without the project, it is projected that SVCSD would need to install storage to hold increased effluent production during the May through October period when discharge is prohibited according to the effluent discharge permit, until it can be released during the wet weather period. Projected dry-year effluent flows indicate that storage would be needed in 2013.

Also, without the project, continued pumping of groundwater from uses that would be replaced by recycled water use increases the risk of saltwater intrusion. Saltwater intrusion results when excessive groundwater pumping depletes the aquifer and draws saltwater into the area from San Pablo Bay. Use of recycled water that results in reduced groundwater pumping could potentially slow the rate of seawater intrusion.

## **H.5 MONETIZED FINANCIAL BENEFITS**

Monetized financial benefits of the project include avoided wastewater storage costs, avoided effluent conveyance costs, avoided Sonoma County Water Agency (SCWA) groundwater pumping costs, avoided VOMWD groundwater pumping costs, avoided City groundwater pumping costs, avoided SCWA Russian River water pumping costs, recycled water revenue from agricultural customers, and salvage value of recycled water assets. These monetized benefits are discussed below.

### **H.5.1 Avoided Wastewater Storage Costs**

Use of recycled water via the proposed project would avoid the need for SVCSD to install additional effluent storage capacity in order to meet NPDES (national pollutant discharge elimination system) permit requirements to not discharge treated effluent to San Pablo Bay except during the wet weather season from November to April. Avoided wastewater storage capital costs are \$5,495,000 and under the baseline would be installed in 2012 and 2013. Avoided O&M costs for the storage are \$13,815 per year. The present value of total wastewater storage capital and O&M costs avoided over the lifetime of the project is \$5,366,350.

### **H.5.2 Avoided Effluent Conveyance Costs**

The proposed project would avoid additional costs of installing pipe to convey treated effluent to the additional storage capacity to be installed without the project. Avoided effluent conveyance capital costs total \$1,380,000 over 2012 and 2013, and avoided O&M costs are \$23,025 per year. The present value of capital and O&M costs for effluent conveyance totals approximately \$1,768,500 in 2008 dollars.

### **H.5.3 Avoided SCWA Groundwater Pumping Costs**

SCWA is a water wholesaler that delivers to the City and VOMWD. Of the 147 AF of potable water deliveries by the City and VOMWD that is supplied by SCWA, 5% or a maximum of 6.89 AF of that water is assumed to be pumped groundwater. SCWA charges \$454 per AF of water delivered, and this rate is assumed to be equal to the pumping and treatment charges associated with delivering the water. The annual avoided groundwater pumping cost for SCWA is assumed to be \$1,876. The present value of this avoided groundwater pumping over the life of the proposed project is approximately \$55,630 in 2008 dollars.

#### **H.5.4 Avoided VOMWD Groundwater Pumping Costs**

Approximately 95% of the water supplied by VOMWD is water delivered wholesale by SCWA. The other 5% is groundwater pumped by VOMWD. Of the 60 AF per year of VOMWD water delivery offsets, 5%, or 3 AF, is assumed to be groundwater pumped by VOMWD. It costs VOMWD approximately \$195 per AF to pump and treat groundwater. Therefore, the annual avoided groundwater pumping costs for VOMWD are \$585 ( $\$195 \text{ per AF} \times 3 \text{ AF}$ ). The present value of VOMWD groundwater pumping costs over the life of the proposed project is approximately \$9,800 in 2008 dollars.

#### **H.5.5 Avoided City of Sonoma Groundwater Pumping Costs**

Approximately 95% of the water supplied by the City is water delivered wholesale from SCWA. The other 5% is groundwater pumped by the City. Of the 60 AF per year of City water delivery offsets, 5%, or 4.85 AF, is assumed to be groundwater pumped by the City. It costs the City approximately \$195 per AF to pump and treat groundwater. Therefore, the annual avoided groundwater pumping costs for the City are \$848 ( $\$195 \text{ per AF} \times 4.35 \text{ AF}$ ). The present value of City groundwater pumping costs over the life of the proposed project is approximately \$15,300 in 2008 dollars.

#### **H.5.6 Avoided Pumping Costs for SCWA-supplied Russian River Water**

Approximately 95% of the water supplied by SCWA to retailers is Russian River water. Pumping costs for Russian River water are assumed to be equal to the rate charged to retailers of \$454 per AF. The avoided cost of Russian River water pumping and treatment is \$60,231 per year when all alignments are operational for the proposed project. The present value of avoided Russian River water pumping by SCWA over the life of the proposed project is approximately \$983,000 in 2008 dollars.

#### **H.5.7 Revenue for Recycled Water Delivery to Agricultural Customers**

Revenue from recycled water sales is counted as a benefit when performing BCA from a societal perspective if the recycled water sales are to entities that were not previously purchasing water from any supplier (thus they are new revenues, not revenues transferred from another type of water delivery or another supplier). In this case, agricultural users for the proposed project were previously pumping their own groundwater and SCWA would provide recycled water to these new agricultural customers. SCWA's contracts with its existing agricultural customers stipulate a minimum charge of \$25 per AF to be charged when SCWA starts charging for recycled water. SCWA has determined that it likely intends to charge agricultural users for recycled water from the proposed project. The \$25 per AF price is used in this analysis as a conservative estimate, given that SCWA's existing agricultural contracts set \$25 per AF as the minimum price. Revenue to SCWA for sales to agricultural customers of the proposed project are projected to reach \$56,150 when all alignments are operating. The present value of revenue to SCWA over the projected useful life of the project is expected to total \$1,236,170 in 2008 dollars.

## **H.5.8 Salvage Value of Recycled Water Assets**

For purposes of this BCA, the useful life of the recycled water assets installed as part of the proposed project is assumed to average 30 years, based on engineering judgments and previous BCA for recycled water projects. However, the useful life of structures to be installed for the project is assumed to be 50 years. The salvage value for these structures that would remain after the assumed 30-year project life totals \$3,789,000, or \$2,139,000 in present value \$2008 dollars.

## **H.6 MONETIZED SOCIAL BENEFITS**

Monetized social benefits include increases in water supply reliability for SCWA, the City, and VOMWD; avoided fertilizer costs for agricultural users; and avoided fertilizer costs for municipal irrigation users, which are discussed below.

### **H.6.1 Increased Water Supply Reliability for SCWA**

The reliability of a water supply refers to the ability to meet water demands consistently, even in times of drought or other constraints on source water availability. SCWA is the water wholesaler for the Sonoma Valley. SCWA's 2005 Urban Water Management Plan shows a 15% shortfall in supply during a single dry year drought event (SCWA, 2006). The proposed project will provide a local water source that will help SCWA sustain water supplies through drought periods. The additional water made available by the project is expected to be 2% of annual demand (2,600 AF out of 113,880 AF)<sup>1</sup> by the year 2018 as all four alignments are activated.

Although interest in water supply reliability is increasing, only a few studies have directly attempted to quantify its value. The results from these studies indicate that residential and industrial (i.e., urban) customers seem to value supply reliability quite highly. Stated preference studies find that the annual value of reliability ranges from \$88 to \$461 per household (updated to 2008 dollars) for total reliability (i.e., a 0% probability of their water supply being interrupted in times of drought).

The challenge for using these values to determine a value of the project is recognizing how to reasonably interpret these survey-based household monetary values. The values noted above reflect a willingness-to-pay (WTP) to ensure complete reliability (zero drought-related use restrictions in the future), whereas the proposed project enhances overall reliability, but does not guarantee 100% reliability. Thus, the dollar values from the studies will probably overstate the reliability value provided by the project. One simple way to roughly adjust for this "whole versus part" problem is to attribute a portion of the total value of reliability to the portion of the problem that is solved by the project.

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<sup>1</sup> Total deliveries for SCWA taken from SCWA's 2005 Urban Water Management Plan (SCWA, 2006).

For the proposed project, to adjust for the partial increase in reliability associated with the relatively small amount of new water supply for SCWA relative to total demands, we adjust the lower bound of the literature values downward from \$88 per household per year to approximately \$2.10 per household for years in which the project is delivering the full amount of water for all four alignments.

When multiplied by the 166,000 households<sup>2</sup> in the region by 2020, the potential benefit from increased reliability is over \$342,100 per year by 2020, and almost \$374,000 per year by 2040. Assuming a 2.5% discount rate, the present value of improved reliability for SCWA over the 30-year project life is \$6.7 million in 2008 dollars.

### **H.6.2 Increased Water Supply Reliability for City of Sonoma**

The reliability of a water supply refers to the ability to meet water demands consistently, even in times of drought or other constraints on source water availability. The City's 2005 Urban Water Management Plan shows a 19% shortfall in meeting demands in a single dry year drought event (City of Sonoma, 2008). The proposed project will provide a local water source that will help the City sustain water supplies through drought periods. The additional water made available by the project is expected to be 3.1% of annual demand (87 AF out of 2,806 AF),<sup>3</sup> starting in year 2015 as Alignment 2 is activated.

Similar to the adjustment made when calculating increased SCWA water supply reliability, to adjust for the partial increase in reliability associated with the relatively small amount of new water supply for the City relative to total demands, we adjust the lower bound of the literature values downward from \$88 per household per year to approximately \$2.10 per household for years in which the project is delivering the full amount of water for all four alignments.

When multiplied by the 4,996 households<sup>4</sup> in the City's service area by 2020, the potential benefit from increased reliability is over \$13,860 per year by 2020, and over \$12,900 per year by 2040. Assuming a 2.5% discount rate, the present value of improved reliability for the City over the 30-year project life is \$239,900 in 2008 dollars.

### **H.6.3 Increased Water Supply Reliability for VOMWD**

The reliability of a water supply refers to the ability to meet water demands consistently, even in times of drought or other constraints on source water availability. VOMWD's 2005 Urban Water Management Plan shows a 5% shortfall in meeting demands in a single dry year drought event (VOMWD, 2007). The proposed project will provide a local water source that will help VOMWD sustain water supplies through drought periods. The additional water

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<sup>2</sup> Estimated number of households over time in the SCWA service area comes from the 2005 SCWA Urban Water Management Plan. The number of households in the City and VOMWD service areas have been subtracted from the total because reliability for those entities is handled separately.

<sup>3</sup> Total deliveries taken from the City of Sonoma's 2005 Urban Water Management Plan (City of Sonoma, 2008) and the Sonoma County General Plan.

<sup>4</sup> Estimated number of households over time in the City service area comes from the 2005 City of Sonoma Urban Water Management Plan (City of Sonoma, 2008).

made available by the project is expected to be 1.6% of annual demand (60 AF out of 3,788 AF),<sup>5</sup> starting in year 2018 as Alignment 1B is activated.

Similar to the adjustment made when calculating increased SCWA and City water supply reliability, to adjust for the partial increase in reliability associated with the relatively small amount of new water supply for VOMWD relative to total demands, we adjust the lower bound of the literature values downward from \$88 per household per year to approximately \$2.10 per household for years in which the project is delivering the full amount of water for all four alignments.

When multiplied by the 9,707 households<sup>6</sup> in the VOMWD service area by 2020, the potential benefit from increased reliability is almost \$13,840 per year by 2020, and over \$14,125 per year by 2040. Assuming a 2.5% discount rate, the present value of improved reliability for VOMWD over the 30-year project life is approximately \$234,000 in 2008 dollars.

#### **H.6.4 Avoided Fertilizer Costs for Agricultural Users**

This project will allow for reduced fertilizer use for agricultural users expected to take recycled water. Recycled water contains substantial amounts of nitrogen, phosphorus, and potassium (Kopec et al., 1993). Nutrients available in recycled water will allow agricultural users to reduce fertilizer treatment applied to the soil. Agricultural use of recycled water is expected to total 2,246 AF when all four alignments are operational.

Although the exact offset of fertilizer use from the use of recycled water is difficult to predict due to daily and seasonal nutrient variations in the reclaimed water, the potential fertilizer value of reclaimed water produced from the Irvine Ranch Water District was calculated. This value is used to calculate the potential benefit from the offset of fertilizer use from this project. Using a fertilizer price index for the United States from the Food and Agriculture Organization of the United Nations, and after adjusting for existing data on the nitrogen, potassium, and phosphorus values of recycled water produced at the SVCS D treatment plant, the value of offset fertilizer use per acre-foot of water applied is \$40.54, when updated to \$2008 (updated from Asano, 1981). When multiplied by the amount of recycled water to be delivered from this project for agricultural irrigation [up to 2,246 AF per year (AFY) when all four alignments are in operation], the total avoided fertilizer cost is approximately \$91,042 per year during years with maximum recycled water. Assuming a 2.5% real discount rate, the present value of this benefit over the assumed 30-year life of the project is approximately \$1,643,600.

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<sup>5</sup> Total deliveries taken from the City of Sonoma 's 2005 Urban Water Management Plan (City of Sonoma, 2008) and the Sonoma County General Plan.

<sup>6</sup> Estimated number of households over time in the VOMWD service area comes from the 2005 VOMWD Urban Water Management Plan (VOMWD, 2007) and the Sonoma County General Plan.



## **H.6.5 Avoided Fertilizer Costs for Municipal Users**

This project also will allow for reduced fertilizer use for municipal irrigation users such as parks, schools, and golf courses that are expected to take recycled water. Nutrients available in recycled water will allow municipal irrigation users to reduce fertilizer treatment applied to the soil. Municipal irrigation use of recycled water is expected to total 504 AF per year.

Although the exact offset of fertilizer use from using recycled water is difficult to predict due to daily and seasonal nutrient variations in the reclaimed water, the potential fertilizer value of reclaimed water produced from the Irvine Ranch Water District was calculated. This value is used to calculate the potential benefits from the offset of fertilizer use from this project. Using a fertilizer price index for the United States from the Food and Agriculture Organization of the United Nations, and after adjusting for existing data on the nitrogen, potassium, and phosphorus values of recycled water produced at the SVCSD treatment plant, the value of offset fertilizer use per acre-foot of water applied is \$40.54, when updated to \$2008 (updated from Asano, 1981). When multiplied by the amount of recycled water to be delivered from this project for municipal irrigation (504 AFY), the total avoided fertilizer cost is approximately \$20,430 per year. Assuming a 2.5% real discount rate, the present value of this benefit over the assumed 30-year life of the project is approximately \$351,120.

## **H.7 MONETIZED ENVIRONMENTAL BENEFITS**

### **H.7.1 Enhanced Riparian Habitat for Salmon and Steelhead**

Steelhead trout and Chinook salmon are present in Sonoma Creek. However, the exact extent of current anadromous fish access in the watershed is not precisely known.<sup>7</sup> Small numbers of adult Chinook salmon have been documented recently in Sonoma Creek (SEC, 2003), but a regular, self-sustaining run of Chinook salmon is not believed to occur in the basin. Restoration and monitoring efforts in the Sonoma Creek watershed have generally focused on improving habitat conditions and monitoring populations of steelhead.

Based on late summer surveys, the Sonoma Ecology Center (SEC) estimates the abundance of rearing juvenile steelhead in 2002 was greater than 16,000 in the mainstem of Sonoma Creek and three tributaries north of Glen Ellen. This includes fish spawned in Sonoma Creek and its tributaries that have survived one to two seasons of juvenile rearing, despite multiple challenges, including predators, turbid winter storms, scarce summer water, hot summer temperatures, low shelter, and likely fierce competition for food. However, there is uncertainty as to how many of these juvenile fish reach maturity and survive to migrate to the Pacific Ocean. The SEC census estimated that very few fish were present that were greater than one-year-old (age 1).

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<sup>7</sup> Anadromous fishes are those that spend all or part of their adult life in saltwater and return to freshwater streams and rivers to spawn.

In 2006, SEC conducted an analysis of limiting factors for steelhead trout in Sonoma Creek Watershed (SEC, 2006). The fish need enough flow in the stream channel to create adequate depths, on the order of one foot or deeper, for passage. Adequate water depth is particularly important to their success in Sonoma Valley because long reaches of spawning tributaries dry out during the summer and stay dry until after the first fall rains. The best conditions for upstream migration include deep pools and backwater channels for opportunities to rest and feed on the journey upstream. Stranding by low flows has created the greatest source of mortality directly observed in the course of habitat surveys. Surveyors estimate that they have seen thousands of dead fry in dry pools by the end of the summer.

Sonoma's anadromous fish constitute a "cold water fishery" and studies show preferred rearing temperatures range from 50 to 55°F, although existing research is often focused on fish in more northern climates. Temperatures exceeding a threshold in the range of 64 to 68°F are considered stressful, while temperatures exceeding 75°F become lethal (Sullivan et al., 2000). Thus, shade provided by riparian trees and cold groundwater in-flows are important to maintain cool water temperature conditions for summer rearing.

Assuming that the existing groundwater and local surface water use offset by the project will be left in the ground or in the stream, the proposed project can increase stream flows in Sonoma Creek with additional groundwater baseflow, providing the increased flows and lower water temperatures needed to increase the survival of steelhead and salmon beyond their first year. A study of groundwater in the Sonoma Creek basin shows that the reach of stream from the project and downstream is a gaining stream, i.e., decreases in groundwater pumping should translate into increased flows of cooler water in Sonoma Creek (Farrar et al., 2006).

The groundwater offset from the proposed project is expected to total 2,315 AF per year. A United States Geological Survey (USGS) model of Sonoma Creek hydrology and water use shows that the percentage of offset annual groundwater pumping that will become stream flow will grow to 90% over three years, and remain at that level thereafter<sup>8</sup>. This means that approximately 2,150 AF of the offset groundwater pumping will become stream flow from the third year the project is fully implemented onward. The project also will offset 287 AF per year of local creek water use. Sonoma Creek is a gaining system from the project location and all the way downstream. Therefore it is assumed that 100% of the offset local creek water use will become stream flow. In total, the annual contribution to stream flow at the project site and downstream is estimated to reach a maximum of 2,437 AF per year.

The Agua Caliente gauge on Sonoma Creek is located near the furthest upstream extent of parcels associated with the proposed project. Records at this gauge from 1971 to 2006 show an average annual flow of 55,235 AF. Most of the agricultural groundwater pumping and local creek water use offset by the project is expected to be immediately downstream of this gauge. Only approximately 10 AF of the 2,150 AF per year contribution to stream

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<sup>8</sup> Results from the USGS model are unofficial, and are based on a modified version of the Sonoma Valley model used in the official USGS report (Farrar et al. 2006).

flow from offset groundwater pumping is expected to come from land upstream of the gauge, according to the Sonoma Creek model after parcels on which groundwater pumping will be offset by the proposed project are registered with it.

Contributions to Sonoma Creek flow will benefit fish from the Agua Caliente gauge downstream to the terminus of Sonoma Creek into San Pablo Bay. Flow into San Pablo Bay has not been measured historically. The Sonoma Creek model shows the future base flow in Sonoma Creek, at its terminus after accounting for likely changes in water demand not associated with the proposed project, should total 36,500 AF per year. Total flow in the creek is the sum of base flow plus runoff. The model does not include runoff, so the ratio of base flow to total stream flow of 0.49 over the period of record for the creek from 1971 to 2006 was used to calculate total stream flow to San Pablo Bay without the project resulting in an estimate of 74,490 AF per year of total stream flow (36,500 AF/0.49).

This means that the project is likely to contribute an additional flow of 4.4% of the current average annual flows (2,437/55,235 AF per year) at the Agua Caliente gauge, and 3.3% of the projected future average annual flows into San Pablo Bay (2,437/74,490 AF per year).

The literature on the value of increased habitat for salmon and steelhead shows the public's willingness to pay (WTP) to protect salmon and steelhead ranges from \$47 to \$325 per household (after adjustment to 2008 dollars using the Consumer Price Index) (Loomis and White, 1996; Hanemann et al., 1991). We selected the lower bound of this range for the analysis because some of the higher values from the literature included other values such as fishing and other recreation that are not applicable to the Sonoma Creek situation. Those studies usually target a doubling of stream flows and, although an increase in stream flow and cooler stream temperatures have been identified as being very important to increasing the health of the fishery, they are not the only factors that contribute to recovery of the fishery. Because the project is estimated to increase stream flows by 4.4%, we take that percentage of the WTP value – or \$2.08 per household per year as an appropriate value to use in this study (4.4% × \$47.19 per household).

The yearly total WTP value for increased stream flow can be calculated by multiplying the number of households assumed willing to pay the \$2.08 per household estimate. Studies have shown that members of the public hold value for actions to benefit endangered anadromous fish, even if they do not live in the immediate area of the project. Loomis (1996) shows that the public that does not live in the immediate vicinity of a project has an average WTP that declines to approximately 80% for those that reside on the impacted coast of the United States (e.g., residents on the east coast valuing a west coast project).<sup>9</sup> For residents within several hundred miles, the public holds 93% of the WTP value of residents in the immediate vicinity of the project (Loomis, 1999). For this analysis we apply the full WTP value to residents in the SCWA service area, which is expected to grow to

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<sup>9</sup> One fact supporting an assertion that there is WTP value outside of the SCWA service area is that Sonoma County receives over 7 million tourist visitors per year. These visitors enjoy the environmental amenities of the Sonoma Creek watershed, including locally made wine made with the valley's water resources.

193,700 by 2030. We apply 93% of the WTP value to the residents of Sonoma and Marin counties that are not in the SCWA service area, and to the residents of the other counties surrounding Sonoma County.<sup>10</sup> In total the WTP from Sonoma and surrounding county residents for increased stream flows for salmon and steelhead is up to \$2.5 million per year by 2030, or \$41.4 million in present value over the assumed project lifetime in 2008 dollars assuming a 2.5% discount rate (and would be higher if any values were included from other northern California or state-wide households).

## **H.8 QUALITATIVELY ASSESSED BENEFITS AND COSTS**

Qualitatively assessed financial benefits include avoided increased groundwater pumping costs. Qualitatively assessed social benefits and costs include increased in-stream and near-stream recreation, recycled water projects leveraging other community projects, aesthetic values including fountains with recycled water, increased water supply reliability for agricultural users, increased demonstration of “green ethic,” public perception of recycled water use by agricultural users, and public perception of recycled water use by municipal users. Qualitatively assessed environmental benefits and costs include enhanced downstream water bodies from increased Sonoma Creek flow, benefit to riparian and aquatic species from increased stream flow, reduced seawater intrusion, source water protection for water providers, and short-term construction impacts. These qualitatively assessed benefits and costs are discussed below.

### **H.8.1 Qualitatively Assessed Financial Benefits**

#### **H.8.1.1 Avoided Increased Groundwater Pumping Costs**

A study of Sonoma Creek hydrogeology found that the aquifer underlying the basin is being depleted in localized areas. If groundwater pumping continues, water levels in the aquifer will be lowered, thus increasing the energy needed to pump water from the aquifer. The rate of potential groundwater level declines and the exact locations of those declines without the proposed project is uncertain.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

### **H.8.2 Qualitatively Assessed Social Benefits and Costs**

#### **H.8.2.1 Increased In-stream and Near-stream Recreation**

The projected increase in Sonoma Creek flows as a result of the project will increase recreational opportunities in or near the creek. The San Francisco Bay Basin Water Quality Control Plan (Basin Plan) identifies water contact recreation and non-water contact recreation as existing beneficial uses on Sonoma Creek. Water contact uses include but

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<sup>10</sup> Counties surrounding Sonoma County include Lake, Marin, Mendicino, Napa, Contra Costa and Solano.

are not limited to swimming, wading, or fishing. Non-contact water uses include but are not limited to picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

No specific data were available on recreational use of Sonoma Creek. This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

#### **H.8.2.2 Water Projects Leveraging Other Community Projects**

SVCSO, SCWA, the City, and VOMWD strongly believe that bringing the proposed recycled water project to the Sonoma Valley will help in leveraging other water and wastewater projects for the region.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a significantly positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of ++).

#### **H.8.2.3 Increased Demonstration of “Green Ethic”**

In many parts of the United States, there is a growing trend among individuals, local governments, and businesses to promote environmental stewardship and sustainability. SVCSO, SCWA, the City, and VOMWD all are committed to being leaders in promoting sustainable water management. Using reclaimed water instead of potable water for irrigation is one way to help demonstrate environmental leadership. By posting the reclaimed water sign (“*We’re using water wisely by irrigating with reclaimed water*”), SVCSO, SCWA, the City, and VOMWD’s “green” image would be portrayed to all public park and golf course visitors and other individuals driving past these sites.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a significantly positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of ++).

#### **H.8.2.4 Aesthetic Values, Including Fountains with Recycled Water**

Use of recycled water delivered through the proposed project is expected to positively contribute to the aesthetic values in the project area. In particular, it is anticipated by SCWA, the City, and VOMWD that recycled water will be used in fountains, including the fountain in the main Sonoma square, to keep water flowing in an environmentally sustainable manner.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a significantly positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of ++).

### **H.8.2.5 Increased Water Use Reliability for Agricultural Users**

The availability of recycled water from the proposed project is expected to increase water use reliability for agricultural water users. Much of the agricultural water use is for vineyards, which without recycled water have relied on groundwater use and captured runoff for irrigation.

There are disadvantages to use existing water sources that make use of recycled water attractive. For groundwater use, agricultural users understand the need to reduce pumping of groundwater for long-term sustainable groundwater management. Recent efforts on a regional groundwater management plan have shown that reduced pumping is a high priority goal.

In addition to water quantity concerns with pumping groundwater, there also are water quality concerns. In particular, high levels of boron have been recorded in the project area. Plants require small amounts of boron for growth, but excess boron can be toxic. Boron in irrigation water at concentrations as low as 0.7 milligrams per liter (mg/L) can be toxic to sensitive plants such as grapes (Ayers and Westcot, 1985). High boron affects growers that do not have access to an alternate source for irrigation water blending. There are many factors that make it very difficult to estimate the impacts of boron on grape yields in Sonoma. Those include highly variable boron levels in groundwater from year to year, variation in rainfall from year to year, variation in soil type, and management practices where the grapes produced are “thinned” in order to meet production targets (i.e., not all the grapes grown are used). However, the presence of boron has been identified as a significant factor that could influence some vineyards to desire recycled water as an alternate irrigation water source (Smith, 2008).

Use of captured runoff water by vineyards is reported to consume capital, take land out of production, and reduce stream flows. Reliance on runoff in dry years has reduced crop yields and limited the amount of acreage planted. One grower that already receives recycled water from the other recycled water project in the area reports avoiding costs of constructing an additional new storage reservoir, saving several hundred thousand dollars. No data are currently available on whether vineyards that would receive recycled water from the proposed project would have similar avoided costs.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a significantly positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of ++).

### **H.8.2.6 Public Perception of Recycled Water Use by Agricultural Users**

Public perception of recycled water use by agricultural users is positive. Agricultural users, especially vineyards, are excited about the prospect of increased recycled water availability in the Sonoma Valley.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

#### **H.8.2.7 Public Perception of Recycled Water Use by Municipal Users**

Public perception of recycled water use by municipal users is negative, on average. A key concern is the potential risk of human exposure to pathogenic organisms. However, controlling the extent of human exposure to reclaimed water and ensuring that the wastewater treatment systems are effective and reliable can minimize health risks (Asano, 2001). Title 22, Article 4, of the California Code of Regulations sets regulations for water quality standards and treatment reliability criteria for water recycling in California. It sets bacteriological water quality standards based on the degree of expected public contact with recycled water. For use applications that have a high potential for direct contact with recycled water, Title 22 requires disinfected tertiary treatment. For applications with lower potential public contact, Title 22 requires secondary treatment. With a new filtration system installed, SCVSD's treatment facility treats to disinfected tertiary treatment level (SCWA, 2005).

This cost cannot be monetized with the information available. However, it was determined to potentially have a significant negative effect on the net benefits of the project if monetized (a qualitative benefit rating of --).

### **H.8.3 Qualitatively Assessed Environmental Benefits and Costs**

#### **H.8.3.1 Enhanced Downstream Water Bodies from Increased Stream Flow in Sonoma Creek**

It has been estimated that stream flow in Sonoma Creek in the vicinity of the proposed project will increase by approximately 30% as a result of groundwater pumping and local creek water use offset by using recycled water from the project. Assuming that groundwater and local stream water will be use offset by the project will be left in the ground and in the streams, then some, but not all, of the increased stream flow will remain in the stream as Sonoma Creek empties into San Pablo Bay.

In addition to increasing stream flows by offsetting existing use of groundwater or surface water connected to Sonoma Creek, the project also will reduce or eliminate discharges of treated wastewater from the SVCSD treatment plant, which will further enhance water quality in the bay.

This benefit cannot be monetized with the information available. However this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

### **H.8.3.2 Benefit to Riparian and Aquatic Species from Increased Stream Flow**

Increased stream flow in Sonoma Creek will not only benefit special status fish species, but also other riparian and aquatic flora and fauna. Increased Sonoma Creek flows will encourage riparian habitat development. In addition to salmon and steelhead, Sonoma Creek also supports California freshwater shrimp, Pacific lamprey, California roach, sculpin, Sacramento squawfish, and Sacramento sucker (SEC, 2000).

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

### **H.8.3.3 Reduced Seawater Intrusion**

Seawater intrusion into non-saline groundwater supplies can result from groundwater pumping in excess of natural recharge rates (groundwater mining). The Sonoma Valley Groundwater Management Plan states that existing data suggest that seawater intrusion has occurred in the southern end of the Sonoma Valley basin, and is a concern (SCWA, 2007). Exact locations or trends in seawater intrusion are difficult to assess. The plan identifies increased use of recycled water as one of the potential water management strategies that should be investigated to help mitigate groundwater quality impacts. This project can help reduce or prevent seawater intrusion in the project area by reducing groundwater mining if the existing groundwater use offset by delivery of recycled water delivery is left in the ground.

This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of +).

### **H.8.3.4 Source Water Protection for Water Providers**

Taking steps to protect groundwater by avoiding some groundwater pumping as a result of implementation of the proposed project will help protect this water source. Source water protection will mainly benefit water providers that include this source in their potable supply. This benefit cannot be monetized with the information available. However, this benefit was determined to potentially have a positive effect on net benefits of the project if it could be monetized (a qualitative benefit rating of +).

### **H.8.3.5 Short-term Construction Impacts**

Short-term construction impacts are expected with the proposed project. Any adverse effects have been determined to be temporary or mitigated.

This cost was not monetized, however, it was determined to potentially have a negative effect on the net benefits of the project if it could be monetized (a qualitative benefit rating of -).



## H.9 OMISSIONS, BIASES AND UNCERTAINTIES

Table H.2 shows some of the major omissions due to lack of data, biases due to incomplete information, and uncertainties in this analysis.

**Table H.2. Omissions, Biases and Uncertainties**

<b>Benefit or Cost Category</b>	<b>Likely Impact on Net Benefits</b>	<b>Comment</b>
Enhanced riparian habitat for salmon and steelhead	+	There are several factors affecting this benefit: 1) The value used per household for enhanced riparian habitat for salmon and steelhead was the low end of the range of values from the literature. The value was adjusted downward to \$2.08 per household based on the fact that most studies are based on a doubling of stream flow, and to account for the fact that there are other determinants of fishery health than the increase in stream flow and decrease in water temperature that will result from the project. Flow increases from the project were compared to average annual flows at the stream gauge at the northernmost extent of the project. The adjusted WTP value is lower (\$1.58 per household) if compared to flows into San Pablo Bay. 2) The literature shows that even if they do not reside in the immediate area, the members of the public have non-use value for stream flow increases that enhance steelhead and salmon populations. Those across the country were shown to have approximately 80% of the value of those in the immediate project area (Loomis, 1996). We only assigned WTP value to residents of Sonoma County and counties surrounding it. 3) There also is uncertainty about the relationship between WTP and increases in streamflow and fish populations. We assumed a linear relationship, but there is evidence that the relationship is non-linear and that half of the WTP value comes in the first 5% increase in fish populations, when considering a 50% increase in populations through the project (Layton et al., 1999). Using a non-linear WTP function would increase the value of streamflow benefits for this project.
Increased reliability for agricultural water users (water supply and water quality)	++	Values for increased reliability of agricultural water use could not be monetized with the information available. However, it is believed that agricultural users will gain significant water quantity and water quality benefits. Use of recycled water will remove uncertainty for agricultural users about rights to captured runoff, and uncertainty over future management of groundwater in the basin. It will allow avoidance of expense associated with capturing runoff. Use of recycled water also will allow agricultural users to replace groundwater that has high levels of boron in some locations. High boron levels in irrigation water are toxic to grapes and prevent grape growth in young vines.
Revenue for recycled water delivery to agricultural customers	+	Revenue from recycled water sales is counted as a benefit in BCA if the revenue is from new customers. Projected agricultural customers would be new customers for SCWA. The contracts between SCWA and agricultural customers state that the minimum price per AF to be charged for recycled water delivery is \$25. This minimum value is used in this analysis. However, the existing contracts state that this value could be higher.

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

## H.10 PERSPECTIVES ANALYSIS – ACCOUNTING OF PROJECT BENEFITS BY STAKEHOLDER

Tables H.3 through H.8 show the share of benefits from the proposed project assigned to each stakeholder. Many of the benefits identified in this study are held by one stakeholder. A few benefits, such as the salvage value of recycled water system assets to be installed, are held by multiple stakeholders. The salvage value benefit was divided between SCWA, the City, VOMWD, and SVCSD using the proportion of total benefits from the proposed recycled water project (see the next section, specifically Table H.9, for these proportions – the “Agencies-only” set of proportions was used). In order to overcome the circularity in this calculation (division of salvage value benefits is needed before obtaining the proportion of overall benefits from the project), three iterations of the calculation were made with a starting assumption that the salvage value was shared equally between the four entities, and then the resulting proportion of total benefits for the project became the rule for division of the salvage value benefit in the next iteration. After three iterations, the difference between starting proportions of total benefits and ending portions was very small – indicating the solution had converged.

This perspective on benefits from the project does not include losses of potable water sales or gains in recycled water sales to municipal irrigation users. Those gains and losses were not part of the benefit cost analysis from the social perspective, and are instead shown in the financial analysis.

**Table H.3 Benefits Assigned to Sonoma County Water Agency**

<b>Benefit Category</b>	<b>Value<sup>(1)</sup></b>
Avoided costs SCWA Russian River and groundwater	1.04
Increased water supply reliability SCWA	6.69
Revenues from recycled water sale to agricultural users	1.24
Salvage value for remaining reclaimed water assets	1.15
Avoided increased groundwater pumping costs	+
Source water protection for water providers	+
Water projects leveraging other community projects	++
Local control over water resources	++
Increased demonstration of “green ethic”	++
Aesthetic values, including fountains with recycled water	++
<b>Total Monetized Benefits</b>	<b>\$10.12</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

– = Likely to decrease net benefits

– – = Likely to decrease benefits significantly

**Table H.4 Benefits Assigned to City of Sonoma**

<b>Benefit Category</b>	<b>Value<sup>1</sup></b>
Avoided costs City groundwater	0.02
Increased water supply reliability for City of Sonoma	0.24
Salvage value for remaining reclaimed water assets	0.03
Avoided increased groundwater pumping costs	+
Source water protection for water providers	+
Water projects leveraging other community projects	++
Local control over water resources	++
Increased demonstration of "green ethic"	++
Aesthetic values, including fountains with recycled water	++
<b>Total Monetized Benefits</b>	<b>\$0.29</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

**Table H.5 Benefits Assigned to VOMWD**

<b>Benefit Category</b>	<b>Value<sup>1</sup></b>
Avoided costs VOMWD groundwater	0.01
Increased water supply reliability VOMWD	0.23
Salvage value for remaining reclaimed water assets	0.03
Avoided increased groundwater pumping costs	+
Source water protection for water providers	+
Water projects leveraging other community projects	++
Local control over water resources	++
Increased demonstration of "green ethic"	++
Aesthetic values, including fountains with recycled water	++
<b>Total Monetized Benefits</b>	<b>\$0.28</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

**Table H.6 Benefits Assigned to SVCSD**

<b>Benefit Category</b>	<b>Value<sup>1</sup></b>
Avoided wastewater storage costs	5.37
Avoided effluent conveyance costs	1.77
Salvage value for remaining reclaimed water assets	0.92
Water projects leveraging other community projects	++
Increased demonstration of "green ethic"	++
<b>Total Monetized Benefits</b>	<b>\$8.05</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

**Table H.7 Benefits Assigned to Agricultural Users**

<b>Benefit Category</b>	<b>Value<sup>1</sup></b>
Avoided fertilizer costs for agricultural users	1.64
Avoided pumping costs for agricultural users	0.05
Public perception of recycled water use by agricultural users	+
Increased reliability for agricultural users (supply and water quality)	++
<b>Total Monetized Benefits</b>	<b>\$1.69</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

**Table H.8 Benefits Assigned to Municipal Irrigation Users**

<b>Benefit Category</b>	<b>Value<sup>1</sup></b>
Avoided fertilizer costs for municipal irrigation users	0.35
Public perception of recycled water use by municipal users	--
<b>Total Monetized Benefits</b>	<b>\$0.35</b>

(1) Dollar values are in millions of 2008 dollars. Qualitative benefits use the following scale:

Magnitude of likely effect on net benefits:

++ = Likely to increase net benefits significantly

+ = Likely to increase net benefits relative to quantified estimates

U = Uncertain effect on net benefits relative to quantified estimates

- = Likely to decrease net benefits

-- = Likely to decrease benefits significantly

## H.11 RELATIVE PROPORTION OF BENEFITS

One of the values of estimating the full range of benefits incurred by a full range of stakeholders associated with a proposed project is that the ratio of the total benefits assigned to different stakeholders can suggest shares for cost-sharing agreements. Three views of proportion of benefits are presented in Table H.9. The first view, titled “Share of Total,” shows the relative proportion of total monetized project benefits for each stakeholder or type of stakeholder, including agricultural users, municipal irrigation users, and the general public. The second view, titled “Non-public Share,” excludes the monetized benefits from increased stream flows that were assigned to the general public, and then calculates the proportion of remaining total monetized project benefits assigned to each remaining stakeholder. The third view, titled “Agencies-only Share,” excludes the monetized benefits assigned to the general public, agricultural users, and municipal irrigation users, and calculates the proportion of remaining total monetized project benefits assigned to the four main agency stakeholders for the project.

The “Share of Total” view shows the proportion of total monetized project benefits assigned to each stakeholder. This view shows that 66.6% of the total monetized benefits generated by the project have been assigned to the general public. This share assigned to the general public comes from the enhanced riparian habitat for salmon and steelhead from increased stream flows in Sonoma Creek. This benefit is \$41.4 million of the \$62.1 million in total benefits generated by the project (assuming a 2.5% real discount rate). That a large share of benefits from this project can be assigned to the general public may be a good justification for seeking grant funding from the state of California and/or Federal sources.

The share of benefits assigned to agricultural users is an underestimate due to the fact that an important benefit for agricultural users – increased reliability of water use, could not be monetized with the information available. Having a monetized estimate would affect the proportions calculated in the “Share of Total” and “Non-public Share” views from Table H.9.

**Table H.9 Stakeholder Shares of Total Project Benefits, Assuming a 2.5% Real Discount Rate <sup>(1)</sup>**

<b>Stakeholder</b>	<b>Share of Total</b>	<b>Non-Public Share</b>	<b>Agencies-Only Share <sup>(9)</sup></b>
Sonoma County Water Agency <sup>(2)</sup>	16.2%	48.6%	54.0%
City of Sonoma <sup>(3)</sup>	0.5%	1.4%	1.5%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.3%	1.5%
Sonoma Valley County Sanitation District <sup>(5)</sup>	13.0%	38.8%	43.0%
Agricultural users <sup>(6)</sup>	2.7%	8.2%	–
Municipal irrigation users <sup>(7)</sup>	0.6%	1.7%	–
Public <sup>(8)</sup>	66.6%	–	–
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

- (1) Table shows percentage of total monetizable benefits by stakeholder.
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets.
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets.
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets.
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets.
- (6) Agricultural users share is under-estimated because increased agricultural water use reliability could not be monetized.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations.
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of the those agencies combined.

## **H.12 SENSITIVITY ANALYSIS**

### **H.12.1 Use of Alternate Discount Rate**

Rules for recent analyses for Integrated Regional Water Management implementation grants from the State of California have stipulated the use of a 6% real discount rate. This choice of discount rate means that costs and benefits incurred in the early project years are relatively much more highly valued than when the cost of capital for water and wastewater utilities and the prevailing rate of inflation are used to calculate a real discount rate. The effect of using a 6% real discount rate instead of 2.5% real discount rate on the analysis for the proposed project can be seen in Table H.10.

**Table H.10 BCA Overview – Using 6.0% Real Discount Rate**  
(values in millions of 2008 dollars)

<b>Benefit or Cost Category</b>	<b>Present Value<sup>(1)</sup></b>	<b>Stakeholder Accruing Cost or Benefit</b>
<b>Costs – Total</b>		
Capital and O&M costs	50.64	To be determined
<b>Monetized Benefits</b>		
<u>Financial Benefits</u>		
Avoided wastewater storage costs	4.37	SVCSD
Avoided effluent conveyance costs	1.32	SVCSD
Avoided costs SCWA Russian River and groundwater <sup>(2)</sup>	0.55	SCWA
Avoided costs VOMWD groundwater <sup>(3)</sup>	0.00	VOMWD
Avoided costs City of Sonoma groundwater <sup>(4)</sup>	0.01	City of Sonoma
Salvage value for remaining reclaimed water assets	0.58	SCWA, VOMWD, City, SVCSD
Revenue from recycled water sales to new agricultural users <sup>(6)</sup>	0.65	SCWA
<u>Social Benefits</u>		
Increased water supply reliability SCWA <sup>(7)</sup>	3.61	SCWA
Increased water supply reliability VOMWD <sup>(8)</sup>	0.11	VOMWD
Increased water supply reliability City of Sonoma <sup>(9)</sup>	0.13	City
Avoided fertilizer costs for municipal irrigation users	0.18	Municipal irrigation users
Avoided fertilizer costs for agricultural users	0.89	Agricultural users
Avoided pumping costs for agricultural users	0.02	Agricultural users
<u>Environmental Benefits</u>		
Enhanced riparian habitat for salmon and steelhead	21.71	Public
<b>Total Monetizable Benefits</b>		<b>\$34.2</b>
<b>Qualitative Benefits and Costs</b>		<b>Relative Magnitude*</b>
<u>Financial Benefits</u>		
Avoided increased groundwater pumping costs	+	SCWA, VOMWD, City, Agricultural users
Source water protection for water providers	+	SCWA, VOMWD, City
<u>Environmental Benefits</u>		
Enhanced downstream water bodies from increased stream flow in Sonoma Creek	+	Public
Benefit to riparian and aquatic species from increased stream flow	+	Public
Reduced seawater intrusion	+	Public
<u>Social Benefits</u>		
Increased in-stream and near-stream recreation	+	Public
Water projects leveraging other community projects	++	SCWA, VOMWD, City, SVCSD
Local control over water resources	++	SCWA, VOMWD, City
Increased demonstration of “green ethic”	++	SCWA, VOMWD, City, SVCSD
Aesthetic values, including fountains with recycled water	++	SCWA, VOMWD, City
Increased water use reliability for agricultural users (quantity and quality)	++	Agricultural users

**Table H.10 BCA Overview – Using 6.0% Real Discount Rate  
(values in millions of 2008 dollars)**

<b>Qualitative Benefits and Costs</b>	<b>Relative Magnitude*</b>
Short-term construction impacts	– Public
Public perception of recycled water use by agricultural users	+ Agricultural users
Public perception of recycled water use by municipal users	– – Municipal users
<b>Total Net Benefits (Monetizable Benefits – Costs)</b>	<b>\$(16.5)</b>

Monetized values in millions of dollars  
O&M – operations and maintenance  
SCWA – Sonoma County Water Agency  
SVCSD – Sonoma Valley County Sanitation District  
VOMWD – Valley of the Moon Water District  
City – City of Sonoma

- (1) Assume 6 percent real discount rate and 30-year project life for each alignment.
- (2) Based on imported Russian River water offset that reaches 133 AF per year by 2018 and imported groundwater of 7 AF per year by 2018.
- (3) Based on assumption that 5% of the water delivered by VOMWD is groundwater, and the remaining 95% is supplied wholesale by SCWA, 3 AF per year of groundwater deliveries is avoided.
- (4) Based on assumption that 5% of the water delivered the City is groundwater, and the remaining 95% is supplied wholesale by SCWA, 4.85 AF per year of groundwater deliveries is avoided.
- (5) Assuming \$25 per AF initial price for recycled water delivered to agricultural users multiplied by recycled water deliveries that reach 2,246 AF per year by 2020.
- (6) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 166,000 households by 2020 in SCWA service area that are not in the City or VOMWD service area, and 178,631 households by 2040.
- (7) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 9,707 households by 2020 in VOMWD service area, and 9,987 householders by 2040.
- (8) Value of increased reliability is assumed to be \$2.10 per household, and is multiplied by 4,996 households by 2020 in City’s service area, and 5,092 households by 2040.

\* Magnitude of likely effect on net benefits:

- ++ = Likely to increase net benefits significantly
- + = Likely to increase net benefits relative to quantified estimates
- U = Uncertain effect on net benefits relative to quantified estimates
- = Likely to decrease net benefits
- – = Likely to decrease benefits significantly

Table H.11 shows the impact on relative shares of total project benefits assigned to stakeholders under the alternate discount rate assumption of a 6% real rate. The relative shares for some of the stakeholders shift, as benefits assigned to the general public shrinks from 66.6% to 63.6% under the “Share of Total” view compared to the 2.5% discount rate assumption. Similarly, the share of benefits to SCWA shrinks from 16.3% under the 2.5% discount rate assumption to 14.9% under the 6% discount rate assumption. SVCSD’s share grows from 13.0% under the 2.5% discount rate to 17.6% under the 6% discount rate.



**Table H.11 Stakeholder Shares of Total Project Benefits, Assuming a 6.0% Real Discount Rate <sup>(1)</sup>**

Stakeholder	Share of Total	Non-public Share	Agencies-only Share <sup>(9)</sup>
Sonoma County Water Agency <sup>(2)</sup>	14.8%	40.8%	44.8%
City of Sonoma <sup>(3)</sup>	0.4%	1.2%	1.3%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.0%	1.1%
Sonoma Valley County Sanitation District <sup>(5)</sup>	17.6%	48.2%	52.8%
Agricultural users <sup>(6)</sup>	2.7%	7.4%	–
Municipal irrigation users <sup>(7)</sup>	0.5%	1.4%	–
Public <sup>(8)</sup>	63.6%	–	–
Total	100.0%	100.0%	100.0%

**Notes:**

- (1) Percentages shown are based on a 6.0 percent real discount rate. Table shows percentage of total monetizable benefits by stakeholder.
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets
- (6) Agricultural users share is under-estimated because increased agricultural water use reliability could not be monetized.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of the those agencies combined

### **H.12.2 Value of Enhanced Stream Flows for Steelhead and Chinook Salmon**

We chose a WTP value per household for enhanced stream flows for steelhead and salmon from the lower bound of the range of values in the literature, which is \$47.19 per household in 2008 dollars. This is likely the correct value because this estimate only includes public non-use value, and does not include factors such as fishing use. There is little fishing on Sonoma Creek.

We adjusted the WTP value downward using the percent increase in flows expected in Sonoma Creek as a result of the project because most WTP estimates in the literature are based on a doubling of stream flows or fish populations. Flows at the Agua Caliente gauge were used to compare the expected increase in stream flow to total stream flow, and we calculated a WTP of \$2.08 per household per year. We believe this is a reasonable estimate of value because most of the land where pumping would be offset by the proposed project is much closer to the gauge than to the terminus of Sonoma Creek into San Pablo Bay. However, to explore the sensitivity of the benefits from increased stream flow to this assumption, the lower bound of the WTP value can be viewed by comparing the expected

increase in stream flow to the flow at the furthest downstream point of Sonoma Creek as it empties into San Pablo Bay. The USGS model of Sonoma Creek shows that average projected stream flows into the bay are 74,490 AF per year (after making adjustment for the fact that modeled base flow is 49% of total flow, on average). The projected increase in stream flows from the project as a percentage of total flow into San Pablo Bay is 3.27% (for comparison, the increase was 4.41% when compared to average stream flow at the Agua Caliente gauge). The WTP value using the adjustment to the 3.27% increase in flows is \$1.54 per household per year ( $3.27\% \times \$47.19$  per household per year). Using that value in the BCA results in a present value of fish benefits of \$30.61 million in 2008 dollars using a 2.5% discount rate, and \$16.07 million using a 6% discount rate (shown in Table H.12). The net benefits from the project as a whole would then be \$(16.8) using a 2.5% discount rate, and \$(22.1) using a 6% discount rate (shown in Table H.13).

Adjusting the WTP value from the literature using the percent increase in stream flow, as we have done in this analysis, implies that the WTP value increases in a linear fashion with an increase in stream flow. Evidence from the literature on the shape of the WTP curve is sparse, and so we have used a linear assumption because it is relatively conservative. However, at least one study shows that the WTP function may not be linear in terms of the projected increase in fish population. Layton et al. (1999) shows that the relationship between WTP and increase in number of fish in the stream is non-linear, with as much as half of the WTP applying to the first 5% increase in fish in the stream, if the maximum WTP value cited is for a 50% increase in fish population. If considering a doubling in population, approximately one-quarter of the WTP value would come in the first 5% increase in fish in the stream. The precise effect on fish populations in Sonoma Creek with an increase in stream flows is very uncertain, and so using 25% of the \$47.19 per household estimate would likely not be justifiable. However, assuming that 10% of the value comes in the first 4.4% increase in stream flow might be reasonable (4.4% is the percent stream flow increase at the Agua Caliente gauge). In that case, the WTP value would be \$4.72 per household per year ( $10\% \times \$47.19$  per household per year). Using this assumption in the BCA results in a present value of fish benefits of \$93.82 million in 2008 dollars using a 2.5% discount rate, and \$49.26 million using a 6% discount rate (shown in Table H.12). The net benefits from the project as a whole would then be \$46.5 million using a 2.5% discount rate, and \$11.1 million using a 6% discount rate (shown in Table H.13).

**Table H.12 Sensitivity Analysis on Willingness to Pay Value for Stream Flow Increase Benefiting Anadromous Fish, by Real Discount Rate Assumption (values in millions of 2008 dollars)**

Sensitivity Analysis Scenario	Real Discount Rate <sup>(1)</sup>	
	2.5% Rate	6% Rate
4.41% Stream Flow Increase, Linear WTP Curve (measured at Agua Caliente Gauge) <sup>(2)</sup>	\$41.35	\$21.71
3.27% Stream Flow Increase, linear WTP Curve (measured at Sonoma Creek Terminus into San Pablo Bay) <sup>(3)</sup>	\$30.61	\$16.07
Non-linear WTP Curve, 10% of WTP in First 4.4% Stream Flow Increase <sup>(4)</sup>	\$93.82	\$49.26
Exclude Contra Costa and Solano Counties from accounting of those surrounding Sonoma County <sup>(5)</sup>	\$16.25	\$8.58

**Notes:**  
 (1) All values in millions of 2008 dollars.  
 (2) Using a linear WTP curve and flow measured at Agua Caliente Gauge.  
 (3) Using a linear WTP curve and flow measured at Sonoma Creek Terminus into San Pablo Bay.  
 (4) Using a non-linear WTP curve and 10 percent of WTP.  
 (5) Used in calculating number of households willing to pay for stream flow benefits to salmon and steelhead. Assumes 4.41 percent stream flow increase.

Adjusting the number of households used to calculate total willingness to pay for stream flow increases also has an effect. Households in all six counties surrounding Sonoma County were used for the calculation. Those counties include Lake, Marin, Mendicino, Napa, Contra Costa and Solano. If Contra Costa and Solano Counties are excluded because they are on the other side of the San Francisco Bay-Delta from Sonoma County, then total calculated willingness to pay for stream flow increases drops to \$16.5 million assuming a 2.5 percent discount rate, and \$8.58 million assuming a 6 percent discount rate. Total net benefits of the project would drop to \$(31.1) million assuming a 2.5 percent discount rate, and \$(29.6) million assuming a 6 percent discount rate. However, as discussed in the section describing stream flow benefits, use of all six counties surrounding Sonoma County is already a conservative assumption given that the literature shows that even if they do not reside in the immediate area, the members of the public have non-use value for stream flow increases that enhance steelhead and salmon populations. Those across the country were shown to have approximately 80% of the value of those in the immediate project area (Loomis, 1996). That residents outside the six-county area value environmental improvement in Sonoma Creek also is supported by the fact that approximately 7 million tourists per year visit Sonoma County for the amenities enabled by Sonoma Creek and Sonoma Valley's water resources generally. Households in all six counties in 2010 were projected to be approximately 835,000.

**Table H.13 Sensitivity Analysis on Total Project Net Benefits by Varying Willingness to Pay Value for Stream Flow Increase Benefiting Anadromous Fish, by Real Discount Rate Assumption (values in millions of 2008 dollars)**

Sensitivity Analysis Scenario	Real Discount Rate <sup>(1)</sup>	
	2.5% Rate	6% Rate
4.41% Stream Flow Increase, Linear WTP Curve (measured at Agua Caliente Gauge) <sup>(2)</sup>	\$(6.0)	\$(16.5)
3.27% Stream Flow Increase, linear WTP Curve (measured at Sonoma Creek Terminus into San Pablo Bay) <sup>(3)</sup>	\$(16.8)	\$(22.1)
Non-linear WTP Curve, 10% of WTP in First 4.4% Stream Flow Increase <sup>(4)</sup>	\$46.5	\$11.1
Exclude Contra Costa and Solano Counties from accounting of those surrounding Sonoma County <sup>(5)</sup>	\$(31.1)	\$(29.6)

**Notes:**

- (1) All values in millions of 2008 dollars.
- (2) Using a linear WTP curve and flow measured at Agua Caliente Gauge.
- (3) Using a linear WTP curve and flow measured at Sonoma Creek Terminus into San Pablo Bay.
- (4) Using a non-linear WTP curve and 10 percent of WTP.
- (5) Used in calculating number of households willing to pay for stream flow benefits to salmon and steelhead. Assumes 4.41 percent stream flow increase.

### H.12.3 Value of Agricultural Water Use Reliability

Data were not sufficiently available to estimate the value of increased water supply reliability from the use of recycled water by agricultural customers. That value comes from switching away from groundwater use, which has an uncertain future and has high boron levels in localized areas, and away from captured runoff, which can be capital intensive to manage, takes land out of production, reduces stream flows, and means less water availability in dry years. One vineyard estimated that recycled water from the other project in the area allowed it to avoid installing an additional storage tank for captured runoff, saving several hundred thousand dollars. Given the number of vineyards likely to take recycled water from the project, it seems likely that avoided costs such as these and theoretical WTP for removed uncertainty regarding existing water sources could add to significant reliability benefits for agricultural users. It does not seem improbable that the sum of reliability benefits could be enough to at least make total project benefits equal to project costs when a discount rate of 2.5% is used for the analysis. This would total approximately \$6.0 million in present value 2008 dollars over the 30-year life of the project.

Table H.14 shows the revised stakeholder shares of project benefits if \$6 million were used to represent the present value over the life of the project of increased agricultural water use reliability, assuming a 2.5% discount rate.

**Table H.14 Stakeholder Shares of Total Project Benefits, Assuming a 2.5% Real Discount Rate, With Agricultural Water Use Reliability Assumed to be \$6 Million in Present Value <sup>(1)</sup>**

<b>Stakeholder</b>	<b>Share of Total</b>	<b>Non-public Share</b>	<b>Agencies-only Share <sup>(9)</sup></b>
Sonoma County Water Agency <sup>(2)</sup>	14.8%	37.8%	54.0%
City of Sonoma <sup>(3)</sup>	0.4%	1.1%	1.5%
Valley of the Moon Water District <sup>(4)</sup>	0.4%	1.0%	1.5%
Sonoma Valley County Sanitation District <sup>(5)</sup>	11.8%	30.1%	43.0%
Agricultural users <sup>(6)</sup>	11.3%	28.7%	–
Municipal irrigation users <sup>(7)</sup>	0.6%	1.3%	–
Public <sup>(8)</sup>	60.7%	–	–
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Notes:

- (1) Percentages shown are assuming a 2.5 percent real discount rate.
- (2) SCWA share reflects avoided costs of SCWA Russian River and groundwater deliveries, increased water supply reliability for SCWA, revenues from recycled water sale to agricultural users, and salvage value from remaining reclaimed water assets
- (3) City of Sonoma share reflects avoided groundwater pumping costs, increased water supply reliability for the City, and share of salvage value for remaining recycled water assets
- (4) Valley of the Moon Water District reflects avoided groundwater pumping costs, increased water supply reliability for VOMWD, and a share of salvage value for reclaimed water assets
- (5) SVCSD share reflects avoided wastewater storage costs, avoided effluent conveyance costs, and salvage value of remaining reclaimed water assets
- (6) Agricultural users share is based on assumption that agricultural water use reliability is worth \$6 million in present value.
- (7) Municipal irrigation users share reflects avoided fertilizer costs for municipal irrigation users
- (8) Public share reflects the value of increased stream flow in Sonoma Creek and resulting healthier ecosystem benefiting salmon and steelhead populations
- (9) Agencies-Only Share reflects the monetary value of benefits to any one agency (SVCSD, SCWA, the City or VOMWD) compared to the monetary value of benefits to all of the those agencies combined

## H.13 CONCLUSIONS

The Sonoma Valley Recycled Water Project will provide recycled water to offset existing use of groundwater, local creek water, and Russian River water by agricultural and municipal irrigation users. The project also will allow SVCSD to meet its treated wastewater discharge requirements into the future.

The net benefits from the project are \$(6.0) million, when analyzed using a 2.5% discount rate. Using this discount rate, benefits for the project are approximately 91% of the costs. The largest benefit category is environmental benefits from increased Sonoma Creek flow (67% of total benefits). A majority of the offset by the project of groundwater pumping and local creek water usage without the project is expected to result in increased flows in Sonoma Creek, benefiting steelhead and Chinook salmon in the stream. The fact that such a large share of expected benefits from the project comes from environmental benefits to be enjoyed by the general public suggests that pursuing grant funding from State of California or Federal sources would be justified.

There are significant and diverse non-monetized benefits from the proposed project. Those non-monetized benefits rated to significantly increase net benefits of the project if they could be monetized include increased water use reliability for agricultural users, increased local control over water resources, the recycled water project leveraging other community projects, increased demonstration of a “green ethic” by the wastewater and water agencies involved, increased aesthetic values including fountains with recycled water. Additional benefits that were also rated as contributing to net benefits include reduced seawater intrusion, avoided increased groundwater pumping costs, increased source water protection for water providers, enhanced downstream water bodies from increased stream flow in Sonoma Creek, benefit to riparian and aquatic species from increased stream flow, and increased in-stream and near-stream recreation. Consideration together of all of the monetized and non-monetized benefits identified for the project clearly indicates that the total value of the project is significantly in excess of its costs.

Sensitivity analysis showed that the result for the economic assessment was sensitive to the choice of discount rate. When a 6% discount rate is used, which is consistent with recent practice for analyzing grant applications for Proposition 50 Integrated Regional Water Management implementation grants from the State of California, the net benefits for the project become more negative – benefits are less than costs for the project by \$16.5 million.

Sensitivity analysis also showed that the result for the economic assessment is very sensitive to assumptions made to calculate benefits to steelhead and salmon from increased flows in Sonoma Creek. Key assumptions involve which point on the creek against which to compare increases in stream flow due to the project (Agua Caliente gauge or terminus into San Pablo Bay), and the assumed relationship of WTP values to relative increases in stream flows or fish populations (linear or non-linear). The total value for fish habitat enhancement over the assumed 30-year project lifetime at a 2.5% discount rate ranged from \$16.25 million to \$93.82 million in present value 2008 dollars, with a best estimate of \$41.35 million. Fish values at a 6% discount rate ranged from \$8.58 million to \$49.26 million in present value 2008 dollars, with a best estimate of \$21.71 million.

One of the largest benefit categories that could not be monetized is increased agricultural water use reliability. Recycled water would be a consistent water source for irrigators that have been relying on groundwater or captured runoff. Data were not available to allow estimating the potential value to agricultural irrigators from the increase in source water reliability with recycled water, however, anecdotal evidence suggests that there may be significant avoided costs for vineyards in switching from using captured runoff or groundwater to recycled water. These avoided costs combined with WTP for a more stable source suggest that the increased water use reliability could be a significant benefit. It seems possible that the potential agricultural water use reliability benefit could be enough to make the net benefits for the project turn positive when analyzed using a 2.5% discount rate (i.e., the agricultural water use reliability benefit totals at least \$6 million in present value over the assumed 30-year life of the project).

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**APPENDIX I – GRANT AND LOAN APPLICATION PACKAGE**

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A contact and or website to access the applications for available grant and loan programs is provided below.

<b>Table I.1 Applicable Grants and Loans Sonoma Valley Recycled Water Project Financial/Economic Analysis Sonoma Valley County Sanitation District</b>		
<b>Organization</b>	<b>Program</b>	<b>Contact or Website</b>
<b>Local</b>		
Sonoma County Agricultural Preservation and Open Space District	<b>Matching Grant</b>	<a href="http://www.sonomaopenspace.org/">http://www.sonomaopenspace.org/</a> Navigate to the “District” tab, click on “Programs”, then “Matching Grants”
<b>State</b>		
State Water Resources and Control Board	<b>Water Recycling Funding Program (SRF, Prop 13, Prop 50)</b>	<a href="http://www.waterboards.ca.gov/water_issues/programs/grants_loans/">http://www.waterboards.ca.gov/water_issues/programs/grants_loans/</a> Scroll down to “Funding Programs” at the bottom of the page
California Resources Agency	<b>River Parkways Grants Program (Prop 84)</b>	<a href="http://www.resources.ca.gov/bonds/riverparkways.html">http://www.resources.ca.gov/bonds/riverparkways.html</a>
California Department of Parks and Recreation	<b>Habitat Conservation Fund Program</b>	<a href="http://www.parks.ca.gov/?page_id=21361">http://www.parks.ca.gov/?page_id=21361</a>
Department of Water Resources	<b>Water Use Efficiency Grant Program (Prop 50)</b>	<a href="http://www.owue.water.ca.gov/finance/index.cfm">http://www.owue.water.ca.gov/finance/index.cfm</a> New application cycles will be announced on this website
Department of Water Resources	<b>Agricultural Water Conservation Loan Program (Prop 13)</b>	<a href="http://www.owue.water.ca.gov/finance/index.cfm">http://www.owue.water.ca.gov/finance/index.cfm</a> See right sidebar, under “Prop 13”
Department of Water Resources	<b>New Local Water Supply Program (Prop 82)</b>	<a href="http://www.grantsloans.water.ca.gov/loans/construction.cfm">http://www.grantsloans.water.ca.gov/loans/construction.cfm</a>
California Statewide Communities Development Authority	<b>CaLease Program</b>	<a href="https://www.psacommunities.org/fs/apps/?app=4">https://www.psacommunities.org/fs/apps/?app=4</a>
<b>Federal</b>		
Bureau of Reclamation	<b>Water Reclamation and Reuse Program (Title XVI)</b>	<a href="http://www.usbr.gov/pmts/writing/guidelines/">http://www.usbr.gov/pmts/writing/guidelines/</a>
Bureau of Reclamation	<b>Water for America Initiative Challenge Grant</b>	<a href="http://www.usbr.gov/wfa/">http://www.usbr.gov/wfa/</a>

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Sonoma Valley County Sanitation District

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**APPENDIX J – SAMPLE INTER-GOVERNMENTAL  
AGREEMENTS**

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**AMENDED PRODUCER - WHOLESALER AGREEMENT  
FOR SUPPLY OF RECYCLED WATER**

**BETWEEN**

**SOUTH COUNTY REGIONAL WASTEWATER AUTHORITY**

**AND**

**SANTA CLARA VALLEY WATER DISTRICT**

This amended agreement ("Amended Agreement") is made and entered into on this \_\_\_\_ day of \_\_\_\_\_, 2006 (the "Effective Date") between the South County Regional Wastewater Authority (hereinafter referred to as "Producer") and the Santa Clara Valley Water District (hereinafter referred to as "Wholesaler"). Producer and Wholesaler may be referred to herein individually as a "Party" or collectively as the "Parties."

**RECITALS**

- A. Producer and Wholesaler entered into an agreement in May 1999 governing the development of recycled water facilities and other topics related to the distribution and sale of recycled water ("Original Agreement"); and
- B. Delivery conditions have changed, anticipated distribution facilities have been completed, and additional recycled water production and distribution facilities are to be constructed; and
- C. Producer and Wholesaler wish to amend the Original Agreement, modifying certain terms to reflect such changed circumstances; and
- D. Producer and Wholesaler are still actively involved in regional efforts to develop recycled water supplies; and
- E. Producer and Wholesaler recognize that sustainable water resource management requires integration of water supply and wastewater management; and
- F. Producer and Wholesaler developed a recycled water master plan for expanding recycled water use in southern Santa Clara County and intend that said master plan shall be consistent with overall water supply planning for the south Santa Clara County region; and



- G. Wholesaler's Board of Directors has adopted "Ends Policies" that state "the water supply is reliable to meet future demands" and "water recycling is expanded in Santa Clara County;" and
- H. Producer and Wholesaler are supporting the development and construction of a recycled water production, storage, and distribution system; and
- I. Recycled water production facilities are being expanded to treat additional secondary effluent at the Producer's regional wastewater treatment (the "WWTP") to increase reliable production capacity to 9 million gallons per day; and
- J. The expanded facilities planned for completion in the spring of 2006 will be able to produce up to six million gallons per day of recycled water; and
- K. The WWTP is permitted by the State of California Central Coast Regional Water Quality Control Board to distribute and use treated effluent as recycled water; and
- L. Producer will deliver to Wholesaler disinfected tertiary recycled water, in accordance with the provisions of Title 22 of the California Code of Regulations and applicable requirements of the California Department of Health Services; and
- M. Wholesaler wishes to acquire from Producer the quantity of recycled water which it can sell to Retailers (as defined below) and End Users (as defined below).

### **AMENDED AGREEMENT PROVISIONS**

For, and in consideration of, the foregoing recitals and of the mutual promises and covenants herein contained, the Parties hereto agree that the terms of this Amended Agreement shall replace those set forth in the Original Agreement, in its entirety, as follows:

#### **ARTICLE A. INTRODUCTORY PROVISIONS**

- 1) **Definitions** - When used in this Amended Agreement, the following terms shall have the meanings hereinafter set forth:
  - a) "South Pipeline" shall mean the pipeline from the WWTP facility to the Pajaro River, or any section thereof, constructed for the primary purpose of discharging recycled water to the Pajaro River, but which may also be used to deliver recycled water to the Wholesaler at a Point of Connection.
  - b) "End User" shall mean the ultimate user of recycled water.

- c) "Fiscal Year" shall mean each 12-month period during the term of this Amended Agreement commencing July 1st of one year and terminating June 30th of the next succeeding year, both dates inclusive.
  - d) "Point of Connection" shall mean a recycled water connection where Producer's recycled water is delivered to Wholesaler's distribution system and is metered by Producer for billing purposes only.
  - e) "Retailer", or "Other Retailer", shall mean any entity, public or private, contracting with Wholesaler for a supply of recycled water.
  - f) "On-Site Reservoir" shall mean the storage reservoir located at the WWTP including the intermediate pumping facilities used to pump recycled water from the Producer's production facilities to the on-site reservoir and back to the Producer's production facilities.
- 2) **Term and Renewal** - This Amended Agreement shall commence on the Effective Date hereof and be in force for twenty (20) years thereafter ("Term"), unless terminated earlier pursuant to the provisions in Article E, herein. If this Amended Agreement is not terminated prior to the end of the Term, this Amended Agreement shall be automatically renewed and extended one (1) year, year-by-year, unless otherwise terminated in accordance with the provisions of Article E herein.

## ARTICLE B. RECYCLED WATER SERVICE PROVISIONS

### 1) **Recycled Water Delivery Limitations**

- a) Wholesaler understands and acknowledges that Producer is charged with the responsibility to operate its sewerage systems in a manner which it determines to be most beneficial to the users thereof. The rights of Wholesaler to recycled water under this Amended Agreement pertain only to the recycled water which actually is produced at the WWTP. Except as otherwise specifically set forth herein, Producer shall have the right to operate the WWTP at such level as it determines, in its absolute discretion to be appropriate, or to discontinue the operation of the WWTP. Any right of Wholesaler to recycled water pursuant to

this Amended Agreement shall be subordinate to the rights and responsibilities of Producer as herein set forth.

- b) Nothing herein shall be construed to commit any portion of the recycled water from the WWTP beyond that which will be delivered to Wholesaler for the reasonable beneficial uses of its customers. Any non-emergency planned reduction that would reduce the availability of recycled water to Wholesaler shall require Producer to give to Wholesaler at least 60 days advance written notice thereof. Wholesaler shall have an opportunity to meet and confer with Producer on the issue.
- c) Any circumstances beyond Producer's control which cause a reduction in the recycled water available for distribution from the WWTP may, at the discretion of Producer, result in a temporary or permanent decrease in recycled water available to Wholesaler under this Amended Agreement. The reduced availability will continue in effect until such time as the WWTP has been restored to normal operations, provided that Producer must use its reasonable best efforts to restore the WWTP to normal operations as soon as possible.
- d) Wholesaler must use its reasonable best efforts to develop recycled water markets by encouraging use of recycled water through its programs, policies, and rate setting.
- e) The Parties acknowledge that, in unusual conditions an emergency discharge or discharge to the Pajaro River of recycled water by Producer may be necessary, and such discharge shall not be deemed a violation of this Amended Agreement.
- f) Wholesaler acknowledges that Producer, by the terms of the Master Water Reclamation Requirements Order No. 98-052, issued by the Central Coast Regional Water Quality Control Board, must review and permit the conditions of recycled water use by End Users.
- g) Producer agrees to deliver all recycled water it distributes for sale (or other valuable consideration) to Wholesaler.

- 2) **Metering and Measurement of Flows** - Producer will meter for billing purposes between Producer and Wholesaler all recycled water delivered to Wholesaler at each Point of Connection. Internal WWTP recycled water use does not constitute a billable consumption of recycled water, but Producer shall report such use monthly to Wholesaler.
- 3) **Recycled Water Quality and Pressure**
- a) All recycled water to be delivered by Producer to Wholesaler pursuant to the terms of this Amended Agreement will be of such quality that the same may be used for all purposes allowed for disinfected tertiary recycled water. The recycled water shall conform to the quality requirements set forth in the then current disinfected tertiary recycled water quality and monitoring regulations specified in Title 22, Division 4, Chapter 3: Wastewater Reclamation Criteria (California Code of Regulations), as further regulated by the California Regional Water Quality Control Board, the California Department of Health Services and all other federal, state and local agencies having jurisdiction over recycled water quality.
  - b) The recycled water to be delivered to Wholesaler at a Point of Connection shall range in pressure from 80 to 110 pounds per square inch (psig).
  - c) The Parties recognize that factors beyond the control of Producer could cause operational difficulties at the WWTP resulting in the temporary production of recycled water which does not meet the current requirements referenced in the previous Subparagraphs for the intended uses of the End Users. In such cases, Producer shall temporarily suspend deliveries of recycled water to Wholesaler from Producer's facilities. Producer shall use its best efforts to re-establish the production of recycled water of a suitable quality and pressure as soon as reasonably possible and shall re-establish Wholesaler's supply of such water accordingly.
  - d) Producer shall immediately notify Wholesaler if recycled water from the WWTP does not meet the currently applicable regulatory requirements or if deliveries of recycled water will be suspended.

Such notice shall be given verbally to Wholesaler by telephone at (408) 395-9309 with a follow-up written confirmation by personal delivery or FAX to (408) 395-3627 on the same day verbal notice is given, or on the next business day if verbal notice is not given during business hours.

- 4) **Recycled Water Limitation of Use** - Recycled water delivered by Producer pursuant to this Amended Agreement has limited uses, and Wholesaler agrees to provide the recycled water it receives hereunder only for the use of those End Users who have obtained the appropriate permit from Producer.
- 5) **Permits** - This Amended Agreement is conditioned on obtaining the necessary permits relating to the use of recycled water and the development and construction of a regional recycled water distribution system. Each of the Parties undertakes and agrees, severally and jointly as appropriate, to file any and all applications and undertake such proceedings as may be necessary to enable each Party to carry out the undertakings contemplated herein, and to pursue each application and proceedings in good faith and due diligence.

#### ARTICLE C. RECYCLED WATER FACILITIES

##### 1) **Facility Planning and Budgeting**

- a) The Parties shall work together to complete an Environmental Impact Report (EIR) for the South County Water Recycling Master Plan. The Wholesaler shall administer the consultant contract for the EIR. Producer shall reimburse Wholesaler for one-half the consultant costs for the programmatic-level EIR work. Wholesaler shall pay all consultant costs for project-level EIR work.
- b) The Parties shall work together to update, at 5-year intervals, the master plan (the "Master Plan") for the design and construction of expanded recycled water production and distribution facilities in southern Santa Clara County. The Master Plan includes a phased capital improvement program that includes the anticipated WWTP improvements and recycled water distribution system extensions. The Parties intend that the Master Plan shall promote the use of recycled water throughout southern Santa Clara County and shall

be consistent with overall water supply planning for the southern Santa Clara County. The cost of outside consultants to update the Master Plan shall be split evenly by the Parties, and both Parties shall participate in the consultant selection process.

- c) The Master Plan and its capital improvement program shall be reviewed annually. The Parties shall direct their staffs to meet annually on or before October 1 to complete a written review for consideration by the governing board of each Party in connection with the adoption of each Party's capital improvement program and/or capital improvement budget for the next fiscal year.
- d) The first Master Plan update shall include a reliability study to evaluate the need for backup sources of water for the distribution system.

2) **Construction of Facilities**

- a) Recycled water delivered to Wholesaler pursuant to this Amended Agreement shall be delivered to the Point(s) of Connection by Producer from the WWTP facility. Except as subject to any other agreements, **Producer has sole discretion to construct or expand at no cost to Wholesaler, its WWTP facility up to the Point(s) of Connection.**
- b) **Wholesaler has sole discretion to construct or expand, at no cost to Producer, its distribution facilities from the Point(s) of Connection up to the End User meter.** Wholesaler shall provide service taps and laterals from its distribution facilities to each End User meter, from which recycled water may be received by the Retailer for sale to End Users. Neither Wholesaler nor Producer is obliged to purchase or install End User meters.
- c) The Parties may agree to partner on construction projects. In such cases, the Parties will develop project-specific agreements that address, at a minimum, the project scope, Party responsibilities, cost-sharing, and billing.
  - i) The terms of such agreements shall be based on responsibilities listed in subparagraphs a) and b) above.

- ii) The following provisions should be included in the agreement if one Party (First Party) is completing design and/or construction on behalf of the other Party (Second Party):
- (1) The Second Party will have the right to approve engineering designs, participate in the development of bid documents, approve final bid documents before the First Party advertises for bids, and approve contract award.
  - (2) Prior to the issuance of the Notice to Proceed for any design, construction, or consulting contract, the Second Party will deposit with the First Party a sum equal to one hundred-percent (100%) of the contract amount plus a ten percent (10%) contingency. The First party shall use these monies only for the purpose of providing payment on the contract.
  - (3) The Second Party will have the right to participate in construction management, including, but not limited to, construction inspection.
  - (4) The First Party shall not approve construction change orders that materially change the agreed upon Project design or that increase cost (either alone or in conjunction with other change orders) without first receiving Second Party approval. Both Parties will approve settlement of any construction claims. The Second Party will deposit with the First Party, within 45 days, any additional monies necessary for approved change orders or construction claim settlements.
  - (5) Upon construction close-out, the First Party will refund to the Second Party all monies on deposit that are remaining 35 days after the filing of the Notice of Completion, final payment, and the settlement of all outstanding claims on the project.

Payment of any refund will be made within 45 days of the date of the Notice of Completion or within 45 days of the last settlement of outstanding claims, whichever is later. Included in this refund will be any interest earned by the deposited money that was not actually paid to contractor(s).

3) **Ownership, Operation and Maintenance of Facilities.**

- (a) Wholesaler shall own, operate, and maintain, at no cost to Producer, all of its distribution facilities from the Point(s) of Connection up to the End User meter(s). At Wholesaler's request or as necessary to comply with permit conditions or State or Federal law, Producer may assist with the operation and maintenance, and emergency repair of Wholesaler's distribution facilities. Wholesaler shall reimburse Producer for reasonable and necessary expenses incurred in carrying out regular operation and maintenance. Wholesaler shall also reimburse Producer for reasonable and necessary expenses incurred in carrying out non-emergency maintenance or repair that is not regularly performed, provided that Producer shall provide Wholesaler with reasonable advanced notice that the work will be performed. Producer will provide Wholesaler with an operations plan for the distribution facilities. If Producer assists with the maintenance or emergency repair of Wholesaler distribution facilities, Producer will provide Wholesaler with copies of all work orders, commissioned or performed by Producer that are associated with such maintenance or repair. Notwithstanding anything in this Paragraph 3(a), operation and maintenance of the On-Site Reservoir shall be governed by Paragraph 3(b) below.
- (b) The On-Site Reservoir constructed at the wastewater treatment plant as part of the 2005-2006 expansion of recycled water production facilities will be owned by Wholesaler but are an integral part of the WWTP in terms of operation and maintenance, and the On-Site Reservoir shall be operated and maintained by Producer at Wholesaler's expense. The Producer will provide Wholesaler with operations and maintenance plans for the On Site-



Reservoir on an annual basis. Producer shall also provide Wholesaler with copies of work orders and invoices for actual costs incurred by Producer in the operations and maintenance of the On Site Reservoir.

- (c) **Producer shall own, operate, and maintain, at no cost to the Wholesaler, all of its recycled water production facilities up to the Point(s) of Connection.** New, on-site pumping facilities constructed at the wastewater treatment plant as part of the 2005-2006 expansion of recycled water production facilities, and used to deliver recycled water to the Point(s) of Connection shall be owned, operated, and maintained by Producer.
  - (d) The South Pipeline shall be owned and operated, by Producer. Wholesaler may purchase capacity in the pipeline for the purposes of delivering recycled water to End Users. Connections to the pipeline for recycled water deliveries by the Wholesaler will be additional Points of Connection. Producer shall be responsible for regular maintenance of the South Pipeline. If emergency repairs or maintenance are required in the South Pipeline, Producer may request that Wholesaler perform such repairs or maintenance.
- 4) **Monitoring** - Producer's responsibility for management and monitoring the recycled water delivered hereunder shall cease upon delivery to Wholesaler at the Point(s) of Connection. Operation, management, maintenance, and monitoring of facilities under the control of the Wholesaler shall be the sole responsibility of Wholesaler. Notwithstanding the above, Producer agrees to accept responsibility for conformance to all monitoring, reporting, and any other requirements assigned to the "recycled water agency" in Title 22 of the California Code of Regulations, and all applicable regulations of the State of California Regional Water Quality Control Board and the California Department of Health Services.
- 5) **Reporting** - Wholesaler shall provide Producer the following reporting information:
- a) Quarterly (or annually, at Producer's option) billing and recycled water use records (with individual customer information) within 30

days of the close of each fiscal quarter (or each Fiscal Year, as the case may be) to the extent permissible by law.

- b) Adequate notification of Wholesaler inspections, start-ups and disconnections.

#### ARTICLE D. PAYMENT PROVISIONS

- 1) **Recycled Water Pricing Policy** - The Parties agree that the rates charged by Producer to Wholesaler and the rates charged by Wholesaler to Retailers and End Users should provide an economic incentive to customers to use recycled water.
- 2) **Producer Recycled Water Rate Review** - Producer shall charge for the delivery of recycled water in accordance with a rate schedule established by the Producer and approved by Producer's governing board. In order to ensure compatibility with the intent of this Amended Agreement, Wholesaler shall have the opportunity to meet and confer with Producer on the pricing policy and rates prior to Producer's setting of recycled water rates.
- 3) **Wholesaler Recycled Water Rate Review** - Wholesaler shall charge for the delivery of recycled water in accordance with a rate schedule established by the Wholesaler and approved by Wholesaler's governing board. Producer shall have the opportunity to meet and confer with Wholesaler on the pricing policy and rates prior to Wholesaler's setting recycled water rates, to ensure compatibility with the intent of the Amended Agreement.
- 4) **Billings** - Parties agree to make quarterly, or annual at Payee's discretion, payments for water delivered and/or costs incurred in accordance with this Amended Agreement. Such payments include:
  - a) Wholesaler payments to Producer for delivered recycled water
  - b) Wholesaler payments to Producer for operation, maintenance, and/or repair of distribution facilities.
  - c) Wholesaler payments to Producer for the operation and maintenance of the On-Site Reservoir.

- d) Producer payments to Wholesaler for programmatic-level EIR consultant work.
  - e) Producer payments to Wholesaler for emergency maintenance or repair to the South Pipeline.
- 5) **Time of Payment** - Each Party agrees to make payment on approved invoices within 45 days of billing by the other Party.

#### ARTICLE E. TERMINATION

- 1) **General** - This Amended Agreement may be terminated upon the occurrence of the events described in the following paragraphs.
- 2) **Nonrenewal** - Either Party may serve upon the other, no later than 180 days prior to end of the Term of this Agreement or, if this Amended Agreement has been extended, the next occurring anniversary of the Effective Date a notice of intent to terminate this Amended Agreement ("Notice of Termination"). Such termination shall become effective at the end of the Term of this Agreement or upon said next occurring anniversary of the Effective Date.
- 3) **Cause** - This Amended Agreement may be terminated by either Party at any time for good cause upon a 60-days written notice to the other Party.
- 4) **Failure to Approve Annual Funding** - The Parties acknowledge that each Party undergoes an annual budgeting process and that neither Party is obligated to expend additional funds or to construct additional facilities in any given year unless the applicable Party's governing board has budgeted money for that purpose. Notwithstanding the foregoing, failure to budget such funds may constitute good cause for termination of this Amended Agreement under Paragraph 3 above.
- 5) **Failure to Approve Master Plan or Capital Improvement Budget** - Failure to approve Master Plan updates and/or Capital Improvement Budget consistent with the Master Plan may constitute good cause for termination of this Amended Agreement under Paragraph 3 above.
- 6) **Decision by Wholesaler to Cease Distributing Recycled Water** - This Amended Agreement shall be terminated in the event that Wholesaler determines that it no longer intends to be a purveyor of recycled water within the service area of Producer. Such termination shall be effective at

the end of the Fiscal Year following the Fiscal Year in which notice of Wholesaler's desire to terminate this Amended Agreement pursuant to this Paragraph is furnished to Producer.

- 7) **Impasse over Rates** - If Wholesaler is unwilling to accept a new annual rate set for recycled water by Producer (at any time following mediation, if requested, as provided for herein), then this Amended Agreement may, at either party's option, be deemed terminated at the end of the Fiscal Year during which such impasse is reached. Also, Producer can declare an impasse if Wholesaler fails to set rates that give sufficient economic incentive to End Users to use recycled water over all other available water.
- 8) **Buyout Upon Termination** - If this Amended Agreement is terminated in accordance with the provisions of this Article, then Producer shall have the option to purchase Wholesaler's distribution facilities (including the On Site Reservoir) necessary to distribute recycled water in Producer's service area that have been constructed or are under construction from Wholesaler, including easements and any associated real estate required for their use or maintenance. Producer may exercise this option on the following terms:
  - a) Producer shall provide written notice of its intent to purchase said facilities no later than 150 days following the Notice of Termination.
  - b) The purchase price shall be equal to Wholesaler's book cost for the improvements to the facilities up to the date of the Notice of Termination. Upon request, Wholesaler shall furnish appropriate accounting data and information to Producer to establish the purchase price.
  - c) To the extent legally permissible, Wholesaler shall assign to Producer, and Producer shall assume from Wholesaler, all water delivery contracts with Retailers and End Users, along with any applicable consulting or construction contracts at the termination of this Amended Agreement. Producer shall not assume, however, any liabilities incurred because of Wholesaler breach of such contracts prior to termination of this Amended Agreement.

ARTICLE F. GENERAL PROVISIONS

- 1) **Amendments** - This Amended Agreement may be further amended at any time by mutual written agreement of the Parties.
- 2) **Notices** - All notices or other writings in this Amended Agreement to be given by either Party to the other, shall be deemed to have been given or when made in writing and deposited in the United States mail, registered, or certified, postage prepaid, and addressed as follows:

To Wholesaler

Stan Williams, Chief Executive Officer  
Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, CA 95118

To Producer

South County Regional Wastewater Authority  
Jay Baksa, Authority Administrator  
City of Gilroy  
7351 Rosanna Street  
Gilroy, CA 95020

The address of either Party may be changed upon written notice given by such Party as above provided. Notices shall also be deemed given when delivered by personal delivery, with a confirmation copy by first class mail.

- 3) **Separability** - If any one or more of the covenants or agreements set forth in this Amended Agreement on the part of Producer or Wholesaler, or either of them, to be performed should be contrary to any provision of law or contrary to the policy of law to such extent as to be unenforceable in any court of competent jurisdiction, then such covenant or covenants, agreement or agreements, shall be null and void and shall be deemed separable from the remaining covenants and agreements and shall not affect the validity of this Amended Agreement.
- 4) **Paragraph Headings** - Paragraph headings in this Amended Agreement are for convenience only and are not to be construed as a part of this Amended Agreement or in any way limiting or amplifying the provisions hereof.

- 5) **Other Agreements** - Producer agrees that each agreement for the supply of recycled water hereafter entered into by Producer with any other wholesaler or End User shall contain provisions substantially similar to those herein set forth and shall not contain any provisions of a material nature more favorable to the other wholesaler or End User than the provisions herein applicable to Wholesaler.
- 6) **Successors and Assigns** - Subject to the provisions of the succeeding Paragraph hereof, this Amended Agreement and all the terms, covenants, agreements, and conditions herein contained shall inure to the benefit of and be binding upon the successors and assigns of the Parties hereto.
- 7) **Assignment** - No assignment or transfer by Wholesaler of this Amended Agreement or any part hereof, or of any rights hereunder or interest herein of County appoint a mediator. The mediation meeting shall not exceed one day (eight hours), unless the Parties agree to extend said time. The costs of the mediator shall be borne by the Parties equally. Mediation under this section is a condition precedent to filing an action in any court.
- 8) **Governing Law** - This Amended Agreement shall be governed, construed and enforced in accordance with the laws of the Wholesaler, shall be valid unless approved by Producer, which approval shall not be unreasonably withheld.
- 9) **Remedies** - By reason of the specialized nature of the recycled water service to be rendered, and for the further reason that the extent of any damage caused to a Party by any breach of this Amended Agreement may be extremely difficult to determine, it is agreed by the Parties hereto that an action for damages is an inadequate remedy for any breach, and that specific performance, without precluding any other remedy available in equity or at law, will be necessary to furnish either Party hereto with an adequate remedy for the breach hereof.
- 10) **Indemnification** - Producer shall indemnify, defend and hold harmless, Wholesaler, its officers, agents and employees, from any and all cost liability, damages or health-related claims arising out of any act or omission to act, including any negligent act, by Producer, its officers, agents or employees arising out of the Producer's performance of its obligations under this Amended Agreement. Wholesaler shall indemnify,

defend and hold harmless Producer, its officers, agents and employees from any and all cost liability, damages or health-related claims arising out of any act or omission to act, including any negligent act, by Wholesaler, its officers, agents or employees arising out of the Wholesaler's performance of its obligations under this Amended Agreement.

- 11) **Dispute Resolution** - Any controversies between the Parties regarding the construction or application of this Amended Agreement, and claims arising out of this Amended Agreement or its breach, shall be submitted to mediation within 30 days of the written request of a Party after the service of that request on the other Party. The Parties may agree on one mediator. If they cannot agree on one mediator, the Party demanding mediation shall request that the Superior Court of Santa Clara State of California.

IN WITNESS WHEREOF, Producer and Wholesaler have caused this Amended Agreement to be executed by their respective duly authorized officers effective as of the day and year first herein above written.

ATTEST:

SOUTH COUNTY REGIONAL WASTEWATER  
AUTHORITY ("PRODUCER")

By: \_\_\_\_\_  
SCRWA Clerk

By: \_\_\_\_\_  
Jay Baksa, SCRWA Manager

APPROVED AS TO FORM:

\_\_\_\_\_  
Linda Callon, SCRWA Attorney

ATTEST:

SANTA CLARA VALLEY WATER DISTRICT  
("WHOLESALER")

\_\_\_\_\_  
SCVWD Clerk

By: \_\_\_\_\_  
SCVWD Chair/Board of Directors

APPROVED AS TO FORM:

\_\_\_\_\_  
Debra Cauble, District Counsel

**ESTABLISHING AGREEMENT FOR THE  
REGIONAL WASTEWATER TREATMENT PLANT  
AUTHORITY  
BY AND BETWEEN  
THE CITY OF BRIGHTON,  
THE METRO WASTEWATER RECLAMATION DISTRICT  
AND  
THE SOUTH ADAMS COUNTY WATER AND  
SANITATION DISTRICT**

**SEPTEMBER 1, 2005**





**ESTABLISHING AGREEMENT FOR THE  
REGIONAL WASTEWATER  
TREATMENT PLANT AUTHORITY  
BY AND BETWEEN  
THE CITY OF BRIGHTON  
THE METRO WASTEWATER RECLAMATION DISTRICT  
AND  
THE SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT**

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**ESTABLISHING AGREEMENT FOR THE  
REGIONAL WASTEWATER TREATMENT PLANT AUTHORITY**

THIS AGREEMENT ("Agreement") is made and entered into effective September 1, 2005 ("Effective Date") among and between the City of Brighton, a municipal corporation, acting by and through its Water, Sewer, Drainage Utilities Enterprise, the address of which is 22 South 4<sup>th</sup> Avenue, Brighton, CO 80601, (hereinafter referred to as "Brighton"), the Metro Wastewater Reclamation District, a metropolitan sewage disposal district and quasi municipal corporation, organized and existing pursuant to Part 5, Article 4 of Title 32 of the Colorado Revised Statutes, the address of which is 6450 York Street, Denver, Colorado 80229-7499, (hereinafter referred to as "Metro"), and the South Adams County Water and Sanitation District, a quasi municipal corporation, operating pursuant to certain provisions of Article 1 of Title 32 of the Colorado Revised Statutes, and entering into this Agreement by and through the South Adams County Water and Sanitation District Activity Enterprise, the address of which is 6595 East 70<sup>th</sup> Avenue, Commerce City, Colorado 80037-0597, (hereinafter referred to as "SACWSD") (hereinafter, together with any Additional Parties which may be made a Party at a later date, collectively the "Parties" or singularly as "Party").

**RECITALS:**

WHEREAS, Brighton, Metro and SACWSD are political subdivisions of the State of Colorado authorized to own and operate Wastewater and sanitation systems and facilities within the State of Colorado;

WHEREAS, Brighton provides Wastewater service to its customers in northern Adams County and southern Weld County;

WHEREAS, Metro provides Wastewater service to the City of Thornton in Adams County;

WHEREAS, SACWSD provides Wastewater service to its customers in Commerce City and Adams County;

WHEREAS, the Parties recognize the desirability of coordinating Wastewater treatment services in a geographical area of common interest located generally north of 96<sup>th</sup> Avenue to Brighton in the South Platte River drainage (hereinafter the "Common Service Area");

WHEREAS, in October 2000, the Parties entered into an Intergovernmental Agreement for the Sharing of Costs for the Study of a Regional Treatment Plant to study the feasibility of cooperating in the construction and operation of a Wastewater treatment plant and interceptor sewer lines to serve some or all of the Common Service Area;

WHEREAS, the Constitution and laws of the State of Colorado permit and encourage local governmental entities to cooperate with each other for the efficient performance of their responsibilities;

WHEREAS, the respective Governing Bodies of the Parties have each determined, and hereby declare, that it is, and will be, economically feasible and desirable, in the best interest of

each Party and their inhabitants, customers, and bondholders, and in the interest of the public health, safety and welfare to enter into this Agreement and establish an Authority to serve the Common Service Area with Authority Facilities as more fully described in this Agreement;

WHEREAS, the respective Governing Bodies of the Parties have each determined, and hereby declare, that the Authority and the Authority Facilities shall be a component of the sewer systems of the Parties, that this Agreement complies with all covenants with existing bondholders of the Parties, that the Authority Facilities will complement and not be in competition with the Parties' existing Wastewater treatment facilities, and that this Agreement enhances the ability of the Parties to efficiently and economically deliver Wastewater services to their inhabitants;

WHEREAS, it is the desire of the Parties to establish an Authority to construct, maintain, own, and operate a Wastewater treatment plant and interceptor sewer lines to serve the Parties and the Common Service Area in a manner which will promote the harmonious and efficient provision of Wastewater service to their citizens and customers and accomplish the objectives of each.

## **AGREEMENT**

NOW, THEREFORE, for and in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the parties agree as follows:

### **I. ESTABLISHMENT OF THE REGIONAL WASTEWATER TREATMENT PLANT AUTHORITY**

The Parties hereby establish and create the Regional Wastewater Treatment Plant Authority (Authority), a body corporate and politic and a separate government and legal entity of the State of Colorado, pursuant to Article XIV, Section 18(2)(a) and (b), Constitution of the State of Colorado, and Sections 31-35-402(h), 29-1-203, 29-1-204.2, and 29-20-105, Colorado Revised Statutes. The Authority shall be a political subdivision and a public corporation of the state, separate from the Parties and have the duties, privileges, immunities, rights, liabilities, and disabilities of a public body politic and corporate.

### **II. NAME**

The name of the entity established shall be the "Regional Wastewater Treatment Plant Authority" (the "Authority").

### **III. PURPOSE**

The purpose of the Authority is to plan, design, acquire, construct, finance, own, maintain, operate, and manage a Wastewater treatment plant and other Authority Facilities to treat and dispose of Wastewater from the Parties under the terms of this Agreement.

#### **IV. DEFINITIONS**

As used in this Agreement, the following words and phrases shall have the following meanings:

**A. "Additional Parties"** are municipalities, special districts, or other political subdivisions of the State of Colorado authorized to provide Wastewater facilities that may enter into this Agreement after its Effective Date in accordance with Sections VI.N. and XXVIII.J.

**B. "Agreement"** means this establishing agreement and any amendments thereto.

**C. "Allocated SFREs"** means the portion of SFRE Capacity allocated to each Party in exchange for 1) payment of its share of the Initial Capital Contribution, 2) undertaking the cost of expansion of the Authority Facilities resulting in an increase in SFRE Capacity after construction, or 3) otherwise undertaking the obligation for the cost of SFRE Capacity in the Authority Facilities including Debt Service under Section XI.A.4. when bonds are issued. A Party's Allocated SFREs may be either Active Allocated SFREs (being used) or Inactive Allocated SFREs (not currently in use).

**D. "Altered Sewer Connection"** means any direct or indirect sewer connection which serves a building or structure in which the number of single family units is increased or converted to other than single family units, or where there is an increase in the size of the water service tap and where the Wastewater from that source will be conveyed to the Authority Facilities.

**E. "Annual Budget"** is the Authority's annual budget of revenues, reserves, and expenditures necessary for current and future operations of the Authority and the Authority Facilities.

**F. "Annual Charges"** are the charges paid by the Parties to the Authority each year to fund the Annual Budget and consist of three charge components: (1) O&M Charges, (2) Debt Service Charges, and (3) Specified Fund Charges.

**G. "Authority Engineer"** is a consulting engineer who may be chosen by the Board to provide advice on treatment and transmission issues and to provide other engineering support for the Authority Facilities.

**H. "Authority Facilities"** are the assets of the Authority including the Initial Authority Facilities, Plant, Interceptor Lines and any real or personal property related thereto and necessary for carrying out the purpose of the Authority and this Agreement including, but not limited to, facilities, pipelines, works, improvements, connections, interceptors, lift stations, meter stations, meter and sampling stations, pump stations, other personal property, fixtures, land, buildings, shops, and testing equipment along with any expansions, modifications, replacements, and rehabilitations. The Authority Facilities, to the extent of a Party's Ownership Interest therein, shall constitute a component of the sewer system of such Party.

**I. "Authority Facilities Master Plan"** is the Master Plan for the Authority Facilities which describes the overall extent and concepts of the Authority Facilities. All

Authority Facilities, including expansions, shall be required to conform to the Authority Facilities Master Plan as amended. (See Exhibit F)

**J.** “Board of Directors” or “Board” is the nine-member board of directors created under Section VIII of this Agreement and comprised of three members appointed by each Party.

**K.** “Capital Construction and Improvements Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse bond proceeds and other monies for capital improvements including the acquisition of land and related interests in land, construction of the Initial Authority Facilities, expansion of the Authority Facilities, and both major and minor capital improvement projects with a projected life of greater than one year. (See Exhibit D).

**L.** “Capital Project” means a project for the Authority involving land acquisition or the initial construction, future expansion, or future improvement or upgrade of any Authority Facilities.

**M.** “Capital Rehabilitation” or “Capital Replacement” is a rehabilitation of Authority Facilities to return those Facilities to a condition where they can continue to function as intended or a like kind replacement of Authority Facilities with new equipment. Any such expenditures shall be paid from the Capital Rehabilitation and Replacement Reserve Fund when the Board determines the Facilities have a useful life greater than one year and the expense is not more properly an Operations and Maintenance Cost.

**N.** “Capital Rehabilitation and Replacement Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse monies held in reserve for Capital Rehabilitation and Capital Replacement. (See Exhibit D).

**O.** “Common Service Area” is the combined areas shown on Exhibits A, B, and C which are portions within each Party’s Wastewater service areas which will be served by the Authority. All Wastewater arising within the Common Service Area (Exhibits A, B, and C) shall be directed to the Authority Facilities for treatment and disposal unless excluded or exempted under Section XX or XXII.

**P.** “Connection Fee” means a charge that may be set by the Board, and paid by a Party, for each SFRE added by each New Sewer Connection or Altered Sewer Connection.

**Q.** [Reserved for future use].

**R.** “Connection Fees” means the total payments due from a Party under a Connection Fee program.

**S.** “Connection Point(s)” means the physical location authorized by the Authority where the Wastewater from a Party enters the Authority Facilities.

**T.** “CPI” is the Denver-Boulder-Greeley, Colorado metropolitan area Consumer Price Index for All Urban Consumers, or a successor index providing equivalent information if the CPI is no longer published.

U. **“Debt Service”** means the principal and interest payments and other charges required to be made on any bonds or other debt issued by the Authority.

V. **“Debt Service Charges”** are the sum of the budgeted debt service payments for the Initial Authority Facilities and any other capital construction and improvements, and any other adjustments needed to maintain the required balance in the Debt Service Fund. (See Exhibit D).

W. **“Debt Service Fund”** is the fund established and maintained under this Agreement to meet the Authority’s debt service obligations. (See Exhibit D).

X. **“Design Engineer(s)”** is a consulting engineer(s) chosen by the Board for the purpose of designing the Authority Facilities and Capital Projects.

Y. **“Effluent Distribution System”** means any facilities and outfall sewer lines used to pump or convey effluent after Wastewater treatment by the Authority Facilities to another location.

Z. **“Effluent Pump Back Project”** means the project required by the Settlement Agreement between Metro and the City of Thornton dated and executed by Metro simultaneously with the execution of this Agreement, including the construction of an effluent pump station and forcemain, to pump treated effluent from the Plant to a point above the Fulton Ditch Headgate on the South Platte River in accordance with Section XXIX.

AA. **“Enterprise(s)”** means a government-owned business operated by each Party to this Agreement that satisfies the requirements of Article X, Section XX of the Colorado Constitution.

BB. **“General Reserve Fund”** is the fund established and maintained under this Agreement to receive, hold, and disperse monies for unanticipated expenses and other uses as directed by the Board. (See Exhibit D).

CC. **“Governing Body(ies)”** are the City Council of Brighton, the Board of Directors of Metro, and the Board of Directors of SACWSD.

DD. **“Initial Authority Facilities”** are the Wastewater treatment and transmission facilities to be constructed by the Authority or transferred to the Authority by the Parties after execution of this Agreement. The Initial Authority Facilities generally consist of a Plant, an Interceptor Line(s), Meter and Sampling Stations, and related facilities.

EE. **“Initial Plant Capacity”** is 18 million gallons per day (mgd), which is the estimated treatment capacity of the Initial Authority Facilities, as of the Effective Date of this Agreement. Each Party’s estimated share is:

Brighton	4.2 mgd
Metro	7.5 mgd
SACWSD	6.3 mgd



The Initial Plant Capacity will be adjusted as identified in Section XI.

**FF. “Initial Capital Contribution”** is the portion of the Initial Project Costs to be contributed in cash by the Parties to initially capitalize the Authority under Section XI.A.1. The Initial Capital Contribution, along with the proceeds from the bonds to be issued by the Authority, will pay for the Initial Project Costs of the Initial Authority Facilities. Each Party’s share of the Initial Capital Contribution is set forth in Section XI.A.

**GG. “Initial Project Costs”** are the costs incurred by the Authority for design and construction of the Initial Authority Facilities and establishing the Authority for initial operations, including costs for engineering, construction, land, legal (not related to the negotiation and preparation of this Agreement), Authority Facilities Master Plan, 1041 Plan, site application, capitalized interest, needed reserves and any other costs necessary to design, construct, and begin operations of the Initial Authority Facilities.

**HH. “Initial Treatment Requirement”** is 8.4 mgd which is the amount of treatment projected by the Parties from annual average Wastewater flows to be needed in 2007, and is the amount of the capacity of the Initial Authority Facilities to be cash funded by the Initial Capital Contribution. Each Party’s estimated share is: Brighton 2.5 mgd; Metro 4.3 mgd; and SACWSD’s 1.6 mgd. The Initial Treatment Requirement will be adjusted as identified in Section XI.

**II. “Interceptor Line(s)”** means the interceptor sewer line(s) to be constructed, owned, and operated by the Authority that are intended to carry Wastewater flow from the sewer systems of all three Parties to the Plant.

**JJ. “Manager”** is the individual or entity appointed by the Board of Directors to oversee and manage the Authority and the Authority Facilities.

**KK. “Meter and Sampling Station”** means a station installed to monitor the volume or strength or both of Wastewater flow discharged by the Parties to the Authority Facilities. All Meter and Sampling Stations shall be owned and operated by the Authority after installation, as further provided herein.

**LL. “New Sewer Connection”** means a Sewer Connection which was not physically attached to the sewer system of a Party or Subscriber to a Party.

**MM. “Operations and Maintenance Charges” or “O&M Charges”** are the O&M Costs budgeted by the Board to operate the Authority and maintain the Authority’s Facilities, and any adjustments needed, to maintain the required balance in the Operations and Maintenance Revenue Fund. (See Exhibit E).

**NN. “Operations and Maintenance Costs” or “O&M Costs”** are the expenses incurred for day-to-day operations, maintenance, and repair of a type which recur annually or at shorter intervals for the Authority and the Authority Facilities. Operations and Maintenance Costs may include personnel costs, chemicals, utilities, parts, materials, professional fees, operations, management fees, repairs, minor replacements, and other similar annually recurring expenditures. (See Exhibit E).

**OO.** “Operations and Maintenance Revenue Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse all revenues of the Authority. Revenues are placed in this fund and then transferred to other funds as appropriate. This fund is also used to pay for all Operation and Maintenance Costs. (See Exhibit D).

**PP.** “Ownership Interest” is a Party’s undivided vested ownership interest in the Authority expressed as a percentage resulting from dividing a Party’s Allocated SFREs by the total of all Parties’ Allocated SFREs as set forth in Section XVI.

**QQ.** “Party” or “Parties” are Brighton, Metro and SACWSD as used singularly or all three collectively.

**RR.** “Phase I” is the period of time from the Effective Date of this Agreement until the notice to proceed is issued by the Authority for construction of the treatment processes of the Plant.

**SS.** “Phase II” is the period of time beginning the day the notice to proceed is issued by the Authority for construction of the treatment processes of the Plant until the day the Plant commences operations and begins to treat flows.

**TT.** “Phase III” is the period of time beginning the day the Plant commences operations and begins to treat flows and continuing through termination of this Agreement.

**UU.** “Plant” is the Wastewater treatment plant of the Authority as expanded from time to time.

**VV.** “Pretreatment Program” is a program for control of Wastewater discharges from non-domestic Users that complies with federal and state Pretreatment Regulations, this Agreement, and the Rules and Regulations of the Authority.

**WW.** “Rate Stabilization Fund” is the fund established and maintained under this Agreement to meet the Authority’s Debt Service coverage ratio requirement. (See Exhibit D).

**XX.** “Sewer Connection” means any physical direct or indirect connection of a building or structure to a Party’s sewer system for discharge of Wastewater to the Authority Facilities. A "stub-in" made for the convenience of construction shall not be considered a Sewer Connection until it is physically connected to a building or structure.

**YY.** “Single Family Residential Equivalent” or “SFRE” means the number of SFREs attributable to each New or Altered Sewer Connection which shall be determined as follows:

1. Single family residential property shall be assessed 1.0 SFRE per residential unit. For purposes of this Agreement, each single family residential property shall initially be assumed to discharge 225 gallons per day of wastewater on an annual average basis. This value may be changed by the Board from time to time in its Rules and Regulations. Each unit in a duplex or each unit in a multi-family residential property receiving separately metered water service shall be assessed 1.0 SFRE per unit.

2. Multifamily residential property with shared metered water service shall have the number of SFREs determined by the Board.

3. All property other than residential property shall have the number of SFREs determined based on the size of water service tap(s) serving the building or structure, except as provided in 4 below.

4. Property estimated or shown to discharge wastewater with a higher flow or concentration of BOD, SS, or TKN than that associated with typical commercial establishments, including retail facilities, offices, restaurants, and the like, shall have the number of SFREs determined by the Board which shall be based on the estimated use of the Authority Facilities.

**ZZ. “SFRE Capacity”** means the total treatment capacity of the Authority Facilities expressed in SFREs.

**AAA. “Skimming Plant”** means a small wastewater filtration system with disinfection placed in a vault connected to either a sewer or lift station which provides filtration of raw Wastewater so that the water can be used in the local vicinity of the skimming plant for water reuse. Such a plant is generally sized to meet a specific, local reuse application, does not discharge except for reuse waters under Colorado reuse regulations, returns the solids remaining from filtration to the sewer or lift station, and is generally operated only during the time periods when the water is reused.

**BBB. “Specified Fund Charges”** are the sum of budgeted expenditure requirements and any other adjustments needed to maintain appropriate balances in the General Reserve Fund, the Capital Rehabilitation and Replacement Fund, the Capital Construction and Improvement Fund and the Rate Stabilization Fund. (See Exhibit E).

**CCC. “Subscriber”** is a private party or government entity located outside of a Party’s Wastewater service area who receives Wastewater treatment and disposal services by agreement from a Party at the Authority Facilities.

**DDD. “Transitional Service Area”** is a sub-area(s) within a Party’s portion of the Common Service Area which will be served initially by treatment facilities owned by that Party, but will be served by the Authority Facilities in the future as required in Section XX.C. The Transitional Service Areas for each Party are shown on Exhibits A, B, and C.

**EEE. “Unallocated SFREs”** means the portion of SFRE Capacity which is not Allocated SFREs. SFRE Capacity created from expansion of the Initial Authority Facilities may be Allocated SFREs or Unallocated SFREs depending on whether or not a Party has undertaken the obligation for the cost of the SFRE Capacity or the Debt Service resulting from the expansion. The Parties do not anticipate that at any given time there will be many, if any, Unallocated SFREs because, in general, any additional SFRE Capacity created by expansion, capital construction or improvements, or issuance of bonds will have previously become Allocated SFREs because of a Party already having made cash payments for the additional SFRE Capacity, or otherwise having been assessed or undertaken the obligation for the cost including Debt Service under Section XI.A.4.

**FFF. "User(s)"** is any person or entity who contributes, causes, or permits the contribution of Wastewater into the Authority Facilities.

**GGG. "Wastewater"** means sewage, wastewater and any other water-carried wastes created in and carried, or to be carried, away from residences, hotels, apartments, schools, hospitals, industrial establishments, businesses, or any other public or private building, together with such surface or ground water and industrial wastes as are present. It includes liquid wastes, solid wastes, industrial wastes, and any other substance, whether it be liquid, solid, in suspension, or in solution, in a sewer system.

## **V. SERVICE RENDERED BY THE AUTHORITY AND THE PARTIES**

The Authority shall intercept, receive, transport, treat, and dispose of the Wastewater, and the byproducts of the Authority's Wastewater treatment process, delivered by the Parties under the terms of this Agreement to the Authority Facilities from the sewer systems of the Parties arising within the Common Service Area, and to the extent determined by a Party's Governing Body, also outside of the Common Service Area, to the extent of a Party's Allocated SFREs. All Wastewater delivered to the Authority shall comply with the requirements of the Authority's Rules and Regulations and the Pretreatment Program.

The Authority Facilities shall be operated and maintained in good working order and in accordance with applicable industry practices and standards. Each of the Parties shall have the right, at any time, to inspect the Authority Facilities for any purpose. With the exception of the design, implementation, administration and enforcement of the Pretreatment Program, and subject to the terms of this Agreement, each Party shall retain full power and authority to provide Wastewater sewer service to its customers, including the acquisition, improvement, operation, and maintenance of facilities for the collection of Wastewater arising within the Wastewater service area of the Party, and to the extent determined by its Governing Body, also without its Wastewater service area.

## **VI. POWERS OF THE AUTHORITY**

Subject to the purpose, conditions, requirements, and limitations of this Agreement, the general powers of the Authority to be exercised on behalf of the Authority by the Board of Directors, which are hereby delegated to the Authority by the Parties, shall be as follows:

**A.** To plan, design, acquire, construct, finance, lease, own, maintain, and operate a Wastewater treatment Plant and other Authority Facilities to treat and dispose of Wastewater from the Parties as provided for in this Agreement;

**B.** To make and enter into contracts;

**C.** To employ agents and employees and set their compensation;

**D.** To acquire, hold, lease (as lessor or lessee), sell, or otherwise dispose of any real or personal property;

**E.** To condemn property for use by the Authority;

- F.** To incur debts, liabilities, or obligations in the name of the Authority;
- G.** To provide insurance for the operation of the Authority;
- H.** To sue and be sued in its own name;
- I.** To have and use a corporate seal;
- J.** To fix, maintain, and revise fees, rates, and charges for functions, services, or facilities provided by the Authority;
- K.** To adopt, implement, and enforce rules, regulations and policies to exercise and carry out the powers and purpose of the Authority;
- L.** To exercise any other powers which are essential to the provision of functions, services, or facilities by the Authority under this Agreement;
- M.** To do and perform any acts and things authorized by this Agreement under, through, or by means of an agent or by contracts with any person, firm, or corporation;
- N.** To permit other municipalities, special districts, or political subdivisions of the State of Colorado that are authorized to provide Wastewater facilities to enter this Agreement with the unanimous approval of Parties hereto and the fulfilling of any and all conditions or requirements of this Agreement in accordance with Sections IV.A. and XXVIII.J.; except that rates need not be uniform between the Authority and such entities;
- O.** To own, operate and maintain real and personal property and facilities in common with others, and to conduct joint, partnership, cooperative or other operations with others, and to exercise all powers herein granted in joint, partnership or cooperative efforts and operations with others;
- P.** To provide for the rehabilitation of any surfaces adversely affected by the construction of the Authority Facilities through the rehabilitation of plant cover, soil stability, and other measures appropriate to the subsequent beneficial use of such lands;
- Q.** To justly indemnify property owners or others affected for any losses or damages incurred by, including reasonable attorney fees, or that may subsequently be caused by or which result from, actions of the Authority;
- R.** To defend and indemnify members of the Board of Directors and employees of the Authority as provided in Section XXIV.D.
- S.** To design, adopt, implement and administer a Pretreatment Program approved by the appropriate state and federal authorities to control discharges into the Authority Facilities and to perform all technical and administrative duties necessary to implement the program as the duly authorized agent of each Party, to enforce the Pretreatment Program, and to delegate and re-delegate these duties and responsibilities by contract to one or more of the Parties or a private person or company to the extent allowed by law;

T. To apply for, hold, and comply with all permits necessary or convenient for carrying out the purpose of the Authority;

U. To appropriate funds for expenditure for the purpose of the Authority;

V. To accept, treat, and discharge hauled-in wastewater, sewage, septic system wastes, and similar wastes from public or private parties under such terms and conditions as may be determined by the Board, provided such wastes are compatible with and treatable by the Authority Facilities;

W. To receive contributions, gifts, bequests or other grants of cash, equipment, or services from the Parties or other entities, individuals, the State or political subdivisions.

X. To issue revenue bonds, notes, or other obligations payable solely from the revenues derived from the function, service, system, or facility or the combined functions, services, systems, or facilities of the Authority or from any other available funds of the Authority. The terms, conditions, and details of said bonds, notes, and other obligations, the procedures related thereto, and the refunding thereof shall be set forth in the resolution authorizing said bonds, notes, or other obligations and, as nearly as may be practicable, shall be substantially the same as those provided in Part 4 of Article 35 of Title 31, C.R.S., relating to water and sewer revenue bonds as supplemented by the Supplemental Public Securities Act, Part 2 of Article 57 of Title 11, C.R.S.; (except that the purposes for which the same may be issued shall not be so limited and except that interest on said bonds, notes, and other obligations need not be payable semi-annually or annually). Bonds, notes, or other obligations issued under this subsection shall not constitute an indebtedness of the Authority or the Parties within the meaning of any constitutional or statutory limitations or other provision. Each bond, note, or other obligation issued under this subsection shall recite in substance that said bond, note, or other obligation, including the interest thereon, is payable solely from the revenues and other available funds of the Authority pledged for the payment thereof and that said bond, note, or other obligation does not constitute a debt of the Authority or the Parties within the meaning of any constitutional or statutory limitation or provision. Notwithstanding anything in this section to the contrary, such bonds, notes, and other obligations may be issued to mature at such times not beyond forty years from their respective issue dates, shall bear interest at such rates, and shall be sold at, above, or below the principal amount thereof, all as shall be determined by the Board of Directors. The bonds, notes, and other obligations of the Authority and the income therefrom shall be exempt from taxation by the State of Colorado, except inheritance, estate, and transfer taxes.

## **VII. LIMITATIONS ON LIABILITY**

Any debts, liabilities, bonds, notes, and other obligations of the Authority shall not be the debts, liabilities, bonds, notes or obligations of the Parties.

The Authority shall be protected by sovereign immunity and the Colorado Governmental Immunity Act, as amended, and nothing herein shall be deemed to modify or waive any such protections afforded the Authority or any of the Parties.

## **VIII. BOARD OF DIRECTORS**

A. **Creation.** The Board of Directors is hereby created and established.

B. **Board Membership.** The Board shall consist of nine members with three members appointed by each Party. The members shall serve at the pleasure of the Party from which appointed and may be replaced at any time by the appointing Party. The term of each member shall be three calendar years; except that the terms of the members of the first Board of Directors shall be adjusted so that the terms of one of the members appointed by each Party shall expire one year thereafter and the terms of another member shall expire two years thereafter, and except that the terms of the first Board shall be extended to cover the period between the Effective Date of this Agreement and the beginning of the first calendar year following their appointment. The members of the first Board shall be appointed by the Parties within 30 days after the Effective Date of this Agreement. The appointing Party shall determine who of its three members shall serve for one, two, and three year terms for the first Board of Directors. The Parties agree that during Phases I and II, the Brighton Director of Public Works, the Metro District Manager, and the SACWSD General Manager, or their respective designees, shall serve on the Board (hereinafter "Designated Board Members"). Except for the members of the first Board, the terms of office shall begin January 1 and end December 31. Board members may be reappointed for succeeding terms, without limitation, and shall continue to serve until their replacement is appointed.

C. **Alternate Members.** Each Party shall appoint one alternate member who shall act for and in the stead of any absent member of the appointing Party at any meeting or at an adjourned meeting where the member is absent. (For purposes of this paragraph, "meeting" shall include Board and Subcommittee meetings under VIII.D.9.). No alternate member may act for more than one absent member at any one meeting or adjourned meeting. At any meeting or adjourned meeting where an alternate member is acting, the alternate shall have all rights, duties, privileges and responsibilities of the absent member for that meeting only or any adjournment of that meeting. Once a meeting or adjourned meeting begins, the alternate member is required to act for the member for the entire meeting and the member may not act at the meeting; provided however, a member may act at an adjourned meeting held on a later date. An alternate member may act for an absent member at an adjourned meeting held on a later date even though the member may have been present and acting at the meeting which was adjourned to the later date. An alternate member shall not be a Board member for any purpose or at any time other than for the specific times and circumstances described in this Section VIII.C. Alternate members shall be appointed for one calendar year terms, shall continue to serve until their replacement is appointed, and may be reappointed for succeeding terms without limitation.

D. **Powers, Duties and Responsibilities of the Board.** All legislative powers, duties, and responsibilities of the Authority shall be vested in, and shall be exercised by, the Board, subject to the terms of this Agreement. The Board shall act by passing resolutions appropriate under the circumstances. In addition to any other responsibilities required by this Agreement, the Board shall be responsible for:

1. **Appointing a Manager** to manage the construction, operation and maintenance of the Authority Facilities under such terms and conditions, including compensation, as the Board, from time to time, may establish by resolution in accordance with

the terms of this Agreement. The Manager may be one of the Parties, an individual, or a private firm or company. The Manager may be removed by the Board in accordance with the voting procedures set forth in Section VIII.F. The Manager shall have the duties and responsibilities set forth in Section IX of this Agreement.

2. **Appointing General Legal Counsel, an Independent Auditor, and an Authority Engineer** to provide professional services to the Board and the Authority who shall report to and be responsible to the Board.

3. **Reviewing and Acting on the Annual Budget** proposed by the Manager in accordance with Section XII.

4. **Reviewing and Acting on Annual Charges and any Connection Fee** in accordance with Sections XIII and XIV and adopting a methodology for allocation of Annual Charges.

5. **Acting on Selection of Design Engineers and Other Outside Consultants.** Selection of consultants shall be in accordance with standard selection and evaluation procedures adopted by the Board. The Board may delegate selection of consultants to the Manager within parameters established by the Board consistent with this Agreement.

6. **Reviewing and Acting on Selection of Contractors, Suppliers, and Vendors.** Selection of contractors, suppliers, and vendors shall be in accordance with standard bidding and evaluation procedures adopted by the Board and which may include procedures for design/build contracting and awarding construction contracts to the lowest responsive and responsible bidder. The Board may delegate selection of contractors, suppliers, and vendors to the Manager within parameters established by the Board consistent with this Agreement. With approval of the Board, one or more of the Parties may construct some or all of the Authority Facilities.

7. **Reviewing and Adopting the Authority Facilities Master Plan,** and any amendments thereto. The Board shall select and retain a consultant to prepare the Authority Facilities Master Plan, and any amendments thereto, under the direction of the Board and coordinated by the Manager.

8. **Adopting Rules and Regulations** for governance of the Authority, for use of the Authority Facilities, and for implementation of a Pretreatment Program complying with all applicable federal and state laws and regulations and in accordance with Sections IV.VV and VI.S.

9. **Establishing Subcommittee(s) of the Board** from its membership or its alternates to investigate or advise the Board on any issues or activities being conducted under this Agreement.

10. **Adopting Bylaws** and rules for procedures for meetings of the Board consistent with this Agreement.

11. **Adopting Financial Policies and Procedures** necessary to ensure the budgeting, planning, and financial management of the Authority are carried out consistent with



this Agreement, good management practices, and in the best interests of the Parties and their Users.

12. **Adopting Other Policies and Procedures** necessary or desirable for the efficient operation of the Authority Facilities consistent with this Agreement.

13. **Electing Officers** from its membership to serve as chairman, pro tem chairman, secretary, and treasurer of the Board. No member shall hold more than one office simultaneously. The officers shall serve one year terms unless removed earlier in the same manner as elected.

14. **Providing Direction to the Manager** necessary or desirable for the efficient management and operation of the Authority Facilities.

15. **Appropriating funds and approving expenditures** for the Annual Budget and projects, contracts and expenses of the Authority. The authority to appropriate funds is non-delegable. At the Board's discretion, expenditure and contracting authority may be delegated to the Manager within limits set by the Board from funds previously appropriated by the Board.

E. **Compensation.** During Phases I and II, Board members and alternates shall be paid one hundred dollars for each regular, special or Subcommittee meeting of the Board attended, provided no member or alternate shall receive more than two thousand dollars in any one calendar year. The Board is authorized to review and, in its discretion, increase these amounts on an annual basis after the beginning of Phase III. No member or alternate shall receive any compensation as an agent, employee, engineer, or attorney of the Authority. Board members and alternates may be reimbursed by the Authority for Authority expenses under guidelines established by the Board.

F. **Meetings.**

1. **Regular Meetings.** Regular meetings of the Board shall occur at least monthly, at specified times and places to be determined by the Board with such notice as required under the Colorado Open Meetings Law, as amended.

2. **Special Meetings.** Any three members of the Board may call a special meeting of the Board at any time. The members calling the meeting shall give notice of the date, time, place, and purpose of the meeting by mailing written notice thereof to each Board member, postage prepaid, at least seven (7) days prior to the meeting and by posting notice as provided by the Colorado Open Meetings Law, as amended. Upon request of the members calling the meeting, the Manager shall give the required notice. The time and place shall be reasonably convenient to all members. Attendance of a member at a special meeting shall constitute a waiver by such member of notice of such meeting, except when such member attends such meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully convened.

3. **Open Meetings.** All meetings of the Board shall comply with the Colorado Open Meetings Law (Sections 24-6-401, *et seq.* of the Colorado Revised Statutes, as amended).

4. **Assistant Secretary.** The Board may appoint an Assistant Secretary to prepare minutes and maintain the official records of the Board. The Assistant Secretary need not be a member of the Board but may be the Manager, an employee of the Authority, or an employee of one of the Parties.

5. **Quorum.** No business of the Board shall be transacted except at a regular or special meeting at which a quorum consisting of five members (or duly authorized alternates), with at least one member from each Party, are present in person (or by speaker telephone or video conferencing if permitted by the Bylaws and if all members can hear all other members). In the absence of a quorum, a smaller number of members than a quorum may adjourn from time to time to a date, time and place certain no more than 15 days from the original meeting. Notice of the date, time, and place of the adjourned meeting shall be provided to all members by the Chairman or the Manager. In the event a quorum is also not present at the first adjourned meeting adjourned for the purpose of establishing a quorum, the first such adjourned meeting may be adjourned again and noticed as set forth above. If at the second adjourned meeting, a quorum is not present, the members present shall be deemed to constitute a quorum for the second adjourned meeting only, regardless of whether or not a member from each party is present, and the business of the Board may be transacted as if a regular quorum were present.

6. **Proxies.** No member or alternate may vote by proxy nor shall proxies be allowed to establish a quorum.

7. **Voting.** Each member shall have one vote on all matters to come before the Board. Each and every action of the Board, necessary or proper for the government and management of the affairs of the Authority or the Board, for the execution of the powers vested in the Board and for carrying into effect the provisions of this Agreement, as amended, shall be taken by passage of resolutions. Any action of the Board shall require the affirmative vote of the majority of the members present and voting.

8. **Flow Weighted Voting after Five Years.** At the first meeting during the first calendar year after five completed years of Phase III, the regular voting requirements in Section VIII.F.7 shall be superceded by the following flow-weighted voting if requested in accordance with this Section. Any member (or duly seated alternate) may make a request for a Flow-Weighted Vote to occur before action on the matter by the Board shall be deemed to have been taken. A request for a Flow-Weighted Vote shall be made immediately following the regular vote or it shall be deemed to have been waived. The weight of each member's vote under a Flow-Weighted Vote shall be determined as follows:

Each member's vote shall be multiplied by three and then by the percent of the

volume of Wastewater treated at the Plant of the member's appointing Party as it relates to the total volume of Wastewater treated at the Plant for all Parties for the immediately preceding five-calendar-years, as described below. For example, if for the five year period the total volume of Wastewater treated by the Plant for all Parties was 20 million gallons per day or 36,500,000,000 for the five year period, and a Party's total volume was 8 million gallons per day or 14,600,000,000 for the same five year period, the Flow-Weighted Vote for each member representing that Party on the matter before the Board would be 1.2 as determined by the following calculation:

$$[1 \times 3(14,600,000,000/36,500,000,000) = 1.2].$$

The initial voting weight calculation made herein shall apply for the entire second five-year period of operation of the Authority Facilities and shall be recalculated every five years thereafter and used for the following five year period and shall be based on the immediately preceding five years of Wastewater treated at the Plant.

If any Party's Wastewater volume exceeds 49%, it shall be deemed capped at 49% for purposes of Flow-Weighted Voting, and the percentages of the other Parties adjusted proportionately so that the total voting percentage equals 100 percent.

The sum of all Flow-Weighted Votes cast shall be nine. When any Party has fewer than three members (or alternates) present at a meeting, the calculation of the Flow-Weighted Vote for each member shall not change and it shall be calculated as if all nine members were present. The actual vote taken in such a situation will result in total votes cast totaling less than nine.

Any action of the Board under a Flow-Weighted Vote shall require the affirmative vote of the majority of the total Flow-Weighted Votes present and voting.

## **IX. MANAGER**

**A. Duties and Responsibilities of the Manager.** The Manager shall have the following duties and responsibilities, subject to the reasonable control and direction of the Board and the terms of this Agreement:

1. Design, construction, management, maintenance and operation of the Authority and Authority Facilities in accordance with sound engineering, construction, management and operating principles and in compliance with all required permits and licenses and applicable federal, state and local laws and regulations. The Manager may cause to be made those repairs deemed necessary, the cause of which materially threatens the operations of the Authority Facilities. In the event an emergency repair arises, the Manager shall have the authority to hire a contractor(s) to make emergency repairs or acquire needed parts, materials, and equipment to restore the Authority Facilities to operational condition. The Manager shall advise the Board and the Parties of the emergency repairs within five business days of the emergency;

2. Hiring, discharge, general superintendence, and direction of all other employees of the Authority to the end that qualified individuals are employed when and as needed and that their respective duties are properly performed;

3. Hiring and discharge of one or more licensed plant operations superintendents to operate the Authority Facilities if deemed necessary or desirable by the Manager. The Manager, an individual, a private firm, a Party, or an employee of a Party may be plant operations superintendent as determined by the Manager except that Board approval is required for hiring a Party, or an employee of a Party, for this position;

4. Preparation of the Annual Budget;

5. Reporting to the Board on the operations, progress of projects, financial status, and other matters pertaining to the Authority at least monthly, or at other intervals established by the Board;

6. Reporting to the Board on the Active and Inactive Allocated SFREs on a quarterly basis. The Manager shall also report to the Board when various Authority Facilities are approaching 80% and 95% of design capacity;

7. Approving expenditures and executing contracts within spending authority limits set by the Board from funds appropriated by the Board;

8. Approving expenditures and executing contracts for specific projects authorized by the Board from funds appropriated by the Board;

9. Endorsing checks and making deposits of funds of the Authority in Board approved depositories and operating the check signing machine. The Manager may delegate these functions to an employee and may outsource check signing functions to an outside service;

10. Acting as spokesperson for the Authority;

11. Preparing proposals for review, comment, and consideration by the Board;

12. Preparing and updating, as necessary, the short and long term strategic and other plans for consideration by the Board in accordance with Exhibit F;

13. Preparing and updating a Pretreatment Program for consideration and adoption by the Board and for submission to appropriate state and federal authorities for approval; and implementing, administering and enforcing the approved Pretreatment Program. The Board may delegate administration and initial enforcement responsibilities to a Party or a third party;

14. Making recommendations to the Board for hiring consultants, architects, engineers, construction managers, attorneys, accountants and other professionals necessary for design, construction, operation, maintenance and

management of the Authority, in accordance with standard selection and evaluation procedures adopted by the Board;

15. Making recommendations to the Board for selection of contractors for construction projects involving the Authority, in accordance with standard bidding and evaluation procedures adopted by the Board;

16. Making recommendations to the Board for the selection of other contractors, suppliers, and vendors in accordance with standard bidding and evaluation procedures adopted by the Board;

17. Preparation of Rules and Regulations governing the operation and maintenance of the Authority and the Authority Facilities for consideration and adoption by the Board;

18. Preparation and submittal of applications for, and compliance with, all permits necessary for operation of the Authority;

19. Preparing and sending billings to the Parties as required by this Agreement for Annual Charges as approved by the Board and notifying the Parties of any Connection Fee approved by the Board;

20. Retaining and maintaining all required accounting, financial, operational, and other records necessary or incidental to operating the Authority in accordance with customary procedures in the field of wastewater treatment; and

21. Such additional duties and responsibilities as may be delegated or authorized from time to time by Board resolution consistent with this Agreement.

## **X. FINANCIAL OBLIGATIONS TO THE AUTHORITY**

**A. Phase I.** During Phase I, the Parties shall be obligated to pay to the Authority Major Capital Facilities Costs (Section XI) and Annual Charges (Section XIII) in addition to any other obligations under this Agreement.

**B. Phase II.** During Phase II, the Parties shall be obligated to pay to the Authority Major Capital Facilities Costs (Section XI), Annual Charges (Section XIII), and Connection Fees (Section XIV), if applicable, in addition to any other obligations under this Agreement.

**C. Phase III.** During Phase III, the Parties shall be obligated to pay to the Authority Major Capital Facilities Costs (Section XI), Annual Charges (Section XIII), and Connection Fees (Section XIV), if applicable, in addition to any other obligations under this Agreement.

## XI. MAJOR CAPITAL FACILITIES COSTS

### A. Initial Authority Facilities

1. **Initial Capital Contribution.** The Initial Capital Contribution, and each Party's share thereof, shall be established by the Board no later than one year from the Effective Date of this Agreement. The estimated Initial Capital Contribution as of the Effective Date of this Agreement is \$51,260,000 based on an estimated Initial Project Cost of \$110,000,000. It was determined by applying the same proportion as the Initial Treatment Requirement bears to the total Initial Plant Capacity, to the Initial Project Costs. Each Party's share of the Initial Capital Contribution is determined by dividing each Party's projected Initial Treatment Requirement by the total of all Parties projected Initial Treatment Requirement and multiplying the result by the Initial Capital Contribution. The Initial Capital Contribution and each Party's share will be adjusted in accordance with Sections IV.EE, FF, GG, and HH, XI.A.3, and XVI.B to reflect any changes in the Initial Plant Capacity, Initial Treatment Requirements and changes in Initial Project Costs. Each Party agrees to pay to the Authority its share of the Initial Capital Contribution subject to the adjustments set forth below in this Section. Based on an estimated Initial Capital Contribution of \$51,260,000, each Party's share thereof would be as follows:

Brighton	\$15,275,480;
Metro	\$26,245,120;
SACWSD	\$ 9,739,400

2. **Payment of Initial Capital Contribution.** The parties will make an initial payment of:

Brighton	\$ 1,311,200
Metro	\$ 2,252,800
SACWSD	\$ 836,000

on or before December 1, 2005, which will be applied to their share of the Initial Capital Contribution. A payment schedule for the remaining Initial Capital Contribution, and each Party's share thereof, shall be established by the Board within one year of the Effective Date of this Agreement. The schedule shall ensure the timely availability of funds for expenditures for start-up of the Authority, construction of the Initial Authority Facilities, issuance of bonds by the Authority and fund reserves. The schedule shall be equitable and all Parties shall pay on the same schedule in proportion to their share.

3. **Recalculation of Initial Plant Capacity, Initial Treatment Requirements, Update of Initial Capital Contribution, and Payment Schedule.** Within 180 days after the beginning of Phase II, the Authority shall prepare a report that recalculates the Initial Plant Capacity, Initial Treatment Requirement, and each Party's share thereof, on a one-time basis. The report shall be prepared by one of the following as determined by the Board: the Design Engineer, the Authority Engineer, or a professional rate consultant. After approval by

the Board, the recalculations in the report shall be used in conjunction with Section IV. EE, FF and HH., XI.A.2., and XVI.B.

In addition, the Board shall recalculate and update annually the amount of the Initial Capital Contribution and the payment schedule to be used in the Annual Budget, until one year after the Initial Authority Facilities are complete and functional and have been accepted by the Authority. The updates may include, but are not limited to, adjustments to the Initial Capital Contribution to account for changes in construction cost of the Initial Authority Facilities; changes in the treatment capacity that occur during design and construction; changes in the project schedule; and the availability of sufficient funds for construction and start-up. The final recalculation and update shall incorporate the final total design, construction, and start-up costs incurred in Phase I and Phase II.

**4. Allocation of Initial Authority Facilities Debt Service Payments.** The cost of the Initial Authority Facilities in excess of the Initial Capital Contribution shall be paid by the issuance of bonds by the Authority. The Authority's Debt Service for the bonds will be paid by the Authority and assessed to the Parties based on each Party's projected future treatment capacity needs as defined in the initial Authority Facilities Master Plan approved by the Board. (Amendments to the Authority Facilities Master Plan shall not change the initial Debt Service assessment to the Parties based on the initial Authority Facilities Master Plan). The portion of SFRE Capacity attributable to the bonded portion of the Initial Authority Facilities shall be Allocated SFREs for each Party in the same proportion as the initial Debt Service assessments for those bonds are made to each Party.

**5. Adjustment of Initial Authority Facilities Inactive Allocated SFREs.** It may be necessary or desirable to adjust the distribution of Initial Authority Facilities Inactive Allocated SFREs among the Parties for the purpose of more equitably assessing Debt Service Payments. Inactive Allocated SFREs transfers may occur only by a Party voluntarily agreeing to sell Inactive Allocated SFREs to another Party. The purchasing Party shall notify the Board and any other Party not involved in the transaction of the intent to make such purchase at least three months before the execution of any agreement of purchase. All transfers to accomplish such adjustment will include the following actions:

a. The purchasing Party will pay the selling Party a cash payment, as approved by the Board, for the number of Inactive Allocated SFREs transferred. This cash payment will include the total principal and interest payments made to date on the portion of capacity being transferred between Parties. Additionally, the cash payment will include interest assessed on each aforementioned principal and interest payment, from the date of each principal and interest payment to the date of SFRE transfer, using the monthly Merrill Lynch 3-month U.S. Treasury Bill Index data; and

b. The purchasing Party will assume the debt service payments of the selling Party for the remainder of the term for the number of Inactive Allocated SFREs transferred.

**B. Upgrades and Expansions to Authority Facilities.**

1. The Authority shall upgrade and expand the Authority Facilities:

- a. as identified in the Authority Facilities Master Plan;
- b. to comply with legal, regulatory, discharge permit, or other permit requirements; or as otherwise mandated by applicable local, state, or federal governmental procedures, rules or regulations; or
- c. at the request of any of the Parties.

Upgrades and expansion shall be considered activities that change the rated capacity of the Authority Facilities, change the performance capabilities of the facilities, or otherwise materially change the scope of the services provided by the Authority Facilities.

The Authority shall upgrade and expand facilities consistent with the Authority Facilities Master Plan. In all cases, planning, design, and construction milestones will occur within the timing requirements established under Colorado Law CRS § 25-8-501(5)(d) and (e) as amended.

2. Amendment to the Authority Facilities Master Plan

Prior to upgrade or expansion of the Authority Facilities, an amendment to the Authority Facilities Master Plan shall be prepared and adopted by the Board in accordance with Section VIII.D.7. The amendment shall address the feasibility and cost-effectiveness of the upgrade, expansion, modification, or replacement of Authority Facilities. The Authority Facilities Master Plan update shall include a determination of the portion of the costs attributable to upgrading Allocated SFREs, the portion of cost attributable to expansion, and the percentages of the expansion costs attributable to each Party.

3. Cost Distribution for Authority Upgrades and Expansions.

For each year's expenses related to upgrading the Plant, the share of the capital contribution of each Party shall be based on the Party's proportionate share of Allocated SFREs in effect at the end of the year the expense is incurred. Payment requirements will be as established by the Board and may include cash payment, use of funds accumulated in the Capital Construction and Improvements Fund, and the issuance of debt where the repayment of such debt shall become an obligation of the Authority and the basis for Debt Service Charges to the Parties.

For each year's expenses related to expansion, the share of the capital contribution of each Party shall be based on the share of the cost of construction agreed to be undertaken by that Party of the additional SFRE Capacity being created by the construction. Payment requirements will be as established by the Board and may include cash payment, use of funds accumulated in the Capital Construction and Improvements Fund, and the issuance of debt where the repayment of such debt shall become an obligation of the Authority and the basis for Debt Service Charges to the Parties. If funds from the Capital Construction and Improvements Fund are used for the expansion, the SFRE Capacity created by the expansion from use of those funds shall become



Allocated SFREs of the Parties in proportion to their Ownership Interest in effect at the commencement of the construction.

4. Requested Upgrade or Expansion.

The Authority shall upgrade or expand facilities at the request of any party to accommodate growth that is not accounted for under Section XI.B.1. The costs for such requested expansions and associated upgrades, including update of the Authority Facilities Master Plan, will be funded entirely by the requesting entity. As determined by the Board, the expansion must be sized to be cost effective and shall be consistent with the expansion strategy embodied in the Authority Facilities Master Plan.

**XII. ANNUAL BUDGET**

**A. Schedule of Annual Budget Events.** The Board shall adopt an Annual Budget for the upcoming calendar year on or before May 1 of each year in accordance with Section VIII.D.3 and this Section. The schedule of Annual Budget events is as follows:

<b>Date</b>	<b>Event to be completed on or before date</b>
February 1	Parties report to the Authority the number of SFREs connected to Authority Facilities (Active Allocated SFREs) as of the end of the preceding calendar year and the projected number of Active Allocated SFREs as of the end of the current calendar year.
March 1	Authority notifies each Party of its proposed Annual Budget and preliminary estimated Annual Charges for each Party.
April 1	Parties shall furnish the Authority with any recommendations or comments regarding the proposed Annual Budget.
May 1	Board adopts the Annual Budget and the final Annual Charges for the next calendar year.

**B. Failure to Adopt Annual Budget by May 1.** If the Annual Budget for the next calendar year is not adopted by May 1, then the Annual Budget for the next calendar year shall be the greater of (a) the current year Annual Budget, adjusted for the change in the Denver-Boulder-Greeley Consumer Price Index and adjusted proportionately to the percentage increase in SFREs in the preceding calendar year, or (b) the current year Annual Budget plus ten percent (10%).

**C. General Requirements.** The Annual Budget shall:

1. Consider all funding needs and requirements in this Section and Exhibit D, Procedures for Financial Planning, Fund Management, and Budgeting;
2. Include expenses for Board support, management, professional consultants, contractors, staff or independent contractors to carry out the responsibilities of the Authority, sufficient reserves for unexpected expenses to minimize the probability that additional

funds will have to be appropriated by any Party during a budget year, and other direct and incidental expenses to further the purposes of this Agreement;

3. Comply with all mandatory provisions of the Local Government Budget Law of Colorado, as amended, CRS 29-1-101, et seq.;

4. Comply with generally accepted accounting principles;

5. Include a statement of all sources and uses of funds budgeted for the current year including Annual Charges to be paid by each Party. Such statement shall include all actual sources and uses for the most recently completed calendar year, and the budgeted sources and uses for the current and following budget years;

6. Incorporate reasonable comments and suggestions from the Authority Facilities Engineer, the Auditor, or the Parties as to the classifications in which such budget shall be prepared, particularly with respect to the divisions into which such budget shall be divided;

7. Comply with public hearing requirements of applicable laws or bond covenants;

8. Include provisions for reconciliation of the previous year expenses and Annual Charges; and

9. Include a calculation of Annual Charges for the budget, showing all Annual Charge components and method of allocation to the Parties.

**D. Limitations on O&M Costs.** O&M Costs incurred in any year shall be reasonable and sufficient to ensure the proper operations and maintenance of the Authority Facilities and to meet the obligations of the Authority. No amount shall be expended for O&M Costs in excess of the aggregate amount provided for O&M Costs in the Annual Budget then in effect, unless such excess amounts are received from some source other than the current Annual Charges from the Parties.

**E. Funding of Annual Budget.** The Annual Budget shall be funded by Annual Charges as set forth in Section XIII.

**F. Amendment of Annual Budget.** An amended Annual Budget may be adopted by the Board at any time.

**G. Phase I and Phase II.** During Phases I and II, the Annual Budget shall be tailored to carry out the design and construction of the Initial Authority Facilities, to start up the Authority, to prepare for commencement of operations and management of the Authority Facilities during Phase III, and to otherwise set up systems, procedures, offices, management, staff, and a business structure to plan for, oversee, and manage the Authority and the Authority Facilities during Phase III.

### XIII. ANNUAL CHARGES

**A. Annual Charges Sufficient to Pay for Annual Budget and Obligations.** The Annual Charges shall be computed, made, imposed, and collected so that the income collected therefrom will be at least sufficient to: pay for the requirements of the Annual Budget; comply at all times in all respects with the terms and the provisions of any resolution of the Board and bond covenants; pay and discharge all other charges or liens payable out of the income when due and enforceable; and pay for any obligation or contract of the Authority under this Agreement for which provision has not otherwise been made.

1. Phase I. Total O&M and Specified Fund Charges for the year 2005 are \$574,000 (O&M charges of \$454,000 and Specified Fund Charges of \$120,000). For the year 2005, the Parties shall pay an equal share of the prorated portion of O&M charges based on the number of months remaining in 2005 beginning with the month following the Effective Date of this Agreement, plus an equal share of the total Specified Fund Charges to the Authority for Annual Charges. For year 2006, the Parties shall pay \$165,000 each for Annual Charges. For the remainder of Phase I, the Parties shall each pay an equal share of Annual Charges as developed in the Annual Budget.

2. Phase II. Annual Charges and payments during Phase II will be determined in accordance with the provisions of Exhibit E, except that the O&M Charges and payments during Phase II will be determined in the same manner as the Specified Fund Charges and payments.

**B. Annual Charge Components-Phase III.** During Phase III, Each Party shall pay the following three components of Annual Charges in the amounts specified in the Annual Budget in accordance Exhibit E:

1. O&M Charges
2. Debt Service Charges
3. Specified Fund Charges

**C. Uniformity of Annual Charges.** Annual Charges shall be uniform for all Parties within classification of charges and charge components and be consistent with this Section and Exhibit E.

**D. Payment Schedule and Invoicing.** Annual Charges shall be paid in equal monthly installments. The Authority shall invoice the Parties for Annual Charges by May 1 of each year for the upcoming calendar year. The invoices shall show the applicable charge components, cost parameters, any credits and debits for adjustments to Annual Charges from previous years, and the monthly installments due. Monthly installments are due the third day of each month for the current month. All payments shall be made electronically to the O&M Revenue Fund of the Authority.

**E. Enforcement of Payment of Annual Charges.** No Party shall be released from the obligation to pay Annual Charges under this Agreement, as amended or otherwise supplemented. If payment is not made by the due date, the delinquent Party shall pay interest at

the rate of one per centum (1%) per month (or fraction thereof) on the amount due from the due date and costs of collection including reasonable attorney fees. The Authority, and each Party, is hereby granted the right and power to enforce collection of Annual Charges and any other payments due under this Agreement against any Party, and to take all reasonable measures permitted by this Agreement or by law to enforce prompt payment of all Annual Charges and other payments due, and shall defend, enforce, preserve, and protect the rights, benefits, and privileges under this Agreement and of any holder of any bond or other security under or with respect to this Agreement.

If any payment or any part thereof due to the Authority from any Party shall remain unpaid following its due date, the Authority in its discretion may charge and collect Annual Charges from the other Parties sufficient to meet any default or deficiency in any payments herein agreed to be made by any Party. If in any such case Annual Charges are so collected, the amount ultimately so collected by the Authority from any defaulting Party will be credited against the amount of such default or deficiency, and adjustments shall be made for any payments due to the Authority from each Party that was assessed to offset any amounts it owes under the provisions of this Agreement.

**F. Fees Paid for use of a Parties Sewer System.** Nothing herein contained shall be construed as preventing any Party from fixing and collecting by contract or otherwise rates, tolls, and other fees appertaining to its sewer system from anyone connected to its sewer system or with whom the Party has an agreement for Wastewater services.

**G. Failure to Adopt Annual Charges by May 1.** If the Annual Charges are not adopted by May 1, then the Annual Charges for the next calendar year shall continue to be charged to the Parties based on the prior year's charges adjusted to fund the Annual Budget pursuant to XII.B.

#### **XIV. CONNECTION FEE CHARGES**

**A. Establishment, Methodology, and Amounts.** With the approval of all of the Governing Bodies, the Authority may adopt a system to impose and collect a Connection Fee for each New Sewer Connection or Altered Sewer Connection made within the Common Service Area to be served by the Authority Facilities. Prior to the adoption of a Connection Fee, the Board shall retain an outside consultant to complete a study establishing a Connection Fee methodology and developing an initial Connection Fee. Once a Connection Fee has been adopted by the Board, the amount of the Connection Fee shall be established by the Board no later than May 1 of each year effective for the following calendar year.

**B. Uniform and Equitable.** Any Connection Fee adopted by the Board shall be uniform for all Parties within any classification, and classifications shall be reasonable, fair, and equitable.

**C. Use of Proceeds.** Connection Fees, if established, shall be used by the Authority to provide for the payment of debt service and to finance capital projects. If connection fees are used to pay for debt service, the allocation procedure for debt service charges in Exhibit E will need to be modified so that each Party's debt service charge are equitable in light of connection fees paid.

**D. Payment and Enforcement.** If a system is adopted by the Board, Connection Fees payments from the Parties to the Authority will be due by May 15, August 15, November 15, and February 15 of each year for the preceding calendar quarter along with a report prepared by the Party detailing all New or Altered Sewer Connections and corresponding SFREs for the prior quarter. If payment is not made within 30 days of the due date, the delinquent Party shall pay interest at the rate of one per centum (1%) per month (or fraction thereof) on the amount due from the due date and all costs of collection including reasonable attorney fees. The Authority and each Party are hereby granted the right and power to enforce collection of Connection Fees and any other payments due under this Agreement against any Party, and to take all reasonable measures permitted by this Agreement or by law to enforce prompt payment of all Connection Fees and other payments due, and shall defend, enforce, preserve, and protect the rights, benefits, and privileges under this Agreement and of any holder of any bond or other security under or with respect to this Agreement.

## **XV. PLANNING**

The Parties agree the Authority shall carry out the planning required in Exhibit F.

## **XVI. OWNERSHIP INTERESTS**

**A. Ownership Interests.** The Ownership Interest of each Party on the Effective Date of this Agreement is equal to its Allocated SFREs as a percent of all Parties' Allocated SFREs, which, until bonds are issued and Debt Service is assessed, is equal to each Party's percentage share of the Initial Capital Contribution in accordance with Sections IV.C.1., FF., and PP.

**B. Recalculation of Ownership Interests.** The Ownership Interest of each Party shall be recalculated and adjusted:

1. When the Initial Treatment Requirement, and each Party's share thereof, is recalculated at the beginning of Phase II under Section XI.A.3., which results in the recalculation of the Initial Capital Contribution and each Party's share thereof;

2. Whenever there is a change in a Party's Allocated SFREs including, but not limited to, whenever Debt Service is assessed against a Party under Section XI.A.4 when bonds are issued; and

3. If a Connection Fee is established under Section XIV.A. and a Party purchases Unallocated SFREs that may be available by paying the Authority the Connection Fee rate in effect for the calendar year when the connection is made. The appropriate number of Unallocated SFREs will be transferred to the Party as Allocated SFREs. The Parties do not anticipate that at any given time there will be many, if any, Unallocated SFREs to transfer because, in general, any additional SFRE Capacity created by expansion, capital construction or improvements, or issuance of bonds will have previously become Allocated SFREs because of a Party having already made cash payments for the additional SFRE Capacity, or otherwise having been assessed or undertaken the obligation for the cost including Debt Service under Section XI.A.4.

**XVII. TITLE TO AUTHORITY FACILITIES**

Title to all real or personal property of the Authority, or any interest therein, shall be held in the name of the Authority.

**XVIII. RIGHT TO USE CAPACITY OF AUTHORITY FACILITIES**

To the extent of its Allocated SFREs, and so long as it is in compliance with all of its obligations and duties under this Agreement, each Party has the right to use the treatment and disposal capacity of the Authority Facilities, and to direct Wastewater flows to the Authority Facilities for transmission and treatment from areas within and without the Common Service Area, as presently existing or hereinafter constituted, and from Subscriber flow, without further approval of the other Parties or the Board. No Party has the right to use, in any manner, Allocated SFREs of another Party or Unallocated SFREs except in emergency circumstances authorized in the Rules and Regulations or approved by the Board. If a Party is in default of payment of Annual Charges, Connection Fees, or other financial obligations under this Agreement, and if the default is not cured within 90 days of written notice by the Authority (or any Party) to the defaulting Party, in addition to any other remedies that may be available at law, in equity or under this Agreement including injunctive relief, the Party's right to use the Authority Facilities and its Allocated SFREs may be restricted, conditioned, or terminated by action of the Board until the default is cured.

**XIX. CONNECTION POINTS TO AUTHORITY FACILITIES**

Each Party shall connect its sewer systems or the outfalls therefrom that collect Wastewater from the Common Service Area to the Authority Facilities only at a Connection Point(s) authorized by the Board. The initial Connection Point(s) shall be described in the initial Authority Facilities Master Plan approved by the Board. The Board may approve additional Connection Points as needed. Every connection made by a Party shall be at that Party's own expense and shall be constructed in accordance with design requirements and construction quality as specified by the Authority. Connections shall be limited to connections from the sewer systems owned, operated, or controlled by the Parties. In accordance with Sections IV.KK., XIII and Exhibit E, generally each Connection Point shall have a Metering and Sampling Station to measure the Wastewater quantity and strength unless the Board authorizes a connection where quantity and strength are estimated. Each such connection, Meter and Sampling Station, and estimating facilities shall be paid for initially by the connecting Party, and after construction shall be conveyed to the Authority who shall own, maintain, operate, rehabilitate, and replace all such facilities as part of the Authority Facilities. All connections shall include facilities as may be necessary to cause all Wastewater delivered at said Connection Point(s) to be discharged into the Authority Facilities.

## **XX. MANDATORY DISCHARGE OF WASTEWATER AND EXEMPTIONS**

**A. Mandatory Discharge to Authority Facilities.** The Parties shall cause all Wastewater originating in their portion of the Common Service Area to be delivered and discharged into the Authority Facilities, except as provided in the following paragraphs. Each Party at its own expense and cost will construct, install, and operate any and all extensions of its sewer system or the outfalls therefrom necessary to cause the same to reach to and to deliver Wastewater at the Connection Point(s) and after making such connection or connections shall keep its sewer system connected with the Authority Facilities.

**B. Exempt Wastewater.** No Party shall be obligated to deliver and discharge Wastewater into the Authority Facilities from its portion of the Common Service area which:

1. On the Effective Date of this Agreement is being treated by a private party (septic system or other treatment facility); or
2. Is served by a separate government entity or a private entity over which the Party has or had no control over the establishment of such treatment service; or
3. Is exempted from delivery and discharge into the Authority Facilities by reduction of its portion of the Common Service Area set forth in Exhibits A, B, or C where such reduction is approved by all Governing Bodies; or
4. Involves a property(ies) where the closest point of the property line is more than 400 feet from existing or future sewer lines directing flow to the sewer system of a Party, or there is a significant physical impediment to connecting the property to the sewer system of a Party (subject to a requirement of later connection when service becomes available).

**C. Transitional Service Area.** Wastewater from Transitional Service Areas shall be directed and discharged into the Authority Facilities by the responsible Party within ten years of the beginning of Phase III in accordance with the requirements and timetable set forth in this Section XX.C., Section IV.DDD., and Exhibits A, B, and C. If a Party fails to direct and discharge all Wastewater from its Transitional Service Area to the Authority Facilities by the end of the ten year period, that Party shall pay the Authority for the share of fixed costs of operating the Authority attributable to the volume and strength of Wastewater which would have been discharged to the Authority Facilities had the Party been in compliance with this Agreement. Such payment shall be in addition to Annual Charges and other charges under this Agreement.

## **XXI. REGULATION OF DISCHARGES INTO THE AUTHORITY FACILITIES**

**A. Conformity to this Agreement and Regulations.** Each Party shall require and enforce conformity to this Agreement and these provisions with respect to, and shall cause, all Wastewater at any time discharged directly or indirectly into its sewer system, or into the Authority Facilities by it or on its behalf, to comply with all requirements of this Agreement, and the Rules and Regulations of the Authority to protect the Authority Facilities. Each Party agrees it will not discharge Wastewater into the Authority Facilities which is of such a nature and delivered at such a rate as to impair the hydraulic capacity of the Authority Facilities, normal and reasonable wear and usage excepted, or Wastewater of such a quantity, quality, or other nature as

to impair the strength or the durability of the Authority Facilities, either by chemical or by mechanical action.

**B. Wastewater, Storm Water, and Infiltration.** Only Wastewater from separate sanitary sewer systems of the Parties shall be discharged into the Authority Facilities unless otherwise provided for in this Agreement. Except to the extent allowed in the Rules and Regulations approved by the Board, the sanitary sewer systems of the Parties shall receive no storm water directly or indirectly from surface drains, ditches or streams, storm or combined sewers, roof, areaway, sumps, or foundation drains, or from any other means. New sewers, manholes, and interceptors built by or for the Parties or Subscribers shall be constructed to minimize the level of infiltration of groundwater. As a maximum, these sewers and appurtenances should not exceed 200 gallons per day per inch of pipe diameter per mile of sewer at the time they are constructed. All trunk, sub-trunk, or lateral sewers and appurtenances, structures comprising tributary sewer systems of the Parties constructed after the date of this Agreement shall be of adequate strength to resist breakage and shall be substantially watertight. Pipelines, including without limitation house and building connections, shall be of such material as to minimize initial and future infiltration, and all such pipes shall be properly bedded or cradled and constructed using tight joints of type, materials, and workmanship which will minimize initial and future infiltration. Each Party agrees to limit infiltration or leakage into its sewer system which are tributary to the Authority Facilities in accordance with this Agreement.

**C. Compliance with Requirements.** In all cases where the application or the enforcement of the Rules and Regulations and other requirements of the Authority and any amendments thereof involve technical or scientific analyses or determinations, the Board shall have final authority as to methods, standards, criteria, significance, evaluation, and interpretation of such analyses and determinations. Each Party will permit no new connections and will discontinue existing public connections and will require the discontinuance of existing private connections to its sewer system or to the Authority Facilities which allow entrance therein of such Wastewater as will cause the discharge at any time into its sewer system, or into the Authority Facilities from such sewer system of Wastewater that does not comply with the Rules and Regulations and other requirements of the Board. The Board may from time to time make a determination that Wastewater discharged or to be discharged into the sewer system of a Party, or into the Authority Facilities by any Party is not in compliance with the Rules and Regulations and other requirements and with the amendments thereof, if any, then in effect. A copy of said determination shall be mailed to the Party at its usual place of business and for all purposes of this Agreement shall be conclusively deemed to have been made in accordance with this Section and to be correct at the expiration of thirty (30) days after such mailing unless within said period of thirty (30) days the Party shall have filed with the Manager and the Board an objection thereto stating that such determination is incorrect and stating the changes therein which should be made in order to correct such determination. In the event such an objection is filed, it shall be resolved in accordance with Dispute Resolution.

**D. No Waiver.** Acceptance by a Party, and discharge into the Authority Facilities, of Wastewater in a volume or with characteristics exceeding or violating any limit or restriction provided for, by or pursuant to this Agreement or the Rules and Regulations in one or more instances or under one or more circumstances, shall not constitute a waiver of such limit or restriction or of any of the provisions of this Agreement and shall not in any way obligate the Party or the Authority thereafter to accept or to make provision for Wastewater delivered and



discharged into the Authority Facilities in a volume or with characteristics exceeding or violating any such limit or restriction in any other instance or under any other circumstances.

**XXII. COMPETING OR OTHER SEWAGE TREATMENT FACILITIES AND SYSTEMS PROHIBITED.**

A. **The Parties.** This Agreement shall be the exclusive means of the Parties for the treatment of Wastewater arising within the Common Service Area. During the term of this Agreement, no Party shall construct, operate, acquire, expand, increase the capacity of, or improve any component or part of its Wastewater disposal system or facilities for the collection, treatment, or disposal of Wastewater of any Party arising within, or to serve, the Common Service Area except as provided in Section XX. or XXII.C.

B. **Third Parties.** During the term of this Agreement, neither the Authority nor any Party shall grant any franchise, permission, or license to a competing Wastewater disposal system, to any other public or private sewage disposal system, or to any other facilities (including septic or other shared or individual systems) for the treatment, or disposal of Wastewater arising within the Common Service Area, and none shall be allowed, constructed, acquired or improved after the Effective Date of this Agreement within, or to serve, the Common Service Area, except as provided in Section XX.B and XXII.C.

C. **Exceptions.** Subject to the terms and provisions of any agreement with any holder of securities issued by the Authority, the following exceptions apply to the prohibitions in A. and B. above:

1. Any acquisition or improvement of any sewer collection facilities or sewer system, (but not Wastewater treatment or disposal facilities or Wastewater disposal system), or any part thereof, owned by a Party at any point above the connection of such collection facilities or sewer systems with any Authority Facilities, or any part thereof;

2. Skimming Plant(s) built and operated by a Party (or any Subscriber to a Party) in its collection system that are approved in advance by the Board, provided: a) the Board determines prior to construction that the operation of the Skimming Plant will not harm the operation of the Authority Facilities; b) the Board determines prior to construction that the cumulative impact of all Skimming Plants approved by the Board will not harm the operation of the Authority Facilities; c) all Skimming Plant solids removed are returned to the sewer for treatment at the Plant; and d) the Party involved continues to be responsible for and pay Annual Charges for the volume of water removed by the Skimming Plant as though the Wastewater (including the water and its BOD, TSS, and TKN constituents) had been discharged to the Authority Facilities. In assessing such Annual Charges, the Board shall make appropriate adjustments in flows and Wastewater strengths received from the Party to assure that the Party does not pay duplicate charges for the solids returned to the sewer from the Skimming Plant and that the Party is charged for the flows removed from the sewer system in accordance with the intent of this section. The Party involved shall be responsible for installing and maintaining, and the Authority shall have access to, flow metering devices used to determine the amount of reuse water removed by the Skimming Plant to determine the accuracy and correctness of the metering. For purposes of assessing Wastewater charges to the Party, the Board shall have the final authority to determine the volume of water reused at any Skimming Plant.

3. Wastewater from Transitional Service Areas in accordance with Sections IV.DDD. and XX.C.

4. The operation of Brighton's existing wastewater treatment plant located at 325 North Kuner Road Brighton, CO 80601, Brighton, Colorado until the beginning of Phase III;

5. The operation of SACWSD's existing wastewater treatment plant located at 9702 Monaco Street, Henderson, Colorado for treatment of wastewater generated outside of SACWSD's Common Service Area.

6. The operation of Metro's Brantner-Gulch Lift Station to the extent required by order of court, or for any other purpose approved by the Board;

7. When a Party is managing, operating, or otherwise providing services for the Authority with the approval of the Board;

8. When the Board and each of the Governing Bodies of the Parties approve the plans and specifications of the proposed facilities and consent in writing after making the following determinations:

a. Not Economically Feasible. It is not economically feasible for the Authority to furnish the desired treatment or disposal within the Common Service Area under this Agreement.

b. Security Not Substantially Impaired. The acquisition, expansion, or increase in capacity of such facilities by the Party shall not substantially impair the income necessary to operate and maintain the Authority and its Authority Facilities nor impair the security for the payment of the obligations issued to finance the Authority Facilities in whole or in part.

c. Equitable and Reasonable to Grant Approval. It is not inequitable or unreasonable to grant such consent and approval.

The Authority and each Party in its discretion may give or may refuse such consent under this Section XXII.C.8., and if given, may restrict, limit, or condition such consent in such manner as it shall deem advisable.

9. When necessary to address a Party's treatment capacity limitations of its existing Wastewater treatment facilities before the beginning of Phase III. The Parties agree to cooperate and negotiate in good faith with each other to find interim solutions for any such limitations, including, but not limited to, the following:

a. Diverting a Party's Wastewater to an existing facility of another Party for treatment at cost;

b. Constructing new interim facilities or improvements to a Party's existing facilities on a temporary basis; or

c. Negotiating with the State of Colorado for relief from permit or other regulatory requirements until Phase III begins.

If the interim treatment capacity problem of a Party is caused by construction delays of the Initial Authority Facilities causing the beginning of Phase III to be delayed beyond July 31, 2011, the other Parties agree to consider in good faith contributing to the cost of construction of any interim facilities of the Parties.

### **XXIII. INSURANCE AND BONDING**

Insurance customarily maintained by similar public utilities shall be obtained and maintained by the Authority for the protection of the Authority and its Facilities. The Board in its discretion may authorize the purchase of officers and directors liability insurance. All policies shall name all Parties as additional insureds and shall be in such amounts sufficient to cover all damages and costs incurred, except that the Board may establish reasonable levels of insurance deductibles and limits considering the amount of existing reserves and protections afforded by the Colorado Governmental Immunity Act, as amended. Obtaining or maintaining insurance shall not be construed to waive or otherwise impact the sovereign or governmental immunity of the Authority or any Party.

The members of the Board, the Manager and any other key employees, as determined by the Board, shall be bonded. The amount of the bond shall be reviewed and set annually by the Board. The cost of bonding shall be included in the Annual Budget.

### **XXIV. INDEMNIFICATION**

**A. Permit Penalties.** The Authority, and not the Parties, shall be solely liable to any issuing and enforcing authority for any fines or penalties resulting from discharge permit or other permit violations of the Authority.

**B. General Indemnification.** Each Party severally agrees to indemnify and hold harmless the Authority and the other Parties from and against all actions, causes of action, claims, counterclaims, demands, liabilities, losses, damages and expenses, including costs and attorney's fees, which may be sustained or incurred by them in connection with any action, cause of action, claim, counterclaims or demand arising from or related to agreements entered into by any of the Parties hereto to which the other Parties are not parties. In addition, any Party whose conduct or Wastewater causes the assessment of fines or penalties against the Authority agrees to indemnify the Authority and any other Party for any losses or payments made as a result of the assessment along with all costs and reasonable attorney fees expended related to the assessment. The Authority, any Party on behalf of the Authority in the name of the Authority if the Authority does not act, and any Party on its own behalf shall have the right to file an action to seek recovery of any amounts so paid.

**C. Thornton Claims Against Metro.** Metro shall defend and indemnify and hold Brighton and SACWSD harmless from any claim, cause of action or liability whatsoever, including costs and attorney's fees, made or brought by the City of Thornton or other Metro members or connectors arising out of the relocation by Metro of the point of discharge of effluent from the Central Treatment Plant located at 6450 York Street, Denver, Colorado, to the

Authority Facilities. Metro shall have the right and obligation to control the defense, to select defense counsel, and to settle or contest any such claims, causes of action or liability. Metro shall have no obligation to indemnify another Party pursuant to this section for any other claims or suits related to this Agreement or otherwise except as expressly set forth in this Agreement. The indemnification hereunder shall not apply to claims or suits brought or supported by Brighton or SACWSD against Metro for relocation of the point of discharge.

**D. Indemnification of Members of the Board of Directors and Employees of the Authority.** The Authority shall defend and indemnify each current or former Member of the Board of Directors and each current or former employee of the Authority (hereinafter Member/Employee) for any civil or criminal investigations, proceedings, claims or actions brought or instituted against any Member/Employee arising out of any act or omission of the Member/Employee while serving in his or her official capacity occurring during the performance of his or her duties and within the scope of his or her employment, except where such action or omission is willful and wanton. The Authority shall pay all costs of defense including reasonable attorney's fees and any judgment or settlement if the Member/Employee does not compromise or settle the claim without the consent of the Authority.

The defense of the Member/Employee shall be undertaken by attorneys for the Authority unless, in the sole discretion of the Authority, the Authority authorizes the Member/Employee to engage counsel of his or her own choosing. If private counsel is authorized, the Authority shall pay the reasonable costs and reasonable attorney's fees as incurred and billed.

If a court or jury determines the act or omission complained of was not within the performance of the Member/Employee's duties, was not within the scope of employment, was willful and wanton, or the Member/Employee is convicted of a crime, the Member/Employee shall not be entitled to defense and indemnity hereunder. The Authority shall recover from the Member/Employee all costs of defense and the Authority may request the court to order the Member/Employee to reimburse the Authority for such costs of defense.

## **XXV. DISPUTE RESOLUTION**

**A.** Any disputes arising under this Agreement involving any of the general powers to be exercised by, or responsibilities delegated to, the Board under this Agreement shall be resolved by Board action at a regular or special meeting under standard procedures set forth in this Agreement.

**B.** Any disputes arising under this Agreement between the Parties not involving the Authority shall be placed on the Board agenda for discussion and review at the next regular or special meeting. If the dispute is not resolved at the Board meeting, within 30 days after the Board meeting, the District Managers and/or City Manager, as the case may be, of the Parties involved in the dispute shall meet in person at the principal offices of the Authority in an attempt to resolve the dispute. Thereafter, if unresolved, the Parties are entitled to pursue any available remedies.

**C.** Any disputes arising under this Agreement between the Authority and a Party(ies) shall be placed on the Board agenda for discussion and review at the next regular or special

meeting. If the dispute is not resolved at the Board meeting, the Chairman of the Board shall send a Notice of Dispute to the Governing Body of the Party(ies) involved notifying the Governing Body of the dispute and that the matter has not been resolved. Upon receipt of the Notice of Dispute, the Party shall place the dispute on the agenda at a regular or special meeting of the Governing Body to be held not less than 10 nor more than 30 days from receipt of such notice. At the meeting, the dispute shall be considered in open or executive session, as appropriate to the Party, and the Party shall appoint a special representative who is a member of the Governing Body (Special Representative), and who is not a Board member, to meet with the Chairman of the Board (or another substitute officer chosen by the Board if the Chairman is a representative of the involved Party). The Special Representative and the Chairman (or substitute) (along with one attorney representing each Party, if the Party so elects) shall meet within 60 days of receipt of the Notice of Dispute to consider the matter. Within 10 days after the meeting, the Special Representative and the Chairman (or substitute) shall send to the Board a recommendation for resolution of the dispute. The Special Representative and the Chairman (or substitute) shall strive in good faith to make a unanimous recommendation. Within 30 days of receipt of the recommendation by the Board, it shall be placed on the agenda at a regular or special meeting of the Board for consideration. If the Special Representative and the Chairman (or substitute) are unable to agree on a recommendation to the Board, if the Board fails to take action on the recommendation, if the Governing Body of the involved Party fails to take action on the recommendation, or if the dispute is otherwise not resolved by these steps, the Parties are entitled to pursue any available remedies. Any litigation initiated by the Authority under this section must be authorized by resolution of the Board.

**D.** The completion of the above applicable dispute resolution procedures is a condition precedent to filing suit except in an emergency.

**E.** The Authority and each Party agree to bear their own costs and attorneys fees in resolving any disputes under this section or in any court action to resolve a dispute under, or breach of, this Agreement.

## **XXVI. WITHDRAWAL, TERMINATION, AND DISSOLUTION**

**A. Unilateral Option to Withdraw.** Prior to the Authority's first issuance of bonds for capital construction and improvements for the Initial Authority Facilities, each Party shall have the option to withdraw from this Agreement under the following circumstances:

1. If all responsive, qualified and otherwise acceptable bids for construction of the Initial Authority Facilities exceed the costs estimated in the Authority Facilities Master Plan by greater than 20%; or

2. If the appropriate Planning Studies or Authority Facilities design documents to be submitted to the State for approval are initially rejected by the State. Conditional approval by the State or the State requiring amendments prior to approval shall not constitute rejection under this paragraph.

Any Party desiring to withdraw under this Section A, shall notify all other Parties in writing within 30 days after the date on which the Manager provides the Parties the relevant construction bids and/or rejection of the Planning Studies and/or design documents. The

Manager shall provide the Parties with these documents within 10 days of receipt by the Authority.

If a Party withdraws from the Agreement pursuant to this Section and the remaining Parties agree to continue with the Authority, the withdrawing Party shall pay a withdrawal fee to the Authority equal to the direct costs reasonably and actually incurred to re-design the Initial Authority Facilities for the reduced capacity. The Authority shall reimburse the withdrawing Party for all money contributed by that Party for the actual purchase price of interests in land for Authority Facilities, to be paid in a lump sum, due in full no later than six (6) months following the notice of withdrawal.

If after receiving notification that a Party is exercising its option to withdraw pursuant to this Section and the other Parties elect to terminate the Agreement, and not continue with the Authority, the Party withdrawing from the Agreement shall reimburse each of the other Parties for the out of pocket expenses those Parties have incurred to the date of the notice of withdrawal for the engineering and design work to the extent that said work is not useable by one or both of the Parties. After the Party withdrawing from the Agreement has paid the non-withdrawing Parties' out of pocket expenses, the Authority shall be dissolved pursuant to paragraph C. below.

**B. Other Termination.** This Agreement shall also terminate if:

1. All Parties consent in writing;
2. The Plant or other Authority Facilities are ordered shut down permanently by any governmental agency with jurisdiction; or
3. The Board determines that the Plant can no longer comply with governmental regulations and cannot be used for the purposes for which it was intended.

**C. Distribution on Dissolution.** In the event this Agreement is terminated under Section A or B above, or Section XXVII below, the Authority shall be dissolved and the Board shall be responsible for winding up its affairs. After payment of the costs of dissolution, all assets of the Authority shall be distributed to the Parties in accordance with their Ownership Interests on the date of dissolution.

**D. Disputes.** Any disputes arising under this Section or Section XXVII below shall be resolved under Section XXV.B, Dispute Resolution, as a dispute arising under this Agreement between the Parties not involving the Authority, which dispute resolution requirement shall survive the termination of this Agreement.

## **XXVII. METRO OPTION TO WITHDRAW**

In addition to the right to withdraw under Section XXVI, Metro shall have the option to withdraw from this Agreement if a non-appealable final order is entered by a Colorado court of competent jurisdiction determining that the Metro District must continue to pump any of Thornton's Wastewater through the Brantner Gulch Lift Station to the Central Treatment Plant.

Metro shall also have the option to withdraw from this Agreement in the event that the Thornton City Council fails to approve the Settlement Agreement referenced in Section XXIX.A.

Metro shall also have the right to withdraw from this Agreement in the event all responsive, qualified and otherwise acceptable bids for construction of the Effluent Pump Back Project Facilities are more than 30% higher than the costs estimated in the Settlement Agreement between Metro and the City of Thornton.

Metro may only exercise these options to withdraw prior to the Authority's first issuance of bonds for capital construction and improvements for the Initial Authority Facilities.

If Brighton and SACWSD agree to continue with the Authority, Metro agrees to pay a withdrawal fee to the Authority for the benefit of the other Parties equal to the direct costs reasonably and actually incurred to re-design the Initial Authority Facilities to address the reduced capacity resulting from Metro's withdrawal. The Authority shall reimburse Metro for all money contributed by Metro for the actual purchase of interests in land for Authority Facilities, to be paid to Metro in a lump sum, due in full no later than six (6) months following the notice of withdrawal.

If after receiving notification that Metro is exercising its option to withdraw pursuant to this Section, and Brighton and SACWSD elect to terminate the Agreement and not continue with the Authority, Metro shall reimburse each of the other Parties for the out of pocket expenses those Parties have incurred to the date of the notice of withdrawal for the engineering and design work to the extent that said work is not useable by one or both of the Parties. After Metro has paid Brighton's and SACWSD's out of pocket expenses, the Authority shall be dissolved pursuant to Section XXVI.C.

## **XXVIII. MISCELLANEOUS COVENANTS**

**A. Wastewater Ownership and Capture of Treated Effluent.** Each Party or any Subscriber shall retain whatever ownership, dominion and control it has, if any, in, over, and to the Wastewater it has delivered to the Authority Facilities for transmission and treatment prior to its discharge from the Authority Facilities and the Authority shall claim none. Execution of this Agreement and any Party's participation in this Agreement shall not be used by any Party hereto or any third-party to establish ownership, dominion or control over said Wastewater, treated Wastewater or other return flows. Each Party shall have the right to capture treated Wastewater effluent from the Authority Facilities after completion of Authority treatment prior to discharge, provided the Party has a legal right to such capture, the Party pays the Authority for all direct and indirect costs incurred by the Authority to accommodate the capture, and there is no disruption to Authority treatment processes.

**B. Records.** The Authority shall maintain all records, accounts and audits required by this Agreement or by law. Upon request, each Party shall have the right at any time during regular business hours to review, inspect and copy, at the requesting Party's expense, any accounting, financial, billing, operational or other records of the Authority and the Board.

C. **Open Records.** The records of the Authority and the Board shall be subject to the Colorado Open Records Act, as amended.

D. **Form of Consent.** Whenever under the terms of this Agreement a Party is authorized to give its consent, such consent shall be given in writing and shall be conclusively evidenced by a copy, certified by its Clerk and under its seal, or by its Secretary, as the case may be, of a resolution purporting to have been adopted by its Governing Body and purporting to give such consent.

E. **Non-assignability.** No Party may assign any interest in this Agreement to any other person or entity.

F. **Severability.** If any section, subsection, paragraph, clause, phrase, or other provision of this Agreement shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, subsection, paragraph, clause, phrase, or other provision shall not affect any of the remaining provisions of this Agreement.

G. **Obligations.** All bonds, notes, or other obligations of each Party either referred to in this Agreement or to be issued by each Party shall, for all purposes of this Agreement, be the sole obligation of the Party which is issuing such bonds, notes or other obligations, and shall not in any way be deemed a debt or liability of the Authority or other Parties to this Agreement, unless all Parties or the Authority otherwise subsequently agree in writing. All bonds, notes, or other obligations of the Authority either referred to in this Agreement or to be issued by the Authority shall, for all purposes of this Agreement, be the sole obligation of the Authority, and shall not in any way be deemed a debt or liability of the Parties to this Agreement, unless all Parties and the Authority otherwise subsequently agree in writing.

H. **Legality.** This Agreement shall not be construed to be in violation of the laws of the United States or the State of Colorado, and the provisions of this Agreement shall not be construed in any manner that will adversely affect or diminish the bonding capacity of any Party with reference to either sewer improvement revenue bonds or general obligation sewer bonds.

I. **Amendment.** Subject to the rights and privileges (fixed by contract, including without limitation this Agreement, or otherwise) of the holder or holders of any bonds or other securities of the Authority, this Agreement may be amended from time to time in writing duly authorized by the Governing Bodies and executed by all Parties.

J. **Additional Parties.** Additional Parties may be added to this Agreement by amendment to this Agreement upon such terms as the Parties unanimously agree in accordance with Sections IV.A. and VI.N.

K. **Paragraph Headings.** The paragraph headings are inserted only for convenient reference and do not define, limit or prescribe the scope of this Agreement except to the extent otherwise required by the context.

L. **Fiscal Year.** The fiscal year for purposes of this Agreement shall be the calendar year.

M. **Principal Place of Business.** The principal place of business of the Authority



and the Board shall be established by the Board in Brighton, Colorado, or in such other location approved by the Board.

N. **Notice.** Any time notice is required to be given under this Agreement whether to the Parties, to the Authority, or the Board it shall be by Certified Mail, Return Receipt Requested, or by hand delivery, addressed to the Party as follows:

**Brighton:**

City of Brighton  
Attention: Director of Public Works  
22 South 4<sup>th</sup> Avenue  
Brighton, CO 80601

**Metro:**

District Manager  
Metro Wastewater Reclamation District  
6450 York Street  
Denver, CO 80229

**SACWSD:**

South Adams County Water & Sanitation District  
Attention: General Manager  
6595 East 70<sup>th</sup> Avenue  
Commerce City, Colorado 80037-0597

**Authority:**

Attention: Authority Manager  
  
(address to be determined)

**Board of Directors:**

Regional Wastewater Treatment Plant Authority  
  
(address to be determined)

Notice shall be complete upon receipt. The address of each Party, the Authority or the Board may be changed by providing written notice to all other Parties in the same manner.

O. **Governmental Immunity.** Nothing in this Agreement shall serve as a waiver of sovereign immunity, governmental immunity, or the provisions of Colorado Governmental Immunity Act, as amended, for any Party or the Authority.

**P. Third Party Beneficiaries.** Nothing in this Agreement shall be interpreted to provide for or make any person or entity not a party to this Agreement a third party beneficiary to or of this Agreement or of any Party. Nothing in this Agreement shall be interpreted to require the Authority to treat and dispose of Wastewater of any third party other than Subscribers approved by a Party as provided for in Section IV.CCC and Section V. Nothing in this Agreement shall be interpreted as giving any right, benefit, or entitlement to any third party including any right to have any third party's Wastewater treated and disposed of at Authority Facilities. Nothing in this Agreement is intended to require any Party or its Governing Body to accept Wastewater flow of any third party for treatment or to approve of any proposed Subscriber.

**Q. Financial Obligations and Annual Appropriation.**

1. The financial obligations herein are the sole obligations of those Parties' Enterprises to be paid solely from those Enterprises' respective revenues. For purposes of this Agreement, Metro's "enterprise" means its "General Fund", and all financial obligations herein are the sole obligation of its General Fund to be paid solely from revenues credited to Metro's General Fund in accordance with Metro's Bond Resolutions. SACWSD's "enterprise" is the South Adams County Water and Sanitation District Activity Enterprise, and all financial obligations herein are the sole obligations of this enterprise to be paid solely from its revenues in accordance with SACWSD's Bond Resolutions. Brighton's "enterprise" is the City of Brighton Water, Sewer, Drainage Utilities Enterprise, and all financial obligations herein are the sole obligations of said enterprise, to be paid solely from its revenues.

2. The Parties' Enterprises agree and covenant to establish and collect rates, fees (including, if applicable, Connection Fees) and other charges for the products and services provided to their respective Enterprises; which rates, fees, and other charges, together with other moneys available shall be at least sufficient: (A) to meet the financial obligations of their respective Enterprises; and (B) to comply with all financial obligations contained in this Agreement.

3. **Annual Appropriation.** Subject to the above covenants regarding the Parties' Enterprises, any Party's remaining rights and obligations under this Agreement are subject to annual appropriation by each Party's Governing Body. In the event a Party fails to appropriate sufficient funds necessary to fulfill any remaining obligations under this Agreement, any other Party or the Authority may seek relief, at law or in equity as appropriate, in the District Court in and for the County of Adams, Colorado, against the Party for all remedies including, but not limited to, an order requiring appropriation of sufficient funds to meet the obligations hereunder, damages, reimbursement of funds advanced, interest, attorneys fees, expenses, costs, and for discontinuation of Wastewater treatment services to the Party, for which each Party hereby expressly grants its consent.

**R. Initiating Litigation and Attorneys' Fees.** Subject to the conditions of Section XXV, any Party, and the Authority when authorized by resolution, may file litigation against any one or more of the Parties or the Authority to enforce the terms of this Agreement. In any litigation between or among the Parties or the Authority related to this Agreement, each Party and the Authority shall pay its own attorney fees and costs consistent with Section XXV, unless expressly authorized in specific circumstances under other provisions of this Agreement.

S. **Term of Agreement.** This Agreement shall be in full force and effect and shall be binding upon the Parties hereto from its Effective Date in perpetuity until terminated in accordance with Sections XXVI or XXVII.

T. **Absence of Representations.** No Party hereto makes any representation concerning the use of property, building permits required or not required, zoning regulations of any body corporate and politic, or concerning the exemption from licenses, permits, or taxes except as set forth in Section XXVIII.EE. with regard to Brighton Site Annexation and XXVIII.HH. with regard to Brighton's Sales and Use Taxes.

U. **Conformance with Laws.** Each party hereto agrees to abide by and to conform to all applicable federal, state, and local laws and regulations and to abide by any government or authority having jurisdiction over the Parties. Nothing herein shall require any Party hereto to comply with any law the validity or applicability of which is being contested in good faith and, if necessary or desirable, by appropriate legal proceedings.

V. **Force Majeure.** If by reason of uncontrollable forces, any Party is unable in whole or in part to carry out its obligations under this Agreement, the affected Party shall not be deemed in default during the continuance of such inability or during any other delays that are direct consequences of the force majeure inability, and the time for completion of any such obligation shall be extended to cover such delays. The term "uncontrollable forces" as used herein shall mean, without limitation, the following: Acts of God; strikes, lockouts, or other industrial disturbances; acts of public enemies; orders or restraints of any kind by the government of the United States of America or State of Colorado or any of their departments, agencies, or officials, or by any civil or military authority; insurrections; riots; landslides; earthquakes; fires; storms; droughts; floods; explosions; breakage or accident to machinery, transmission or outlet works or canals; or any other cause or event not reasonably within the control of the affected Party and not resulting from its negligence. The affected Party shall, however, remedy with all reasonable dispatch the cause or causes preventing it from carrying out its obligations.

W. **Execution of Documents.** Each Party agrees that it will execute any and all deeds, instruments, documents, and resolutions or ordinances necessary to give effect to the terms of this Agreement.

X. **Waiver.** No waiver by any Party of any term or condition of this Agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach, whether of the same or of a different provision of this Agreement.

Y. **Remedies.** In addition to the remedies provided by law, this Agreement shall be specifically enforceable by any party hereto.

Z. **Entirety.** This Agreement merges and supersedes all prior negotiations, representations, and agreements between the Parties hereto relating to the Authority and the Authority Facilities and constitutes the entire contract between the Parties concerning the disposal of Wastewater by the Parties within the Common Service Area, and no Party is relying upon any oral representation made by a Party or an agent or officer of a Party other than as set forth herein. Nothing herein contained shall be construed as superseding or otherwise modifying

any contracts or obligations any Party may have with another Party dealing with other subject matters or with others including Service Contracts or Special Connector Agreements Metro has with third parties. This Agreement shall supercede the Agreement between the Parties dated October 17, 2000 and all amendments thereto except as to work started under the October 17, 2000 Agreement prior to the Effective Date of this Agreement.

**AA. Cooperation.** Each Party agrees to reasonably cooperate in carrying out the purpose of this Agreement and, if necessary, will enter into amendments to this Agreement to make this Agreement compatible and compliant with any of the Parties bond covenants in existence on the Effective Date of this Agreement including, but not limited to, granting perpetual easements to the Parties to provide an interest in real property to Authority Facilities for the purpose of Wastewater treatment under this Agreement.

**BB. Brighton Employees Preference.** Brighton Wastewater Treatment Plant employees will be given preference in hiring for operation of Authority Facilities. The Authority Manager will prepare a hiring plan by 2008 for Board review and approval. The hiring plan will address Authority positions needing to be filled, identify current Brighton employees who are candidates to fill those positions, and identify any training deficiencies before such employees could be hired by the Authority. All transferring employees from Brighton are required to meet the standard requirements for employment with the Authority. Pay and benefits for employees who transfer shall be based on the pay structure adopted by the Board for the Authority. The Authority is an "at will" employer and all new employees will be subject to a probationary period.

**CC. Condemnation.** If necessary to effect the purposes of this Agreement and with approval of the Board and the Governing Body of the Party requested to condemn on behalf of the Authority, the Parties and the Authority hereby authorize each Party to condemn property on behalf of the Authority for the public purposes herein, and to convey any such property condemned to the Authority at the conclusion of the condemnation action.

**DD. Condemnation of Plant Site.** The Parties have executed that certain "Memorandum of Understanding Site Acquisition For Regional Wastewater Treatment Plant" (the "MOU"), attached hereto as Exhibit "G", and incorporated herein by this reference, and which shall hereby become binding upon the Parties hereto. Pursuant to said MOU, Brighton has been designated as the lead entity to purchase and/or acquire by means of eminent domain, the three parcels of land totaling +/- approximately 62.39 acres, located generally in Section 31, Township 1 North, Range 66 West of the 6<sup>th</sup> P.M., Weld County, Colorado, as more particularly described in Exhibit "H" attached hereto and incorporated herein by this reference.

**EE. Brighton Site Annexation.** Within 60 days of Brighton obtaining title to all parcels, Brighton agrees to file a petition to annex the parcels being condemned under Section XXVIII.DD into the City's boundaries for construction and operation of the Plant. At no expense to Brighton, Brighton will cooperate with the Authority so as to allow it to obtain all necessary easements and rights-of-way, including temporary construction easements, for purposes of establishing, constructing, operating, maintaining, and reconstructing any interceptors, diversion works, pump stations, water lines or other facilities through or outside Brighton as may be required for the utilization of the properties for public uses as a regional wastewater treatment facility including the pumpback facilities. Further, Brighton will not oppose the Authority's public uses or the obtaining of permits and other approvals associated with such public uses,

including cooperation on all permits or approvals required by Brighton for these public uses, subject to any public hearing processes required by law.

**FF. Survival of Provisions.** Sections XIV.(Indemnification), XV.(Dispute Resolution), and XXVI.C. and D.(Termination), and any other Sections of this Agreement necessary or impliedly required to, shall survive termination of this Agreement.

**GG. Non-exclusion of Territory.** Nothing in this Agreement shall be interpreted or construed to cause any Party to relinquish or exclude territory from its Wastewater service area to which it now or in the future has a legal right to serve.

**HH. Brighton's Sales and Use Taxes.** As of the effective date of this Agreement, the Colorado Constitution, Colorado Revised Statutes, City of Brighton Charter and Brighton's Sales Tax Ordinance, exempts from sales and use taxes purchases by political subdivisions and governmental entities, such as the Authority, in their governmental capacities, and further exempts sales of building and construction materials to contractors and subcontractors for use on public works owned or used by political subdivisions or governmental entities. The Parties recognize that any change in Brighton's sales and use tax ordinance to eliminate said exemption would require a vote of its Governing Body and a vote of its electorate. If such changes in Brighton's sales and use tax ordinance occur, and there is no longer an exemption from sales and use taxes on building and construction materials for public works projects of the Authority or for contractors and subcontractors working on public projects for the Authority, then Brighton agrees that, in the spirit of mutual governmental and regional cooperation, and if it is legally permissible to do so, it shall consider in good faith refunding any use or sales taxes assessed against the Authority or any of its contractors or subcontractors for building and construction materials for public facilities owned and operated by the Authority.

## **XXIX. EFFLUENT PUMP BACK PROJECT OF METRO AND THORNTON**

**A.** Metro and the City of Thornton, Colorado are engaged in litigation in three cases over Metro's right to move the point of discharge of treated effluent from Metro's Central Treatment Plant (CTP) to the Plant: Denver District Court Case No. 03CV8252(Colo. Sup. Ct., Case No. 04SC527), and District Court, Water Division 1, Case Nos. 96CW1116 and 02CW180 (Colo. Sup. Ct., Case Nos. 04SA364 and 04SA365 respectively). Metro and Thornton have negotiated a Settlement Agreement settling the three cases, and anticipate it will be approved and executed simultaneously with the approval and execution of this Agreement.

**B.** The Settlement Agreement requires Metro to mitigate the impact of moving the point of discharge by pumping treated effluent from the Plant to a point above the Fulton Ditch Headgate on the South Platte River (Effluent Pump Back Project). The treated effluent will consist of Wastewater currently being pumped through the Brantner Gulch Lift Station (BGLS) and treated and discharged at the CTP and future Thornton Wastewater flows that would have been tributary to the BGLS.

**C.** Metro shall construct the Effluent Pump Back Project in conjunction with the Authority Facilities to be located in Brighton, Colorado. The Effluent Pump Back Project will consist of a pump station, one or more force mains and appurtenant facilities. The pump station shall be located so that effluent pumping will be upstream of the Plant outfalls to the South Platte River, and will pump effluent with quality at least equal to the CDPS permit limits for the

Authority Plant. It is intended that only the volume of effluent pumped through the Effluent Pump Back Project will be subject to any additional reporting requirements of the State.

**D.** After construction of the Effluent Pump Back Project, the Authority shall accept a transfer of ownership of the facilities from Metro. Thereafter, the Authority shall own and operate the Effluent Pump Back Project and all its facilities subject to the terms of the Settlement Agreement.

**E.** Prior to the Plant becoming operational, the Authority shall enter into an Operating Agreement with Metro and Thornton. The Operating Agreement shall set forth the policies and procedures for operating, maintaining, repairing and replacing the Effluent Pump Back Project. No later than March 1 each year, the Authority shall provide Metro and Thornton with an estimate of the operation, maintenance, repair, and replacement amounts ("O, M & R Expenses") with respect to the Effluent Pump Back Project for the upcoming budget year.

**F.** The Authority shall bill Metro 74.78 % and Thornton 25.22% of the actual monthly O, M, & R Expenses of the Effluent Pump Back Project. The Authority shall bill Metro and Thornton for all costs reasonably incurred as O, M, & R Expenses, and shall provide a summary of costs supporting the billing, including, but not limited to, costs for labor, materials, parts, supplies, power, and administration.

**G.** Third Party Participation. Prior to commencement of construction, Brighton and SACWSD may elect to participate in the Effluent Pump Back Project by notifying Thornton and Metro in writing prior to July 1, 2006, or any later date established by Thornton and Metro as the deadline to elect participation. If they elect to participate, Brighton and SACWSD agree to pay a portion of the past and future Pump Back Project costs and O, M & R Expenses. The amount to be paid shall be agreed to by Metro, Thornton, and the participating parties no later than 60 days after receipt of the notice of election to participate, or the election to participate shall expire. After commencement of construction of the Effluent Pump Back Project, Brighton, SACWSD and other third parties may participate in the Effluent Pump Back Project only with the approval of Metro, Thornton and any other previously participating party ("Initial Parties"). Any such approval will be subject to payment by the new parties of a portion of past and future Effluent Pump Back Project costs and O, M & R Expenses and any other terms and conditions established by the Initial Parties. If any new party requires expansion of the Effluent Pump Back Project capacity above 30cfs, all costs and expenses related to the expansion shall be paid by that party.

**H.** If, after construction, Thornton elects to modify the Effluent Pump Back Project as permitted by the Settlement Agreement, Thornton shall be responsible for the design and construction of such modification and shall be responsible for all O, M & R Expenses and replacement expenses related to the modification. Thornton shall submit its plans for modification to the Authority for approval prior to starting construction.

**I.** Metro's responsibility to share in the O, M, & R Expenses shall terminate on December 31, 2040. Replacement of pumps and appurtenant facilities shall be regarded as O, M & R Expenses, and the costs thereof shall be allocated as provided in Section XXIX.F. In no event will Metro be required to contribute to the construction, repair or replacement costs for any portion of capacity of the Effluent Pump Back Project that exceeds 100% of the amount of Thornton's effluent treated by the Authority.

J. The Authority, as necessary, shall replace the Effluent Pump Back Project facilities, or components thereof, excluding pumps and appurtenant facilities, at the expense of Metro, subject to third party contribution under Section XXIX.G. The Authority shall notify Metro and Thornton in writing when an Effluent Pump Back Project component replacement is required. If Metro disagrees with the Authority's determination that the Effluent Pump Back Project or its components need replacement, Metro may invoke Dispute Resolution under Section XXVI. Metro and Thornton have agreed to pay their share of these costs within 45 days of billing by the Authority.

K. In the future, if Thornton is no longer required to use the Effluent Pump Back Project to deliver its effluent above the Fulton Headgate, Metro's financial participation in the Effluent Pump Back Project, including its obligation for O, M & R Expenses and replacement costs, shall terminate.

L. Thornton, Metro, and the Authority agree to cooperate to investigate the feasibility of utilizing the same right-of-way or trench for the Effluent Pump Back Project, and the pipelines and/or interceptors of the Authority and the Parties.

M. Notwithstanding anything in this Section XXIX to the contrary, if Metro and Thornton agree during the initial phases of study and design of the Effluent Pump Back Project that a more cost-effective alternative exists to mitigate the loss in water rights yield to Thornton from treatment of its Wastewater at the Plant, Metro shall not be obligated to construct the Effluent Pump Back Project.

N. By agreeing to the terms of this Section XXIX, Brighton and SACWSD shall not be deemed to have waived, and expressly reserve, all rights, defenses and remedies as to any water rights, water matters, or water cases past, present or in the future, and nothing herein shall have any affect thereon.

### **XXX. TECHNICAL ADVISORY SUBCOMMITTEE (TASC)**

The Technical Advisory Subcommittee (TASC) is hereby created and established for the purpose of orienting the Board to the history and terms of this Agreement, and advising and making recommendations to the Board during Phases I and II regarding (1) design, construction, and start up of the Authority Facilities, (2) implementation of the Authority's financial structure and planning process, and (3) any other issue deemed to require the special expertise of the members of the TASC. The Board shall review, carefully evaluate, and seriously consider recommendations of the TASC.

The TASC shall be chaired by the Manager and consist of at least one member representing each Party's staff appointed within 45 days of the Effective Date of this Agreement by each Party's Designated Board Member set forth in Section VIII.B. The staff appointed shall be familiar with this Agreement and wastewater treatment plant operations, serve at the pleasure of the Party from which appointed, and may be replaced at any time by the appointing Party. Nothing herein shall preclude the appointed TASC member(s) from also being a member of the Board. The members shall continue to serve until their replacement is appointed. The TASC shall meet at least monthly.

The TASC shall cease to exist at the end of Phase II unless its existence is extended by

the Board in its sole discretion.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized representatives.

CITY OF BRIGHTON, COLORADO, BY  
AND THROUGH ITS WATER, SEWER,  
DRAINAGE UTILITIES ENTERPRISE

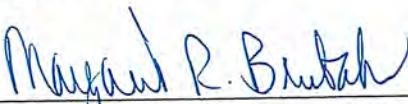
BY:   
Mayor Janice E. Pawlowski

Date Executed: 9-28-2005

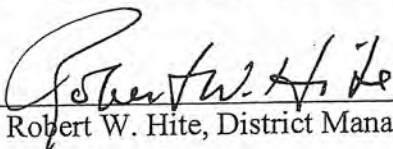
Attest:

  
Karen Borkowski, City Clerk

Approved as to Form:


  
Margaret R. Brubaker, Legal Counsel

METRO WASTEWATER RECLAMATION DISTRICT

BY:   
Robert W. Hite, District Manager

Date Executed: 10-11-05

Approved as to Form:

  
District Legal Counsel



SOUTH ADAMS COUNTY WATER AND SANITATION  
DISTRICT BY AND THROUGH ITS ACTIVITY ENTERPRISE

BY: W. E. Kels  
President Warren Kels

Date Executed: August 29, 2005

Attest:

Mike Bevallo  
Secretary Mike Bevallo

Approved as to Form:

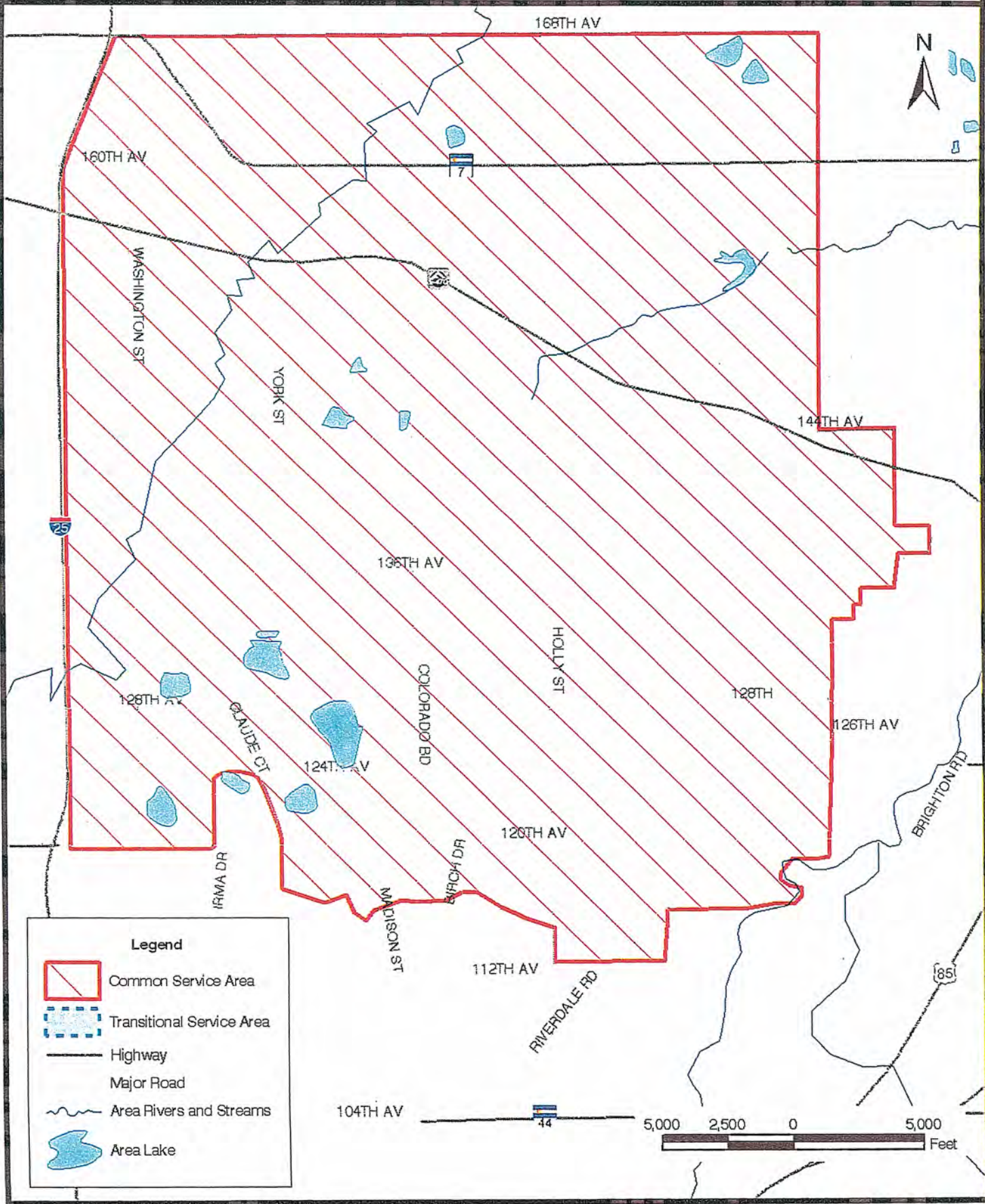
Timothy Beaton  
Timothy Beaton, Legal Counsel





**EXHIBIT B**  
**METRO COMMON SERVICE AREA**  
**Preliminary**

A Final exhibit with substantially similar geographic area will be substituted by September 15, 2005. If there are substantial discrepancies between the Preliminary and Final exhibit, approval by the Governing Bodies of all Parties of the Final is required.

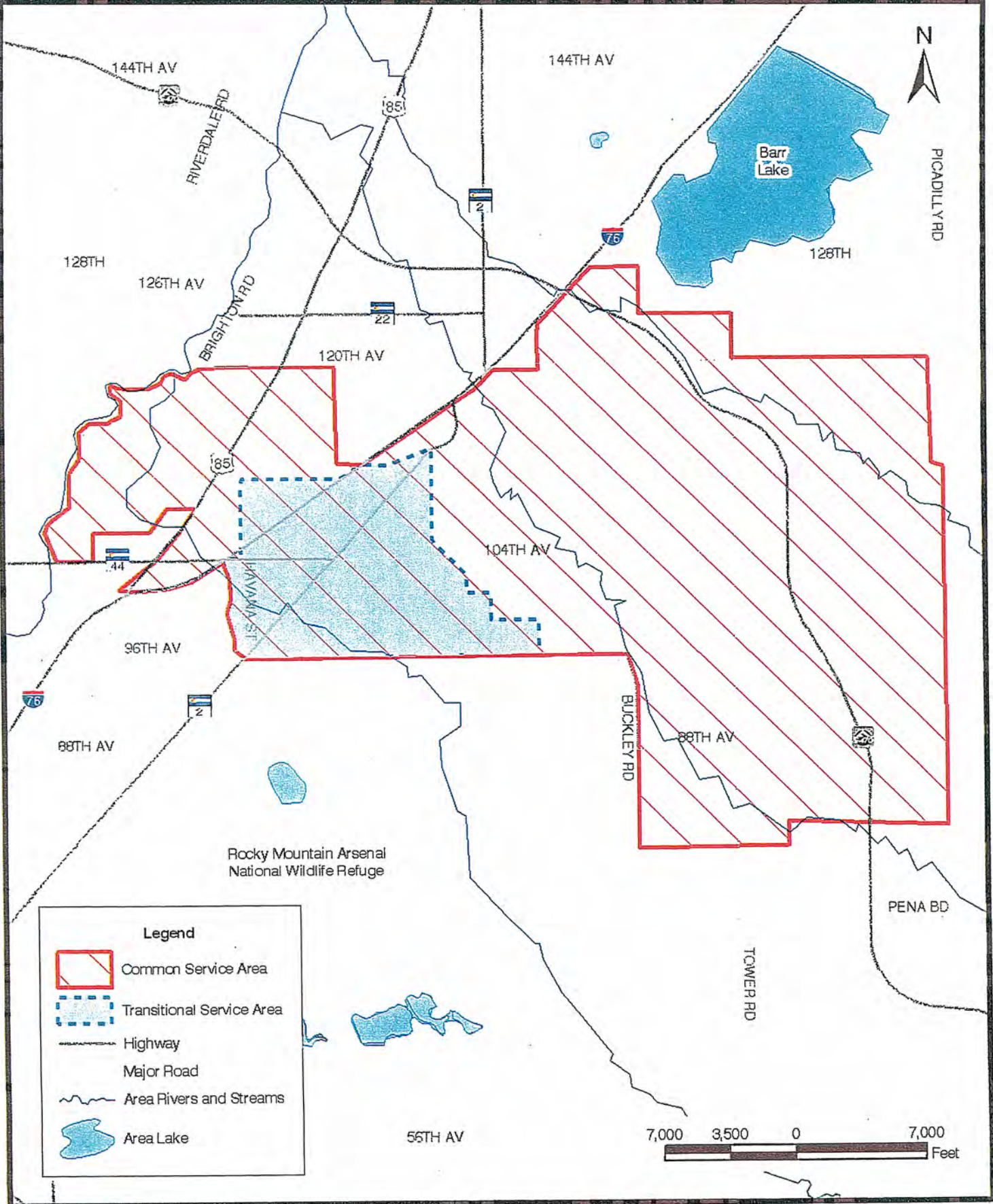




**EXHIBIT C**  
**SACWSD COMMON SERVICE AREA**

**Preliminary**

A Final exhibit with substantially similar geographic area will be substituted by September 15, 2005. If there are substantial discrepancies between the Preliminary and Final exhibit, approval by the Governing Bodies of all Parties of the Final is required.





## EXHIBIT D

### PROCEDURES FOR FINANCIAL PLANNING, FUND MANAGEMENT, AND BUDGETING

These procedures for financial planning, management, and budgeting for the financial management of the Authority are to be followed by the Board and Manager of the Authority. To meet changing circumstances, the Board is authorized to adopt amendments to these Procedures consistent with the Agreement. Any amendments shall be incorporated into this Exhibit with a copy to each Party in accordance with the notice provision Section XXVIII.N. of the Agreement.

Sentences and paragraphs below *in italics* are excerpts directly from the Agreement and are included herein for the purposes of clarity.

*“Operations and Maintenance Revenue Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse all revenues of the Authority. Revenues are placed in this fund and then transferred to other funds as appropriate. This fund is also used to pay for all Operations and Maintenance Costs.*

- Authority revenues are placed in this fund and then transferred to other funds as appropriate. Revenues include Annual Charges, and Bond Proceeds.
- This fund pays for all Operations and Maintenance Costs.
- This fund shall maintain a minimum balance at the end of the year of \$20,000 beginning in 2005, \$50,000 beginning in 2007 and \$250,000 beginning in 2009. The Board may increase the minimum balance as necessary to maintain liquidity in this fund.
- After completing all transfers to other funds and after meeting the required minimum balance, at year-end any funds remaining in the Operations and Maintenance Revenue Fund shall be transferred to the General Reserve Fund.

*“Debt Service Fund” is the fund established and maintained under this Agreement to meet the Authority’s debt service obligations.*

- This fund receives monthly transfers of debt service payments (principal and interest) collected as part of each Party’s Annual Charge payment.
- The minimum year-end balance in the Debt Service Fund will comply with all applicable bond covenants.

*“Rate Stabilization Fund” is the fund established and maintained under this Agreement to meet the Authority’s debt service coverage ratio requirement.*



- This fund receives periodic transfers of funds collected as part of each Party's Annual Charge payment to meet the Authority's debt service coverage ratio requirement.
- The minimum year-end balance in the Rate Stabilization Fund prior to the first full year of operations is estimated to be \$700,000.
- The minimum year-end balance requirement is subject to change at the Authority's sole discretion and depends on several factors including the amount and terms of debt that is issued, and the amount and timing of Authority revenues and expenditures.
- It is anticipated these funds are never actually dispersed. As a paper transaction and as allowed by applicable covenants, the funds are withdrawn when necessary to meet the debt service coverage ratio requirement and then re-deposited in the Fund in the subsequent year.

*“Capital Construction and Improvements Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse bond proceeds and other monies for capital improvements including the construction of the Initial Authority Facilities, expansions of the Authority Facilities, and both major and minor capital improvement projects with a projected life of greater than one year.*

- Interest earned in the Capital Construction and Improvements Fund will remain in the Fund.

**During Initial Construction (Phase I and Phase II):** Based on projected expenditures, the need for working capital, and projected bond issue receipts (payments of submitted invoices), the Board will annually as a part of the budgeting process determine the amount of monies to be paid by each Party into the Capital Construction and Improvements Fund based on its Initial Capital Contribution and the need to maintain an appropriate fund balance. The charges do not have to be equal monthly payments, but the amounts of each monthly payment for each fiscal year must be identified in the Budget. The Board shall budget for payments from the Parties and receipt of bond funds so that there are always sufficient monies available to meet variations in payment schedules or other contingencies. In general, the Board should set the fund balance at a minimum of ten percent (10%) above the anticipated expenditures schedule during the majority of the construction period.

**After Initial Construction (Phase III):** After the initial Plant becomes operational, this fund shall have an initial minimum balance of \$1,000,000. The initial funding shall be paid as a capital cost of establishing the treatment plant.

*“General Reserve Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse funds for unanticipated expenses, and other uses as directed by the Board.*

- At year-end any funds remaining in the Operations and Maintenance Revenue Fund shall be transferred to the General Reserve Fund.
- For the initial year of 2005, the minimum balance in the General Reserve Fund will be \$100,000. The Charges to the Parties will include this amount in excess of the projected Budget expenditures. This minimum balance is expected to be sufficient until the first year of operation of the Plant.
- By the first year of operation of the Authority Facilities, the minimum balance in the General Reserve Fund will be an amount equal to 90 days of O&M Budget expenses. (In 2010, the minimum balance is estimated to be \$1.3 million.)

*“Capital Rehabilitation and Replacement Fund” is the fund established and maintained under this Agreement to receive, hold, and disburse funds for Capital Rehabilitation and Capital Replacement.*

- This fund will receive transfers from the General Reserve Fund beginning in the first full year of operation. The first year of funding will be at \$300,000 and future years funding level may be higher based on the results of the mandatory study.
- Interest earned in the Capital Rehabilitation and Replacement Fund will remain in the Fund.



**EXHIBIT E**

**PHASE III ANNUAL CHARGES**

**I. O&M CHARGES.** The O&M Charges required by Section XIII.B of the Agreement to be paid during Phase III shall be determined in accordance with the following:

**A. Amount of O&M Charges.** The total amount of the annual O&M Charges for all Parties will be the O&M Costs budgeted by the Board to operate the Authority and maintain the Authority's facilities, and any adjustments needed to maintain the required balance in the Operations & Maintenance Revenue Fund as described in Exhibit D.

**B. O&M Cost Parameters.** O&M charges will be allocated based on the following O&M Cost Parameters: (a) Flow Volume, (b) Biochemical Oxygen Demand (BOD), (c) Suspended Solids (SS), and (d) Total Kjeldahl Nitrogen (TKN). The Board shall adopt Rules and Regulations to establish a fair and equitable system for flow metering, sampling, and—where appropriate—estimating flows and loadings, for use in calculating O&M Charges.

**C. O&M Cost Parameter Allocation.** An O&M Cost Parameter Allocation Report shall be prepared before the beginning of Phase III by one of the following as determined by the Board: the Design Engineer, the Authority Engineer, or a professional rate consultant. The report shall analyze the O&M Costs in the initial Phase III Annual Budget and allocate the percentage of such costs associated with each of the O&M Cost Parameters. After approval of the report by the Board and the Governing Bodies, the percentages allocated to the Cost Parameters shall be used to determine the O&M Charges to be paid by each Party.

The O&M Cost Parameter Allocation Report shall be updated as needed, as determined by the Board; such updates require only Board, and not Governing Body, approval before implementation.

Consistent with the findings of the O&M Cost Parameter Allocation Report and any updates, the percentages of O&M costs associated with each Cost Parameter shall be reviewed and revised annually by the Board as part of the Annual Budget approval process using recent operating information from the Authority Facilities.

➤ *Example (NOTE: This and all subsequent examples in this Exhibit are for illustration purposes only; the numbers used are fictitious and do not represent the real values which will be developed by the Authority.*

*The annual review of budgeted 2010 O&M costs results in the following percentages of the total O&M costs being allocated to the Cost Parameters:*

<i>Flow Volume:</i>	<i>32.31%</i>
<i>BOD:</i>	<i>34.52%</i>
<i>SS:</i>	<i>25.38%</i>
<i>TKN:</i>	<i>7.79%</i>
<i>Total:</i>	<i>100.00%</i>

The percentages of the budgeted O&M Costs allocated to the Cost Parameters as described above shall be applied to the total budgeted O&M Costs to determine the annual O&M Charge for each Cost Parameter.

➤ *Example*

The total 2010 budgeted O&M costs are \$4,614,777; therefore the 2010 annual O&M Charge for each Cost Parameter is as follows:

<i>Annual O&amp;M Flow Charge</i>	$= \$4,614,777 \times 32.31\%$	$= \$1,491,035$
<i>Annual O&amp;M BOD Charge</i>	$= \$4,614,777 \times 34.52\%$	$= \$1,593,021$
<i>Annual O&amp;M SS Charge</i>	$= \$4,614,777 \times 25.38\%$	$= \$1,171,230$
<i>Annual O&amp;M TKN Charge</i>	$= \$4,614,777 \times 7.79\%$	$= \$ 359,491$
<i>Total Annual O&amp;M Charges</i>		$= \$4,614,777$

**D. Calculation of Estimated Unit Charges.** The Authority shall annually calculate an estimated Unit Charge for each Cost Parameter by dividing the annual O&M Charge for that parameter by the total number of units estimated to be charged for in the following calendar year.

➤ *Example*

*Estimated quantities to be charged for in 2010:*

	<i>Flow</i>	<i>BOD</i>	<i>SS</i>	<i>TKN</i>
<i>Party</i>	<i>MG</i>	<i>Tons</i>	<i>Tons</i>	<i>Tons</i>
<i>Party X</i>	<i>2,030</i>	<i>1,814</i>	<i>1,752</i>	<i>304</i>
<i>Party Y</i>	<i>1,210</i>	<i>1,080</i>	<i>996</i>	<i>162</i>
<i>Party Z</i>	<i>1,408</i>	<i>1,313</i>	<i>1,112</i>	<i>195</i>
<i>Total</i>	<i>4,648</i>	<i>4,207</i>	<i>3,860</i>	<i>661</i>

(a) Estimated Unit Charge for Flow Received (per MG)

$$= \frac{\text{Annual O\&M Flow Charge}}{\text{Total charged MG to System}} = \frac{\$1,491,035}{4,648 \text{ MG}} = \$320.79 \text{ per MG}$$

(b) Estimated Unit Charge for BOD Received (per ton)

$$= \frac{\text{Annual O\&M BOD Charge}}{\text{Total charged BOD to System}} = \frac{\$1,593,021}{4,207 \text{ Tons}} = \$378.66 \text{ per Ton}$$

(c) Estimate Unit Charge for SS Received (per ton)

$$= \frac{\text{Annual O\&M SS Charge}}{\text{Total charged SS to System}} = \frac{\$1,171,230}{3,860 \text{ Tons}} = \$303.43 \text{ per Ton}$$

(d) Estimated Unit Charge for TKN Received (per ton)

$$\begin{array}{r} \text{Annual O\&M TKN Charge} \quad \$ 359,491 \\ \hline \text{Total charged TKN to System} \quad 661 \text{ Tons} \end{array} = \$543.86 \text{ per Ton}$$

**E. Payment of O&M Charges.**

**1. Payment of Estimated Charges.** The Parties shall make payments of Estimated O&M Charges to the Authority. The Board shall establish the required payments for each Party by May 1 of each year for the next calendar year by multiplying the estimated Unit Charge by the number of applicable units estimated by the Board to be discharged by each Party during the next calendar year. Each Party shall be provided the opportunity for input during the Authority's estimating process.

➤ *Example*

*2010 Payment of Estimated Charges for Party Z:*

Flow: \$320.79/MG x 1,408 MG	= \$ 451,672
BOD: \$378.66/Ton x 1,313 Tons	= \$ 497,181
SS: \$303.43/Ton x 1,112 Tons	= \$ 337,414
<u>TKN: \$543.86/Ton x 195 Tons</u>	<u>= \$ 106,053</u>
<i>Total 2010 Estimated Charges Payments = \$1,392,320</i>	

**2. Final O&M Charges.** Final O&M Charges shall be determined for each Party and approved by the Board by May 1 of each year for the preceding calendar year based on the actual number of units discharged during the preceding calendar year, using final Unit Charges recalculated based on the total actual number of units, but using the originally budgeted annual O&M Charge for each Cost Parameter. Credits and debits for any differences between the payments made for the Estimated O&M Charges and the final O&M Charges shall be subtracted from or added to each Party's O&M Charges payments during the calendar year following the final O&M Charges determination.

➤ *Example*

*Actual quantities discharged in 2010; finalized by May 1, 2011:*

	<i>Flow</i>	<i>BOD</i>	<i>SS</i>	<i>TKN</i>
<u>Party</u>	<u>MG</u>	<u>Tons</u>	<u>Tons</u>	<u>Tons</u>
<i>Party X</i>	2,115	1,921	1,700	307
<i>Party Y</i>	1,200	1,122	942	158
<u><i>Party Z</i></u>	<u>1,511</u>	<u>1,333</u>	<u>1,186</u>	<u>207</u>
<i>Total</i>	4,826	4,376	3,828	672

(a) Final Unit Charge for Flow Received (per MG)

$$= \frac{\text{Annual O\&M Flow Charge} \quad \$1,491,035}{\text{Total charged MG to System} \quad 4,826 \text{ MG}} = \$308.96 \text{ per MG}$$

(b) Final Unit Charge for BOD Received (per ton)

$$= \frac{\text{Annual O\&M BOD Charge} \quad \$1,593,021}{\text{Total charged BOD to System} \quad 4,376 \text{ Tons}} = \$364.04 \text{ per Ton}$$

(c) Final Unit Charge for SS Received (per ton)

$$= \frac{\text{Annual O\&M SS Charge} \quad \$1,171,230}{\text{Total charged SS to System} \quad 3,828 \text{ Tons}} = \$305.96 \text{ per Ton}$$

(d) Final Unit Charge for TKN Received (per ton)

$$= \frac{\text{Annual O\&M TKN Charge} \quad \$ 359,491}{\text{Total charged TKN to System} \quad 672 \text{ Tons}} = \$534.96 \text{ per Ton}$$

2010 Final O&M Charges for Party Z; approved by May 1, 2011:

Flow: \$308.96/MG x 1,511 MG	= \$ 466,839
BOD: \$364.04/Ton x 1,333 Tons	= \$ 485,265
SS: \$305.96/Ton x 1,186 Tons	= \$ 362,869
TKN: \$534.96/Ton x 207 Tons	= \$ 110,737
<u>Total 2010 Final O&amp;M Charges</u>	<u>= \$1,425,710</u>

Total 2010 Estimated Charges Payments = \$1,392,320

Difference = \$ 33,390

\$33,390 will be added to Party Z's O&M Charges payments made in 2012.

**II. DEBT SERVICE CHARGES.** The Debt Service Charges required by Section XIII.B of the Agreement to be paid during Phase III shall be determined in accordance with the following:

**A. Amount of Debt Service Charges.** The total amount of the annual Debt Service Charges for all Parties will be the sum of the budgeted debt service payments for the Initial Authority Facilities and any other capital construction and improvements, and any adjustments needed to maintain the required balance in the Debt Service Fund as described in Exhibit D.

**B. Payment of Debt Service Charges.**

**1. Payment of Budgeted Charges.** The Parties shall make payments of budgeted Debt Service Charges to the Authority. The Board shall establish the required payments for each Party by May 1 of each year for the next calendar year as follows. Each Party's payments will be equal to the sum of the following components:

**a. For the Initial Authority Facilities:** The Party's share of the budgeted debt service payments shall be assessed as provided for in Section XI.A.4. of the Agreement. The assessment is based on each Party's proportionate share of projected future treatment capacity needs as defined in the initial Authority Facilities Master Plan approved by the Board, as adjusted for transfers of Inactive Allocated SFREs from one Party to another as provided in Section XI.A.5.

**b. For Capital Construction and Improvements (other than as provided for the Initial Authority Facilities) that Increase the SFRE Capacity:** The Party's share of the budgeted debt service payments shall be assessed based on the Party's proportionate share of projected future treatment capacity needs of the additional SFRE Capacity provided by the capital construction and improvement, after consideration of any cash paid by a Party to the Authority and applied to the capital construction and improvement as provided for in Section XI.B.2. The portion of the additional SFRE Capacity attributable to capital construction and improvement shall be Allocated SFREs for each Party in the same proportion as its undertaking of its cost including Debt Service in accordance with Section IV.C.

**c. For Capital Construction and Improvements that do not Increase the SFRE Capacity of Authority Facilities:** The Party's share of the budgeted debt service payments shall be assessed based on the Party's proportionate share of Allocated SFREs of all Parties' Allocated SFREs, after consideration of any cash paid by a Party to the Authority and applied to the capital construction and improvement.

**d. For Adjustments to Maintain the Required Debt Service Fund Balance:** The Party's share of any such budgeted adjustments shall be assessed based on the proportionate share of the Party's total payments under Sections II.B.1.a, b, and c of this Exhibit E.

**2. Final Debt Service Charges.** Any adjustments to the Debt Service Charges when Inactive Allocated SFREs are transferred shall be determined for each Party and approved by the Board by May 1 of each year for the preceding calendar year. Credits and debits for any differences between the payments made for the budgeted Debt Service Charges and the final Debt Service Charges shall be subtracted from or added to each Party's Debt Service Charges payments during the calendar year following the final Debt Service Charges determination.



**III. SPECIFIED FUND CHARGES.** The Specified Fund Charges required by Section XIII.B of the Agreement to be paid during Phase III shall be determined in accordance with the following:

**A. Amount of Specified Fund Charges.** The total amount of the annual Specified Fund Charges for all Parties will be determined based on the Authority's expenditure requirements and the need to maintain appropriate balances in the following Funds pursuant to the procedures in Exhibit D:

- (1) General Reserve Fund
- (2) Capital Rehabilitation and Replacement Fund
- (3) Capital Construction and Improvement Fund
- (4) Rate Stabilization Fund

**B. Payment of Specified Fund Charges.**

**1. Payment of Estimated Charges.** The Parties shall make payments of Estimated Specified Fund Charges to the Authority. The Board shall establish the required payments for each Party by May 1 of each year for the next calendar year by allocating the total amount of the budgeted Specified Fund Charges to each Party in proportion to the Party's expected Ownership Interest as of the end of that calendar year.

**2. Final Specified Fund Charges.** Final Specified Fund Charges shall be determined for each Party and approved by the Board by May 1 of each year for the preceding calendar year by allocating the total amount of the budgeted Specified Fund Charges previously adopted by the Board for that year to each Party in proportion to the Party's actual Ownership Interest as of the end of that calendar year. Credits and debits for any differences between the payments made for the Estimated Specified Fund Charges and the final Specified Fund Charges shall be subtracted from or added to each Party's Specified Fund Charges payments during the calendar year following the final Specified Fund Charges determination.

## EXHIBIT F

### PLANNING

#### I. AUTHORITY PLANNING PROCESS

It is important for the Authority to have and maintain an active planning program in order to assure adequate facilities are available to provide wastewater treatment in compliance with regulatory requirements, to provide adequate capacity for the growth of the Parties, and to assure that the rates and charges of the Authority are both predictable and reasonable from year to year. Therefore, it is incumbent on the Board of the Authority to carry out a planning program that includes Strategic Planning, Ten-Year Planning, Ten-Year Capital Expenditure Planning, Rehabilitation and Replacement Planning, and any additional planning program elements determined by the Board to be necessary to accomplish the goals cited above. Carrying out this planning program as described below is a mandatory duty of the Board. From time to time the Board may adjust the specific details of the planning elements and add additional planning elements, but the Board may not remove any of these initial planning elements or make such changes as result in a significant diminution of the planning process.

#### II. STRATEGIC PLANNING

The purpose of preparing a *Strategic Plan* is to address significant issues regarding the role of the Authority in the future and articulate principles to guide the Board in determining the most cost-effective and efficient allocation of resources to meet the challenges of today and the future. The *Strategic Plan* serves as a general guide to the Board in the acquisition, use, and disposition of resources to meet the short-term and long-term objectives of the Authority. The *Strategic Plan* should be updated periodically by reviewing the Authority's long-term objectives, re-evaluating external factors, and establishing new goals, as appropriate.

The *Strategic Plan* provides a means for the Board of Directors and Manager to:

- establish the Authority's long-term objectives;
- determine changes in these objectives;
- decide on policies which must be in place to pursue these objectives;
- determine resources needed to attain these objectives; and
- guide actions for the acquisition, use, and disposition of these resources.

The time frame addressed in the current *Strategic Plan* should be a minimum of 30 years into the future. The *Strategic Plan* should include (1) working statements of the responsibilities and long-term objectives of the Authority; (2) identification of external factors representing opportunities and constraints facing the Authority's pursuit of its objectives; and (3) recommendations and approaches which will contribute to the Authority achieving its long-term objectives.

Many of these recommendations will involve interactions with other entities, including the Parties, the regulatory agencies, and other operating agencies. Accomplishing these recommendations will also require necessary time for deliberations, decisions, and actions.

The *Strategic Plan* is not the same as the Authority Facilities Master Plan as the *Strategic Plan* looks at broader issues and for a longer time frame than the Master Plan. The *Strategic Planning* process is likely to point out changes which need to be incorporated in to the Master Plan and the Ten-Year Plan.

### **III. AUTHORITY FACILITIES MASTER PLAN**

The Board shall be responsible for developing the Authority Facilities Master Plan and keeping the Plan current. The initial Authority Facilities Master Plan may be the same plan as used by the Authority to receive approval from the State of Colorado for the site of the Authority Facilities. After initial approval of the site by the State of Colorado, the Authority Facilities Master Plan may be simplified to address the Facilities the Authority expects to own, operate, maintain, and build during the following twenty year period. The Plan must address projected flows and loadings into the Authority Facilities, the projected effluent and biosolids regulatory requirements, the projected renewal and replacement expenditures, and such other planning elements necessary to provide good twenty year utility planning for the Authority Facilities and the Authority.

### **IV. TEN-YEAR PLAN FOR SERVICE**

The purpose of the *Ten-Year Plan for Service* is to provide a link between the *Strategic Plan* and the Master Plan with the annual budget planning process. The intent is to translate strategic planning objectives and policies from the Strategic Plan and the Master Plan into operational and financial requirements for a ten-year period and to assess alternatives for meeting these objectives. At a minimum the Ten-Year Plan for Service must address the financial resources needed in the ensuing ten-year period to operate, maintain, repair, replace, expand the facilities, and meet other obligations of the Authority. This information should be used during the annual budget process to prepare more accurate budget projections for the budget year.

There is always some ambiguity with any planning process when trying to predict the impact of factors outside of the Authority's control, such as increased regulatory requirements. It is also difficult to predict capital expenditures, staffing requirements, and specific program costs with any certainty over a ten-year horizon.

Even though long-term planning is not a precise science, the *Ten-Year Plan for Service* provides a base for the Authority to evaluate the impact of alternatives and unanticipated issues on the Authority Facilities and the finances of the Authority. It should assist the Board and the Manager in establishing the objectives of the Authority, identifying changes in these objectives, attaining needed resources, and establishing policies governing the acquisition, use, and disposition of these resources.

**A. Ten-Year Capital Expenditure Plan**

A major component of the *Ten-Year Plan for Service* is the *Ten-Year Capital Expenditure Plan*. This Plan includes detailed descriptions, cost estimates, proposed time frames, funding requirements, and other information for all identified capital projects during the ten-year planning period.

The *Ten-Year Capital Expenditure Plan* is to be updated at least annually, prior to the annual budget process. Each update shall reflect current cost estimates and projected time schedules for capital projects.

**B. Cash Flow Analysis and Projections**

Another major element of the Ten-Year Plan for Service is the preparation of cash flow projections for all Authority Accounts for the ten-year period such that projections of Annual Charges and Connection Fee rates for each year can be made. These projections of future rates and charges are not done to set future rates and charges, but to identify potential adjustments in the financial planning are needed to avoid sharp increases in rates and charges.

**C. Annual Update Process**

The *Ten-Year Plan for Service* will be updated on an annual basis at which time external factors and long-range plans for service are re-examined. Wastewater transmission, wastewater treatment, and biosolids management plans are updated and new financial plans developed. Some information dealing with long-term issues does not change much from year-to-year; however, each annual update results in more refined capital project planning and cost estimating.

Emphasis is placed on issues the Authority must address over the next ten years and the degree of uncertainty the Authority faces. While making projections of future rates and charges, the *Ten-Year Plan for Service* does not focus on costs at a precise level. It is intended to provide a framework for determining resource allocations and financial details needed for annual budgeting each year and to address significant changes in facilities and programs over the next ten years.

The *Ten-Year Plan for Service* allows the Board and the Manager the opportunity to evaluate preliminary estimates of resources needed for the upcoming Budget Year. These projections are reviewed in detail during the annual budget process for the Budget Year.

**V. CAPITAL REHABILITATION AND REPLACEMENT RESERVE**

Providing funding to pay for rehabilitation and replacement of Authority facilities as they age or become technologically obsolete is a very important financial and planning function of the Board.

The Manager and the Board shall cause a study of the Capital Rehabilitation and Replacement Reserve Account requirements to be prepared during the first full year of Plant operation. The Manager and the Board shall cause a major review and revision of the study at least once every ten years and the study shall be reviewed and updated annually by the Manager at the direction

of the Board. The cost of the initial study shall be paid from the Capital Construction and Improvements Account and updates or major revisions shall be paid from the Capital Rehabilitation and Replacement Reserve Account. The study required by this section at a minimum shall include:

**A. Anticipated Maintenance and Replacements**

Identification of the major components which the Parties are obliged to repair, replace, restore or maintain, which as of the date of the study have a remaining useful life of less than 30 years and which are not normally repaired and replaced as part of the normal annual Operations and Maintenance Budget;

**B. Useful Life**

Identification of the probable remaining useful life of those components of the Authority Facilities anticipated to be replaced or restored;

**C. Cost Estimate**

An estimate of the cost of replacement or restoration of each component identified during and at the end of its useful life; and

**D. Annual Contribution**

An estimate of the total annual contributions necessary for the Budget year and future fiscal years to defray the cost to replace or restore each component during and at the end of its useful life, after subtracting total funds held in the Fund for this purpose.

Should more funds than necessary to pay for the 30-year, long-term rehabilitation and replacement of the Authority Facility assets be accumulated, the Board should reduce the level of annual funding to balance the projected long-term needs with the projected funding. Should the projections show that insufficient funds would be available to meet long-term needs, the Board should increase the annual funding. Contributions to the Capital Rehabilitation and Replacement Reserve Account by each Party shall be identified by source in the accounting of the Authority. Upon dissolution of the Authority or upon a determination that the Capital Rehabilitation and Replacement Reserve funds actually collected exceed the projected long-term Capital Rehabilitation and Replacement Reserve requirements, the Board may refund the amounts in excess of what is needed for rehabilitation and replacement as determined by the Study to the Parties in proportion to each party's contribution.

**EXHIBIT G**

**MEMORANDUM OF UNDERSTANDING SITE ACQUISITION**

Memorandum of Understanding Site Acquisition For Regional Wastewater Treatment Plant is attached hereto and made a part of this exhibit.



**EXHIBIT H**

**LEGAL DESCRIPTION PLANT SITE**

Three parcels located in Section 31, Township 1 North, Range 66 of the West P.M., County of Weld, State of Colorado. (more particularly, the NE 1/4 SW 1/4 and NW 1/4 SE 1/4, the SW 1/4, and the SW 1/4 NE 1/4 and SE 1/4 NW 1/4).



**INTERLOCAL COOPERATION ACT AGREEMENT FOR  
WASTEWATER MANAGEMENT  
BY THE LOTT WASTEWATER ALLIANCE**

by and among

**City of Lacey, City of Olympia, City of Tumwater, and Thurston County  
("Partners")**

**November 5, 1999**

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**INTERLOCAL COOPERATION ACT AGREEMENT FOR  
WASTEWATER MANAGEMENT  
BY THE LOTT WASTEWATER ALLIANCE**

THIS AGREEMENT ("Agreement"), dated \_\_\_\_\_, 1999, is entered into by and between the City of Lacey, Washington ("Lacey"); the City of Olympia, Washington ("Olympia"); the City of Tumwater, Washington ("Tumwater"); and Thurston County, Washington (the "County") pursuant to Chapter 39.34 RCW. The parties are herein individually referred to as "Partner" and collectively as the "Partners."

RECITALS

WHEREAS, pursuant to the Intergovernmental Contract for Wastewater Facilities Management dated November 1976, as amended ("1976 Intergovernmental Contract") the LOTT Partners have for more than two decades cooperated successfully in financing, constructing, maintaining and operating joint facilities to provide wastewater treatment and discharge services for the citizens of the urban area of northeast Thurston County; and

WHEREAS, said 1976 Intergovernmental Contract has been modified from time to time to provide for changing environmental and technical requirements, increased service demands and revised public health and environmental protection policies initiated by Partner governments, the Washington State Department of Ecology ("Ecology") and the federal government; and

WHEREAS, since 1976, the Partners have managed the construction and expansion of wastewater treatment and discharge facilities for the region through The Advisory Committee ("TAC") and have relied on Olympia as the lead agency for LOTT contracting and financing; and

WHEREAS, Olympia issued certain water and sewer revenue bonds (the "Bonds" as defined in Section 1.5) to provide funds to finance or refinance the Existing Facilities and local facilities, and, so long as the Bonds are outstanding, Olympia is obligated to comply with its covenants to owners of such Bonds, including covenants not to dispose of the Existing Facilities, as hereinafter defined, without repaying the Bonds or to take any action that would impact the tax-exempt status of the Bonds; and

WHEREAS, in March 1995, TAC authorized the development of a new comprehensive plan known as the LOTT Wastewater Resource Management Plan ("Plan") to provide for the region's future wastewater needs and initiated an environmental review process to assess all reasonable and feasible alternatives for wastewater management; and

WHEREAS, the Plan, as developed by LOTT with the assistance of community, Partner, and Ecology input, provides for the development of future treatment capacity on an incremental basis utilizing new joint use reclamation and groundwater recharge facilities located throughout

the LOTT service area but connected to the main LOTT treatment and marine discharge facilities; and

WHEREAS, the development of such new joint reclamation facilities must be planned and implemented on a cooperative basis so that increments of capacity are added no sooner than necessary but in sufficient time to meet NPDES permit limits and public health requirements; and

WHEREAS, to this point financing and contracting obligations for LOTT have been assumed by Olympia on behalf of the LOTT Partners; and

WHEREAS, the Partners have agreed that an independent, nonprofit corporate entity should be established pursuant to Chapters 36.34 and 24.03 RCW to enable LOTT to directly contract for the services and construction necessary to develop and manage new joint use facilities in response to the Plan; and

WHEREAS, the Partners will exercise control of the new non-profit corporate entity, called the "LOTT Wastewater Alliance" (or "LOTT Alliance"), through appointment of board members by and from their legislative bodies, who will represent their respective local governments; and

WHEREAS, by December 31, 1999, the Partners intend to transfer all joint use facilities developed or identified under the 1976 Intergovernmental Contract to the LOTT Wastewater Alliance and to terminate the 1976 Intergovernmental Contract, so that the LOTT System is exclusively managed by the LOTT Wastewater Alliance Board of Directors pursuant to this Agreement (a series of events termed "Consolidation");

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Partners hereby agree as follows:

## **ARTICLE I PURPOSE AND SCOPE**

### **Section 1.1 PURPOSE OF AGREEMENT**

The purpose of this Agreement is to provide for a new governance structure to carry out the Plan, which anticipates development of additional treatment capacity for the LOTT Partners through innovative wastewater reclamation and management facilities. The new facilities implemented pursuant to this Agreement, together with the facilities and improvements identified or developed as Existing Joint Facilities pursuant to the 1976 Intergovernmental Contract, shall be operated as a combined system for the benefit of all the Partners in the manner set forth herein.

The Partners intend to form a new nonprofit corporate entity, to be known as the LOTT Wastewater Alliance, pursuant to Chapter 39.34 and Chapter 24.03 RCW. The LOTT Wastewater Alliance shall be solely controlled by Partner representatives and its primary function shall be to carry out the public purposes expressed in the Plan and this Agreement, as both may be amended or supplemented from time to time. The Partners intend for the LOTT Wastewater Alliance to function as a regional agency that provides wholesale wastewater resource treatment and management services in the public interest.

The Partners intend to consolidate the ownership and management of all Existing Joint Facilities and related properties and interests in the LOTT Wastewater Alliance so that the entire LOTT System is under its sole management and control. This "Consolidation" can occur only after the Bonds have been paid or defeased and when it is otherwise legally feasible. The Partners herein commit to work together in good faith, to use their best efforts, and to take all necessary actions to accomplish Consolidation as provided herein. The Partners recognize that a transition period will be necessary to identify and accomplish all required and appropriate Consolidation steps and to coordinate the assumption by the LOTT Board of TAC responsibilities and legal obligations related to the LOTT System. The 1976 Intergovernmental Contract, as amended, will continue in effect until the Consolidation is completed as determined by the LOTT Board, and then the 1976 Intergovernmental Contract will terminate.

### **Section 1.2 COMMITMENT & ACCESS TO JOINT FACILITIES**

Consistent with their covenants in the 1976 Intergovernmental Contract, in this Agreement the Partners commit to deliver all sewage flows in their Local Systems within the LOTT Plan area (see Exhibit E) to the Joint Facilities for treatment and disposal or reuse. Each Partner foregoes the opportunity to treat and dispose or reuse its sewage flows individually and decides to share control of access to and capacity in sewerage facilities within its community. Because this Agreement and the 1976 Intergovernmental Contract contemplate that all Partners will be using Joint Facilities and because most, if not all, Partners will be transporting sewage flows collected in their Local Systems through the political jurisdictions of one or more other Partners, the Partners declare and confirm i) that this Agreement is not intended as an instrument to permit one Partner to control the sewer collection services furnished by another Partner, and ii) that each Partner will cooperate to provide the others with access for sewage flow to the Joint

Facilities either by sharing Local System capacity, if reasonably available, or by facilitating the acquisition of necessary rights-of-way, franchises, and permits through and under public streets, rights-of-way, and property under reasonable conditions for such access.

### **Section 1.3 PARTNER CONTRIBUTIONS**

The Partners recognize that they have jointly developed and maintained the LOTT System to serve all the Partner governments. Although precise legal and equitable interests of the Partners in specific Existing Joint Facilities cannot be defined, the Partners hereby reconfirm that they each have an unquantified interest in the Existing Joint Facilities based on the rights and obligations of all Partners under the 1976 Intergovernmental Contract and past financial contributions to the development, operation and maintenance of the facilities. In this Agreement, the Partners commit to transfer all right, title and interest in and to Existing Joint Facilities to the LOTT Wastewater Alliance. In consideration for the mutual promises and covenants and establishment of a new LOTT governance structure, each Partner waives all potential claims against the other Partners as to ownership of Existing Joint Facilities and as to monetary reimbursement or compensation arising from the ownership of Existing Joint Facilities or its transfer to the LOTT Wastewater Alliance, except for the purchase of City of Lacey facilities as provided in the Agreement Regarding Additional LOTT Joint Facilities of June 21, 1999 (see Exhibit I).

### **Section 1.4 CONTRACT DOCUMENTS**

The following exhibits are incorporated by reference into this Agreement as though fully set forth herein:

- Exhibit A — List of all agreements comprising the 1976 Intergovernmental Contract
- Exhibit B — List of Existing Joint Facilities
- Exhibit C — Articles of Incorporation of LOTT Wastewater Alliance
- Exhibit D — Bylaws of LOTT Wastewater Alliance
- Exhibit E — LOTT System Service Area (Urban Growth Area Boundary, Ch. 36.70 RCW)
- Exhibit F — Allocation of Costs to New Connections and Monthly Rates
- Exhibit G — LOTT Discharge and Industrial Pretreatment Regulations
- Exhibit H — O & M Contract
- Exhibit I — Agreement Regarding Additional LOTT Joint Facilities of June 21, 1999



Exhibit J — Intergovernmental Contract for Inflow and Infiltration Management and New Capacity Planning of March 27, 1995

Exhibit K — Interlocal Cooperation Agreement Between Thurston County and the Cities of Lacey, Olympia, and Tumwater Regarding Joint Wastewater Flow Reduction and Water Conservation Projects of May 28, 1997 (with attachments)

Exhibit L — Administrative and Treasury Services Contract

## Section 1.5 DEFINITIONS

For purposes of this Agreement, the following terms shall have the meanings set out below.

“Bonds” means City of Olympia Water and Sewer Revenue Refunding Bonds, 1993 (LOTT Series), Water and Sewer Revenue Bonds, 1997A and Water and Sewer Revenue Refunding Bonds, 1997 (Series B).

“Capacity Development Charge” means the one-time connection charge collected at issuance of building permit for each new connection to a Local System or directly to the LOTT System.

“Consolidation” means the point at which the LOTT Wastewater Alliance has been formed and is capable of functioning as an independent wastewater treatment and management entity and all significant steps necessary to concentrate ownership or control of Existing Joint Facilities and the LOTT System in the LOTT Wastewater Alliance, including defeasance of the Bonds, have been accomplished.

“Debt Service” means the principal of, interest on, sinking fund requirements, reserve account requirements and any coverage requirement required by a resolution authorizing the issuance of LOTT Debt.

“Equivalent Residential Unit” or “ERU” means:

- 1) One separate single family residence;
- 2) With respect to residential duplexes, one per single family unit;
- 3) With respect to each residential structure having more than two single family residential units, each single family unit shall equal 0.70 ERU (or, for these structures, one ERU equals 1.43 single family units);
- 4) With respect to mobile home and trailer parks, one per each mobile home or trailer unit; or
- 5) With respect to the Wastewater Service Charge for uses other than residential uses, the monthly discharge of sewage in units of 900 cubic feet measured at the source either by water consumption or sewage discharge, and with respect to determining the ERU number used to calculate the Capacity Development charge for other than

residential uses, the monthly discharge of sewage in units of 900 cubic feet estimated pursuant to guidelines established by the Advisory Committee and based on the then current or most recent experience of the type and character of the proposed service requested.

“Existing Joint Facilities” means any “Joint Facilities” as defined in or developed pursuant to the 1976 Intergovernmental Contract that are in existence and operation or are designated as LOTT Joint Facilities as of the effective date of this Agreement. The Existing Joint Facilities are identified in Exhibit B.

“General Pretreatment Regulations” shall mean the United States Environmental Protection Administration General Pretreatment Regulations for existing and new sources as set forth in 40 CFR part 403.

“I/I Study” means the LOTT Infiltration and Inflow Removal Study (Gibbs & Olson 1994).

“Joint Facilities” means Existing Joint Facilities and LOTT Wastewater Alliance Joint Facilities.

“Joint Facilities Maintenance and Operation Expenses” means all costs and expenses relating to labor, fringe benefits, power, light, water, heat, chemicals, equipment including repair and replacement thereof, tools, materials, supplies, insurance premiums, contract services, inspections and taxes and “in lieu of taxes” directly and properly chargeable to the operation and maintenance of the Joint Facilities plus administrative overhead expenses, and any other similar costs chargeable to the Joint Facilities.

“LOTT Wastewater Alliance Joint Facilities” means all sewerage or wastewater treatment or reclaimed water facilities or conveyance acquired or developed after the effective date of this Agreement by the LOTT Wastewater Alliance including but not limited to trunk sewer lines, sewage pumping stations, sewage force mains, sewage treatment facilities and outfall lines, resource management basins, reclamation and groundwater recharge facilities, flow reduction improvements, and other improvements, properties, rights, or interests used or useful in the conveyance, treatment, disposal, storage, or management of sewage or wastewater flows or reclaimed wastewater or water products, including any appurtenances thereto, and any improvements or replacements of Existing Joint Facilities.

“Local System” means sewer or wastewater facilities other than Joint Facilities that are owned or operated by a Partner for the local collection, pretreatment, transmission, and delivery of sewage or wastewater flows to Joint Facilities.

“LOTT” means the LOTT Partnership created by the 1976 Intergovernmental Contract and the LOTT Wastewater Alliance created pursuant to this Agreement, and the “LOTT System” means all Joint Facilities that are owned, operated, or controlled by one or more of the Partners or by LOTT or that are used or useful in the performance of LOTT’s

functions, including all contracts, permits, rights, and interests that are necessary or useful for operation of said facilities.

“LOTT Board” or “Board of Directors” means the board of directors created pursuant to Chapter 24.03 RCW to manage and oversee the LOTT Wastewater Alliance non-profit corporation.

“LOTT Debt” means any notes, bonds or other obligation of the LOTT Wastewater Alliance issued to finance or refinance improvements, betterments, or extensions to Joint Facilities or any other costs related to the LOTT System and the State of Washington loan to LOTT, evidenced by the Olympia Water and Sewer Revenue Bonds (1992) ultimately issued in a principal amount of \$36,579,836.19.

“LOTT Discharge and Industrial Pretreatment Regulations” shall mean the regulations attached as Exhibit G to this Agreement, which may be amended from time to time by a unanimous vote of the LOTT Board.

“LOTT System” (see “LOTT”)

“LOTT Wastewater Alliance” or “LOTT Alliance” means the non-profit corporation to be created by the Partners pursuant to Chapter 24.03 RCW and this Agreement.

“1976 Intergovernmental Contract” means the Intergovernmental Contract for Wastewater Facilities Management, dated November 30, 1976, together with all later amendments, all of which are listed in Exhibit A.

“O & M Contract” means the agreement for operation and maintenance of the wastewater treatment plant and other Joint Facilities to be entered by the LOTT Wastewater Alliance and Olympia pursuant to Section 10.3.

“Plan” means the LOTT Wastewater Resource Management Plan dated November, 1999 and approved by the Partners, as may be amended from time to time.

“TAC” means The Advisory Committee formed pursuant to the 1976 Intergovernmental Contract that operates to advise the development and operation of Existing Joint Facilities.

“TSC” means the Technical Subcommittee formed by TAC in response to the requirements of the 1976 Intergovernmental Contract and also made part of the LOTT Wastewater Alliance. The TSC is composed of one public works executive manager from each Partner; the person responsible for management of LOTT treatment plant and facility operations; the LOTT staff engineer; and the LOTT administrator appointed by TAC or the LOTT Board. The LOTT administrator shall chair the TSC.

“Wastewater Service Charge” means the LOTT monthly rate charged for each Equivalent Residential Unit (ERU) connected to Local Systems or directly to the LOTT System.

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**ARTICLE II**  
**LOTT WASTEWATER ALLIANCE: NONPROFIT CORPORATION**  
**GOVERNANCE**

**Section 2.1 LOTT WASTEWATER ALLIANCE**

As soon as practical after this Agreement takes effect, the Partners shall act to form a nonprofit corporation under Chapter 24.03 RCW to be formally called the "LOTT Wastewater Alliance." A form of articles of incorporation and bylaws are attached as Exhibits C and D respectively, and the Partners shall use articles of incorporation and bylaws substantially in the form set out in Exhibits C and D to create the nonprofit corporation.

**Section 2.2 POWERS.**

The LOTT Wastewater Alliance, an independent legal entity, acting through its Board of Directors and duly authorized employees and agents, shall have all the powers of a nonprofit corporation organized under Chapter 24.03 RCW. Among its powers, the LOTT Wastewater Alliance shall have the full power and authority to:

- a) Acquire, construct, receive, own, manage, lease, sell, and otherwise dispose of real property, personal property, intangible property, and Joint Facilities;
- b) Plan, develop, replace, operate and maintain Joint Facilities;
- c) Enter into contracts for goods, services, work, or other benefits to the LOTT Wastewater Alliance;
- d) Borrow money and issue debt instruments or provide for the borrowing of money and issuance of debt instruments;
- e) Receive gifts or grants for the planning, design, development, construction, or operation of Joint Facilities, or assets or programs to further LOTT's purposes, or for other purposes necessary to carry out LOTT's purposes;
- f) Lend money or provide services or facilities to any Partner or other governmental utility or governmental service provider in furtherance of LOTT's purposes;
- g) Invest its funds;
- h) Sue and be sued;
- i) Hire and fire employees of the LOTT Wastewater Alliance;
- j) Fix salaries, wages and other compensation of officers and employees;

- k) Employ or retain engineering, legal, financial or other specialized personnel and consultants as may be necessary to carry out the purposes of the LOTT Wastewater Alliance;
- l) Impose, alter, regulate, control, and collect rates, charges, and assessments;
- m) Purchase insurance and participate in pooled insurance and self-insurance programs;
- n) Indemnify the Partners and their officers and employees in accordance with law;
- o) Establish policies, guidelines, or rules to carry out its powers and responsibilities;
- p) Exercise all other powers within the authority of and that may be exercised individually by all of the Partners with respect to sewage or wastewater conveyance, treatment, disposal, reclamation, reuse, conservation, or other LOTT purposes or functions as set forth herein; and
- q) Take any other actions as the LOTT Board deems necessary to implement the Plan, to protect and advance the interests of the LOTT System, its Partners, and its ratepayers that are consistent with this Agreement, Chapter 39.34 RCW, and other applicable law.

### **Section 2.3 PUBLIC ACCOUNTABILITY.**

The Partners intend for the LOTT Wastewater Alliance to operate and function as a public agency. The LOTT Board shall conduct its deliberations and take action openly. Therefore, the LOTT Wastewater Alliance shall operate and conduct its business subject to the Open Public Meetings Act (Ch. 42.30 RCW, as may be amended), the Public Disclosure Act (Ch. 42.17 RCW, as may be amended), local government accountancy statutes (RCW 43.09.200 et seq., as may be amended), and other applicable laws, regulations, and self-imposed policies.

### **Section 2.4 NO EFFECT ON PARTNER POLICE POWERS.**

Nothing in this Agreement shall be deemed to limit the exercise of a Partner's police or regulatory powers as may be required or allowed by law. The Partners herein confirm that the LOTT Board has no local land use authority to direct growth or development within the LOTT service area as shown on Exhibit E. Instead, the LOTT Board shall manage the LOTT System in a way that is responsive to local land use planning and sewerage plans adopted by the Partners within LOTT's service area and consistent with applicable state and federal laws. However, the LOTT Board may comment on proposed changes by Partners to their land use plans and zoning codes where such changes could affect the amount, timing or characteristics of sewage or wastewater flows to be treated by the LOTT System.

### **Section 2.5 LOTT BOARD**

**a) Composition.** The Board of Directors for the LOTT Wastewater Alliance shall consist of four (4) Directors and four (4) alternate Directors. One Director and one alternate Director shall be appointed by and from the legislative bodies of Lacey, Olympia, Tumwater and

Thurston County. The Director and alternate Director of each Partner appointed to the LOTT Board shall serve at the will and discretion of the legislative body of that Partner. Any Partner may remove its Director or Alternate Director from the LOTT Board at any time. In the event that a Partner's Director or alternate Director is so removed, is no longer qualified to serve on, or otherwise departs from the LOTT Board, that Partner's legislative body shall promptly appoint a new Director or alternate Director to the LOTT Board. It is the Partners' intent that a representative on the LOTT Board will represent his or her Partner local government in voting and acting as a LOTT Board member.

**b) Local government representation.** The Partners hereby agree that legislative oversight by their respective local governments shall not be required for any LOTT Board decisions in the management and operation of the LOTT System, except as expressly provided herein. LOTT Board members shall represent the interests of their respective local governments in carrying out their responsibilities to act in the best interests of the LOTT Wastewater Alliance.

**c) Procedures and voting.** Each Director shall have one vote. A Partner's alternate Director shall vote in place of that Partner's Director when the Director is absent or unavailable or when the Director position is vacant. Alternate Directors may also vote to resolve tie votes as provided below. The LOTT Board shall establish procedures for conducting its meetings consistent with Roberts Rules of Order and its decisions shall be by a majority vote except when a unanimous vote is required, as provided below.

**d) Tie votes.** In the event of a tie vote by the LOTT Board, the LOTT Board shall 1) randomly choose one alternate Director, and 2) table the matter to the following LOTT Board meeting which shall be scheduled as a special or regularly scheduled meeting within the next twenty-one (21) days or as soon thereafter as all LOTT Directors can be present together with the alternate Director randomly chosen to assist in resolving tie votes. At this meeting, all LOTT Directors, including the alternate Director chosen, shall participate in the discussion and voting on the matter or related matters until such time as the issue previously resulting in a tie vote has been resolved by a majority affirmative vote, defeated by a majority, or otherwise resolved. The LOTT Board shall select the alternate Director to resolve a tie vote by a random drawing of the Partners' names from a hat or other container; however, no Partner's alternate Director shall serve as a tie breaker in two consecutive tie vote matters.

**e) Unanimous votes.** For the actions that require unanimous votes identified below, proposed LOTT Board resolutions or motions must be distributed to the Clerk of each Partners' legislative body at least eighteen (18) calendar days in advance of final action by the LOTT Board. The following actions shall require unanimous votes by the LOTT Board:

- i)** Approval or amendment of the Plan;
- ii)** Revisions in the Articles of Incorporation or Bylaws or dissolution of the LOTT Wastewater Alliance non-profit corporation;

iii) Revision of the allocation of costs as to new connection charges and monthly rates; the allocation of costs in effect as of the effective date of this Agreement is set forth in Exhibit F;

iv) Modification or amendment of the LOTT Discharge and Industrial Pretreatment Regulations pursuant to Section 7.1 of this Agreement; and

v) Establishment or modification of pretreatment permit fees, charges, and actions pursuant to Section 7.2 of this Agreement.

f) **Local government review and comment.** The LOTT Board shall, in a timely manner, solicit the review and comment by its Partner local governments of proposed changes in LOTT comprehensive plans, annual budgets and annual capital programs. The LOTT Board shall consult with a Partner local government on any specific Joint Facility capital project proposed within the Partner jurisdiction prior to approving the final design for such project.

#### **Section 2.6 COMMITTEES**

The LOTT Board may form and convene committees and advisory bodies as it deems appropriate for Partner review and comment, public input, efficient staff and Board work, and other purposes. Initially, until the LOTT Board directs otherwise, the following standing committees shall exist to advise the LOTT Board: i) the Technical Subcommittee ("TSC"), and ii) the Legal Committee composed of an attorney chosen by each Partner and the LOTT Wastewater Alliance legal counsel to review legal matters as from time-to-time directed by the LOTT Board.

#### **Section 2.7 BOOKS AND RECORDS.**

Any member of the LOTT Board or a representative of such member may examine the books and records of any Partner or of the LOTT Wastewater Alliance that relate to the Joint Facilities, the administration thereof, this Agreement, or the 1976 Intergovernmental Contract. After provision of reasonable notice, such books and records may be examined at any reasonable time during business hours of that Partner. The LOTT Board may appoint an auditor or accountant to review any such books and records and the costs of such review shall be charged to LOTT which in turn may include such costs as a Joint Facilities Maintenance and Operations Expense.



## **ARTICLE III LOTT WASTEWATER ALLIANCE: FINANCE**

### **Section 3.1 LOTT RATES & CHARGES**

The LOTT Wastewater Alliance shall establish rates and collect fees for wastewater service that will be at least sufficient to pay the expenses of maintenance and operation of the LOTT System and will meet the principal, interest and coverage requirements and other bond covenants of all obligations issued by the LOTT Wastewater Alliance or by a Partner on behalf of the LOTT Wastewater Alliance that are related to improvements and extensions to the LOTT System or refunding bonds issued for the LOTT System and that constitute a charge upon the revenue of such system.

### **Section 3.2 PARTNER COVENANTS TO MAKE PAYMENTS**

**a) Covenants to make payments.** In consideration for the LOTT Wastewater Alliance maintaining and operating the Joint Facilities and as a condition for use thereof and service therefrom, each Partner irrevocably covenants, obligates and binds itself to timely bill, collect and pay the Wastewater Service Charge and the Capacity Development Charge provided for in this Article III. All such payments shall be made at the times and in the manner provided in this Article III. All such payments shall be made out of the gross revenues of each Partner's Local System or combined water/sewer system. Each Partner shall pay its share of costs attributable to Debt Service on and other costs associated with LOTT Debt throughout the term of this Agreement whether or not the Joint Facilities or the LOTT System is operating or operable and notwithstanding the performance or nonperformance of this Agreement by any Partner. Nothing in this Agreement shall be interpreted to cause the LOTT Wastewater Alliance not to charge the Partners for Debt Service or to relieve a Partner from paying its share of Debt Service.

**b) Wastewater Service Charge.** Commencing with the first complete month in which sewage flows are collected and delivered by the Partners to LOTT, each Partner shall pay to the LOTT Wastewater Alliance the Wastewater Service Charge established by the LOTT Board. Initially this uniform charge is \$25.50 per month per ERU as approved by the LOTT Partners and made effective January 1, 1993. At least annually and more frequently as necessary, the LOTT Board shall consider the Wastewater Service Charge and confirm or adjust the amount of the Wastewater Service Charge as needed to cover costs. The Wastewater Service Charge paid by each Partner is based on the number of ERUs connected to its Local System, determined as follows.

**i) Reporting and Payment of ERU count.** By the 25th day of each month each Partner shall deliver to LOTT a statement specifying the amount of Wastewater Service Charge revenue collected and remitted to LOTT and the number of ERUs served or billed by it as of the last day of the immediate preceding month. An ERU shall be counted if it is either connected to or billed for availability of use by Local Facilities. If any Partner fails to furnish such count in a timely manner, LOTT may estimate such ERU count and bill that Partner according to that estimate. Any Partner by giving reasonable notice may examine the books and records of any

other Partner to determine the basis for the computation of any ERU figure used by that examined Partner. No dispute over any such charges shall relieve a Partner from its duty to pay a monthly bill. In the event an adjustment or correction must be made, it shall be effective for a credit or additional charges in the next succeeding month. In order to keep count of ERUs each Partner shall cause all nonresidential users to install meters measuring either all water usage or sewage discharge. Any Significant Industrial User (see Exhibit G Section 2 (JJ)) not covered by an Industrial Pretreatment Permit and covered by a separate discharge contract with any Partner or with the LOTT Wastewater Alliance shall have charges paid and reported consistent with its discharge contract and shall be exempt from the ERU requirements of this section.

**ii) ERU payment reduction.** A Partner may reduce the Wastewater Service Charge for each ERU qualifying under the Partner's sewer rate reduction program for elderly and handicapped low income persons, provided the program is consistent with applicable State law and regulations. The reduction in ERU payment will be equal to the percentage reduction allowed of the Partner's sewer collection system rate per ERU, but in no event may the reduction in ERU payment exceed 50% per qualifying ERU.

**c) Capacity Development Charge.** Each Partner shall collect a LOTT Wastewater Alliance Capacity Development Charge equal to the amount established by the LOTT Board for every additional structure connected to its Local System beginning with the effective date established by the LOTT Board. Upon change in the character in use of any structure connected to a Local System resulting in significantly increased sewage discharge, an additional LOTT Wastewater Alliance Capacity Development Charge shall be collected so as to account for actual use, giving appropriate credit for connection charges already paid. All Capacity Development Charges shall be paid to LOTT with the Partner's next monthly payment following the month in which the charges are collected. Initially the Capacity Development Charge is \$3,000.00 per ERU as approved by the LOTT Partners and made effective July 1, 1999. At least annually and more frequently as necessary, the LOTT Board shall consider the Capacity Development Charge and confirm or adjust the amount of the Capacity Development Charge as needed to cover costs of additional conveyance, treatment and management capacity.

**d) Local System Expenses.** The Wastewater Service Charge shall be deemed a maintenance and operation expense to the maximum extent possible under existing bond resolutions and ordinances and shall expressly be made a part of the maintenance and operation expenses of the Local Systems of each Partner in any future bond issue or other financing payable in whole or in part from the revenues of such systems and shall be payable and constitute a charge prior and superior to any charge or lien of any revenue bonds, or any obligation, issued by the Partners payable from the net revenues (gross revenues less operations and maintenance expenses) of their respective systems.

### **Section 3.3 PARTNER COVENANTS TO MAINTAIN CHARGES**

Each Partner irrevocably covenants and agrees to establish rates and collect fees for sewer service or sewer and water service, in the case of a combined utility, that will be at least sufficient to pay the charges to the LOTT Wastewater Alliance and to pay the other maintenance and operation expenses of their respective Local Systems.

### **Section 3.4 PARTNER BONDS**

**a) Future water and sewer bonds.** On and after the effective date of this Agreement, no Partner shall issue any debt secured by existing or future LOTT sewerage charges or connection revenue, Joint Facilities, or any other LOTT revenues or assets; however, with the approval of the LOTT Board a Partner may issue such debt on behalf of or for the benefit of the LOTT Wastewater Alliance.

**b) Outstanding local bonds.** It is recognized that Olympia, Tumwater and Lacey presently have outstanding revenue bonds payable in whole or in part from the net sewer revenue of their Local Systems. Nothing in this Agreement is intended or shall be construed to violate any covenant of these outstanding bonds, and such covenants, to the extent there is a conflict between them and this Agreement, shall control with respect to such outstanding bonds and any debt issued on a parity with such bonds and required to have the same covenants as the outstanding bonds.

### **Section 3.5 BILLINGS AND PAYMENTS**

For all charges prescribed in this Article III, the LOTT Wastewater Alliance shall bill each Partner on the first day of each calendar month for charges accrued to the first day of the immediately preceding month, unless already paid as provided in Section 3.2. Each Partner shall pay such charges so billed by the twentieth day of the month such bill is received, after which time such billing shall be delinquent. Charges omitted in one month may be billed in the following months. Delinquent charges shall accrue interest on the unpaid balance at a rate equal to the current one year Treasury Bill rate plus 1% from date of delinquency until paid.

### **Section 3.6 ADMINISTRATIVE AND TREASURY SERVICES**

As provided in Section 11.4, the LOTT Wastewater Alliance and Olympia shall enter into an Administrative and Treasury Services Contract to provide for Olympia to continue to provide such services for an initial period of time. Prior to giving notice of termination of all or part of the Administrative and Treasury Services Contract, the LOTT Board shall consider and document Olympia's and alternative administrative and treasury service costs and practices. After this consideration, the LOTT Board shall determine whether to continue under the Administrative and Treasury Services Contract, to terminate all or part of the Administrative and Treasury Services Contract and make other arrangements for such services, or take such other action as the Board finds necessary and appropriate. After the Administrative and Treasury Services Contract terminates, the LOTT Wastewater Alliance may, in its sole discretion, decide to operate and maintain the administrative and treasury services through its own staff or through a contract or contracts with others, including any of the Partners.

The LOTT Board shall control and direct the disposition of all LOTT funds and monies. The contractor shall establish a separate fund to hold LOTT funds, establish special accounts within the LOTT Fund, and keep separate and adequate books and records of the same, all as required by law and regulations of the State Auditor and as the LOTT Board may direct. The

contractor shall also be responsible for investment of LOTT funds consistent with the investment policy adopted by the LOTT Board.

**Section 3.7 LOTT BUDGETING**

**a) Annual LOTT budget**

i) By each June 1, the LOTT Board shall notify each Partner of its proposed budget and capital improvement program for the Joint Facilities showing its estimate of the debt service and reserve requirements for debt obligations incurred to finance the LOTT Existing Joint Facilities, LOTT Wastewater Alliance Joint Facilities, Joint Facilities Maintenance and Operation Expenses, and the coverage requirements of such obligations per ERU for the ensuing calendar year and shall furnish forthwith to those Partners upon request for inspection the data and records supporting such estimate. Each Partner shall furnish LOTT with its recommendations and comments by July 31. Thereafter LOTT shall adopt its final annual budget and capital improvement program for the forthcoming calendar year on or before August 31. Subject to adjustment as provided in this subparagraph, the ERU charges for the Partners under this subparagraph shall be based on the final budget.

ii) By March 1 of each year, LOTT shall determine and notify the other Partners of the actual debt service and reserve requirements of the LOTT Debt, the actual Joint Facilities Maintenance and Operation Expenses, the actual requirements for LOTT Wastewater Alliance obligations and any other payment requirements for the immediately preceding calendar year, or part thereof, covered by this Agreement.

iii) The annual schedule of budget events is summarized as follows:

March 1 <sup>st</sup>	Notice of previous year's reconciliation
March 15 <sup>th</sup>	Preliminary flow estimate for next calendar year provided by LOTT
April 15 <sup>th</sup>	Partners respond to preliminary flow estimates for next calendar year
May 1 <sup>st</sup>	LOTT provides final flow estimate for next calendar year
June 1 <sup>st</sup>	LOTT provides proposed budget and capital improvement program for next calendar year
July 31 <sup>st</sup>	Partners and public comment on proposed LOTT budget and capital improvement program for next calendar year
August 31 <sup>st</sup>	LOTT adopts budget and capital improvement program for next calendar and advises Partners of LOTT rates to take effect January 1st

iv) To respond to special circumstances, the LOTT Board shall have the authority to alter the annual budget schedule in a given year.

**b) LOTT Joint Facilities budget adjustments.** The LOTT Wastewater Alliance shall operate within its annual budget. Should debt service and reserve requirements for the LOTT Debt, or Joint Facilities Maintenance and Operation Expenses, or coverage requirements increase above budget estimates, or should the money in the Operations Account of the LOTT Joint Facilities Fund or the LOTT Wastewater Alliance Joint Facilities Fund be insufficient to meet and pay those requirements and expenses in that calendar year, the LOTT Wastewater Alliance may amend its budget and increase the Wastewater Service Charge after first submitting the proposed budget amendment and Wastewater Service Charge increase to the Partners for comments.

### **Section 3.8 SHORT-TERM FINANCIAL ASSISTANCE FOR EMERGENCY SEWER REPAIRS**

**a)** Upon request from a Partner, the LOTT Wastewater Alliance shall consider providing short-term financial assistance to any Partner facing an emergent need to repair or replace failed sewer facilities when that emergency involves a threat to public health or public safety, poses a significant threat to the natural environment, or presents a threat to or operational difficulty for the LOTT System. In dealing with such emergencies, time is of the essence. The temporary financing is intended to provide financial assistance between the time of the emergency and the time when the requesting Partner has opportunity to secure other financing. It is understood the requesting Partner will make all reasonable efforts to effectively use its own financial resources and any other available funding to assure minimum use of assistance from LOTT.

**b)** LOTT resources available for use in providing emergency repair assistance to a requesting Partner shall be limited to LOTT funds in excess of that required by bond covenants and other debt and that which is not otherwise committed or programmed according to the adopted current LOTT budget and Capital Improvement Program during the term of the requested temporary financing. The amount of the requested temporary financing may not exceed the total cost of the engineering and construction of repairs necessary to restore sewer service, end the public health or safety emergency, end the threat to the natural environment, or end the threat to or operational difficulty for Joint Facilities plus the cost of liquidation losses and interest as provided herein.

**c)** Temporary financing for emergency repairs may be extended for a term of up to eighteen months from the time of first withdrawal at which time it will be due and payable in full including the principal amount, the added cost of losses due to liquidation, and all interest. Any Partner using LOTT funds under this Section 3.8 is subject to the same obligations for payment as for the charges set forth in this Article III.

**d)** The Partners hereby recognize that, due to the emergency nature of the financial assistance covered by this agreement, invested LOTT money may be subject to losses due to liquidation of investments as a result of providing for temporary financing assistance. Every reasonable effort will be made to avoid such losses; however, the amount of these losses will be added to the principal amount of the temporary financing and will be subject to interest charges as described herein.

e) Interest will be charged on temporary financing for emergency repairs at a rate equal to the net earnings rate of the State of Washington Local Government Investment Pool. The interest period will begin with the effective date of the issuance of funds to the requesting Partner.

f) Because time is of the essence when dealing with temporary financing for emergency sewer repairs, the following procedure will guide processing of a request. First, the requesting Partner will, by letter addressed to the LOTT Board, describe the emergency for which a temporary financing is being requested, state the amount requested, and propose a date to meet with LOTT and its treasurer to negotiate a schedule of dates and amounts of withdrawals and repayment. If time permits, the LOTT Board may refer the request to a committee for review and recommendation. In any event, the LOTT Board shall attempt to act on the request in a timely fashion.

### **Section 3.9 TAXES**

In recognition of the LOTT Wastewater Alliance as a public entity, the Partners shall not impose any tax on the gross receipts of the LOTT Wastewater Alliance. Each Partner may levy a gross receipts tax on its utility, including receipts representing the Wastewater Service Charge.

**ARTICLE IV**  
**LOTT WASTEWATER ALLIANCE: WASTEWATER CONVEYANCE**  
**AND TREATMENT**

**Section 4.1 LOTT SERVICE OBLIGATION IN SERVICE AREA**

LOTT shall accept all Partner sewage flows delivered to Joint Facilities within the LOTT System service area (shown on Exhibit E), subject to the conditions and limitations stated herein. The service area shall be the Lacey-Olympia-Tumwater Urban Growth Area in effect when this Agreement takes effect. The LOTT Wastewater Alliance shall not directly accept sewage or wastes from any person, firm or corporation that is located within the boundaries of or is delivering its sewage flows to the Local System of a Partner without the written consent of that Partner.

If the Lacey-Olympia-Tumwater Urban Growth Area is expanded beyond that shown on Exhibit E, the LOTT System service area shall be expanded only if the Partner requesting the expansion remits a connection charge that includes all capacity development costs including those otherwise allocated to monthly rates (Wastewater Service Charge). The foregoing sentence shall not apply to service expansions outside the Lacey-Olympia-Tumwater Urban Growth Area that correct identified health hazards or water quality problems in high density developments consistent with the Thurston County Sewerage General Plan of 1990, and the cost of such expansions shall be allocated pursuant to Exhibit F.

**Section 4.2 PARTNER OBLIGATION TO DELIVER FLOWS**

Each Partner shall deliver all sewage and wastewater flows collected by its Local System to the LOTT System. Each Partner shall deliver its Local System flows at such locations in the LOTT System and pursuant to such connection procedures and other terms and conditions as may be established by the LOTT Board. Except as provided in Section 4.4 of this Agreement, a Partner shall not deliver sewage or wastewater flows generated in the LOTT System service area to an agency other than LOTT for treatment and disposal or treat such flows at its own sewage treatment facilities without the consent of the LOTT Board.

**Section 4.3 LOTT SYSTEM CAPACITY**

**a) Acceptance of Partner flows.** The LOTT System shall be available to receive and treat sewage flows delivered to Joint Facilities by the Partners so long as the LOTT System has capacity to accept, treat, and manage such flows. The LOTT Wastewater Alliance shall use its best efforts to provide for increased capacity pursuant to the Plan, in a manner designed to allow the LOTT System to accept, treat, and manage all flows proposed to be delivered to the Joint Facilities by the Partners. Flows from the Partners' Local Systems shall be accepted on a "first-come, first-served" basis. The LOTT Board shall have the authority to limit flows from the Partners only to ensure preservation of public health and compliance with applicable laws, regulations, permits and provisions of the LOTT Plan. However, in the event that flows are proposed from a single non-residential user which will impair, for a significant period of time,

any Partner's capacity to accommodate growth projected by the Thurston Regional Planning Council in its service area, the LOTT Board shall have the authority to delay the delivery of flows or portions thereof from the single non-residential user until, through the best efforts of the LOTT Board, a plan is in place which will be implemented in time to avoid such projected impairment. Any such flow limitation shall not in any way excuse or reduce any Partner's obligation to make payments to the LOTT Wastewater Alliance under this Agreement.

**b) Annual flow predictions.** The LOTT Board shall annually provide to the Partners by March 15<sup>th</sup> a preliminary estimate of flows to be produced within each Partner local government during the following calendar year based on data from the Thurston County Regional Planning Council forecasting population and employment. Each Partner, within thirty (30) days of receipt of the estimate, shall a) estimate and provide to LOTT the expected building activity within its jurisdiction for the following calendar year based on plats and/or building permits approved or pending immediate approval and b) provide to LOTT any other information that it would like LOTT to consider in establishing a final estimate of the capacity available during the following calendar year. After receiving such comments and information from the Partners, the LOTT Board shall publish a final estimate no later than each May 1<sup>st</sup> identifying the total estimated capacity available for the following year in the LOTT System and the percentage of such capacity expected to be utilized during such year.

**c) No default.** The LOTT Wastewater Alliance shall not be in default of its obligations under this Agreement or any other intergovernmental contract in the event that the LOTT Board determines that insufficient capacity exists to accept, treat, and manage sewerage flows, despite using best efforts to develop sufficient capacity. The existence of a capacity constraint or the unavailability of additional capacity shall not excuse or reduce any Partner's obligation to make payments to the LOTT Wastewater Alliance under this Agreement.

#### **Section 4.4 PARTNER OPTIONS IN THE EVENT OF CAPACITY CONSTRAINT**

In the event that the LOTT Board limits additional Partner flows to the LOTT System pursuant to Section 4.3, the following exclusive remedies are available to the Partners, but only for the duration of such limitation.

i) A Partner may deliver additional sewage flows to an agency other than LOTT for treatment and disposal; and

ii) A Partner may develop its own sewage treatment facilities to serve new demand; provided that such facilities are sized no larger than reasonably necessary to serve customers connecting during the expected duration of the capacity constraint.

The foregoing remedies are the exclusive remedies available to a Partner as to the LOTT Wastewater Alliance and the other Partners in the event of a LOTT System capacity constraint, except that the Partners shall not be limited to such exclusive remedies in the event the LOTT Wastewater Alliance is in default of its obligations under this Agreement.



**ARTICLE V**  
**LOTT WASTEWATER ALLIANCE: COOPERATION IN**  
**MANAGEMENT & DEVELOPMENT OF WASTEWATER FACILITIES**

**Section 5.1 RESPONSIBILITY FOR JOINT FACILITIES AND LOCAL SYSTEMS**

**a) Joint Facilities.** The LOTT Wastewater Alliance shall plan, construct, acquire, replace, operate, and maintain all Joint Facilities such that the entire LOTT System and the Joint Facilities are built, operated and maintained as an integrated sewerage system in accordance with high engineering standards and in conformity with the sewer standards of American Public Works Association, the Water Environment Federation and requirements of the state, federal and local agencies having jurisdiction over the same. The LOTT Wastewater Alliance shall in its sole discretion determine the name, location, and time of construction of LOTT Wastewater Alliance Joint Facilities. The LOTT Wastewater Alliance shall maintain through responsible insurers including insurance pools public liability insurance for Joint Facilities operations and responsibilities in accordance with industry standards.

**b) Local Systems.** The Partners shall maintain and operate their respective Local Systems in accordance with high engineering standards and in conformity with the standards established by the state and federal agencies having jurisdiction over the same. Modifications and additions to Local Systems shall be constructed and operated in accordance with the sewer standards of American Public Works Association, the Water Environment Federation and requirements of the state and federal agencies having jurisdiction over the same. The Partners shall secure and maintain with responsible insurers including insurance pools all such insurance as is customarily maintained with respect to sewage systems of like character against loss of or damage to the Local Systems against public and other liability to the extent that such insurance can be secured and maintained at reasonable cost.

**c) Liability.** Any liability incurred by the LOTT Wastewater Alliance as a result of the operation of the LOTT System shall be the sole liability of the LOTT Wastewater Alliance and any liability incurred by a Partner as a result of the operation of its Local System shall be the sole liability of that Partner.

**Section 5.2 JOINT FACILITIES OPERATIONS**

As provided in Section 11.3, LOTT and Olympia shall enter into an O&M Contract to provide for Olympia to continue to operate the Joint Facilities for an initial period of time. Prior to giving notice of termination of the O&M Contract, the LOTT Board shall prepare a study of Olympia's and alternative operating costs and practices. After completion of the study, the LOTT Board shall determine whether to continue under the O&M Contract, to terminate the O&M Contract and make other arrangements for facilities operations, or take such other action as the Board finds necessary and appropriate. If termination of the O&M Contract with Olympia occurs, the LOTT Board will provide for an orderly, smooth transition which fairly takes into account the effect on Olympia employees. The Partners shall work together in good faith and cooperate with the LOTT Wastewater Alliance in preparation of the study and in developing new

arrangements, if any, for facilities operations to succeed the O&M Contract. After the O&M Contract terminates, the LOTT Wastewater Alliance may, in its sole discretion, decide to operate and maintain the Joint Facilities through its own staff or through a contract or contracts with others, including any of the Partners.

### **Section 5.3 RELATIONSHIP TO LOCAL PLANNING**

**a) Land use.** The development of LOTT Wastewater Alliance Joint Facilities shall be consistent with the Plan, with applicable laws, regulations and permits, and with the Partners' zoning and land use requirements. The LOTT Wastewater Alliance does not have any land use or police powers as a non-profit corporation even though it exists for the benefit of its governmental Partners and their citizens. LOTT shall follow applicable Partner zoning and land use requirements to secure conditional use and other permits and approvals necessary for the development of new LOTT Wastewater Alliance Joint Facilities or modification of Existing Joint Facilities.

**b) Partner and GMA sewerage plans.** The Plan shall be consistent with and responsive to land use plans adopted both individually and collectively by the Partners at the time this Agreement is adopted and whenever the Plan is amended. Future land use plans or modifications proposed individually or collectively by the Partners that affect wastewater treatment shall be offered to the LOTT Board for review and comment regarding their relationship to current LOTT plans prior to their adoption. Further, the Plan shall be consistent with the general sewer plans of the Cities of Lacey, Olympia and Tumwater and the sewerage general plan of Thurston County in force at the time this Agreement is adopted. Before adopting any new or modified general sewer plan or sewerage general plan, each Partner shall forward any such plan proposal to the LOTT Board for review and comment.

### **Section 5.4 PARTNER COMMITMENTS TO ASSIST LOTT**

To the extent legally feasible, each Partner agrees to give good faith consideration to LOTT requests for necessary zoning, land use, eminent domain proceedings and other permits and approvals to implement the Plan. In the event that a Partner completes an eminent domain proceeding for the benefit of the LOTT Wastewater Alliance to secure property or property rights for Joint Facilities, the LOTT Wastewater Alliance shall compensate the Partner for its expenses and for just compensation paid for such property and property rights.

## **ARTICLE VI STATE ENVIRONMENTAL POLICY ACT**

### **Section 6.1 COORDINATION OF ENVIRONMENTAL REVIEW & SEPA REQUIREMENTS**

The Partners and the LOTT Wastewater Alliance are obligated to identify and consider environmental impacts, alternatives and mitigation measures in the development of plans, programs and facilities relating to wastewater management. The State Environmental Policy Act, Ch. 43.21C RCW, and the regulations and ordinances promulgated under it ("SEPA"), establishes procedures for preparing environmental documents and obtaining input from citizens and agencies, and requires identification of a lead agency to prepare the environmental documents and administer the environmental review process. SEPA also requires agencies to integrate environmental review at the earliest time in the decision making process to ensure that planning and decisions reflect environmental values. The Partners agree that it is generally in the public interest for the LOTT Wastewater Alliance to directly manage environmental review of LOTT proposals and actions to assure the early consideration of environmental factors.

For purposes of this Article VI, "action" has the meaning given it in WAC 197-11-704, and "proposal" has the meaning provided in WAC 197-11-784.

### **Section 6.2 SEPA COMPLIANCE**

**a) LOTT as an Agency under SEPA.** The LOTT Wastewater Alliance shall fulfill the responsibilities of an agency pursuant to SEPA in connection with all proposals and actions which it undertakes. By carrying out the responsibilities of an agency under SEPA, the LOTT Wastewater Alliance shall satisfy any SEPA obligations that apply directly to the LOTT Wastewater Alliance as well as any that may apply to indirectly due to the Alliance's acting on the Partners' behalf.

**b) Procedural Responsibilities as Lead Agency.** With respect to LOTT proposals and actions, the LOTT Wastewater Alliance shall carry out the Partners' lead agency procedural responsibilities under SEPA, including the procedural functions of a "lead agency" under SEPA, WAC 197-11-758; however, the Partners retain their legal authority to assert lead agency status for projects located within their respective jurisdictions as permitted under SEPA, including, for example, by WAC 197-11-340(2)(e) and 197-11-948. This includes, without limitation, authority to adopt agency SEPA rules, to establish an administrative appeals process, to enter into lead agency agreements pursuant to WAC 197-11-944, and to appoint a "responsible official."

### **Section 6.3 RETENTION OF SUBSTANTIVE AUTHORITY**

The LOTT Wastewater Alliance's authority under this Article VI is to implement the procedural requirements of SEPA for LOTT proposals and actions. The Partners retain their respective substantive authorities to condition or deny such proposals and actions in their respective jurisdictions as part of their zoning, land use, SEPA, or other permitting processes.

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## **ARTICLE VII PRETREATMENT**

### **Section 7.1 Pretreatment Program**

Pursuant to this Agreement, the LOTT Wastewater Alliance will own and operate the LOTT System, and will hold permits required to operate the LOTT System, including the NPDES waste discharge permit for the LOTT Treatment Plant.

Various facilities located within the Partners' respective jurisdictions currently contribute wastewater which includes commercial and industrial waste to the LOTT System. Such facilities are referred to in this Article as "Industrial Users."

The LOTT Wastewater Alliance must implement and enforce a pretreatment program to control discharges from all Industrial Users of the LOTT System pursuant to requirements set out in 40 CFR Part 403, Ch. 173-208 WAC, and the NPDES Permit. In this Article, the Partners agree to adopt and maintain sewer use ordinances that subject Industrial Users within their respective boundaries to the necessary pretreatment controls, and to implement and enforce such sewer use ordinances.

The Partners stipulate their willingness and ability to assume enforcement powers of the Washington State Department of Ecology, and shall adopt, maintain, and actually enforce the LOTT Discharge and Industrial Pretreatment Regulations (the "LOTT Regulations") as contained in Exhibit "G" of this Agreement, and as the LOTT Regulations may be amended from time to time by the LOTT Board. No Partner shall retain or adopt any ordinance provisions conflicting with or superseding the LOTT Regulations.

The LOTT Wastewater Alliance shall conduct an annual review of the LOTT Regulations and prepare any revisions necessary to provide adequate protection of the LOTT System and maintain compliance with Federal General Pretreatment Regulations and applicable state regulations. Any proposed revisions shall be submitted to the LOTT Board for approval. The LOTT Regulations shall not be modified or amended except by unanimous agreement of the LOTT Board. The Partners agree to immediately consider for adoption any revisions to the LOTT Regulations approved by the LOTT Board. The Partners agree to consider and act upon such revisions within ninety (90) days of approval by the LOTT Board.

### **Section 7.2 Pretreatment Charges and Permits**

Where the LOTT Regulations call for the development of permits, permit fees, charges for discharge violations, and/or enforcement actions, the Partners agree to establish these permits, fees, charges and actions through their annual review of the LOTT operating budget based on predicted costs developed using information provided by the LOTT Wastewater Alliance. Such permit fees, charges and actions shall become effective upon unanimous approval by the LOTT Board. Permits for Industrial Users shall be issued by the Partners. Partners shall provide the LOTT Wastewater Alliance with fourteen (14) days' written notice

before issuing permits so that LOTT Wastewater Alliance personnel can review and comment on the proposed terms and conditions of such permits.

### **Section 7.3 Inspections; Imminent Danger**

The Partners agree that LOTT Wastewater Alliance personnel, or the LOTT Wastewater Alliance's agents, shall coordinate with the appropriate Partner jurisdiction personnel to conduct activities within each Partner's jurisdiction to collect information on compliance with the LOTT Regulation, Federal General Pretreatment Regulation, and state requirements. These activities shall include, among others, coordination with the Department of Ecology Pretreatment Program, updating the industrial waste survey, developing industrial discharge permits and compliance schedules, conducting compliance monitoring and inspections, reviewing industrial self monitoring reports, and notifying the Partners of instances of non-compliance. In order to accomplish these requirements the Partners agree that:

a) Agents of the LOTT Wastewater Alliance may, following reasonable notice to the Partner, enter and inspect at any reasonable time any part of the Local System of any Partner, and any records pertaining to the Partner's pretreatment program.

b) To the extent allowed by law, duly authorized agents of the LOTT Wastewater Alliance, in coordination with Partner personnel, shall be permitted to enter onto private property to inspect Industrial Users. Upon the request of the LOTT Wastewater Alliance, the Partners shall promptly make all necessary legal and administrative arrangements for these inspections.

c) Where a discharge to the wastewater treatment system reasonably appears to present an imminent danger to the health and welfare of persons, or an imminent danger to the environment, or threatens to interfere with the operation of the wastewater treatment system, the LOTT Wastewater Alliance may, in cooperation with a Partner, immediately initiate steps to identify the source of the discharge and to halt or prevent the discharge.

### **Section 7.4 Enforcement**

Whenever provided notice that a discharger has failed or has refused to fulfill any requirements of either the LOTT Regulations, an Industrial Discharge Permit, or a Compliance Schedule, the Partner with jurisdiction over the discharger shall use its legal authority to enforce the applicable regulations. Such enforcement may include collection of permit fees and industrial surcharges, application of fines and/or civil penalties, seeking injunctive relief, and/or interruption of sewer services.

Should a dispute arise between any Partner and personnel or agents of the LOTT Wastewater Alliance regarding any application of the LOTT Regulations, the issue shall be submitted to the LOTT Board. The determination of a majority of the LOTT Board shall be given in writing and the recommended action shall be followed by all Partners.

## **Section 7.5 Accountability**

A majority of the LOTT Board may penalize any single Partner for failure to apply and enforce the LOTT Regulations. This penalty may include requiring that the total of all fines, fees and other charges which are due and payable be paid by the offending Partner to LOTT for each day the Partner fails to apply and enforce the regulations. The offending Partner shall indemnify and hold harmless the LOTT Wastewater Alliance against any damages, penalties or other losses incurred as a result of the Partner's failure to enforce the LOTT Regulations. Without limitation, the LOTT Wastewater Alliance may obtain the remedy of specific performance from a court of competent jurisdiction to require the offending Partner to enforce the LOTT Regulations.

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## **ARTICLE VIII**

### **FLOW REDUCTION & PREVENTION OF CAPACITY DEGRADATION**

#### **Section 8.1 PRIOR AGREEMENTS RELATING TO INFLOW AND INFILTRATION AND JOINT FLOW REDUCTION PROJECTS.**

The Intergovernmental Contract for Inflow and Infiltration Management and New Capacity Planning, dated March 27, 1995 (see Exhibit J) and the Interlocal Cooperation Agreement Between Thurston County and the Cities of Lacey, Olympia, and Tumwater Regarding Joint Wastewater Flow Reduction and Water Conservation Projects (with attachments), dated May 28, 1997 (see Exhibit K) shall continue in force according to their terms, subject to amendment, modification, or termination by the Partners. With approval of this Agreement the "December 31, 1999" dates in the second paragraph of Section 4 (c) of the Intergovernmental Contract for Inflow and Infiltration Management and New Capacity Planning, dated March 27, 1995 (Exhibit J) are amended to "December 31, 2001." This amendment is reflected in Exhibit J.

#### **Section 8.2 Commitment to Support Volume Based Billing by the Partners**

As early as practical, but in no event later than one year after Consolidation, the LOTT Board will develop economic incentives that assist individual Partners choosing to implement residential sewer rates based in some degree on wastewater discharge volumes and designed to encourage lower residential wastewater discharge.

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**ARTICLE IX**  
**[ RESERVED ]**

[Reserved for additional subject]

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## **ARTICLE X LEGAL RELATIONS**

### **Section 10.1 EFFECTIVE DATE & TERM OF AGREEMENT**

**a) Effective date.** This Agreement shall become effective on the first date when all of the following events have occurred: i) the Agreement has been duly executed by all of the Partners; ii) the Agreement has been filed with the Thurston County Auditor pursuant to RCW 39.34.040; and iii) the Agreement has been approved pursuant to RCW 39.34.050.

**b) Duration.** Commencing on the effective date specified above, this Agreement shall be for a term of 35 years or such longer period as any LOTT Debt is outstanding or the payment thereof is not fully provided for, secured and funded.

### **Section 10.2 WITHDRAWAL BY A PARTNER**

Any Partner may individually withdraw from the obligations of this Agreement with the consent of all of the other Partners, which consent shall not be unreasonably withheld, after all LOTT Debt is retired or payment thereof is fully provided for, secured and funded, and the remaining Partners shall continue to be bound by this Agreement as it may be amended.

### **Section 10.3 AMENDMENT OF AGREEMENT AND ORGANIZATION**

This Agreement may be amended with the approval of the legislative bodies of the Partners. The LOTT Wastewater Alliance may be converted into a separate municipal corporation if and as permitted by law. Upon the creation of such a separate municipal corporation, all LOTT Wastewater Alliance rights and obligations under this Agreement shall transfer to that new municipal corporation.

### **Section 10.4 NOTICE**

Notices required to be given to Partners shall be deemed given when served on the respective City Clerks and the Clerk of the Board of County Commissioners of the County. When members of the LOTT Board must be notified, notice to one member thereof from each Partner shall be sufficient compliance, but reasonable efforts shall be made to give notice to every member.

### **Section 10.5 RELATIONSHIP TO 1976 INTERGOVERNMENTAL CONTRACT**

As detailed in Article XI, the 1976 Intergovernmental Contract remains in force until Consolidation. Upon Consolidation, the 1976 Intergovernmental Contract as described in Exhibit A terminates in its entirety.

## **Section 10.6 RESOLUTION OF LEGAL DISPUTES**

**a)** To effect a quick and efficient resolution of legal disputes that may arise under this Agreement, the Partners establish the following procedure. All claims or disputes concerning the interpretation or application of this Agreement or breach thereof ("Dispute") shall be decided exclusively by the following dispute resolution procedure unless all Partners agree in writing otherwise. This dispute resolution procedure applies only to disputes of a legal nature, and shall not be construed to apply to legislative or policy matters that are within the discretion or authority of the LOTT Board or the Partners.

**b)** Each Partner shall use its best efforts to resolve issues prior to giving Notice of Dispute and invoking the procedures set forth in this Section. In the event that any Partner is not satisfied with the results of the resolution, that Partner, acting through its representative on the LOTT Board, shall give prompt written notice of any Dispute to the other Partners' representatives on the LOTT Board, with a copy to the LOTT administrator or executive director. This notice, herein referred to as a "Notice of Dispute," shall clearly state the subject matter of the unresolved issues and the relief requested.

**c) Level I.** Within ten (10) working days of receipt of a Notice of Dispute, each Partner's representative on the LOTT Board shall designate a representative and the designated representatives shall meet and confer and attempt to resolve the Dispute for a period not to exceed five (5) working days. If the Dispute is not resolved at the close of the Level I meeting, the designated representatives shall prepare before adjournment of the meeting a written memorandum summarizing the matters that remain at issue.

**d) Level II.** If the Dispute is not resolved within 48 hours of the close of the Level I meeting, each designated representative shall meet with that Partner's representative on the LOTT Board to discuss the Dispute and the memorandum. Within ten (10) working days of the close of the Level I meeting, the designated representatives of the Partners shall meet and confer and attempt to resolve the Dispute for an additional period not to exceed five (5) working days. Attendance by LOTT Board members at the Level II meeting is optional. If the Partners are not able to resolve the Dispute in the Level II meeting, the designated representatives shall discuss the use of mediation, arbitration, or other alternative dispute resolution process before concluding the Level II meeting.

**e)** The terms of the resolution of all Disputes concluded in Level I or II meetings shall be memorialized in writing and signed by each Partner's representative on the LOTT Board.

**f)** If the Dispute is not resolved within 48 hours of the close of the Level II meeting, then a) the Partners may mediate the issue; b) the Partners may submit the dispute to the Superior Court of Thurston County for arbitration proceedings provided by Chapter 7.04 RCW; or c) any Partner may commence a civil action to resolve the Dispute, unless the Parties agree otherwise in writing. The Superior Court of Thurston County shall be the exclusive venue for the filing of any action, and this Agreement shall be governed by Washington law. Any mediation or arbitration shall be limited to the interpretation and application of this Agreement and may not

impair the contract and debt obligations of LOTT or the powers of LOTT to fix the budget for and determine the methods used in the management of the Joint Facilities.

#### **Section 10.7 PARTNER OBLIGATION PENDING RESOLUTION OF DISPUTES**

The initiation or existence of a dispute between the Partners or between one or more Partners and the LOTT Wastewater Alliance arising out of or relating to this Agreement shall not relieve or authorize the deferral of the Partners' duty to make payments to the LOTT Wastewater Alliance as provided herein.

#### **Section 10.8 SURVIVAL OF OBLIGATIONS**

The Partners' obligations under Section 11.2(b) of this Agreement shall survive the expiration or earlier termination of this Agreement.

#### **Section 10.9 INTERPRETATION OF AGREEMENT**

**a) Governing law.** This Agreement shall be governed by the laws of the State of Washington. The exclusive jurisdiction and venue for any lawsuit between the Partners arising out of this Agreement shall be in Thurston County Superior Court.

**b) Assignment.** This Agreement shall be binding on each Partner and the successors to them and may not be assigned in any respect without the consent of all Partners.

**c) Third party beneficiaries.** The Partners expressly do not intend to create any right, obligation or liability, or promise any performance, to any third party. The Partners have not created any right for any third party to enforce this Agreement.

**d) Severability.** It is the belief of the Partners that all provisions of this Agreement are lawful. If any covenant or provision of this Agreement shall be finally adjudicated by a court of competent jurisdiction to be invalid or unenforceable, such adjudication shall not affect the validity, obligation or performance of any other covenant or provision, or part thereof, which in itself is valid if such remainder conforms to the terms and requirements of applicable law and the intent of this Agreement. In such event, the Partners shall enter into immediate negotiations for the purpose of arriving at a mutually satisfactory replacement of such covenant or provision.

**e) Entire Agreement.** This Agreement embodies the Partners' entire agreement on the issues covered by it, except as supplemented by subsequent written agreements that the Parties make. All prior negotiations and draft written agreements are merged into and superseded by this Agreement.

**f) Counterparts.** This Agreement may be executed in counterparts, each of which shall be considered for all purposes as an original.

**Section 10.10 WAIVER**

No waiver by any party of any term or condition of this Agreement shall be deemed or construed as a waiver of any other term or condition, nor shall a waiver of any breach be deemed to constitute a waiver of any subsequent breach whether of the same or a different provision of this Agreement.

**Section 10.11 REMEDIES**

In addition to the remedies provided by law, this Agreement shall be specifically enforceable by any party.



## ARTICLE XI COOPERATION THROUGH CONSOLIDATION PERIOD

### Section 11.1 COORDINATION: LOTT BOARD & TAC

**a) Parallel oversight.** This Agreement is intended to facilitate the operation of the LOTT System, including the integration of the Existing Joint Facilities and new LOTT Wastewater Alliance Joint Facilities, under the management of the LOTT Wastewater Alliance Board of Directors. During the period from the effective date of the Agreement until the date of Consolidation, the LOTT System shall be administered by two parallel organizations composed of members appointed by the Partners who will concurrently serve as TAC members under the 1976 Intergovernmental Contract and as the Board of Directors of the LOTT Wastewater Alliance. The same Partner representatives will serve as TAC members and as LOTT Board members. Therefore, the Partner representatives may be called upon to act as TAC, in their role under the 1976 Intergovernmental Contract, or as the LOTT Board, in their role under this Agreement, or in a joint capacity, as circumstances may determine.

**b) Extraordinary cooperative efforts.** The Partners recognize that, during at least the initial twelve months after the effective date of this Agreement, extraordinary cooperative efforts will be required to coordinate the legal and service obligations of the LOTT System and to complete all of the legal and administrative steps necessary to consolidate the TAC and LOTT Wastewater Alliance operations.

**i)** The TAC and the LOTT Board shall coordinate the LOTT functions under the two legal instruments so that the ratepayers are not disadvantaged by the use of concurrent agreements.

**ii)** The Partners shall cooperate as may be necessary to enable the LOTT Board to operate as a legal and independent entity.

**iii)** During the initial twelve month period under this Agreement, the LOTT Board shall make quarterly reports to the Partners' legislative bodies on the progress made on implementing an independent LOTT entity and any steps taken to assume legal obligations and achieve Consolidation.

### Section 11.2 TRANSFER AND RELEASE

**a) Transfer of Existing Joint Facilities.** Each Partner agrees to transfer all right, title, and interest in and to the Existing Joint Facilities to the LOTT Wastewater Alliance. Each Partner further agrees to execute or approve any and all deeds, leases, instruments, documents and resolutions or ordinances necessary to give effect to the terms of this Agreement.

**b) Release of Claims.** Each Partner hereby releases and agrees to hold each other Partner harmless from any and all claims, demands, and causes of action arising from or relating to the legal or equitable ownership of Existing Joint Facilities prior to effective date of this

Agreement, including the extent or nature of such ownership and related claims to reimbursement or compensation, except as provided in the Agreement Regarding Additional LOTT Joint Facilities of June 21, 1999 (see Exhibit I) concerning City of Lacey facilities.

### **Section 11.3 O & M CONTRACT WITH OLYMPIA.**

To provide for an orderly transition of facilities operations, the LOTT Wastewater Alliance and Olympia shall enter into an O&M Contract generally in the form set out in Exhibit H. This contract does not include administrative staff reporting directly to the LOTT Board. The term of the O&M Contract shall commence on the date of Consolidation and terminate one year after the LOTT Board provides notice of termination to Olympia, which notice shall not be given earlier than December 31, 1999. This Section shall not preclude other contracts with Olympia at the LOTT Board's discretion.

### **Section 11.4 ADMINISTRATIVE AND TREASURY SERVICES CONTRACT WITH OLYMPIA.**

To provide for an orderly transition of administrative and treasury services, the LOTT Wastewater Alliance and Olympia shall enter into an Administrative and Treasury Services Contract generally in the form set out in Exhibit L. The term of the Administrative and Treasury Services Contract shall commence on the date of Consolidation and terminate one year after the LOTT Board provides notice of termination to Olympia, which notice shall not be given earlier than December 31, 1999. This Section shall not preclude other contracts with Olympia at the LOTT Board's discretion.

### **Section 11.5 CONSOLIDATION PRINCIPLES AND OBJECTIVES**

The Partners shall use their best efforts and work together in good faith to achieve Consolidation by meeting the following objectives:

**a) LOTT Wastewater Alliance.** The LOTT Wastewater Alliance shall have been formed, obtained Section 501(c)(3) status from the Internal Revenue Service, and demonstrated its capability of carrying out its responsibilities under this Agreement.

**b) Olympia Bonds.** All of the Bonds shall have been paid or defeased under a financing arrangement where LOTT funds pay for all transaction costs, 88 percent of which shall be paid using Capacity Development Charge receipts and 12 percent using Wastewater Service Charge receipts. In addition, the State of Washington loan to LOTT, evidenced by the Olympia Water and Sewer Revenue Bonds (1992) ultimately issued in a principal amount of \$36,579,836.19, shall be assumed, assigned or otherwise transferred from Olympia to the LOTT Wastewater Alliance. The LOTT Wastewater Alliance shall pay the bonds and meet all covenants set forth in Olympia ordinances authorizing the bonds.

**c) Rates.** The Partners shall have approved and imposed the rates and charges specified in Article III of this Agreement, and the proceeds are under the control of and available for use by the LOTT Wastewater Alliance.

**d) Transfer of Existing Joint Facilities.** All of the Existing Joint Facilities, as identified in Exhibit B, shall have been transferred to the LOTT Wastewater Alliance by an appropriate instrument or legislative action, or such transfers shall have been substantially provided for to the satisfaction of the LOTT Board.

**e) O&M Contract.** The LOTT Wastewater Alliance and Olympia shall have entered the O&M Contract to take effect upon Consolidation.

**f) Administrative and Treasury Services Contract.** The LOTT Wastewater Alliance and Olympia shall have entered the Administrative and Treasury Services Contract to take effect upon Consolidation.

**g) Vendor contracts.** Olympia shall have assigned to the LOTT Wastewater Alliance all consulting, service, supply, utility and other similar contracts relating to Existing Joint Facilities or the LOTT System, unless such assignment is not legally feasible or would represent any significant additional costs or risk to Olympia or unless the O&M Contract provides for Olympia to continue to administer or to enter such contracts relating to Joint Facilities. If contracts held by Olympia for the benefit of LOTT cannot be so assigned or terminated and then assumed by the LOTT Wastewater Alliance without cost or risk to Olympia, then such contracts shall be allowed to expire at the end of their normal term and the LOTT Wastewater Alliance shall secure such services, supplies, materials or construction in the future under separate agreements.

**h) Permits.** Olympia and the other Partners have assigned or transferred the LOTT Wastewater Alliance NPDES permits and all other permits, certificates, and licenses necessary or useful in ownership, operation, or control of the LOTT System or Existing Joint Facilities.

**i) Other necessary steps.** As determined by the LOTT Board, the Partners shall take such other steps and actions as are necessary and appropriate to concentrate ownership and control of Existing Joint Facilities and the LOTT System in the LOTT Wastewater Alliance and to enable the LOTT Wastewater Alliance to function as a comprehensive wastewater treatment and management entity.

#### **Section 11.6 CONSOLIDATION EVENT**

**a) LOTT Board finding.** When it determines that the Consolidation objectives set out in Section 11.5 have been substantially achieved, the LOTT Board shall adopt a resolution that finds and declares that Consolidation has been achieved. The Partners acknowledge that the LOTT Board may make a finding of Consolidation that reflects substantial attainment of the objectives.

**b) Effect on 1976 Intergovernmental Contract and TAC.** Upon the LOTT Board's adoption of the Consolidation resolution pursuant to paragraph (a) of this section, the following events shall be deemed to occur:

- i) 1976 Intergovernmental Contract shall terminate as provided in Section 10.5;
- ii) TAC shall be dissolved;
- iii) The O & M Contract shall enter into force; and
- iv) The Administrative and Treasury Services Contract shall enter into force.

IN WITNESS WHEREOF, each Party has caused this Agreement to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**CITY OF OLYMPIA**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Attest: By \_\_\_\_\_

**CITY OF LACEY**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Attest: By \_\_\_\_\_

**CITY OF TUMWATER**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Attest: By \_\_\_\_\_

**THURSTON COUNTY**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Attest: \_\_\_\_\_

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## Exhibit A

### 1976 INTERGOVERNMENTAL AGREEMENT, AS AMENDED TABLE OF CONTENTS

Intergovernmental Contract for Financial Assistance with Emergency Sewer Repairs	April 29, 1996
Intergovernmental Agreement for Purchase and Sale of Animal Shelter Facilities	February 26, 1996
Intergovernmental Contract for LOTT Environmental Review	August 23, 1994
Intergovernmental Agreement for Industrial Waste Pretreatment Program	April 26, 1993
Amendment to Intergovernmental Contract for Wastewater Facilities Management; Reserve Capacity Charge	January 11, 1993
Amendment to Intergovernmental Contract for Wastewater Facilities Management; Low Income Assistance Rates	July 20, 1992
Amendment to Intergovernmental Contract For Wastewater Facilities Management; Multi-Family Units, ERUs	October 15, 1991
Intergovernmental Contract: Uses of the Reserve Capacity Charge, Joint Facilities, Inflow and Infiltration and Equalization Basins	September 16, 1991
Intergovernmental Contract: Amending 1976 Agreement and Initiating Nitrogen Removal Plant Improvements	January 9, 1989
Amendment to Intergovernmental Agreement for Wastewater Facilities Management (LOTT Phase II Study)	September 7, 1982
Intergovernmental Contract for Wastewater Facilities Management	November 30, 1976

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## **Exhibit B**

### **EXISTING JOINT FACILITIES**

Existing Joint Facilities are comprised of the following facilities:

- 1) All facilities designated as Joint Facilities in the 1976 Intergovernmental Contract.
- 2) Modifications to the LOTT Wastewater Treatment Plant and outfalls.
- 3) The 1990 and 1998 modifications to Joint Facilities in the vicinity of Henderson Blvd./Plum. Street and Union Avenue
- 4) Modifications to Joint Facilities in Martin Way.
- 5) Planned modifications to the Capitol Lake Pump Station and force main.
- 6) Lacey's interceptor extending north and east from the LOTT joint facilities at Martin Way and Sleater-Kinney Road to the intersection of Martin Way and Marvin Road including Lacey's Martin Village Pump Station.
- 7) Planned Southern Connection south from the Capitol Lake Pump Station to a point on the eastern boundary of Tumwater Falls Park on Capitol Boulevard south of the bridge across the Deschutes River.

All Existing Joint Facilities include any and all easements, rights of way, permits and approvals, licenses, franchises, and other property interests necessary or useful in the ownership or operation of the specific facility.

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**Exhibit C**  
**ARTICLES OF INCORPORATION**  
**of the**  
**LOTT WASTEWATER ALLIANCE**

The undersigned, to form a nonprofit corporation under the provisions of the Washington Nonprofit Corporation Act (Chapter 24.03 of the Revised Code of Washington), as amended, hereby submit the following Articles of Incorporation.

**Article 1. NAME**

The name of the corporation shall be the LOTT Wastewater Alliance (the "Corporation").

**Article 2. DURATION**

The Corporation shall have perpetual existence.

**Article 3. PURPOSES AND POWERS**

**Section 3.1. Purposes.**

This Corporation is organized exclusively for one or more of the purposes specified in Section 501(c)(3) of the Internal Revenue Code of 1986, as amended. The Corporation shall exist for the primary purpose of lessening the burdens of the various municipal governments that require wastewater or other governmental services in the area to be served by the Corporation. The Corporation was created pursuant to that certain Interlocal Cooperation Act Agreement for Wastewater Facilities Management by LOTT Alliance by and between the City of Olympia, Washington ("Olympia"); the City of Lacey, Washington ("Lacey"); the City of Tumwater, Washington ("Tumwater"); and Thurston County, Washington (the "County"), dated \_\_\_\_\_, \_\_\_\_\_ ("Agreement"). By way of illustration, and not by way of limitation, the Corporation intends to lessen the burdens of government by implementing a wastewater resource management plan, which anticipates the development of additional wastewater treatment capacity, and operating and maintaining all or part of the wastewater facilities.

In furtherance of such purposes, this Corporation shall have the following additional purposes and powers:

- (a) implement and otherwise effectuate the Agreement;
- (b) administer property, including without limitation, selling, leasing, exchanging or otherwise distributing real and personal property;
- (c) contract for services and work and enter into other legal instruments binding the Corporation or provide for benefits to be secured by the Corporation;

- (d) aid, support, and assist by contributions or otherwise, other organizations organized and operated exclusively for purposes specified in Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, no part of the net earnings of which inures to the benefit of any private shareholder or individual, and no substantial part of the activities of which is carrying on propaganda, or otherwise attempting to influence legislation; and
- (e) engage in any and all lawful activities which may be necessary, useful or desirable for the furtherance, accomplishment, fostering or attainment of the foregoing purposes, either directly or indirectly and either alone or in conjunction or cooperation with others, whether such others be persons or organizations of any kind or nature, such as corporations, firms, associations, trusts, institutions, foundations, or governmental bureaus, departments, or agencies.

### **Section 3.2. Powers.**

In general, and subject to such limitations and conditions as are or may be prescribed by law, these Articles of Incorporation or the Corporation's Bylaws, the Corporation shall have all powers which now or hereafter are conferred by law upon a corporation organized for the purposes set forth above, are necessary or incidental to the powers so conferred, or are conducive to the attainment of the Corporation's purposes.

## **Article 4. LIMITATIONS**

All of the purposes and powers of the Corporation shall be exercised exclusively for charitable purposes in such manner that the Corporation shall qualify as an exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future United States Internal Revenue law, and that contributions to the Corporation shall be deductible under Section 170(c)(2) of the Internal Revenue Code of 1986, or the corresponding provision of any future United States Internal Revenue law.

No substantial part of the activities of the Corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, except as otherwise permitted by an organization described in Section 501(c)(3) of the Internal Revenue Code of 1986, or the corresponding provision of any future United States Internal Revenue law. The Corporation shall not participate in, nor intervene in any political campaign, including the publishing or distribution of statements, on behalf of or in opposition to any candidate for public office.

Notwithstanding any other provisions of these Articles, the Corporation shall not carry on any activities not permitted to be carried on (a) by a corporation exempt from federal and state income taxes under Section 501(c)(3) of the Internal Revenue Code of 1986 or the corresponding provision of any future United States Internal Revenue law, or (b) by a corporation, contributions to which are deductible under Section 170(c)(2) of the Internal Revenue Code of 1986, or the corresponding provision of any future United States Internal Revenue law.

No part of the net earnings of the Corporation shall inure to the benefit of, or be distributable to, its members (if any), directors, trustees, officers, or other private persons, except

that the Corporation is authorized or empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of its purposes.

### **Article 5. DISSOLUTION**

Upon the winding up and dissolution of the Corporation, the assets of the Corporation remaining after payment, or provision for payment, of all debts and liabilities of the Corporation, shall be distributed in trust to either a governmental entity or municipal corporation in such a manner as to best accomplish the goals of the Corporation as provided in a plan of final liquidation and dissolution as may be approved by the Corporation's Board of Directors. If, however, (i) such distribution would not be in compliance with Section 501(c)(3) of the Internal Revenue Code of 1986; (ii) no such governmental entity or municipal corporation is willing or able to accept the distribution; or (iii) if such distribution is not otherwise possible, then the distribution shall be made to an organization or organizations recognized as exempt from taxation under Section 501(c)(3) of the Internal Revenue Code of 1986, or the corresponding provision of any future United States Internal Revenue law (to be used exclusively to accomplish the purposes for which this Corporation is organized) as may be provided in a plan of final liquidation and dissolution approved by the Corporation's Board of Directors.

### **Article 6. MEMBERS**

The qualifications of members, the property, voting and other rights, privileges, and responsibilities of members shall be set forth in the Bylaws.

### **Article 7. DIRECTORS**

The management of the Corporation shall be vested in a Board of Directors pursuant to the Washington Nonprofit Corporation Act, these Articles of Incorporation and the Corporation's Bylaws. The Board shall consist of directors and alternate directors. The powers, duties, number, qualifications, terms of office, manner of election, time and criteria for removal, and time and place of meetings of the directors and alternate directors shall be as set forth in the Bylaws of the Corporation.

The names and addresses of the persons who are to serve as the initial directors of the Corporation are as follows:

Name	Address
_____	_____

The names and addresses of the persons who are to serve as the initial alternate directors of the Corporation are as follows:

<u>Name (Alternate For)</u>	<u>Address</u>
-----------------------------	----------------

For purposes of these Articles of Incorporation, and unless the context otherwise clearly indicates, the term "director" shall include both directors and alternate directors.

### **Article 8. DIRECTOR LIABILITY LIMITATIONS**

A director shall have no liability to the Corporation for monetary damages for conduct as a director, except for acts or omissions that involve intentional misconduct by the director, or for any transaction from which the director will personally receive a benefit in money, property or services to which the director is not legally entitled. If the Washington Nonprofit Corporation Act is hereafter amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director shall be eliminated or limited to the full extent permitted by the Washington Nonprofit Corporation Act, as so amended without need for further amendment of these Articles by the Corporation's Board of Directors. Any repeal or modification of this Article shall not adversely affect any right or protection of a director of the Corporation existing at the time of such repeal or modification for or with respect to an act or omission of such director occurring prior to such repeal or modification.

Directors of the Corporation shall not be personally liable to the Corporation or its members, if any, for monetary damages for conduct as a director, except for acts or omissions that involve intentional misconduct by a director or a knowing violation of law by a director, where the director votes or assents to a distribution which is unlawful or violates the requirements of these Articles of Incorporation, or for any transaction from which the director will personally receive a benefit in money, property, or services to which the director is not legally entitled.

### **Article 9. INDEMNIFICATION**

#### **Section 9.1. Right to Indemnification.**

Each person who was, or is threatened to be made a party to or is otherwise involved (including, without limitation, as a witness) in any actual or threatened action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director or officer of the Corporation or, while a director or officer, he or she is or was serving at the request of the Corporation as a director, director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans (whether the basis of such proceeding is an alleged action

in an official capacity as a director, trustee, officer, employee or agent or in any other capacity while serving as a director, trustee, officer, employee or agent), shall be indemnified and held harmless by the Corporation, to the full extent permitted by applicable law as then in effect, against all expense, liability and loss (including attorney's fees, judgments, fines, ERISA excise taxes or penalties and amounts to be paid in settlement) actually and reasonably incurred or suffered by such person in connection therewith, and such indemnification shall continue as to a person who has ceased to be a director, trustee, officer, employee or agent and shall inure to the benefit of his or her heirs, executors and administrators; however, except as provided in Section 9.2 with respect to proceedings seeking solely to enforce rights to indemnification, the Corporation shall indemnify any such person seeking indemnification in connection with a proceeding (or part thereof) initiated by such person only if such proceeding (or part thereof) was authorized by the Board of Directors of the Corporation. The right to indemnification conferred in this Section 9.1 shall be a contract right and shall include the right to be paid by the Corporation the expenses incurred in defending any such proceeding in advance of its final disposition; however, the payment of such expenses in advance of the final disposition of a proceeding shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified under this Section 9.1 or otherwise.

#### **Section 9.2. Right of Claimant to Bring Suit.**

If a claim for which indemnification is required under Section 9.1 is not paid in full by the Corporation within sixty (60) days after a written claim has been received by the Corporation, except in the case of a claim for expenses incurred in defending a proceeding in advance of its final disposition, in which case the applicable period shall be twenty (20) days, the claimant may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and, to the extent successful in whole or in part, the claimant shall also be entitled to be paid the expense of prosecuting such claim. The claimant shall be presumed to be entitled to indemnification under this Article upon submission of a written claim (and, in an action brought to enforce a claim for expenses incurred in defending any proceeding in advance of its final disposition, where the required undertaking has been tendered to the Corporation), and thereafter the Corporation shall have the burden of proof to overcome the presumption that the claimant is not so entitled. Neither the failure of the Corporation (including its Board of Directors, independent legal counsel or its members, if any) to have made a determination prior to the commencement of such action that indemnification, or the reimbursement or advancement of expenses of the claimant is proper in the circumstances, nor an actual determination by the Corporation (including its Board of Directors, independent legal counsel or its members, if any) that the claimant is not entitled to indemnification or the reimbursement or advancement of expenses, shall be a defense to the action or create a presumption that the claimant is not so entitled.

#### **Section 9.3. Nonexclusivity of Right.**

The right to indemnification and the payment of expenses incurred in defending a proceeding in advance of its final disposition conferred in this Article shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, provision of

these Articles of Incorporation, Bylaws, agreement, vote of members, if any, or disinterested directors or otherwise.

#### **Section 9.4. Indemnification of Members.**

The Corporation shall hold Corporation members harmless and defend all claims for personal injury or property damage arising out of the Corporation's activities in the same manner as provided for directors and officers under Sections 9.1, 9.2, and 9.3, and only to the extent that such claims, damages, and injuries are not caused by the negligent act or omission of a member to perform required maintenance or other operations or by any member violation of applicable laws or regulations.

#### **Section 9.5. Insurance, Contracts, and Funding.**

The Corporation may maintain insurance at its expense to protect itself and any director, trustee, officer, employee, agent or member of the Corporation or another corporation, partnership, joint venture, trust or other enterprise against any expense, liability or loss, whether or not the Corporation would have the power to indemnify such persons against such expense, liability or loss under the Washington Business Corporation Act, as applied to nonprofit corporations. The Corporation may, without further action of the Corporation's members, enter into contracts with any director or officer of the Corporation in furtherance of the provisions of this Article and may create a trust fund, grant a security interest or use other means (including, without limitation, a letter of credit) to ensure the payment of such amounts as may be necessary to effect indemnification as provided in this Article.

#### **Section 9.6. Indemnification of Employees and Agents of the Corporation.**

The Corporation may, by action of its Board of Directors, provide indemnification and pay expenses in advance of the final disposition of a proceeding to employees and agents of the Corporation with the same scope and effect as the provisions of this Article with respect to the indemnification and advancement of expenses of directors and officers of the Corporation or pursuant to rights granted pursuant to, or provided by, the Washington Business Corporation Act, as applied to nonprofit corporations, or otherwise.

### **Article 10. BYLAWS**

Bylaws of the Corporation may be adopted by the Board of Directors at any regular meeting or any special meeting called for that purpose, so long as they are not inconsistent with the provisions of these Articles of Incorporation. The authority to make, alter, amend or repeal Bylaws is vested in the Board of Directors and may be exercised at any regular or special meeting of the Board of Directors.



**Article 11. INCORPORATORS**

The name and address of the incorporators of the Corporation are:

\_\_\_\_\_  
Name Address

**Article 12. REGISTERED OFFICE AND AGENT**

The address of the initial registered office of the Corporation shall be \_\_\_\_\_, Washington 98\_\_\_\_\_. The name of the initial registered agent of the Corporation at such address shall be \_\_\_\_\_.

**Article 13. AMENDMENTS**

These Articles of Incorporation may be amended as allowed by the Washington Non-profit Corporation Act and pursuant to a unanimous vote of the Board of Directors.

IN WITNESS WHEREOF, the undersigned have signed these Articles of Incorporation:

\_\_\_\_\_  
(Signature)

Print name: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature)

Print name: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature)

Print name: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature)

Print name: \_\_\_\_\_

Date: \_\_\_\_\_

**CONSENT TO SERVE AS REGISTERED AGENT**

I, \_\_\_\_\_, hereby consent to serve as Registered Agent in the State of Washington for the LOTT Alliance. I understand that as agent for the corporation, it will be my responsibility to receive service of process in the name of the corporation; to forward all mail to the corporation; and to immediately notify the Office of the Secretary of State in the event of my resignation or of any changes in the registered office of the corporation for which I am agent.

DATED: \_\_\_\_\_

\_\_\_\_\_  
(Signature of agent)

Address of Registered Office and Agent:

**Exhibit D**  
**BYLAWS**  
**of the**  
**LOTT WASTEWATER ALLIANCE**

The Board of Directors of the LOTT Wastewater Alliance (the "Corporation") hereby adopts the following Bylaws:

**Article 1. OFFICES**

**Section 1.1. Principal Office.**

The principal office of the Corporation shall be located at its principal place of business or such other place as the Board of Directors may designate. The Corporation may have such other offices, either within or outside of the State of Washington, as the Board of Directors may designate or as the business of the Corporation may require.

**Section 1.2. Registered Office and Agent.**

The Corporation's initial registered office and registered agent shall be as set forth in the Articles of Incorporation. The registered agent and the address of the registered office may be changed by the Board of Directors.

**Article 2. MEMBERSHIP**

**Section 2.1. Members.**

The Corporation shall have one class of members consisting of four Members. The four Members of the Corporation shall be the City of Olympia, Washington ("Olympia"); the City of Lacey, Washington ("Lacey"); the City of Tumwater, Washington ("Tumwater"); and Thurston County, Washington (the "County").

**Section 2.2. No Voting Rights.**

Except as expressly provided in this Section 2.2, the Members of the Corporation shall not be members within the meaning of RCW 24.03 and shall not have the authority to manage or vote on any matters related to the business and affairs of the Corporation. Each Member shall have the right to appoint one Director and one Alternate Director to represent such Member on the Board of Directors.

### **Section 2.3. Meetings.**

Because Members do not have voting rights and because each Member appoints a representative Director and Alternate Director to the Board of Directors, there shall be no annual or special meetings of the membership.

## **Article 3. BOARD OF DIRECTORS**

### **Section 3.1. General Powers.**

The business and affairs of the Corporation shall be managed by a Board of Directors. The actions of the Board shall be consistent with and shall effectuate the terms of that certain Interlocal Cooperation Act Agreement for Wastewater Facilities Management by LOTT Wastewater Alliance by and between the Members, dated \_\_\_\_\_, \_\_\_\_\_ (“Agreement”), including without limitation, adopting the revenue allocation formula set forth in the Agreement. The Board shall have the power to do, but shall not be limited to, the following:

- (a) Acquire, construct, receive, own, manage, lease, sell, and otherwise dispose of real property, personal property, intangible property, and the facilities of the Corporation;
- (b) Plan, develop, operate, replace, and maintain the facilities of the Corporation;
- (c) Enter into contracts for goods, services, work, or other benefits to the Corporation;
- (d) Borrow money and issue debt instruments or provide for the borrowing of money and issuance of debt instruments;
- (e) Receive gifts or grants for the planning, design, development, construction, or operation of the facilities of the Corporation, or for the assets or programs to further the Corporation’s purposes, or for other purposes necessary to carry out the purposes of the Corporation;
- (f) Lend money or provide services or facilities to any Member or other governmental utility or governmental service provider in furtherance of the Corporation’s purposes;
- (g) Invest Corporate funds;
- (h) Sue and be sued;
- (i) Hire and fire employees of the Corporation;
- (j) Fix salaries, wages and other compensation of officers and employees;
- (k) Employ or retain engineering, legal, financial or other specialized personnel and consultants as may be necessary to carry out the purposes of the Corporation;

- (l) Impose, alter, regulate, control, and collect rates, charges, and assessments;
- (m) Purchase insurance and participate in pooled insurance and self-insurance programs
- (n) Indemnify Members, officers, and employees in accordance with applicable law;
- (o) Establish policies, guidelines, or rules to carry out the Corporation's powers and responsibilities;
- (p) Convene or appoint committees and advisory bodies as the Board deems appropriate for Member or public review and comment on Corporate matters, efficient staff and Board work, or any other purpose in the best interests of the Corporation and consistent with applicable law,
- (q) Exercise all other powers within the authority of, and that may be exercised individually by all of, the Members with respect to sewage or wastewater conveyance, treatment, disposal, reclamation, reuse, conservation, or other Corporate purposes or functions as set forth in the Agreement; and
- (r) Take any other actions as the Board deems necessary to implement a comprehensive plan and to protect and advance the interests of the Corporation, its property and other assets, its Members, and its ratepayers that are consistent with the Agreement, Chapter 39.34 RCW, and other applicable law.

**Section 3.2. Number and Types.**

The Board of Directors shall consist of four (4) Directors and (4) Alternate Directors. Each Member shall appoint an Alternate Director to represent such Member at meetings of the Board of Directors in which such Member's Director is not present.

**Section 3.3. Qualification and Representation.**

Each Director and each Alternate Director must be serving as a member of the legislative body of the Member that has appointed that Director or Alternate Director. Each Director and Alternate Director shall serve at the will and discretion of the legislative body of the Member that appointed the respective Director or Alternate Director. Each Director and Alternate Director shall represent his or her Member in carrying out his or her responsibility to act in the best interests of the Corporation. The Alternate Director appointed by each Member shall be entitled to attend meetings of the Board and to receive notice of such meetings as provided in these Bylaws but shall not be entitled to vote unless the Director appointed by such Member is absent or unless selected to break a tie vote.

### **Section 3.4. Appointment of Directors.**

#### **Subsection 3.4.1. Initial Directors.**

Each initial Director and Alternate Director named in the Articles of Incorporation shall serve until he or she resigns, becomes disqualified to serve as a Director or Alternate Director, or is removed or replaced by the legislative body of the Member that he or she represents.

#### **Subsection 3.4.2. Successor Directors.**

Each Director and Alternate Director shall be appointed by the legislative body of the Member that each respective Director and Alternate Director is to represent.

### **Section 3.5. Vacancies.**

A vacancy in a Director or an Alternate Director position shall be filled promptly by the legislative body of the Member who appointed the predecessor Director or Alternate Director. Vacancies may occur or arise by removal, disqualification, or resignation, as described below, or by other means.

#### **Subsection 3.5.1. Removal.**

A Director or Alternate Director may be removed at any time by, and at the sole discretion of, the legislative body of the Member that appointed the respective Director or Alternate Director. The removal of a Director or Alternate Director shall constitute a vacancy of that position.

#### **Subsection 3.5.2. Disqualification.**

Whenever a Director or Alternate Director is no longer qualified to serve as a Director or Alternate Director pursuant to these Bylaws, that Director or Alternate Director shall cease to be a Director or Alternate Director and his or her position shall be considered vacant.

#### **Subsection 3.5.3. Resignation.**

Any Director or Alternate Director may resign at any time by delivering written notice to the President or the Secretary of the Corporation at the principal office or registered office of the Corporation, or by giving written notice at any meeting of the Board of Directors. Any such resignation shall take effect at the time specified in the notice, or if the time is not specified, upon delivery of the notice. Upon the effective date of the resignation, that position shall be considered vacant. Unless otherwise specified in the notice, the acceptance of such resignation shall not be necessary to make it effective.

### **Section 3.6. Compensation and Expenses.**

Directors and Alternate Directors shall not receive compensation for their service as Directors and Alternate Directors. Consistent with any applicable law, Directors and Alternate Directors may receive reimbursement for expenditures incurred on behalf of the Corporation.

## **Article 4. ACTIONS OF BOARD OF DIRECTORS**

### **Section 4.1. Regular Meetings.**

Regular meetings of the Board of Directors shall be specified as to the date, time and place for the holding of such regular meetings by the adoption of a resolution of the Board of Directors.

### **Section 4.2. Special Meetings.**

Special meetings of the Board of Directors may be called by or at the written request of the President or any two (2) Directors. Notice of special meetings of the Board of Directors shall be made as set forth in Section 4.6.

### **Section 4.3. Meetings by Telephone.**

Members of the Board of Directors may participate in a meeting of such Board of Directors by means of a conference telephone or similar communication equipment if all persons participating in the meeting can hear each other at the same time and the participation complies with the Open Public Meetings Act, Chapter 42.30, as may be amended. Participation by such means shall constitute presence in person at a meeting.

### **Section 4.4. Place of Meetings.**

All meetings shall be held at the principal office of the Corporation or at such other place within the State of Washington designated by the Board of Directors, by any persons entitled to call a meeting, or by a waiver of notice signed by all of the Directors and Alternate Directors.

### **Section 4.5. Notice of Meetings.**

Where notice of a meeting of the Board of Directors is required by the Articles of Incorporation or these Bylaws, such notice shall be given to each Director and Alternate Director in writing or by personal communication with Director or Alternate Director not less than five (5) calendar days before the meeting. Notices in writing may be hand delivered or sent by U.S. mail or facsimile transmission to the Director or Alternate Director at his or her address shown on the records of the Corporation. Neither the business to be transacted at, nor the purpose of, the meeting need be specified in the notice of such meeting, unless specifically required by the Articles of Incorporation or these Bylaws. If a notice is delivered by mail, the notice shall be deemed effected when deposited in the official government mail properly addressed with postage prepaid. If notice is given by facsimile transmission, the notice shall be deemed effective upon receipt of the facsimile transmission confirmation showing the facsimile transmission was received at the Director's or Alternate Director's facsimile number shown on the records of the Corporation. Facsimile transmission of any signed original document, and retransmission of any signed facsimile transmission shall be the same as delivery of an original document. At the request of the Secretary, any person will confirm facsimile transmitted signatures by signing an original document.

**Section 4.6. Waiver of Notice.**

**Subsection 4.6.1. Written Waiver of Notice.**

Whenever any notice is required to be given to any Director or Alternate Director under the provisions of these Bylaws, the Articles of Incorporation or applicable Washington law, a waiver thereof in writing, signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the Board of Directors need be specified in the waiver of notice of such meeting.

**Subsection 4.6.2. Waiver of Notice by Attendance.**

The attendance of a Director or Alternate Director at a meeting shall constitute a waiver of notice of such meeting, except where a Director or Alternate Director attends a meeting for the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened.

**Section 4.7. Quorum.**

The attendance of a majority of Directors (or their respective Alternate Directors) in office shall constitute a quorum for the transaction of business at any meeting of the Board of Directors. For purposes of these Bylaws, "majority" shall mean a number more than one-half. If a quorum is not present at a meeting, any one Director present may adjourn the meeting.

**Section 4.8. Manner of Acting.**

The act of the majority of the Directors (or their respective Alternate Directors) present at a meeting at which there is a quorum shall be the act of the Board of Directors, unless the vote of a greater number is required, or a tie-breaking procedure is provided by these Bylaws, the Articles of Incorporation, a valid Board resolution, or applicable Washington law.

**Subsection 4.8.1. Tie-breaking procedure.**

In the event of a tie vote on any matter requiring a majority vote of Directors, the Directors shall: (1) randomly choose an Alternate Director to assist in resolving the tie vote pursuant to these Bylaws; and (2) table the matter to the following Board of Directors meeting, which shall be calendared as a special or regularly scheduled meeting within the next twenty-one (21) days or as soon thereafter as all Directors can be present together with the randomly-chosen Alternate Director. At said meeting, all Directors, including the randomly-chosen Alternate Director, shall participate in the discussion and vote on the matter or related matters until such time as the issue has been resolved by a majority affirmative vote, defeated by a majority vote, or withdrawn.



**Subsection 4.8.2. Alternate Director randomly chosen to serve in a tie-breaking situation.**

The Board shall select the Alternate Director to assist in resolving a tie vote by a random drawing of the current Alternate Directors' names from a hat or other container; , however, no Alternate Director shall serve as a tie-breaker in two consecutive tie vote matters.

**Subsection 4.8.3. Actions requiring unanimous votes.**

In addition to any action required by the Articles of Incorporation or applicable Washington law to be by unanimous vote of the Board of Directors, the following actions shall be taken only by unanimous vote of the Board of Directors:

- (a) Approval or amendment of the comprehensive plan for the Corporation;
- (b) Revisions of or amendments to the Articles of Incorporation or Bylaws of the Corporation, or dissolution of the Corporation;
- (c) Revision of the allocation of costs as to new connection charges and monthly rates set forth in the Agreement;
- (d) Modification or amendment of the LOTT Discharge and Industrial Pretreatment Regulations pursuant to Section 7.1 of the Agreement; and
- (e) Establishment or modification of pretreatment permit fees, charges, and actions pursuant to Section 7.2 of the Agreement.

At least eighteen (18) calendar days in advance of taking any such action, the Board shall distribute a proposed Board resolution or motion regarding such action to the Clerk of each Members' legislative body, by any reasonable method of distribution, including but not limited to, deposit in the U.S. Mail, facsimile, hand delivery, or electronic mail.

**Section 4.9. Presumption of Assent.**

A Director (or, where authorized by these Bylaws to cast a vote, an Alternate Director) of the Corporation present at a meeting of the Board of Directors at which action on any corporate matter is taken shall be presumed to have assented to the action taken, unless the Director's or Alternate Director's dissent or abstention is entered in the minutes of the meeting or the Director or Alternate Director files a written dissent or abstention to such action with the person acting as secretary of the meeting before the adjournment of the meeting or forwards such dissent or abstention by registered mail to the Secretary of the Corporation immediately after the adjournment of the meeting. Such right to dissent or abstain shall not apply to a Director or Alternate Director who voted in favor of such action.

**Section 4.10. Open Public Meetings.**

Meetings of the Board are subject to the Open Public Meetings Act, Chapter 43.20 RCW. Accordingly, the Board shall ensure that its deliberations are conducted openly and that the

actions of the Corporation are taken openly.

**Section 4.11. Procedure.**

The Board shall conduct its meetings consistent with Robert's Rules of Order on Parliamentary Procedure, so far as applicable and when not inconsistent with these Bylaws, the Articles of Incorporation, the Agreement, or any resolution of the Board. The Board may adopt additional rules of procedure to govern the conduct of its meetings.

**Article 5. OFFICERS**

**Section 5.1. Officers.**

The officers of the Corporation shall be a President, one Vice President, a Secretary and a Treasurer, each of whom shall be elected by the Board of Directors. Other officers and assistant officers may be elected or appointed by the Board of Directors, such officers and assistant officers to hold office for such period, have such authority and perform such duties as are provided in these Bylaws or as may be provided by resolution of the Board of Directors. Any officer may be assigned by the Board of Directors any additional title that the Board of Directors deems appropriate. Any two or more offices may be held by the same person, except the offices of President and Secretary.

**Section 5.2. Election and Term of Office.**

The officers of the Corporation shall be elected annually by the Board of Directors. Unless an officer resigns or is removed or replaced, he or she shall hold office until the next annual election by the Board of Directors or until the officer's successor is elected and assumes the office, whichever is later.

**Section 5.3. Vacancies.**

A vacancy in any office created by the resignation, removal, replacement, or any other cause may be filled by the Board of Directors for the unexpired portion of the term or for a new term established by the Board of Directors.

**Section 5.4. Resignation.**

Any officer may resign at any time by delivering written notice to the President, a Vice President, the Secretary or the Board of Directors or by giving oral or written notice at any meeting of the Board of Directors. Any such resignation shall take effect at the time specified in the notice, or if the time is not specified, upon delivery of the notice and, unless otherwise specified in the notice, the acceptance of such resignation shall not be necessary to make it effective.

**Section 5.5. Removal.**

Any officer or agent elected or appointed by the Board of Directors may be removed from office by the Board of Directors whenever in its judgment the best interests of the

Corporation would be served thereby. Such removal shall be without prejudice to the contract rights, if any, of the person so removed.

**Section 5.6. President.**

The President shall preside over meetings of the Board of Directors. The President may sign deeds, mortgages, bonds, contracts or other instruments, except when the signing and execution thereof have been expressly delegated by the Board of Directors or by these Bylaws to some other officer or agent of the Corporation or are required by law to be otherwise signed or executed by some other officer or in some other manner. In general, the President shall perform all duties incident to the office of President and such other duties as are assigned to him or her by the Board of Directors.

**Section 5.7. Vice President.**

In the event of the death of the President or his or her inability to act, the Vice President shall perform the duties of the President, except as may be limited by resolution of the Board of Directors, with all the powers of, and subject to, all of the restrictions upon the President. The Vice President shall have, to the extent authorized by the President or the Board of Directors, the same powers as the President to sign deeds, mortgage, bonds, contracts or other instruments. The Vice President shall perform such other duties as from time to time may be assigned to him or her by the President or the Board of Directors.

**Section 5.8. Secretary.**

The Secretary shall: (a) keep the minutes of meetings of the members and the Board, and minutes which may be maintained by committees of the Board; (b) see that all notices are duly given in accordance with the provisions of these Bylaws or as required by law; (c) be custodian of the corporate records of the corporation; (d) keep records of the post office address of each member and Director and of the name and post office address of each officer; (e) sign with the President, or other officer authorized by the President or the Board, deeds, mortgages, bonds, contracts, or other instruments; and (f) in general perform all duties incident to the office of Secretary and such other duties as from time to time may be assigned to him or her by the President or the Board.

**Section 5.9. Treasurer.**

The Treasurer shall have charge and custody of and be responsible for all funds and securities of the corporation; receive and give receipts for moneys due and payable to the corporation from any source whatsoever, and deposit all such moneys in the name of the corporation in banks, trust companies or other depositories selected in accordance with the provisions of these Bylaws, the Agreement, and applicable law; and in general perform all of the duties incident to the office of Treasurer and such other duties as from time to time may be assigned to him or her by the President or the Board.

### **Section 5.10. Salaries.**

The officers shall serve without salary unless they are employees of the Corporation. No officer shall be prevented from receiving a salary by reason of the fact that he or she is a Director or Alternate Director of the Corporation. Consistent with any applicable law, officers may receive reimbursement for expenditures incurred on behalf of the Corporation upon approval of the Board of Directors.

## **Article 6. EMPLOYEES**

Subject to the other provisions of these Bylaws, the Board of Directors may establish such positions of employment as it deems desirable and shall fix the salaries for such positions; provided, there shall be created and maintained the position of Executive Director. This position shall be responsible for implementing Board policy and for general administration of the Alliance functions.

The Executive Director shall have sole authority to appoint persons to fill other positions created by the Board, or to dismiss or discipline such persons. The appointments shall be based on ability and training appropriate for the position. Except for the purpose of inquiry, the Board and its members shall deal with policy implementation or administrative services solely through the Executive Director and neither the Board nor any of its members shall give directions or orders to employees subordinate to the Executive Director. Nothing in this Article shall prevent the Board from freely and fully discussing with the Executive Director anything pertaining to appointments and removals of subordinate employees.

## **Article 7. ADMINISTRATIVE PROVISIONS**

### **Section 7.1. Books and Records of the Corporation.**

The Corporation shall keep at its principal or registered office copies of its current Articles of Incorporation and Bylaws; correct and adequate records of accounts and finances; minutes of its proceedings; records of the name and address of each Member, Director, Alternate Director, and officer; and such other records as may be necessary or advisable. All books and records of the Corporation shall be open at any reasonable time to inspection by any Director or Alternate Director.

### **Section 7.2. Books and Records of Members.**

Any Director or a representative of that Director may examine the books and records of any Member which relate to the Corporation (including, but not limited to, the Corporation's assets, property, facilities, governance, and finance). After provision of reasonable notice, such books and records may be examined at any reasonable time during business hours of that Member. The Board may appoint an auditor or accountant to review any such books and records and the costs of such review shall be charged to the Corporation, which in turn may include such costs as an expense to be shared jointly among all Members.

**Section 7.3. Accounting Year.**

The accounting year of the Corporation shall be the twelve months ending December 31 of each year.

**Article 8. AMENDMENTS**

These Bylaws may be altered, amended or repealed and new Bylaws may be adopted by a unanimous vote of the Board of Directors.

THE FOREGOING BYLAWS were adopted by the Board of Directors on

\_\_\_\_\_

\_\_\_\_\_

Secretary

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**Exhibit E**

LOTT System Service Area (Urban Growth Area Boundary, Ch. 36.70 RCW)

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## Exhibit F

### ALLOCATION OF COSTS TO NEW CONNECTIONS AND MONTHLY RATES

The INTERLOCAL COOPERATION ACT AGREEMENT FOR WASTEWATER MANAGEMENT BY THE LOTT WASTEWATER ALLIANCE recognizes two principal revenue sources for LOTT: 1) revenues from the one-time connection charge (Capacity Development Charge) received at issuance of building permit for each new connection to the LOTT System, and 2) monthly rate revenues (Wastewater Service Charge) received based on each Participant's number of Equivalent Residential Units (ERUs).

There are two types of capital facilities costs: 1) new capacity facilities or those capital expenditures necessary to provide additional wastewater management facilities to serve additional wastewater flows, and 2) system upgrades or capital modifications of existing facilities necessary to improve efficiency or meet higher water quality standards for water treated and discharged by LOTT. Certain capital projects could contain both cost types. In considering future facilities, LOTT chooses to associate new capacity costs primarily with connection charge revenues and system upgrade costs primarily with monthly rates to the extent those costs provide for connections existing at the time the upgrade is constructed. Accordingly, for each facility addition or upgrade project, there is an allocation of the facility cost to the two cost types LOTT is choosing to recognize.

**Allocation for New Capacity Projects.** Projects to create new capacity facilities are divided into four types. These project costs are to be paid using the allocation of revenue sources described in the following table follows:

<i>Project Type</i>	<i>% Capacity Development Charge</i>	<i>% Wastewater Service Charge</i>
<b>Plants</b> – Satellite wastewater treatment plants and associated downstream conveyance to send treated Class A water to polishing ponds	90%	10%
<b>Ponds</b> – Polishing ponds which further treat Class A water from satellite plants and serve to store Class A water for use, recharge basins which infiltrate unused Class A from polishing ponds, and associated conveyance	80%	20%
<b>Pipes</b> – New sewer interceptors, piping and existing pipe modifications necessary to convey wastewater to satellite wastewater treatment plants	100%	0%

**Allocation for System Upgrades.** Projects which upgrade or replace existing LOTT facilities are considered System Upgrades. Recognizing that these projects will usually include

provision for extra capacity, and based on a review of the incremental cost associated with this extra capacity for System Upgrade projects in the Plan, these project costs are to be paid using 9% Capacity Development Charge revenues and 91% Wastewater Service Charge revenues.

## Exhibit G

### LOTT DISCHARGE AND INDUSTRIAL PRETREATMENT REGULATIONS

#### 1. PURPOSE AND POLICY.

This ordinance sets forth uniform requirements for direct and indirect contributors into the wastewater collection systems and the Regional Wastewater Treatment Facility for the Cities of Lacey, Olympia and Tumwater and for Thurston County. This ordinance enables the Cities of Lacey, Olympia, and Tumwater and Thurston County to comply with all applicable State and Federal laws required by the Clean Water Act of 1977, and amendments thereof, and the General Pretreatment Regulations (40 CFR, Part 403). The objectives of this ordinance are:

- A. To prevent the introduction of pollutants into the POTW (Publicly Owned Treatment Works) which will interfere with the operation of the system or contaminate the resulting sludge;
- B. To prevent the introduction of pollutants into the POTW which will pass through the system inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system;
- C. To ensure that the quality of the wastewater treatment plant sludge is maintained at a level which allows its use and disposal in compliance with applicable statutes and regulations;
- D. To provide for equitable distribution of wastewater costs among dischargers and establish a system of fees and charges that recovers the cost of the Industrial Pretreatment Program;
- E. To protect POTW personnel who may be affected by wastewater and sludge in the course of their employment and to protect the general public;

Except as otherwise provided herein, the Plant Manager shall administer and implement the provisions of this ordinance, and shall conduct other activities as set forth in Sections 6,7 and 8 of the Intergovernmental Agreement for Industrial Waste Pretreatment Program of April 23, 1993. Any powers granted to or duties imposed upon the Plant Manager may be delegated by the Plant Manager to personnel under the Plant Manager's direction.

This ordinance shall apply to all users of the POTW. The ordinance authorizes the issuance of wastewater discharge permits; authorizes monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

## 2. DEFINITIONS.

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this ordinance, shall have the following meanings:

A. ACT - The Clean Water Act (33 U.S.C. 1251 et. seq.), as amended.

B. AKART - This is an acronym for All Known, Available, and Reasonable methods of prevention, control, and Treatment. AKART shall represent the most current methodology that can be reasonably required for preventing, controlling, or abating the pollutants associated with a discharge. The concept of AKART applies to both point and nonpoint sources of pollution. The term "best management practices" is considered a subset of the AKART requirement.

C. APPLICABLE PRETREATMENT STANDARD - For any specified pollutant, prohibited discharge standards and discharge limitations as defined herein, State of Washington pretreatment standards, or EPA's Categorical Pretreatment Standards (when effective), whichever standard is appropriate or most stringent.

D. APPROVAL AUTHORITY - The Washington State Department of Ecology.

E. AUTHORIZED REPRESENTATIVE OF THE USER shall mean:

### 1. If the user is a corporation:

a. The president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

b. The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. If the user is a partnership or sole proprietorship: a general partner or proprietor, respectively;

3. If the user is a Federal, State, or local governmental facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or his/her designee;

4. The individuals described in paragraphs 1 through 3 above may designate another authorized representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the Plant Manager.

F. BOD (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees C., expressed in parts per million (mg/l) by weight.

G. CATEGORICAL PRETREATMENT STANDARDS shall mean any regulation containing pollutant discharge limits promulgated by the U.S. EPA in accordance with Section 307(b) and (c) of the Act which apply to a specific category of users and which appear in 40 CFR Chapter I, Subchapter N, Parts 405-471.

H. CATEGORICAL USER - a user covered by one of EPA's Categorical Pretreatment Standards.

I. COLOR - The optical density at the visual wave length of maximum absorption, relative to distilled water. One-hundred percent (100%) transmittance is equivalent to zero (0.0) optical density.

J. COOLING WATER/NON-CONTACT COOLING WATER - Water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product, or finished product. Cooling water may be generated from any use, such as air conditioning, heat exchangers, cooling or refrigeration to which the only pollutant added is heat.

K. COMPOSITE SAMPLE - The sample resulting from the combination of individual wastewater samples taken at selected intervals based on an increment of either flow or time.

L. DOMESTIC USER (RESIDENTIAL USER) shall mean any person who contributes, causes, or allows the contribution of wastewater into the POTW that is of a similar volume and/or chemical make-up as that of a residential dwelling unit. Discharges from a residential dwelling unit include up to 900 cu.ft. of flow, with up to 300 mg/l of BOD, and 300 mg/l of TSS, per month.

M. ENVIRONMENTAL PROTECTION AGENCY (EPA) - The U.S. Environmental Protection Agency or, where appropriate, the Regional Water Division Director, or other duly authorized official of said agency.

N. EXISTING SOURCE - Any Categorical Industrial User whose construction or operation commenced prior to the publication by EPA of proposed Categorical Pretreatment Standards, which will be applicable to such source if the standard is thereafter promulgated in accordance with Section 307 of the Act.

O. EXISTING USER shall refer to all Industrial Users except Categorical Users which were discharging wastewater prior to the effective date of this ordinance. Any person that buys an existing facility that is discharging non-domestic wastewater will be considered an "Existing User" if no significant changes are made in the manufacturing operation.

P. GRAB SAMPLE - A sample which is taken from a wastestream on a one-time basis without regard to the flow in the wastestream and without consideration of time.

Q. INTERFERENCE - Any discharge which, alone or in conjunction with a discharge or discharges from other sources, either:

1. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; or
2. Is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations); Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), or 40 CFR part 503, and including State Regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

R. MAXIMUM ALLOWABLE DISCHARGE LIMIT (DISCHARGE LIMITATION) - The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composite sample collected, independent of the industrial flow rate and the duration of the sampling event.

S. MINOR INDUSTRIAL USER (MIU) - Any Industrial User which does not otherwise qualify as a Significant Industrial User of the POTW, identified by the Plant Manager as having the potential to spill or discharge chemicals or slugs of wastewater to the POTW, or the potential to discharge a waste stream that, when taken into account with the waste streams of other industrial users, may have a significant impact on the POTW.

T. NPDES - National Pollutant Discharge Elimination System permit program as administered by the U.S. EPA or State.

#### U. NEW SOURCE

1. Any building, structure, facility, or installation from which there is (or may be) a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307(c) of the Act which will be applicable to such source if such standards are thereafter promulgated in accordance with that section, provided that:

a. The building, structure, facility, or installation is constructed at a site at which no other source is located; or

b. The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or

c. The production or wastewater generating process of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source, should be considered.

2. Construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation

meeting the criteria of Part 1, b. or c. above but otherwise alters, replaces, or adds to existing process or production equipment.

3. Construction of a new source as defined under this paragraph has commenced if the owner or operator has:

a. Begun, or caused to begin as part of a continuous on-site construction program any placement, assembly, or installation of facilities or equipment; or significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities necessary for the placement, assembly, or installation of new source facilities or equipment; or

b. Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.

V. NEW USER - Any Non-Categorical Industrial User that applies to the Participant for a new building permit or otherwise makes known their intentions to begin operations which will generate non-domestic wastes. This includes any person occupying existing buildings and planning to discharge wastewater to the POTW's collection system after the effective date of this ordinance. Also included are Industrial Users which have been previously overlooked or otherwise not identified by the Plant Manager as a Minor or Significant Industrial User.

W. pH - The logarithm of the reciprocal of the weight of hydrogen ions, in grams per liter of solution.

X. PARTICIPANT - means the City or County of \_\_\_\_\_ Washington, a municipal corporation or county organized and existing under and by virtue of the laws of the State of Washington. "WITHIN THE PARTICIPANT JURISDICTION" shall mean within the Participant jurisdiction boundaries as now or hereafter constituted.

Y. PASS THROUGH - Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).



Z. PERMITTEE - A Person or Industrial User issued a wastewater discharge permit.

AA. PERSON - Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns. This definition includes all Federal, State, or local governmental entities.

BB. PLANT MANAGER shall mean the Manager of the regional Publicly Owned Treatment Works (POTW) facilities as described and built pursuant to the "Intergovernmental Contract for Wastewater Facilities Management" of November, 1976, and successor agreements, designated by the Participant as the person responsible determining Industrial User compliance with applicable pretreatment standards and requirements set forth in this ordinance, or that person's duly authorized representatives.

CC. POLLUTANT - Any substance discharged into the POTW which if discharged directly would alter the chemical, physical, biological, or radiological integrity of the water of the state. This includes, but is not limited to the priority pollutant list listed in 40 CFR Part 403.

DD. POTW shall mean the system of conduits, pumps, treatment plants, structures and properties, including without limitation all properties, interests, physical and intangible rights of every kind or nature owned or held by the Participant and all appurtenances thereto, however acquired, insofar as they relate to or concern drainage, transportation, storage, or treatment, in any manner whatsoever, of waste matter or storm and surface water of any nature now or hereafter permitted by this chapter to enter the POTW which is tributary to treatment facilities described in or built pursuant to the Intergovernmental Contract for Wastewater Facilities Management of November, 1976, and successor agreements. Sanitary Sewers and Storm Drains, separately and in combination, are, without limitation, included in the POTW.

EE. PREMISES shall be defined as a continuous tract of land, building, or group of adjacent buildings under a single control with respect to use of water and responsibility for payment therefore. Subdivision of such use or responsibility shall constitute a division into separate premises as herein defined, except where more than one dwelling is being served through the same water meter, in which case, each of said dwellings shall constitute a separate premises and shall be subject to the same separate charges as if separate single-family dwellings.

FF. PRETREATMENT - The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant

properties in waste water to a less harmful state, prior to or in lieu of discharging or otherwise introducing such pollutants to the POTW in order to be consistent with the discharge requirements of this Ordinance. This reduction or alteration can be obtained by physical, chemical, or biological processes; by process changes; or by other means except by diluting the concentration of the pollutants unless specifically allowed by an applicable pretreatment standard.

GG. PRETREATMENT REQUIREMENT(S) - Any substantive or procedural requirement related to pretreatment imposed on a user, other than a pretreatment standard. Pretreatment requirements shall include, but not be limited to all permit requirements, reporting requirements, and other requirements specified by the Plant Manager as necessary to comply with the provisions of this ordinance.

HH. PRIORITY POLLUTANT - Any of the substances so designated by the Washington State Department of Ecology or the United States Environmental Protection Administration such as the Priority Pollutants listed in 40 CFR Part 403.

II. SANITARY SEWERS shall mean only those portions of the POTW which are designated by the Participant to carry, treat or dispose of waste matter not constituting storm or surface water permitted by or under this ordinance to enter the POTW.

JJ. SIGNIFICANT INDUSTRIAL USER (SIU) - Any industrial user of the POTW who:

1. Is subject to categorical pretreatment standards; or
2. Has a process wastewater flow of 25,000 gallons or more per average work day; or
3. Has a discharge flow greater than 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
4. Is designated as such by the Plant Manager on the basis that it has a reasonable potential, either singly or in combination with other contributing industries, for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement;
5. Upon a finding that a user meeting the criteria in Subsections 2-4 has no reasonable potential for adversely affecting the POTW's operation or for violating any applicable pretreatment standard or requirement, the Plant Manager may at any time, on his own

initiative or in response to a petition received from a user, and in accordance with procedures in 40 CFR 403.8(f)(6) determine that such user should not be considered a significant industrial user.

KK. SLUGLOAD shall mean any discharge of a non-routine, episodic nature including, but not limited to an accidental spill or non-customary batch discharge.

LL. STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE - A classification pursuant to the "Standard Industrial Classification Manual" issued by the United States Office of Management and Budget.

MM. STORM DRAINS shall mean only those collection and conveyance systems which do, or are designated by the Participant to; detain or retain, carry or dispose of storm and surface water and such other waters as are not required by or under this ordinance or other applicable law to be disposed of through sanitary sewers, in accordance with the provisions hereinafter set forth. Storm drains shall, without limitation, include all properties, interests, and rights of the Participant insofar as they relate to or concern storm or surface water sewerage, whether natural or constructed, in and to the drainage or storage, or both, of storm or surface waters, or both, including without limitation through, under or over lands, landforms, watercourses, sloughs, streams, ponds, lakes, and swamps.

NN. STORM WATER - Any flow occurring during or following any form of natural precipitation, and resulting from such precipitation, including snowmelt.

OO. TOTAL SUSPENDED SOLIDS (TSS) shall mean the total matter suspended in water removable by laboratory filtration using standard method 2540 D or equivalent, and expressed in mg/l.

PP. TOXIC POLLUTANT shall mean those pollutants, or combination of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Plant Manager, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations, in such organisms or their offspring, including those listed as toxic in regulations promulgated by the U.S.EPA.

QQ. TREATMENT PLANT EFFLUENT - Discharge from the POTW into waters of the United States.

RR. UPSET shall mean an exceptional incident in which a user unintentionally and temporarily is in a state of noncompliance with the applicable pretreatment standards due to factors beyond the reasonable control of the user, and excluding noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation thereof.

SS. USER (INDUSTRIAL USER- IU) shall mean any Person with a source of discharge which does not qualify that person as a Domestic User who discharges an effluent into the POTW by means of pipes, conduits, pumping stations, force mains, tank trucks, constructed drainage ditches, intercepting ditches, and all constructed devices and appliances appurtenant thereto.

TT. WASTEWATER - Industrial waste, sewage, treated or untreated waters, or any other waste including that which may be combined with any ground water, surface water or storm water, that may be discharged to the POTW.

UU. WASTEWATER DISCHARGE PERMIT (INDUSTRIAL WASTEWATER DISCHARGE PERMIT, OR DISCHARGE PERMIT) - An authorization or equivalent control document issued by the Participant to users discharging wastewater to the POTW. The permit may contain appropriate pretreatment standards and requirements as set forth in this ordinance.

### 3. PROHIBITED DISCHARGE STANDARDS.

#### General Prohibitions:

No user shall introduce or cause to be introduced into the POTW any pollutant or wastewater which causes pass through or interference. These general prohibitions apply to all users of the POTW whether or not they are subject to categorical pretreatment standards or any other National, State, or local pretreatment standards or requirements.

#### Specific Prohibitions:

No person, business, industry or entity shall discharge or permit or cause the discharge of waste or wastewater of any kind or nature into the POTW with any of the following properties:

A. Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction to cause fire or

explosion, or which have closed-cup flash point of less than 140 degrees F (60 degrees C), or be injurious in any other way to the operation of the POTW. At no time shall two successive readings on a combustible gas meter, at the point of discharge into the system, (or at any point in the system) be more than five percent (5%) or any single reading over ten percent (10%) of the Lower Explosive Limit (LEL) of the meter.

B. Solid or viscous substances which will or may cause obstruction to the flow in a sewer or other interference with the operation of the POTW, including but not limited to, any garbage or putrescible material that has not been properly comminuted to one-fourth inch or less in any direction. Waste from garbage grinders shall not be discharged into the POTW except wastes generated in preparation of food normally consumed on the premises. Such grinders must shred the waste to such a degree that all particles are comminuted to one fourth inch or less in any direction and are carried freely under normal flow conditions prevailing in sanitary sewers. Garbage grinders shall be connected to an approved grease trap. No discharge permitted by this section may contain plastic, paper products, or inert material.

C. Any wastewater having a pH of less than 6 or greater than 9 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the system.

D. Any wastewater having a fat waste, oil, or grease (FOG) content, whether or not emulsified, in excess of fifty (50) milligrams per liter; or any substance which may solidify or become discernibly viscous at temperatures above zero degrees Centigrade (32 degrees F.) This restriction applies to non-biodegradable cutting oil, or products of mineral origin. FOG is defined as the combined total of vegetable, animal, and petroleum based fats, oils, and greases.

E. Any wastewater containing any pollutant, including oxygen demanding pollutants, in sufficient quantity, either singly or by interaction, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, or be in violation of any applicable statute, rule, regulation or ordinance of any public agency, including U.S.EPA.

F. Any noxious or malodorous liquids, gases, or solids which either singly or by interaction are capable of creating a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for their maintenance and repair, or capable of causing acute worker health or safety problems.

G. Any substance which may cause the POTW's treatment residues, sludges, or scums to be unsuitable for reclamation and reuse or permitted disposal or to interfere with the reclamation or disposal process. In no

case shall a substance be discharged to the POTW that will cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under Section 503 of the Act; or with any criteria, guidelines, or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act; or with the Clean Air Act, the Toxic Substances Disposal Act, or State standards applicable to the sludge management method being used.

H. Any substance which will cause the POTW to violate its NPDES and/or other Disposal System Permits, or cause a violation of any state air or water quality standard or solid and hazardous waste regulation.

I. Any substance with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions.

J. Wastewater having a temperature which will inhibit biological activity in the treatment plant resulting in interference, in no case wastewater which causes the temperature at the introduction into the treatment plant to exceed 104 degrees F (40 degrees C) unless the Approval Authority, upon the request of the POTW, approves alternate temperature limits..

K. Any trucked or hauled pollutants, except at discharge points designated by the POTW, under permits issued by the Participant with the approval of the Plant Manager.

L. Any slugload of any type of pollutant, including Oxygen Demanding Pollutants.

M. Persistent pesticides and/or pesticides regulated by the Federal Insecticide Fungicide Rodenticide Act (FIFRA).

N. Concentrations of dissolved solids including but not limited to, sodium chloride, calcium chloride, or sodium sulfate which are so high as to constitute a danger to the wastewater treatment processes or equipment.

O. Concentrations of inert suspended solids such as, but not limited to, fuller's earth, lime slurries, lime residue, or fly ash which are so high as to constitute a danger to the POTW.

P. Any infectious wastes that, in the opinion of the County Health Officer, significantly increase the risk of disease transmission beyond the level of risk normally associated with domestic sewage.

Q. Wastewater containing any radioactive wastes or isotopes except under conditions developed by the Plant Manager in compliance with applicable State or Federal regulations. No person shall discharge or cause to be discharged any radioactive waste into the POTW except when that person is licensed for the use of those radioactive materials by the Department of Health and the waste meets all requirements of WAC 246-221-190, "Disposal By Release Into Sanitary Sewerage Systems", and the average concentration limits as defined in WAC 246-221-290 Appendix A, Table I, Column 2, and WAC 246-221-300 Appendix B and all other applicable local, State and Federal regulations.

R. Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a toxicity test.

4. PROHIBITIONS ON STORM DRAINAGE, GROUNDWATER AND UNPOLLUTED WATER.

Storm water, groundwater, rainwater, street drainage, subsurface drainage, yard drainage, roof drainage, or unpolluted water, including, but not limited to, non-contact cooling water, or blow-down from cooling towers or evaporative coolers, shall not be discharged through direct or indirect connection to any sanitary sewer. With the approval of the Plant Manager, the Participant may, but shall not be required to, permit such discharge when no reasonable alternative method of disposal is available. If a permit is granted for the discharge of such water into a sanitary sewer, the user shall pay the applicable charges and fees and meet such other conditions as required from time to time by the Participant.

5. DISCHARGE LIMITATIONS.

A. No person shall discharge wastewater containing in excess of (as measured on a daily average of composite samples):

mg/l	component
0.2 mg/l	arsenic
0.2 mg/l	cadmium
1.0 mg/l	chromium, total
0.25 mg/l	chromium, hexavalent
0.5 mg/l	copper
0.64 mg/l	cyanide, total
0.25 mg/l	cyanide, free
0.4 mg/l	lead
0.05 mg/l	mercury
0.5 mg/l	nickel

0.2	mg/l	non-halogenated phenols or cresols
0.2	mg/l	silver
1.0	mg/l	zinc

B. The above limits apply at the point where the wastewater is discharged to the POTW (end of pipe). All concentrations for metallic substances are for "total" metal unless indicated otherwise. The Plant Manager may develop mass limitations to be imposed in addition to, or in place of, the concentration-based limitations above. Where a user is subject to a categorical pretreatment standard and a discharge limitation as defined herein for a given pollutant, the more stringent limit or applicable pretreatment standard shall apply. A person will also be subject to more stringent and/or additional limits if required by the application of AKART.

C. No person, business, industry or entity shall increase the use of potable or process water in any way, nor mix separate waste streams for the purpose of diluting a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the standards set forth in this chapter.

D. The discharge into the POTW of any wastewater or wastes having:

1. A 5 day biochemical oxygen demand greater than three hundred (300) parts per million by weight.
2. Containing more than three hundred (300) parts per million by weight of suspended solids,
3. Containing any quantity of substances having the characteristics described above in this section; or
4. Having an average daily flow greater than two percent (2%) of the average daily flow of the POTW;

shall require the evaluation and concurrence of the Plant Manager and be subject to payment as determined by applicable fees for waste strength and flow.

E. The National categorical pretreatment standards found in 40 CFR Chapter I, Subchapter N, Parts 405-471, as amended, are incorporated herein by reference as though fully set forth and shall apply to industries subject to these standards whenever categorical standards are more stringent than applicable state or local discharge limitations.



6. LIMITATIONS ON POINT OF DISCHARGE.

No person shall discharge any substance directly into a manhole or other opening in the POTW other than through an approved building sewer, unless that person has been issued a permit by the Participant. If a permit is issued for such direct discharge, the user shall pay the applicable charges and fees and shall meet such other conditions as determined by the Plant Manager. Septage haulers shall comply with the limitations set forth in their permits, as specified by the Plant Manager and;

A. Septic tank waste may be introduced into the POTW only at a designated receiving structure within the treatment plant area, and at such times as are established by the Plant Manager. Such wastes shall not violate this section of the ordinance or any other requirements established or adopted by the Participant. Wastewater discharge permits for individual vehicles to use such facilities shall be issued by the City of Olympia.

B. Septage haulers may only discharge loads at locations specifically designated by the Plant Manager. No load may be discharged without prior consent of the Plant Manager. The Plant Manager may collect samples of each hauled load to ensure compliance with applicable pretreatment standards. The Plant Manager may require the hauler to provide a waste analysis of any load prior to discharge.

C. Septage haulers must provide a waste-tracking form for every load. This form shall include, at a minimum, the name and address of the waste hauler, permit number, truck identification, sources of waste, and volume and characteristics of waste.

D. Fees for dumping hauled wastes may be established as part of the user fee system as authorized within this ordinance.

E. Septic Haulers may not discharge material designated as hazardous or dangerous wastes as specified by 173.303 WAC or knowingly discharge septage mixed with hazardous and/or dangerous wastes.

7. MATTER EXCLUDED FROM STORM DRAINS.

Unpolluted water regulated by this ordinance including, but not limited to, cooling water, or blow-down from cooling towers or evaporative coolers may not be directed into a storm drain except under the authorization and direction of the Participant and under engineering and technical conditions set by the Plant Manager to carry out the purposes of this chapter.

8. SAMPLING AND TESTING OF WASTEWATER.

Users shall allow the Plant Manager or his/her designee ready access to all parts of the premises for the purposes of inspection, sampling, records examination and copying, and the performance of any additional duties.

A. Where a user has security measures in force which require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, the Plant Manager will be permitted to enter without delay for the purposes of performing specific responsibilities.

B. The Plant Manager shall have the right to set up on the user's property, or require installation of, such devices as are necessary to conduct sampling and/or metering of the user's operations.

C. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the user at the written or verbal request of the Plant Manager and shall not be replaced. The costs of clearing such access shall be born by the user.

D. Unreasonable delays in allowing the Plant Manager access to the user's premises shall be a violation of this ordinance.

E. Failure to allow inspection, sampling, monitoring, or metering as authorized by this section shall be grounds for revocation of the user's discharge permit.

F. Nothing herein shall be construed to limit the Participant's rights to obtain a criminal search warrant.

G. The Plant Manager will follow the sampling and testing procedures outlined in Section 26.

H. No person shall willfully or negligently break, damage, destroy, uncover, deface, tamper with, or prevent access to any structure, appurtenance or equipment, or other part of the POTW. Any person found in violation of this requirement shall be subject to the sanctions set out in this ordinance.

9. APPROVAL OF WASTEWATER DISCHARGES.

The Participant reserves the right to enter into special agreements with users setting out special terms under which they may discharge to the POTW. Any

such special agreements must be approved in advance by the Plant Manager. In no case will a special agreement waive compliance with a categorical pretreatment standard or federal pretreatment requirement. However, the user may request a net gross adjustment to a categorical standard in accordance with 40 CFR 403.15. They may also request a variance from the categorical pretreatment standard from the Approval Authority in accordance with 403.13. The Participant may allow discharge of high BOD, TSS, or flow rate for any permittee upon approval of the Plant Manager, and subject to charges as provided by section 14 of this ordinance.

#### 10. PRETREATMENT OF INDUSTRIAL WASTES.

When at any time it becomes apparent to the Plant Manager or Participant that does not conform to the requirements outlined in Sections 3 through 7, or the applicable pretreatment standards or requirements; it is hereby required that before such matter may be discharged into the POTW, the producer thereof shall treat same at the producer's own expense to a degree that will produce an effluent which does conform to the said requirements.

A. Users shall provide all known, available, and reasonable methods of prevention, control and treatment (AKART) as required to comply with this ordinance and State and Federal regulations and shall achieve compliance with all applicable pretreatment standards and requirements within the time limitations as specified by appropriate statutes, regulations, chapters and ordinances. Any facilities required to treat wastewater to satisfy applicable pretreatment standards and requirements, shall be supplied, properly operated, and maintained at the user's expense. Such treatment plants may include, but shall not be limited to, grease traps, chemical or biochemical plants, sedimentation chambers, and any other devices which effect a change of any nature in the characteristics of the matter being treated toward the characteristics of matter permitted.

B. Detailed plans showing the pretreatment facilities shall be submitted to the Plant Manager for review and must be acceptable to the Plant Manager and the Participant, and meet the requirements of Chapter 173-240 WAC for Department of Ecology review, before construction of the facility. The review of such plans by the Participant shall in no way relieve the user from the responsibility of modifying its facility as necessary to produce an effluent acceptable to the Plant Manager under the provisions of this ordinance. The user shall obtain all necessary construction-operating permits from the Participant. Prior to completion of the Wastewater Treatment Facility, the user shall furnish its plan of operations and maintenance procedures for review. All treatment devices shall be subject to the approval of the Plant Manager.

## 11. TRAPS AND INTERCEPTORS.

Any non-residential occupancy shall install the proper type and capacity trap or interceptor to prevent materials from entering the sewer system that cause or may cause stoppages, impair the efficiency of the wastewater collection system, threaten collection system or treatment plant workers, or impair the efficiency of the wastewater treatment plant. Traps or interceptors shall be provided if required by the Uniform Plumbing Code or if determined necessary in the opinion of the Plant Manager.

When required, all non-residential occupancies handling any fats, oils, or greases shall install and maintain a fats, oils, and grease interceptor and/or trap to remove these materials prior to entrance into the sewer system. The use of biological or chemical treatment agents for the emulsification or separation of fats, oils, or greases shall be prohibited. Such non-residential occupancies include, but are not limited to restaurants, wash racks, vehicle service stations, engine or machinery repair shops, delis, cafes, slaughter houses, packing plants, bakeries, food processing operations and commercial, industrial or institutional cooking facilities.

When required, all non-residential occupancies handling flammable or combustible liquids shall install and maintain an oil and flammable liquids interceptor.

When required, all non-residential occupancies producing, handling or discharging solids shall provide adequate and approved sediment traps or interceptors. These traps or interceptors shall be used by, but not limited to, occupancies discharging, or with the potential to discharge, lint, rags, sand, grit, glass, metal, or any other dense material.

All interceptors shall be of a type and capacity approved by the Plant Manager and shall be located as to be readily and easily accessible for cleaning and inspection at the expense of the user or applicant. Where installed, all traps and interceptors shall be maintained by the owner, or at his expense, in a manner that will always prevent the above-mentioned wastes from being carried into the sewer system. Wastes removed from such a facility shall not be reintroduced or disposed of in sanitary or storm sewers.

## 12. MONITORING FACILITIES.

A. Each user shall provide and operate at its own expense a monitoring facility to allow inspection, sampling, and flow measurements of each sewer discharge to the POTW.

B. Each monitoring facility shall be situated on the user's premises, except where such a location would be impractical or cause undue hardship on

the user. The Participant may concur with the facility being constructed in the public street or sidewalk area, providing that the facility is located so that it will not be obstructed by landscaping or parked vehicles. The Plant Manager, whenever applicable, may specify the construction and maintenance of sampling facilities at other locations (for example, at the end of a manufacturing line or wastewater treatment system).

C. There shall be ample room in or near such sampling facility to allow accurate sampling and preparation of samples for analysis. Each user shall at all times maintain required facilities and sampling and measuring equipment in a safe and proper operating condition, at the user's own expense.

D. All monitoring facilities shall be constructed and maintained in accordance with all applicable local construction standards and specifications.

E. The Participant may require the user to install monitoring equipment determined by the Plant Manager to be necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition, by the user at its own expense. All devices used to measure wastewater flow and quality shall be calibrated to ensure their accuracy.

### 13. ACCIDENTAL DISCHARGE/SLUG CONTROL PLANS.

Each user shall provide protection from accidental discharge of prohibited or regulated materials or substances established by this ordinance. Where necessary, facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted as specified in this section.

Users shall immediately take action to correct the situation and verbally notify the LOTT facility console monitor upon the occurrence of a "slugload" or accidental discharge of substances prohibited by this ordinance. Written notification including location of the discharge, date and time thereof, type of waste, concentration and volume, and corrective actions must be filed with the Plant Manager within five days of the accidental discharge.

Any user who discharges a slugload of prohibited materials shall be liable for any expense, loss, or damage to the POTW, in addition to any other liabilities established by this ordinance and the amount of any fines imposed on the Participant and/or Plant Manager on account thereof under State or Federal law.

Signs shall be permanently posted in conspicuous places on the user's premises, advising employees whom to call in the event of a slug or accidental discharge. Employers shall instruct all employees who may cause or discover such a discharge with respect to emergency notification procedures.

The Participant may require any user to develop and implement an accidental discharge/slug control plan. Where deemed necessary by the Plant Manager or Participant, facilities to prevent accidental discharge or slug discharges of pollutants shall be provided and maintained at the user's cost and expense. An accidental discharge/slug control plan showing facilities and operating procedures to provide this protection shall be submitted to the Plant Manager for review and approval before implementation. The Plant Manager shall determine which user is required to develop a plan and require said plan to be submitted within 180 days after notification by the Plant Manager or Participant. Each user shall implement its accidental discharge/slug control plan as submitted or as modified after such plan has been reviewed and approved by the Plant Manager. Review and approval of such plans and operating procedures by the Plant Manager shall not relieve the user from the responsibility to modify its facility as necessary to meet the requirements of this Section.

A. Any user required to develop and implement an accidental discharge/slug control plan shall submit a plan which addresses, at a minimum, the following:

1. Description of discharge practices, including non-routine batch discharges;
2. Description of stored chemicals;
3. Procedures for immediately notifying the Plant Manager and Participant of any accidental or slug discharge. Such notification must also be given for any discharge which would violate any of the standards in Sections 3 through 7 of this ordinance; and
4. Procedures to prevent adverse impact from any accidental or slug discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents), and/or measures and equipment for emergency response.

14. EXCESS STRENGTH CHARGES.

For industrial waste or other discharges exceeding the BOD and/or Suspended Solids limits defined in Section 5., the following formula shall be used to determine the ERU equivalency of the waste flow. This formula applies only to BOD and/or SS concentrations in excess of 300 mg/l.

A. ERU Equivalent for High Strength Waste shall be the sum of the following:

1. Flow Calculation

$$(P\text{-FLOW}) \times \frac{\text{Industry flow, cu. ft./ Month}}{900 \text{ cu. ft. /ERU}} = \text{FLOW ERUs}$$

2. BOD Calculation

$$(P\text{-BOD}) \times \frac{\text{Industry BOD, mg/l}}{300 \text{ mg/l}} \times \frac{\text{Industry Flow, cu ft/Month}}{900 \text{ cu ft/ERU}} = \text{BOD ERU}$$

3. Suspended Solids (SS) Calculation

$$(P\text{-SS}) \times \frac{\text{Industry SS, mg/l}}{300 \text{ mg/l}} \times \frac{\text{Industry Flow, cu ft/Month}}{900 \text{ cu ft/ERU}} = \text{SS ERUs}$$

B. Explanation of terms

1. (P-FLOW) = Percentage treatment costs associated with hydraulic flow

2. (P-BOD) = Percentage treatment costs associated with BOD

3. (P-SS) = Percentage treatment costs associated with SS

4. ERU: (Equivalent Residential Unit) equal to 900 cubic feet of wastewater containing a maximum of 300 mg/l of suspended solids and a maximum of 300 mg/l of BOD.

5. Wastewater Treatment costs used in items 1,2 and 3 above are calculated at years end. The ratios determined shall apply throughout the following year.

6. All monthly charges per ERU established by the LOTT Intergovernmental Contract for Wastewater Facilities Management of November 1976, as amended, shall apply to ERU's calculated by the above formulas.

15. DISCHARGE PERMIT FEES.

Annual discharge permit fees shall be levied on each Significant Industrial User (SIU) and each Minor Industrial User (MIU) based on three criteria: (1) permitted flowrate, (2) permit complexity and (3) potential danger to the collection system or POTW. Each permittee will be evaluated annually by the Plant Manager and placed in one of three categories; with Category III having the highest combination of flow, complexity and risk. The Plant Manager shall use the Permit Fee Category Criteria set forth in the following table:

PERMIT FEE CATEGORY CRITERIA

CRITERION	RANGE	DESCRIPTION	SCORE
FLOW:	High	>25,000 GPD	3
	Medium	1,000 – 25,000 GPD	2
	Low	<1,000 GPD	1
COMPLEXITY	High	Categorical SIU	3
	Medium	Non-Categorical SIU	2
	Low	MIU	1
POTENTIAL DANGER	High	Excess Strength Discharge, High Spill Potential, Large Quantity Of Toxic Materials, High Flows	3
	Medium	All Others	2
	Low	Low Spill Potential, No Excess Strength, Low Or No Toxics On Site, Low Flows	1

The total scores for all criteria determines the permit category and fee according to the following table:



### PERMIT FEE TABLE

SCORE	CATEGORY	FEE
3-4	I	\$200
5-7	II	\$300
8-9	III	\$400

These fees shall be indexed to the current ERU cost, rounded to the nearest \$10. The base level ERU cost is currently \$21. These discharge permit fees are in addition to the excess strength charges required in the previous ordinance section, and shall be collected by the Participant and remitted to the LOTT Fund prior to the end of the calendar month following collection. To encourage reduction in the use of water and generation of wastewater, the annual discharge permit fee will be waived for any permittee that achieves zero industrial wastewater discharge to LOTT in the prior calendar year.

#### 16. PERMITS REQUIRED.

A. Permits Required: No Significant Industrial User (SIU) shall discharge wastewater into the POTW without first obtaining a wastewater discharge permit from the Participant. Any violation of the terms and conditions of a wastewater discharge permit shall be deemed a violation of this ordinance and subject the permittee to the sanctions set out in this ordinance. Obtaining a wastewater discharge permit does not relieve a permittee of their obligation to comply with all Federal and State pretreatment standards or requirements or with any other requirements of Federal, State, and local law. Leachate from a solid waste landfill, and condensate from gas recovery systems at a solid waste landfill shall be considered an industrial wastewater and a permit shall be required by the Participant in accordance with this ordinance.

B. Others Regulated: The Plant Manager or Participant may require users not meeting the criteria for a SIU, including liquid waste haulers, to obtain wastewater discharge permits to carry out the purposes of this ordinance, and shall designate these users as Minor Industrial Users (MIUs).

C. Permits for Existing Industrial Users: Any SIU or MIU discharging wastewater into the POTW prior to the effective date of this ordinance, that wishes to continue such discharges, shall within 30 days after notification submit a permit application to the Plant Manager in accordance with Section 18 of this ordinance. Such Dischargers shall not cause or allow discharges to the POTW to continue after one hundred eighty (180) days of the effective date of this ordinance except in accordance with a wastewater discharge permit issued by the Participant.

D. Permits for New Sources and New Users: At least 90 days prior to anticipated start-up, New Sources and New Users that fit the definition of an SIU or MIU shall apply for a wastewater discharge permit and will be required to submit to the Plant Manager at least the information listed in paragraphs (A)-(E) of Section 18. A New Source or New User cannot discharge without first receiving a wastewater discharge permit from the Participant. New Sources and New Users shall give estimates of the information requested in paragraphs C, D, and E of Section 18.

E. Newly Promulgated or Recognized Categorical Wastestreams: Users with wastewater from processes for which applicable categorical pretreatment standards are promulgated and users which are recognized by the Plant Manager as being subject to any existing applicable categorical pretreatment standard will provide actual data for all information of section 18 within 180 days after the effective date of the applicable categorical standard, or within 90 days of being informed by the Plant Manager of applicable categorical standards, whichever is sooner. Such users may continue discharging, subject to the approval and conditions of the Plant Manager, until a permit is issued.

F. Extrajurisdictional Users: Any non-domestic user located within the Lacey, Olympia, Tumwater, and Thurston County service districts shall be required to follow the above procedures.

17. INDUSTRIAL USER SURVEY.

All persons, upon request, shall complete an Industrial User Survey. Each person will provide the survey information in the form prescribed by the Plant Manager or Participant, complete the form to the best of their ability, and return it to the Participant within the allotted time. This requirement is separate from any requirements under this ordinance to complete a permit application.

18. PERMIT APPLICATION.

All users required to obtain a wastewater discharge permit must submit, at a minimum, the following information. The Plant Manager shall approve a form to be used as a permit application. Categorical users submitting the following information shall have complied with 40 CFR 403.12 (b).

A. Identifying information. The user shall submit the name and address of the facility including the name of the operator and owners.

B. Permits. The user shall submit a list of any environmental control permits held by or for the facility.

C. Description of operations. The user shall submit a brief description of the nature, average rate of production, and Standard Industrial Classification of the operation(s) carried out by such Industrial User, including a list of all raw materials and chemicals used or stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW; number and type of employees; hours of operation; each product produced by type, amount, process or processes, and rate of production; type and amount of raw materials processed (average and maximum per day) and the time and duration of discharges. This description should also include a schematic process diagram which indicates points of discharge to the POTW from the regulated or manufacturing processes. Disclosure of site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, inspection manholes, sampling chambers and appurtenances by size, location and elevation.

D. Flow Measurement.

1. Categorical User:

The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from each of the following:

- a. Regulated or manufacturing process streams; and
- b. Other streams as necessary to allow use of the combined wastestream formula of 40 CFR 403.6(e).

2. All other users:

The user shall submit information showing the measured average daily and maximum daily flow, in gallons per day, to the POTW from each of the following:

- a. Total process flow, wastewater treatment plant flow, total plant flow or individual manufacturing process flow as specified by the Plant Manager.

The Plant Manager may accept verifiable estimates of these flows where justified by cost or feasibility considerations.

E. Measurements of pollutants.

1. Categorical User:

a. The user shall identify the applicable pretreatment standards for each regulated or manufacturing process.

b. In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration (or mass), where required by the Categorical Pretreatment Standard or as specified by the Plant Manager, of regulated pollutants (including standards contained in Sections 3 through 7, as appropriate) in the discharge from each regulated or manufacturing process. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations and shall conform to sampling and analytical procedures outlined in Section 26.

c. The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this paragraph.

d. Where an alternate concentration or mass limit has been calculated in accordance with 40 CFR 403.6(e) for a categorical user covered by a categorical pretreatment standard this adjusted limit along with supporting data shall be submitted as part of the application.

2. All other users:

a. The user shall identify the applicable pretreatment standards for its wastewater discharge.

b. In addition, the user shall submit the results of sampling and analysis identifying the nature and concentration (or mass) where specified by the Plant Manager, of regulated pollutants contained in Sections 3 through 7 as appropriate in the discharge. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of daily operations and shall conform to sampling and analytical procedures outlined in Section 26.

c. The user shall take a minimum of one representative sample to compile that data necessary to comply with the requirements of this paragraph.

d. Where the Plant Manager has specified alternate concentration or mass limits because of dilution this adjusted limit along with supporting data shall be submitted as part of the application.

F. Certification. A statement, reviewed by an authorized representative of the user and certified by a qualified professional as outlined in subparagraph I of this section, indicating whether the applicable Pretreatment Standards are being met on a consistent basis, and, if not, whether additional operation and maintenance (O and M) and/or additional pretreatment is required for the user to meet the applicable Pretreatment Standards and Requirements;

G. Compliance Schedule. If additional pretreatment and/or O and M will be required to meet the applicable Pretreatment Standards; the shortest schedule by which the user will provide such additional pretreatment and/or O and M.

1. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

2. No increment referred to in paragraph (A) of this section shall exceed 9 months.

3. Not later than 14 days following each date in the schedule and the final date for compliance, the user shall submit a progress report to the Plant Manager including, at a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the user to return the construction to the schedule established. In no event shall more than 9 months elapse between such progress reports.

4. Where the user's categorical Pretreatment Standard has been modified by the combined wastestream formula (40 CFR 403.6(e)), and/or a Fundamentally Different Factors variance (40 CFR 403.13)

at the time the user submits the report required by this paragraph, the information required by paragraphs (F) and (G) of this section shall pertain to the modified limits.

5. If the categorical Pretreatment Standard is modified by the combined wastestream formula (40 CFR 403.6(e)), and/or a Fundamentally Different Factors variance (40 CFR 403.13) after the user submits the report required by paragraphs (F) and (G) of this section; a new report pertaining to the modified limit shall be submitted by the user within 60 days after the modified limit is approved.

The completion date in this schedule shall not be later than the compliance date established pursuant to Section 20 of this Ordinance.

H. Any other information as may be deemed necessary by the Plant Manager to evaluate the wastewater discharge permit application.

I. All wastewater discharge permit applications and user reports must be signed by an authorized representative of the user and contain the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Incomplete or inaccurate applications will not be processed and will be returned to the user for revision.

The Plant Manager will evaluate the data furnished by the user and may require additional information. The Plant Manager will prepare a written recommendation regarding issuance or non-issuance of the permit and submit it to the Participant. Within 30 days of receipt of a complete wastewater discharge permit application, including the Plant Manager's recommendation, the Participant will determine whether or not to issue a wastewater discharge permit. Upon a determination to issue, the permit shall be issued within 30 days of full evaluation and acceptance of the data furnished. The Participant may deny any

application for a wastewater discharge permit. An Industrial User denied a discharge permit may petition the Participant to reconsider the issuance of a discharge permit as described in section 25 of this ordinance.

19. PERMIT MODIFICATIONS.

The Participant reserves the right to amend any Wastewater Discharge permit issued hereunder in order to assure compliance or continued compliance by the Participant with applicable laws and regulations. Within nine (9) months of the promulgation of a National Categorical Pretreatment Standard, but not later than the deadline for final compliance with a standard when such is specified, the Wastewater Discharge Permit of each user subject to such standards shall be revised to require compliance with such standards within the time frame prescribed by such standards.

Where a user, subject to a National Categorical Pretreatment Standard, has not previously submitted an application for a Wastewater Discharge Permit as required by section 18; the user shall apply for a Wastewater Discharge Permit from the Participant within 90 days after the promulgation of the applicable National Categorical Pretreatment Standards by the EPA. In addition, the user with an existing Wastewater Discharge Permit shall submit to the Plant Manager within 90 days after the promulgation of an applicable National Categorical Pretreatment Standard, the information required by paragraphs (C) and (H) of section 18. The user shall be informed of any proposed changes in its permit at least 30 days prior to the effective date of change. Any changes or new conditions upon the user may require modifications of the Wastewater Discharge Permit, as well as include a reasonable time schedule for compliance.

On approval by the Plant Manager, the Participant may modify a wastewater discharge permit for any good cause, including but not limited to the following:

- A. To incorporate any new or revised Federal, State, or local pretreatment standards or requirements;
- B. To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance;
- C. A change in the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge;
- D. Information indicating that the permitted discharge poses a threat to the Participant's, the POTW's, or other personnel, or the receiving waters;
- E. Violation of any terms or conditions of the wastewater discharge permit;

F. Misrepresentations or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting;

G. Revision of, or a grant of variance from, categorical pretreatment standards pursuant to 40 CFR 403.13;

H. To correct typographical or other errors in the wastewater discharge permit; or

I. To reflect a transfer of the facility ownership and/or operation to a new owner/operator.

## 20. PERMIT CONDITIONS.

Wastewater Discharge Permits for Significant Industrial Users shall specify no less than all of the following, and for Minor Industrial Users, shall specify the provisions from the following, as determined applicable by the Plant Manager:

A. Wastewater discharge permits must contain the following conditions:

1. A statement that indicates wastewater discharge permit duration, which in no event shall exceed five (5) years;
2. A statement that the wastewater discharge permits are transferable only upon compliance with section 22 of this ordinance, and provisions for furnishing the new owner or operator with a copy of the existing wastewater discharge permit;
3. Applicable pretreatment standards and requirements, including any special State requirements;
4. Self monitoring, sampling, reporting notification, submittal of technical reports, compliance schedules, and record-keeping requirements. These requirements shall include an identification of pollutants to be monitored, sampling location, sampling frequency, and sample type based on Federal, State, and local law; and
5. Requirement for immediate notification to the Plant Manager where self-monitoring results indicate non-compliance;
6. Requirement to report a by-pass or upset of a pretreatment facility;



7. Requirement for the SIU or MIU who reports non-compliance to repeat the sampling and analysis and submit results to the Plant Manager within 30 days after becoming aware of the violation;

8. A statement of applicable civil, criminal, and administrative penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule;

9. The requirement to apply AKART to all wastewaters discharged.

B. Wastewater discharge permits may contain, but need no be limited to, the following conditions:

1. Limits on the average and/or maximum rate of discharge, time of discharge, and/or requirements for flow regulation and equalization;

2. Requirements for the installation of pretreatment technology, pollution control, or construction of appropriate containment devices, designed to reduce, eliminate, or prevent the introduction of pollutants into the treatment works;

3. Requirements for developing and implementing spill control plans or other special conditions including management practices necessary to adequately prevent accidental, unanticipated, or routine discharges;

4. Development and implementation of waste minimization plans to reduce the amount of pollutants discharged to the POTW;

5. The unit charge or schedule of user charges and fees for the management of the wastewater discharged to the POTW;

6. Requirements for installation and maintenance of inspection and sampling facilities and equipment;

7. A statement that compliance with the wastewater discharge permit does not relieve the permittee of responsibility for compliance with all applicable Federal and State pretreatment standards and requirements, including those which become effective during the term of the wastewater discharge permit;

8. Any special agreements developed or continued between the Participant and user with the approval of the Plant Manager;

9. Compliance schedule(s) for meeting applicable pretreatment standards and requirements. Compliance schedules shall conform

to the requirements specified in Section 18 subparts G.1. through G.3. of this ordinance.

10. Other conditions as deemed appropriate by the Plant Manager to ensure compliance with this ordinance, and State and Federal laws, rules, and regulations.

#### C. Deadline for Compliance with Applicable Pretreatment Requirements

Compliance by existing users (categorical users) covered by Categorical Pretreatment Standards shall be within 3 years of the date the Standard is effective unless a shorter compliance time is specified in the appropriate Standard. The Plant Manager shall establish a final compliance deadline date for any existing user not covered by Categorical Pretreatment Standards or for any categorical user when the local limits for said user are more restrictive than EPA's Categorical Pretreatment Standards. New source users and new users are required to comply with applicable pretreatment standards within the shortest feasible time (not to exceed 90 days from the beginning of discharge). New sources and new users shall install and have in operating condition, and shall start-up all pollution control equipment required to meet applicable pretreatment standards before beginning to discharge. Any wastewater discharge permit issued to a categorical user shall not contain a compliance date beyond any deadline date established in EPA's Categorical Pretreatment Standards.

Any other existing user or a categorical user that must comply with a more stringent local limit, which is in non-compliance with any local limits shall be provided with a compliance schedule placed in an industrial wastewater permit to insure compliance within the shortest time feasible.

#### 21. PERMIT DURATION AND REISSUANCE.

All wastewater discharge permits shall be issued for a period of five years, subject to appendment or revocation as provided in this ordinance. Under extraordinary circumstances, a permit may be issued for a shorter period or may be stated on its face to expire on a specific date.

A user, required to have a wastewater discharge permit, shall apply for wastewater discharge permit reissuance by submitting a complete wastewater discharge permit application, in accordance with Section 18 of this ordinance, a minimum of 90 days prior to the expiration of the user's existing wastewater discharge permit. A user, whose existing wastewater discharge permit has expired and has submitted its re-application in the time period specified herein, shall be deemed to have an effective wastewater discharge permit until the Participant issues or denies the new wastewater discharge permit. A user, whose existing wastewater discharge permit has expired and who failed to

submit its re-application in the time period specified herein, will be deemed to be discharging without a wastewater discharge permit.

22. LIMITATIONS ON PERMIT TRANSFER.

This permit is automatically transferred to a new owner or operator if:

- A. A written agreement between the old and new owner or operator containing a specific date for transfer of permit responsibility, coverage, and liability is submitted to the Participant and the LOTT Industrial Waste Program Supervisor;
- B. A copy of the permit is provided to the new owner; and
- C. LOTT does not notify the Permittee of the need to modify the permit.

Unless this permit is automatically transferred according to section A above, this permit may be transferred only if it is modified to identify the new Permittee and to incorporate such other requirements as determined necessary by the Plant Manager.

23. PROPERTY RIGHTS.

The issuance of a permit shall not convey any property rights in either real or personal property, or any exclusive privileges, nor shall it authorize any invasion of personal rights nor any infringement of Federal, State or Local regulations.

24. PUBLIC NOTICE.

Public notice shall be given in accordance with Section 173-216-090 WAC. The Participant may initiate the Public Notice rather than requiring it of the user.

25. APPEAL OF PERMIT CONDITIONS.

Any person, including the user, may petition the Participant to reconsider the terms of a wastewater discharge permit within thirty (30) days of its issuance or denial.

A. Failure to submit a timely petition for review shall be deemed to be a waiver of the administrative appeal.

B. In its petition, the appealing party must indicate the wastewater discharge permit provisions objected to, the reasons for this objection, and the alternative condition, if any, it seeks to place in the wastewater discharge permit.

C. The effectiveness of the wastewater discharge permit shall not be stayed pending the appeal.

D. If the Participant fails to act within ninety (90) days, a request for reconsideration shall be deemed to be denied. Decisions not to reconsider a wastewater discharge permit, not to issue a wastewater discharge permit, or not to modify a wastewater discharge permit, shall be considered final administrative actions for purposes of judicial review.

E. Aggrieved parties seeking judicial review of the final administrative wastewater discharge permit decisions must do so by filing a petition with the Superior Court 10 days of final administrative action.

F. Industrial Users may request a meeting with the Plant Manager and Participant to present the petition required in this section. The Plant Manager shall arrange such a meeting within 30 days of the request by the Industrial User.

## 26. REPORTING REQUIREMENTS.

Reporting requirements specified in this section shall be inclusive of all Significant Industrial Users and shall also apply to those Minor Industrial Users as specifically required in their Waste Discharge Permits.

All reports of permittees shall contain all results of sampling and analysis of the discharge, including the flow and the nature and concentration or production and mass as specified by the Plant Manager. The frequency of monitoring by the user shall be as prescribed in the Wastewater Discharge Permit. All analyses shall be performed in accordance with 40 CFR, Part 136 and amendments thereto. Where 40 CFR, Part 136 does not include a sampling or analytical technique for the pollutant in question, sampling and analysis shall be performed in accordance with the procedures set forth in the EPA publication, "Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants", April 1977, and amendments thereto, or with any other sampling and analytical procedures approved by the Administrator of the EPA.

### A. Initial Compliance Report.

Within 90 days following the date for final compliance with Applicable Pretreatment Standards and requirements set forth in this ordinance, or following commencement of the discharge of wastewaters into the POTW, any user subject to this ordinance shall submit a report to the Plant Manager that indicates compliance with Section 18, parts D through I, of this ordinance. The report shall state whether the Applicable Pretreatment

Standards or requirements are being met on a consistent basis and, if not, what additional O & M and/or pretreatment is necessary to bring the user into compliance with the Applicable Pretreatment Standards or requirements. This statement shall be signed by an authorized representative of the user. If permit conditions are not being met, the statement also must be signed by an engineer qualified in pretreatment system design.

For users subject to equivalent mass or concentration limits developed by the Plant Manager in accordance with procedures established in 40 CFR 403.6 (c), this report shall contain a reasonable measure of the user's long term production rate. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period.

#### B. Periodic Compliance Report.

Any user subject to the Pretreatment Standards set forth in this ordinance, after the compliance date of such Pretreatment Standard or, in the case of a new user, after commencement of the discharge to the POTW, shall submit to the Plant Manager during the months of May and November of each year, unless specified more frequently by the Plant Manager, a report indicating the nature and concentration of prohibited or regulated substances in the effluent which are limited by the Permit and/or Pretreatment Standards hereof. Industrial Users subject to mass limitations as provided for in this ordinance and/or the Federal Categorical Pretreatment Standards shall indicate the mass of pollutants regulated by Pretreatment Standards in the discharge from the Industrial User. For users subject to equivalent mass or concentration limits developed by the Plant Manager in accordance with procedures established in 40 CFR 403.6 (c), this report shall contain a reasonable measure of the user's long term production rate. For all other users subject to categorical pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the user's actual production during the appropriate sampling period.

In addition, this report shall include a record of all measured or estimated average and maximum daily flows during the reporting period specified in Section 20 hereof, and if a user monitors a pollutant more frequently than specified by the Plant Manager, using the procedures prescribed in 40 CFR part 136, the results of this monitoring shall be included in the report. Flows shall be reported on the basis of actual measurement, provided however, where cost or feasibility considerations justify, the Plant

Manager may accept reports of average and maximum flows estimated by verifiable techniques. The Plant Manager, for good cause shown, considering such factors as local high or low flow rates, holidays, budget cycles, or other extenuating factors, may authorize the submission of said reports on months other than those specified above.

C. Notification of Significant Production Changes.

Any user operating under a wastewater discharge permit incorporating equivalent mass or concentration limits shall notify the Plant Manager within two (2) business days after the user has a reasonable basis to know that the production level will significantly change within the next calendar month. Any user not providing a notice of such anticipated change will be required to comply with the existing limits contained in its wastewater discharge permit.

D. Hazardous Waste Notification.

Any user that is discharging 15 kilograms of hazardous wastes as defined in 40 CFR 261 (listed or characteristic wastes) in a calendar month or any facility discharging any amount of acutely hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e) is required to provide a one time notification in writing to the Plant Manager, EPA Regional Waste Management Division Plant Manager, and Hazardous Waste Division of Ecology. Any existing user exempt from this notification shall comply with the requirements contained herein within 30 days of becoming aware of a discharge of 15 kilograms of hazardous wastes in a calendar month or the discharge of acutely hazardous wastes to the LOTT sewer system. Such notification shall include:

1. The name of the hazardous waste as set forth in 40 CFR Part 261,
2. The EPA Hazardous waste number; and
3. The type of discharge (continuous, batch, or other),
4. If an industrial user discharges more than 100 kilograms of such waste per calendar month to the sewer system, the notification shall also contain the following information to the extent it is known or readily available to the industrial user:
  - a. an identification of the hazardous constituents contained in the wastes,

b. an estimation of the mass and concentration of such constituents in the wastestreams discharged during that calendar month, and

c. an estimation of the mass of constituents in the wastestreams expected to be discharged during the following 12 months.

These notification requirements do not apply to pollutants already reported under the self-monitoring requirements. Whenever the EPA publishes final rules identifying additional hazardous wastes or new characteristics of hazardous waste, a user shall notify the Plant Manager of the discharge of such a substance within 90 days of the effective date of such regulations. In the case of any notification made under this paragraph, an industrial user shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

E. Notice of potential problems, including accidental spills and/or slug loadings.

Any user shall notify the Plant Manager immediately of all discharges that could cause problems to the POTW, including any slug loadings, as defined in Section 2. The notification shall include the concentration and volume and corrective action. Steps being taken to reduce any adverse impact should also be noted during the notification. Any user who discharges a slug (or slugs) of pollutants shall be liable for any expense, loss, or damage to the POTW, in addition to the amount of any fines imposed on the Participant or Plant Manager under State or Federal law.

F. Notification of Changed Discharge.

All users shall promptly notify the Plant Manager in advance of any substantial change in the volume or character of pollutants in their discharge, including significant manufacturing process changes, pretreatment modifications, and the listed or characteristic hazardous wastes for which the user has submitted initial notification under 40 CFR 403.12(p).

G. Users subject to equivalent mass or concentration limits.

For users subject to equivalent mass or concentration limits developed by the Plant Manager in accordance with procedures established in 40 CFR 403.6 (c), this report shall contain a reasonable measure of the user's long term production rate. For all other users subject to categorical

pretreatment standards expressed in terms of allowable pollutant discharge per unit of production (or other measure of operation), this report shall include the users's actual production during the appropriate sampling period.

#### H. Non-Compliance Reporting.

If sampling performed by a user indicates a violation, the user shall notify the Plant Manager within 24 hours of becoming aware of the violation. The user shall also repeat the sampling within 5 days and submit the results of the report analysis to the Plant Manager within 30 days after becoming aware of the violation, except the user is not required to resample if:

1. The Plant Manager performs sampling at the user at a frequency of at least once per month, or
2. The Plant Manager performs sampling at the user between the time when the user performs its initial sampling and the time when the user receives the results of this sampling.

#### I. TTO Reporting.

Categorical users which are required by EPA to eliminate and/or reduce the levels of toxic organics (TTO's) discharged into the sewer system must follow the Categorical Pretreatment Standards for that industry. Those users must also meet the following three requirements:

1. Sample, as part of the application requirements, for all the organics listed under the TTO limit (no exceptions);
2. Either: routinely monitor for TTOs, (as specified in permit conditions), certify that no Toxic Organics are used at the facility, or develop a solvent management plan in lieu of required TTO monitoring;
3. Include a certification statement in self-monitoring reports that there has been no dumping of concentrated toxic organics into the wastewater and that it is implementing a solvent management plan as approved by the Plant Manager.

#### J. Reports from Minor Industrial Users.

Minor Industrial Users shall provide appropriate reports as the Plant Manager may require.



#### K. Reports for Unpermitted Users.

The Plant Manager may require non-domestic users which are otherwise not required to obtain a wastewater discharge permit or authorization to provide appropriate reports and complete Industrial User survey forms as necessary to properly implement the pretreatment program.

#### L. Sampling Requirements for Users.

A minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. The Plant Manager will determine on a case-by-case basis whether the user will be able to composite the individual grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportional composite sampling techniques where feasible.

The Plant Manager may waive flow-proportional composite sampling for any user that demonstrates that flow-proportional is infeasible. In such cases, samples may be obtained through time-proportional composite sampling techniques or through a minimum of four (4) grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged.

Samples should be taken immediately downstream from pretreatment facilities if such exist or immediately downstream from the regulated or manufacturing process if no pretreatment exists or as determined by the Plant Manager and contained in the user's wastewater discharge permit. For categorical users, if other wastewaters are mixed with the regulated wastewater prior to pretreatment the user should measure the flows and concentrations necessary to allow use of the combined wastestream formula of 40 CFR 403.6(e) in order to evaluate compliance with the Applicable Categorical Pretreatment Standards. For other SIUs, for which the Plant Manager has adjusted discharge limitations to factor out dilution flows, the user should measure the flows and concentrations necessary to evaluate compliance with the adjusted pretreatment standard(s).

All sample results shall indicate the time, date and place of sampling and methods of analysis and shall certify that such sampling and analysis is representative of normal work cycles and expected pollutant discharges from the user. If a user sampled and analyzed more frequently than was required in its wastewater discharge permit, using methodologies in 40 CFR Part 136, it must submit all results of sampling and analysis of the discharge as part of its self-monitoring report.

27. CONFIDENTIAL INFORMATION.

Information and data furnished to the Plant Manager and/or Participant with respect to the nature and frequency of discharge shall be available without restriction unless the user specifically requests and is able to demonstrate to the satisfaction of the Plant Manager and/or Participant that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets or proprietary information of the user under the laws or regulations of the State or Federal Government. If a user furnishing a report requests that information provided as part of a report or permit process be kept confidential, and the user marks said pages as confidential, then the portions of a report or other information which may disclose trade secrets or secret processes protected by State or Federal law shall not be made available for inspection by the public, subject to the provisions of RCW chapter 42.17, but shall be made available upon written request to governmental agencies for uses related to this ordinance, the National Pollutant Discharge Elimination System (NPDES) Permit, State Disposal System Permit and/or the Pretreatment Program; provided however that such portions of a report or other information shall be available for use by the State or any State Agency in judicial review or enforcement proceedings involving the user furnishing the report. Wastewater constituents and characteristics and other "effluent data" as defined by 40 CFR 2.302 will not be recognized as confidential information and will be available to the public without restriction.

Information accepted by the Plant Manager and/or Participant as confidential, shall not be transmitted to any governmental agency or to the general public by the Plant Manager and/or Participant until and unless a ten-day notification is given to the user. Once notice of intent to release information has been given to the user, if the user fails to contest the release, then any rights created by this section shall be deemed to have been waived.

28. BYPASS.

A. For the purposes of this section;

1. "Bypass" means the intentional diversion of wastestreams from any portion of a user's treatment facility.
2. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. A user may allow any bypass to occur which does not cause applicable pretreatment standards or requirements to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of paragraphs (C) and (D) of this section.

C. 1. If a user knows in advance of the need for a bypass, it shall submit prior notice to the Plant Manager, at least ten (10) days before the date of the bypass, if possible.

2. A user shall submit oral notice to the Plant Manager of an unanticipated bypass that exceeds applicable pretreatment standards within twenty four (24) hours from the time it becomes aware of the bypass. A written submission shall also be provided within five (5) days of the time the user becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass. The Plant Manager may waive the written report on a case-by-case basis if the oral report has been received within twenty four (24) hours.

D. 1. Bypass is prohibited, and the Participant may take an enforcement action against a user for a bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The user submitted notices as required under paragraph (C) of this section.

2. The Participant may approve an anticipated bypass, after considering its adverse effects, if the Plant Manager determines that it will meet the three conditions listed in paragraph (D)(1) of this section.

29. EMERGENCY SUSPENSION OF SERVICE AND PERMIT.

The Participant may order the suspension of wastewater treatment service and of the Discharge Permit of a user without advance notice if it appears to the Plant Manager and/or Participant that an actual or potential discharge:

- A. Presents or threatens a substantial danger to the health or welfare of persons or to the environment; or,
- B. Threatens to interfere with the operation of the POTW or to violate any pretreatment limits imposed by this chapter or by any Discharge Permit issued pursuant to this ordinance.

Any user notified of the Participant's suspension order shall cease immediately all discharges.

Any user whose permit has been suspended pursuant to this section shall have the right to a post-suspension hearing to be conducted in accordance with the procedures set forth in Section 36. The Participant shall reinstate the Discharge Permit and wastewater treatment services upon proof by the user of the elimination of the risk of actual or potential discharge, unless the Participant has commenced proceedings for service termination and permit revocation pursuant to Section 30.

In addition to all other rights and remedies, the Participant shall have the authority to physically cap, block, or seal the side sewer line at its juncture with the sewer line or elsewhere (whether on public or private property) if the Plant Manager determines that such action is reasonably necessary to suspend service as authorized by this section. The Participant shall have the right of access onto the user's private property to accomplish such capping, blocking, or sealing of the sewer line.

If the Participant has invoked an emergency suspension of service, the user must file a written report to the Plant Manager, describing the causes of the harmful contribution, and the measures taken to prevent any future occurrence. This report is required before service can resume.

30. TERMINATION OF TREATMENT SERVICES, PERMIT REVOCATION.

The Participant shall have authority to terminate wastewater treatment services and to revoke the discharge permit of any user if it determines that the user has:

- A. Failed to accurately report wastewater constituents and characteristics;

- B. Failed to report significant changes in wastewater constituents, volume, characteristics, or user operations;
- C. Refused reasonable access to the user's premises for purposes of inspection, sampling, or monitoring;
- D. Violated conditions of the wastewater discharge permit;
- E. Violated any of the provisions of this ordinance or regulations promulgated thereunder; or
- F. Violated any lawful order of the Participant issued with respect to the user's permit or this ordinance.

The user shall be given written notice of the Participant's decision (and basis or bases therefore) to terminate wastewater services and shall have the right to a pre-termination hearing in accordance with the provisions of Section 36.

### 31. NOTIFICATION OF VIOLATION.

When the Plant Manager finds that a user has violated (or continues to violate) any provision of this ordinance, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Participant may serve upon that user a written Notice of Violation, via certified letter. Within ten (10) days of the receipt of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted by the user to the Plant Manager. Submission of this plan in no way relieves the user of liability for any violations occurring before or after receipt of the Notice of Violation. Nothing in this section shall limit the authority of the Participant to take any action, including emergency actions or any other enforcement action, without first issuing a Notice of Violation.

### 32. CONSENT ORDERS.

The Participant may enter into Consent Orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for non-compliance. Such documents will include specific action to be taken by the user to correct the non-compliance within a time period specified by the document. Such documents shall have the same force and effect as the administrative orders issued pursuant to Sections 33 and 34 of this ordinance and shall be judicially enforceable. Use of a Consent Order shall not be a bar against, or prerequisite for, taking any other action against the user.

33. COMPLIANCE SCHEDULE ORDER.

When the Plant Manager finds that a user has violated or continues to violate any provision of this ordinance, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Participant may issue an order to the user responsible for the discharge describing the nature of the violation; directing that the user come into compliance within a time specified in the order; and describing the method of appeal. The order shall be served by personal service or by mail to the user's last known address.

If the user does not come into compliance within the time specified in the order, sewer service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders may also contain other requirements to address the non-compliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the sewer. Issuance of a compliance order shall not be a bar against, or a prerequisite for, taking any other action against the user. Compliance schedules shall conform to the requirements specified in Section 18 subparts G.1. through G.3. of this ordinance.

34. CEASE AND DESIST ORDERS.

When the Plant Manager finds that a user has violated (or continues to violate) any provision of this ordinance, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, or that the user's past violations are likely to recur, the Participant may issue an order to the user directing it to cease and desist all such violations and directing the user to:

- A. Immediately comply with all requirements; and
- B. Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.

Issuance of a cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the user.

35. ADMINISTRATIVE FINES.

- A. When the Plant Manager finds that a user has violated or continues to violate any provision of this ordinance, a wastewater discharge permit or order issued hereunder, or any other pretreatment standard or

requirement, the Participant may fine such user in an amount not to exceed \$10,000. Such fines shall be assessed on a per violation, per day basis. In the case of monthly or other long term average discharge limits, fines shall be assessed for each day during the period of violation.

B. Unpaid charges, fines, and penalties shall, after thirty (30) calendar days, be assessed an additional penalty of fifteen percent (15%) of the unpaid balance, and interest shall accrue thereafter at a rate of ten percent (10%) per month. A lien against the user's property will be sought for unpaid charges, fines, and penalties.

C. Users desiring to dispute such fines must file a written request for the Participant to reconsider the fine along with full payment of the fine amount within fifteen (15) days of being notified of the fine. Where a request has merit, the Participant, in conjunction with the Plant Manager shall convene a hearing on the matter within fifteen (15) days of receiving the request from the user. In the event the user's appeal is successful, the payment, together with any interest accruing thereto, shall be returned to the user. The Participant may add the costs of preparing administrative enforcement actions, such as notices and orders, to the fine.

D. Issuance of an administrative fine shall not be a bar against, or a prerequisite for, taking any other action against the user.

### 36. ADMINISTRATIVE HEARING.

A. A user shall have the right to an administrative hearing to contest the Participant's determination:

1. To impose an enforcement action provided for by this ordinance;
2. That the user has violated a compliance schedule order.

B. Any hearing pursuant to this section must be requested by the user in writing within fifteen (15) business days after the user receives notice of the Participant's decision. The user's written request for hearing shall be filed with the Plant Manager.

The LOTT Technical Sub-Committee (TSC) shall conduct the hearing within fifteen (15) business days of the receipt of the request (or within five (5) business days if the user is contesting suspension of wastewater services and discharge permit.)

C. The administrative hearing authorized by this section shall be held before the TSC. Formal rules of evidence shall not apply but the user and the Participant shall have the right to present witnesses and other evidence. The TSC shall issue a written decision within fourteen (14) business days of the conclusion of the hearing.

D. Any user requesting a hearing shall have the right to make an electronic or stenographic record of the proceedings. Such record shall be made at the user's expense.

E. The TSC may by resolution or ordinance adopt additional rules for the conduct of hearings pursuant to this section.

F. The TSC shall serve notice, to the person requesting the hearing, of the meeting personally or by registered or certified mail (return receipt requested) at least five (5) days prior to the hearing. Such notice may be served on any authorized representative of the user.

G. The decision of the TSC shall be final.

### 37. INJUNCTIVE RELIEF.

When the Plant Manager finds that a user has violated (or continues to violate) any provision of this ordinance, a wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement, the Participant may petition the Superior Court for the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the wastewater discharge permit, order, or other requirement imposed by this ordinance on activities of the user. The Participant may also seek such other action as is appropriate for legal and/or equitable relief, including a requirement for the user to conduct environmental remediation. A petition for injunctive relief shall not be a bar against, or a prerequisite for, taking any other action against a user.

### 38. CIVIL PENALTIES.

A. A user which has violated or continues to violate any provision of this ordinance, a wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement shall be liable to the Participant for a maximum civil penalty of \$10,000 per violation, per day. In the case of a monthly or other long-term average discharge limit, penalties shall accrue for each day during the period of the violation.



B. The Participant may recover reasonable attorneys fees, court costs, and other expenses associated with enforcement activities, including sampling and monitoring expenses, and the cost of any actual damages incurred by the POTW and/or the Participant.

C. In determining the amount of civil liability, the Court shall take into account all relevant circumstances, including but not limited to, the extent of harm caused by the violation, the magnitude and duration, any economic benefit gained through the user's violation, corrective actions by the user, the compliance history of the user, and any other factor as justice requires.

D. Filing a suit for civil penalties shall not be a bar against, or a prerequisite for, taking any other action against a user.

39. JUDICIAL REVIEW.

Any final administrative decision of the Participant rendered pursuant to this Ordinance may be reviewed only by the Superior Court. The review shall be initiated by a petition filed by the Industrial User. Such review shall be timely and shall be filed no later than ten (10) business days after the Participant has provided notice of the decision.

40. ANNUAL PUBLICATION OF ENFORCEMENT ACTIONS.

The Participant shall publish annually, in the largest daily newspaper published in the municipality where the POTW is located, a list of the users which, during the previous twelve (12) months, were in significant non-compliance with applicable pretreatment standards and requirements. The term significant non-compliance shall mean:

A. Chronic violations of wastewater discharge limits, defined here as those in which sixty-six percent (66%) or more of wastewater measurements taken during a six (6) month period exceed the daily maximum limit or average limit for the same pollutant parameter by any amount;

B. Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent (33%) or more of wastewater measurements taken for each pollutant parameter during a six (6) month period equals or exceeds the product of the daily maximum limit or the average limit multiplied by the applicable criteria [1.4 for BOD, TSS, FOG, and 1.2 for all other pollutants except pH];

C. Any other discharge violation that the Plant Manager believes has caused alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public);

D. Any discharge of pollutants that has caused imminent endangerment to the public or to the environment, or has resulted in the Plant Manager or Participant's exercise of its emergency authority to halt or prevent such a discharge;

E. Failure to meet, within ninety (90) days of the scheduled date, a compliance schedule milestone contained in a wastewater discharge permit or enforcement order for starting construction, completing construction, or attaining final compliance;

F. Failure to provide within thirty (30) days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical pretreatment standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules;

G. Failure to accurately report non-compliance; or

H. Any other violation(s) which the Plant Manager or Participant determines will adversely affect the operation or implementation of the local pretreatment program.

#### 41. RIGHT TO WRITTEN INTERPRETATION OF CHAPTER.

Any user or any interested party shall have the right to request an interpretation or ruling by the Participant on any matter covered by this ordinance. The request must be in writing and must be addressed to the Participant. The Plant Manager and/or Participant shall provide a prompt written response. A request pursuant to this section shall not stay or otherwise affect enforcement proceedings.

#### 42. OPERATING UPSETS.

For the purposes of this section, "upset" means an exceptional incident in which there is unintentional and temporary non-compliance with applicable pretreatment standards because of factors beyond the reasonable control of the user. An upset does not include non-compliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

A. Reporting Requirements: The user will immediately inform the Plant Manager of an upset and submit the following information to the Plant Manager within five (5) days:

1. A description of the indirect discharge and cause of non-compliance;
2. The period of non-compliance, including exact dates and times or, if not corrected, the anticipated time the non-compliance is expected to continue;
3. Steps being taken and/or planned to reduce, eliminate, and prevent the recurrence of the non-compliance.

B. Required Actions: users shall control production of all discharges to the extent necessary to maintain compliance with applicable pretreatment standards upon reduction, loss, or failure of its treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost, or fails.

C. Affirmative Defense: an upset shall constitute an affirmative defense to an action brought for non-compliance with applicable pretreatment standards if the user can demonstrate through properly signed, contemporaneous operation logs, or other relevant evidence that:

1. An upset occurred and the user can identify the cause(s) of the upset;
2. The facility was at the time being operated in a prudent and workman-like manner and in compliance with applicable operation and maintenance procedures; and
3. The user has complied with the reporting requirements of "A" (above).

D. Burden of Proof: In any enforcement proceeding, the user seeking to establish the occurrence of an upset shall have the burden of proof.

E. Defense applies only to enforcement actions: Users will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for non-compliance with applicable pretreatment standards. Such defense shall not relieve the user of any liability for the upset, including liability for damages to the POTW, the Participant, or third persons.

43. RECORDS RETENTION.

All users subject to this ordinance shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or in behalf of a user in connection with its discharge. Records shall include the date, exact place, method, and time of sampling; the name of the persons taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used; and the results of such analysis. All records which pertain to matters which are the subject of an enforcement action or litigation shall be retained and preserved by the user until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

44. REGULATIONS AND RIGHT OF REVISION.

The Plant Manager shall propose, subject to approval and adoption by the Participant, additional regulations consistent with this ordinance when necessary to reflect changes in applicable State and/or Federal regulations.

The Participant reserves the right to amend this ordinance and any permits it issues under it in a manner consistent with Section 4 of the Intergovernmental Agreement for Industrial Waste Pretreatment Program to provide for more stringent limitations or requirements on discharges to the POTW if such amendments are deemed necessary to comply with the objectives set forth in this ordinance, or are otherwise in the public interest. No vested right shall be created by the issuance of any permit under this ordinance.

45. RECOVERY OF COSTS INCURRED BY THE PARTICIPANT.

Any user violating any of the provisions of this ordinance who discharges or causes a discharge producing a deposit or obstruction or causes damage to or impairs the POTW shall be liable to the Participant for any reasonable expense, loss, fines or damage caused by such violation or discharge. The Participant shall bill the user for the cost incurred by the Participant for any cleaning, repair, replacement work, or other damages caused by the violation or discharge. Refusal to pay the assessed costs shall constitute a violation of this ordinance enforceable under the provisions of Part 35 of this ordinance.

46. CRIMINAL PROSECUTION.

A. A user which has willfully or negligently violated any provision of this ordinance, a wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement shall, upon conviction, be guilty of a misdemeanor, punishable by a fine of not more than \$10,000 per violation per day, or imprisonment for not more than one (1) year, or both.

B. A user which has willfully or negligently introduced any substance into the POTW which causes personal injury or property damage shall, upon conviction, be guilty of a misdemeanor and be subject to a penalty of not more than \$10,000 and/or be subject to imprisonment for one (1) year. This penalty shall be in addition to any other cause of action for personal injury or property damage available under State law.

C. A user which knowingly made any false statements, representations, or certifications in any application, record, report, plan, or other documentation filed, or required to maintained, pursuant to this ordinance, wastewater discharge permit, or order issued hereunder, or who falsified, tampered with, or knowingly rendered inaccurate any monitoring device or method required under this ordinance shall, upon conviction, be punished by a fine of not more that \$10,000 per violation per day, or imprisonment for not more than one (1) year, or both.

47. REMEDIES NON-EXCLUSIVE.

The provisions in Sections 29 through 38 and sections 45 and 46 of this ordinance are not exclusive remedies. The Participant reserves the right to take any, all, or any combination of these actions against a non-compliant user. Enforcement of pretreatment violations will generally be in accordance with the enforcement response plan provided by the Plant Manager. However, the Participant reserves the right to take other action against any user when the circumstances warrant. Subject to constitutional provisions relating to double jeopardy, the Participant is empowered to take more than one enforcement action against any non-compliant user. These actions may be taken concurrently.

48. STATE REQUIREMENTS.

State requirements and limitations on discharges to the POTW shall be met by all users which are subject to such standards in any instance in which they are more

stringent than federal requirements and limitations, or those in this ordinance or other applicable ordinance.

49. SEVERABILITY.

If any provision, paragraph, word, section or article of this ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

50. CONFLICT.

All other previously issued ordinances and parts of other ordinances inconsistent or conflicting with any part of this ordinance are hereby repealed to the extent of such inconsistency or conflict.

51. EFFECTIVE DATE.

This ordinance shall be in full force and effect immediately following its passage, approval, and publication, as provided by law.

Introduced the \_\_\_\_ day of \_\_\_\_, 199 .

First reading: \_\_\_\_ day of \_\_\_\_, 199 .

Second Reading: \_\_\_\_ day of \_\_\_\_, 199 .

Passed this \_\_\_\_ day of \_\_\_\_, 199 .

Ayes:

Nays:

Absent:

Not Voting:

Approved by me this \_\_ day of \_\_\_\_, 199 .

[insert appropriate City official]

Attest:

[City] Clerk

Published:

[Publication Date]

## **Exhibit H**

### **OPERATIONS AND MAINTENANCE AGREEMENT**

by and between

**The City of Olympia and the LOTT Alliance**

THIS OPERATIONS AND MAINTENANCE AGREEMENT ("O&M Agreement"), dated \_\_\_\_\_, 2000, is entered into by and between the City of Olympia ("Olympia"), a Washington municipal corporation, and the LOTT Wastewater Alliance ("LOTT"), a nonprofit corporation formed and existing under Chapters 24.03 and 39.34 RCW. The parties are herein individually referred to as "Party" and collectively as the "Parties."

#### **Recitals**

WHEREAS, prior to the creation of the LOTT Alliance, Olympia had acted on behalf of the LOTT Partners as the lead agency for certain joint facilities, which involved owning, operating and maintaining such facilities; and

WHEREAS, each year since 1976, Olympia presented the LOTT Advisory Committee with a proposed budget which projected expenses for the operation and maintenance of the facilities, and consistently accepted the Advisory Committee's recommendations in its formal adoption of the budget; and

WHEREAS, with the execution of the Interlocal Cooperation Act Agreement, the LOTT Alliance has been created and will upon Consolidation take ownership of all Joint Facilities formerly owned by the individual partners;

WHEREAS, the LOTT Alliance and Olympia desire that Olympia continue to operate those facilities which it has been operating, using competent staff, following similar procedures, meeting the same standards of performance, and using similar budgeting methods as having prevailed in the past, except that the Parties desire that Olympia's responsibilities be established through an operations and maintenance agreement entered directly between Olympia and the LOTT Alliance as the new owner of the facilities; and

**1. Purpose.**

The City of Olympia, a municipal corporation of the State of Washington, and the LOTT Alliance, a Washington nonprofit corporation formed and existing under Chapters 24.03 and 39.34 RCW owned jointly by the Cities of Lacey, Olympia, and Tumwater and Thurston County, enter this Operations and Maintenance Agreement ("O&M Agreement") to provide contractual terms for Olympia's operation Joint Facilities owned by the LOTT Alliance.

**2. Effective Date.**

This O&M Agreement shall take effect on the date when Consolidation occurs pursuant to the Interlocal Cooperation Act Agreement ("Effective Date").

**3. Term**

Unless terminated for a cause pursuant to Section 13 below, the O&M Agreement shall remain in force until one year after written notice of termination is executed and delivered by either party. Prior to the LOTT Alliance giving such notice, the LOTT Alliance shall prepare a study of operating costs and practices of Olympia and alternatives in its operations of the Facilities. If such termination occurs, the LOTT Alliance will provide for an orderly, smooth transition which fairly takes into account the effect on Olympia's employees.

**4. Joint Facilities; Future Joint Facilities.**

For the purpose of this Agreement, "Joint Facilities" shall mean all "existing Joint Facilities" described in Exhibit B to the Interlocal Cooperation Act Agreement For Wastewater Management By the LOTT Wastewater Alliance. Future Joint Facilities shall include any facilities hereafter constructed or acquired by the LOTT Alliance.

**5. Joint Facility Operation and Maintenance Services.**

Olympia shall, at the Effective Date, assume responsibility for control, security, maintenance and operational performance of the Joint Facilities on a twenty-four hour per day, seven day per week basis. Olympia shall have operations and maintenance oversight authority over future Joint Facilities to the extent necessary to perform its obligations under this section.

- a) **Compliance with Law; General Standards.** Olympia shall operate and maintain the Facilities in compliance with all applicable federal, state, and local laws, regulations, and ordinances, and in compliance with any orders or permits under which the Facilities operate. Olympia's operation and maintenance of the Joint Facilities shall conform to generally accepted industry principles and practices and the Treatment Plant's and other facilities' design capacity and capability, producing treated wastewater in full compliance with the NPDES permit requirements of the Environmental Protection Agency. Olympia shall also perform in accord with the Operation and Maintenance Manual established under WAC 173-240-080, the Department of Ecology "Orange Book," the Water



Environment Federation Manual of Practice, the Water Quality Laboratory Quality Assurance Manual, Water Quality Laboratory Standards of Practice Approved by the Department of Ecology, Water Environment Federation Standard Methods for Analysis of Water and Wastewater, Pretreatment Operation Manual as Approved by the Department of Ecology, and other applicable technical reference manuals that are pertinent to the operation of the LOTT Joint Facilities.

**b) Regulatory Agency Relations.** As operator of the Joint Facilities, Olympia shall work cooperatively with all regulatory agencies with jurisdiction over the Facilities to assure:

- Compliance with all permits and licenses
- Continued satisfaction of laboratory accreditation standards
- Conformance with personnel, practices, and equipment safety requirements
- Completion of all testing and certification required to assure safe Facility operations and environment
- That biosolids produced by the Facility are handled and utilized in compliance with law and applicable permits
- That the Facility meets all applicable air quality standards

**c) Personnel.** Olympia shall maintain an appropriately-sized workforce using qualified employees who have appropriate training, skill and, where required by law, appropriate certifications. Olympia shall further assure that employees are skilled and knowledgeable in their assigned duties.

**d) Planning.** Olympia shall look to future needs and submit plans to assure continuous and reliable performance of all Facility processes, in such a manner as to respond to and remain in compliance with changing regulations and other requirements.

**e) Insurance.** Olympia shall maintain during the life of this O&M Agreement Public Liability and General Liability Insurance in amounts deemed appropriate by the Alliance. The City of Olympia is a member of the Washington Cities Insurance Authority (WCIA) and this membership shall constitute adequate insurance coverage by Olympia for this Section. Olympia shall also maintain Worker's Compensation as required by state and federal law. The LOTT Alliance shall be responsible for providing fire and other property damage insurance to cover the Joint Facilities and equipment, vehicles, tools, and other property associated therewith.

**f) Reporting.** Olympia shall provide in a timely manner all necessary reporting functions to regulatory agencies and others as necessary in the operation of the facilities. These reports shall include, but not be limited to:

- NPDES Reports
- Lab Accreditation Reports
- Pretreatment Reports
- Annual Budget Requests
- Monthly operations report submitted to the LOTT Alliance by the 15th of the following month, including data reported under the NPDES permit, overview of statement of operation and any significant events.

**g) Emergency Response.** Olympia shall maintain in place emergency response plans for all major disasters and plans for restoration of Joint Facility processes following the disaster, including:

- Plans for continuous operations during a disaster
- Recovery following a disaster
- Community information

**h) Industrial Pretreatment.** Olympia shall administer a pretreatment program in accordance with authority delegated from the Department of Ecology in accordance with applicable pretreatment ordinances, and the Department of Ecology approved operations manual or pretreatment programs. In addition, Olympia shall:

- Provide an annual report to the LOTT Alliance
- Provide a permitting system for major and minor industrial dischargers
- Regularly inspect and communicate with industrial dischargers
- Enforce the pretreatment ordinance in concert with the applicable LOTT Partner in accord with the Interlocal Cooperation Act Agreement for Wastewater Management by the LOTT Wastewater Alliance

## **6. Permitting Responsibilities.**

The LOTT Alliance will maintain and hold the NPDES Permit, permits for sludge management and any applicable air emission permits. Olympia shall cooperate with the LOTT Alliance in preparing information to apply for, amend, renew, or demonstrate compliance under such permits. Because the costs necessary to comply with any modifications in such permits cannot be determined, the LOTT Alliance shall approve requested amendments to Olympia's budget for the reasonable costs of complying with changed or new permit conditions.

## **7. Budget.**

The LOTT Alliance shall pay the costs incurred by Olympia in the performance of this O&M Agreement to the extent that such costs conform with a budget for responsibilities approved in advance by the LOTT Alliance in accordance with the following process. The year 2000 budget shall be that budget already adopted for that year by the City of Olympia on behalf of LOTT. On or before May 1 of each year preceding a new budget year, Olympia shall prepare a proposed budget including all costs and expenses anticipated to be incurred in the performance of its duties in the following calendar year. The proposed budget shall be in substantially the same form as Olympia's 2000 budget with respect to operation and maintenance of Joint Facilities. The budget shall include overhead costs in accordance with practices used prior to the effective date of this Agreement. The LOTT Alliance shall consider the proposed budget in good faith in accordance with the procedures for budgeting set forth in Section 3.7 of the Interlocal Cooperation Act Agreement for Wastewater Management by the LOTT Wastewater Alliance and shall, no later than August 31, approve a budget for the following calendar year to reasonably fund the services required herein. If Olympia objects to the budget as approved by the LOTT Alliance, it shall notify the LOTT Alliance within ten (10) days after the passage of such budget. Any such disputes shall be resolved pursuant to the provisions of Section 14 of this Agreement and such resolution shall occur prior to the commencement of the budget year in question.

Once approved, the Budget ("Budget" shall mean an approved budget) shall be the maximum compensation available to Olympia for its services under this O&M Agreement. Olympia may request and the LOTT Alliance shall consider and in good faith approve modifications at any time. Any unspent and uncommitted funds held by Olympia at the end of the budget year shall be carried over to the following budget year.

## **8. Payment.**

City of Olympia shall receive from the LOTT Alliance as soon as practical, not to exceed thirty (30) days after the Effective Date of this O&M Agreement \$750,000 as an advance for payment of services under this Agreement. This amount may be modified by agreement of the parties. The City of Olympia shall place these funds in a Fund which is separate from assets of the City of Olympia. The City of Olympia shall invest advanced funds and credit any net earnings from those investments to the Fund into which the advance was placed. The City of Olympia shall not use these funds for any purpose not associated with this Agreement. From time to time, the City of Olympia shall notify the LOTT Alliance of the use of these funds, (hereafter referred to as the "reimbursement amount"). Upon such notification, the LOTT Alliance shall pay to the City of Olympia the reimbursement amount, so as to replenish the Fund to the advance amount. The reimbursement amount shall be the amount of costs paid from the advance since the previous reimbursement notification less net earnings on investments posted to the Fund into which the advance was placed since the previous reimbursement notification.

Replenishment of the advance shall be made within ten (10) business days after a request is made by the City of Olympia. If the LOTT Alliance disputes the reimbursement amount

requested by the City of Olympia, it shall pay the reimbursement amount and notify the City of Olympia of the amount disputed. If the City of Olympia agrees with the disputed amount, it shall adjust the next reimbursement request. If the City of Olympia and the LOTT Alliance do not agree upon any disputed amount to be adjusted, the dispute resolution process defined in this Agreement shall be utilized. Any advance sums remaining in the Fund upon the termination of this Agreement shall be paid to the LOTT Alliance together with any interest earned upon such sums.

**9. Payment by Alliance for Capital Expenditures by Olympia.**

A. Capital expenditures shall not be included within the scope of this Agreement as operation and maintenance costs. Capital expenditures will be made by Olympia only after approval and funding by the LOTT Alliance. If such expenditures are urgently necessary to continue operation of any or all of the Joint Facilities in order to provide for public safety and environmental protection, Olympia shall make such emergency expenditures and make every effort to immediately seek and gain approval of these expenditures from the LOTT Alliance. The LOTT Alliance will reimburse Olympia for these emergency capital expenditures so long as Olympia has acted in good faith in making the expenditures. Reimbursement will be made within thirty (30) days of notification by Olympia. Capital expenditures, except for emergency capital expenditures, shall not be considered part of this Agreement and shall be funded by the LOTT Alliance. The term "capital expenditures" shall be defined as any expenditure for: 1) the purchase of new equipment or Joint Facility items that cost more than \$5,000 and have a lifetime span of two (2) years or more; or 2) major repairs which significantly extend equipment or facility service life and cost more than \$5,000.

Purchases or repairs, except emergency expenditures, which fall below the amounts and life span above shall be considered part of the Operation and Maintenance Budget per Section 7 above.

B. Starting with the first Budget under this Agreement and for each subsequent year hereafter, Olympia shall prepare and propose for LOTT Alliance review and approval annual and six-year capital improvement plans identifying major repairs and capital expenditures that will be necessary for then existing Joint Facilities and to restore, maintain, replace, or upgrade the equipment for efficiency, safety, function, and/or compliance with current and anticipated regulatory requirements. Odor control, noise control, reduction of visual impacts and lighting impacts should be addressed. The Alliance shall make funding provisions for approved major repairs and capital expenditures and shall provide the ways and means for construction of same. The provisions of the paragraph shall not apply to planning by the LOTT Alliance for the construction or acquisition of Joint Facilities in the future.

C. Additional operation and maintenance costs resulting from new capital facilities shall be included in the budget approved for this Agreement by the LOTT Alliance. The amount of additional operation and maintenance costs for Joint Facility items that go on-line in the middle of a budget year shall be negotiated in good faith between Olympia and the LOTT Alliance.

**10. Rolling Stock and Equipment.**

Within the LOTT budget of this Agreement, Olympia shall pay for equipment rental of all rolling stock and equipment used for operation and maintenance of Joint Facilities. In the event Olympia's role under this Agreement is terminated, Olympia shall pay LOTT any depreciation reserves maintained for such rolling stock and equipment and shall convey without cost the applicable rolling stock and equipment to LOTT.

#### **11. Contracts for Goods and Services.**

Olympia shall in its own capacity and not as agent for the LOTT Alliance enter into contracts for the purchase and disposal of goods and for the performance of services as may be necessary to perform Olympia's obligations under this O&M Agreement, provided, however, that the LOTT Alliance shall enter into and maintain directly contracts relating to capital expenditures and major repairs discussed in Section 9 above. Any contracts entered into/by Olympia pursuant to this O&M Agreement for work or goods relating to the Joint Facilities shall be made expressly assignable to the LOTT Alliance, without restriction or condition of any kind, and Olympia shall, at the LOTT Alliance's request, assign such contracts to the LOTT Alliance at the termination of this O&M Agreement.

#### **12. Notices; Authorized Representatives.**

All notices shall be in writing and delivered in person or transmitted by certified mail, return receipt requested, postage prepaid. Notices required to be given to the City of Olympia shall be given to the City Manager or his/her designee.

Notices required to be given to the LOTT Alliance shall be given to the LOTT Alliance Board Chair or his or her designee.

#### **13. Termination for Cause.**

Either party may terminate the O&M Agreement upon material breach by the other party providing that the terminating party first provides written notice of such breach to the other party and such breach has not been corrected within a forty-five day cure period. By mutual agreement by the Parties, the forty-five day cure period may be extended where the situation warrants.

#### **14. Force Majeure.**

If a Party is rendered unable by Force Majeure to carry out, in whole or part, its obligations under this Agreement and such Party gives notice and full details of the event to the other Party as soon as practicable after occurrence, then during the pendency of such Force Majeure but for no longer period, the obligations of the Party affected by the event (other than the obligation to make payments due for performance prior to the event) shall be suspended to the extent required. The Party claiming Force Majeure shall remedy the Force Majeure as soon as possible.

**15. Disputes.**

Any disputes under this Agreement shall be resolved by negotiation, if possible. If impasse is reached, the Parties shall employ a panel with three arbitrators, one appointed by each party and the third by the two appointed arbitrators, to resolve the dispute. The ruling of the panel shall be binding, subject to judicial review under an arbitrary and capricious standard.

**16. Access to Facilities.**

LOTT Alliance staff shall have access to the Joint Facilities at all times but shall be required to first sign in at the entrance.

**17. Independent Contractor.**

The relationship of Olympia to the LOTT Alliance created by this O&M Agreement is that of an independent contractor, and none of Olympia's employees or agents shall be considered employees of the LOTT Alliance.

**18. Non-Waiver.**

The failure on the part of either party to enforce its right as to any provision of the Agreement shall not be construed as a waiver of its rights to enforce such provision in the future.

**19. No Third Party Beneficiaries.**

Except as expressly provided herein, this Agreement is not intended to create rights in, or to grant remedies to, any third party as a beneficiary of this Agreement or of any duty, obligation or undertaking established herein.

**20. Governing Law.**

This O&M Agreement shall be governed by the laws of the State of Washington.

**21. Assignment.**

This O&M Agreement shall inure to the benefit of, and shall bind, the respective successors and assigns of the Parties; provided, however, that neither Party shall assign this O&M Agreement without first obtaining the other Party's written consent, which shall not be unreasonably withheld.

**22. Severability.**

If one or more clauses, sections, or provision of this Agreement is held to be unlawful, invalid or unenforceable by any court with jurisdiction, the remainder of this Agreement shall not be affected thereby.

**23. Modifications in Writing.**

Except as expressly provided in this Agreement, no amendment or modification of this Agreement shall be effective unless made in writing and executed by all Parties.

IN WITNESS WHEREOF, the Parties have caused this O&M Agreement to be executed in their respective names and in their respective behalf, and have caused their respective names to be subscribed and affixed by their respective duly and legally elected and authorized officers, who are authorized to execute this O&M Agreement this \_\_\_\_\_ day of \_\_\_\_\_,

CITY OF OLYMPIA

LOTT WASTEWATER ALLIANCE

By:

By:

Its:

Its:

Date:

Date:

ATTEST:

ATTEST:

By:

By:

Approved as to form:

Approved as to form:

Legal Counsel

Legal Council

moe9319c  
1/14/00

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**Exhibit I**  
**Agreement**  
**Regarding Additional LOTT Joint Facilities**

This Agreement, dated -----June 21-----, 1999, is entered into by and between the City of Olympia ("Olympia"), the City of Lacey ("Lacey"), the City of Tumwater ("Tumwater"), and Thurston County (the "County"), all of which are municipal corporations organized under the laws of the State of Washington and are herein collectively referred to as the "LOTT Partners."

**WHEREAS**, the LOTT Partners entered into the Intergovernmental Contract for Wastewater Facilities Management of November, 1976, and

**WHEREAS**, that agreement provides that when The Advisory Committee deems it desirable and the LOTT Partners agree in writing that additional wastewater facilities be acquired or added, those facilities may become LOTT Joint Facilities, and

**WHEREAS**, as a result of several years of planning and deliberation, The Advisory Committee recommends the designation of existing City of Lacey facilities as LOTT Joint Facilities and LOTT's construction of certain new facilities as LOTT Joint Facilities to prepare for expected future additions to the LOTT system and assure reliable management of existing wastewater flows in a manner consistent with the requirements of the Washington State Department of Ecology, and

**WHEREAS**, the facilities to be acquired from the City of Lacey were originally designed and constructed to be LOTT Joint Facilities and are integral to plans for future LOTT wastewater treatment, and

**WHEREAS**, the facilities to be constructed by LOTT as Joint Facilities are necessary to carry existing and future City of Tumwater and City of Olympia wastewater flows to Joint Facilities transmission and treatment structures, now

**THEREFORE, IT IS AGREED** by the LOTT Partners that the City of Lacey gravity sewer running west along Martin Way from Marvin Road to the City of Lacey Martin Village

Pump Station, the Martin Village Pump Station near Martin Way and Desmond Drive, and the sewer force main from the Martin Village Pump Station which runs west to its connection to the existing LOTT Joint Facility interceptor west of the intersection of Sleater-Kinney Road and Martin Way, together with all associated deeds, easements, and franchise agreements, shall become LOTT Joint Facilities as set forth in the terms of a Facilities Acquisition Agreement for total amount not to exceed \$2,390,000, said amount to be drawn 25% from LOTT's Capacity Development Charge account and 75% from LOTT monthly rate revenues, and

**IT IS FURTHER AGREED** by the LOTT Partners that a new gravity sewer line from the southern end of the Capitol Boulevard Bridge across the Deschutes River, west to Deschutes Parkway, and north along Deschutes Parkway to the existing LOTT Capitol Lake Pump Station, and the associated parallel sewer force main addition north from the Capitol Lake Pump Station through northwest downtown Olympia to an existing LOTT Joint Facility interceptor in the vicinity of Olympia Avenue and Adams Street shall be a LOTT Joint Facility to be engineered using funds already appropriated for that purpose and constructed for an amount estimated at \$5,274,353, 9% of which shall be drawn from LOTT's Capacity Development Charge account and 91% from LOTT monthly rate revenues.

**CONTINUES ON NEXT PAGE**

**IN WITNESS WHEREOF**, each party has caused this Agreement to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**City of Lacey:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

Attest: By \_\_\_\_\_

**City of Olympia:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

Attest: By \_\_\_\_\_

**City of Tumwater:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

Attest: By \_\_\_\_\_

**Thurston County:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

Attest: By \_\_\_\_\_

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## **Exhibit J**

### **Intergovernmental Contract For Inflow and Infiltration Management and New Capacity Planning**

**WHEREAS**, pursuant to the Intergovernmental Contract for Wastewater Facilities Management dated November, 1976, (hereinafter "LOTT 1976 Contract") the LOTT Partners agreed to cooperatively construct and maintain joint facilities for wastewater treatment and discharge; and

**WHEREAS**, pursuant to the Intergovernmental Contract of September, 1991, (hereinafter "LOTT 1991 Contract") the LOTT Partners affirmed their intent to assure long-term availability of capacity in LOTT joint facilities to intercept, treat, and discharge sanitary sewage in an environmentally sound and cost effective manner for the benefit of all Partners; and

**WHEREAS**, under the terms of the LOTT 1991 Contract, the Partners agreed to conduct an engineering study of inflow and infiltration and thereafter set a standard for allowable inflow and infiltration, define an equalization basin service area and agree upon a program for the cost effective removal of inflow and infiltration; and

**WHEREAS**, the agreed-upon study of inflow and infiltration (hereinafter "LOTT I/I Study") is complete and the Partners have learned that the extent of inflow and infiltration is such that capacity for treating wastewater using existing LOTT joint facilities cannot reasonably be provided to the year 2010 as assumed in the LOTT 1991 Contract; and

**WHEREAS**, the Partners have concluded that standards for allowable inflow and infiltration cannot be established in the manner assumed in the LOTT 1991 Contract without either forcing construction of inflow and infiltration removal projects which are clearly not cost effective or creating the potential for additional inflow and infiltration into the LOTT system; and

**WHEREAS**, the Partners have also concluded that during a ten year storm the equalization basins in the existing LOTT Wastewater Treatment Plant are inadequate to

effectively manage inflow and infiltration from even a small portion of the combined sewer system; and

**WHEREAS**, using information developed during the LOTT I/I Study, the Partners found that while LOTT system inflow and infiltration, which originates primarily in the City of Olympia, can dramatically impact treatment capacity during heavy rain, the cost to treat such flows is, and has been, approximately equal to the value of in-kind contributions made by the City of Olympia to the LOTT Partnership; and

**WHEREAS**, during the course of the LOTT I/I Study, the LOTT Partners concluded that only through a combination of cost effective inflow and infiltration removal and water conservation efforts, and immediate initiation of planning for additional wastewater treatment capacity can adequate treatment capacity for all Partners be reasonably assured, and

**WHEREAS**, during the course of consideration of long-term capacity needs the Partners have determined that to the extent practicable new capacity should be financed using the principle that new connections should fund new capacity, now

**THEREFORE**, it is agreed by the LOTT Partners as follows:

**1. Purpose of Agreement**

In order to cooperatively preserve capacity in the existing LOTT treatment facilities and to plan for new wastewater treatment facilities on an accelerated basis, the LOTT Partners, collectively and individually, commit by this Contract to act on a cooperative basis by authorizing the LOTT Advisory Committee, with the assistance of the Technical Sub-Committee, to study, decide upon and implement necessary wastewater strategies as provided in this Contract. Each Partner recognizes that the successful implementation of those strategies may require each Partner to actively study and implement commensurate improvements in its local system.

To facilitate these reciprocal commitments, the LOTT Partners are formally recognizing by this Contract their respective legal and equitable interests in current LOTT facilities and their agreement in resolving any pending disputes or issues including the equitable allocation of past City of Olympia infiltration and inflow treatment costs.

This Contract is intended to amend and supersede inconsistent provisions of the LOTT 1976 Contract and LOTT 1991 Contract in recognition of changing conditions and capacity needs within the LOTT service area and to provide a mutually agreed basis among the LOTT Partners for future facility planning and implementation efforts.

## **2. Definitions**

For the purposes of this Contract, the following words and phrases shall be defined as set forth below:

- a. "Advisory Committee" shall mean the committee of the same name defined in the Intergovernmental Contract for Wastewater Facilities Management of November 30, 1976 (LOTT 1976 Contract) as amended.
- b. "Cost Effective" shall mean the cost of capacity management options, such as conservation or removal of inflow and infiltration which is equal to or less than the value of the savings they achieve through delay of the anticipated date when a new wastewater treatment facility will be needed.
- c. "Equivalent Residential Unit" or "ERU" shall mean the flow unit established in the LOTT 1976 Contract, as amended.
- d. "Financial Responsibility" as used in reference to the LOTT Partners in Section 4, Subsection D of this contract shall mean each Partner has financial obligation based on each Partner's number of connected equivalent residential units consistent with the LOTT 1976 Contract, as amended, or as required by the Partner's allocation of new capacity as established pursuant to Section 6, Sub-Section B of this contract.
- e. "Joint Facilities" shall mean those facilities, either existing or future, as defined and described in the LOTT 1976 Contract, as amended.
- f. "I & I Removal" shall mean the actual or intended removal or reduction of inflow and/or infiltration present in the sewer systems tributary to LOTT joint facilities and the removal or reduction of inflow and /or infiltration originating in LOTT joint facilities.

- g. "Infiltration" shall mean ground water entering LOTT joint facilities and ground water entering the system of sanitary sewers tributary to LOTT joint facilities.
- h. "Inflow" shall mean storm water entering LOTT joint facilities and storm water entering the system of sanitary sewers tributary to LOTT joint facilities as a result of constructed combined storm/sanitary sewer facilities.
- i. "LOTT" shall mean the sewerage services, facilities and activities cooperatively performed, constructed and operated by the cities of Lacey, Olympia, and Tumwater and Thurston County pursuant to the LOTT 1976 Contract, as amended.
- j. "LOTT Fund" shall mean the City of Olympia fund used to accumulate and disperse revenues from monthly and other LOTT charges.
- k. "LOTT Inflow and Infiltration Study" shall mean the study of the same name prepared for the LOTT Wastewater Management Partnership between 1992 and 1994.
- l. "Partner" shall mean "Original Participant" as defined in the LOTT 1976 Contract, as amended.
- m. "Reserve Capacity Charge Receipts" shall mean the money collected from the Reserve Capacity Charge as defined in the LOTT 1976 Contract, as amended, and as further defined in the LOTT 1991 Contract, as amended.
- n. "Water conservation" shall mean those efforts which reduce, or are intended to reduce, the amount of residential, commercial and industrial wastewater entering the sewer systems tributary to LOTT joint facilities. Other efforts which reduce the amount of water consumed but which do not affect the amount of water entering the sewer systems tributary to LOTT are, for the purposes of this contract, not considered water conservation. Efforts which reduce inflow and infiltration are, for the purposes of this contract, not considered water conservation.
- o. "Technical Sub-Committee" shall mean the committee of the same name defined in the LOTT 1976 Contract, as amended.



- p. "Wet weather season" shall mean the calendar period November through February.

### **3. Confirmation of LOTT Partners' Interests**

#### **A. Capacity and Facility Use**

The LOTT Partners, collectively and individually, acknowledge and agree that each Partner has a beneficial interest in the current LOTT joint facilities and in the capacity of such facilities due to their past funding of construction of the facilities and their continued payments for treatment services including financing and operating costs of the LOTT system. Pursuant to the LOTT 1976 Contract, the LOTT Partners, collectively and individually, also acknowledge and agree that each Partner has a right to utilize such current capacity on a "first come first serve" basis as defined in the LOTT 1976 Contract, as amended.

#### **B. Property Use**

The City of Olympia hereby acknowledges and agrees that such beneficial interests of the Partners extends to the continued use and enjoyment, in common with the City, of the LOTT treatment plant facilities and property for so long as the facilities are required by LOTT for wastewater treatment purposes.

### **4. Inflow and Infiltration**

#### **A. Inflow and Infiltration Standards**

Section 3 of the LOTT 1991 Contract requires that the LOTT Partners adopt standards for acceptable levels of inflow and infiltration, and that Partners not meeting the adopted standards are to compensate the LOTT Partnership on an Equivalent Residential Unit Basis for the estimated flows in excess of adopted standards are to compensate the LOTT Partnership on an Equivalent Residential Unit Basis of the estimated flows in excess of adopted standards. As a result of the technical findings of the LOTT I/I Study, the LOTT Partners hereby rescind any LOTT 1991 Contract requirements to establish and enforce standards for acceptable levels of inflow and infiltration within the system of sewers flowing into LOTT joint facilities. From and after the effective date of this Contract, all binding Partnership requirements concerning

acceptable levels of inflow and infiltration shall be contained in and governed by this Contract. Further, the LOTT Partners agree that all new sewers tributary to LOTT joint facilities and all future LOTT joint facilities which are constructed subsequent to the date of this Contract by LOTT or by any participant shall be constructed to allow no more inflow and infiltration than 700 gallons per day per inch/mile of new sewer line.

B. Equalization Basin Service Area

Section 4 of the LOTT 1991 Contract requires that an Equalization Basin Service Area be determined. As a result of the technical findings of the LOTT I/I Study, the LOTT Partners hereby rescind any LOTT 1991 Contract requirements to establish an Equalization Basin Service Area.

C. Olympia Inflow and Infiltration Removal Program

The City of Olympia hereby agrees to design and implement in good faith the infiltration removal program recommended in the LOTT I/I Study which is expected to remove 2,712,000 gallons or 8.28 per cent of the current system-wide 10 year storm/24 hour peak inflow and infiltration from the LOTT joint facilities at an estimated cost of \$8,791,000 in 1994 dollars (including the cost of design, administration and construction). The City of Olympia will follow the I/I Study recommendation to the extent feasible and consistent with design-level findings and good civil engineering practice. The City of Olympia agrees to provide a reasonable opportunity for the LOTT Technical Sub-Committee to review design and construction decisions and expenditures related to this infiltration removal program.

The City of Olympia agrees to complete all such recommended program work by December 31, 2001. Should the City of Olympia fail to complete implementation of the Study's recommended infiltration removal by December 31, 2001, the City of Olympia shall compensate the LOTT Fund on an Equivalent Residential Unit basis for the difference between the 10 year storm/24 hour peak infiltration flows actually removed and the 2,712,000 gallon 10 year storm/24 hour peak flows estimated as likely to be removed in the LOTT I/I Study until such time as the Study's recommendation for Olympia facilities has been implemented or until the City of Olympia has expended the then current equivalent of \$8,791,000 in 1994 dollars on reasonable and appropriate efforts to complete implementation of the Study's recommendation.

At such time as the City of Olympia, according to pre- and post-construction flow measurements by LOTT, has removed infiltration or inflow in an amount equal to the 10 year storm/24 hour peak 2,712,000 gallon volume estimated in the LOTT I/I Study recommendation, or when the Technical Sub-Committee agrees the City Of Olympia has expended \$8,791,000 in 1994 dollars on reasonable and appropriate efforts to complete implementation of the Study recommendation, the City of Olympia's obligation to fund and manage inflow and infiltration removal is recognized by all present and future LOTT Partners as forever satisfied except as provided later in this section under Subsection F.

D. LOTT Inflow and Infiltration Projects

Should additional inflow and infiltration removal beyond that recommended in the LOTT I/I Study later be found by the LOTT Partners to be appropriate and cost effective, the LOTT Partners, acting through the Advisory Committee in their efforts to assure adequate treatment capacity, shall assume financial responsibility for such additional inflow and infiltration removal. Each Partner agrees to act in good faith and in a timely manner to cooperate with any such additional inflow and infiltration removal efforts recommended by the Advisory Committee provided that no such efforts will be conducted in a City of Olympia area bordered by Union Street on the south, Capitol Lake and Bud Inlet on the west, State Street on the north and Eastside Street on the east unless such removal can be part of otherwise required City of Olympia sewer repair or replacement projects within the specified area. In that case, the LOTT Partners, upon separate agreement with the City of Olympia, will be financially responsible for that portion of the work associated with inflow and infiltration removal which the LOTT Partners wish to pursue in their efforts to assure adequate treatment capacity.

If regulatory authorities require inflow and infiltration removal which the LOTT Partners do not consider cost effective, the Partner jurisdiction wherein the inflow and infiltration removal is required shall be financially responsible.

E. Cost of Treating Inflow and Infiltration, Benefits of Olympia Facilities and Services

The LOTT Partners agree that although the substantial portion of inflow and infiltration passing through LOTT joint facilities originates in the City of Olympia due to Olympia's combined sewer system, the cost of treating those flows on an annual basis is, and has been, approximately equal to the value provided by the City of Olympia to LOTT for land owned by the City of Olympia but fully utilized by the LOTT Wastewater Treatment Plant for the benefit of all LOTT Partners and the extra cost of administrative and overhead services and benefits provided to the LOTT Partners by the City of Olympia beyond those costs already compensated by the LOTT Partners. It is further agreed that the sum of these in-kind contributions by the City of Olympia and the continued contribution of such value and services shall be considered appropriate compensation for the past and future cost of treating the City's combined flows, provided payment for overhead services remains at its current level as adjusted annually for inflation according to the federal Seattle Area Consumer Price Index, and provided further, that LOTT Partners have continued use of Olympia property occupied by current LOTT joint facilities without charge.

F. Prevention of Further Inflow and Infiltration Degradation

The LOTT Partners agree that additional inflow and infiltration in the system of sewers tributary to and including LOTT joint facilities is to be avoided so as to prevent further capacity degradation of LOTT joint facilities beyond that which exists at the time of this Contract and that which is otherwise herein accepted or removed. Each LOTT Partner agrees to exercise sound engineering judgment in the repair and maintenance of its own sewers tributary to LOTT joint facilities to assure minimal additional inflow and infiltration will be allowed beyond that which exists at the time of this Contract and that which is otherwise herein accepted or removed.

Beginning March, 1996, and each year thereafter, it is agreed that each Partner with sewer lines tributary to LOTT joint facilities will prepare and submit to the LOTT Technical Sub-Committee an updated inventory of those sewer lines with an accompanying report identifying all updates, modifications, repairs and additions made during the preceding year to sewer lines which are tributary to LOTT joint facilities. The

inventory shall be similar to and substantially in the form of Appendix B of the LOTT I/I Study. LOTT will prepare a similar report for LOTT joint facility sewer lines. The Technical Sub-Committee will review the materials submitted and, commencing June, 1996, report annually to the Advisory Committee concerning the status of the systems of sewers tributary to LOTT joint facilities and the status of LOTT joint facilities relative to modifications, repairs and additions and the expected resulting changes in inflow and infiltration.

Beginning in the wet weather season of 1998-1999, and every seven years thereafter, the Partners agree that LOTT will conduct an update of the LOTT I/I Study to determine if significant additional inflow and infiltration exists which could result in a significant degradation of system capacity beyond that which exists at the time of this Contract and which is otherwise herein accepted or removed. Should such a condition(s) be present, each LOTT Partner agrees to act within twelve months of receiving such information to begin correction of the facilities contributing to degradation within its jurisdiction when such correction is cost effective. All sewer lines with inflow and infiltration no greater than 1,500 gallons per day per inch mile are exempt from correction under this agreement. The Partners further agree that LOTT, acting through the Advisory Committee, will act within twelve months of receiving of such information to initiate cost effective correction of facilities contributing to degradation in LOTT joint facilities.

## **5. Water Conservation**

### **A. Purpose for Water Conservation Program**

The LOTT Partners agree that reducing the amount of water consumed which reaches the Partner's local wastewater systems will delay the need for additional wastewater treatment facilities provided by or through LOTT. The LOTT Partners further agree that water conservation can be a cost effective method for delaying the need to construct additional wastewater treatment facilities. The LOTT Partners also agree that primary responsibility for water conservation, as defined herein, rests with water utilities providing water which, in the form of wastewater, reaches LOTT joint facilities.

B. Partner's Conservation Commitments

Each Partner operating a water utility(s) which provides water that reaches LOTT joint facilities agrees to individually pursue water conservation efforts which result in a per capita reduction in wastewater flow to LOTT joint facilities. The LOTT Technical Sub-Committee, using information on per capita wastewater flows in the LOTT I/I Study, will, on or before December 31, 1995, further refine and mutually establish specific, current per capita wastewater flows for each Partner operating a water utility(s) which provides water that reaches LOTT facilities. The LOTT Technical Sub-Committee shall also establish on or before December 31, 1995, a measuring system for calculating per capita wastewater flows from each Partner operating a water utility(s) which provides water that reaches LOTT facilities. Further, the LOTT Technical Sub-Committee shall establish a recommended cost effective per capita residential conservation goal, expressed in gallons per day, and a related cost effective conservation goal for commercial and industrial sewer users, both of which can be achieved within ten years. These recommended goals shall be presented to The Advisory Committee for consideration on or before December 31, 1995. The Advisory Committee shall, on or before February 28, 1996, adopt a ten year cost effective residential per capita conservation goal and a related ten year cost effective goal for commercial and industrial sewer users.

The conservation goals shall be targeted for achievement by December 31, 2005. Each February, commencing in 1996, each Partner operating a water utility(s) which provides water that reaches LOTT facilities will submit a report to The Advisory Committee which identifies the water conservation efforts undertaken or continued during the preceding calendar year, the current per capita wastewater flow using the agreed upon measuring system, and the progress toward the conservation goals.

C. LOTT Assistance

Each Partner operating a water utility(s) which provides water that reaches LOTT facilities is encouraged to present proposals to the Advisory Committee requesting LOTT funds to support water conservation as defined in this contract. Within sixty days of receipt of such proposals, the Advisory Committee, with the involvement of the Technical Sub-Committee, will respond to each proposal indicating the level of financial

support the LOTT Partners will provide and whether that support will be available immediately or during the following fiscal year. Proposals will be reviewed based on their likelihood of success and whether they will be cost effective in managing LOTT wastewater treatment capacity. It is the Partners' intent to fully support those conservation activities which have a high likelihood of success and which are cost effective.

D. LOTT's Role in Conservation

The LOTT Partners collectively will, in the manner described herein, support the conservation activities of the water utilities providing water which reaches LOTT joint facilities in the form of wastewater. LOTT will, while supporting and encouraging those activities, also search for and implement cost effective conservation activities which complement those of the water utilities and which can be effectively managed by LOTT acting on behalf of all the Partners.

**6. New Capacity Planning**

A. Initiate Wastewater Treatment Capacity Planning

The LOTT Partners agree that upon approval of this Contract, LOTT should act as quickly as feasible to secure engineering services, prepare a scope of work, and initiate facilities planning as defined by the United States Environmental Protection Agency pursuant to 40 CFR Part 35.917 and in Chapter 173-240 of the Washington Administrative Code to assure adequate future wastewater treatment capacity for the LOTT Partners. It is further agreed that the Advisory Committee, with assistance from the Technical Sub-Committee, is hereby authorized to conduct and timely complete facilities planning according to the general schedule described below. The planning effort will review all reasonable alternative for developing new capacity, including inflow and infiltration removal beyond that which is described in or provided for by Section 4 of this Contract. The planning will also consider population growth information consistent with local planning and regional growth management planning in developing refined flow projections beyond those already developed in the LOTT I/I Study.

The planning effort will be coordinated with other local, regional and state agencies and include an appropriate environmental review process consistent with

requirements of the Washington State Environmental Policy Act. The planning effort will provide adequate opportunity for citizens potentially affected by LOTT's planning outcomes to be aware of the planning process and to provide input to the Advisory Committee's planning decisions as plans are being prepared.

No later than June 30, 1998, and prior to completing facilities planning, the Partners agree to have convened and completed discussions about Partnership processes and operating procedures relative to decisions concerning planning, designing, financing and constructing future joint facilities.

B. Wastewater Treatment Capacity Allocation

Facilities planning effort identified above will include consideration of how new capacity is to be allocated among the LOTT Partners. The Partners hereby agree in principle that any allocation of future LOTT capacity should be based on each Partner's decision about its own future wastewater treatment capacity requirements provided that decision is consistent with State of Washington forecasts provided for growth management purposes, and maintaining prudent levels of reserve capacity. Until a new capacity allocation system is approved by the LOTT Partners, nothing herein shall be construed as changing the allocation established in the LOTT 1976 Contract as amended.

C. Financing Planning and New Wastewater Treatment Capacity

The facilities planning effort will be paid for using no less than sixty percent Reserve Capacity Charge receipts from LOTT funds and no more than forty percent from other LOTT revenues. It is hereby agreed that in considering how to finance new wastewater treatment capacity alternatives and recognizing the interest of existing rate payers, to the extent practicable the principle of "growth paying for growth" shall apply.

D. Schedule for Facilities Planning, Facilities Design and Facilities Construction

The LOTT Partners agree that time is of the essence in preparing a facilities plan so that the maximum amount of time is available for design and construction of whatever new capacity alternative(s) may be selected by the Advisory Committee. To that end, it is agreed that facilities planning will be completed no later than June 30, 1998, and that facilities planning information concerning estimates of remaining capacity



in existing LOTT joint facilities and schedules for timely implementation of new capacity alternatives will be made available as soon as possible to the Washington State Department of Ecology and each Partner for use in preparing each Partner's National Pollutant Discharge Elimination System Permit for LOTT joint facilities. It is further agreed that all reasonable efforts will be undertaken by the LOTT Partners collectively and individually to avoid Washington State Department of Ecology imposition of a sewer connection and septic tank permit moratorium as a result of insufficient wastewater treatment capacity or lack of reasonable progress in planning for wastewater treatment capacity.

## **7. Dispute Resolution**

### **A. Advisory Committee Review**

In the event of any dispute, claim or demand for performance ("issue") between or among Partners concerning, the Partner or Partners concerned with the issue shall present it to the Advisory Committee in detail and in writing for study and recommendation. Oral presentations shall be permitted and all Partners shall be given a reasonable opportunity to respond to the issue prior to consideration of a recommendation by the Advisory Committee. The Advisory Committee shall then make such findings and prepare such conclusions and recommendations as may represent the majority decision of the Advisory Committee on the issue within ninety (90) days after receipt of the initial written presentation of the issue.

### **B. Non-binding Mediation**

In the event the Advisory Committee's actions do not resolve the issue to the satisfaction of all of the Partners, any Partner may refer the matter to mediation by filing a written request with the Advisory Committee within thirty (30) days of the issuance of the advisory Committee's decision. The Advisory Committee shall refer the request to the presiding judge of the Thurston County Superior Court with the request that the court appoint a qualified mediator to establish the rules, schedule and scope of the mediation, unless all of the Partners agree on an appropriate mediator and the rules, schedule and scope of the mediation. All Partners shall be parties to the mediation and shall equally share the cost of the mediator.

The mediation shall occur within ninety (90) days of the appointment of a mediator. The mediation shall be conducted de novo from prior dispute resolution proceedings.

C. Binding Arbitration

In the event the issue is not resolved by mediation, then the issue may be submitted to binding arbitration by any Partner pursuant to paragraph 15 of the LOTT 1976 Contract and Chapter 7.04 of the Revised Code of Washington. All Partners shall be parties to the arbitration and shall equally share the cost of the arbitrator. Such arbitration shall be limited to the interpretation and application of this Contract and may not impair the contract and debt obligations of any Partner, including Olympia. The arbitration shall be conducted de novo from prior dispute resolution proceedings.

D. Litigation

Completion of the Advisory Committee review, the mediation steps and binding arbitration shall be a prerequisite to the filing of any legal action relative to interpretation of this agreement in Thurston County Superior Court. Subject to this condition, the terms of this Contract shall be specifically enforceable.

*--continues on next page--*

So approved this 27th day of March, 1995.

**City of Lacey:**

By: Jon Halvorson

Its Mayor

Attest:

Charlotte Taylor

**City of Olympia:**

By: Bob Jacobs

Its Mayor

Attest:

By: Jane Ragland Kirkemo

**City of Tumwater:**

By: Ralph Osgood

Its Mayor

Attest:

Sheryle Wyatt

**County of Thurston:**

By: Judy Wilson

Its Chairperson

Attest:

LaBonita Bowman

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## Exhibit K

INTERLOCAL COOPERATION AGREEMENT  
BETWEEN THURSTON COUNTY  
AND THE CITIES OF LACEY, OLYMPIA AND TUMWATER  
REGARDING JOINT WASTEWATER FLOW  
REDUCTION AND WATER CONSERVATION PROJECTS

This agreement, dated May 28, 1997, hereinafter referred to as GENERAL AGREEMENT, is made and entered into by and between Thurston County and the cities of Lacey, Olympia and Tumwater for joint planning, management and operation of wastewater flow reduction and water conservation projects. The terms of agreement about each specific project will be described in separate agreements, hereinafter referred to as PROJECT AGREEMENTS.

WITNESSETH:

WHEREAS, it is in the public interest to effectively reduce LOTT wastewater flows and thereby help delay the need for developing additional sewage treatment capacity; and

WHEREAS, it is in the public interest to make most effective use of limited water resources; and

WHEREAS, it is to the mutual advantage of the parties to share the cost of preparing general water and wastewater reduction plans, developing public education, retrofit and other programs for water conservation and wastewater flow reduction; and

WHEREAS, coordinated water conservation and wastewater flow reduction programs and messages promote the wise use of resources and provide benefits across jurisdictional boundaries; and

WHEREAS, in the Intergovernmental Contract for Inflow and Infiltration Management and New Capacity Planning, dated March 27, 1995, the LOTT Partners agreed that water conservation can be a cost-effective method for delaying the need to construct additional wastewater treatment facilities; and

WHEREAS, the LOTT Partners further agreed in the March 27, 1995 contract that primary responsibility for water conservation rests with water utilities providing water which, in the form of wastewater, reaches LOTT joint facilities; and

WHEREAS, the LOTT Partners further agreed in the March 27, 1995 contract that each Partner operating such water utility(s) would individually pursue water conservation efforts which result in a per capita reduction in wastewater flow to LOTT joint facilities; and

WHEREAS, pursuant to Chapter 39.34 RCW, the parties are authorized to jointly exercise the powers, privileges, and authority described herein;

NOW, THEREFORE, in consideration of the mutual promises and covenants recited herein, the parties agree and resolve as follows:

I. PURPOSE

This GENERAL AGREEMENT establishes the benefits and obligations to the parties for participating in cooperative water conservation and wastewater flow reduction planning and management activities.

II. RELATIONSHIP

The parties agree that they intend to act jointly pursuant to the authority of Chapter 39.34 RCW to accomplish the purpose recited herein. No separate legal entity is created by this agreement.

### III. MANAGEMENT

All activities conducted pursuant to this GENERAL AGREEMENT shall be coordinated and managed by the STEERING COMMITTEE, whose members shall be the Directors of Public Works or Directors of Water and Waste Management of the four jurisdictions.

### IV. ACTIVITIES

Any water conservation or wastewater flow reduction activity or projects may be conducted under the terms of this GENERAL AGREEMENT by consent of two or more parties. For each activity or project, detailed terms of agreement related to the scope of work, responsibility of each party and financing shall be prepared as a PROJECT AGREEMENT attached to this document. Such activities shall be consistent with adopted policies and budgets of each jurisdiction and LOTT. Each PROJECT AGREEMENT shall be adopted and/or officially approved by each of the affected jurisdictions.

### V. PUBLIC INFORMATION, EDUCATION AND INVOLVEMENT

It is understood and recognized that each activity or project completed under this GENERAL AGREEMENT will require varying amounts of public information, education and involvement. The specific scope and type of public activity shall be included in the PROJECT AGREEMENT attached to this GENERAL AGREEMENT.

### VI. RESPONSIBILITY

Within each separate PROJECT AGREEMENT, one of the following two responsibility approaches will apply and will be specifically defined.

A. Lead Agency Approach. In this model, one jurisdiction will be designated in the applicable PROJECT AGREEMENT as lead agency and other participating jurisdictions, not serving as lead agency, shall be cooperating agencies.

1. Lead Agency will be responsible to:

- a. Administer the project, including managing any grant funds and coordinating with other jurisdictions and agencies to ensure that work proceeds in an acceptable manner and that performance is timely.
- b. Account for funds expended and bill each jurisdiction, as appropriate, for its agreed upon share of the project at regular intervals.
- c. Provide legal opinions and support as necessary to carry out the work.
- d. Provide required budget and program information and/or requirements to cooperating agencies allowing adequate time for preparation of their annual budgets and workplans.
- e. Coordinate the project with other County and City water conservation and/or wastewater flow reduction programs.

2. Cooperating Agencies:

For each project, cooperating agencies not serving as lead agency will be responsible to:

- a. Assign their chief public works or engineering manager or designee to participate and assist the lead agency in preparing the work program and directing the overall project.

- b. Reimburse the lead agency for their share of the total project or account for labor and other costs within the terms of the PROJECT AGREEMENT. Make payments within 45 days following billing by the lead agency.
- c. Keep a record of costs incurred as part of the project, whether or not they are to be reimbursed.
- d. Provide information required for the project.
- e. Review the data and findings of the project.
- f. Assist as appropriate with obtaining public participation and/or input.
- g. Provide feedback and evaluation where needed for development of future projects.

B. Project Policy Agreement Approach. In this model, participating jurisdictions will incorporate in the applicable PROJECT AGREEMENT the terms by which separate projects undertaken by each jurisdiction shall achieve common goals and will be carried out in a manner that provides consistent service to customers across jurisdictional boundaries. Elements incorporated in the PROJECT AGREEMENT may include provisions for joint selection of service providers, development and distribution of consistent educational and marketing messages, establishment and implementation of evaluation techniques and procedures, equitable allocation of charges and benefits to customers, and other issues deemed necessary to the promotion of a consistent regional program. Each participating jurisdiction will be responsible for carrying out and funding its own project.

VII. COST ALLOCATION

Costs for each project may be shared by LOTT, the participating water and/or sewer utilities, customers and/or other funding sources. Generally, costs for each project supported by LOTT and achieving wastewater flow reductions through activities targeting sewer customers shall be allocated based on LOTT's flow reduction program funding guidelines effective at the time the project is approved. Costs to serve water customers who are not also LOTT sewer customers shall be covered by the utilities, customers and/or other funding sources. The specific method of cost allocation shall be included in the detailed terms of the activity or project as described in the PROJECT AGREEMENT attached to this GENERAL AGREEMENT.

VIII. DURATION

This GENERAL AGREEMENT shall remain in effect for five years and may be extended upon agreement of the participating jurisdictions.

IX. WITHDRAWAL

Any party to this GENERAL AGREEMENT may withdraw after giving 30 days written notice to the other parties. The withdrawing party will remain responsible for fulfilling all financial commitments made under this GENERAL AGREEMENT and any PROJECT AGREEMENTS, except as mutually agreed upon by the affected parties.

CITY OF LACEY

BOARD OF COMMISSIONERS  
Thurston County, Washington

By: Greg J. Cuoio

ABSENT  
Chairman

ATTEST:

Charlotte M. Taylor

Richard Q. Nichols  
Commissioner

CITY OF OLYMPIA

Judy Wilson  
Commissioner

By: Richard C. Cushing

ATTEST:

ATTEST:

Jane Ragland Kirkemo  
City Clerk

LaBonita I. Bowmar  
Clerk of the Board

CITY OF TUMWATER

APPROVED AS TO FORM:

By: Ralph Osgood

\_\_\_\_\_  
Prosecuting Attorney

ATTEST:

BY:

Sheryle Wyatt  
City Clerk

Mark H. Calkins  
Deputy Prosecuting Attorney

APPROVED AS TO FORM:

P. Brock  
City Attorney



## **Exhibit L**

### **ADMINISTRATIVE AND TREASURY SERVICES CONTRACT**

THIS CONTRACT ("Contract"), dated \_\_\_\_\_, 2000, is entered into by and between the City of Olympia ("Olympia"), a Washington municipal corporation, and the LOTT Wastewater Alliance ("LOTT"), a nonprofit corporation formed and existing under Chapters 24.03 and 39.34 RCW. The parties are herein individually referred to a "Party" and collectively as the "Parties."

#### RECITALS

WHEREAS, the Cities of Lacey, Olympia, and Tumwater and Thurston County (ALOTT Partners®) have entered the Interlocal Cooperation Act Agreement for Wastewater Management by the LOTT Wastewater Alliance, dated \_\_\_\_\_, 2000 ("Interlocal Cooperation Act Agreement"). Any capitalized terms not defined herein shall have the meaning as defined in the Interlocal Cooperation Act Agreement; and

WHEREAS, RCW 43.09.285 requires the funds of the LOTT Wastewater Alliance to be deposited in the public treasury of one of the LOTT Partners; and

WHEREAS, the Interlocal Cooperation Act Agreement provides for Olympia and LOTT to enter this Contract so that Olympia may continue to provide certain administrative and treasury services to LOTT for at least an initial period of time; and

WHEREAS, Olympia has historically provided administrative treasury, and financial services for the LOTT Partnership prior to the Interlocal Cooperation Act Agreement; and

WHEREAS, the Parties desire to set out the specific terms and conditions of Olympia's provision of services to LOTT.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties hereby agree as follows:

#### **1. General Description of Roles.**

The Parties intend for Olympia to perform limited treasury and accounting functions for LOTT, as defined below. This contract does not include providing financial advice, serving as a financial advisor to LOTT, capital facilities planning or financing, issuing of debt, administratively arbitrage regulations, or signing contracts or documents on behalf of LOTT, except for contracts or documents necessary to carry out the functions and intent of this contract. In addition, the Parties intend that Olympia provide informal consultations to LOTT regarding the above financial matters. LOTT will obtain formal advice and services regarding capital facilities financing, debt issuance, investment advice, and other financial matters from other sources.

## **2. Services Provided by Olympia.**

As directed by the LOTT Board and its duly authorized representatives, Olympia shall provide the following services to LOTT:

- a) Hold LOTT funds in a separate fund (the "LOTT Fund") and establish special accounts within the LOTT Fund as requested by LOTT or as required by state law.
- b) Receive and disburse LOTT funds. Olympia may disburse funds for debt service obligations in accord with bond covenants of LOTT without specific direction from the LOTT Wastewater Alliance, and establish bank accounts as needed to carry out this contract.
- c) Perform basic accounting services including detail of accounting transactions, maintenance of budget, accounts payable, accounts receivable, and payroll. Maintenance of detailed inventory and fixed asset records shall be the responsibility of LOTT. Project and grant accounting shall be the responsibility of LOTT, although Olympia will within the standard design of its accounting system provide for tracking of financial transactions of projects and grants.
- d) Investment of LOTT funds consistent with investment policies adopted by the LOTT Board. Establish investment accounts as needed.
- e) Assist with audits of LOTT.
- f) Prepare annual financial reports as required by the State Auditor=s Office.

LOTT shall be responsible for retaining any and all documents produced which are necessary for Olympia to carry out the provisions of this contract. Upon completion of the audit by the State Auditor=s Office, all documents produced for the audited period shall be delivered to LOTT.

Olympia shall perform the above functions in accordance with Generally Accepted Accounting Principles ("GAAP"), rules promulgated by the Auditor of the State of Washington, and other applicable law.

Olympia shall have access to LOTT books and records as necessary or convenient in performing services for LOTT. LOTT shall provide reasonable notice to Olympia of requests to perform tasks under this Contract.

## **3. Compensation.**

From the date of this agreement through December 31, 2001, the amount received by Olympia for overhead and indirect charges under the LOTT facilities Operations and Maintenance Agreement executed per Section 5.2 of the Interlocal Cooperation Act Agreement,

shall also cover the services rendered by Olympia under this contract. The Parties recognize that creation of the LOTT Wastewater Alliance as a separate entity will result in more effort for administration and treasury services than before. As a result, at least sixty (60) days prior to December 31, 2001, and for each year thereafter, Olympia will submit to LOTT for inclusion as an amendment to this contract the costs to perform the treasury and administrative functions separately under this agreement. LOTT will review these costs in good faith and, if these costs are acceptable to LOTT, that amount will be included in this contract as the payment to Olympia for services performed hereunder. If the Operation and Maintenance Contract for LOTT facilities is terminated prior to December 31, 2001, the Parties shall negotiate in good faith the compensation to be paid hereunder for the period this contract is in effect.

Separate from the above, each year LOTT will pay Olympia the out-of-pocket expenses Olympia incurs which are not customarily incurred in the provision of administrative and treasury services, such as investment fees, wire transfer fees, and setup costs.

**4. Billings.**

Overhead and indirect costs payable under the LOTT facilities Operations and Maintenance Contract which constitute compensation hereunder for the period indicated above, and reimbursement requests shall be billed by Olympia to LOTT. Payment on these billings shall be due within thirty (30) days of receipt thereof by LOTT. Delinquent amounts shall accrue interest at one percent per month. Compensation for services under this contract for any period after December 31, 2001 shall be billed and paid in the same manner.

**5. Contract Relationship.**

The relationship of Olympia to LOTT created by this Contract is that of an independent contractor, and none of Olympia's employees or agents shall be considered employees of LOTT.

**6. Term of Agreement.**

This contract shall take effect on the date Consolidation occurs pursuant to the Interlocal Cooperation Act Agreement ("Effective Date"). This Contract shall remain in effect unless and until earlier terminated for convenience by LOTT or Olympia.

**7. Termination for Convenience.**

Either party may terminate this Contract for convenience, which termination shall be effective one year after either party provides notice of termination to the other party. Neither party shall give notice of termination earlier than January 31, 2000. Prior to giving notice of termination of this Contract, LOTT shall have considered and documented Olympia's and alternate administrative and treasury service costs and practices as provided in the Interlocal Cooperation Act Agreement.

**8. Termination for Cause.**

Either Party may terminate this Contract upon material breach by the other party providing that the terminating Party first provides written notice of such breach to the other Party and such breach has not been corrected within a forty-five (45) day cure period, except if the cure cannot reasonably be completed within forty-five (45) days then the Party shall not be in default so long as it commences the cure within forty-five (45) days and promptly and diligently completes the same. The written notice shall specify the alleged breach and the action(s) that would cure it.

**9. Notices; Authorized Representatives.**

All notices shall be in writing and delivered in person or transmitted by certified mail, return receipt requested, postage prepaid. Notices required to be given to the City of Olympia shall be addressed as follows:

City Manager  
City of Olympia  
P.O. Box 1967  
Olympia WA 98507-1967

Notices required to be given to the LOTT Wastewater Alliance shall be addressed as follows:

Executive Director  
LOTT Partnership Administration  
2101 - 4th Ave., E./Suite 101  
Olympia WA 98506

**10. Dispute Resolution.**

Any disputes under this Agreement shall be resolved by negotiation, if possible. If impasse is reached, the Parties shall employ a panel with three arbitrators, one appointed by each party and the third by the two appointed arbitrators, to resolve the dispute. The ruling of the panel shall be binding, subject to judicial review under an arbitrary and capricious standard.

**11. Non-waiver.**

The failure on the part of either Party to enforce its right as to any provision of the Contract shall not be construed as a waiver of its rights to enforce such provision in the future.

**12. No Third Party Beneficiaries**

Except as expressly provided herein, this Contract is not intended to create rights in, or to grant remedies to, any third party as a beneficiary of this Contract or of any duty, obligation or undertaking established herein.

**13. Governing Law.**

This Contract shall be governed by the laws of the State of Washington.

**14. Assignment.**

With the approval of the LOTT Board, Olympia may assign this Contract to one of the other LOTT Partners.

**15. Severability.**

If one or more clauses, sections, or provisions of this Contract is held to be unlawful, invalid or unenforceable by any court with jurisdiction, the remainder of this Contract shall not be affected thereby.

**16. Modifications in Writing.**

Except as expressly provided in this Contract, no amendment or modification of this Contract shall be effective unless made in writing and executed by all Parties.

**IN WITNESS WHEREOF**, each Party has caused this Contract to be signed by its duly authorized officer or representative as of the date set forth below its signature.

DATED this \_\_\_\_\_ day of \_\_\_\_\_ 2000.

**CITY OF OLYMPIA**

**LOTT WASTEWATER ALLIANCE**

By:

By:

\_\_\_\_\_  
Its:

\_\_\_\_\_  
Its:

ATTEST:

ATTEST:

By:

By:

\_\_\_\_\_  
Approved as to form:

\_\_\_\_\_  
Approved as to form:

\_\_\_\_\_  
Legal Counsel

\_\_\_\_\_  
Legal Council

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**RECLAIMED WATER SUPPLY AGREEMENT**  
**BETWEEN THE LOTT ALLIANCE**  
**AND THE**  
**CITY OF OLYMPIA**  
**REGARDING THE BUDD INLET RECLAIMED WATER FACILITY**

This agreement (“Supply Agreement”) is entered into as of the date of the latest signature below by and between the LOTT Alliance (“LOTT Alliance”) and City of Olympia (“City”), each a “Party” and together referred to as the “Parties.”

**1. RECITALS**

WHEREAS:

- 1.1 The LOTT Alliance owns and operates the Budd Inlet Reclaimed Water Facility, a municipal Reclaimed Water Facility that generates Class A reclaimed water; and
- 1.2 The LOTT Alliance and the LOTT Partners entered the General Interlocal Agreement Between the LOTT Alliance, Thurston County and the Cities of Lacey, Olympia and Tumwater For Distribution and Use of Reclaimed Water, dated January 16, 2004, (“General Agreement”) to provide a regional framework for distribution and use of reclaimed water and for conserving the LOTT Partners’ potable water supplies; and
- 1.3 The City adopted Ordinance No. \_\_\_\_ that governs the supply of reclaimed water to End Use customers;

NOW, THEREFORE, in consideration of the recitals and the mutual promises and covenants contained herein, the LOTT Alliance agrees to supply and the City agrees to purchase and use and distribute reclaimed water on the terms and conditions set forth herein.

**2. RELATIONSHIP TO GENERAL AGREEMENT**

- 2.1 The LOTT Alliance and the City enter into this Supply Agreement to implement the General Agreement, and they intend for this Supply Agreement to be performed and interpreted consistent with the provisions of the General Agreement, which is incorporated herein by reference.
- 2.2 Definitions. Capitalized terms in this Supply Agreement have the same meanings as set forth in the General Agreement. In addition, the term “Reclaimed Water Facility” means the Budd Inlet Reclaimed Water Facility, a municipal wastewater treatment and reclaimed water facility that generates Class A Reclaimed Water.

### **3. SUPPLY AND SALE OF RECLAIMED WATER**

- 3.1 The LOTT Alliance agrees to deliver Class A Reclaimed Water to the City on the condition that all uses are in full and continuous compliance with the Standards, other applicable state, federal or local regulations, and the conditions in the LOTT Alliance's NPDES permit and State Reclaimed Water Permit.
- 3.2 The LOTT Alliance warrants it shall deliver Class A Reclaimed Water, as defined by the Standards. The LOTT Alliance makes no further express or implied warranties whatsoever as to reclaimed water supplied under this Supply Agreement.
- 3.3 Consistent with the Reclaimed Water Distribution Methodology established in the General Agreement and Reclaimed Water Distribution Agreement No. 1 included as Exhibit A hereto, the quantities of reclaimed water produced at the Reclaimed Water Facility will be made available as follows:
- (a) LOTT intends to initially reserve up to 540,000 gallons per day of the reclaimed water produced at the Reclaimed Water Facility for its own use.
  - (b) Subject to available remaining supply of reclaimed water, the LOTT Alliance shall initially make available up to 460,000 gallons per day of reclaimed water to the City at the Delivery Point(s). At its option, the City may take some, all, or none of the above available quantity of reclaimed water.
  - (c) Quantities are subject to adjustment as new increments of reclaimed water are added or the distribution among LOTT Partners is renegotiated as set forth in the General Agreement. Such adjustments will be documented through amendments to this Supply Agreement.
- 3.4 The volume of reclaimed water produced at the Reclaimed Water Facility may be adjusted to correspond to actual demand up to the amounts specified in Sections 3.3(a) and 3.3(b) herein. Reclaimed water not used or distributed by the City may be discharged through LOTT's outfall into Budd Inlet or returned to the treatment system and will no longer be available for use.
- 3.5 The City shall pay the LOTT Alliance for delivered reclaimed water from the Reclaimed Water Facility one dollar (\$1.00) per year for each year that this Supply Agreement is in effect or until it is amended by the Parties. Further consideration exchanged between the Parties to this Agreement is described in the General Agreement and the Distribution Agreement, which are incorporated by reference herein.



#### 4. CONDITIONS OF RECLAIMED WATER SUPPLY

- 4.1 The Parties agree that the LOTT Alliance's primary responsibility is to provide wastewater treatment and discharge services and capacity consistent with the terms of LOTT's NPDES and State Reclaimed Water Permits. In carrying out this Supply Agreement, the Parties agree that compliance with LOTT's NPDES permit and State Reclaimed Water Permit are the primary interest and that supply and beneficial use are a secondary interest.
- 4.2 The Parties agree that use by the LOTT Alliance stipulated in this Supply Agreement has priority over supply of reclaimed water to the City under this Agreement. In event of limited supply of reclaimed water, reclaimed water deliveries to the City under section 3.3 shall be subject to available supply after satisfaction of the LOTT Alliance's uses.
- 4.3 The LOTT Alliance shall in good faith provide reclaimed water to the City without interruption to the best of its ability, and the City shall in good faith maintain and operating its system to the best of its ability. However, the Parties understand and agree that, with no liability or penalty to any Party, there may be temporary interruptions or limitations in service or acceptance of reclaimed water due to the following events:
- (a) unavailability or limited quantities of reclaimed water;
  - (b) emergencies requiring repair or replacement of Reclaimed Water Facility or conveyance system equipment;
  - (c) routine repair or replacement of Reclaimed Water Facility or conveyance system equipment;
  - (d) the need for the LOTT Alliance, in its professional judgment, to take extraordinary action to comply with its NPDES Permit or State Reclaimed Water Permit (for example and without limitation to address treatment upsets);
  - (e) as a result of regulatory or judicial orders; or
  - (f) other circumstances beyond the control of a Party.

If the performance by any Party is prevented or delayed by any of the foregoing events, the Party shall have a reasonable period of time after each such event to resume performance under this Agreement. In the event of a planned curtailment of flow, the LOTT Alliance will provide 72 hours advance notice. In the event the LOTT Alliance has less than 72 hours advance notice of an interruption of supply, it will provide advance notice within one hour of learning of the need for

an interruption. Where advance notice is not possible, the LOTT Alliance will notify the LOTT Partner within one hour of the event preventing delivery and provide an estimated duration of the supply interruption.

## **5. DESCRIPTION OF FACILITIES**

- 5.1 LOTT's Facilities. The LOTT Alliance owns, operates and maintains the Reclaimed Water Facility and all associated facilities up to the Delivery Point.
- 5.2 City's Facilities. The City will install, own, operate and maintain a water meter on the downstream end of each Delivery Point. The City owns, operates and maintains all facilities on the downstream side of the Delivery Point, up to and including the End Users' water meters.

## **6. RESPONSIBILITY FOR PRODUCTION, DISTRIBUTION AND USE OF RECLAIMED WATER**

Consistent with Washington State requirements, the Parties shall have the following responsibilities for the reclaimed water produced, distributed and used pursuant to this Agreement.

- 6.1 Production. The LOTT Alliance shall maintain control over, and be responsible for, all facilities and activities relating to the production of reclaimed water and conveyance of reclaimed water to the Delivery Point to ensure that the Reclaimed Water Facility operates as approved by the Washington Departments of Health and Ecology. The LOTT Alliance's responsibility for the reclaimed water made available to the City, as to production reliability requirements, reclaimed water quality, disposition, or otherwise, shall end at the Delivery Point.
- 6.2 Distribution. The City shall maintain control over, and be responsible for, all of its facilities and activities relating to the distribution of the reclaimed water to End Users. The City shall ensure that its distribution system operates as approved by the Washington Departments of Health and Ecology. The City's responsibility for the reclaimed water, as to its quality, disposition, or otherwise, shall begin at the Delivery Point.
- 6.3 Commencement of Supply. Supply of reclaimed water by the LOTT Alliance to the City will commence after the Reclaimed Water Facility and the City's facilities described above have been completed and begun operation.
- 6.4 Connection to LOTT Facilities. All facilities to be connected directly to LOTT Alliance reclaimed water transmission lines or other LOTT Alliance reclaimed

water facilities by the City are subject to the LOTT Alliance's review and approval prior to installation.

- 6.5 Disconnection from LOTT Facilities. If service is discontinued from any Delivery Point or this Agreement is terminated for any reason, the City will assure proper abandonment or disconnection of its facilities from LOTT Alliance facilities. The City shall notify the LOTT Alliance of such abandonment or disconnection.
- 6.6 Inspection. Consistent with LOTT's obligations under its State Reclaimed Water Permit, the City shall allow an authorized representative of LOTT or of the Washington State Departments of Health or Ecology, upon the presentation of credentials:
  - (a) To enter upon the premises where reclaimed water is distributed or used under this contract; or
  - (b) To inspect at reasonable times any facilities, equipment, meters, records, or premises involved in the distribution and use of the reclaimed water under this contract, and to take samples of the water or soil, and make copies of records.

## **7. RESALE TO END USE CUSTOMER**

- 7.1 The City may resell or otherwise supply reclaimed water purchased from the LOTT Alliance to any of its End Users for those purposes authorized in the State Reclaimed Water Permit or other uses as additionally approved by the Washington State Departments of Health and Ecology.
- 7.2 The City has adopted Ordinance No. \_\_\_\_ that governs the supply of reclaimed water by the City to End Users. The Parties intend for the City to serve as the supplier and to regulate the delivery and use of reclaimed water to and by its End Users. The Parties intend for LOTT to become involved with End Users only as necessary to provide technical or other assistance at the request of a LOTT Partner, or as a last resort to ensure permit compliance.
- 7.3 The City may resell or otherwise supply reclaimed water purchased from the LOTT Alliance to an End User only where a binding End User Agreement exists between the City and the End User. The End User Agreement shall be substantially and materially in the form set out in Exhibit B to this Agreement, as approved by the Washington State Departments of Ecology and Health.
- 7.4 The City shall maintain all End User Agreements for the duration of LOTT's State Reclaimed Water Permit, and shall provide copies of all new or revised End

User Agreements to LOTT to meet annual reporting requirements of the Departments of Health and Ecology.

**8. DESIGNATED REPRESENTATIVES AND NOTICES**

8.1 To facilitate communication between the Parties and cooperative implementation of this Agreement, each Party shall name a designated representative to receive all notices under this Agreement. The initial designated representatives are as follows:

LOTT Alliance: Karla Fowler, Program Manager  
LOTT Alliance  
111 Market St. NE, Suite 250  
Olympia, WA 98501  
Phone: (360) 664-2333 ext. 1112  
E-mail: karlafowler@lottonline.org

City of Olympia: Michael Mucha, Public Works Director  
City of Olympia  
PO Box 1967  
Olympia, WA 98507-1967  
Phone: (360) 753-8426  
E-mail: mmucha@ci.olympia.wa.us

A Party's designated representative or place of business may be changed with advance notice to the other Party.

8.2 The LOTT Alliance will maintain 24-hour emergency response personnel for the project, who can be reached by calling (360) 664-2333 extension 4.

8.3 The City will maintain 24-hour emergency response personnel for the project, who can be reached by calling (360) 753-8333.

**9. TERM OF AGREEMENT**

The term of this Agreement shall commence on the date of the later signature below and continue until terminated by written agreement of both Parties, with 30 days notice.

## **10. TERMINATION**

- 10.1 The City may terminate this Supply Agreement for any reason at any time.
- 10.2 LOTT may terminate this agreement if the City violates terms of this Agreement, LOTT's State Reclaimed Water Permit, state Standards, or other requirements of the Washington State Departments of Health and Ecology; or if the termination is necessary due to regulatory mandate or termination of LOTT's State Reclaimed Water Permit.
- 10.3 This Supply Agreement will terminate if the City withdraws from the General Agreement, or if the General Agreement is terminated.
- 10.4 Prior to termination, the Parties shall fulfill all financial commitments made under this Supply Agreement, except as agreed by the Parties.

## **11. SHARING OF INFORMATION**

The Parties agree, to the fullest extent permitted by law, to exchange information about all aspects of reclaimed water programs and projects including but not limited to operations, maintenance, customer comments, metering data, water quality analyses, and regulatory compliance.

## **12. LEGAL RELATIONS AND INTERPRETATION OF AGREEMENT**

- 12.1 Each Party shall negotiate in good faith and use its best efforts to resolve any dispute which may arise. If a dispute cannot be resolved initially by the designated representatives, the designated representatives shall prepare a joint statement describing the dispute and refer the dispute to the Technical Sub-Committee that advises the LOTT Alliance Board of Directors. If the dispute is not resolved after consultation with the Technical Sub-Committee, then the designated representatives shall refer the dispute to the LOTT Executive Director, the City Managers, and the County Chief Administrative Officer. These officials shall meet and confer regarding the issue. If they are unable to resolve the dispute, then the designated representatives shall bring the matter before the LOTT Alliance Board. At a Board meeting, the LOTT Alliance Board shall consider the issues and attempt to resolve the dispute. Only upon failure to resolve the dispute through such negotiations may a Party institute legal action.
- 12.2 This Supply Agreement shall be governed by the laws of the State of Washington. The exclusive jurisdiction and venue for any lawsuit between the Parties arising out of this Supply Agreement shall be in Thurston County Superior Court.

- 12.3 The Parties expressly do not intend to create any right, obligation or liability, or promise any performance, to any third party. The Parties have not created any right for any third party to enforce this Supply Agreement.
- 12.4 It is the belief of the Parties that all provisions of this Supply Agreement are lawful. If any covenant or provision of this Supply Agreement shall be finally adjudicated by a court of competent jurisdiction to be invalid or unenforceable, such adjudication shall not affect the validity, obligation or performance of any other covenant or provision, or part thereof, which in itself is valid if such remainder conforms to the terms and requirements of applicable law and the intent of this Supply Agreement. In such event, the Parties shall enter into immediate negotiations for the purpose of arriving at a mutually satisfactory replacement of such covenant or provision, or renegotiation of the terms of the Supply Agreement.
- 12.5 Waiver of any breach of any provision of this Supply Agreement shall not be deemed to be a waiver of any prior or subsequent breach, and shall not be construed to be a modification of this Supply Agreement.
- 12.6 This Supply Agreement shall be binding on a Party's assigns and successors. A Party may not assign its rights or delegate its duties under this Supply Agreement in any respect without the written consent of the other Party.
- 12.7 To the maximum extent permitted by law, each Party shall protect, defend, indemnify and hold harmless the other Party and its officials and employees from and against all claims, demands, suits, actions, costs, damages, liability or loss of any kind whatsoever arising from the acts or omissions of the indemnifying Party and its officials, employees, agents and contractors. The indemnifying Party specifically assumes liability for actions brought by its own employees against the other Party and for that purpose the indemnifying Party specifically waives, as respects the other Party only, any immunity under the Worker's Compensation Act, RCW Title 51. The indemnifying Party recognizes that this waiver was the subject of mutual negotiation and is expressly entered into pursuant to the provisions of RCW 4.24.115, if applicable. In the case of joint negligence, any damages allowed shall be levied in proportion to the percentage of negligence attributed to each Party. This indemnification shall survive the termination of this Supply Agreement.
- 12.8 LOTT shall defend the City at LOTT's sole cost from and against any cause of action in which LOTT's and the City's right to use reclaimed water pursuant to state statute and LOTT's Reclaimed Water Permit is challenged in said cause of action. Where multiple causes of action are brought against the City in the same suit, LOTT's obligation to defend shall extend only to the cause or causes of action that expressly apply to LOTT and the City as described in the preceding sentence of this section. LOTT is not obligated to indemnify the City under any

circumstances involving a cause or causes of action as described in this section. LOTT is not obligated to provide a defense to the City where LOTT's Articles of Incorporation would be violated, or where said defense would be contrary to any applicable law. LOTT's obligation to defend shall take effect only after the City has first tendered defense to any and all insurers that may defend the City and said tender is denied in writing. LOTT will not be obligated to defend the City where any insurer agrees to defend the City, notwithstanding a defense provided under reservation of rights by any covering insurer. LOTT shall have no duty to defend where the City, by and through its agents and employees, intentionally or recklessly fails to act in good faith, or contrary to law, and such is a substantial factor in bringing about the cause or causes of action against which LOTT would otherwise be obligated to defend.

**13. ATTACHMENTS**

The following documents are attached hereto and incorporated by reference herein:

- Exhibit A – Reclaimed Water Distribution Agreement No. 1
- Exhibit B – Form of End User Agreement (called a “Class ‘A’ Reclaimed Water Service Agreement”)

IN WITNESS WHEREOF, each Party has caused this Supply Agreement to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**LOTT Alliance:**

By 

Its BOARD PRESIDENT


Date: 6-14-05

Approved as to form:

By   
Richard Hughes, General Counsel

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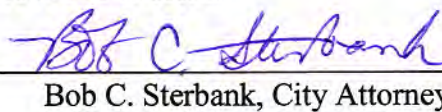
**City of Olympia:**

By 

Its: MAYOR

Date: 5-17-05

Approved as to form:

By   
Bob C. Sterbank, City Attorney

**RECLAIMED WATER DISTRIBUTION AGREEMENT NO. 1  
BETWEEN THE LOTT WASTEWATER ALLIANCE,  
THURSTON COUNTY AND THE CITIES OF  
LACEY, OLYMPIA AND TUMWATER**

This Agreement ("Distribution Agreement") is entered into as of the date of the latest signature below by and between the LOTT Wastewater Alliance ("LOTT Alliance"), Thurston County, and the Cities of Lacey, Olympia, and Tumwater, each a "Party" and together referred to as the "Parties."

**1. RECITALS**

WHEREAS:

1.1 The Parties entered into the General Interlocal Agreement Between the LOTT Wastewater Alliance, Thurston County and the Cities of Lacey, Olympia and Tumwater For Distribution and Use of Reclaimed Water ("General Agreement"), dated January 16, 2004, to provide a regional framework for distribution and use of reclaimed water and for conserving potable water supplies; and

1.2 Exhibit A of the General Agreement is a "Reclaimed Water Distribution Methodology," which defines a process for distribution of reclaimed water among the four LOTT Partner jurisdictions; and

1.3 The LOTT Partner representatives have completed negotiations for distribution of the first 1.0 million gallon per day increments of reclaimed water from all four planned LOTT reclaimed water facilities, consistent with the Reclaimed Water Distribution Methodology; and

1.4 The LOTT Partner representatives have further completed negotiations for distribution of the second 1.0 million gallon per day increment of reclaimed water from the Hawks Prairie Reclaimed Water Project, consistent with the Reclaimed Water Distribution Methodology; and

1.5 Table #1 attached hereto and incorporated by reference documents the negotiated distributions for the aforementioned increments of reclaimed water.

NOW, THEREFORE, in consideration of the recitals and the mutual promises and covenants contained herein the Parties commit to the negotiated distributions as follows.



## 2. AGREEMENT

2.1 The Parties agree to the reclaimed water distributions documented in Table #1 attached hereto.

2.2 The distributions documented in Table #1 shall be in effect until superseded by any future Reclaimed Water Distribution Agreement negotiated and approved consistent with the Reclaimed Water Distribution Methodology, or until the General Agreement is terminated, or until some other action is taken by the Parties that supersedes Table #1.

2.3 LOTT will incorporate documentation of the negotiated distribution in its next annual Flow and Capacity Report update.

2.4 This Reclaimed Water Distribution Agreement No. 1, or successor agreement(s), will be appended to the Supply Agreements for the Budd Inlet Reclaimed Water Facility, Hawks Prairie Reclaimed Water Satellite, Chambers Prairie Reclaimed Water Satellite, and Tumwater Reclaimed Water Satellite as each of those Supply Agreements is developed.

(continued on next page)

IN WITNESS WHEREOF, each Party has caused this Reclaimed Water Distribution Agreement No. 1 to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**LOTT Wastewater Alliance:**

By [Signature]  
Its: Board President  
Date: 3-4-05

Approved as to Form:

By [Signature]

**City of Lacey:**

By [Signature]  
Its: City Manager  
Date: 1-13-05

Approved as to Form:

By [Signature]

**City of Tumwater:**

By [Signature]  
Its: Mayor  
Date: 1-14-05

Approved as to Form:

By Christy A. Todd

**City of Olympia:**

By [Signature]  
Its: Pub Works Director  
Date: 10-20-04

Approved as to Form:

By [Signature]

**Thurston County:**

By [Signature]  
Its: Water & Waste Mgt Director  
Date: 12-02-04

Approved as to Form:

By [Signature]

Distribution Table #1

Facility	Year On-Line	Volume Produced	LOTT Reserve	Volume Available	Lacey Percent 1000 gpd	Olympia Percent 1000 gpd	Tumwater Percent 1000 gpd
<b>First Increments:</b>							
Budd Inlet	2004	1000	540	460	0.0%	100.0%	0.0%
Hawks Prairie	2007	1000	250	750	60.0%	40.0%	0.0%
Tumwater	2014	1000	250	750	0.0%	0.0%	100.0%
Chambers Pr	2016	1000	250	750	60.0%	40.0%	0.0%
<b>Increment 1 Subtotals</b>		4000	1290	2710	33.2%	39.1%	27.7%

<b>Second Increment:</b>		1000	0	1000	100.0%	0.0%	0.0%
Hawks Prairie	2007						

**Totals**      5000      1290      3710      1900      1060      20.2%      750  
100%

NOTE: Volumes are expressed in thousands of gallons per day

## CLASS "A" RECLAIMED WATER SERVICE AGREEMENT

**END USER:**

**CONTACT PERSON:**

**PHONE NO.:**

**ADDRESS:**

### TERMS & CONDITIONS OF SERVICE

*The End User identified in this agreement, in receiving Class A Reclaimed Water from the City of Olympia ("City") under this agreement, does hereby agree to the following terms and conditions for the use of Class "A" Reclaimed Water:*

1. **Use of Reclaimed Water**
  - a. **Location of Use(s):**
  - b. **Intended Use(s):**

**Period of Use:**
2. **Quantity of Reclaimed Water:** Class A Reclaimed Water will be provided by the City as follows:
  - a. **Minimum Quantity:**
  3. **Maximum Quantity:**
4. **Price of Reclaimed Water:**
  - a. 70 percent of the irrigation rate set forth in *OMC 4.24.010.A.7.a* except as provided in Section 7 below.
5. **Restrictions on Use:** Class A Reclaimed Water provided under this Service Agreement shall not be used in any place or manner except as specified in the "Location of Use(s)" and "Intended Use(s)" designations above, without written approval of the City, which shall not be unreasonably denied.
  - a. Class A Reclaimed Water shall not be used for human consumption or in the preparation of foodstuffs or other products intended for human consumption.
  - b. Class A Reclaimed Water shall not be discharged or released to any surface water body or stormwater collection or conveyance facility, unless said water body or facility is a non-restricted recreational impoundment or a created beneficial use and treatment wetland, as shown in Exhibit 2.
  - c. Class A Reclaimed Water shall not be sold, conveyed, gifted, or otherwise transferred to any other party.
6. **Interruption or Change of Supply:** In case of emergency repairs or other necessary work, or whenever the public health or safety so demands, the City may change, reduce, or limit the time for, or temporarily discontinue the supply of, Class A Reclaimed Water. Before so changing, reducing, limiting or discontinuing the supply of Class A Reclaimed Water, the City shall, insofar as practicable, notify all water consumers affected. The City shall not be responsible for any damage resulting from interruption or change of the Class A Reclaimed

## CLASS A RECLAIMED WATER SERVICE AGREEMENT

Page 2

Water supply, or for any damages incurred by the End User arising out of the use or transportation of the Class A Reclaimed Water.

7. **Disclaimer, Indemnity, and Hold Harmless:** To the extent permitted by law, the End User shall hold harmless, indemnify, and defend the City, whether acting as a separate municipal entity or as a member of the LOTT Alliance, from any claims, suits, actions, losses, penalties, judgments, awards for damages of any kind arising out of, or in connection with, the use of Class A Reclaimed Water provided under this Service Agreement, except to the extent arising out of the negligence or other fault of the City.
8. **Termination:** This agreement shall have a term of one year, and shall automatically be renewed from year to year unless terminated pursuant to this Section. Class A Reclaimed Water service may be terminated, without cause, upon thirty (30) days written notice by the City; provided, however, that if the City terminates Class A Reclaimed Water service without cause prior to the expiration of five (5) years from the date of this Agreement, the City will provide potable water to the End User in the same quantities and prices set forth in Section 3 above until five (5) years from the date of this Agreement. Termination for violation of the requirements described in Section 8.b below shall not trigger the City's obligations under this Section 7.
9. **Compliance with Laws Governing Reclaimed Water:**
  - a. The City agrees that it will comply with all applicable federal, state, and local laws, regulations and standards governing the generation and delivery of Class A Reclaimed Water.
  - b. The End User's use of Class A Reclaimed Water will meet all applicable requirements contained in the *Water Reclamation and Reuse Standards*, issued by the Washington State Departments of Health and Ecology, and *Ordinance No. \_\_\_\_\_ / Chapter 13. \_\_\_\_\_* of the *Olympia Municipal Code*, including those listed on the back of this Agreement, as amended from time to time, or contained in any successor standards or ordinances.
  - c. Representatives of the City and Washington State Departments of Ecology and Health shall be granted access to any facilities or service locations for purposes of inspection and compliance with local and state regulations governing the use of Class A Reclaimed Water. End User shall permit access at reasonable times and upon reasonably advance notice, except in cases of emergency.
  - d. Violations of these Terms and Conditions or of State standards and regulations may result in termination of Class A Reclaimed Water Service under this Service Agreement.
10. **Third Party Beneficiary:** The LOTT Alliance shall be considered a third party beneficiary under this agreement.



## **CLASS A RECLAIMED WATER DEFINITION AND USE REQUIREMENTS**

### **DEFINITION**

“Class A Reclaimed Water” means reclaimed water that meets State Class A Reclaimed Water criteria established in the Washington State Water Reclamation and Reuse Standards (Standards), as they may be amended from time to time. “Reclaimed Water” has the same meaning as provided in *RCW 90.46.010(4)* of the *Reclaimed Water Act*, as it may be amended from time to time.

### **CHANGES IN ALLOWABLE USES**

Class A Reclaimed Water may be used only for the purposes specified and at the service location(s) identified in this Service Agreement. Any extension or change in use and/or in location of use must be specifically approved by an Amendment to this Service Agreement.

### **GENERAL USE AND USE AREA REQUIREMENTS**

1. Standard notification signs provided by the City] must be posted in all Class A Reclaimed Water use areas, consistent with the Standards.
2. Backflow prevention devices must be installed and maintained.
3. All Reclaimed Water piping, valves, outlets and other appurtenances shall be color-coded purple, taped purple, or otherwise marked to identify the source of the water as being Reclaimed Water, consistent with LOTT’s Permit and state Standards.
4. Reclaimed Water use, including runoff and spray, shall be confined to the areas designated in this approved Service Agreement.
5. The “Contact Person” designated on the front of this agreement shall ensure that all personnel using reclaimed water complete training in requirements for appropriate use of the Class A Reclaimed Water. This training requirement may be met by: 1) familiarizing them with the terms of this service agreement, and 2) providing written materials provided by the City and discussing them with the employee(s).
6. Irrigation users must ensure that their irrigation systems are in good working order, maintained regularly and kept free of leaks, and are set so that reclaimed water is applied appropriately to the landscape, to avoid excessive puddling or runoff. Sprinkler heads should be adjusted regularly to avoid application of water to impervious services.
7. At all times, the distribution system(s) and use area(s) shall be maintained to ensure that all equipment is kept in a reliable operating condition.

### **REFERENCES**

“Standards” – *Water Reclamation and Reuse Standards*, Washington State Department of Health and Washington State Department of Ecology, September 1997, and future amendments.

“Permit” – *Reclaimed Water Permit Number ST 6159*, State of Washington Department of Ecology and State of Washington Department of Health, issued to LOTT Wastewater Alliance, February 13, 2004, and future amendments and renewals as issued.

**RECLAIMED WATER DISTRIBUTION AGREEMENT NO. 1**  
BETWEEN THE LOTT WASTEWATER ALLIANCE,  
THURSTON COUNTY AND THE CITIES OF  
LACEY, OLYMPIA AND TUMWATER

This Agreement (“Distribution Agreement”) is entered into as of the date of the latest signature below by and between the LOTT Wastewater Alliance (“LOTT Alliance”), Thurston County, and the Cities of Lacey, Olympia, and Tumwater, each a “Party” and together referred to as the “Parties.”

**1. RECITALS**

WHEREAS:

1.1 The Parties entered into the General Interlocal Agreement Between the LOTT Wastewater Alliance, Thurston County and the Cities of Lacey, Olympia and Tumwater For Distribution and Use of Reclaimed Water (“General Agreement”), dated January 16, 2004, to provide a regional framework for distribution and use of reclaimed water and for conserving potable water supplies; and

1.2 Exhibit A of the General Agreement is a “Reclaimed Water Distribution Methodology,” which defines a process for distribution of reclaimed water among the four LOTT Partner jurisdictions; and

1.3 The LOTT Partner representatives have completed negotiations for distribution of the first 1.0 million gallon per day increments of reclaimed water from all four planned LOTT reclaimed water facilities, consistent with the Reclaimed Water Distribution Methodology; and

1.4 The LOTT Partner representatives have further completed negotiations for distribution of the second 1.0 million gallon per day increment of reclaimed water from the Hawks Prairie Reclaimed Water Project, consistent with the Reclaimed Water Distribution Methodology; and

1.5 Table #1 attached hereto and incorporated by reference documents the negotiated distributions for the aforementioned increments of reclaimed water.

NOW, THEREFORE, in consideration of the recitals and the mutual promises and covenants contained herein the Parties commit to the negotiated distributions as follows.



## 2. AGREEMENT

2.1 The Parties agree to the reclaimed water distributions documented in Table #1 attached hereto.

2.2 The distributions documented in Table #1 shall be in effect until superseded by any future Reclaimed Water Distribution Agreement negotiated and approved consistent with the Reclaimed Water Distribution Methodology, or until the General Agreement is terminated, or until some other action is taken by the Parties that supersedes Table #1.

2.3 LOTT will incorporate documentation of the negotiated distribution in its next annual Flow and Capacity Report update.

2.4 This Reclaimed Water Distribution Agreement No. 1, or successor agreement(s), will be appended to the Supply Agreements for the Budd Inlet Reclaimed Water Facility, Hawks Prairie Reclaimed Water Satellite, Chambers Prairie Reclaimed Water Satellite, and Tumwater Reclaimed Water Satellite as each of those Supply Agreements is developed.

(continued on next page)

IN WITNESS WHEREOF, each Party has caused this Reclaimed Water Distribution Agreement No. 1 to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**LOTT Wastewater Alliance:**

By [Signature]

Its: Board President

Date: 3-4-05

Approved as to Form:

By [Signature]

**City of Lacey:**

By [Signature]

Its: City Manager

Date: 1-13-05

Approved as to Form:

By [Signature]

**City of Tumwater:**

By [Signature]

Its: Mayor

Date: 1-14-05

Approved as to Form:

By Christy A. Todd

**City of Olympia:**

By [Signature]

Its: Pub. Works Director 3/07/05

Date: 10-20-04

Approved as to Form:

By [Signature]

**Thurston County:**

By [Signature]

Its: Water & Waste Mgt Director

Date: 12-02-04

Approved as to Form:

By [Signature]

**Distribution Table #1**

Facility	Year On-Line	Volume Produced	LOTT Reserve	Volume Available	Lacey		Olympia		Tumwater	
					Percent	1000 gpd	Percent	1000 gpd	Percent	1000 gpd
<b>First Increments:</b>										
Budd Inlet	2004	1000	540	460	0.0%	0	100.0%	460	0.0%	0
Hawks Prairie	2007	1000	250	750	60.0%	450	40.0%	300	0.0%	0
Tumwater	2014	1000	250	750	0.0%	0	0.0%	0	100.0%	750
Chambers Pr	2016	1000	250	750	60.0%	450	40.0%	300	0.0%	0
<b>Increment 1 Subtotals</b>		4000	1290	2710	33.2%	900	39.1%	1060	27.7%	750
<b>Second Increment:</b>										
Hawks Prairie	2007	1000	0	1000	100.0%	1000	0.0%	0	0.0%	0
<b>Totals</b>		5000	1290	3710	51.2%	1900	28.6%	1060	20.2%	750
				100%						

NOTE: Volumes are expressed in thousands of gallons per day

**GENERAL INTERLOCAL AGREEMENT**  
**BETWEEN THE LOTT WASTEWATER ALLIANCE,**  
**THURSTON COUNTY AND THE CITIES OF**  
**LACEY, OLYMPIA AND TUMWATER**  
**FOR DISTRIBUTION AND USE OF RECLAIMED WATER**

This agreement ("General Agreement") is entered into as of the date of the later signature below by and between the LOTT Wastewater Alliance ("LOTT Alliance"), Thurston County, and the Cities of Lacey, Olympia, and Tumwater, each a "Party" and together referred to as the "Parties."

**1. RECITALS**

WHEREAS:

- 1.1 The Cities of Lacey, Olympia, Tumwater and Thurston County (the "LOTT Partners") have for more than 25 years cooperated successfully in planning, financing, constructing and operating joint wastewater treatment and discharge facilities and services; and
- 1.2 In 2000, the LOTT Partners entered the Interlocal Cooperation Act Agreement for Wastewater Management by the LOTT Wastewater Alliance ("Interlocal Cooperation Act Agreement") to enable further cooperative actions to develop additional capacity by and through the LOTT Alliance, a nonprofit corporation created, funded and controlled by the LOTT Partners; and
- 1.3 Pursuant to the Interlocal Cooperation Act Agreement, the LOTT Alliance is implementing the LOTT Wastewater Resource Management Plan ("WRMP") including development of reclaimed water and groundwater recharge facilities located throughout the LOTT service area; and
- 1.4 Pursuant to the Interlocal Cooperation Act Agreement, the LOTT Partners have transferred all existing joint use facilities to the LOTT Alliance and the LOTT Alliance generally will own new facilities so that the LOTT Alliance manages the regional wastewater treatment system for the benefit of the LOTT Partners and the ratepayers; and
- 1.5 The LOTT Alliance is the owner and operator of reclaimed water facilities under development that will produce Class A reclaimed water; and
- 1.6 In RCW 90.46.005, the Washington State Legislature encourages the use of reclaimed water "to replace potable water in nonpotable applications, to supplement existing surface and ground water supplies, and to assist in meeting the future water requirements of the state"; and

- 1.7 The Legislature further finds, in RCW 90.46.005, that “use of reclaimed water constitutes the development of new basic water supplies needed for future generations”; and
- 1.8 The LOTT Alliance will be issued State Reclaimed Water Permits by the State of Washington pursuant to RCW 90.46.030 and RCW 90.46.040, which will authorize it to produce Class A reclaimed water; and
- 1.9 The LOTT Partners operate municipal water utilities (“Water Utilities”) that supply water that is ultimately discharged to the LOTT Alliance system and that will be reclaimed and made available for beneficial use in the public interest; and
- 1.10 This General Agreement will effectuate the purposes of the Reclaimed Water Act, Ch. 90.46 RCW, implement the Water Reclamation and Reuse Standards (“Standards”) developed by the Washington State Departments of Health and Ecology pursuant to the Reclaimed Water Act, and implement State Reclaimed Water Permits issued to the LOTT Alliance by enabling the LOTT Partners to replace the use of potable water for non-potable applications; and
- 1.11 The LOTT Alliance and the LOTT Partners will coordinate on water supply planning as required by the Reclaimed Water Act (RCW 90.46.120); and
- 1.12 The LOTT Alliance has conducted extensive environmental review under the State Environmental Policy Act of the reclaimed water project including issuance of a Wastewater Resource Management Plan Final Programmatic Environmental Impact Statement dated December 1996, a Final Supplemental Environmental Impact Statement dated November 1998, a Budd Inlet Resource Management Basin Implementation Project Addendum dated February 2001, a Hawks Prairie Reclaimed Water Project Final Supplemental Environmental Impact Statement dated June 2001, and a Hawks Prairie Reclaimed Water Project Addendum dated January 2002; and
- 1.13 The LOTT Partners recognize the LOTT Alliance, as the permittee, has responsibilities for ensuring that reclaimed water treatment, water quality, monitoring, reporting, recordkeeping, uses and use locations meet the terms and conditions of the State Reclaimed Water Permits; and
- 1.14 The LOTT Alliance and the LOTT Partners have determined that it is in the public interest to enter into a general agreement to establish policies and provide a framework for implementing distribution and use of reclaimed water and conserving the LOTT Partners’ potable water supplies; and
- 1.15 Pursuant to Chapter 39.34 RCW, the Parties are authorized to jointly exercise the powers, privileges, and authority described herein. The Parties agree that they intend to act jointly to accomplish the purposes of this General Agreement. No separate legal entity is created by this General Agreement. The LOTT Wastewater Alliance will serve as administrative lead.

## 2. DEFINITIONS

- 2.1 “Class A Reclaimed Water” means reclaimed water that meets State Class A criteria established in the Standards, as they may be amended from time to time. “Reclaimed water” has the same meaning as provided in RCW 90.46.010(4) of the Reclaimed Water Act, as it may be amended from time to time.
- 2.2 “Delivery Point” means the physical location(s) designated in a Supply Agreement where the LOTT Alliance conveys reclaimed water to a LOTT Partner. The term includes any points of withdrawal or diversion identified in the future by the Parties to recover reclaimed water stored underground and/or conveyed along a surface water body.
- 2.3 “End User” means a person or entity that puts reclaimed water to one or more End Uses. End Users may include the LOTT Alliance, a LOTT Partner that uses reclaimed water, or a person or entity that receives reclaimed water from a LOTT Partner.
- 2.4 “End User Agreement” means an agreement between a LOTT Partner and an End User concerning terms and conditions of reclaimed water supply and use.
- 2.5 “End Uses” means the beneficial uses for which reclaimed water may be used consistent with State Reclaimed Water Permits and the Standards including, but not limited to, commercial and industrial uses, irrigation, groundwater recharge, stream flow augmentation, and other environmental enhancement or restoration.
- 2.6 “Increment” means each new volume of reclaimed water treatment capacity to be designed and built by LOTT, and includes initial development of each new Class A Reclaimed Water facility or each addition of new reclaimed water capacity to a previously built facility.
- 2.7 “In-Ground Stored Water” means reclaimed water stored underground by recharge, surface percolation, or otherwise that is intended for recovery and beneficial use.
- 2.8 “Reclaimed Water Distribution Agreement” means an agreement among the Parties that distributes available reclaimed water among the LOTT Partners consistent with the Reclaimed Water Distribution Methodology attached hereto as Exhibit A.
- 2.9 “State Reclaimed Water Permit” means the reclaimed water use permit authority issued by the State.
- 2.10 “Standards” means the Water Reclamation and Reuse Standards (Publication #97-23, September 1997) issued by the Washington State Departments of Health and Ecology, as may be amended or reissued, pursuant to the Reclaimed Water Act, Chapter 90.46 RCW.

- 2.11 "Supply Agreement" means an agreement between the LOTT Alliance and a LOTT Partner that provides for the LOTT Alliance to supply the Partner with reclaimed water from a LOTT Alliance reclaimed water production facility under terms and conditions consistent with this General Agreement.

### 3. REGIONAL RECLAIMED WATER POLICIES

- 3.1 LOTT's Permits, Responsibility and Rights. The LOTT Alliance holds the NPDES permit for the regional wastewater treatment and discharge system, and the LOTT Alliance produces and supplies reclaimed water under State Reclaimed Water Permits. The Parties agree that the LOTT Alliance's primary responsibility is to provide adequate and reliable wastewater treatment and discharge services and system capacity, consistent with the terms of the NPDES permit and State Reclaimed Water Permits. In implementing this General Agreement, the Parties agree that compliance with LOTT's NPDES permit and State Reclaimed Water Permits takes precedence over supply and beneficial use. To the extent feasible, LOTT will specify in Supply Agreements the nature of the rights it reserves to itself for the purpose of compliance with its NPDES permit and State Reclaimed Water Permits.
- 3.2 Beneficial Use Goal. Subject to NPDES permit, State Reclaimed Water Permits and regulatory compliance, the Parties agree that the overriding policy goal of this General Agreement is beneficial use of reclaimed water, including conservation of potable water supplies, recharge of aquifers and other environmental enhancements. Accordingly, use of reclaimed water takes precedence over generation of revenue. The LOTT Partners receiving reclaimed water will demonstrate a good faith commitment to use the water and facilitate distribution of the water in the best interests of their communities.
- 3.3 Region-Wide Accessibility Goal. Consistent with the Wastewater Resource Management Plan and subsequent LOTT Capital Improvement Programs, the Parties reaffirm their intent to make reclaimed water available and accessible to all of the LOTT Partners for beneficial use. This may be accomplished:
- (a) Through construction of initial Increments of reclaimed water treatment capacity at three geographically dispersed reclaimed water satellites (Hawks Prairie, Chambers Prairie and Airport/West) and a reclaimed water facility at the Budd Inlet Treatment Plant prior to construction of a second Increment at any one facility, and/or
  - (b) Other modes or methods that provide each Partner access, consistent with the access they would have received if the three satellites were built before any second Increment is added, and/or
  - (c) An exchange of alternative benefits among the LOTT Partners, including but not limited to financial benefits or substitute water supplies, in place of reclaimed water access.

Prior to authorizing the construction of each Increment, the LOTT Board of Directors shall consider treatment capacity needs, conveyance capacity needs, timing considerations, cost-benefit, availability of committed or clearly identified uses for the water, impact on future facility requirements, alternative methods for achieving region-wide access, and other policy considerations.

- 3.4 **Intent to Preserve Exclusive Rights.** For any reclaimed water that is not immediately taken at a Delivery Point by a LOTT Partner, the Parties intend to preserve and maintain the LOTT Alliance's exclusive rights to that reclaimed water as a future water resource and for the benefit of the LOTT Partners. Among other steps, the Parties intend to pursue programs or projects that result in In-Ground Stored Water. The Parties intend for the LOTT Alliance to maintain rights to In-Ground Stored Water until it is taken by a LOTT Partner at a Delivery Point.
- 3.5 **Supply Roles and Responsibilities.** Except for use of reclaimed water by the LOTT Alliance, the Parties intend for the LOTT Partners to serve as the suppliers and to regulate the delivery and use of reclaimed water to and by End Users. Other than reserving water needed for its own use and distribution of water to the LOTT Partners for their own use, the LOTT Alliance will not serve as a retail supplier of reclaimed water to any End Users. The Parties intend for the LOTT Partners to adopt reclaimed water ordinances, as described in section 5a of this General Agreement, to govern the supply of reclaimed water to End Users.
- 3.6 **Distribution Responsibility and Flexibility.** The Parties intend for the LOTT Partners receiving reclaimed water supply to take the lead roles in developing distribution programs and facilities and, in doing so, to assume responsibility for meeting the terms and conditions of LOTT's State Reclaimed Water Permits as they apply to distribution and End Use of the water. The Parties recognize that specific End Uses or patterns of End Uses may vary among the LOTT Partners.
- 3.7 **LOTT Partners as End Users.** The Parties further intend that the LOTT Partners may also use reclaimed water for their own purposes, consistent with the End Uses and End User requirements of the Standards and LOTT's State Reclaimed Water Permits.
- 3.8 **Involvement with End Users.** The Parties intend for the LOTT Alliance to become involved with the LOTT Partners' End User customers only to provide technical or other assistance at the request of a LOTT Partner or as a last resort to ensure permit compliance.

#### **4. SUPPLY OF RECLAIMED WATER**

- 4.1 **Supply Agreements.** For each reclaimed water production facility built by the LOTT Alliance, the Parties intend for the LOTT Alliance to enter a Supply Agreement with each participating LOTT Partner regarding reclaimed water produced at that facility. Supply Agreements will contain provisions that further common policy and regional accessibility goals (set forth in sections 3.2 and 3.3



of this General Agreement), and enable provision of reclaimed water service to customers across jurisdictional boundaries on generally consistent terms and conditions.

- 4.2 Reclaimed Water Distribution Methodology. The Parties agree that the primary responsibility for water supply planning and distributing available reclaimed water to End Users rests with the LOTT Partners. Accordingly, the LOTT Partners will jointly negotiate the distribution of reclaimed water available from each LOTT Alliance facility, as prescribed in the Reclaimed Water Distribution Methodology attached hereto as Exhibit A and incorporated herein by reference. The Parties shall execute binding Reclaimed Water Distribution Agreements documenting negotiated distributions or be bound by the fallback distribution percentages as prescribed in Exhibit A.
- 4.3 LOTT Uses. With respect to beneficial use and supply of reclaimed water, the Parties agree that use by the LOTT Alliance has priority over supply of reclaimed water to the LOTT Partners in event of limited supply, subject to the specific provisions of a Supply Agreement concerning quantities of water for LOTT's use and for distribution or use by LOTT Partners.
- 4.4 LOTT Partner Supplies. The LOTT Alliance will agree to provide Class A Reclaimed Water to one or more LOTT Partner(s) under terms and conditions specified in Supply Agreements, subject to terms and conditions that ensure full and continuous compliance with the LOTT Alliance's NPDES permit and State Reclaimed Water Permits, the Standards, and other applicable law.
- 4.5 Supply Responsibilities. A Supply Agreement shall specify responsibilities for the reclaimed water production and distribution according to the following general principles.
  - (a) LOTT Alliance Responsibilities. The LOTT Alliance shall maintain control over, and be responsible for, all facilities and activities relating to the production of reclaimed water to ensure that reclaimed water facilities operate as approved by the Washington Departments of Health and Ecology. The LOTT Alliance's responsibility for distribution of the reclaimed water, as to its quality (except as noted in subsection 4.5(b) below), disposition, or otherwise, ends at the Delivery Point(s).
  - (b) LOTT Partner Responsibilities. Each LOTT Partner's responsibility for distribution of the reclaimed water, as to its quality (to the extent altered while under direct control of the LOTT Partner), disposition, or otherwise, begins at the Delivery Point(s). The LOTT Partners shall maintain control over, and be responsible for, all facilities and activities relating to the distribution of the reclaimed water to End Users.
- 4.6 Terms of Distribution. A Supply Agreement will provide for the terms of use and distribution of the reclaimed water by the LOTT Partners. A Supply Agreement will also provide for the LOTT Alliance to supply and a LOTT Partner to purchase

reclaimed water from a LOTT facility. The price shall be \$1.00 per year for each Supply Agreement each LOTT Partner enters, until changed by amendment to this General Agreement.

- 4.7 Construction and Funding Responsibilities. For a particular reclaimed water facility or project, the LOTT Alliance will construct and fund LOTT Alliance facilities and the LOTT Partners will construct and fund their respective facilities. This agreement shall not preclude future negotiations or considerations among the Parties with regard to funding or construction responsibilities for distribution of reclaimed water.

## 5. RESALE TO END USERS

Pursuant to a Supply Agreement, the Parties agree that a LOTT Partner utility may resell reclaimed water purchased from the LOTT Alliance to any of its End User customers under the following additional conditions.

- (a) Reclaimed Water Ordinance. The City Council or Board of Commissioners of the LOTT Partner has adopted a reclaimed water ordinance providing for reclaimed water service to End Users, the lawful use of reclaimed water, and enforcement authority through service termination, penalties, and other appropriate means. This ordinance shall not include any provision in conflict with requirements in the LOTT NPDES or State Reclaimed Water Permits.
- (b) End User Agreement. The End User has signed a binding reclaimed water End User Agreement with the LOTT Partner utility. The Parties intend for the LOTT Partners' End User Agreements to be materially identical as to consistency with this General Agreement and the Supply Agreements and as to permit and regulatory compliance, and the form of the End User Agreement will be attached to the reclaimed water Supply Agreement between the LOTT Alliance and the LOTT Partner. The binding reclaimed water service agreement shall set forth terms and conditions including legal rights and responsibilities; regulatory compliance provisions required by the Washington State Departments of Health or Ecology; provisions enabling enforcement action as necessary to ensure regulatory compliance; and other necessary or appropriate terms and conditions.

## 6. DESIGNATED REPRESENTATIVE AND NOTICES

To facilitate communication among the Parties and cooperative implementation of this Agreement, each Party shall name a designated representative to receive all notices under this Agreement. The initial designated representatives are as follows:

LOTT Alliance: \_\_\_\_\_

City of Lacey: \_\_\_\_\_

City of Olympia: \_\_\_\_\_

City of Tumwater: \_\_\_\_\_

Thurston County: \_\_\_\_\_

A Party's designated representative or place of business may be changed with advance notice to the other Parties. Notices required under this General Agreement shall be deemed given when served on the Parties' designated representatives.

**7. SHARING OF INFORMATION**

The Parties agree, to the fullest extent permitted by law, to exchange information about all aspects of reclaimed water programs and projects including but not limited to operations, maintenance, customer comments, metering data, water quality analyses, and regulatory compliance.

**8. POLICY COORDINATION**

The Parties recognize an ongoing need to cooperatively address reclaimed water policy, and distribution and use issues on a regional basis. The LOTT Technical Sub-Committee (TSC) will be responsible for assuring that issues are addressed on a timely and coordinated basis. To accomplish that goal, the TSC may choose to appoint a sub-committee to address reclaimed water matters and make recommendations for TSC consideration. As needed, the TSC will propose policies, agreements, and/or other actions to referral to the LOTT Board of Directors. For policy recommendations that affect all the Parties, the LOTT Board of Directors may make recommendations to the LOTT Partner jurisdictions. The LOTT Alliance shall have the responsibility of coordinating the Committee's activities.

**9. DISPUTE RESOLUTION**

Each Party shall negotiate in good faith and use its best efforts to resolve any dispute which may arise. If a dispute cannot be resolved initially by the designated representatives, the designated representatives shall prepare a joint statement describing the dispute and refer the dispute to the Technical Subcommittee that advises the LOTT Alliance Board of Directors. If the dispute is not resolved after consultation with the Technical Subcommittee, then the designated representatives shall refer the dispute to the LOTT Executive Director, the City Managers, and the County Chief Administrative Officer. These officials shall meet and confer regarding the issue. If they are unable to resolve the dispute, then the designated representatives shall bring the matter before the LOTT Alliance Board. At a Board meeting, the LOTT Alliance Board

shall consider the issues and attempt to resolve the dispute. Only upon failure to resolve the dispute through such negotiations may a Party institute legal action.

## **10. INDEMNIFICATION**

To the maximum extent permitted by law, each Party shall protect, defend, indemnify and hold harmless each other Party and their officials and employees from and against all claims, demands, suits, actions, costs, damages, liability or loss of any kind whatsoever arising from the acts or omissions of the indemnifying Party and its officials, employees, agents and contractors. The indemnifying Party specifically assumes the defense of actions brought by its own employees against the other Parties and for that purpose the indemnifying Party specifically waives, insofar as it defends another party, any immunity under the Worker's Compensation Act, RCW Title 51. The indemnifying Party recognizes that this waiver was the subject of mutual negotiation and is expressly entered into pursuant to the provisions of RCW 4.24.115, if applicable. In the case of joint negligence, any damages allowed shall be levied in proportion to the percentage of negligence attributed to each Party. This indemnification shall survive the termination of this General Agreement.

## **11. TERM OF AGREEMENT & WITHDRAWAL**

This General Agreement shall become effective on the first date when all of the following events have occurred: i) it has been duly executed by all of the Parties; ii) it has been filed with the Thurston County Auditor pursuant to RCW 39.34.040; and iii) it has been approved by the State Departments of Health and Ecology pursuant to RCW 39.34.050. The term of this General Agreement shall commence on the effective date and remain in effect until terminated by action of the Parties. The LOTT Alliance may not withdraw from this General Agreement. A LOTT Partner may withdraw from this General Agreement after giving 180 days written notice to the other Parties. A LOTT Partner may not withdraw from this General Agreement without also withdrawing from (or other termination of) any Supply Agreements then in effect to which that Partner is a party. Prior to withdrawal, the withdrawing LOTT Partner shall fulfill all financial commitments made under this General Agreement and any Supply Agreement, except as agreed by the Parties. When a LOTT Partner withdraws from this General Agreement, the remaining Parties will promptly meet and negotiate the disposition of the withdrawing LOTT Partner's share under the reclaimed water distribution methodology (Exhibit A).

## **12. MISCELLANEOUS**

12.1 This General Agreement shall be governed by the laws of the State of Washington. The exclusive jurisdiction and venue for any lawsuit between the Partners arising out of this General Agreement shall be in Thurston County Superior Court.

- 12.2 The Parties expressly do not intend to create any right, obligation, or liability, or promise any performance, to any third party. The Parties have not created any right for any third party to enforce this General Agreement.
- 12.3 It is the belief of the Parties that all provisions of this General Agreement are lawful. If any covenant or provision of this General Agreement shall be finally adjudicated by a court of competent jurisdiction to be invalid or unenforceable, such adjudication shall not affect the validity, obligation or performance of any other covenant or provision, or part thereof, which in itself is valid if such remainder conforms to the terms and requirements of applicable law and the intent of this General Agreement. In such event, the Parties shall enter into immediate negotiations for the purpose of arriving at a mutually satisfactory replacement of such covenant or provision, or renegotiation of the terms of the General Agreement.
- 12.4 Waiver of any breach of any provision of this General Agreement shall not be deemed to be a waiver of any prior or subsequent breach, and shall not be construed to be a modification of this General Agreement.
- 12.5 This General Agreement shall be binding on a Party's assigns and successors. A Party may not assign its rights or delegate its duties under this General Agreement in any respect without the written consent of the other Parties.
- 12.6 This General Agreement embodies the Parties' entire agreement on the issues covered by it, except as supplemented or modified by subsequent written agreements signed by all of the Parties. All prior negotiations and draft written agreements are merged into and superseded by this General Agreement.

IN WITNESS WHEREOF, each Party has caused this General Agreement to be signed by its duly authorized officer or representative as of the date set forth below its signature.

**LOTT Wastewater Alliance:**

By \_\_\_\_\_

Its  
\_\_\_\_\_

Date: \_\_\_\_\_

-

Approved as to form:

By \_\_\_\_\_

**City of Lacey:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

**City of Tumwater:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

**City of Olympia:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

**Thurston County:**

By \_\_\_\_\_

Its: \_\_\_\_\_

Date: \_\_\_\_\_

Approved as to form:

By \_\_\_\_\_

**Exhibit A**  
**General Interlocal Agreement**  
**Between the LOTT Wastewater Alliance,**  
**Thurston County and the Cities of Lacey, Olympia and Tumwater**  
**For Distribution and Use of Reclaimed Water**  
**Reclaimed Water Distribution Methodology**

Introduction

The LOTT Partners contribute wastewater flows to the LOTT system. Each of the three cities operates a water utility for supply and distribution of potable water. Portions of that water, in the form of wastewater, reach LOTT joint facilities and are treated at LOTT facilities. Although Thurston County currently does not operate a water utility providing water that reaches the LOTT system, this distribution process recognizes that such relationship could exist in the future. Each of the Partners is interested in using Class A reclaimed water produced by the LOTT Alliance. This exhibit describes the mechanism by which each of the Partners can be assured a proportional share of the reclaimed water resource to be produced by LOTT.

Distribution and use of reclaimed water will require substantial investments in planning and infrastructure on the part of the LOTT Partners and their End Use customers. In order for the Partners and their customers to plan for future water supply and service, and justify the necessary financial and infrastructure commitments, they need reasonable certainty of some known volume of supply and an estimated point in time when that supply will be available. To provide that reasonable level of certainty, the projected volume of reclaimed water to be produced and the distribution of that volume among the Partners needs to be determined several years in advance. This Distribution Methodology is also designed to meet this need.

Planned Facilities

The distribution methodology that follows applies to all of LOTT's reclaimed water facilities. Through 2025, LOTT is planning construction of seven 1.0 mgd Increments of reclaimed water to be produced at four facilities. An eighth Increment is planned for 2026.

<b><i>Reclaimed Water Facilities</i></b>	<b><i>On-line Date</i></b>
Budd Inlet Reclaimed Water Project – First 1.0 mgd	2004
Hawks Prairie Reclaimed Water Satellite – First 1.0 mgd	2006
Airport/West Reclaimed Water Satellite – First 1.0 mgd	2014
Chambers Prairie Reclaimed Water Satellite – First 1.0 mgd	2016
Hawks Prairie Reclaimed Water Satellite – Second 1.0 mgd	2019
Hawks Prairie Reclaimed Water Satellite – Third 1.0 mgd	2021
Airport/West Satellite – Second 1.0 mgd	2024
Chambers Prairie Reclaimed Water Satellite – Second 1.0 mgd	2026

Source: LOTT Wastewater Alliance, 2003 Capital Improvement Program

This schedule may change with annual Capital Improvement Program updates.

The availability of “committed or clearly identified users” in a given area is a criterion that influences LOTT’s decision about which Increments will be built when (see LOTT’s Wastewater Resource Management Plan, Table 6-2). Thus, it is incumbent upon the Partners to provide such information to LOTT in conjunction with annual Flow and Capacity Report updates.

#### Distribution Proportions

TRPC population and employment projections will be used to establish a long-term, bottom-line proportional share of reclaimed water to which each Partner will have access. That distribution will be based on each Partner’s long-term projected contribution to the LOTT system. The ultimate percentage allotments will be based on TRPC’s 2025 population and employment forecasts converted into equivalent residential units (ERUs) for LOTT planning purposes. This approach is consistent with other long-range water and sewer planning data used by LOTT and the LOTT Partners.

Based on the most recent 2025 planning forecasts, the corresponding reclaimed water distribution for each of the LOTT Partners is:

Lacey	40.4%
Olympia	44.3%
Tumwater	15.3%
Thurston County	0.0%

The above distributions are the recommended targets to be achieved at the end of 2025. The percentages also provide a “fallback” distribution for each added Increment of capacity in the event negotiations between the Partners are not successful.

The Parties recognize that the TRPC population and employment forecasts and related wastewater flow projections are planning estimates only and will change over time. For that reason, the fallback percentages will be revisited and, if necessary, readjusted every 6 years starting in 2010. This time period is consistent with other LOTT and LOTT Partner capital facility and utility system planning time periods. Such adjustments will not affect distribution agreements already in effect.

#### Distribution Negotiations

Specific distributions of any Increment of capacity, different than the fallback distributions, will be negotiated among the Partners by the members of the LOTT Technical Sub-Committee or other LOTT Partner designees.

Distribution of the first Increments of reclaimed water from all four planned facilities will be negotiated as a block. For this purpose, the term “first Increments” means the first 1.0 million gallons per day to be developed at each of the four planned LOTT reclaimed water facilities. Each additional new Increment (second, third, fourth or fifth) at any facility will be negotiated separately. For all planned Increments, the fallback distribution percentages will be used as a starting point for negotiations. Table 1 attached displays sample distributions based on the fallback percentages.



To start the negotiation process, the Technical Sub-Committee members or other LOTT Partner designees will meet to express their interest in using some specific portion of the first 1.0 mgd Increments of reclaimed water from each of the LOTT satellite facilities. The Partners will negotiate the amount of reclaimed water that will be made available to each Partner from these initial Increments. If the negotiators cannot agree on a distribution, the fallback distribution will be used. The fallback distribution will be binding until all parties agree on a different distribution.

Because of geographic access limitations, it is likely that not all of the LOTT Partners will have interest in shares of reclaimed water from each of the plants. If one or two Partners decline to claim all or part of their share for a specific Increment at a facility, they may elect, during negotiations, to postpone their share and use it at a satellite closer in proximity to potential customers or uses.

**EXAMPLE:**

Assume Tumwater has no interest in receiving water from Increment #1 of the Hawks Prairie plant. In such case, Tumwater may choose to trade its portion for a share of Lacey and/or Olympia's allotment(s) in the Airport/West plant. Tumwater might make specific trades with the other Partners, or allow Lacey and Olympia to negotiate how to divide Tumwater's portion of the Hawks Prairie Increment. If Lacey and Olympia could not negotiate an agreement, then their fallback proportions would be used to determine how much is distributed to each.

The goal is to have distributions for each Partner match or nearly match its apportioned share at the end of the 2025 planning horizon – unless all parties have agreed to deviate from this schedule as reflected in one or more Distribution Agreements.

Interim Uses

Because planning, funding limitations and/or infrastructure requirements may delay a Partner's ability to put some or all of its reclaimed water to use, that available water may be temporarily used by another Partner(s) until it's actually needed. Such interim use may be negotiated among the affected Partners.

Distribution Volumes

The volume of reclaimed water available for distribution from each new satellite Increment will be determined by LOTT. LOTT will first identify how much water it expects to produce and the amount it needs to reserve for its own uses. The remaining volume will be available for distribution. Initial volume estimates (in gallons per day) will be made prior to negotiation of the first Increments. Volume estimates will be refined at the time an Increment of capacity moves to the construction stage.

Similarly, the volume of water available for distribution from the Budd Inlet Treatment Plant will be determined by LOTT after reserving the amount needed for its own uses. Because distribution capability from the Budd Inlet Plant may be more limited than at the satellites, due to its downhill location and heavily built environment, the available volume will be evaluated in terms of distribution feasibility. Through an engineering implementation analysis, Olympia will define a quantity of water that can be reasonably distributed and used from the Budd Inlet Plant.

That amount, which may be lower than the available volume, will be used in the distribution template (described below) as the "available flow" amount. Olympia will agree to accept that revised volume at 100 percent as part of its negotiated distribution, unless another Partner wishes to negotiate for a portion of that water. As uses are established over time, this volume may be adjusted upward until it equals the full volume LOTT has determined is actually available. Until such time as the implementation analysis is complete, the available volume as determined by LOTT shall serve as the negotiation volume.

#### Distribution Template

To track progress toward this bottom-line distribution, a computer template will be developed, producing spreadsheets similar to Table 1 attached. The template will be used to track distributions in gallons and percentages across the Increments, providing a continuous profile of the ultimate target distributions and facility-specific commitments to date. Adjustments to the template will be made as LOTT's variables change. These are likely to include timing and sequencing of capacity Increments, and estimated water volumes LOTT will reserve for its own use. The distribution template will be maintained by LOTT as part of its annual Flow and Capacity Report.

#### Agreements and Approvals

Upon completion of negotiations, the negotiated distributions will be incorporated into a proposed Distribution Agreement, which will be referred to the LOTT Alliance Board for review. The LOTT Board will refer the proposed Distribution Agreement to the LOTT Partner jurisdictions for approval. LOTT Board adoption will follow Partner jurisdiction approvals. That agreement will include a brief introduction citing the negotiations conducted, a spreadsheet documenting the agreed-upon distribution and signature blocks for all the Parties. Each of the LOTT Partners shall determine who within its organization has authority to commit to the negotiated distribution.

The most recent agreed-upon distribution for the first Increment of water to be built at each facility will also be embodied in the Reclaimed Water Supply Agreement for that facility as it is developed. Reclaimed Water Distribution Agreements will be appended to the Supply Agreements for facilities included in the distributions.

#### Timetable

Negotiations for distribution of the "first Increments" block will be initiated within 30 days after approval of the General Agreement by all Parties. If negotiations do not result in a fully executed Distribution Agreement within 180 days, the fallback distribution will be assumed.

The Supply Agreement for the Budd Inlet Reclaimed Water Facility will be initiated within 30 days after all Parties have approved the Reclaimed Water Distribution Agreement for the first Increments block or the fallback distribution has been assumed. Supply Agreements for the Hawks Prairie, Chambers Prairie and Airport/West Satellites will be initiated when the LOTT Board of Directors directs that financing be authorized for construction of those satellites.

To facilitate advance planning for future Increments to be added at each facility, the Partners will negotiate planning level distributions six years in advance of availability, recognizing that LOTT's timing and Increment sequencing is subject to change. Advance planning will be based on the most recent LOTT Flow and Capacity Report. The negotiated distributions will be incorporated into a Distribution Agreement.

#### Renegotiation Opportunities

The Parties recognize that needs and circumstances may change as they gain actual experience with distribution and use of reclaimed water. Accordingly, flexibility to adjust distributions is needed. Renegotiations of the reclaimed water distributions for any Increment can occur at any time if all of the participating Partners agree.

Flexibility in adjusting to realities of reclaimed water distribution may also result in desires to exchange other benefits as substitutes for reclaimed water. Accordingly, the Parties agree that they may exchange alternative benefits, including but not limited to financial benefits or substitute water supplies, in place of reclaimed water distributions. Alternative benefits may be considered as distributions are negotiated or renegotiated.

**Table 1. Fallback Distributions**

Facility	Year On-Line	Avail. Flow (1000 gpd)	Lacey		Olympia		Tumwater	
			Percent	(1000 gpd)	Percent	(1000 gpd)	Percent	(1000 gpd)
Budd Inlet	2004	750	40.4	303	44.3	332	15.3	115
Hawks								
Prairie	2006	750	40.4	303	44.3	332	15.3	115
Airport/West	2014	750	40.4	303	44.3	332	15.3	115
Chambers								
Pr	2016	750	40.4	303	44.3	332	15.3	115
<b>Increment 1 Subtotals</b>		3000		1212		1329		459
Hawks								
Prairie	2019	1000	40.4	404	44.3	443	15.3	153
Airport/West	2024	1000	40.4	404	44.3	443	15.3	153
Chambers								
Pr	2026	1000	40.4	404	44.3	443	15.3	153
<b>Increment 2 Subtotals</b>		3000		1212		1329		459
Hawks								
Prairie	2021	1000	40.4	404	44.3	443	15.3	153
Airport/West		0		0		0		0
Chambers								
Pr		0		0		0		0
<b>Increment 3 Subtotals</b>		1000		404		443		153
<i>2025 Build-Out Targets at Fallback Percentages</i>		7000		2828		3101		1071
		100%		40.4%		44.3%		15.3%
Hawks								
Prairie		0		0		0		0
Airport/West		0		0		0		0
Chambers								
Pr		0		0		0		0
<b>Increment 4 Subtotals</b>		0		0		0		0
Hawks								
Prairie		0		0		0		0

Airport/West	0	0	0	0
Chambers				
Pr	0	0	0	0
<b>Increment 5</b>				
<b>Subtotals</b>	0	0	0	0

Revised 11/07/02

**NOTES:**

Year on-line is from the LOTT 2003 Capital Improvement Program

Available flow: Flow for the Budd Inlet facility is based on 1.0 mgd production less estimated use by the Treatment Plant; amount will be adjusted based on an engineering implementation analysis.  
Flow for the Satellites is based on 1.0 mgd production per increment, less estimated reserve of 250,000 gals. from the first increment at each facility for maintenance of wetland plants.

Percentage allocations by jurisdiction are based on the TRPC population and employment forecasts for the year 2025 as converted into estimated wastewater flows in ERUs (equivalent residential units)

**WHAT THIS SCENARIO SHOWS:**

This table shows how the water would be distributed based on the fallback percentages. This scenario could not be feasibly implemented due to geographic limitations.

