Attachment 2

SANTA ROSA WATER

Water and Wastewater Rate Study

Final Report

September 9, 2015

THE REED GROUP, INC.

Table of Contents

SECTION I – EXECUTIVE SUMMARY 1

Introduction and Background 1
Financial Plans and Water and Wastewater Revenue Needs 2
Proposed Water Rates 5
Proposed Wastewater Rates 7
Customer Bill Impacts of Proposed Water and Wastewater Rates 8

SECTION II – WATER AND WASTEWATER FINANCIAL PLANS 11

Fund Structure and Cash Flows 11
Financial Plan Assumptions 14
Water Utility Financial Plan Summary 19
Wastewater Utility Financial Plan Summary 22
Subregional System Financial Plan Summary 25

SECTION III – WATER RATES 30

Rate Setting Objectives 30
Current Water Rates 31
Customer Account Data and Water Use Estimates 32
Water Rate Calculations 34
Proposed Water Rate Schedule 42
Automatic Adjustments to Water Usage Rates for Changes in SCWA Costs 43
Low Income Assistance Programs 45

SECTION IV – WASTEWATER RATES 47

Current Watewater Rates 47
Customer Account Data and Wastewater Flow and Loading Estimates 49
Wastewater Rate Calculations 52
Proposed Wastewater Rate Schedule 59

SECTION I – EXECUTIVE SUMMARY

INTRODUCTION AND BACKGROUND

In 2014, Santa Rosa Water retained The Reed Group, Inc. to prepare a *Water and Wastewater Rate Study*. The Reed Group, Inc. has assisted Santa Rosa Water on a variety of utility rate, cost of service, demand fee, and related issues for more than fifteen years, and was chosen to conduct this study through a competitive Request for Proposals process.

The water and wastewater rate study included developing ten-year financial plans for the water and wastewater utilities. The financial plans provide a ten-year financial analysis of the utilities' operation and maintenance costs, debt service obligations, and capital program needs, and are used to identify the annual water and wastewater rate revenue requirements for rate-setting purposes. The financial plan models provide an opportunity to assess the potential implications of future operating and maintenance costs, capital improvement program needs, current and future debt obligations, changing customer demands, and other variables.

The water and wastewater rate study provides the cost of service analyses and design of user rates intended to meet Santa Rosa Water's service and financial obligations for the next five years. Water and wastewater rates have been developed consistent with requirements of California Constitution Article XIIID and related court decisions. In particular, the recent decision from the Fourth District Court of Appeal in *Capistrano Taxpayer Association v. City of San Juan Capistrano* (SJC decision) has been considered in the development of rate recommendations. In addition, the water and wastewater rate study was conducted with input from Santa Rosa Water staff and the Board of Public Utilities (BPU) Budget Subcommittee.

Santa Rosa Water generally adjusts water and wastewater rates annually to meet the financial and service needs of the utilities. While each rate adjustment has been supported and justified by required analyses, a comprehensive outside review of water and wastewater rates has not been performed in over fifteen years. Santa Rosa Water's financial policies, budgeting practices, and operational efficiencies have served the community well. Even though the City is in a second year of water shortage, and the State has imposed mandatory water use restrictions, Santa Rosa Water's financial health is such that ***general water and wastewater rate increases are not needed for the current fiscal year***. This makes it an ***ideal time to institute the rate structure changes***, as summarized in this Executive Summary more fully described in the body of this report.

Santa Rosa Water's financial policies, as well as available reserves, help protect the utilities, and customers, from financial risk and catastrophic events, including the risk of continuing drought. Beyond the current fiscal year, modest annual rate adjustments are warranted. ***A five-year rate plan is proposed.*** While Santa Rosa Water has historically adopted two-year rate plans, the ten-year financial plan used in this study, as well as the sound financial health of the utilities, provide the right conditions to adopt rate adjustments for a longer period of time. The five-year period provides customers with greater certainty on the level of rates in the future, provides Santa Rosa Water staff with similar confidence, and reduces the time and costs associated with more frequent rate setting processes.

FINANCIAL PLANS AND WATER AND WASTEWATER REVENUE NEEDS

Santa Rosa Water staff has utilized a five-year financial planning model for planning purposes for many years. This rate study included the development of a ten-year financial model. Using a longer planning horizon can enable greater confidence in making near-term decisions, improve rate certainty and stability over time, and reduce financial risk.

Both of the water and wastewater utilities, as well as the subregional system, are self-supporting independent enterprises of the City. That is, the utilities are expected to generate the revenues (through user charges, demand fees, and other revenues) to cover the ongoing costs of operations, maintenance, administration, regulatory compliance, debt service, capital improvements, and maintenance of prudent financial reserves.

Financial planning models reflect Santa Rosa Water's FY 15-16 budget, five-year capital improvement plans, financial reserve policies, contractual debt service obligations, and current fund and reserve balances. The models also reflect certain estimates and assumptions pertaining to future water supply costs, changes in water demands, cost inflation, and other variables. At present, both the water and wastewater utilities are experiencing reduced water and wastewater rate revenues as a result of reduced water demand stemming for the continuing drought. Nevertheless, the utilities have been able to maintain sound financial health, and are able to use available reserve surpluses to buffer the potential financial impacts associated with water shortage conditions.

In 2014, Santa Rosa Water restructured a portion of its long-term debt to take advantage of conditions in the financial markets. Additional debt to provide funding for planned capital improvement projects of the subregional system is anticipated in both 2017 and 2022. However, Santa Rosa Water is also taking steps to increase the portion of pay-as-you-go funding of capital projects thereby reducing borrowing costs in the future.

Santa Rosa Water's water rates were last adjusted in July 2015 with an automatic pass-through adjustment to water usage rates (but not fixed service charges) to reflect changes in the cost of water purchases from the Sonoma County Water Agency (SCWA). Wastewater rates were last adjusted in January 2015. Financial plan analyses indicate that increases in water and wastewater rates are not needed in the current fiscal year. However, modest increases will be needed in future years to meet service and financial obligations. **Exhibit I-1** presents proposed overall water and wastewater rate adjustments covering the next five years.

Annually, during the budget process, Santa Rosa Water staff should review the need for each planned water and wastewater rate increase. That annual review should consider operating and maintenance costs, debt service obligations, planned capital improvement needs, the status of financial reserves, and anticipated system demands. Based on this review, staff may determine that the projected revenue needs in a given year are less than those that would be generated by proposed water and/or wastewater rates presented herein. As a result, it would be appropriate to recommend rate adjustments be limited to the cost of service as determined with consideration of all of the preceding financial and service obligations. In effect, if adopted, the rate adjustments from July 2016 through July 2020 would be the maximum rates allowed under the Proposition 218 proceeding.

Exhibit I-1
Santa Rosa Water
Proposed Overall Level of Rate Increases Needed to Meet Water and Wastewater Service and Financial Obligations

	Water Utility			Wastewater (WW) Utility	Change in a Typical Single Family Utility Bill (6)
	Water Usage Rates (3)	Service Charges (4)	All Water Rate Components (5)	All WW Rate Components	
January 2016 (1)			**0%**	**0%**	1.0%
July 2016 (2)	SCWA Adjust.	5%	**2.8%**	**3.0%**	2.9%
July 2017	SCWA Adjust.	5%	**2.8%**	**3.0%**	2.9%
July 2018	SCWA Adjust.	5%	**2.8%**	**3.0%**	2.9%
July 2019	SCWA Adjust.	5%	**2.8%**	**2.5%**	2.6%
July 2020	SCWA Adjust.	5%	**2.8%**	**2.5%**	2.6%

Notes:

(1) Proposed rates for January 2016 are revenue neutral, and not intended to generate additional revenue for the utilities. However, due to recommended rate restructuring some utility bills will increase, while others decrease.

(2) Historically, general rate increases have occurred in January of each year. It is recommended that this be changed to July, to conincide with the SCWA rate adjustment and simplify administrative and customer service processes.

(3) Consistent with practices for the past seven years, water usage rates will be adjusted to reflect changes in SCWA wholesale water costs. SCWA wholesale water rates are anticipated to increase by 5% each year, which would result in water usage rates increasing about 2.2% each year.

(4) Water service charges comprise about 22.5% of water rate revenue under the proposed water rates, therefore adjustments to this portion of the rate structure has a limited impact overall.

(5) The overall water rate adjustments are estimated based on the anticipated 5% SCWA wholesale rate adjustments from July 2016 though July 2020, as well as the annual service charge adjustments.

(6) Typical single family bill includes a 5/8" water meter, 7,000 gallons of monthly water use, and 4,000 gallons of wastewater. The slight increase in January 2016 is due to the proposed rate restructuring.

Recent and continuing water shortage conditions have led to reduced water usage, which has resulted in significant reductions in both water and wastewater revenues. Even if water shortage conditions return to normal in 2016, it may take several years for water demands to rebound and because of permanent changes made during the drought water demand may rebound to ***a new normal***. In addition, the current drought may persist and require water use restrictions to be continued at some level. The current situation is inherently uncertain, and the BPU Budget Subcommittee stressed the need to assess risk by performing sensitivity analyses around potential scenarios. To this end, the water and wastewater financial models have been used to assess various future scenarios, including various water demand scenarios.

Exhibits I-2 and I-3 each illustrate a range of potential water demand scenarios considered in developing 5-year rate plans for the water and wastewater utilities, respectively. The graphs show each utility's financial reserves in relation to target minimum reserves (operating and catastrophic reserves) with the proposed 5-year rate plans, but with varying changes in future water (and wastewater) demand. The scenarios illustrate possibilities ranging from a bigger demand rebound to a more extended or deepening drought. The proposed 5-year rate plans reflect annual adjustments to the water and wastewater rates intended to maintain Santa Rosa Water's ability to meet service and financial obligations over the next five years. However, the uncertainty that is inherent under current and unknown future water supply conditions warrants continued monitoring and vigilance.

Exhibit I-2
Santa Rosa Water
Water Utility Financial Plan - Water Demand Sensitivity Analysis

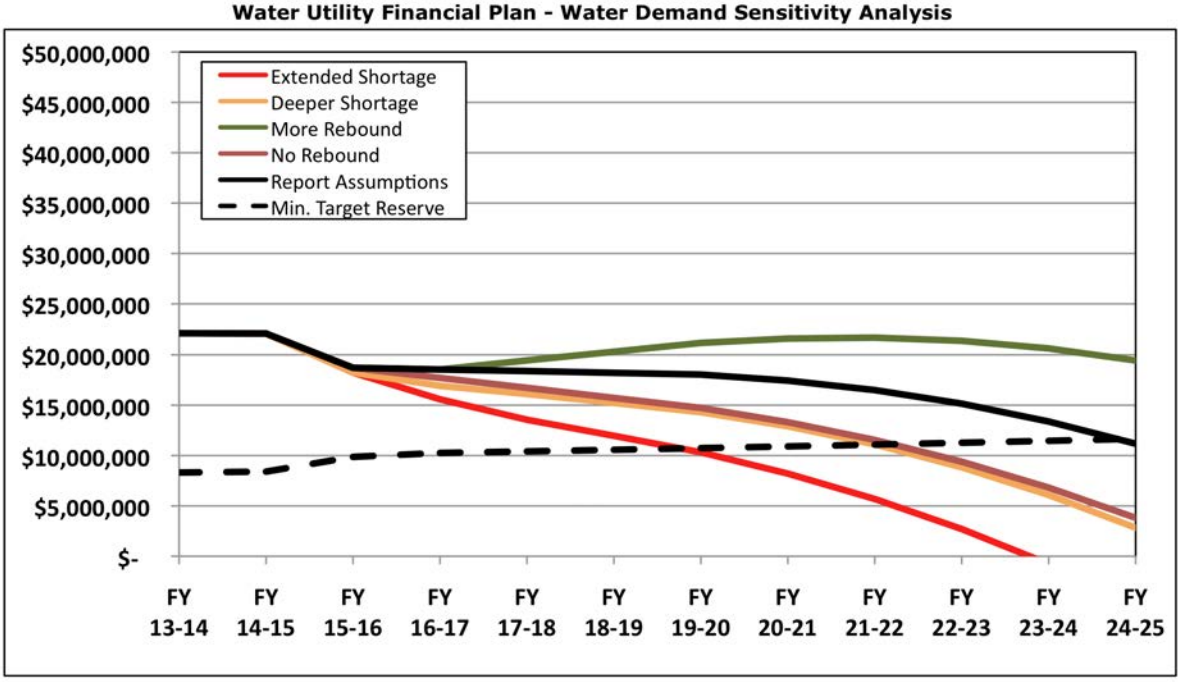
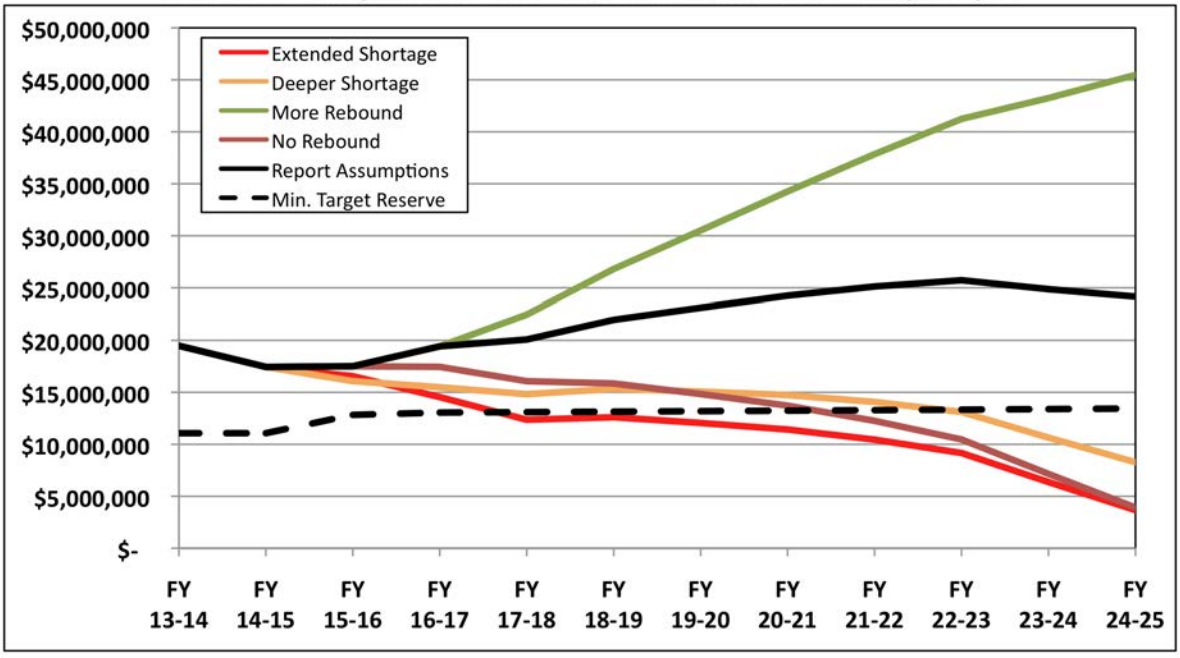


Exhibit I-3
Santa Rosa Water
Wastewater Utility Financial Plan - Wastewater Demand Sensitivity Analysis



Details of financial plan analyses and the recommendation to increase water and wastewater rates over the next five years are presented in **Section II** of this report. Section II also describes a recommendation to increase catastrophic reserves using available surplus reserves, and without increasing water and wastewater rates.

PROPOSED WATER RATES

Exhibit I-4 presents the proposed water rate schedule for January 2016[1]. This rate schedule is revenue neutral with the current water rates; no additional revenue is anticipated. The proposed water rates include rate structure changes and reflect an updated cost of service analysis. The water rate structure has been modified as follows:

- The current 4-tier water usage rate structure for single family homes has been modified and reduced to two tiers. The first tier water allocation is still based on each customer's sewer cap, with all water use above the cap billed at the second tier rate.

Exhibit I-4
Santa Rosa Water
Proposed Water Rate Schedule (1)

			January 2016
Water Usage Rates ($/1,000 gallons)			
Single Family and Duplexes			
Tier 1	Up to Sewer Cap (2)	$	5.25
Tier 2	Over Sewer Cap	$	6.14
Multi-Family, Commercial, Industrial, Institutional			
Uniform	All Water Use	$	5.59
Irrigation			
Tier 1	Up to 125% of Water Budget (3)	$	5.29
Tier 2	Over 125% of Water Budget	$	6.70
Monthly Service Charges			
	5/8" & 3/4" meters	$	10.78
	1" meter	$	24.18
	1 1/2" meter	$	46.51
	2" meter	$	73.31
	3" meter	$	135.83
	4" meter	$	225.16
	6" meter	$	448.46

Notes:
(1) Recycled water customers pay the water usage rates that are 95% of potable water rates (Tier 1 or uniform only, as applicable), and service charges that are 90% of potable water service charges.
(2) The Sewer Cap is calculated for each residential account based on the average water use from complete billing periods within the months of November through March. For accounts with no outdoor usage all water is billed at the Tier 1 rate.
(3) The water budget varies each month and is determined using the site's square footage for the types of plants and the evapotranspiration rate.

[1] Water usage is measured for each billing period, which generally corresponds to a one-month period of time. When the terms month or monthly are used in this report related to water usage or service charges, they pertain to billing periods. Billing periods may straddle adjacent months, and may be from 28 to 35 days, due to logistical considerations for meter reading.

- The current 3-tier water usage rate structure for irrigation accounts has been modified and reduced to two tiers. The first tier water allocation remains based on 125 percent of the water budget for each account, with all water use above this amount billed at the second tier rate.
- Tiered water usage rates for residential and irrigation accounts are each based on costs of providing water and water service within each tier of usage. The rate for the first tier reflects blended water supply costs, including SCWA water, groundwater, and recycled water, as well as other water system costs recovered through usage rates. The rate for the second tier reflects SCWA water costs (the highest cost water supply) and water conservation program costs, as well as other water system costs recovered through usage rates.
- Duplex accounts are grouped with single family customers for billing purposes. It was found that water use patterns of duplex accounts more closely resemble single family homes than apartments. With this change duplex accounts will be subject to the proposed 2-tier rates, rather than a uniform water usage rate.
- Multi-family, commercial, industrial, and institutional customers remain on a uniform water usage rate. The uniform rate spreads all water supply, water conservation, and other water system costs recovered through usage rates across all usage by these customer groups.
- The revenue mix between fixed service charges and water usage rates has been shifted slightly toward water usage revenue (from a current mix of 25.5 percent fixed and 74.5 percent volumetric to a proposed mix of 22.5 percent fixed and 77.5 percent volumetric).
- Fixed service charges have been adjusted across the range of meter sizes to reflect the capacity relationship across meter sizes. This equitably assigns service charge costs to each customer in relation to the potential demand they place on the water system.

In addition to reflecting the cost of service and proportionately allocating costs to each user based on service and demand characteristics, the water rate structure has been designed to encourage water conservation, help protect the affordability of basic water usage, and simplify administration and customer understanding.

For the past six years, Santa Rosa Water has adjusted water usage rates based on changes in wholesale water purchase costs through an automatic rate adjustment mechanism authorized by the Government Code and adopted by the City Council. The purchase of treated water from the SCWA is the water utility's largest cost. The automatic adjustment mechanism has been beneficial in helping keep water rates in line with costs. Changes to the automatic water usage rate adjustment calculation are recommended to be compatible with tiered rate structure changes and cost of service requirements.

Section III of this report provides details on the water rate recommendations including rate-setting objectives, cost of service analysis, rate design issues, water rate calculations, and automatic water usage rate adjustments. Information on ways to offer assistance to low income customers is also presented in Section III.

PROPOSED WASTEWATER RATES

Exhibit I-5 presents the proposed wastewater rate schedule for January 2016. This rate schedule is revenue neutral with the current wastewater rates; no additional revenue is anticipated. The proposed wastewater rates include rate structure changes and reflect an updated cost of service analysis. The wastewater rate structure has been modified as follows:

- The fifteen separate categories for commercial and industrial accounts have been consolidated to four general categories based on wastewater strength characteristics. The proposed categories include low, standard, medium, and high strength. Exhibit IV-3, in Section III of this report, lists the types of businesses that would be assigned to each classification. About 89 percent of commercial and industrial customers will be in the standard category.

Exhibit I-5
Santa Rosa Water
Proposed Wastewater Rate Schedule (1)

	January 2016	
Wastewater Usage Rates ($/1,000 gallons)		
Single Family, Duplexes, and Multi-Family	$	13.08
Commercial, Industrial, and Institutional		
Low Strength	$	10.87
Standard Strength	$	13.08
Medium Strength	$	14.50
High Strength	$	17.91
Monthly Service Charges		
Single Family and Duplexes	$	22.74
Multi-Family/Commercial/Industrial/Institutional		
5/8" & 3/4" meters	$	22.74
1" meter	$	54.75
1 1/2" meter	$	108.11
2" meter	$	172.15
3" meter	$	321.56
4" meter	$	535.00
6" meter	$	1,068.60

Notes:

(1) Wastewater usage charge applies to the wastewater generated. For single family and multi-family residential accounts the wastewater generated is based on the lower of current water use or the Sewer Cap. The Sewer Cap is calculated for each residential account based on the average water use from complete billing periods within the months of November through March. For non-residential customers with separate irrigation meters the wastewater generated is based on actual monthly water usage.

- All residential accounts will continue to pay wastewater usage charges based on the lesser of the individual sewer cap or actual water use each billing period. The sewer cap is determined annually for each customer based on the average water use during complete billing periods from November through March. Non-residential accounts with separate irrigation meters will continue to pay wastewater usage charges based on actual water use. Irrigation water is separately metered in most instances.
- The revenue mix between fixed service charges and wastewater usage rates has been maintained with a mix of 25 percent fixed and 75 percent variable.
- Fixed service charges for multi-family, commercial, industrial, and institutional accounts have been adjusted across the range of water meter sizes to reflect the capacity relationship across meter sizes. This equitably assigns service charge costs to each customer in relation to the potential demand they place on the wastewater system. Single family customers continue to pay a single service charge, regardless of meter size (larger meters are generally required for irrigation demands or fire flow considerations, rather than water use related to wastewater generation).
- For administrative ease, as with water rates, duplex accounts are grouped with single family customers for wastewater billing purposes. It was found that water use patterns of duplexes more closely resemble single family homes than apartments. With this change duplexes will be subject to a single wastewater service charge, regardless of meter size.

In addition to reflecting the cost of service and proportionately allocating costs to each user based on service and demand characteristics, the wastewater rate structure has been designed to encourage water conservation, maintain financial stability, help protect the affordability of basic service, and simplify administration and customer understanding.

Section IV of this report provides details on the wastewater rate recommendations including rate-setting objectives, cost of service analysis, rate design issues, and wastewater rate calculations. Special considerations for commercial and industrial wastewater customers that place extraordinary demands and/or loads on the wastewater system are also addressed in Section IV.

CUSTOMER BILL IMPACTS OF PROPOSED WATER AND WASTEWATER RATES

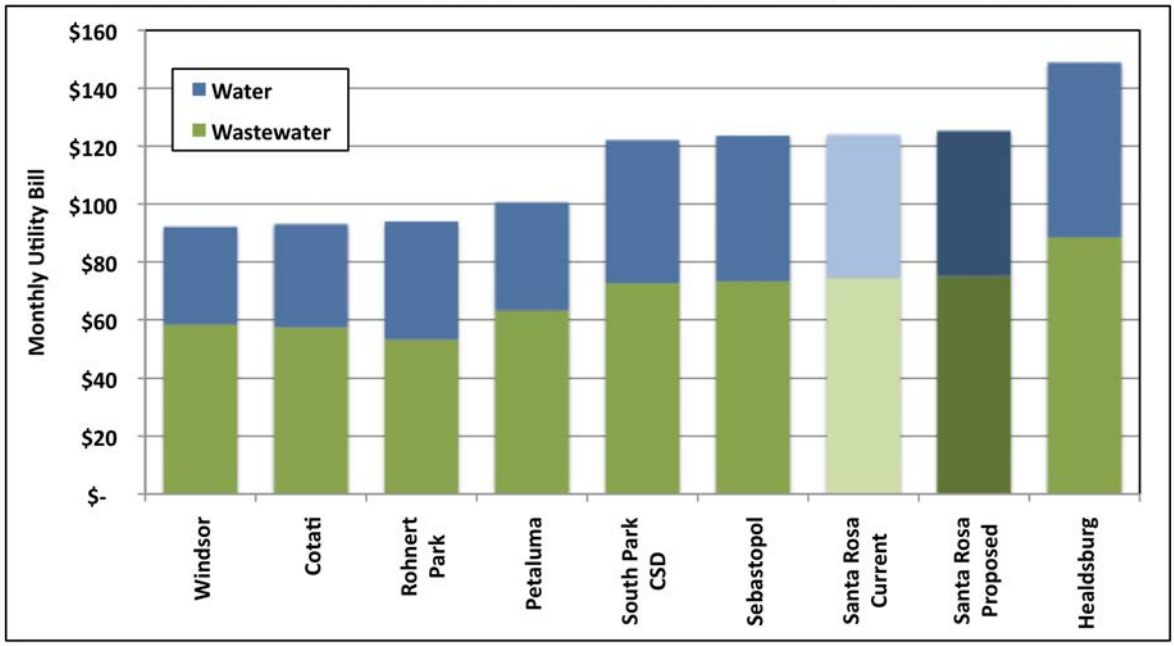
While the proposed water and wastewater rates for January 2016 are revenue neutral, overall, the rate structure changes will mean that some utility bills will increase while others decrease. For most customers the changes will be relatively small. **Exhibit I-6** presents a comparison of water and wastewater utility bills, for a variety of different customers, under both current and proposed water and wastewater rates. Even though bill amounts may change, the proposed rates reflect requirements clarified by recent case law.

Exhibit I-7 shows how a typical single family residential water and wastewater bills compares with utility bills with the same usage characteristics in other local communities. While the typical single family water bill in Santa Rosa is higher than most of the neighboring communities, the proposed rates do not result in a significantly higher utility bill. Some of the communities shown are in the midst of, or are about to begin, their own utility rate studies.

Exhibit I-6
Santa Rosa Water
Sample of Monthly Bill Impacts for Water/Wastewater Customers

	Meter Size	Wtr. Use (1,000 gal.)	WW Use	Bills With Current Water/WW Rates			Bills With Proposed Water/WW Rates			Change in Total Bill	
				Water	Wastewater	Total	Water	Wastewater	Total	$	%
Single Family Residential											
Low Water Use	5/8"	4	4	$ 32.32	$ 74.56	**$ 106.88**	$ 31.78	$ 75.07	**$ 106.85**	**$ (0.03)**	**0%**
Median Water Use	5/8"	7	4	$ 49.42	$ 74.56	**$ 123.98**	$ 50.20	$ 75.07	**$ 125.27**	**$ 1.29**	**1%**
High Water Use	5/8"	12	4	$ 77.92	$ 74.56	**$ 152.48**	$ 80.90	$ 75.07	**$ 155.97**	**$ 3.49**	**2%**
Very High Water Use	5/8"	20	4	$ 134.80	$ 74.56	**$ 209.36**	$ 130.02	$ 75.07	**$ 205.09**	**$ (4.27)**	**-2%**
Duplex	5/8"	8	6	$ 56.20	$ 101.04	**$ 157.24**	$ 54.56	$ 101.23	**$ 155.79**	**$ (1.45)**	**-1%**
Small Apartment (4 DUs)	1"	15	12	$ 104.70	$ 206.98	**$ 311.68**	$ 108.03	$ 211.74	**$ 319.77**	**$ 8.09**	**3%**
Large Apartment (24 DUs)	2"	80	80	$ 510.03	$ 1,238.00	**$ 1,748.03**	$ 520.51	$ 1,218.70	**$ 1,739.21**	**$ (8.82)**	**-1%**
Very Lrg. Apart. (100 DUs)	4"	320	320	$ 2,038.54	$ 4,938.41	**$ 6,976.95**	$ 2,013.96	$ 4,721.22	**$ 6,735.18**	**$ (241.77)**	**-3%**
Small Retail	5/8"	6	6	$ 45.28	$ 101.04	**$ 146.32**	$ 44.32	$ 101.23	**$ 145.55**	**$ (0.77)**	**-1%**
Large Retail	2"	80	80	$ 510.03	$ 1,238.00	**$ 1,748.03**	$ 520.51	$ 1,218.70	**$ 1,739.21**	**$ (8.82)**	**-1%**
Office Building	1 1/2"	40	40	$ 261.98	$ 632.23	**$ 894.21**	$ 270.11	$ 631.39	**$ 901.50**	**$ 7.29**	**1%**
Car Wash	2"	60	60	$ 400.83	$ 672.60	**$ 1,073.43**	$ 408.71	$ 824.11	**$ 1,232.82**	**$ 159.39**	**15%**
Mixed Comm. w/ Food	1"	35	35	$ 213.90	$ 581.50	**$ 795.40**	$ 219.83	$ 562.10	**$ 781.93**	**$ (13.47)**	**-2%**
Hotel w/ Restaurant	3"	200	200	$ 1,263.26	$ 3,444.66	**$ 4,707.92**	$ 1,253.83	$ 3,220.65	**$ 4,474.48**	**$ (233.44)**	**-5%**
Restaurant	1 1/2"	50	50	$ 316.58	$ 977.13	**$ 1,293.71**	$ 326.01	$ 1,003.55	**$ 1,329.56**	**$ 35.85**	**3%**
Supermarket	2"	160	160	$ 946.83	$ 2,977.20	**$ 3,924.03**	$ 967.71	$ 3,037.55	**$ 4,005.26**	**$ 81.23**	**2%**
Mortuary	1"	20	20	$ 132.00	$ 352.90	**$ 484.90**	$ 135.98	$ 412.93	**$ 548.91**	**$ 64.01**	**13%**
Small Winery	1"	10	10	$ 77.40	$ 295.20	**$ 372.60**	$ 80.08	$ 233.84	**$ 313.92**	**$ (58.68)**	**-16%**
Sm. Irrig. (Wtr Budg.=18 tg)	1"	20		$ 127.40		**$ 127.40**	$ 129.98		**$ 129.98**	**$ 2.58**	**2%**
Lrg. Irrig. (Wtr. Budg.=250 tg)	4"	300		$ 1,860.34		**$ 1,860.34**	$ 1,812.16		**$ 1,812.16**	**$ (48.18)**	**-3%**

Exhibits I-7
Santa Rosa Water
Comparison of Typical Single Family Utility Bill with Neighboring Communities (1) (2)



Notes:

(1) Comparison assumes 7,000 gallons per month of water use and 4,000 gallons per month of wastewater, as well as the standard residential meter size for each jurisdiction.

(2) Some of the communities shown are currently in the process of reviewing and adjusting their utility rates and/or have previously adopted multi-year schedules for future rate adjustments.

SECTION II – WATER AND WASTEWATER FINANCIAL PLANS

This section of the report describes the water and wastewater financial plans developed for Santa Rosa Water. The ten-year financial plans (1) provide an analysis of each utility's current and estimated future operating and maintenance costs, debt service obligations, and capital program needs, (2) present a financial strategy for meeting the financial and service obligations, and (3) are used to determine annual water and wastewater rate revenue requirements. The annual rate revenue requirement is the amount of revenue needed from water and wastewater rates to cover planned operating, maintenance, debt service, and capital program costs with consideration of other revenues and financial reserves for each utility.

FUND STRUCTURE AND CASH FLOWS

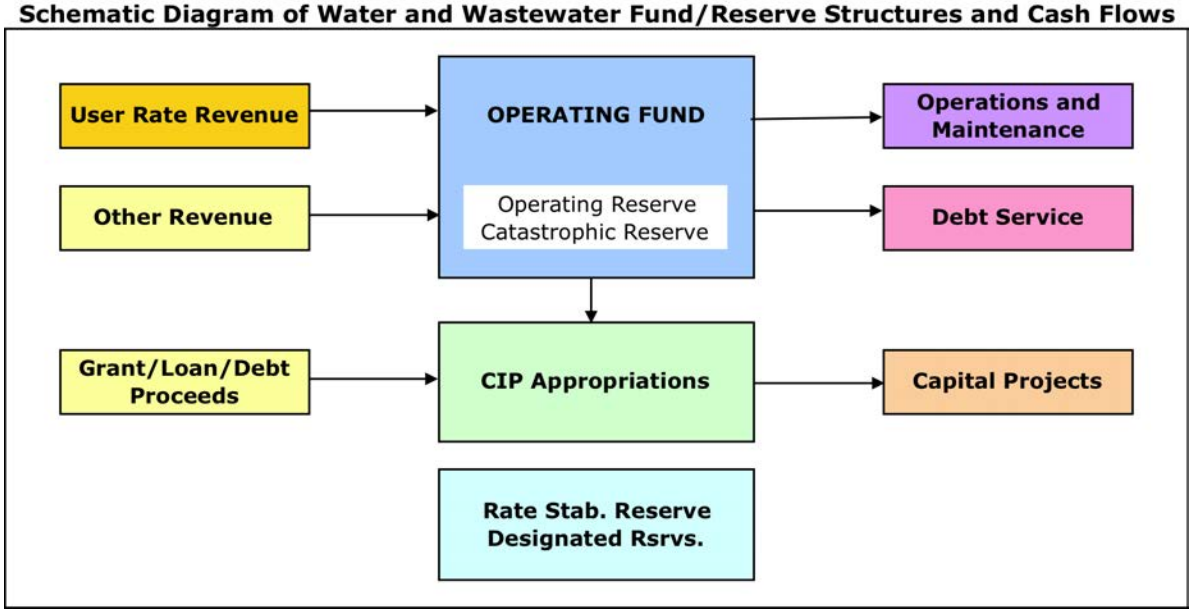
The financial plans were developed through analyses using an annual cash flow planning model developed for each utility. As a cash flow model, it differs from standard accounting income statements and balance sheets. The financial plan models reflect sources and uses of funds into, out of, and between the various funds and reserves of each utility.

The financial plan models reflect each utility's current fund and reserve structure and also incorporate specific reserve recommendations. This structure was discussed with staff and presented to the BPU Budget Subcommittee during workshops; the structure provides a helpful framework for evaluating the financial needs of the utilities and for clearly demonstrating how operating and maintenance costs, debt service obligations, and capital program needs are addressed. The fund and reserve structure common to both utilities is summarized below. **Exhibit II-1** is a schematic diagram of the funds/reserves and major cash flows associated with the financial plan models.

An understanding of the fund/reserve structure is helpful in understanding the financial plan worksheets that model estimated annual cash flows through each utility from one year to the next. Financial reserve policies where last formally reviewed by the BPU and the City Council in 2013, and reserve policies are contained in Council Resolution 28244. The fund/reserve structure is comprised of:

- ***Operating Fund*** – The Operating Fund is the primary fund within each utility. Most of the water/wastewater system's revenues, including user rate revenues, flow into the Operating Fund and all operating and maintenance costs, including debt service payments, are paid out of this fund. Funds are also transferred from the Operating Fund to the Capital Fund to help pay for capital projects intended to rehabilitate and upgrade facilities.

Exhibit II-1
Santa Rosa Water
Schematic Diagram of Water and Wastewater Fund/Reserve Structures and Cash Flows



- *Operating Reserves* – Under the current reserve policy, Santa Rosa Water maintains an Operating Reserve equal to 15 percent of annual operating and maintenance costs, excluding debt service costs. The purpose of the Operating Reserve is to provide sufficient funds for working capital and to manage cash flow, as well as to provide funds for unanticipated expenditures or revenue shortfalls and for minor emergencies. In addition, the utility may plan for the use of up to 50 percent of the minimum target reserve with each biennial rate update process, so long as the operating reserve is shown to return to the target minimum balance within a 5-year planning period.

  As of June 30, 2014, the water utility had an operating reserve of about $3,918,000 and the wastewater utility had an operating reserve of about $3,380,000.

- *Catastrophic Reserves* – Catastrophic reserves are intended to help protect the water and wastewater utilities from financial risk associated with a major seismic event or other catastrophic event. They are intended to be available in the event of a major (catastrophic) emergency, including a reduction in revenues from a water shortage emergency, rather than minor emergencies. The amounts held in catastrophic reserves were determined based on an engineering analysis of the amounts needed to restore "basic services" of the water and wastewater systems following a major earthquake.

  As of June 30, 2014, the water utility had $4.4 million held in the catastrophic reserve and the wastewater utility had $5.2 million held in the catastrophic reserve. These amounts have not been adjusted since 2006. Since that time, the 20-cities construction cost index (CCI), published by the *Engineering News Record*, has increased about 30 percent. As a result, the real value of the catastrophic reserves is diminished.

It is recommended that Santa Rosa Water increase the amounts in the catastrophic reserves to account for the effects of inflation since 2006. With 30 percent increases to each of these reserves, new balances would be $5.75 million for the water utility and $6.8 million for the wastewater utility[2]. The increased balances in each of these reserves can be accomplished simply by designating a portion of currently available surpluses in each utility's Operating Fund. No increase in utility rates is required.

- *Available Surplus* – The balance in the Operating Fund in excess of the target amounts for the Operating Reserve and the Catastrophic Reserve is shown in the financial plan as Available Surplus. After all other obligations are met this available balance can be used to offset rate increases. This surplus provides important flexibility in managing the financial needs of the utility. For financial planning purposes, the Available Surplus is gradually reduced over the 10-year planning period. In actual practice, it better enables Santa Rosa Water to manage the natural financial variability that follows fluctuating customer demands and other operational requirements.

  As of June 30, 2014 the Available Surplus in the water utility was about $13.8 million and the Available Surplus in the wastewater utility was about $8.4 million.

- ***Rate Stabilization Reserves*** – The water and wastewater utilities may fund Rate Stabilization Reserves to enhance the utility's bond ratings by adding a stable source of liquidity to a fund with outstanding debt. Debt rate stabilization reserve levels are determined as part of the utility's long-term financing plan.

  As of June 30, 2014 the wastewater utility had $1.0 million in the Rate Stabilization Reserve. This is maintained due to the significant outstanding long-term debt of the subregional system and the City's (wastewater utility's) share of the debt obligations. The water utility has not funded a Rate Stabilization Reserve.

- ***Geysers Reserves*** – Under terms of its contract, Calpine Corporation was required to provide the City with a $30 million letter of credit as security for continued operations and potential partial reimbursement for construction costs of the Geysers pipeline should the project cease operation. Because of financial conditions at the time, Calpine did not secure the required letter of credit. However, the City obtained $1.25 million from Calpine (representing the cost of a $30 million letter of credit for two years). This money has been placed in the Geysers reserve, and no decision has been made as to how this money should be used. However, the fund could be used as an emergency reserve to protect the pipeline to the Geysers project.

- ***Designated Reserves*** – Designated (or restricted) reserves are set by external requirements and restraints of creditors, grantors, contributors, or law. The water and wastewater utilities will maintain such reserves by bond covenants, state revolving fund loan contract, or other requirements, as needed.

  As of June 30, 2014 the wastewater utility had $3.5 million in designated reserves, and the water utility does not have any designated reserves.

[2] Similarly, the Catastrophic Reserve for the subregional system should be increased from $1.3 million to $1.7 million.

- ***Capital Project Appropriations*** – Each year Santa Rosa Water appropriates funds for specific capital improvement projects. When appropriations are made funds are set aside to cover project costs. While not specifically in a separate fund or reserve, this cash sits in this appropriated (or designated) state until capital project expenditures are incurred and bills are paid.

  As of June 30, 2014 the water utility had about $35.5 million appropriated for capital projects and the wastewater utility had about $41.8 million appropriated for capital projects.

FINANCIAL PLAN ASSUMPTIONS

The water and wastewater financial plans were initialized with the FY 14-15 budget and financial conditions as of the beginning of the fiscal year. They were later updated to incorporate budgets for FY 15-16, as well as estimates for FY 14-15. The financial plan models also reflect existing debt service obligations and planned annual capital improvement program appropriations as identified by staff.

The process used to develop the financial plans involved estimating future revenues and expenditures based on estimates of future conditions using budgets, existing debt service schedules and planned capital improvement plan appropriations. The financial plans are based on the best available information and assumptions are believed to be reasonable; however, no assurance can be provided as to the accuracy and completeness of future estimates. The proposed annual rate adjustments will help protect Santa Rosa Water and ratepayers from some of the risk and inherent uncertainty associated with financial plan assumptions. Primary assumptions reflected in financial plan analyses are described below, with additional information presented in **Exhibit II-2**.

- *Interest Rates* – Interest earned on fund/reserve balances is estimated to be 0.25 percent through FY 16-17, then increases by 0.25 percent every two years until reaching 1.00 percent and remains at 1.00 percent for the remainder of the planning period. Interest calculations are based on beginning-of-year fund/reserve balances. The initial interest rate reflects the current return from the Local Agency Investment Fund (LAIF), as well as a gradual return towards historical averages. Interest accrues to each of the funds. Santa Rosa Water also pays interest on outstanding long-term debt obligations. The interest payments on outstanding debt are those contained in existing contracts and repayment schedules.
- *Inflation Rates* – Financial plan analyses include a general inflation factor and a construction inflation factor both at 3.0 percent per year throughout the planning period. General inflation is currently about 2.5 percent per year, as reported by the Bureau of Labor Statistics for the San Francisco-Oakland-San Jose area. Construction inflation, as indicated by the *Engineering News Record's* 20-Cities Construction Cost Index, is also currently about 2.5 percent per year. Both general inflation and construction inflation have historically been higher than the current levels, and the 3.0 percent used in the financial plan analyses are reasonable for the 10-year planning period.

Exhibit II-2
City of Santa Rosa
Summary of Water and Wastewater Financial Plan Assumptions

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Financial Assumptions											
Interest Earnings			0.25%	0.50%	0.50%	0.75%	0.75%	1.00%	1.00%	1.00%	1.00%
General Inflation			3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
SCWA Rate Inflation		4.16%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Est. Usage Rates Pass-Through		1.9%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
Subregional O&M Cost Inflation			3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Construction Inflation		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Reserve Policy Targets		Water	Local WW	Subregional							
Operating Reserve		15%	15%	15%	of annual O&M expenses						
Catastrophic Reserve		5,750,000	6,800,000	1,700,000							
Geysers Reserve				1,250,000							
Subregional User Agency Reserve				15%	of annual debt service payments						
Dedicated/Restricted		External and maintained as required by bond covenants, loan contracts, etc.									
Water Demand Fee	$ 4,685	$ 4,826	$ 4,971	$ 5,120	$ 5,274	$ 5,432	$ 5,595	$ 5,763	$ 5,936	$ 6,114	$ 6,297
Wastewater Demand Fee	$ 6,375	$ 6,566	$ 6,763	$ 6,966	$ 7,175	$ 7,390	$ 7,612	$ 7,840	$ 8,075	$ 8,317	$ 8,567
Customer, Water Use, and Wastewater Flow Assumptions											
Customer Growth Rate	0.00%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Water Utility											
No. of Water Accounts	51,518	51,647	51,776	51,905	52,035	52,165	52,295	52,426	52,557	52,688	52,820
No. of 5/8" Meter Equivalents	72,445	72,626	72,808	72,990	73,172	73,355	73,538	73,722	73,906	74,091	74,276
Annual Water Sales (MG)	5,471	5,479	5,767	5,724	5,681	5,638	5,596	5,554	5,512	5,470	5,429
Annual Water Sales (AF)	16,791	16,814	17,699	17,566	17,434	17,303	17,173	17,043	16,915	16,788	16,661
Water Usage Factor	-11%	0.0%	5.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Local Wastewater											
No. of Wastewater Accounts	48,898	49,020	49,143	49,266	49,389	49,512	49,636	49,760	49,884	50,009	50,134
No. of WW EDUs	60,671	60,823	60,975	61,127	61,280	61,433	61,587	61,741	61,895	62,050	62,205
Annual Wastewater Flow (MG)	3,606	3,615	3,769	3,760	3,751	3,741	3,732	3,722	3,713	3,704	3,694
Wastewater Usage Factor	-2.5%	0.0%	4.0%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%
Water Supplies											
SCWA Water Purchases (AF)	18,215	17,367	18,228	18,084	17,940	17,797	17,656	17,515	17,376	17,238	17,100
Groundwater Production (AF)	1,269	800	900	900	900	900	900	900	900	900	900
Recycled Water (Urban) (AF)	100	110	110	110	110	110	110	110	110	110	110
Total Water Supplies	19,584	18,277	19,238	19,094	18,950	18,807	18,666	18,525	18,386	18,248	18,110
SCWA Purchase Conting. (AF)		3,433	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Unacct. Loss Rate	-14%	-8%	-8%	-8%	-8%	-8%	-8%	-8%	-8%	-8%	-8%
SCWA Water Rate ($/AF)	$ 730.68	$ 761.05	$ 799.10	$ 839.06	$ 881.01	$ 925.06	$ 971.31	$ 1,019.88	$ 1,070.87	$ 1,124.41	$ 1,180.63
SCWA Water Purchase Cost	$13,309,000	$13,217,000	$14,566,000	$15,174,000	$15,805,000	$16,463,000	$17,149,000	$17,863,000	$18,607,000	$19,383,000	$20,189,000
SCWA Purchase Conting.		$ 2,613,000	$ 2,797,000	$ 2,937,000	$ 3,084,000	$ 3,238,000	$ 3,400,000	$ 3,570,000	$ 3,748,000	$ 3,935,000	$ 4,132,000
Est. Groundwater Cost ($/AF)	$ 100	$ 100	$ 103	$ 106	$ 109	$ 112	$ 115	$ 118	$ 122	$ 126	$ 130
GW Production Cost	$ 126,900	$ 80,000	$ 92,700	$ 95,400	$ 98,100	$ 100,800	$ 103,500	$ 106,200	$ 109,800	$ 113,400	$ 117,000
Recycled Water Cost ($/AF)	$ 247	$ 254	$ 262	$ 270	$ 278	$ 286	$ 295	$ 304	$ 313	$ 322	$ 332
RW Purchase Cost	$ 24,700	$ 27,968	$ 28,820	$ 29,700	$ 30,580	$ 31,460	$ 32,450	$ 33,440	$ 34,430	$ 35,420	$ 36,520

- *Growth Projections* – The financial plans assume that the customer base (number of active service connections) will grow by 0.25 percent per year through the planning period. While lower than projections reflected in the 2010 Urban Water Management Plan, this estimate is reasonable and more conservative for financial planning purposes.
- *Customer Demand* – The current drought is continuing through 2015, and the financial plans have been revised to reflect that water demand may be significantly constrained through FY 15-16 in order to achieve water use reduction goals established by the State Water Resources Control Board (SWRCB). Beyond FY 15-16, average customer water demands are then assumed to rebound from the drought levels. The financial plan assumes that FY 16-17 water demand will be 5 percent higher than FY 15-16, and wastewater flow will be 4 percent higher. Beyond FY 16-17 average water demand is assumed to then decline by 1 percent per year, and wastewater demand decline by 0.6 percent per year.

  Future water demand and wastewater flows are uncertain and may be influenced by continuing drought conditions, conservation and environmental ethics of customers, economic conditions, weather patterns, and other factors. The assumptions used in the financial analysis are believed reasonable, and sensitivity analyses performed on the water demand and wastewater flow assumptions suggest that these assumptions are consistent with risk aversion expressed by BPU Budget Subcommittee members.
- *Water System Losses* – The water financial plan reflects estimated water system losses of 8 percent of the total water produced. While actual water lose rates do vary, this estimate is consistent with industry standards, assumptions included in the *2010 Urban Water Management Plan*, and actual experience.
- *Operation and Maintenance Costs* – The financial plan models are based on current operating and maintenance costs as reflected in the FY 15-16 operating budget, with future estimates influenced by the inflation, growth, and water demand assumptions described above, with the exceptions listed below.
  - *SCWA Water Purchases* – About 95 percent of the water utility's water supply is purchased from the Sonoma County Water Agency (SCWA). SCWA adjusts its water rates and charges annually, and the financial plan assumes that the rate for SCWA water purchases will increase by 5.0 percent per year through the planning period based on indications from SCWA staff. Santa Rosa Water budgets for water supply purchases based on normal water demands, even if lower water demands are anticipated. For rate calculation purposes, assumptions for water supply and demand must align (with consideration for water system losses). For this reason, budgeted water supply costs are effectively reduced by subtracting SCWA purchase contingency costs (difference between budgeted water purchases and the amount that aligns with estimated water demand).
  - *Subregional Costs* – Financial plan models assume that subregional O&M costs will increase by 3.0 percent per year throughout the planning period. Seventy-three percent of subregional O&M costs and capital program appropriations are allocated to the wastewater utility.

- *Existing Debt Obligations* – Existing long-term debt repayment obligations are summarized in **Exhibit II-3**. Santa Rosa Water is responsible for the repayment on about a dozen outstanding bonds and State Revolving Fund (SRF) loans. As of June 30, 2014 the outstanding principal on long-term debt totaled about $333 million, and total annual debt service in FY 14-15 was about $28 million. The water utility has relatively little long-term debt, and most of the debt service obligation of the wastewater utility is associated with the City's share of subregional debt, with relatively little associated with the wastewater collection system. Seventy-six percent of subregional debt service costs are allocated to the wastewater utility.
- *New Long-Term Debt* – Santa Rosa Water has examined the need to issue additional long-term debt for improvements to the subregional system. At present, the City is considering the possible issuance of an additional $35 million in long-term debt in 2017 and $22 million in 2022. The City's financial advisors have estimated potential debt service schedules that structure debt repayment around existing repayment obligations. That information has been incorporated into the subregional financial plan.
- *Capital Improvement Program Appropriations* – Santa Rosa Water appropriates funds for capital improvement projects within each of the utilities each year. Annual appropriations, as developed by staff for the next five years, are included in the financial plans for each utility. For the last five years of the ten-year planning period, the annual appropriations have been escalated based on the construction inflation factors described previously. As described previously, a ten-year planning period is new for Santa Rosa Water, and capital improvement plans may be similarly extended to a ten-year planning period in the near future. **Exhibit II-4** summarizes the annual capital program appropriations included in the financial plan models.

Financial plan models were developed based on the foregoing data, information, and assumptions. The financial plans were then used to determine the annual rate revenue requirements for each of the utilities. Results of the financial analyses are presented below. In addition, while not presented in this report, the financial plan models were also used to perform a variety of sensitivity analyses to evaluate, among other things, the potential impact of deepening or continued water shortage conditions. Some of the analyses were presented to the BPU Budget Subcommittee, and this use of the financial plan models to evaluate various assumptions and conditions was instrumental in developing the 5-year water and wastewater rate recommendations. In effect, having a longer planning period for the financial plan models, and using the models to assess the potential impacts of assumptions, conditions, and potential rate recommendations, has led to increased confidence in the recommendations for rate adjustments for the next five years.

Exhibit II-3
Santa Rosa Water
Summary of Existing Long-Term Debt Payment Obligations

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Water Utility Summary	1,004,084	1,004,020	1,004,679	1,004,556	1,004,288	1,004,143	1,004,404	1,004,165	1,004,614	1,004,797	1,004,249
Wastewater Summary	1,799,143	1,340,777	1,708,883	1,755,984	1,924,618	2,566,730	2,571,760	2,575,962	2,671,669	4,248,419	4,251,421
Subregional Summary											
Santa Rosa	19,147,392	18,279,612	18,825,959	18,680,566	17,791,894	18,300,983	18,301,651	18,304,485	17,194,775	16,564,095	15,858,707
Rohnert Park	3,866,065	3,588,335	3,727,879	3,735,555	3,547,557	3,660,892	3,660,533	3,660,550	3,494,118	3,609,659	3,447,595
Sebastopol	712,370	597,317	645,398	661,157	630,378	649,047	648,670	648,296	645,706	752,985	713,693
Cotati	932,270	892,340	916,921	911,008	867,081	892,434	892,477	892,626	837,856	808,068	774,453
SPCSD	531,060	483,506	520,468	516,119	490,579	506,282	506,114	506,022	495,682	545,499	512,871

Notes:
(1) Source: debt alloc w 2014 issue.xlsm

Exhibit II-4
Santa Rosa Water
Summary of Capital Improvement Program Planned Appropriations

	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Water Utility Summary											
Existing Projects	11,750,000	14,407,233	8,510,000	8,645,000	6,225,000	8,900,000					
New Projects	250,000	775,000	2,490,000	2,355,000	4,775,000	2,100,000					
Debt Funded Projects	-	-	-	-	-	-					
Contribution to Reserves	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000					
Water Total	13,000,000	17,182,233	13,000,000	13,000,000	13,000,000	13,000,000	13,390,000	13,790,000	14,200,000	14,630,000	15,070,000
Wastewater Summary											
Existing Projects	10,400,000	5,000,000	6,850,000	5,800,000	4,390,000	6,050,000					
New Projects	600,000	6,000,000	3,150,000	4,200,000	5,610,000	3,950,000					
Debt Funded Projects	-	-	-	-	-	-					
Contribution to Reserves	1,000,000	1,000,000	2,000,000	2,000,000	2,000,000	2,000,000					
Local Wastewater Total	12,000,000	12,000,000	12,000,000	12,000,000	12,000,000	12,000,000	12,360,000	12,730,000	13,110,000	13,500,000	13,910,000
Subregional Summary											
Subregional WW Capital Fund	1,500,000	2,004,174	3,160,000	4,160,000	5,160,000	6,160,000	7,000,000	8,000,000	9,000,000	10,000,000	11,000,000
Debt Funded Projects	1,650,000	100,000	-	44,250,000	-	-					
Subregional Total	3,150,000	2,104,174	3,160,000	48,410,000	5,160,000	6,160,000	7,000,000	8,000,000	9,000,000	10,000,000	11,000,000

WATER UTILITY FINANCIAL PLAN SUMMARY

Exhibit II-5 provides the details of the financial plan for the water utility. The financial plan was used to develop estimates of annual water rate revenue requirements, to perform sensitivity analyses related to certain assumptions, and to evaluate the implications of various courses of action. Even with the reduced water demands associated with the current water shortage conditions, the water utility appears to be in sound financial condition. In addition, it appears that rather modest annual water rate adjustments should be sufficient to cover the utilities costs and financial obligations throughout the planning period.

Many conditions can and will change over the ten-year planning period, and it would be imprudent to adopt a schedule of water rate adjustments for the entire ten-year period. However, a five-year rate plan could be adopted with reasonable confidence. Adopting a multi-year rate plan would enable Santa Rosa Water to reduce costs associated with rate development and approval processes. It would also help ensure the financial stability of the utility and rate confidence for customers.

Specific findings and recommendations pertaining to the water utility's financial plan are presented below, beginning with a description of the current situation.

- Estimated FY 14-15 revenues nearly match estimated expenses illustrating the relative financial stability of the water utility, even with significantly reduced water sales resulting from water shortage conditions.
- For FY 15-16, budgeted expenses exceed estimated revenues by about $3.4 million. This was a purposeful decision based on the present available surplus. The budget deficit is also primarily due to a one-time increase in capital program appropriations, with the available surplus in the water Operating Fund more than adequate to cover this difference.
- As a result of State-mandated water use reductions, water demand is expected to match or exceed water use reductions in FY 14-15. The financial plan assumes a return to normal water supply conditions in FY 16-17 along with a modest rebound in water demand.
- Debt covenants require Santa Rosa Water to establish rates and charges sufficient to make debt service payments and meet debt service coverage obligations. However, long-term debt represents a relatively small portion of expenses for the water utility. As such, there are no concerns regarding the utility's ability to meet debt repayment and debt service coverage obligations.
- SCWA water purchase costs represent about one-third of the water rate revenue requirement, and as such is the largest single cost of the water utility. Based on information provided by SCWA staff, the financial plan incorporates 5 percent annual increases in the rates for SCWA water purchases.
- Existing procedures to automatically adjust water usage rates based on changes in wholesale water costs have been effective in helping to maintain revenue in line with costs and in limiting general rate increases. As described in the next section, a 5 percent increase in the wholesale rate for water will result in increases in the water usage rates of about 2 percent.

Exhibit II-5
Santa Rosa Water
Summary of Water Financial Plan

	FY 14-15E	FY 15-16B	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Service Charge Increase (July) -->		0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.5%	5.5%	5.5%	5.5%
WATER OPERATING FUND											
Beginning Balance	22,140,420	22,114,590	18,713,499	18,544,499	18,390,499	18,211,499	18,042,499	17,440,499	16,499,499	15,152,499	13,379,499
Revenues and Transfers In											
Rate Revenue - Fixed	9,800,000	9,482,000	9,378,000	9,871,000	10,390,000	10,937,000	11,512,000	12,176,000	12,878,000	13,620,000	14,405,000
Rate Revenue - Usage	28,842,000	29,775,000	32,925,000	33,382,000	33,846,000	34,316,000	34,793,000	35,277,000	35,767,000	36,264,000	36,768,000
Charges for Services	1,869,600	1,876,800	1,933,000	1,991,000	2,051,000	2,113,000	2,176,000	2,241,000	2,308,000	2,377,000	2,448,000
Other Earned Income	133,680	1,268,056	114,000	117,000	121,000	125,000	129,000	133,000	137,000	141,000	145,000
Demand Fee Transfer In	1,145,446	775,000	641,000	660,000	686,000	706,000	727,000	755,000	778,000	801,000	831,000
Interest Earnings	168,000	175,000	47,000	93,000	92,000	137,000	135,000	174,000	165,000	152,000	134,000
Total Revenues	41,958,726	43,351,856	45,038,000	46,114,000	47,186,000	48,334,000	49,472,000	50,756,000	52,033,000	53,355,000	54,731,000
Expenses and Transfers Out											
Salaries & Benefits	3,799,246	5,461,864	5,626,000	5,795,000	5,969,000	6,148,000	6,332,000	6,522,000	6,718,000	6,920,000	7,128,000
Services and Supplies	2,747,597	3,307,554	3,407,000	3,509,000	3,614,000	3,722,000	3,834,000	3,949,000	4,067,000	4,189,000	4,315,000
Utility Billing Services	1,885,994	2,002,217	2,062,000	2,124,000	2,188,000	2,254,000	2,322,000	2,392,000	2,464,000	2,538,000	2,614,000
SCWA Water Purchases	11,328,472	15,829,960	17,363,000	18,111,000	18,889,000	19,701,000	20,549,000	21,433,000	22,355,000	23,318,000	24,321,000
Recycled Water Purchases	27,000	28,000	29,000	30,000	31,000	31,000	32,000	33,000	34,000	35,000	37,000
Electricity	740,000	660,500	680,000	700,000	721,000	743,000	765,000	788,000	812,000	836,000	861,000
Groundwater Production		80,000	93,000	95,000	98,000	101,000	104,000	106,000	110,000	113,000	117,000
Indirect Costs	2,984,338	2,399,074	2,471,000	2,545,000	2,621,000	2,700,000	2,781,000	2,864,000	2,950,000	3,039,000	3,130,000
Water Conserv./Dmd Mgmt.	451,032	1,134,957	1,169,000	1,204,000	1,240,000	1,277,000	1,315,000	1,354,000	1,395,000	1,437,000	1,480,000
Capital Outlay	-	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
O&M Projects	2,730,434	662,957	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Turnback		(4,120,000)	(4,351,000)	(4,537,000)	(4,732,000)	(4,936,000)	(5,149,000)	(5,371,000)	(5,603,000)	(5,846,000)	(6,100,000)
Transfers To											
Utility Impact Fee Fund	1,225,017	1,078,918	1,111,000	1,144,000	1,178,000	1,213,000	1,249,000	1,286,000	1,325,000	1,365,000	1,406,000
Debt Service Funds	1,004,000	1,004,000	1,005,000	1,005,000	1,004,000	1,004,000	1,004,000	1,004,000	1,005,000	1,005,000	1,004,000
Capital Fund (Approp.)	13,000,000	17,182,233	13,000,000	13,000,000	13,000,000	13,000,000	13,390,000	13,790,000	14,200,000	14,630,000	15,070,000
ARP Capital Lease	61,426	30,713	32,000	33,000	34,000	35,000	36,000	37,000	38,000	39,000	40,000
Total Expenses	41,984,556	46,752,947	45,207,000	46,268,000	47,365,000	48,503,000	50,074,000	51,697,000	53,380,000	55,128,000	56,933,000
Ending Balance	**22,114,590**	**18,713,499**	**18,544,499**	**18,390,499**	**18,211,499**	**18,042,499**	**17,440,499**	**16,499,499**	**15,152,499**	**13,379,499**	**11,177,499**
Operating Reserve	4,004,000	4,119,000	4,509,000	4,663,000	4,822,000	4,988,000	5,159,000	5,337,000	5,522,000	5,713,000	5,912,000
Catastrophic Reserve	4,400,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000	5,750,000
Available Surplus	13,710,590	8,844,499	8,285,499	7,977,499	7,639,499	7,304,499	6,531,499	5,412,499	3,880,499	1,916,499	(484,501)
Wtr DS Coverage (min = 1.20)	13.92	10.62	9.44	9.27	9.06	8.86	8.61	8.45	8.21	7.98	7.74

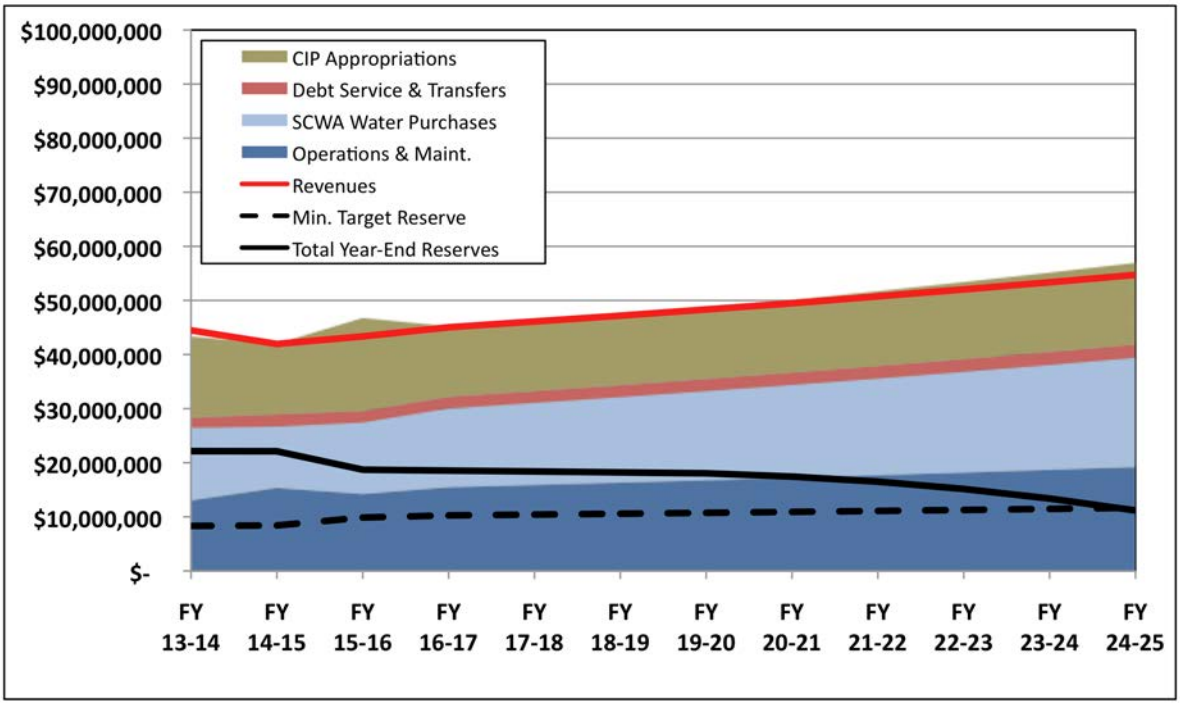
- A general water rate increase is not needed at this time, and proposed water rate structure changes (presented in Section III of this report) can be implemented in a revenue neutral manner, which will help limit the potential bill impacts associated with rate structure changes.
- Under the proposed water rates, future general water rate increases would be applied to fixed service charges (and not to water usage rates). Applying general rate increases to service charges and the automatic pass-through adjustment for wholesale water costs to water usage rates will help maintain the appropriate balance between fixed and usage based rate revenue.
- Under the proposed water rates service charges would be increased by 5 percent each July for the next five year in order to meet estimated revenue needs during this period. The combined effect of the proposed automatic adjustments to water usage rates (based on changes in SCWA water costs) and the 5 percent increase in service charges will result in total water rate revenues increasing by about 2.8 percent per year.

Exhibit II-6 graphically summarizes the water utility financial plan with annual revenues, expenses, and year-end Operating Fund balances all shown. The exhibit reflects the proposed water rate increases. Of particular interest in the financial planning process are the total year-end reserves relative to the minimum target reserves. The difference is the surplus reserves described previously. The financial planning process seeks to reduce the surplus over the ten-year planning period. This, in effect, reduces the water rate revenues that would otherwise be required.

The water utility financial plan model reflects assumptions and estimates that are believed reasonable at the present time. However, conditions change. It is recommended that Santa Rosa Water staff review its financial condition and recommend annual rate adjustments as part of the annual budget process.

Proposed water rates, rate structure changes, and rate schedules for the next five years are presented in the Section III of this report.

Exhibit II-6
Santa Rosa Water
Summary of Water Utility Financial Plan



WASTEWATER UTILITY FINANCIAL PLAN SUMMARY

Exhibit II-7 provides the details of the financial plan for the wastewater utility. The financial plan was used to develop estimates of annual wastewater rate revenue requirements, to perform sensitivity analyses related to certain assumptions, and to evaluate the implications of various courses of action. Even with the reduced water demands associated with the current water shortage conditions, the wastewater utility appears to be in sound financial condition. In addition, it appears that modest annual wastewater rate adjustments should be sufficient to cover the utilities costs and financial obligations throughout the planning period.

Many conditions can and will change over the ten-year planning period, and it would be imprudent to adopt a schedule of wastewater rate adjustments for the entire ten-year period. However, a five-year rate plan could be adopted with reasonable confidence. Adopting a multi-year rate plan would enable Santa Rosa Water to reduce costs associated with rate development and approval processes. It would also help ensure the financial stability of the utility and rate confidence for customers.

Specific findings and recommendations pertaining to the wastewater utility's financial plan are presented below, beginning with a description of the current situation.

- Estimated FY 14-15 expenses exceed estimated revenues by about $2.3 million. However, this appears largely due to atypical O&M project costs, rather than a systematic mismatch between revenues and expenses. This atypical expense aside, it appears there is relative financial stability in the wastewater utility, even with significantly reduced wastewater revenue resulting from water shortage conditions.

Exhibit II-7
City of Santa Rosa
Summary of Wastewater Financial Plan

	FY 14-15E	FY 15-16B	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Wastewater Rate Increase (July) -->		0.0%	3.0%	3.0%	3.0%	2.5%	2.5%	2.0%	2.0%	2.0%	2.0%
WASTEWATER OPERATING FUND											
Beginning Balance	19,477,662	17,443,090	17,508,539	19,423,462	20,081,385	21,963,308	23,123,231	24,254,154	25,122,077	25,724,000	24,865,923
Revenues											
Usage Charge	46,798,372	47,761,000	51,289,000	52,695,000	54,140,000	55,495,000	56,740,000	57,878,000	58,887,000	59,914,000	60,959,000
Fixed Service Charges	15,940,779	16,256,000	16,786,000	17,332,000	17,896,000	18,434,000	18,942,000	19,417,000	19,855,000	20,303,000	20,761,000
South Park Sanitation Revenue	33,530	-	-	-	-	-	-	-	-	-	-
South Park Maintenance Revenue	466,870	480,876	495,000	510,000	525,000	541,000	557,000	574,000	591,000	609,000	627,000
Charges for Services	1,400,000	1,400,000	1,442,000	1,485,000	1,530,000	1,576,000	1,623,000	1,672,000	1,722,000	1,774,000	1,827,000
Other Earned Income	250,685	193,000	199,000	205,000	211,000	217,000	224,000	231,000	238,000	245,000	252,000
Demand Fee Transper In	1,104,000	552,000	832,000	857,000	883,000	909,000	944,000	972,000	1,001,000	1,040,000	1,071,000
Interest Earnings	200,000	150,000	44,000	97,000	100,000	165,000	173,000	243,000	251,000	257,000	249,000
Total Revenues	66,194,236	66,792,876	71,087,000	73,181,000	75,285,000	77,337,000	79,203,000	80,987,000	82,545,000	84,142,000	85,746,000
Expenses											
Salaries & Benefits	2,674,681	3,233,524	3,331,000	3,431,000	3,534,000	3,640,000	3,749,000	3,861,000	3,977,000	4,096,000	4,219,000
Services and Supplies	2,037,153	2,612,046	2,690,000	2,771,000	2,854,000	2,940,000	3,028,000	3,119,000	3,213,000	3,309,000	3,408,000
Utility Billing Services	1,740,916	1,848,200	1,904,000	1,961,000	2,020,000	2,081,000	2,143,000	2,207,000	2,273,000	2,341,000	2,411,000
Indirect Costs	2,771,446	2,839,887	2,925,000	3,013,000	3,103,000	3,196,000	3,292,000	3,391,000	3,493,000	3,598,000	3,706,000
Capital Outlay	-	-	-	-	-	-	-	-	-	-	-
O&M Projects	4,475,399	828,919	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Turnback		(1,053,000)	(1,085,000)	(1,118,000)	(1,151,000)	(1,186,000)	(1,221,000)	(1,258,000)	(1,296,000)	(1,334,000)	(1,374,000)
Subregional Expenses											
Operations Contribution	19,194,876	20,801,005	21,633,000	22,714,000	23,282,000	23,864,000	24,460,000	25,072,000	25,699,000	26,341,000	27,000,000
Capital Contribution (Approp.)	1,094,462	1,445,000	2,307,000	3,037,000	3,767,000	4,497,000	5,110,000	5,840,000	6,570,000	7,300,000	8,030,000
Debt Service Contribution	19,147,392	19,203,711	18,826,000	20,026,000	19,137,000	19,646,000	19,647,000	19,649,000	19,300,000	18,669,000	17,964,000
Transfers To											
Utility Undrgrnd. Impact Fund	1,268,754	919,077	919,077	919,077	919,077	919,077	919,077	919,077	919,077	919,077	919,077
Debt Service Funds	1,799,145	2,036,766	1,709,000	1,756,000	1,925,000	2,567,000	2,572,000	2,576,000	2,672,000	4,248,000	4,251,000
Local WW Capital Fund (Approp.)	12,000,000	12,000,000	12,000,000	12,000,000	12,000,000	12,000,000	12,360,000	12,730,000	13,110,000	13,500,000	13,910,000
Other Funds	24,584	12,292	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
Total Expenses	68,228,808	66,727,427	69,172,077	72,523,077	73,403,077	76,177,077	78,072,077	80,119,077	81,943,077	85,000,077	86,457,077
Ending Balance	**17,443,090**	**17,508,539**	**19,423,462**	**20,081,385**	**21,963,308**	**23,123,231**	**24,254,154**	**25,122,077**	**25,724,000**	**24,865,923**	**24,154,846**
Operating Reserve	1,384,000	1,546,000	1,765,000	1,809,000	1,854,000	1,901,000	1,949,000	1,998,000	2,049,000	2,102,000	2,156,000
Catastrophic Reserve	5,200,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000	6,800,000
Rate Stabilization Reserve	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Designated Rsrv. (Geysers Loan)	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245	3,486,245
Available Surplus	6,372,845	4,676,294	6,372,217	6,986,140	8,823,063	9,935,986	11,018,909	11,837,832	12,388,755	11,477,678	10,712,601
DS Coverage (min = 1.20)	1.35	1.60	1.63	1.61	1.71	1.69	1.73	1.77	1.88	1.84	1.92

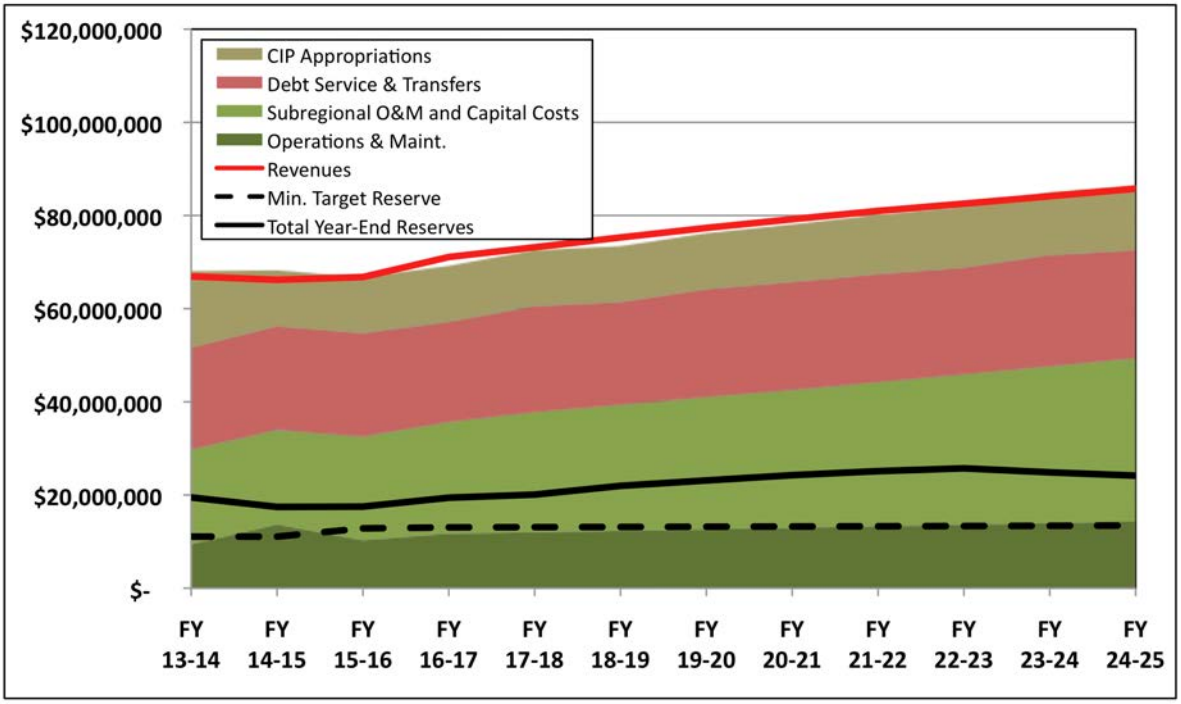
- For FY 15-16 budgeted expenses nearly match estimated revenues further indicating financial stability.
- As a result of State-mandated water use reductions, water demand is expected to match or exceed water use reductions in FY 14-15. The financial plan assumes a return to normal water supply conditions in FY 16-17 along with a modest rebound in water demand, as well as wastewater flows and wastewater revenue.
- Subregional operation and maintenance costs for treatment and disposal are the majority of wastewater utility operating costs, and are about twice collection system operating costs.
- Debt covenants require Santa Rosa Water to establish rates and charges sufficient to make debt service payments and meet debt service coverage obligations. The City's portion of subregional debt is borne by the wastewater utility, and represents about 90 percent of total wastewater debt service costs.
- The wastewater utility is able to meet debt repayment and debt service coverage obligations with current rates and revenues. Proposed wastewater rate increases will enable the wastewater utility to continue to meet these obligations through the planning period, even with additional debt issues in 2017 and 2022, based on information and assumptions reflected in the analysis.
- A general wastewater rate increase is not needed at this time, and proposed wastewater rate structure changes (presented in Section IV of this report) can be implemented in a revenue neutral manner, which will help limit the potential bill impacts associated with rate structure changes.
- Wastewater rates and service charges should be increased by 3.0 percent at the beginning of FY 16-17, FY 17-18, and FY 18-19, then by 2.5 percent in FY 19-20 and FY 20-21 in order to meet estimated revenue needs for the next five years.

Exhibit II-8 graphically summarizes the wastewater utility financial plan with annual revenues, expenses, and year-end Operating Fund balances all shown. The exhibit reflects the proposed wastewater rate increases. Of particular interest in the financial planning process are the total year-end reserves relative to the minimum target reserves. The difference is the surplus reserves described previously. The financial planning process seeks to reduce the surplus over the ten-year planning period. This, in effect, reduces the wastewater rate revenues that would otherwise be required.

The wastewater utility financial plan model reflects assumptions and estimates that are believed reasonable at the present time. However, conditions change. It is recommended that Santa Rosa Water staff review its financial condition and recommend annual rate adjustments as part of the annual budget process.

Proposed wastewater rates, rate structure changes, and rate schedules for the next five years are presented in the Section IV of this report.

Exhibit II-8
Santa Rosa Water
Summary of Wastewater Utility Financial Plan



SUBREGIONAL SYSTEM FINANCIAL PLAN SUMMARY

The City of Santa Rosa owns and operates the Santa Rosa Subregional System for the benefit of the City and the surrounding communities of Rohnert Part, Cotati, Sebastopol, and the South Park County Sanitation District. In addition to the water and wastewater utilities, Santa Rosa Water is also responsible for operating and maintaining its own water reuse system, which is operated as part of the water utility.

As part of the water and wastewater rate study, a financial plan model has also been developed for the subregional system (for staff's future use). Each member agency is charged for its proportionate share of operating and maintenance costs, capital program expenditures, and debt service obligations, in accordance with the Subregional Agreement. The subregional system also derives additional revenues from energy rebates, recycled water and compost sales, an annual stipend from Calpine, payments from the Town of Windsor for use of the Geysers Pipeline, and for accepting various types of high strength waste trucked in to the wastewater treatment plant from surrounding areas.

Estimates of future operating and maintenance costs, capital program appropriations, and other costs were developed consistent with the assumptions used in the water and wastewater financial plans. In addition, the subregional financial plan includes two new debt issues. Santa Rosa Water staff anticipates that the subregional system may issue $35 million in new long-term debt in 2017 and another $22 million in 2022. Estimates of future debt service payments have been structured around current debt service payments, which minimize the near-term financial impact of new debt issuance. Annual debt service payments on the new debt issues have been incorporated in the financial plan based on information provided by the City's financial advisors.

Exhibit II-9 presents the 10-year financial plan for the subregional system. As the owner/operator and primary user of the subregional system, about 73 percent of subregional operation, maintenance, and capital program costs are allocated to the City's wastewater utility, as well as about 76 percent of subregional debt service costs. These allocated costs are included in the costs and the financial plan for the wastewater utility, as well as the wastewater rate calculations included in Section IV of this report.

Exhibit II-10 graphically summarizes the subregional system financial plan with annual revenues, expenses, and year-end Operating Fund balances all shown. Decisions related to the annual budget, reserve balances, and other financial matters are made in close consultation with the subregional Technical Advisory Committee. As shown in Exhibit II-10, minimal surplus reserves exist in the subregional system, which in effect shift some of the financial risk associated with the subregional system to user agencies. This is one of the reasons that the wastewater utility maintains $1 million in its Rate Stabilization Reserve.

Because the subregional system operates under the terms of the Subregional Agreement details of this operation and the allocation of costs to subregional partners are not detailed in the water and wastewater rate study, or this report.

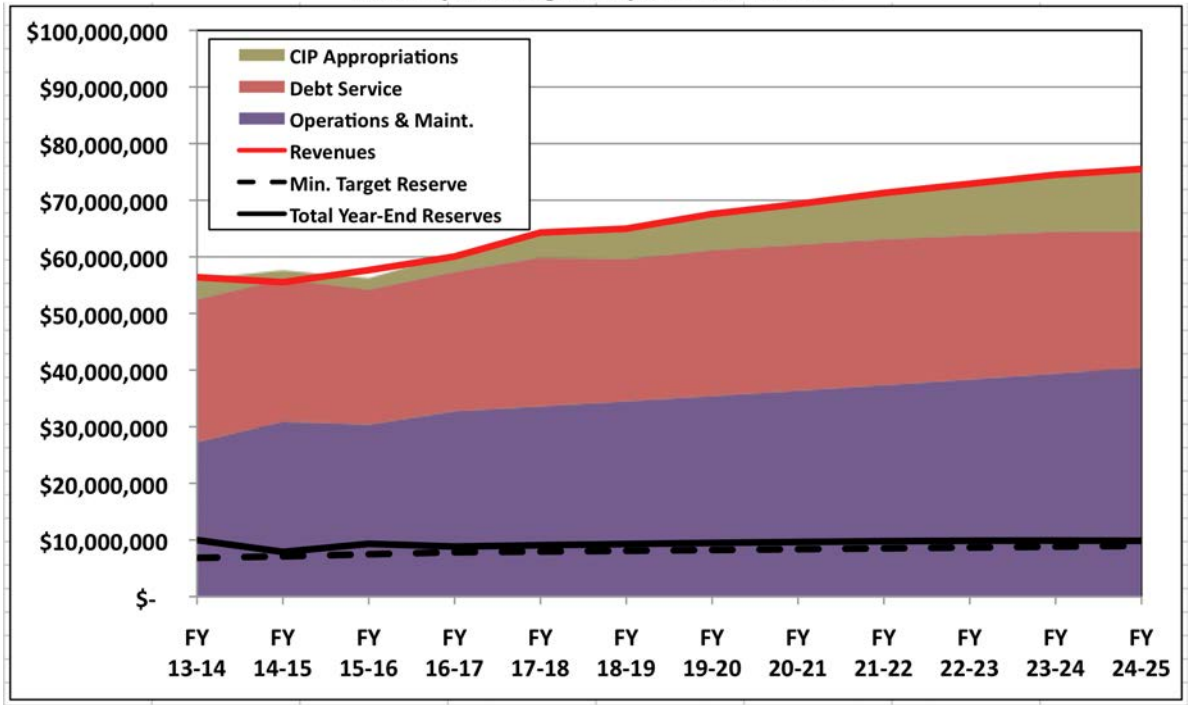
Exhibit II-9
City of Santa Rosa
Summary of Subregional Financial Plan

	FY 14-15E	FY 15-16B	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Subregional O&M Rate Increase (July) -->			6.0%	5.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
SUBREGIONAL OPERATING FUND											
Beginning Balance	9,981,266	7,886,000	9,317,811	8,832,111	9,069,411	9,278,711	9,478,011	9,638,011	9,777,011	9,865,011	9,893,011
Revenues											
Charges to User Agencies for O&M											
Santa Rosa	19,194,876	20,801,005	21,633,000	22,714,000	23,282,000	23,864,000	24,460,000	25,072,000	25,699,000	26,341,000	27,000,000
Rohnert Park	4,944,836	4,958,556	5,571,000	5,850,000	5,996,000	6,146,000	6,299,000	6,457,000	6,618,000	6,784,000	6,953,000
Sebastopol	736,699	769,892	830,000	871,000	893,000	915,000	938,000	962,000	986,000	1,010,000	1,036,000
Cotati	560,450	622,490	622,000	653,000	670,000	686,000	704,000	721,000	739,000	758,000	777,000
SPCSD	870,409	804,354	978,000	1,027,000	1,052,000	1,079,000	1,106,000	1,133,000	1,162,000	1,191,000	1,221,000
Sub-Total	26,307,269	27,956,297	29,634,000	31,115,000	31,893,000	32,690,000	33,507,000	34,345,000	35,204,000	36,084,000	36,987,000
Charges to User Agencies for Capital Program											
Santa Rosa	1,094,462	1,445,000	2,307,000	3,037,000	3,767,000	4,497,000	5,110,000	5,840,000	6,570,000	7,300,000	8,030,000
Rohnert Park	281,947	372,200	594,100	782,100	970,100	1,158,100	1,316,000	1,504,000	1,692,000	1,880,000	2,068,000
Sebastopol	42,005	55,400	88,500	116,500	144,500	172,500	196,000	224,000	252,000	280,000	308,000
Cotati	31,956	41,600	66,400	87,400	108,400	129,400	147,000	168,000	189,000	210,000	231,000
SPCSD	49,629	65,300	104,300	137,300	170,300	203,300	231,000	264,000	297,000	330,000	363,000
Sub-Total	1,500,000	1,979,500	3,160,300	4,160,300	5,160,300	6,160,300	7,000,000	8,000,000	9,000,000	10,000,000	11,000,000
Charges to User Agencies for Existing Debt Service											
Santa Rosa	19,147,392	19,203,711	18,826,000	18,681,000	17,792,000	18,301,000	18,302,000	18,304,000	17,195,000	16,564,000	15,859,000
Rohnert Park	3,866,065	3,823,056	3,728,000	3,736,000	3,548,000	3,661,000	3,661,000	3,661,000	3,494,000	3,610,000	3,448,000
Sebastopol	712,370	658,730	645,000	661,000	630,000	649,000	649,000	648,000	646,000	753,000	714,000
Cotati	932,270	937,481	917,000	911,000	867,000	892,000	892,000	893,000	838,000	808,000	774,000
SPCSD	531,060	521,548	520,000	516,000	491,000	506,000	506,000	506,000	496,000	545,000	513,000
Sub-Total	25,189,156	25,144,526	24,636,000	24,505,000	23,328,000	24,009,000	24,010,000	24,012,000	22,669,000	22,280,000	21,308,000
Est. Charges to User Agencies for Future Debt Service											
Santa Rosa				1,345,000	1,345,000	1,345,000	1,345,000	1,345,000	2,105,000	2,105,000	2,105,000
Rohnert Park				273,000	273,000	273,000	273,000	273,000	427,000	427,000	427,000
Sebastopol				50,000	50,000	50,000	50,000	50,000	78,000	78,000	78,000
Cotati				65,000	65,000	65,000	65,000	65,000	102,000	102,000	102,000
SPCSD				37,000	37,000	37,000	37,000	37,000	58,000	58,000	58,000
Sub-Total	-	-	-	1,770,000	1,770,000	1,770,000	1,770,000	1,770,000	2,770,000	2,770,000	2,770,000
TOTAL CHARGES TO USER AGENCIES											
Santa Rosa	39,436,730	41,449,716	42,766,000	45,777,000	46,186,000	48,007,000	49,217,000	50,561,000	51,569,000	52,310,000	52,994,000
Rohnert Park	9,092,848	9,153,812	9,893,100	10,641,100	10,787,100	11,238,100	11,549,000	11,895,000	12,231,000	12,701,000	12,896,000
Sebastopol	1,491,074	1,484,022	1,563,500	1,698,500	1,717,500	1,786,500	1,833,000	1,884,000	1,962,000	2,121,000	2,136,000
Cotati	1,524,676	1,601,571	1,605,400	1,716,400	1,710,400	1,772,400	1,808,000	1,847,000	1,868,000	1,878,000	1,884,000
SPCSD	1,451,098	1,391,202	1,602,300	1,717,300	1,750,300	1,825,300	1,880,000	1,940,000	2,013,000	2,124,000	2,155,000
Total to User Agencies	52,996,425	55,080,323	57,430,300	61,550,300	62,151,300	64,629,300	66,287,000	68,127,000	69,643,000	71,134,000	72,065,000

Exhibit II-9 -- Continued
City of Santa Rosa
Summary of Subregional Financial Plan

	FY 14-15E	FY 15-16B	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Other Revenues											
Energy Rebates	416,833	395,833	408,000	420,000	433,000	446,000	459,000	473,000	487,000	502,000	517,000
Recycled Water & Compost Sales	488,018	502,600	518,000	534,000	550,000	567,000	584,000	602,000	620,000	639,000	658,000
Charges for Services	190,000	220,120	227,000	234,000	241,000	248,000	255,000	263,000	271,000	279,000	287,000
Other Earned Income	411,121	403,500	416,000	428,000	441,000	454,000	468,000	482,000	496,000	511,000	526,000
Town of Windsor	746,897	781,379	810,000	845,000	879,000	914,000	948,000	983,000	1,017,000	1,052,000	1,086,000
Dairy Waste Loan Payments	220,000	220,000	227,000	234,000	241,000	248,000	255,000	263,000	271,000	279,000	287,000
Interest on Investments	50,000	50,000	23,000	44,000	45,000	70,000	71,000	96,000	98,000	99,000	99,000
Total Revenues	55,519,294	57,653,755	60,059,300	64,289,300	64,981,300	67,576,300	69,327,000	71,289,000	72,903,000	74,495,000	75,525,000
Expenses											
Salaries & Benefits	10,500,761	13,433,802	13,837,000	14,252,000	14,680,000	15,120,000	15,574,000	16,041,000	16,522,000	17,018,000	17,529,000
Services and Supplies	10,597,228	11,833,235	12,188,000	12,554,000	12,931,000	13,319,000	13,719,000	14,131,000	14,555,000	14,992,000	15,442,000
Indirect Costs	2,440,951	2,534,595	2,611,000	2,689,000	2,770,000	2,853,000	2,939,000	3,027,000	3,118,000	3,212,000	3,308,000
Capital Outlay	-	102,000	105,000	108,000	111,000	114,000	117,000	121,000	125,000	129,000	133,000
O&M Projects	6,773,240	2,248,123	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000	3,750,000
Transfers To											
Subregional WW Capital Fund	1,500,000	1,980,000	3,160,000	4,160,000	5,160,000	6,160,000	7,000,000	8,000,000	9,000,000	10,000,000	11,000,000
Other Funds	613,146	249,189	257,000	265,000	273,000	281,000	289,000	298,000	307,000	316,000	325,000
Debt Service Funds	25,189,156	23,841,000	24,637,000	24,504,000	23,327,000	24,010,000	24,009,000	24,012,000	22,668,000	22,280,000	21,307,000
Est. 2017 Debt Service ($35M)				1,770,000	1,770,000	1,770,000	1,770,000	1,770,000	1,770,000	1,770,000	1,770,000
Est. 2022 Debt Service ($22M)									1,000,000	1,000,000	1,000,000
Total Expenses	57,614,482	56,221,944	60,545,000	64,052,000	64,772,000	67,377,000	69,167,000	71,150,000	72,815,000	74,467,000	75,564,000
Ending Balance	**7,886,078**	**9,317,811**	**8,832,111**	**9,069,411**	**9,278,711**	**9,478,011**	**9,638,011**	**9,777,011**	**9,865,011**	**9,893,011**	**9,854,011**
Operating Reserve	4,547,000	4,523,000	4,874,000	5,003,000	5,136,000	5,273,000	5,415,000	5,561,000	5,711,000	5,865,000	6,024,000
Catastrophic Reserve	1,300,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000
Geysers Reserve	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Available Surplus	789,078	1,844,811	1,008,111	1,116,411	1,192,711	1,255,011	1,273,011	1,266,011	1,204,011	1,078,011	880,011
WW DS Coverage (min = 1.20)	1.35	1.60	1.63	1.61	1.71	1.69	1.73	1.77	1.88	1.84	1.92

Exhibit II-10
Santa Rosa Water
Summary of Subregional System Financial Plan



SECTION III – WATER RATES

This section of the report provides the cost of service analysis and design of water rates intended to meet the water utility's service and financial obligations for FY 15-16 and beyond. Proposed water rates are intended to meet the utility's financial needs, satisfy legal requirements, encourage water conservation, and achieve other rate-setting objectives. The water rate analyses and related recommendations address each of the following:

- Identification of water rate-setting objectives
- Evaluation of customer account and water usage data
- A cost of service analysis used to allocate costs to each customer and customer class in proportion with service demands
- Design of a water rate structure to meet revenue needs, satisfy legal requirements, and achieve rate-setting objectives in a fair and reasonable manner.

RATE SETTING OBJECTIVES

Rate-setting objectives were identified and discussed with Santa Rosa Water staff and the BPU Budget Subcommittee. The objectives were used to help guide the rate-setting process for both water and wastewater rates. In some respects, rate-setting objectives individually can lead to rate decisions that conflict with one another (e.g., encourage water conservation vs. provide stable revenues), and part of the task of designing water and wastewater rates is to strike a balance between any conflicting objectives.

There are two rate setting objective that are primary and fundamental to the rate study. They include (1) water and wastewater rates must generate sufficient revenue to meet the utility's service and financial obligations, and (2) water and wastewater rates must be calculated consistent with the requirements of the California Constitution, Article XIIID (Proposition 218) and relevant case law. Other rate-setting objectives are secondary and can be addressed so long as the primary objectives are first achieved. Beyond the primary objectives, other rate-setting objectives identified to help guide the rate design process included the following:

- Water and wastewater rates should encourage water conservation and efficient use of resources
- Water and wastewater rates should strike an appropriate balance between fixed and usage-based charges, with consideration of
  - Revenue stability
  - Conservation incentive (including CUWCC Best Management Practice 1.4)
  - Affordability for basic usage
  - Customer bill impacts of rate structure changes
- Water and wastewater rates should be simple, understandable, and easy to administer
- Water and wastewater rates should be viewed as fair and equitable by the public.

CURRENT WATER RATES

Santa Rosa Water's current water rates were last adjusted in July 2015 with automatic adjustments to water usage rates to reflect increased costs associated with SCWA's FY 15-16 rates and charges. The current water rates are presented in **Exhibit III-1**. Current water rates include a fixed service charge for all connections based on size of the water meter, a 4-tier structure for single family residential customers, a 3-tier structure for irrigation accounts, and uniform rates for multi-family, commercial, industrial, and institutional customers.

The current 4-tier structure for single family customers was designed to encourage water conservation as well as to help maintain the affordability of basic water service. The water allocation for the first tier is based on each customer's winter water use, or sewer cap. The sewer cap is calculated as the average water use for complete billing periods from November through March, when water is essentially used for domestic (indoor) purposes. In addition to providing the basis for the allocation of water in the first tier, the sewer cap is also used for wastewater billing. The second tier is intended to provide a reasonable amount of water for irrigation purposes, and the third and fourth tiers are intended to discourage excessive water use. Approximately 60 percent of single family water use occurs within the first tier, 30 percent within the second tier, 9 percent within the third tier, and 1 percent in the fourth tier. The weighted average of the water usage rates across the four tiers is about equal to the uniform rate applicable to multi-family, commercial, industrial, and institutional customers.

The current 3-tier structure for irrigation customers was designed to encourage water conservation and efficient irrigation practices. The water allocation in the tiers is based on a water budget determined for each connection, which incorporates the irrigated area, plant types, and actual evapotranspiration rates. The first tier includes water usage up to 125 percent of the water budget (allowing for inherent inefficiency in irrigation systems), the second tier covers water use above 125 percent and up to 200 percent of the water budget, and the third tier applies to water use in excess of 200 percent of water budget. At present, about 78 percent of irrigation water use occurs in the first tier, with the remainder in the second and third tiers.

As small number of customers are now using recycled water for irrigation purposes. Recycled water users are obligated to monitor water use, post signs, avoid runoff, and take other special precautions. Because of these requirements, Santa Rosa Water's recycled water pricing policy includes slightly reduced water rates, effectively compensating the customer for the extra burdens placed on them.

Under normal water demands, about 20 percent of water rate revenue is generated from fixed service charges and about 80 percent from water usage charges. However, due to reductions in water demand stemming from drought conditions, currently about 25 percent of current water rate revenue is from fixed service charges and about 75 percent from water usage charges.

Exhibit III-1
Santa Rosa Water
Current Water Rate Schedule

		As of July 1, 2015
Water Usage Rates ($/1,000 gallons)		
Single Family Residential		
Tier 1	Use up to Sewer Cap (1)	$ 4.95
Tier 2	Use over Tier 1 - Up to 8,000 gal.	$ 5.70
Tier 3	Use over Tiers 1 & 2 - Up to 22,000 gal.	$ 7.11
Tier 4	All use over Tiers 1, 2 & 3	$ 10.68
Single Family with No Irrigation Needs		
	All water use	$ 4.95
Multi-Family Residential		
	All water use	$ 5.46
Commercial/Industrial/Institutional		
	All water use	$ 5.46
Irrigation (potable water)		
Tier 1	Use up to 125% of water budget (2)	$ 5.23
Tier 2	Use from 125% to 200% of water budget	$ 7.11
Tier 3	Use over 200% of water budget	$ 10.68
Irrigation (recycled water)		
Tier 1	Use up to 125% of water budget (2)	$ 4.95
Tier 2	Use from 125% to 200% of water budget	$ 7.11
Tier 3	Use over 200% of water budget	$ 10.68
Recycled Water (Commercial/Industrial)		
	All water use	$ 5.19

Monthly Service Charges	**Potable Water**	**Recycled Water**
5/8" meter	$ 12.52	$ 11.27
1" meter	$ 22.80	$ 20.52
1 1/2" meter	$ 43.58	$ 39.21
2" meter	$ 73.23	$ 65.90
3" meter	$ 171.26	$ 154.13
4" meter	$ 291.34	$ 262.21
6" meter	$ 637.82	$ 574.03

Notes:
(1) The Sewer Cap is calculated for each customer account based on the average monthly water use during the months of November through March.
(2) The Water Budget varies each month and is determined by a formula using the site's square footage for the types of landscape and the evapotranspiration rate.

The water conservation best management practice (BMP 1.4) promulgated by the California Urban Water Conservation Council (CUWCC) indicates that at least 70 percent of water rate revenue should come from water usage charges. Santa Rosa Water's water rates have long exceeded the best management practice.

CUSTOMER ACCOUNT DATA AND WATER USE ESTIMATES

Santa Rosa Water provides water service through about 51,500 water service connections, including about 44,000 single family homes, about 1,500 duplex accounts, about 1,600 multi-family accounts, about 2,800 non-residential service accounts, and about 1,600 irrigation accounts.

Exhibit III-2
Santa Rosa Water
Summary of Water Accounts for 2016 Rate Calculations

Customer Class	Meter Size (1) 5/8"	1"	1 1/2"	2"	3"	4"	6"	Total	Est. Ann. Wtr. Use (tg) (2)
Single Family	38,353	1,431	53	16				39,853	2,977,000
Single Family w/o Irrig (Z=Y)	3,939	153	5	3				4,100	138,000
Duplexes	1,359	146	1					1,506	149,000
Multi-Family	456	538	108	432	55	15	7	1,611	801,000
Comm./Indus./Inst.	1,272	861	147	478	55	20	11	2,844	811,000
Irrigation (Potable)	401	632	63	437	24	16	1	1,574	586,000
Irrigation (Recycled Water)	3	8	1	17			1	30	17,000
Total Accounts	**45,783**	**3,769**	**378**	**1,383**	**134**	**51**	**20**	**51,518**	**5,479,000**
No. of 5/8" Equiv. Mtrs.	45,783	9,423	1,890	11,064	2,010	1,275	1,000	**72,445**	
Hydraulic Capacity Factor	1.0	2.5	5.0	8.0	15.0	25.0	50.0		

Notes:
(1) Summary of active water accounts as of July 1, 2014.
(2) Actual water use from FY 13-14 adjusted for estimated water use in 2016.

Exhibit III-2 summarizes customer account and water usage data used in water rate calculations for this report. Account information is based on the utility billing data from FY 13-14, with adjustments for estimated water use in 2016.

Water rate calculations are based on a number of factors related to Santa Rosa Water's customer base. Factors include the number of customers, customer classes, meter size, and water usage. Santa Rosa Water provides water service through 51,500 water service connections (customer accounts). Single family customers comprise about 85 percent of the customer accounts and about 57 percent of annual water usage. Duplex accounts make up about 3 percent of the customer accounts and 3 percent of the annual water usage. Multi-family customer accounts make up about 3 percent of the customer accounts and 15 percent of annual water usage. Non-residential customer accounts make up about 6 percent of the customers and 15 percent of annual water usage. Irrigation accounts make up about 3 percent of the customer accounts and 11 percent of the water use.

While there are extremes on both the low and high ends, average monthly single family water usage is normally about 7,000 gallons per month. Single family customers also exhibit a wide variation in water usage throughout the year. Monthly winter water usage for single family homes typically averages about 4,500 gallons per month. Monthly summer usage varies dramatically depending on landscape irrigation and other factors, and averages about 10,000 gallons per month.

Currently, duplex accounts are grouped with multi-family customers for water rate and utility billing purposes. However, a review of water use characteristics indicates that duplex accounts exhibit water use patterns that are more consistent with single family homes than with multi-family accounts. For this reason, it is recommended that duplex accounts be grouped with single family homes for water rate purposes.

Water usage for multi-family dwellings is generally less than for single family residences (on a per dwelling unit basis) for a variety of reasons including fewer people per household, limited landscape irrigation (or irrigation that is separately metered), and less seasonal peaking. Non-residential and irrigation water usage can vary dramatically, even within a single meter size.

Service connections with different meter sizes can place different demands on the water system. For example, much more water can be delivered through a 2" water meter than through a 5/8" meter. To relate the potential demands on the water system from customers with different size water meters, hydraulic capacity factors are used to determine the number of equivalent meters represented by the total customer base with variable meter sizes. Exhibit III-2 presents the hydraulic capacity factors (based on the rated flow capacity of various meter sizes) used to determine the number of equivalent meters. For purposes of rate analysis, a 5/8" meter is assigned a hydraulic capacity factor of 1.0. The ratios of rated flow capacities of the various meter sizes to the capacity of a 5/8" meter are used to determine the capacity factors for other meter sizes. This capacity relationship across meter sizes is used to allocate capacity-related fixed costs to various customers; this is a common rate-setting practice used in the water industry.

WATER RATE CALCULATIONS

There are three steps to determining water rates. These are:

- Determine annual water rate revenue requirements
- Analyze the cost of providing service and proportionately allocate costs to each customer class and customer
- Design water rates to recover costs from each customer class and customer.

Water Rate Revenue Requirements

The water utility ten-year financial plan was used to identify the water rate revenue required to meet financial obligations for each fiscal year of the planning period. As presented in Section II of this report, a water rate increase is not needed in the current fiscal year. As a result, the water rates presented herein are revenue neutral. While rate structure changes are recommended, the proposed water rates are intended to generate the same amount of revenue as the current water rates. Based on the current customer base and estimated water use for 2016 (as shown in Exhibit III-2), the current water rates are estimated to generate $39,528,000 annually. The proposed water rates, as presented in this section, are also designed to generate $39,528,000 from this same customer base and water usage. Even though the overall annual water rate revenue requirement is revenue neutral, the cost of service analysis and recommended rate restructuring will mean that individual customers may pay somewhat more or somewhat less under the new water rates, relative to the current water rates.

Cost of Service Analysis

Once the annual water rate revenue requirement is determined using the financial plan model, the next step in the rate-setting process is to evaluate the cost of providing service. Water rate calculations contained herein are intended to generate water rate revenue equal to the revenue requirement from Santa Rosa Water's water service customers. The manner in which each customer is responsible for the water utility's costs is determined through the cost of service analysis.

Santa Rosa Water incurs certain types of costs associated with making water service available to customers. Other costs are incurred directly or partially as a result of customer

water usage. A cost of service analysis is intended to allocate the costs of providing water service to customers in proportion to the extent to which each customer contributes to the utility's incursion of costs. There are many approaches to cost of service analysis; some are more complex than others. The approach used herein is commensurate with the available data, the distinctions made between various types of customers, and requirements contained in the California Constitution, Article XIIID (Proposition 218), relevant court decisions, and other requirements. The primary provisions of Article XIIID that affect water and wastewater rate calculations include:

- Section 6(b)(1) – Revenues derived from the fee or charge shall not exceed the funds required to provide the service.

- Section 6(b)(3) – The amount of a fee or charge imposed upon any parcel or person shall not exceed the proportional cost of the service attributable to the parcel.

With regard to tiered water rates, in April 2015, the Fourth District Court of Appeal decided the *Capistrano Taxpayer Association v. City of San Juan Capistrano* case (SJC decision) that public agencies have authority to design tiered water rate structures, but that the tiers must be based on calculating the cost of providing water at various levels of usage. The SJC decision is one of a number of court cases addressing water and wastewater rates since voters approved Proposition 218 in 1996.

The cost allocation methodology used herein begins by assigning all costs to one of three categories. The cost allocation process is performed with data available in Santa Rosa Water's detailed budget and related financial documents. The three categories include:

- Customer costs, such as meter reading and billing, are fixed costs that tend to vary as a function of the number of customers being served. Customer costs are allocated to customers based on the number of accounts. That is, every customer will pay an equal share of customer-related costs.

- Capacity costs are also fixed costs; however, these tend to vary in relation to the capacity of the water system and the ability to serve the demands of active customers. Customers that place greater or lesser burdens on the capacity of the water system should bear greater or lesser shares of these costs. The sizing of the water system is based on the potential demand that each customer could place on the water system. Capacity costs are allocated to customers based on the hydraulic capacity of the water meter. The hydraulic capacity reflects the potential demand that a customer could place on the water system at any given time, and is a general indicator of total system demands. A customer with a large meter size will be assigned a larger share of fixed capacity-related costs than one with a smaller meter. Capacity costs include costs associated with the water system's capacity including contributions to the capital program, debt service, maintenance, and certain fixed operating costs.

- Commodity costs are variable costs that vary entirely or substantially in response to the amount of actual water use, or are reasonably allocated on the basis of water use. Water treatment costs and energy costs are two typical examples. However, in an effort to encourage water conservation, some fixed costs are frequently included in commodity components such that a larger

portion of cost is recovered on the basis of usage. Even though some commodity costs are fixed, rather than variable, it is reasonable to allocate these costs to customers on the basis of usage, rather than the capacity relationship expressed by meter size and hydraulic capacity. A significant portion of the water utility's fixed costs is currently recovered through water usage charges. Proposed water rates continue this practice to a similar degree.

Exhibit III-3 summarizes how the water rate revenue requirement of $39,528,000 is comprised of various functional categories of operating and maintenance costs, debt service obligations, and the capital program appropriations with offsetting revenues and the application of available reserves. It also illustrates how the functional cost categories that make up the revenue requirement are each assigned to one or more of the three cost components, previously described.

The costs within each of the functional categories were derived from the detailed budget for FY 15-16, as prepared by staff, and the financial plan. Once functional cost categories are allocated to the components the total for each component is divided by the number of units to arrive at a total unit costs for each component. The units of demand include the number of customer accounts (service connections), number of 5/8" equivalent meters, and annual water sales for the customer, capacity, and commodity components, respectively.

The cost allocation process involved considering different variations of the allocation of costs between customer, capacity, and commodity components. In all cases, costs were proportionately allocated to each customer class based on customer account, meter size, and water usage. However, consideration was also given to other rate setting objectives including revenue stability, encouraging water conservation, and bill impacts of potential rate structure changes. The goal was to find an appropriate allocation that satisfied not only cost of service (proportionality) requirements, but also the other rate-setting objectives.

In the end, an allocation that resulted in 2.9 percent of costs assigned to the customer component, 19.6 percent to the capacity component, and 77.5 percent to the commodity component was selected, and presented to the BPU Budget Subcommittee. One of the deciding factors that led to this allocation was a sensitivity analysis of bill impacts that would be created by the resulting water rates. While not a primary rate-setting objective, after other rate-setting objectives had been addressed, the potential impacts to customer water bills of the changes in the water rate structure became a consideration, and the resulting allocation of costs served to help mitigate some of these impacts.

Exhibit III-3
Santa Rosa Water
FY 15-16 Unit Costs of Water Service

	Total Water Rate Rev. Rqmt.	Customer Costs	Capacity Costs	Commodity Costs
Units of Service -->		**51,518** Accounts	**72,445** 1" Eq. Mtrs.	**5,479,000** 1,000 gal.
Salaries and Benefits				
Total	$ 5,461,864	$ -	$ -	$ 5,461,864
Unit Cost		$ -	$ -	$ 1.00
Utility Billing Services				
Total	$ 2,002,217	$ 2,002,217	$ -	$ -
Unit Cost		$ 38.86	$ -	$ -
Water Purchases/Production				
Total	$ 13,325,000	$ -	$ -	$ 13,325,000
Unit Cost		$ -	$ -	$ 2.43
Electricity				
Total	$ 660,500	$ -	$ -	$ 660,500
Unit Cost		$ -	$ -	$ 0.12
Other Services and Supplies				
Total	$ 3,307,554	$ -	$ -	$ 3,307,554
Unit Cost		$ -	$ -	$ 0.60
Indirect Costs				
Total	$ 3,534,031	$ -	$ -	$ 3,534,031
Unit Cost		$ -	$ -	$ 0.65
Capital Outlay				
Total	$ 10,000	$ -	$ -	$ 10,000
Unit Cost		$ -	$ -	$ 0.00
To Utility Impact Fee Fund				
Total	$ 2,399,074	$ -	$ -	$ 2,399,074
Unit Cost		$ -	$ -	$ 0.44
To Debt Service Fund				
Total	$ 1,004,000	$ -	$ 1,004,000	$ -
Unit Cost		$ -	$ 13.86	$ -
To Capital Fund				
Total	$ 17,182,000	$ -	$ 15,292,000	$ 1,890,000
Unit Cost		$ -	$ 211.09	$ 0.34
To Other Funds				
Total	$ 30,713	$ -	$ -	$ 30,713
Unit Cost		$ -	$ -	$ 0.01
To/From Operating Reserves				
Total	$ (5,294,097)	$ -	$ (5,294,097)	$ -
Unit Cost		$ -	$ (73.08)	$ -
Charges for Services				
Total	$ (1,876,800)	$ (858,000)	$ (1,018,800)	$ -
Unit Cost		$ (16.65)	$ (14.06)	$ -
Other Revenue				
Total	$ (2,218,056)	$ -	$ (2,218,056)	$ -
Unit Cost		$ -	$ (30.62)	$ -
Total and Unit Costs of Service	**$39,528,000**	**$ 22.21** per Account	**$ 107.19** per Eq. Mtr.	**$ 5.59** per tg

Unit costs presented in Exhibit III-3 are then used to distribute the costs of providing service to each customer class, as presented in **Exhibit III-4**. Customer classes include single family and duplex accounts, multi-family, commercial, industrial, and institutional accounts, and dedicated irrigation accounts. For each customer class, unit costs for each cost component are multiplied by the units of demand. The resulting allocation of the total water rate revenue requirement to each customer class is shown on the right side of Exhibit III-4. This indicates that 61.8 percent of costs are allocated to single family and duplex customers, 27.7 percent to multi-family, commercial, industrial, and institutional customers, and 10.5 percent to irrigation accounts. The allocation of costs to the customer, capacity, and commodity components is shown to be 2.9 percent, 19.6 percent, and 77.5 percent, respectively at the bottom of Exhibit III-4.

The water conservation best management practice for retail water rates (BMP 1.4), as promulgated by the CUWCC, specifies that at least 70 percent of water rate revenue be generated through usage charges. The allocation of costs ensures that Santa Rosa Water's water rates will continue to exceed this requirement.

Exhibit III-4
Santa Rosa Water
Cost Distribution to Customer Classes

	Customer Costs	Capacity Costs	Commodity Costs	Cost of Service	
Unit Costs of Service -->	**$ 22.21** per Account	**$ 107.19** per Eq. Mtr.	**$ 5.59** per tg		
Customer Classes					
Single Family and Duplex Accounts					
Units of Service	45,459	48,423	3,264,000		
Alloc. of Cost of Service	$ 1,009,646	$ 5,190,275	$ 18,240,473	**$24,440,395**	61.8%
Multi-Family, Commercial, Industrial, and Institutional Accounts					
Units of Service	4,455	17,206	1,612,000		
Alloc. of Cost of Service	$ 98,946	$ 1,844,191	$ 9,008,469	**$10,951,606**	27.7%
Dedicated Irrigation Accounts					
Units of Service	1,604	6,816	603,000		
Alloc. of Cost of Service	$ 35,625	$ 730,581	$ 3,369,793	**$ 4,135,999**	10.5%
Total Costs	**$ 1,144,217** 2.9%	**$ 7,765,047** 19.6%	**$30,618,736** 77.5%	**$39,528,000**	100%

Water Rate Design

The third step in the rate setting process is the design of water rates to recover costs from each customer class and generate the revenue needed for the utility. **Exhibit III-5** summarizes the basic elements of the water rate structure for each customer class. Costs that were distributed to each customer class under each rate component are then divided by the units of demand within each class to arrive at basic rate components.

Exhibit III-5
Santa Rosa Water
Summary of Water Rate Calculations

	Single Family and Duplex Accounts	Multi-Family, Commercial, Industrial, & Institutional Accounts	Irrigation Accounts	Totals	
Allocated Costs -->	**$24,440,395**	**$10,951,606**	**$ 4,135,999**	**$39,528,000**	
Rate Component Calculations					
Customer Costs	$ 1,009,646	$ 98,946	$ 35,625	$ 1,144,217	2.9%
No. of Accounts	45,459	4,455	1,604		
Monthly Customer Cost -->	**$ 1.85**	**$ 1.85**	**$ 1.85**		
Capacity Costs	$ 5,190,275	$ 1,844,191	$ 730,581	$ 7,765,047	19.6%
No. of 5/8" Equiv. Mtrs.	48,423	17,206	6,816		
Monthly Capacity Cost -->	**$ 8.93**	**$ 8.93**	**$ 8.93**		
Commodity Costs	$ 18,240,473	$ 9,008,469	$ 3,369,793	$ 30,618,736	77.5%
Ann. Water Use (tg)	3,264,000	1,612,000	603,000		
Uniform Water Rate ($/tg) -->	$ 5.59	**$ 5.59**	$ 5.59		
Tiered Water Rate ($/tg)					
Tier 1	**$ 5.25**		**$ 5.29**	Tier 1	
Tier 2	**$ 6.14**		**$ 6.70**	Tier 2	

In general, proposed water rates follow the same basic structure as the current water rates, even though the specific rate amounts have been updated to reflect the current cost of service analysis. Water rates include fixed service charges based on the size of the water meter, and water usage rates applicable to each customer class.

Service Charges

Exhibit III-6 presents the calculation of monthly service charges for the proposed water rates. Service charges are intended to recover the customer and capacity costs identified through the cost of service analysis. Service charges apply to all customer water bills, regardless of the amount of water actually used. Customers that use no water during a billing period should still be required to pay the service charge, as service is immediately available to them. In calculating service charges customer costs are allocated equally to all customers and capacity costs are allocated based on meter size in relation to the hydraulic capacity associated with the various meter sizes.

The proposed service charge for a 5/8″ meter (typical for single family homes) is $10.78. Service charges for other meter sizes vary from $24.18 to $448.46, depending on meter sizes ranging from 1″ to 6″. Service charges for 5/8″ water meters, as well as those for meters 3″ and larger will all decrease, while service charges for meters from 1″ to 2″ will increase commensurate with the cost of service analysis and the capacity relationship across meter sizes. All proposed service charges properly reflect the capacity relationship across meter sizes, as well as the revenue needs of the utility. The changes to the service charges across the range of meter sizes objectively reflect a consistent proportioning of the cost of providing service to customers of varying meter sizes.

Exhibit III-6
Santa Rosa Water
Water Utility Monthly Service Charge Calculations

Meter Size	Customer Cost	Hydraulic Capacity Factor	Capacity Cost	Monthly Service Charge
5/8" & 3/4"	$ 1.85	1.0	$ 8.93	$ 10.78
1"	$ 1.85	2.5	$ 22.33	$ 24.18
1 1/2"	$ 1.85	5.0	$ 44.66	$ 46.51
2"	$ 1.85	8.0	$ 71.46	$ 73.31
3"	$ 1.85	15.0	$ 133.98	$ 135.83
4"	$ 1.85	25.0	$ 223.30	$ 225.16
6"	$ 1.85	50.0	$ 446.61	$ 448.46

A service charge for ¾" water meters is added to the water rate schedule. On occasion, Santa Rosa Water will allow customers to upsize from a 5/8" meter to a ¾" meter to meet a Fire Code requirement during a remodel (both meter sizes fit within the same meter box). In these instances, where the upsize is required only for the Fire Code requirement charging the same service charge is reasonable and appropriate.

Water Usage Rates

Current water rates include a 4-tier rate structure for single family customers, a 3-tier structure for dedicated irrigation accounts, and a uniform usage rate for multi-family, commercial, industrial, and institutional customers. Under the proposed water rates a uniform water rate would be $5.59 per 1,000 gallons (tg), as shown near the bottom of Exhibit III-5. This uniform rate could be applied to all water use by all customer classes. This uniform rate is comprised of $2.43 per tg for water supplies, $0.27 per tg for water conservation programs and activities, and $2.89 per tg for other general commodity costs allocated to water usage.

Even though current water rates were developed based on cost of service requirements, the recent SJC decision effectively created new requirements for tiered rate structures and Santa Rosa Water staff determined that it would be prudent to modify its tiered water rate structures.

Santa Rosa Water obtains its water supplies from three different sources, including water purchased from SCWA, groundwater produced from local wells, and recycled water purchased from the subregional system. The cost to purchase or produce an acre-foot (AF) of water from each of these sources is about $761 per AF for SCWA water, about $100 per AF for groundwater, and about $254 per AF for recycled water. At present SCWA water makes up about 95 percent of total water supply, groundwater about 4.5 percent, and recycled water about 0.5 percent. The court, in the SJC decision, discussed using the costs of various sources of water to justify different tiered water rates. In addition, the court also identified the cost of water conservation programs as a cost that could be used in developing tiered water rates.

Because of the broad diversity of water use and water using characteristics exhibited by multi-family, commercial, industrial, and institutional customers, it continues to be appropriate to use a uniform water rate for these customer classes. However, both single family customers (including duplex accounts) and dedicated irrigation accounts (with defined water budgets) have relatively predictable and homogeneous water usage

patterns, and tier rates that appropriately reflect costs for each level of usage can satisfy not only cost of service (and proportionality) requirements, but also source of water supply and water conservation objectives as well.

Exhibit III-7 shows the calculation of proposed 2-tier water rates for single family and duplex customer accounts, as well as for dedicated irrigation accounts. These 2-tier structures are justified as follows:

- The first tier water allocation for single family and duplex accounts is based on the sewer cap for each account, and represents water for indoor purposes (necessary for health and safety). Water use above the sewer cap is generally for irrigation and more discretionary.
- The first tier water allocation for dedicated irrigation accounts is based on 125 percent of the water budget for each account, and represents efficient irrigation water use (no irrigation system is 100 percent efficient). Water use above 125 percent of the water budget exceeds the need for the landscape.
- Water supplied for the first tier of usage includes the mix of water supplies with their various costs, resulting in a blended water supply cost[3].
- Water supplied for the second tier includes only SCWA water costs (highest cost supply) as well as water conservation program costs. Water conservation costs have been assigned only to usage in the second tier, because usage in the first tier generally reflects reasonable water use[4].
- Commodity costs not related to water supply or water conservation costs are equally allocated across all water usage.

* * * * *

The proposed service charges, uniform water rate, and 2-tier water rate structures reflect a reasonable allocation of costs on a proportionate basis to each water user, as required by Section 6(b)(3) of Article XIIID of the California Constitution, as well as the overall limit that rates not exceed the cost of service required by Section 6(b)(1). The proposed water rate structure also assists Santa Rosa Water in achieving other rate setting objectives, as previously described.

[3] Because the sewer cap and the water budget are derived separately the water supply mix in the first tier differs slightly for single family and duplex accounts than it does for irrigation accounts. As a result, the water supply costs and hence the water usage tier rates for each customer class is somewhat different.

[4] Water conservation program costs are assigned equally to each customer class at $0.27 per tg for all water usage. However, the allocated costs are recovered only from second tier usage for single family and duplex accounts and for irrigation accounts. Because the percentage of usage in the second tier differs between these two customer classes, the second tier water conservation cost differs as well.

Exhibit III-7
Santa Rosa Water
Water Usage Rate Calculations

	Single Family and Duplex Accounts			Multi-Family, Commercial, Industrial, & Institutional Accounts	Dedicated Irrigation Accounts		
	Tier 1 (2)	Tier 2	Total	Total	Tier 1 (3)	Tier 2	Total
Water Usage (tg) (1)	2,028,000	1,236,000	3,264,000	1,612,000	475,000	128,000	603,000
	62%	38%		100%	79%	21%	
Water Supply (AF) $/AF							
SCWA $ 761	6,222	4,123	10,345	5,110	1,484	427	1,911
Groundwater $ 100	477		477	235	88		88
Recycled Water $ 254	66		66	32	12		12
Total Supply	6,765	4,123	10,888	5,377	1,584	427	2,011
Water Supply (%)							
SCWA	92.0%	100%	95.0%	95.0%	93.7%	100%	95.0%
Groundwater	7.1%	0%	4.4%	4.4%	5.6%	0%	4.4%
Recycled Water	1.0%	0%	0.6%	0.6%	0.8%	0%	0.6%
Total Supply	100%	100%	100%	100%	100%	100%	100%
Water Usage Rates ($/tg)							
Gen'l. w/o Supply/Conserv.	$ 2.89	$ 2.89	$ 2.89	$ 2.89	$ 2.89	$ 2.89	$ 2.89
SCWA Water	$ 2.33	$ 2.54	$ 2.41	$ 2.41	$ 2.38	$ 2.54	$ 2.41
Groundwater & Rec. Wtr.	$ 0.03	$ -	$ 0.02	$ 0.02	$ 0.02	$ -	$ 0.02
Water Conservation		$ 0.71	$ 0.27	$ 0.27		$ 1.27	$ 0.27
Total Cost per tg (4)	**$ 5.25**	**$ 6.14**	$ 5.59	**$ 5.59**	**$ 5.29**	**$ 6.70**	$ 5.59

Notes:
(1) Total water sales estimated at 5,479,000 tg, as distributed across the customer classes. Total usage is estimated to be about 8 percent less than total water production due to system losses. One acre foot (AF) is equal to 325,851 gallons.
(2) The first tier allocation for single family and duplex accounts is equal to the Sewer Cap, and represents indoor water needs.
(3) The first tier allocation for irrigation accounts is equal to 125 percent of the individual water budget, and represents efficient water usage.

PROPOSED WATER RATE SCHEDULE

Exhibit III-8 summarizes the proposed water rate schedule for water rates to be effective in January 2016. The proposed water rates are revenue neutral overall, relative to current water rates. The proposed water rates reflect the cost of providing water service to customers. In particular, the proposed water rates reflect a proportionate distribution of costs to all customers and customer classes, and reflect the cost of providing service.

As described in Section II of this report, it is recommended that the water usage rates be adjusted annually, at the beginning of each fiscal year, based on changes in the cost of wholesale water purchases. In addition, service charges should be increased by 5 percent at the beginning of each fiscal year. Both of the changes will help ensure that the water utility will continue to receive adequate revenue to meet service and financial obligations. Automatic adjustments to water usage rates to reflect changes in wholesale water supply costs are presented below.

Information on the impact of proposed water rates on customer utility bills is included near the end of Section I of this report.

Exhibit III-8
Santa Rosa Water
Proposed Water Rate Schedule (1)

			January 2016
Water Usage Rates ($/1,000 gallons)			
Single Family and Duplexes			
Tier 1	Up to Sewer Cap (2)	$	5.25
Tier 2	Over Sewer Cap	$	6.14
Multi-Family, Commercial, Industrial, Institutional			
Uniform	All Water Use	$	5.59
Irrigation			
Tier 1	Up to 125% of Water Budget (3)	$	5.29
Tier 2	Over 125% of Water Budget	$	6.70
Monthly Service Charges			
	5/8" & 3/4" meters	$	10.78
	1" meter	$	24.18
	1 1/2" meter	$	46.51
	2" meter	$	73.31
	3" meter	$	135.83
	4" meter	$	225.16
	6" meter	$	448.46

Notes:

(1) Recycled water customers pay the water usage rates that are 95% of potable water rates (Tier 1 or uniform only, as applicable), and service charges that are 90% of potable water service charges.

(2) The Sewer Cap is calculated for each residential account based on the average water use from complete billing periods within the months of November through March. For accounts with no outdoor usage all water is billed at the Tier 1 rate.

(3) The water budget varies each month and is determined using the site's square footage for the types of plants and the evapotranspiration rate.

AUTOMATIC ADJUSTMENTS TO WATER USAGE RATES FOR CHANGES IN SCWA COSTS

Government Code Section 53756 authorizes public agencies to adopt procedures for automatically adjusting water and wastewater rates to counter the effects of inflation and/or changes in wholesale water supply costs. Santa Rosa Water has used this procedure to adjust water usage rates each year since 2009, including in July 2015. Because of proposed changes in water usage rates, it is recommended that Santa Rosa Water adopt new procedures for adjusting water usage rates for the changes in wholesale water costs. Procedures can be adopted for a five-year period, and would be available from 2016 through 2020.

Exhibit III-9 includes a worksheet to be used to calculate the automatic rate adjustments for changes in SCWA water charges on an annual basis. The worksheet shows the calculation for a hypothetical 5 percent increase in SCWA rates and charges for FY 16-17 (applied to the proposed water rates for January 2016). The same worksheet and embedded calculations would be used for actual annual rate adjustments. The worksheet reflects the mix of water supplies and the proportion of water coming from SCWA. Only

the water usage rates are affected by the adjustment for wholesale water costs. Service charges would be unaffected by the automatic rate adjustments. The bottom portion of Exhibit III-9 shows how the automatic adjustments to the water usage rates would affect the typical single family residential water bill. Because SCWA water supply costs represent only a portion of the total cost of providing water service, the adjustment for changes in wholesale water costs is largely diluted in the total water bill. As the single family bill comparison at the bottom if Exhibit III-9 indicates, a 5 percent increase in the rate for SCWA water would result in a 1.7 percent increase in a typical single family water bill.

Exhibit III-9
Santa Rosa Water
Automatic Water Usage Rate Adjustment Calculation for Changes in SCWA Water Costs (1)

SCWA Santa Rosa Aquedect (2)

Current Rate	$ 761.05	/AF	
New Rate	$ 799.10	/AF	
Change	**5.00%**		

	Current Rates and Charges	% SCWA Water Cost (3)	SCWA Adjustment	Adjusted Water Usage Rates ($/tg) and % Change
WATER RATES				
Water Usage Rates ($/1,000 gallons)				
Single Family				
Tier 1	$ 5.25	44.4%	$ 0.12	**$ 5.37** 2.3%
Tier 2	$ 6.14	41.4%	$ 0.13	**$ 6.27** 2.1%
Comm./Indus./Inst.				
All Water Use	$ 5.59	43.2%	$ 0.12	**$ 5.71** 2.1%
Irrigation				
Tier 1	$ 5.29	45.0%	$ 0.12	**$ 5.41** 2.3%
Tier 2	$ 6.70	37.9%	$ 0.13	**$ 6.83** 1.9%
Monthly Service Charges	No change to service charges due to changes in SCWA costs.			

Notes:

(1) Example presented assumes a 5 percent increase in the rate for SCWA water purchases from the Santa Rosa Aqueduct.

(2) Rates charged by SCWA for water from the Santa Rosa Aqueduct. Rates for the upcoming fiscal year are typically adopted in April of each year.

(3) Percentage of the current water usage rate that is attributable to SCWA water purchase costs. These percentages are updated with each automatic adjustment cycle.

Est. Impact of Water Usage Rate Adjustments on Typical Monthly Single Family Water Bill

	Current Bill	Adjusted Bill	Change $	Change %
Single Family with a 5/8" meter, 7,000 gallons of water use, and sewer cap of 4,500 gallons	$ 49.76	$ 50.62	$ 0.86	1.7%

LOW INCOME ASSISTANCE PROGRAMS

Under California Constitution Article XIIID (Proposition 218), passed by voters in 1996, the water and wastewater rates from one customer class cannot be used to subsidize another customer class. For this reason, Santa Rosa Water's ability to offer a low-income assistance program is significantly restricted. Staff and City officials have wrestled with the issue for a number of years, and have identified several creative ways the City would be able to assist those with financial hardship.

In 2003, the BPU recommended, and the City Council approved, the "Change for Kids" donation program whereby customers could have their utility bills rounded up to the nearest dollar, or add a specified amount per bill, to voluntarily fund to fund free or low-fee afterschool recreation programs for children of families with limited income. That program currently generates about $25,000 and assists about 400 children annually.

The BPU and City Council are interested in assisting utility customers with limited income with their utility bills by providing payment assistance and improving water use efficiency. On August 20, 2015, the BPU passed a resolution recommending expansion of the water bill donation program (now called "Santa Rosa Cares") to include Change for Kids, Youth Scholarship Fund, and H2O (Help to Others). The Youth Scholarship Fund has provided free swim lessons to about 350 children from families with limited income annually. H2O would be a new program to provide utility bill payment assistance to individuals and families with limited income. City and Santa Rosa Water staff plan to revise the marketing of these donation programs in an effort to increase program participation and to generate additional funds for these programs.

According to estimates developed by staff, PG&E's low-income (CARE) program has about 16,500 participants in Santa Rosa. Qualifying criteria for the CARE program is based on the number of people in the household and household income below twice the poverty level. This is a relatively high number of households that may benefit from assistance, and would strain the City's ability to provide assistance. Using more restrictive qualifying criteria, such as the US Dept. of Housing and Urban Development's (HUD) definition of extremely low income households, might make it possible to provide more assistance, but to fewer participants. Staff estimates that about 4,000 households in Santa Rosa fall within HUD's extremely low income definition.

Santa Rosa Water staff also identified revenue from cell tower leases as a potential source of funds for low-income assistance programs. At present, the City's cell tower leases generate about $270,000 annually. If this sum of money was provided to low income customers in the form of a discount on utility bills it would equate to about $1.36 per month (about 1 percent of a typical monthly water and wastewater bill) if available to 16,500 low income households, or about $5.63 per month (about 4 percent of the typical bill) if available to 4,000 extremely low income households.

Santa Rosa Water's water and wastewater rates have been designed, in part, to encourage water conservation and maintain the affordability of basic service for health and safety reasons. This is accomplished by limiting fixed service charges and recovering costs more through usage charges (within the limits of cost of service proportionality requirements and financial stability concerns). Under the proposed water and wastewater usage charges for basic service each 1,000 gallons of water consumed costs customers $5.25

for water (first tier) and $13.08 for wastewater service, for a total of $18.33 per 1,000 gallons. Because of this structure, a better way to assist low-income customers may be to assist them in reducing their water usage (particularly indoor usage which also affects wastewater costs).

The City has long offered a broad variety of water conservation assistance and information programs, including rebates, water audits, water saving kits, and more. While these programs and services have been available to low income customers, as with all other customers, perhaps it would be beneficial to specifically market these programs to low-income customers to help reduce their utility bills.

Santa Rosa Water staff has identified the costs and water savings benefits of residential indoor retrofits. While replacing toilets can be expensive, simply installing low water using showerheads and faucet aerators has been estimated to save up to 1,800 gallons per month. The estimated cost to install these devices in a home, including labor, has been estimated to be about $106, if installed in a systematic way under a comprehensive program.

At $106 per residential dwelling, cell tower lease revenue could be sufficient to retrofit up to 2,500 homes per year. Even if water savings is only 1,000 gallons per month, each customer could benefit by $18.33 per month, or about $220 per year. This is a more significant benefit than likely could be achieved through a direct discount program.

Beyond voluntary donations encouraged and supported by the Santa Rosa Cares program, the above analysis is provided to illustrate that perhaps an additional way to assist low-income customers is by helping them to reduce indoor water usage. There are certainly other ways to assist in saving water, but developing a systematic program to help reduce indoor water use for low income households would not only assist low income customers in a meaningful way, but would also further Santa Rosa Water's conservation objectives.

SECTION IV – WASTEWATER RATES

This section of the report provides the cost of service analysis and design of wastewater rates intended to meet the wastewater utility's service and financial obligations for FY 15-16 and beyond. Proposed wastewater rates are intended to meet the utility's financial needs, satisfy legal requirements, encourage water conservation, and achieve other rate-setting objectives. Rate setting objectives in the last section on water rates were also considered in the development of wastewater rates. The wastewater rate analyses and related recommendations address each of the following:

- Evaluation of customer account, estimated wastewater flow, and wastewater loading data
- A cost of service analysis used to allocate costs to each customer and customer class in proportion with service demands, including flow and loading characteristics
- Design of a wastewater rate structure to meet revenue needs, satisfy legal requirements, and achieve rate-setting objectives in a fair and reasonable manner.

CURRENT WATEWATER RATES

Santa Rosa Water's current wastewater rates were last adjusted in January 2015 with an overall 3.5 percent adjustment to reflect increased costs associated with providing wastewater service. The current wastewater rates are presented in **Exhibit IV-1**. Current wastewater rates include a service charge for each connection and wastewater usage rates applied to estimates of wastewater flow generated by each customer. All single family residential customers pay the same service charge of $21.60 per billing period, and other customers pay a service charge based on size of the water meter. Residential customers (single family and multi-family) and nearly 90 businesses pay the same wastewater usage rate. However, the utility also has nearly 20 other special categories of user with rates that vary based on the wastewater loading characteristics of wastewater generated by different types of business. Most of these special categories have only a few accounts within them.

For residential customers, wastewater flow is estimated with the sewer cap. The sewer cap is calculated annually for each residential account as the average water use for billing cycles that fall within the period from November through March. The wastewater usage charge is based on the lesser of the sewer cap or actual water use during the billing period. Non-residential accounts with a dedicated meter for irrigation are billed for wastewater usage based on actual water usage. In general irrigation is separately metered and is not included in wastewater billing. Non-residential customers without a separate irrigation meter are charged for wastewater usage based on a sewer cap, similar to residential accounts.

Under normal conditions, about 20 percent of wastewater rate revenue is generated from fixed service charges and about 80 percent from wastewater usage charges. However, due to reductions in water demand stemming from drought conditions, currently about 24 percent of current wastewater rate revenue is from fixed service charges and about 76 percent from usage charges.

Exhibit IV-1
Santa Rosa Water
Current Wastewater Rate Schedule

	As of January 1, 2015	
Wastewater Usage Rates ($/1,000 gallons) (1)		
Residential	$	13.24
General Commercial/Industrial	$	13.24
Special Categories		
Bakery - Commercial	$	19.21
Car Wash - Commercial	$	8.23
Combined General Commercial/Food	$	15.24
Electronics Manufacture	$	13.87
Food Processor	$	22.80
Glass Products	$	11.12
Groundwater	$	8.23
Hotel/Motel with Restaurant	$	15.24
Meat Cutter	$	20.45
Miller	$	18.42
Mortuary	$	15.24
Newspaper	$	11.82
Restaurant	$	17.49
Supermarket	$	17.49
Water Purifier	$	14.30
Monthly Service Charges		
Single Family Residential	$	21.60
Multi-Family/Commercial/Industrial		
5/8" meter	$	21.60
1" meter	$	48.10
1 1/2" meter	$	102.63
2" meter	$	178.80
3" meter	$	396.66
4" meter	$	701.61
6" meter	$	1,572.94

Notes:

(1) Wastewater usage charge applies to the wastewater generated. For single family and multi-family residential accounts the wastewater generated is based on the lower of current monthly water use or the Sewer Cap. Each customer's Sewer Cap is determined annually by averaging usage for billing periods within the months from November through March. For non-residential customers with dedicated irrigation meters, the wastewater is based on actual water usage.

CUSTOMER ACCOUNT DATA AND WASTEWATER FLOW AND LOADING ESTIMATES

Wastewater rate calculations are based on a number of factors related to Santa Rosa Water's wastewater service customers. Factors include the number of customers, customer classes, water usage and wastewater flows, and strength characteristics of wastewater as determined by biochemical oxygen demand (BOD), total suspended solids (TSS), and nitrogen as measured by total Kjeldahl nitrogen (TKN). **Exhibit IV-2** summarizes customer account and water usage data obtained from the utility billing system for FY 13-14, as well as estimates of resulting wastewater flow and loading characteristics.

Residential wastewater flows are estimated based on winter water usage and the sewer cap, as previously described. On average, the single family sewer cap is normally about 4,500 gallons per month. However, due to current drought conditions and reduced water usage the current average sewer cap is about 4,000 gallons per month. Non-residential wastewater flows are based on actual monthly water usage, as irrigation is generally separately metered and it is reasonable to assume that non-irrigation water demand ends up as wastewater.

In an effort to simplify the wastewater rate structure, it is recommended that the approximately 15 special wastewater categories be consolidated into four general strength categories: low strength, standard strength, medium strength, and high strength. With the exception of a small number of special high strength industries and businesses, all non-residential customer accounts have been assigned into one of these four categories. Most of the existing 15 special categories have just a few (or none at all) accounts, and the classifications create a false sense of precision, as well as distinctions without real differences. By using four general categories to represent wastewater strength differences the rate structure will be easier to administer and fair for all customers. **Exhibit IV-3** provides a list of the types of businesses that would be classified into each of the recommended general categories, as well as the range of strength concentrations for each category. About 89 percent of the non-residential accounts are classified into the standard strength category.

Wastewater rate analyses, and the establishment of the four strength categories, consider the strength (loading) characteristics of wastewater entering treatment facilities. Strength factors for BOD, TSS, and TKN are considered, as these factors play a role in the treatment operations. Santa Rosa Water staff provided strength data from a primarily residential portion of the collection system, and that information is used to establish residential strength factors. It is also used to define the standard non-residential strength category. Residential, as well as low, standard, medium, and high strength non-residential wastewater usage rates have been calculated with the strength factors below:

• Residential strength	270 mg/l for BOD	225 mg/l for TSS	55 mg/l for TKN
• Low strength	20 mg/l for BOD	20 mg/l for TSS	10 mg/l for TKN
• Standard strength	270 mg/l for BOD	225 mg/l for TSS	55 mg/l for TKN
• Medium strength	400 mg/l for BOD	400 mg/l for TSS	75 mg/l for TKN
• High strength	800 mg/l for BOD	800 mg/l for TSS	100 mg/l for TKN

Exhibit IV-2
Santa Rosa Water
Wastewater Customer Account Data and Estimated Wastewater Flows and Loadings

Customer Class	No. of Accounts (1)	No. of ESFDs (2)	Annual Water Usage (1)	Rate of Return	Estimated Annual Wastewater Flow (1) (3)	Estimated Annual Wastewater Flow	BOD Strength (4)	Annual BOD Loading	TSS Strength (4)	Annual TSS Loading	TKN Strength (4)	Annual TKN Loading
			1,000 Gal.		1,000 Gal.	MG	mg/l	lbs	mg/l	lbs	mg/l	lbs
Residential												
Single Family & Duplexes	44,548	44,548	3,238,000	66%	2,146,000	2,146	270	4,832,363	225	4,026,969	55	984,370
Multi-Family	1,624	6,951	947,000	91%	859,000	859	270	1,934,296	225	1,611,914	55	394,023
Non-Residential												
Low Strength	27	196	32,600	100%	32,600	33	20	5,438	20	5,438	10	2,719
Standard Strength	2,413	7,657	467,000	100%	467,000	467	270	1,051,591	225	876,326	55	214,213
Medium Strength	62	360	53,300	100%	53,300	53	400	177,809	400	177,809	75	33,339
High Strength	224	961	141,000	100%	141,000	141	800	940,752	800	940,752	100	117,594
Totals	**48,898**	**60,671**	**4,878,900**	**76%**	**3,698,900**	**3,699**	**290**	**8,942,248**	**248**	**7,639,206**	**57**	**1,746,258**

Notes:
(1) From utility billing system for FY 13-14, and other utility billing data.
(2) The number of equivalent single family dwellings (ESFDs) for multi-family and non-residential accounts are based on meter size.
(3) Wastewater flow for residential customers is determined as the lower of actual water use or the sewer cap. The sewer cap is calculated each year as the average water use for complete billing periods from November through March. Wastewater flow for non-residential customers with dedicated irrigation meters is based on water usage, as irrigation is generally separately metered.
(4) Based on previous wastewater rate analyses, SWRCB guidelines, and adjustments to better match with actual treatment plant flows and loadings.

Exhibit IV-3
Santa Rosa Water
Classification of Non-Residential Accounts to Strength Categories (1)

Low Strength	***Medium Strength***
Car Wash	Auto Repair / Service
Glass Products	Bar / Wine Tasting (w/o food prep)
Groundwater	Combined General Comm. & Food
	Community Facility (w/ comm. kitchen)
Standard Strength	Gas Station (w/ food prep)
Barber / Beauty Salon	Hospital
Community Facility (w/o comm. kitchen)	Hotel / Motel (w/ restaurant)
Electronics Manufacture	Mixed Use (w/ multiple strengths)
Gas Station (no food prep)	
General Commercial / Industrial	***High Strength***
Health Club / Spa	Bakery
Hotel / Motel (no restaurant)	Bar / Wine Tasting (w/ food prep)
Jail / Detention Facilities	Butcher / Meat Cutter
Laundromat / Dry Cleaners	Miller
Medical / Dental Office	Mortuary
Newspaper	Restaurant
Office	Small Wineries (< 80,000 gal. per year)
Residential Care Facility	Supermarket
Retail	
School	
Water Purifier	

Notes:

(1) This list is not all-inclusive, but provides guidance for classifying customers into appropriate categories. General guidelines for the range of wastewater concentration for each loading constituent are as follows:

	BOD mg/l	TSS mg/l	TKN mg/l
Low	<150	<150	<25
Standard	150-300	150-300	25-60
Medium	300-600	300-600	60-85
High	>600	>600	>85

There are also a number of customers that are subject to specially calculated high-strength surcharges due to their unique or heavy loading characteristics and/or high flow volumes. These surcharge accounts are rolled together in the rate model for continuity purposes. The calculation of high strength surcharges[5] and customer-specific rate calculations are addressed later in this section.

Loading characteristics for each general strength category, and the assignment of different business types to each category are generally based on guidelines published by the California State Water Resources Control Board (SWRCB) and other sources of information. The strength factors used were adjusted in an effort to better match estimated aggregate wastewater flow and strength data with actual treatment plant inflow and loading characteristics. This results in a better match to estimated loading into the wastewater treatment plant with actual sampling done of wastewater influent, and thereby improves the cost of service analysis.

[5] To avoid confusion between the current high strength surcharges and the proposed high strength wastewater customer category, it is recommended that the high strength surcharges be referred to as additional surcharges. This change in terminology is used in this report.

WASTEWATER RATE CALCULATIONS

There are three steps to determining wastewater rates. These are:

- Determine annual wastewater rate revenue requirements
- Analyze the cost of providing service to each customer class
- Design wastewater rates to recover costs from each customer class.

Wastewater Rate Revenue Requirements

The wastewater utility ten-year financial plan was used to identify the wastewater rate revenue required to meet financial obligations for each fiscal year of the planning period. As presented in Section II of this report, a wastewater rate increase is not needed in the current fiscal year. As a result, the wastewater rates presented herein are revenue neutral. While rate structure changes are recommended, the proposed wastewater rates are intended to generate the same amount of revenue as the current wastewater rates. Based on the current customer base and estimated wastewater flows for 2016 (as shown in Exhibit IV-2), the current wastewater rates are estimated to generate $65,430,000 annually. The proposed wastewater rates, as presented in this section, are also designed to generate $65,430,000 from this same customer base and wastewater generated. Even though the overall annual wastewater rate revenue requirement is revenue neutral, the cost of service analysis and recommended rate restructuring will mean that individual customers may pay somewhat more or somewhat less under the new wastewater rates, relative to the current wastewater rates.

Cost of Service Analysis

Once the annual wastewater rate revenue requirement has been determined, the next step in the rate setting process is to evaluate the cost of providing service. Wastewater rate calculations contained herein are intended to generate the level of revenue commensurate with the revenue requirement from wastewater service customers. The manner in which each customer is responsible for the wastewater utility's costs is the subject of the cost of service analysis.

To develop equitable wastewater rates, the revenue requirement is allocated to various customer classifications according to the services provided and the demands placed on the wastewater system. Santa Rosa Water has historically allocated a majority of wastewater costs on the basis of water usage (wastewater flows), BOD, TSS, and TKN. Wastewater rates also include fixed service charges as part of the rate calculation.

The cost of service analysis for wastewater differs from water in another important way. Treatment costs are separated from collection system costs. Collection system costs are allocated entirely on the basis of flow, whereas treatment costs are allocated on the basis of flow, BOD, TSS, and TKN.

Santa Rosa Water's financial accounting structure allows for a clear segregation of costs between operations and maintenance, debt service and capital project costs, as well as between collection system and treatment/disposal costs. However, the financial accounting structure does not lend itself to a simple segregation of costs into specific treatment components. As a result, professional judgment, standard industry practices,

and sensitivity analyses were employed to help develop appropriate cost allocations. For the proposed rate analysis, 25 percent of the revenue requirement is assigned to fixed service charges, with the remaining 75 percent to usage charges. This 75 percent is further allocated between estimated collection system costs (flow allocation only), and treatment/disposal costs (allocation based on flow and loading factors). Fifteen percent of costs were allocated to the variable collection component and 60 percent to variable treatment component. Treatment costs were further allocated between flow, BOD, TSS, and TKN.

Exhibit IV-4 summarizes how the annual wastewater rate revenue requirement was allocated to fixed charges, as well as variable components for flow, BOD, TSS, and TKN components. Once total costs are allocated, unit costs were determined by dividing the total cost for each component by the number of units identified in Exhibit IV-2. These units include number of customer accounts, number of equivalent single family dwellings (ESFDs), millions of gallons for wastewater flow volume, and pounds of BOD, TSS, and TKN in the wastewater influent.

Unit costs are applied to the annual wastewater flows, as well as BOD, TSS, and TKN loadings associated with each customer class to arrive at the allocation of total costs to each customer class. **Exhibit IV-5** presents the allocation of costs to each user class.

The unit costs determined in Exhibit IV-4 are also used for high strength surcharges, which are applied to commercial and industrial customers that generate high wastewater flow volumes, high loads, and/or widely varying loads on the treatment system. Recommendations for high strength surcharges are described later in this section.

Exhibit IV-6 presents the wastewater service charges and usage rates for each customer class. Single family customers continue to be subject to a fixed service charge for each dwelling unit and a wastewater usage rate based on the lesser of the sewer cap or actual water use for each customer each billing period. Each duplex account will pay the same service charge as single family homes. Multi-family accounts will be subject to a service charge based on meter size plus a wastewater usage charge based on the lesser of the sewer cap or actual water use. Non-residential (low, standard, medium, and high strength) customers with dedicated irrigation meters are subject to wastewater usage rates applied to actual water usage. The wastewater usage charges for non-residential accounts with irrigation usage not separately metered will be billed based on the sewer cap, similar to residential accounts. All non-residential accounts will also pay a service charges based on the size of the water meter.

Wastewater Rate Design

As described previously, Santa Rosa Water has maintained wastewater rates based on water usage. This results in volumetric rates applicable to water usage for non-residential customers. Rates vary for low, standard, medium, and high strength customers commensurate with the treatment requirements of wastewater of various strengths.

Exhibit IV-4
Santa Rosa Water
Determination of Unit Costs

Cost Category	Component Allocation Percentages (1)	Parameter Allocation Percentages (2)	Annual Cost Allocated to Each Parameter	Quantities for Each Parameter (3)	Unit Cost for Each Parameter
Allocation for Fixed Charge Component	25%				
Customer Accounts		5%	$ 817,875	48,898	$ 16.73
Equivalent Single Family Dwellings (ESFDs)		95%	$ 15,539,625	60,671	$ 256.13
Alloc. for Variable Collection Component	15%				
Flow (MG)		100%	$ 9,814,500	3,699	$ 2,653
Alloca. for Variable Treatment Component	60%				
Flow (MG)		75%	$ 29,443,500	3,699	$ 7,960
BOD (lbs)		10%	$ 3,925,800	8,942,248	$ 0.439
TSS (lbs)		10%	$ 3,925,800	7,639,206	$ 0.514
TKN (lbs)		5%	$ 1,962,900	1,746,258	$ 1.124
Total Wastewater Revenue Requirement			**$65,430,000**		

Notes:
(1) Total revenue requirement is about 48 percent for O&M and about 52 percent for debt service and capital projects. Part of the debt service is related to the collection system, with the majority related to treatment.
(2) Allocations to parameters are consistent with cost structures, prior rate studies, and rate setting practices.
(3) From Exhibit IV-2.

Fixed Service Charges

Proposed wastewater rates include a fixed service charge and a usage charge each billing period. Single family homes and duplex accounts will each pay a fixed service charge of $22.74 per month, which is $1.14 per month more than the current service charge. This service charge is the same regardless of meter size since larger meters for single family homes and duplexes are generally tied to irrigation demands or Fire Code requirements and not wastewater requirements. Multi-family accounts will pay a fixed service charges based on the size of the water meter. Non-residential service charges are also based on the size of the water meter. The meter size reflects the potential load each customer can place on the system, similar to water rates. There may be limited instances where the size of multi-family or non-residential water meters are size based on water demand or Fire Code requirements, and not related to needed capacity in the wastewater system, in which case the Director of Santa Rosa Water should be authorized to determine the most appropriate manner of billing customers for utility services, when unique circumstances suggest that such consideration is appropriate.

Some of the proposed wastewater service charges are increasing, while others are decreasing, but they all reflect an appropriate apportionment of costs across meter sizes based on capacity.

Residential Wastewater Usage Charges

The proposed wastewater usage charge for residential customers is $13.08 per 1,000 gallons of wastewater, or $0.16 per 1,000 gallons less than the current wastewater rate. Residential wastewater usage is determined based on the lesser of the sewer cap or actual water usage during the billing period. The sewer cap is calculated annually for each customer and is the average of water use from each complete billing period within the period November through March.

Exhibit IV-5
Santa Rosa Water
Wastewater Allocation of Annual Costs to Users

			Service Charge Costs (1)		Usage Component Costs (2)					
			Collection and Treatment		Collection	Treatment				
No. of Accts.	No. of ESFDs	Customer Class	Customer Unit Cost = $ 16.73	Capacity Unit Cost = $ 256.13	Flow Unit Cost = $ 2,653.36	Flow Unit Cost = $ 7,960.07	BOD Unit Cost = $ 0.439	TSS Unit Cost = $ 0.514	TKN Unit Cost = $ 1.124	Allocation of Total Costs
		Residential								
44,548	44,548	Single Family & Duplexes	$ 745,116	$ 11,410,051	$ 5,694,103	$ 17,082,309	$ 2,121,490	$ 2,069,466	$ 1,106,492	$ 40,229,026
1,624	6,951	Multi-Family	$ 27,163	$ 1,780,227	$ 2,279,233	$ 6,837,699	$ 849,189	$ 828,365	$ 442,906	$ 13,044,783
		Non-Residential								
27	196	Low Strength	$ 452	$ 50,073	$ 86,499	$ 259,498	$ 2,387	$ 2,794	$ 3,056	$ 404,760
2,413	7,657	Standard Strength	$ 40,360	$ 1,961,183	$ 1,239,117	$ 3,717,352	$ 461,666	$ 450,345	$ 240,788	$ 8,110,812
62	360	Medium Strength	$ 1,037	$ 92,079	$ 141,424	$ 424,272	$ 78,061	$ 91,376	$ 37,475	$ 865,724
224	961	High Strength	$ 3,747	$ 246,012	$ 374,123	$ 1,122,370	$ 413,006	$ 483,454	$ 132,183	$ 2,774,895
48,898	**60,671**	**Totals**	**$ 817,875**	**$15,539,625**	**$ 9,814,500**	**$ 29,443,500**	**$3,925,800**	**$3,925,800**	**$1,962,900**	**$65,430,000**

Notes:
(1) Unit costs at the top of each column are multiplied by the customer account and ESFD data for each customer classification.
(2) Unit costs at the top of each column are multiplied by the wastewater flow, BOD loading, TSS loading, or TKN loading for each customer class from Exhibit IV-2.

Exhibit IV-6
Santa Rosa Water
Wastewater Rate Determination

No. of Accts.	Customer Class	Estimated Annual Wastewater Flow	BOD Strength	TSS Strength	TKN Strength	Fixed Service Charges	Usage Rates (1)	Total Service Charge Revenue	Total Usage Charge Revenue	Total Annual Wastewater Rate Revenue
		1,000 Gal.	mg/l	mg/l	mg/l	$/mo.	$/tg			
	Residential									
44,548	Single Family & Duplexes	2,146,000	270	225	55	**$ 22.74**	**$ 13.08**	$ 12,155,167	$ 28,073,859	$ 40,229,026
1,624	Multi-Family	859,000	270	225	55		**$ 13.08**	$ 1,807,390	$ 11,237,393	$ 13,044,783
	Non-Residential					Varies				
27	Low Strength	32,600	20	20	10	By Meter	**$ 10.87**	$ 50,525	$ 354,235	$ 404,760
2,413	Standard Strength	467,000	270	225	55	Size	**$ 13.08**	$ 2,001,543	$ 6,109,269	$ 8,110,812
62	Medium Strength	53,300	400	400	75	(see below)	**$ 14.50**	$ 93,116	$ 772,608	$ 865,724
224	High Strength	141,000	800	800	100		**$ 17.91**	$ 249,759	$ 2,525,136	$ 2,774,895
48,898	**Totals**	**3,698,900**						**$16,357,500**	**$49,072,500**	**$65,430,000**

Notes:

(1) For residential customers, the usage rate applies to the lesser of the sewer cap or actual water use. For non-residential customers with dedicated irrigation meters, the usage rate applies to actual water usage in each billing period.

Multi-Family and Non-Resid. Service Charges

Mtr. Size	Amount
5/8" & 3/4"	**$ 22.74**
1"	**$ 54.75**
1 1/2"	**$ 108.11**
2"	**$ 172.15**
3"	**$ 321.56**
4"	**$ 535.00**
6"	**$ 1,068.60**

Non-Residential Wastewater Usage Charges

As described previously, and summarized in Exhibit IV-3, it is recommended that Santa Rosa Water simplify the current 15 separate special categories of non-residential customers into four categories – low, standard, medium, and high strength. About 89 percent of the customer accounts will fall in the standard category, with small percentages in the low, medium, and high strength category. The wastewater usage rates for each strength category are proposed to be $10.87 per 1,000 gallons for low strength, $13.08 per 1,000 gallons for standard strength, $14.50 per 1,000 gallons for medium strength, and $17.91 per 1,000 gallons for high strength. Wastewater usage rates will continue to apply to actual water usage.

Additional Surcharges for Extraordinary Loads and Other Special Situations

Santa Rosa Water imposes additional strength surcharges on certain commercial and industrial customers that generate high wastewater volumes, place high pollutant loads on the treatment system, and/or place widely varying loads on the treatment system. Examples of users subject to additional surcharges may include, but are not limited to, food processors, industrial laundries, wineries, and breweries. The additional surcharges are intended to reflect the additional cost of treating wastewater above the typical or standard strength. The sample additional surcharge calculations presented herein are applicable to customers of Santa Rosa Water's wastewater utility.

The cost of service rate model described in the preceding pages resulted in unit costs for the volumetric portion of wastewater collection and treatment in terms of pounds of BOD, TSS, and TKN treated. These volumetric unit costs for collection and treatment are building blocks for the wastewater usage rates.

Flow volume	$10.61 per 1,000 gallons
BOD	$0.44 per pound
TSS	$0.51 per pound
TKN	$1.12 per pound

Additional surcharges are based on laboratory analysis, conducted by Santa Rosa Water from time to time, of the discharge to the sewer collection system by the affected customer. Monthly surcharges are developed for each commercial and industrial connection to the sewer system whose wastewater is sampled and analyzed, based on the flow from the premises, the laboratory analysis, and the applicable unit costs. Each customer subject to the additional surcharges would also pay the general wastewater rates, including a service charge based on meter size and the standard strength wastewater usage rate. Through the general rates they pay the general costs of service for standard strength waste. The surcharges reflect the additional costs associated with treating extraordinary (above standard) loads associated with wastewater from these monitored users.

The calculation of an additional surcharge, using the calculated unit treatment costs, is illustrated below. The surcharge is calculated for wastewater strength that exceeds the concentrations used to calculate the ***standard*** wastewater usage rate, which are 270 mg/l for BOD_{Std}, 225 mg/l for TSS_{Std}, and 55 mg/l for TKN_{Std}.

Sample Additional Strength Surcharge Calculation

Measured monthly flow = 100,000 gallons = 0.100 MG
Measured BOD = BOD_M = 1200 mg/l
Measured TSS = TSS_M = 800 mg/l
Measured TKN = TKN_M = 50 mg/l

Additional Strength Surcharge = [(BOD_M - BOD_{Std}) x \$0.44 + (TSS_M - TSS_{Std}) x \$0.51 + (TKN_M - TKN_{Std}) x \$1.12] x 8.34 x Flow

= [(1,200 – 270) x \$0.44 + (800 – 225) x \$0.51 + 0 x \$1.12] x 8.34 x 0.100 MG

= **\$586.95**

In this example, the measured TKN is below the standard threshold, so the surcharge does not include costs related to this constituent. Also, the factor from converting mg/l to lbs/MG is 8.34.

Santa Rose Water previously developed two pre-calculated additional surcharges applicable to wineries. Based on a review of water use by wineries, as well as sampled wastewater loads from wineries, it is recommended that the procedures for determining wastewater bills for wineries be changed. At present, there are 15 wineries receiving wastewater service from Santa Rosa Water. Nine of these wineries use less than 80,000 gallons of water per year, and therefore generate relatively small volumes of wastewater. The six other wineries use much more water, up to 1.35 MG annually, and therefore generate significant wastewater volumes. It is recommended that wineries with annual water use less than 80,000 gallons per year be classified as high strength customers for billing through the customer information system (CIS billing) and billed like other high strength non-residential accounts, and not subject to the additional surcharges.

Because of significant volumes of wastewater generated by large wineries, it is appropriate to consider them for additional surcharges. In addition, sampling data suggest that loading characteristics vary significantly, both throughout the year and between wineries[6]. Rather than having pre-calculated winery wastewater usage rates, the large wineries should be included in periodic sampling and laboratory analyses to develop either additional monthly surcharges (following the method described above) or customer-specific wastewater usage rates for each large winery.

An example of the calculation for developing a customer-specific wastewater usage rate for a large winery is illustrated below. The calculation relies on the unit costs identified previously. The customized wastewater usage rate, calculated as described below, would be used in place of the high strength usage rate applicable to small wineries. A fixed service charge would also be included in wastewater billing for wineries.

[6] Higher usage and loadings both tend to occur in the fall months during crush and production periods. Wastewater loads vary between wineries because their operations, including handling of waste, vary widely.

Sample Winery-Specific Wastewater Rate Calculation

Measured BOD = BOD_M = 4500 mg/l
Measured TSS = TSS_M = 600 mg/l
Measured TKN = TKN_M = 20 mg/l

Wastewater Usage Rate = \$10.61 + [BOD_M x \$0.44 + TSS_M x \$0.51 + TKN_M x \$1.12] x 8.34 / 1,000

= \$10.61 + [4,500 x \$0.44 + 600 x \$0.51 + 20 x \$1.12] x 8.34 / 1,000

= **\$29.85 per 1,000 gallons**

This customized wastewater usage rate would apply to all wastewater usage, and not just be applied as a surcharge. A fixed service charge, based on meter size, would also be part of the wastewater bill. This method of billing eliminates the need for an additional surcharge.

The unit wastewater costs that are used in the above calculation could be used for any commercial or industrial customer exhibiting unique or extraordinary wastewater characteristics, and served by Santa Rosa Water's wastewater utility, but for whom routine wastewater monitoring and sampling is either impractical or not cost-effective. The Director of Santa Rosa Water should be authorized to determine the most appropriate manner of billing customers for utility services, when unique circumstances suggest that such consideration is appropriate.

PROPOSED WASTEWATER RATE SCHEDULE

Exhibit IV-7 summarizes the proposed wastewater rate schedule for wastewater rates to be effective in January 2016. The proposed wastewater rates are revenue neutral overall, relative to current wastewater rates. The proposed wastewater rates reflect the cost of providing wastewater service to customers. In particular, the proposed wastewater rates reflect a proportionate distribution of costs to all customers and customer classes, and better reflect the cost of providing service.

As described in Section II of this report, it is recommended that the wastewater rates be adjusted annually, in order to continue to meet service and financial obligations. All wastewater rates should be increased by 3.0 percent at the beginning of FY 16-17, FY 17-18, and FY 18-19, and by 2.5 percent in FY 19-20 and FY 20-21. The annual rate adjustments will help ensure that the wastewater utility will continue to receive adequate revenue to meet service and financial obligations.

Information on the impact of proposed wastewater rates on customer utility bills is included near the end of Section I of this report.

Exhibit IV-7
Santa Rosa Water
Proposed Wastewater Rate Schedule (1)

		January 2016
Wastewater Usage Rates ($/1,000 gallons)		
Single Family, Duplexes, and Multi-Family	$	13.08
Commercial, Industrial, and Institutional		
Low Strength	$	10.87
Standard Strength	$	13.08
Medium Strength	$	14.50
High Strength	$	17.91
Monthly Service Charges		
Single Family and Duplexes	$	22.74
Multi-Family/Commercial/Industrial/Institutional		
5/8" & 3/4" meters	$	22.74
1" meter	$	54.75
1 1/2" meter	$	108.11
2" meter	$	172.15
3" meter	$	321.56
4" meter	$	535.00
6" meter	$	1,068.60

Notes:

(1) Wastewater usage charge applies to the wastewater generated. For single family and multi-family residential accounts the wastewater generated is based on the lower of current water use or the Sewer Cap. The Sewer Cap is calculated for each residential account based on the average water use from complete billing periods within the months of November through March. For non-residential customers with separate irrigation meters the wastewater generated is based on actual monthly water usage.