VENTURA WATER

Cost of Service and Rate Design Study Report

Raftelis Financial Consultants, Inc.

March 2012

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March 14, 2012

Ms. Shana Epstein
General Manager
Ventura Water
P.O. Box 99, 336 Sanjon Road
Ventura, CA 93002

Subject: Cost of Service and Rate Design Study Report for Water and Wastewater Utilities

Dear Ms. Epstein:

Raftelis Financial Consultants Inc. (RFC) is pleased to present this report on the cost of service and rate study for the water and wastewater utilities to the City of San Buenaventura – Ventura Water (City). We are confident that the recommendations based on the cost of service analysis will result in fair and equitable water and wastewater rates to the City's users.

The study involved a comprehensive review of the City's financial plan and rate structures for the water and wastewater utilities. Based on our findings, RFC recommends that the City implement the following revenue adjustments for fiscal years (FY) 2013 and 2014 in order to fund operating and capital expenses and meet Council approved reserves and debt coverage requirements.

Effective Date	Water	Wastewater
July 2012	$1.7 million	$1.4 million
July 2013	$1.8 million	$1.0 million

All assumptions, including all increases in operating and capital costs, were factored into the rates. The rates were restructured to promote conservation, enhance rate and revenue stability and increase equity among customer classes. The recommendations and findings of the study and various tables describing the calculation of the rates are included.

It was a pleasure working with you and we appreciate the assistance that you, Ms. Nancy Broschart, and other staff members provided during the course of the study. If you have any questions, please call me at (626) 583-1894.

Sincerely,

Sudhir Pardiwala
Vice President

Hannah Phan
Senior Consultant

TABLE OF CONTENTS

SECTION 1 – EXECUTIVE SUMMARY

The City of San Buenaventura – Ventura Water (City) engaged Raftelis Financial Consultants, Inc. (RFC) to conduct a comprehensive financial plan over the planning period from fiscal years (FY) 2013 to 2022 and develop cost of service rates for the water and wastewater utilities. The rate study process was conducted in conjunction with input from City staff and a citizens Advisory Committee, a resident stakeholders group. This report documents the resultant findings, analyses, and proposed changes that were developed with input from and approved by the stakeholders.

The major objectives of the study include the following:

1. Ensure *Revenue Sufficiency* to meet the operation and maintenance (O&M) and capital needs of the City's water and wastewater utilities.
2. Ensure that rates are *Fair and Equitable* and are based on *Cost of Service* guidelines used in the industry.
3. Plan for *Rate and Revenue Stability* to prevent rate spikes and provide for adequate operating and capital reserves and the overall financial health of the water and wastewater utilities under varying conditions.

This executive summary provides an overview of the study and includes findings and recommendations for both water and wastewater rates.

The remainder of the report defines a unit of water as a hundred cubic feet (HCF or hcf). A hundred cubic feet of water equals 748 gallons or enough water to fill 15 bathtubs. Also, a fiscal year (FY) for the City of Ventura is from July 1 to June 30 the following year. Therefore, fiscal year July 1, 2011 through June 30, 2012 is identified as FY 2012, fiscal year July 1, 2012 through June 30, 2013 is identified as FY 2013 and so forth.

WATER UTILITY

System Background

The water utility provides service to over 28,500 customer accounts in a service area of over 32 square miles, which includes all portions within the City limits as well as portions of the unincorporated Ventura County. Water is supplied through three main sources: local groundwater from the Mound, Santa Paula, and Oxnard Plain basins, treated water purchased from Casitas Municipal Water District (Casitas) and Ventura River water (via surface diversion, subsurface collector and shallow wells). The water supply costs range from $125 per acre foot for groundwater to approximately $340 per acre foot for treated water in FY 2012. The cost of local groundwater supply sources has increased in the last several years due to continued years of drought, tightening water restrictions and environmental and regulatory requirements.

The current water rate structure consists of a fixed bi-monthly service charge that varies by meter size, a tiered commodity rate for residential customers, and uniform commodity rates for non-residential customers, as shown in **Table 1-1.**

Table 1-1
Existing Bi-Monthly Rate Structure

Bi-Monthly Service Charge				
Meter Size	Inside City	Outside City	Fire Line	Reclaimed
3/4"	$15.03	$25.55		$15.03
1"	$28.74	$48.86	$6.93	$28.74
1 1/2"	$47.76	$81.19	$6.93	$47.76
2"	$66.76	$113.49	$6.93	$66.76
3"	$150.42	$255.71	$20.80	$150.42
4"	$245.49	$417.33	$41.60	$245.49
6"	$483.06	$821.20	$115.58	$483.06
8"	$720.60	$1,225.02	$242.71	$720.60
10"	$958.15	$1,628.86	$416.08	$958.15
12"	$1,100.68	$1,871.16	$429.94	$1,100.68

Rates ($/hcf)		Inside City	Outside City
SFR			
Tier 1	1 to 16	$2.02	$3.43
Tier 2	17 to 42	$2.66	$4.52
Tier 3	43+	$4.27	$7.26
MFR			
Tier 1	1 to 10	$2.02	$3.43
Tier 2	11 to 24	$2.66	$4.52
Tier 3	25+	$4.27	$7.26
Non-Residential		$2.66	$4.52
City Parks		$1.40	$1.40
Reclaimed Water		$0.50	$0.50

SFR – single family residential
MFR – multi-family residential

Financing Plan

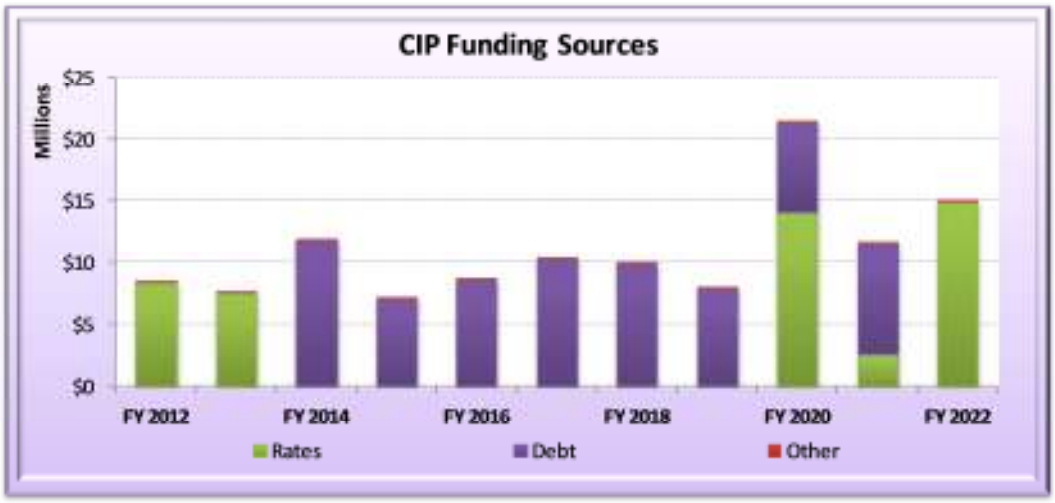
In order to determine water rates, RFC projected the revenue requirements, including operations and maintenance (O&M) expenses, capital improvement expenses, debt service costs, reserve requirements, etc., for the study period from FY 2013 to 2022. O&M expenses include the cost of operating and maintaining water supply, treatment, storage, and distribution facilities, as well as the costs of providing technical services such as laboratory services and other administrative costs of the water system such as

meter reading and billing. O&M projections are based on the City's FY 2012 adopted and 2013 estimated budgets using an inflationary factor of three percent per year starting in FY 2014 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to remain unchanged through FY 2015 due to current union contracts, increasing at 0.5 percent per year in all other years. Benefits expenses are projected to remain unchanged through FY 2014, increasing at 0.3 percent per year in all other years. Chemical and utilities expenses are projected to increase at 5 percent per year during the study period. Water supply costs are budgeted to increase approximately 6 percent in FY 2013, 3 percent in FY 2014 and approximately 4.5 percent from FY 2015 to 2021.

In addition to the operating expenses, the City is planning significant capital expenditures over the next eleven years. Due to the size of the total Capital Improvement Program (CIP), $120 million over the next eleven years (FY 2012 to 2022), the capital financing plan projects that approximately $80 million will be funded through debt. Existing and anticipated debt service results in annual payments in the range of $3 to $8.2 million. **Figure 1-1** shows the CIP funding plan over planning period.

Water accounts are projected to grow at an average of 0.4 percent per year. However, water usage, due to conservation efforts, is projected to decrease 2 percent per year in FY 2013 and 2014 and 1 percent per year through FY 2020.

Figure 1-1
Capital Financing Plan



To ensure that the City will have adequate revenues to fund water operating and capital expenses and to maintain sufficient reserves, RFC recommends the following revenue adjustments.

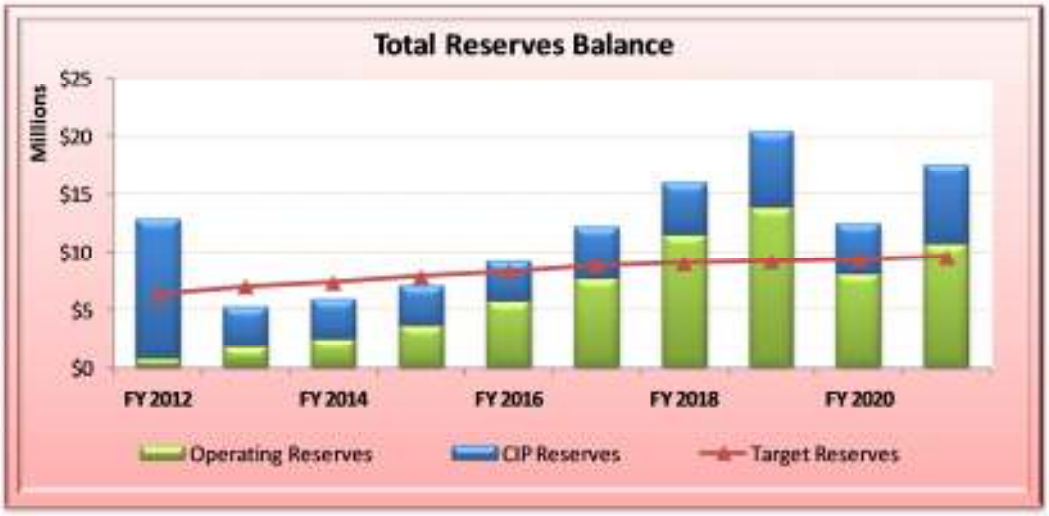
Annual Revenue Increases

Effective Date	Increases
July 1, 2012	$1.7 million
July 1, 2013	$1.8 million

Figure 1-2 shows the resulting reserve balance, excluding the debt reserves. The red line represents the total target, which is composed of both operating and capital reserves targets consistent with industry

standards. The operating reserve target is set at 25 percent of the operating expenses and the capital reserve target is gradually increased from 50 percent to 100 percent of average annual replacement capital expenditures by FY 2017.

Figure 1-2
Reserves Balance



Cost of Service Analysis and Rate Design

To calculate fair and equitable rates so that users pay in proportion to the cost of providing service, RFC performed a cost allocation of the total revenue requirements consistent with industry standards. The cost of service allocation is based on the Base-Extra Capacity Method described in the American Water Works Association (AWWA) M-1 Manual. Under this method, costs are apportioned amongst various cost parameters to determine the costs to provide service under average conditions, to meet peaking requirements, to provide meter capacity and to provide customer service. Costs to serve different customer classes are determined; rates are then designed to recover the costs equitably consistent with Proposition 218 requirements.

Fixed meter charges were increased from the current levels to provide increased revenue stability. Additionally, based on current usage patterns, RFC adjusted the tiers for residential customers to meet the City's goals of promoting efficient water usage that encourages conservation and recovers costs proportionally from customers. Because they are non-homogenous, commercial and irrigation accounts are not ideally suited for a tiered rate structure; therefore, all non-residential customers will be billed on a uniform rate structure. Municipal irrigation customers will be provided a lower interruptible commodity rate which would require those customers to be the first to reduce usage in times of drought or emergency.

Outside-City customers will be charged an incremental rate on their water usage based on the cost of providing service to those customers. RFC also recommends that reclaimed water rates be increased to cover the cost of providing recycled water service.

Proposed Water Rates

Table 1-2 shows the proposed rates for calendar year 2012 and 2013. These rates are effective in July of each year.

Table 1-2
Proposed Bi-Monthly Service Charge – Based on Meter Size (Per Meter)

	Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Bi-Monthly Service Charge			
Meter Size			
3/4"	$15.03	$23.14	$25.11
1"	$28.74	$35.34	$38.35
1 1/2"	$47.76	$65.86	$71.46
2"	$66.76	$102.48	$111.20
3"	$150.42	$218.43	$237.00
4"	$245.49	$389.31	$422.41
6"	$483.06	$798.20	$866.05
8"	$720.60	$1,469.52	$1,594.43
10"	$958.15	$2,323.92	$2,521.46
12"	$1,100.68	$3,056.26	$3,316.05

Proposed Bi-Monthly Fireline Service Charge – Based on Meter Size (Per Meter)

	Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Bi-Monthly Fireline Charge			
Meter Size			
1" Ubranch	$2.11	$5.96	$6.47
1"	$6.93	$5.96	$6.47
1 1/2"	$6.93	$5.96	$6.47
2"	$6.93	$5.96	$6.47
3"	$20.80	$17.30	$18.78
4"	$41.60	$36.87	$40.00
6"	$115.58	$107.09	$116.20
8"	$242.71	$228.21	$247.61
10"	$416.08	$410.40	$445.29
12"	$429.94	$662.91	$719.26

Proposed Bi-Monthly Water Rates – Commodity Rates

		Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Volume Rates ($/hcf)				
SFR				
Tier 1	0 to 14	$2.02	$1.98	$2.15
Tier 2	15 to 30	$2.66	$2.69	$2.92
Tier 3	> 30	$4.27	$4.41	$4.79
MFR				
Tier 1	0 to 10	$2.02	$1.98	$2.15
Tier 2	11 to 16	$2.66	$2.69	$2.92
Tier 3	> 16	$4.27	$4.41	$4.79
Non-Residential		$2.66	$2.48	$2.70
Institutional/Interruptible Rate		$1.40	$1.98	$2.15
Reclaimed Water		$0.50	$0.64	$0.68
Untreated Water		$1.40	$1.88	$2.04
Outside City Rates		170% of Inside	Add $0.73/hcf	Add $0.76/hcf

*Current rates have different tiers

Customer Impacts

Table 1-3 below shows the impacts of an average single-family residential (SFR) customer with a 3/4-inch meter using an average 21 hcf of water bi-monthly. For comparison purposes, the impacts of very low to very high users are also shown.

Table 1-3
SFR Bi-Monthly Customer Impacts

SFR	Usage (hcf)	Current	July 1, 2012	July 1, 2013	Difference 1	Difference 2
Very Low	5	$25.13	$33.04	$35.86	$7.91	$2.82
Low	12	$39.27	$46.90	$50.91	$7.63	$4.01
Average	21	$60.65	$69.69	$75.65	$9.04	$5.96
High	35	$97.89	$115.95	$125.88	$18.06	$9.93
Very High	50	$150.67	$182.10	$197.73	$31.43	$15.63

Note: Assume 3/4" meter

WASTEWATER UTILITY

System Background

The City's wastewater utility is responsible for the collection, treatment, and disposal of wastewater from its 44,300 (each multi-family dwelling unit is counted as an account) residential and non-residential accounts. Wastewater is treated at the Ventura Water Reclamation Facility, a tertiary treatment facility located in the Ventura Harbor area near the mouth of the Santa Clara River.

Table 1-4 shows the existing wastewater rate structure. Residential customers have a six-tier bi-monthly wastewater rate structure, with usage determined using the lowest water usage on bills received during the previous winter, defined as the time period from November 1 through April 30. Commercial customers pay a fixed charge varying with strength up to 8 hcf and a rate for usage above 8 hcf. They are divided into six strength groups. Churches pay a fixed bi-monthly charge equal to the highest residential charge. Schools pay a fixed charge which varies depending based on whether or not they have showers and per 100 students on average daily attendance (ADA). Industrial customers are billed monthly based on flow, chemical oxygen demand (COD), and total suspended solids (SS).

Financing Plan

In order to determine wastewater rates, RFC projected the revenue requirements, including operations and maintenance (O&M), capital improvement expenses, debt service costs, reserves requirements, etc., for the study period from FY 2013 to 2022. O&M expenses include the cost of operating and maintaining wastewater collection, treatment, and disposal facilities, as well as the costs of providing technical services such as laboratory services and other administrative costs of the wastewater system such as customer service and billing. The O&M projections are based on the City's FY 2012 adopted and estimated 2013 budgets using an inflationary factor of three percent per year starting in FY 2014 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to remain unchanged through FY 2015 due to current union contracts, increasing at 0.5 percent per year in all other years. Benefits expenses are projected to remain unchanged through FY 2014, increasing at 0.3 percent per year in all other years. Chemical and utilities expenses are projected to increase at 5 percent per year during the study period.

Capital expenditures are based on the City's Capital Improvement Program (CIP) and are funded by various sources, including connection fees, rate revenues, grants, bonds proceeds, etc. Due to the size of the CIP, $147 million over eleven years (FY 2012 to 2022), the capital financing plan projects that approximately $95 million will be funded through debt. Existing and anticipated debt service results in annual payments in the range of $1.7 to $7.1 million. **Figure 1-4** shows the CIP funding plan over the eleven-year period. It should be noted that most tables and figures are shown for the ten years FY 12 through FY 21 for clarity and to compare with FY 12 data.

Similar to growth used in the water projections, wastewater accounts are projected to grow at an average of approximately 0.4 percent per year.

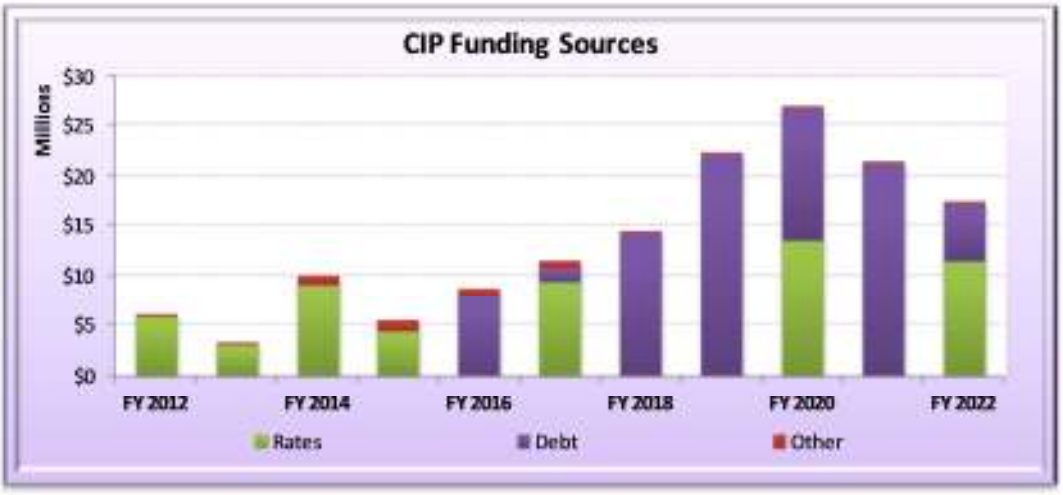
Table 1-4
Existing Bi-Monthly Wastewater Rates

SFR & MFR	HCF*	Bi-Monthly Rate
Tier 1	0 - 8	$34.27
Tier 2	9 - 10	$42.24
Tier 3	11 - 12	$50.00
Tier 4	13 - 14	$57.76
Tier 5	15 - 16	$65.51
Tier 6	17+	$73.27
Schools (with showers - 100 ADA)		$131.89
Schools (no showers - 100 ADA)		$102.58
Churches		$73.27

*HCF determined based on lowest billing between November through April

Commercial	HCF	Bi-Monthly Rate
Group 1		
Tier 1	0 - 8	$16.07
Tier 2	9+	$2.63
Group 2		
Tier 1	0 - 8	$24.26
Tier 2	9+	$3.15
Group 3		
Tier 1	0 - 8	$36.38
Tier 2	9+	$5.39
Group 4		
Tier 1	0 - 8	$56.79
Tier 2	9+	$7.03
Group 5		
Tier 1	0 - 8	$47.74
Tier 2	9+	$6.57
Group 6		
All		$73.27
Industrial (Monthly)		
Flow	(MG)	$2,470.10
COD	(klbs)	$280.51
SS	(klbs)	$597.62

Figure 1-4
Capital Financing Plan



In order to meet projected revenue requirements and to maintain desired reserves fund balances, the following revenue adjustments are proposed to meet long term revenue stability.

Annual Revenue Increases

Effective Date	Increases
July 1, 2012	$1.4 million
July 1, 2013	$1.0 million

Figure 1-5 shows the resultant reserves balance, excluding the debt reserves. The red line representing the total targets are the same as defined for the water utility.

Figure 1-5
Reserves Balance

Cost of Service Analysis

To calculate fair and equitable rates so that users pay in proportion to the cost of providing service, RFC performed a cost allocation of the total revenue requirements consistent with industry standards. The methodology is consistent with the guidelines of the Water Environment Federation (WEF). Since wastewater is not directly measured for each customer, RFC estimated the wastewater loadings (flow, chemical oxygen demand (COD) and total suspended solids (SS)), generation for each customer class through a mass balance analysis, which is used to determine the loadings of each user class and their cost responsibility. Costs are allocated to flow, COD and SS to apportion the costs amongst various customer classes in proportion to their loadings.

Proposed Wastewater Rates

The current rate structure has an effective cap of 17 hcf per bimonthly period for residential wastewater discharge. Non-residential customers are categorized into six groups based on their strength, each with a fixed bimonthly charge that includes the first 8 units of water plus a variable unit rate for the remaining usage based on actual water usage.

As a result of discussions with City staff and the Advisory Committee, a fixed plus flow charge rate structure was selected to further incentivize conservation and improve equity amongst different customer classes. Residential wastewater charges will be based on the average winter usage based on two full cycles for bills received from February to May. To capture costs of serving customers with higher wastewater generation, the residential cap is increased to 30 hcf for single family and 24 hcf for multi-family users per bi-monthly period. Additionally, to prepare for costs associated with the Santa Clara River Estuary settlement with Heal the Bay and Wishtoyo Foundation's Ventura Coastkeeper Program, a charge equal to two percent of the wastewater bill in FY 2013 and four percent of the

wastewater bill in FY 2014 is recommended. Revenues collected from this charge will be used for Estuary protection related planning studies.

Table 1-5 shows the proposed wastewater rates for the next two years with the winter average fixed plus flow rate structure for residential customers and a fixed plus flow rate structure based on actual water usage for non-residential customers. Schools will be billed on the basis of 100 ADA only.

The current non-residential classes are retained as they adequately reflect the strength of those customers. Proposed charges for churches are based on water used instead of the current bi-monthly fixed charge.

Table 1-5
Proposed Bi-Monthly Wastewater Rates

	Effective	
	July 1, 2012	July 1, 2013
SFR		
Bi-monthly Fixed Charge	$17.65	$18.35
Bi-monthly Flow Charge*	$2.67	$2.78
Maximum Bill (cap at 30 hcf)	$97.75	$101.75
Max Estuary Protection Fund Charge	$1.96	$4.07
MFR		
Bi-monthly Fixed Charge	$13.06	$13.58
Bi-monthly Flow Charge*	$2.67	$2.78
Maximum Bill (cap at 24 hcf)	$77.14	$80.30
Max Estuary Protection Fund Charge	$1.54	$3.21
Commercial		
Bi-monthly Fixed Charge	$17.65	$18.35
Bi-monthly Flow Charge**		
Group 1	$3.13	$3.26
Group 2	$3.58	$3.72
Group 3	$4.61	$4.80
Group 4	$5.61	$5.84
Group 5	$5.12	$5.33
Group 6	$1.08	$1.13
Churches	$2.33	$2.43
Schools (100 ADA)	$128.17	$133.25
Industrial (Monthly)		
Flow (MG)	$3,689.47	$3,835.63
COD (klbs)	$153.01	$159.08
SS (klbs)	$283.68	$294.92
Estuary Protection Fund Charge	2% of bill	4% of bill

*Based on average winter usage for 2 full billing cycles for bills received February through May

** Based on actual water usage

Customer Impacts

Tables 1-6 and 1-7 below show the impacts to SFR and MFR customers at different levels of winter water usage. The three columns within the box outline show the breakdown between the wastewater charge, the Estuary protection charge and the proposed total bi-monthly wastewater bills for the first year. The last three columns show the bills for the second year.

Table 1-6
SFR Bi-Monthly Customer Impacts

Winter Avg HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
5	$34.27	$31.00	$0.62	$31.62	$32.25	$1.29	$33.54
10	$42.24	$44.35	$0.89	$45.24	$46.15	$1.85	$48.00
15	$65.51	$57.70	$1.15	$58.85	$60.05	$2.40	$62.45
20	$73.27	$71.05	$1.42	$72.47	$73.95	$2.96	$76.91
25	$73.27	$84.40	$1.69	$86.09	$87.85	$3.51	$91.36
30	$73.27	$97.75	$1.96	$99.71	$101.75	$4.07	$105.82

Table 1-7
MFR Bi-Monthly Customer Impacts

Winter Avg HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
2	$34.27	$18.40	$0.37	$18.77	$19.14	$0.77	$19.91
6	$34.27	$29.08	$0.58	$29.66	$30.26	$1.21	$31.47
12	$50.00	$45.10	$0.90	$46.00	$46.94	$1.88	$48.82
17	$73.27	$58.45	$1.17	$59.62	$60.84	$2.43	$63.27
21	$73.27	$69.13	$1.38	$70.51	$71.96	$2.88	$74.84
24	$73.27	$77.14	$1.54	$78.68	$80.30	$3.21	$83.51

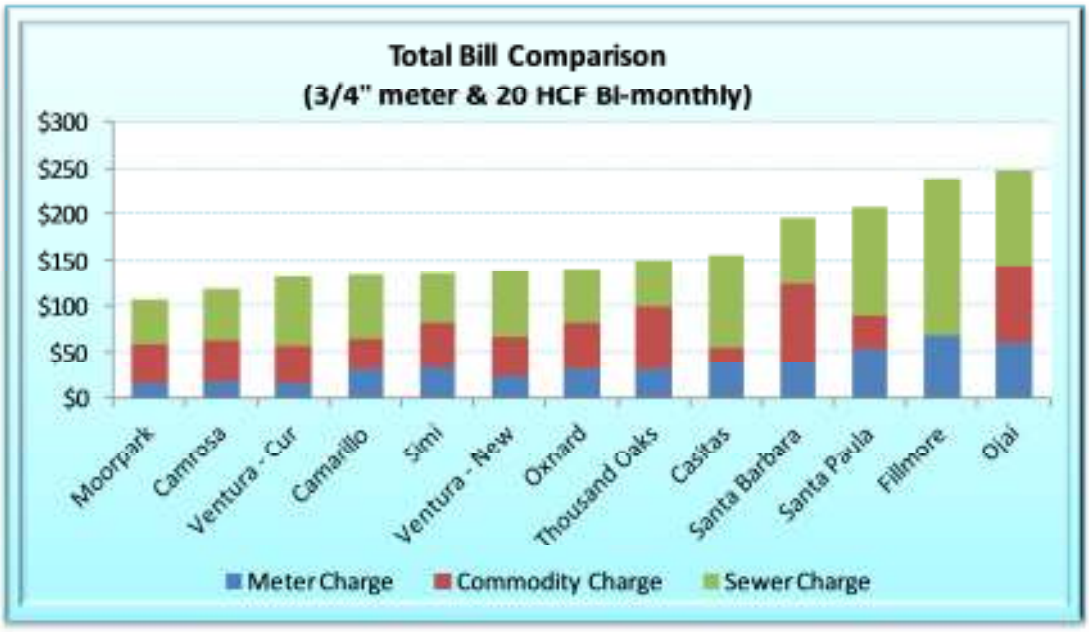
Non-residential customers will experience different rate impacts depending on their group and usage levels. **Table 1-8** shows the rate impact of an average user within each group.

Table 1-8
Non-Residential Bi-Monthly Customer Impacts

Customer Group	Bi-Monthly Usage HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
Group 1	70	$179.13	$236.75	$4.74	$241.49	$246.55	$9.86	$256.41
Group 2	331	$1,041.71	$1,202.63	$24.05	$1,226.68	$1,249.67	$49.99	$1,299.66
Group 3	923	$4,968.23	$4,272.68	$85.45	$4,358.13	$4,448.75	$177.95	$4,626.70
Group 4	147	$1,033.96	$842.32	$16.85	$859.17	$876.83	$35.07	$911.90
Group 5	122	$796.72	$642.29	$12.85	$655.14	$668.61	$26.74	$695.35
Group 6	200	$73.27	$233.65	$4.67	$238.32	$244.35	$9.77	$254.12
Chuches	242	$73.27	$581.51	$11.63	$593.14	$606.41	$24.26	$630.67
Schools	704 ADA	$722.15	$902.32	$18.05	$920.37	$938.08	$37.52	$975.60

Figure 1-6 compares the total bi-monthly water and wastewater service charges for an average SFR customer with a 3/4" meter and 20 hcf of water usage bi-monthly with neighboring communities' rates as of December 2011.

Figure 1-6
Total Bill Comparison



SECTION 2 – INTRODUCTION

BACKGROUND

The City of San Buenaventura – Ventura Water (City) engaged Raftelis Financial Consultants, Inc. (RFC) to develop a long-term financial plan and conduct a comprehensive rate study for the water and wastewater utilities that could be utilized to evaluate and enhance the equity of user charges for the City's water and wastewater services to ensure that there is a proportionate recovery of costs from the various user classes. This report documents the resultant findings, analyses, and proposed changes.

The City's water utility provides water services to approximately 28,500 residential, commercial, irrigation, and industrial accounts. The City receives water from three main sources: the Ventura River, Lake Casitas, and local groundwater wells. The water utility is responsible for operating and maintaining three water treatment plants, 380 miles of distribution pipelines, 23 pump stations, 16,000 valves, 3,700 fire hydrants, and 31 reservoirs.

The City's wastewater utility provides sewer services to about 44,300 residential (each multi-family dwelling unit is counted as an account), commercial, and industrial accounts. Approximately 9 million gallons per day (MGD) of wastewater is treated at the Ventura Water Reclamation Facility, a tertiary treatment facility located in the Ventura Harbor area near the mouth of the Santa Clara River. The wastewater utility is also responsible for the operation and maintenance of 290 miles of gravity collection pipelines, 10 miles of force mains, 5,900 manholes and 11 operating lift stations.

The City operates the water and wastewater systems as separate, self-supporting enterprises, with revenues and expenditures accounted for separately from its other enterprises and activities. These functions receive no funding from the City's General Fund.

Objectives

A pricing objectives public workshop (see **Appendix A** for details) was conducted with the citizens Advisory Committee and members of the public. In this exercise, participants were asked to prioritize 11 pricing objectives that would serve as a guideline in the design of rates. Each objective was given a grade and weight in order to calculate the most important pricing objectives. The most important objectives that resulted from the exercise were:

- Ensure that rates are based on *Cost of Service* guidelines used in the industry
- Plan for *Revenue Stability* to provide for adequate operating and capital reserves and the overall financial health of the water and wastewater utilities under varying conditions
- Plan for *Rate Stability* to prevent rate spikes
- Ensure *Affordability* of water and wastewater service for low volume customers
- Provide for *Fairness and Equitability* in the development of a system of user charges

Some of these objectives conflict with others. For example, revenue stability may conflict with affordability. That being the case, judgment plays a role in the final design of rate structures and rates

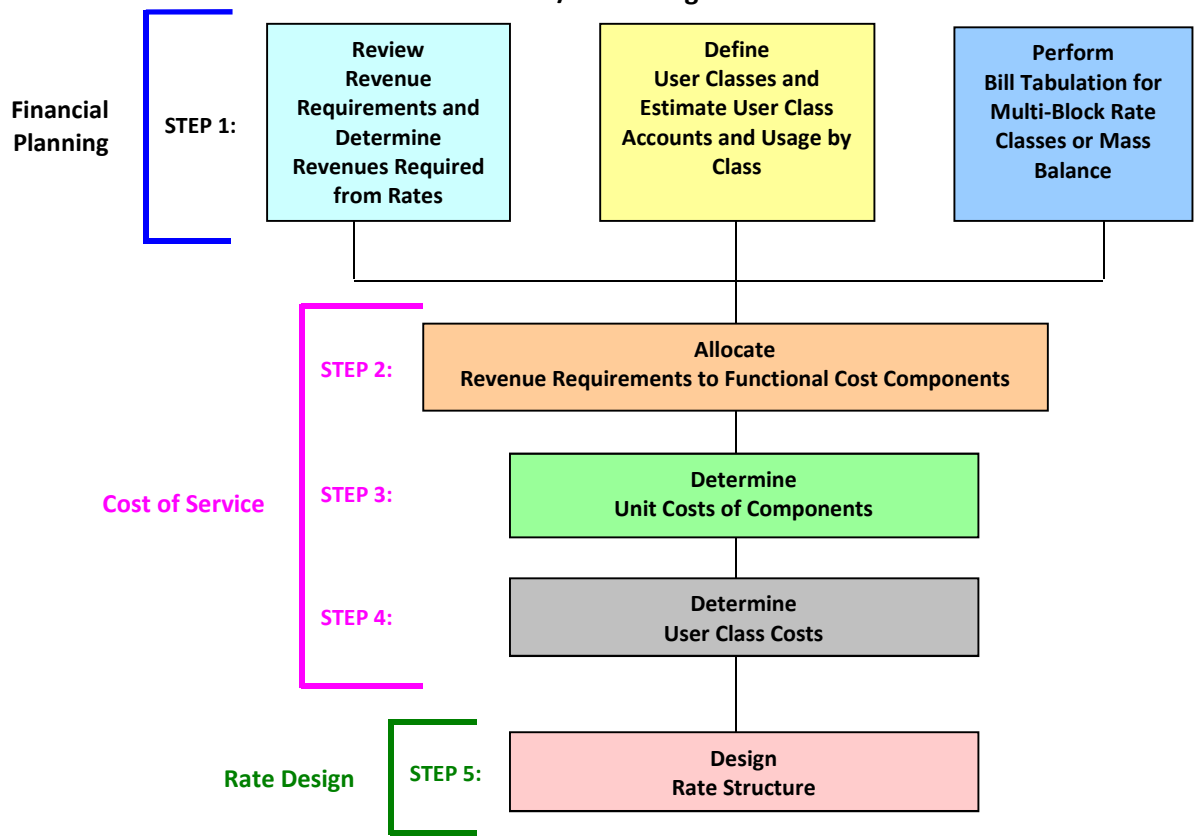
and the Advisory Committee carefully considered customer impacts throughout the process to balance competing objectives.

Scope of the Study

The scope of this study results in the development of cost of service based water and wastewater user rates through a comprehensive cost of service and rate design study process. **Figure 2-1** provides a graphical representation of the various steps involved in the comprehensive cost of service and rate design process. The three major processes are as follows:

- **Financial Planning:** User and usage data from the most recent Fiscal Year (FY) is compiled. The single family residential usage in the different tiers is analyzed to determine revenues that will be collected from this class. Operating and capital costs are compiled and revenue requirements are projected for a ten-year period from FY 2013 through FY 2022. Financial planning involves estimation of annual O&M and capital expenditures, annual debt service and reserve requirements, operating and capital revenue sources and the determination of required annual user revenues from rates and charges.
- **Cost of Service Analysis:** Cost of Service Analysis involves identifying and apportioning annual revenue requirements to the different cost centers and defining unit costs so that costs can be allocated to the different user classes proportionate to their demand on the water system (for water) and proportionate to their wastewater loadings (for wastewater).
- **Rate Design:** Rate Design involves the development of a fixed and variable schedule of rates for each of the different user classes to proportionately recover the costs associated with such user classes. This is also where policy objectives can be achieved, such as encouraging water conservation.

Figure 2-1
Cost of Service/Rate Design Process



Assumptions Used In the Study

The following assumptions are used in the study:

1. Annual O&M and capital expenditures, other revenue sources and reserve requirements, O&M inflation factors and user account growth projections are all based on the City's FY 2012 adopted and 2013 estimated budgets. Water supply costs are projected using the latest estimates available from United Water Conservation District (United), Fox Canyon Groundwater Management Agency (FCGMA), State Water Project and Casitas Municipal Water District (Casitas).

2. Annual water system accounts and volume data used in the study are based on data from the City's billing system.

3. Hydraulic capacity ratios of meters are based on their rated capacity as indicated in AWWA's *Sizing Water Service Lines and Meters, M22* Manual.

This study report includes three sections in addition to the Executive Summary and the Introduction. A brief description of the remaining sections follows.

- ***Section 3*** describes findings and results of the water rate study. It includes a description of the water system, the current water rates for the various types of customers, and the existing and suggested user classifications. This section also discusses the water system revenues and expenditures, the determination of annual revenues required from user rates, a detailed discussion of the Cost of Service, which includes allocation of costs to water parameters and the determination of unit costs, and a detailed discussion of the merits of alternative rate structures and the expected impact on the different user classes, including Outside-City customers.

- ***Section 4*** describes findings and results of the wastewater rate study. It includes a description of the wastewater system, the current wastewater rates for the various types of customers, and the existing and suggested user classifications. This section also discusses the wastewater system revenues and expenditures, the determination of annual revenues required from user rates, a detailed discussion on the Cost of Service, which includes allocation of costs to wastewater parameters and the determination of unit costs, and a detailed discussion of the merits of alternative rate structures and the expected impact on the different user classes. The charges resulting from potential costs for Estuary protection are included.

- ***Section 5*** includes a survey of water and wastewater charges of the City and neighboring and comparable agencies.

- ***Appendix A*** includes the results of the exercise on Pricing Objectives and the rate structures that best meet those objectives.

SECTION 3 – WATER RATE STUDY

The following subsections present the findings and recommendations of the rate study which pertain to the water utility.

WATER SYSTEM

Below is a brief description of the City's current water system and rate structure.

Water System Infrastructure

The water utility provides service to over 28,500 customers in a service area of over 32 square miles. The primary water supply is local groundwater from the Mound, Santa Paula, and Oxnard Plain basins which can represent nearly 50 percent of the total supply, depending on weather and the availability of the other sources. About one third of the water is purchased treated from the Casitas Municipal Water District. The remainder of the water is supplied through Ventura River surface water. Water supply costs range from $125 per acre foot for untreated groundwater to approximately $340 per acre foot for treated Casitas water in FY 2012. The City's treatment cost is approximately $260 per acre foot. The cost of groundwater has increased in the last several years due to continued years of drought, tightening water restrictions and environmental and regulatory requirements.

The City owns and operates three water treatment plants, the Avenue Treatment Plant, Bailey Conditioning Facility, and the Saticoy Conditioning Facility and delivers water to its customers through 380 miles of pipelines, 23 pump stations, and 31 reservoirs. The City also provides reclaimed water from the Ventura Water Reclamation Facility to two local golf courses, the Ventura Marina area, and private commercial customers along the existing reclaimed water distribution system for landscape irrigation.

Water Rates

The current water rate structure consists of a bi-monthly service charge and a per-unit volume rate. The service charge varies by meter size and also differs between Inside City and Outside City customers. Residential customers have a three-tier water volume rate, and non-residential customers pay a uniform rate per hundred cubic feet (hcf) of water used. The volume rate also differs between Inside and Outside City customers. Outside City customers pay 170 percent of the Inside City rates. The bi-monthly service charge is shown in **Table 3-1**.

Table 3-1
Existing Bi-Monthly Service Charge – Based on Meter Size (Per Meter)

Bi-Monthly Service Charge				
Meter Size	Inside City	Outside City	Fire Line	Reclaimed
3/4"	$15.03	$25.55		$15.03
1"	$28.74	$48.86	$6.93	$28.74
1 1/2"	$47.76	$81.19	$6.93	$47.76
2"	$66.76	$113.49	$6.93	$66.76
3"	$150.42	$255.71	$20.80	$150.42
4"	$245.49	$417.33	$41.60	$245.49
6"	$483.06	$821.20	$115.58	$483.06
8"	$720.60	$1,225.02	$242.71	$720.60
10"	$958.15	$1,628.86	$416.08	$958.15
12"	$1,100.68	$1,871.16	$429.94	$1,100.68

Commodity rates are shown in **Table 3-2**.

Table 3-2
Existing Bi-Monthly Commodity Rates (Per 100 Cubic Feet)

Rates ($/hcf)		Inside City	Outside City
SFR			
Tier 1	1 to 16	$2.02	$3.43
Tier 2	17 to 42	$2.66	$4.52
Tier 3	43+	$4.27	$7.26
MFR			
Tier 1	1 to 10	$2.02	$3.43
Tier 2	11 to 24	$2.66	$4.52
Tier 3	25+	$4.27	$7.26
Non-Residential		$2.66	$4.52
City Parks		$1.40	$1.40
Reclaimed Water		$0.50	$0.50

Water Accounts and Usage Characteristics

Customer accounts and usage information for FY 2011 are used as the basis for projecting water revenues during the study period. RFC has made the following assumptions regarding the growth and water usage in the City.

Growth Assumptions

RFC assumed that the City will experience an average account growth rate of 0.4 percent per year during the study period, since the City is almost built out. Water usage growth rates are projected to be

proportional to account growth rates. However, since FY 2011 was a wetter year than average, water usage in FY 2012 is expected to increase 2 percent. In the future years, due to mandatory conservation requirements, water usage is projected to decrease 2 percent per year in FY 2013 and 2014 and 1 percent per year through FY 2020 and then remain unchanged thereafter.

Meters & Equivalent Meters

Most customers in the City are provided water service through a 3/4-inch meter. The total number of meters by size in the City is shown in **Table 3-3** below. The projected average annual growth rate for the entire City is approximately 0.4 percent per year over the ten year planning period.

To allocate meter-related costs appropriately, the concept of equivalent meters needs to be understood. By using equivalent meters instead of a straight meter count, the analysis accounts for the fact that larger meters impose larger demands and are more expensive to install, maintain, and replace than smaller meters and commit a greater capacity in the system.

Equivalent meters are based on meter hydraulic capacity. A ratio of hydraulic capacity is calculated by dividing large meter capacities by the base meter capacity. The base meter is the smallest meter, in our case, a 3/4-inch meter. The actual number of meters by size is multiplied by the corresponding capacity ratio to calculate equivalent meters. The capacity ratio is calculated using the meter capacity in gallons per minute (gpm) provided in the AWWA M22 Manual.

Equivalent meters are used in calculating meter service costs. The equivalent meter ratios used for this study are shown in **Table 3-4** below.

Table 3-3
Customer Accounts/Meters – Current & Projected

Line #	Total Meters Summary	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	Inside City					
2	3/4"	23,431	23,442	23,570	23,688	23,807
3	1"	2,123	2,123	2,134	2,144	2,154
4	1 1/2"	811	811	814	817	821
5	2"	650	650	653	656	659
6	3"	104	104	104	104	104
7	4"	56	56	56	56	56
8	6"	64	64	64	64	64
9	8"	7	7	7	7	7
10	10"	0	0	0	0	0
11	12"	0	0	0	0	0
12	**Subtotal Inside City**	**27,246**	**27,257**	**27,402**	**27,536**	**27,672**
13						
14	Outside City					
15	3/4"	1,141	1,130	1,119	1,119	1,119
16	1"	101	100	99	99	99
17	1 1/2"	13	13	13	13	13
18	2"	18	18	18	18	18
19	3"	5	5	5	5	5
20	4"	5	5	5	5	5
21	6"	0	0	0	0	0
22	8"	0	0	0	0	0
23	10"	1	1	1	1	1
24	12"	0	0	0	0	0
25	**Subtotal Outside City**	**1,284**	**1,272**	**1,260**	**1,260**	**1,260**
26						
27	**TOTAL METERS (EXCLUDING FIRELINE)**	**28,530**	**28,529**	**28,662**	**28,796**	**28,932**
28	**FIRELINE (EXCLUDE HYDRANTS)**	**3,093**	**3,093**	**3,093**	**3,093**	**3,093**

Line #	Total Meters Summary	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Inside City					
2	3/4"	23,926	24,046	24,166	24,287	24,408
3	1"	2,164	2,174	2,184	2,194	2,204
4	1 1/2"	825	829	833	837	841
5	2"	662	665	668	671	674
6	3"	104	104	104	104	104
7	4"	56	56	56	56	56
8	6"	64	64	64	64	64
9	8"	7	7	7	7	7
10	10"	0	0	0	0	0
11	12"	0	0	0	0	0
12	**Subtotal Inside City**	**27,808**	**27,945**	**28,082**	**28,220**	**28,358**
13						
14	Outside City					
15	3/4"	1,119	1,119	1,119	1,119	1,119
16	1"	99	99	99	99	99
17	1 1/2"	13	13	13	13	13
18	2"	18	18	18	18	18
19	3"	5	5	5	5	5
20	4"	5	5	5	5	5
21	6"	0	0	0	0	0
22	8"	0	0	0	0	0
23	10"	1	1	1	1	1
24	12"	0	0	0	0	0
25	**Subtotal Outside City**	**1,260**	**1,260**	**1,260**	**1,260**	**1,260**
26						
27	**TOTAL METERS (EXCLUDING FIRELINE**	**29,068**	**29,205**	**29,342**	**29,480**	**29,618**
28	**FIRELINE (EXCLUDE HYDRANTS)**	**3,093**	**3,093**	**3,093**	**3,093**	**3,093**

Table 3-4
Equivalent Meters Ratio and Equivalent Meters

Meter Size	Meter Capacity	AWWA Ratio	Number of Meters	Equivalent Meters
3/4"	30	1.00	24,572	24,572
1"	50	1.67	2,223	3,705
1 1/2"	100	3.33	824	2,747
2"	160	5.33	668	3,563
3"	350	11.67	109	1,272
4"	630	21.00	61	1,281
6"	1,300	43.33	64	2,773
8"	2,400	80.00	7	560
10"	3,800	126.67	1	127
12"	5,000	166.67	0	0

Water Usage

Table 3-5 shows the current and projected water usage for each customer class from FY 2012 through 2021. Due to conservation requirements, the total water usage is projected to decrease approximately 3 percent over the planning period.

Table 3-5
Water Usage by Customer Class (in hcf*)

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	**Inside City**					
2	SFR	2,873,534	2,817,471	2,776,308	2,762,288	2,748,338
3	MFR	1,542,258	1,512,169	1,490,076	1,482,551	1,475,064
4	Non-Residential	1,480,471	1,450,861	1,428,953	1,421,737	1,414,557
5	City Parks	139,395	136,607	133,875	132,536	131,211
6	Reclaimed Water	207,406	207,406	207,406	228,147	250,962
7						
8	**Outside City**					
9	SFR	130,275	126,393	122,627	121,400	120,186
10	MFR	38,993	37,831	36,703	36,336	35,973
11	Non-Residential	126,335	123,808	121,332	120,119	118,918
12	City Parks	11,309	11,083	10,861	10,752	10,645
13						
14	**TOTAL WATER USAGE**	**6,549,976**	**6,423,629**	**6,328,141**	**6,315,867**	**6,305,854**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Inside City**					
2	SFR	2,734,459	2,720,650	2,706,911	2,693,241	2,706,707
3	MFR	1,467,615	1,460,204	1,452,830	1,445,493	1,452,720
4	Non-Residential	1,407,414	1,400,306	1,393,235	1,386,199	1,393,130
5	City Parks	129,899	128,600	127,314	126,040	126,040
6	Reclaimed Water	276,058	303,664	334,030	367,433	404,176
7						
8	**Outside City**					
9	SFR	118,985	117,795	116,617	115,451	115,451
10	MFR	35,613	35,257	34,904	34,555	34,555
11	Non-Residential	117,729	116,551	115,386	114,232	114,232
12	City Parks	10,538	10,433	10,329	10,225	10,225
13						
14	**TOTAL WATER USAGE**	**6,298,309**	**6,293,460**	**6,291,554**	**6,292,869**	**6,357,237**

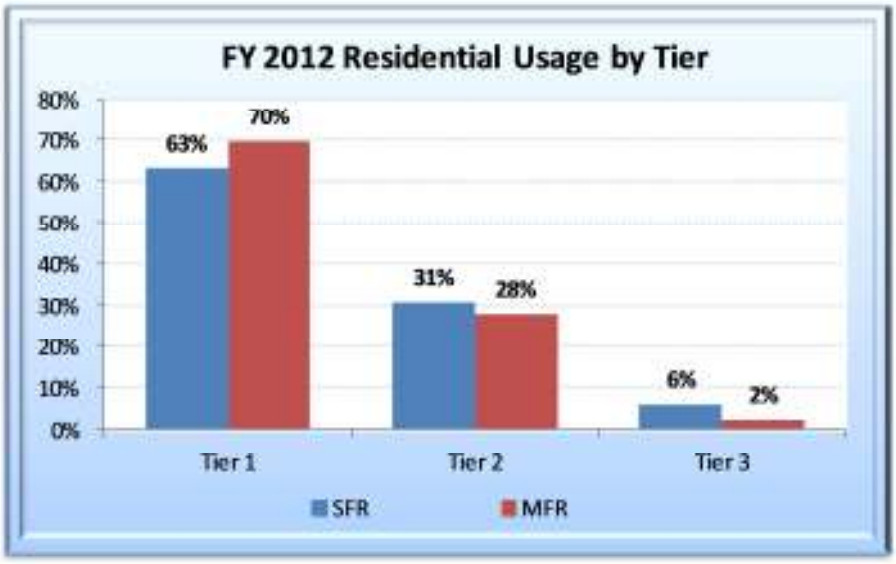
* hcf – hundred cubic feet

Usage Characteristics

Figure 3-1 shows the projected usage by tier for SFR and MFR in FY 2012 under the existing rate structure. The graph indicates that a significant portion of residential customers' usage is in Tier 1 and a

disproportionally small usage in Tier 3. This results because the tier definitions were set over 20 years ago and consumption patterns have changed significantly since that time. The existing tier definitions can be improved to send a stronger signal for conservation. RFC proposes that the City adjust the tier widths for residential customers to achieve greater equity in the rate structure and encourage conservation. The proposed adjustments are presented in Rate Design subsection.

Figure 3-1
FY 2012 Projected Usage by Current Tiers



Usage records in FY 2011 indicate that the average SFR water usage is approximately 21 hcf per bi-monthly period while the average MFR water usage per dwelling unit is approximately 13 hcf per bi-monthly period.

WATER USER CLASSIFICATION

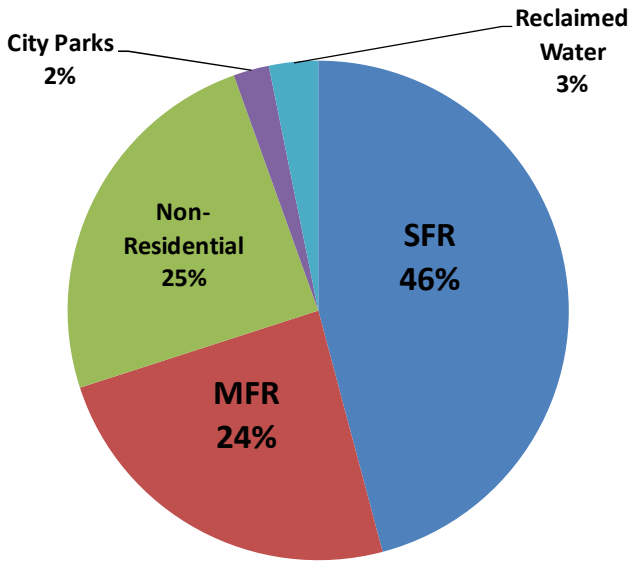
One of the major tasks in the cost of service and rate design process is the classification of users within the water system and the determination of annual demand and costs associated with each class. A review of the City's existing user classifications is presented in the following subsection.

Existing User Classification

The City currently serves a population of nearly 109,000 within the City's service area. In an ideal scenario, a utility with unlimited resources and perfect information could calculate and implement unique rates for every customer based on each customer's individual usage patterns and their unique costs. However, since in the real world it is costly and time prohibitive to separately track each customer's demands and costs, utilities group customers with similar characteristics into categories or user classifications so that rates can be effectively calculated and implemented to recover utility costs in an equitable manner. **Table 3-5** shows the breakdown of the City's water user classes and estimated water usage, in hcf, associated with each class.

The percentage usage breakdown for each customer class is shown in **Figure 3-2.** Residential customers account for 70 percent of the total usage and non-residential customers account for 25 percent, with City parks and reclaimed water making up the remainder. Outside-City customers account for approximately 5 percent of the total water usage in the system.

Figure 3-2
FY 2012 Projected Usage by Customer Class



WATER REVENUE REQUIREMENTS

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under the current rates, capital revenues, operation and maintenance (O&M) expenses, capital expenditures, transfers between funds, and reserve requirements. This subsection of the report provides a discussion of the projected revenues, O&M and capital expenditures, capital improvement financing plan, debt service requirements, and the revenue adjustments required to ensure the financial stability of the water utility.

Water System Revenues

The City's water utility derives its required annual operating and capital revenues from a number of sources. The principal source of operating revenues from rates are the water service charges from the City's users, which are expected to decrease from $19.9 million in FY 2012 to $19 million by FY 2021 due to projected reduction in water usage. Other revenue sources include miscellaneous operating revenues such as installation fees, rental income, interest earnings, etc. Capital revenue sources include connection fees, bond proceeds, and grants and loans.

RFC reviewed the various sources of operating and capital revenues and the City's financing plan. **Table 3-6** presents the details of the operating and capital related revenues.

Table 3-6
Revenue Summary at Existing Rates

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	**Inside City**					
2	Bi-Monthly Service Charge	$3,885,515	$3,886,507	$3,902,008	$3,916,435	$3,931,239
3	Usage Revenues	$14,349,164	$14,067,186	$13,858,743	$13,787,829	$13,717,282
4						
5	**Outside City**					
6	Bi-Monthly Service Charge	$276,841	$274,862	$272,882	$272,882	$272,882
7	Usage Revenues	$1,290,962	$1,258,245	$1,226,388	$1,214,124	$1,201,983
8						
9	Interest - Investment Earnings	$350,000	$164,525	$83,343	$174,201	$303,282
10	Water - Connection Fees	$90,000	$90,030	$90,510	$90,963	$91,418
11	Other Miscellaneous Revenue	$1,892,874	$2,377,896	$2,377,896	$2,435,432	$2,494,695
12						
13	**TOTAL WATER REVENUE**	**$22,135,356**	**$22,119,251**	**$21,811,771**	**$21,891,867**	**$22,012,780**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Inside City**					
2	Bi-Monthly Service Charge	$3,946,043	$3,960,937	$3,975,831	$3,990,815	$4,005,799
3	Usage Revenues	$13,647,100	$13,577,282	$13,507,825	$13,438,729	$13,505,040
4						
5	**Outside City**					
6	Bi-Monthly Service Charge	$272,882	$272,882	$272,882	$272,882	$272,882
7	Usage Revenues	$1,189,963	$1,178,064	$1,166,283	$1,154,620	$1,154,620
8						
9	Interest - Investment Earnings	$464,495	$652,170	$796,391	$1,043,863	$909,784
10	Water - Connection Fees	$91,875	$92,334	$92,796	$93,260	$93,726
11	Other Miscellaneous Revenue	$2,555,736	$2,618,608	$2,683,367	$2,750,068	$2,818,770
12						
13	**TOTAL WATER REVENUE**	**$22,168,094**	**$22,352,277**	**$22,495,375**	**$22,744,236**	**$22,760,621**

The City currently derives 21 percent of its rate revenues from fixed service charges and the remainder from the variable commodity rates. RFC proposes that the City increase the percentage of revenue collected from fixed charges to achieve greater revenue stability. The proposed adjustment is presented in Rate Design subsection.

Water System Expenditures

For sound financial operation of the City's water system, revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include water purchase costs, O&M expenses, capital improvement program (CIP) expenditures, principal and interest payments on existing debt, and other obligations.

Operation and Maintenance Expenses

O&M expenditures include the cost of operating and maintaining water supply, treatment, storage, and distribution facilities. O&M expenses also include the costs of providing technical services such as laboratory services and other administrative costs of the water system such as meter reading and billing. These costs are a normal obligation of the system, and are met from operating revenues as they are incurred. The comprehensive forecasted annual O&M expenditures for the study are based upon the City's budgeted FY 2012 and 2013 expenditures, adjusted for changes since the budget was developed and for anticipated changes in operations and the effect of inflation in future years. The City conservatively uses an inflationary factor of three percent per year starting in FY 2014 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to remain unchanged through FY 2015 due to union contracts, increasing at 0.5 percent per year in all other years. Benefits expenses are projected to remain unchanged through FY 2014, increasing at 0.3 percent per year in all other years. Chemical and utilities expenses are projected to increase at 5 percent per year during the study period. Projected O&M expenditures for the study period are summarized by functions in **Table 3-7**. It should be noted that water and wastewater utilities share certain facilities and services when it makes sense to do so in order to reduce overhead costs. The wastewater utility pays for a portion of the administrative expenses, such as customer care, water resource planning, general manager budget, etc. budgeted in water utility. The payment from the wastewater utility is included in "Other Miscellaneous Revenue", line 11 of **Table 3-6**, which is used to offset the total budgeted expenditures of the water utility.

Table 3-7
Water Operations & Maintenance Expenses

Line #		FY 2012 Budgeted	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected
1	Ventura Water Utility Administration	$500,506	$536,601	$538,040	$543,491	$550,476
2	Water Administration	$2,592,557	$2,650,020	$2,514,043	$2,608,728	$2,709,392
3	Water Distribution	$2,895,180	$3,146,785	$3,159,263	$3,207,799	$3,263,569
4	Water Production	$3,813,760	$4,113,387	$4,224,536	$4,366,333	$4,516,648
5	Water Purification	$4,938,499	$5,048,063	$5,168,933	$5,365,191	$5,573,676
6	Customer Care - Billing	$1,096,712	$1,550,488	$1,310,199	$1,332,699	$1,357,916
7	Water Efficiency	$1,063,698	$815,583	$816,496	$825,161	$836,064
8	Resource Planning	$962,610	$1,460,286	$1,429,630	$1,455,752	$1,484,880
9	Revenue Management	$206,241	$212,016	$218,376	$224,928	$231,675
10	State Water Project Payment	$1,374,829	$1,413,324	$1,455,724	$1,499,396	$1,544,378
11	**TOTAL WATER O&M EXPENSES**	**$19,444,592**	**$20,946,552**	**$20,835,241**	**$21,429,478**	**$22,068,673**

Line #		FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
1	Ventura Water Utility Administration	$557,628	$564,954	$572,457	$580,142	$588,016
2	Water Administration	$2,812,660	$2,921,247	$3,028,936	$3,141,664	$3,259,709
3	Water Distribution	$3,320,831	$3,379,632	$3,440,015	$3,502,028	$3,565,718
4	Water Production	$4,673,218	$4,836,320	$5,006,247	$5,183,303	$5,367,806
5	Water Purification	$5,791,718	$6,019,774	$6,258,318	$6,507,853	$6,773,187
6	Customer Care - Billing	$1,383,824	$1,410,446	$1,437,801	$1,465,912	$1,494,801
7	Water Efficiency	$847,232	$858,674	$870,397	$882,409	$894,720
8	Resource Planning	$1,514,817	$1,545,585	$1,577,210	$1,609,716	$1,643,131
9	Revenue Management	$238,626	$245,784	$253,158	$260,753	$268,575
10	State Water Project Payment	$1,590,709	$1,638,430	$1,687,583	$1,738,211	$1,790,357
11	**TOTAL WATER O&M EXPENSES**	**$22,731,265**	**$23,420,846**	**$24,132,122**	**$24,871,990**	**$25,646,020**

Water supply costs vary from $3.7 million to $5.5 million in 2012 through 2021. Total water supply costs are forecasted to increase at an average of approximately 5 percent over the study period.

Water Capital Improvement Program

The City has developed a comprehensive water Capital Improvement Program (CIP) to address current water system needs. As **Table 3-9** indicates, the total estimated water CIP from FY 2012 to FY 2022 is $120million. These projected costs include a 3.5 percent annual inflation factor due to anticipated increases in construction costs over time. This inflation rate is a conservative estimate and ensures that the City has adequate resources reserved to complete the necessary projects. Additionally, the CIP costs used in this study represents only 75 percent of the actual projected CIP. This percentage is based on the City's previous experiences regarding project completion, recognizing project delays and changing priorities in the program schedule. This minimizes customer rate impacts as capital project expenditures are the primary driver for future increases.

Table 3-9
Water Capital Improvement Program at 75% of Budget - inflated

Line #	Proj No.	Description	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	97917	Well - Saticoy #3	$1,332,000	$960,000	$0	$0	$0
2	97927	Pipeline - North Catalina	$1,020,000	$1,102,500	$0	$0	$0
3	97916	Storage Tank - Circulation Improvements	$82,500	$535,342	$0	$0	$0
4	97928	Well - Saticoy Country Club #3	$600,750	$0	$0	$0	$0
5	97930	Pump Station - Gosnell Rehab	$105,000	$997,500	$0	$0	$0
6	97914	Pipeline - Harbor Blvd Replace & Improve	$135,000	$1,905,000	$0	$0	$0
7	97929	Reservoir - Kingston Cover/Roof	$288,750	$112,500	$1,875,000	$0	$0
8	97915	Pipeline - Montalvo Area Replace & Improve	$75,000	$112,500	$2,647,500	$0	$0
9	97924	Well - Golf Course #7	$345,000	$0	$2,362,500	$1,650,000	$0
10	97925	Facility - System Pressure Monitoring Stations	$513,750	$30,000	$0	$0	$0
11	97931	Storage Tank - Hall Canyon & Mariano Retrofit	$82,500	$626,250	$585,000	$0	$0
12	97920	Pipeline - Fairview Drive	$2,045,250	$0	$0	$0	$0
13	97926	Pipeline - Market Street Area	$1,057,500	$0	$0	$0	$0
14	73038	Pump Station - Fixed Emergency Power	$0	$86,250	$738,750	$0	$0
15	97521	Treatment - Saticoy Conditioning Capacity & Facility Renovation	$0	$0	$0	$0	$0
16	97907	Well - Mound #2	$375,000	$375,000	$0	$0	$1,500,000
17	73037	Facility - Hall Canyon Pressure Reducing	$0	$0	$225,000	$0	$0
18	73021	Pipeline - Navigator Drive	$0	$0	$0	$750,000	$0
19	73042	Facility - 360 Zone Pressure Reducing	$0	$0	$0	$300,000	$0
20	97887	Pump Station - Booster Motor Control Upgrades	$0	$0	$0	$0	$1,500,000
21	73013	Treatment - Bailey Control & Equipment Upgrade	$0	$0	$0	$0	$0
22	97895	Pipeline - Telephone Road Extension (210/330) Improvements	$0	$0	$0	$0	$0
23	73004	Pipeline - Grant Park Improvements	$0	$0	$0	$0	$0
24	73009	Treatment - Avenue Plant Phase II	$0	$0	$0	$0	$0
25	73033	Facility - Ventura/Oxnard Emergency Interconnect	$0	$0	$0	$0	$0
26	73032	Recycle - Reuse OVSD Effluent	$0	$0	$0	$0	$0
27	73039	Pipeline - Small Diameter Replacement/Improvement	$0	$0	$0	$0	$0
28	73040	Pipeline - Deficient Replacement/Improvement	$0	$0	$0	$0	$0
29	73041	Pipeline - Looping Program/Improvement	$0	$0	$0	$0	$0
30	73044	Treatment -Avenue Membrane Module Replacement	$0	$0	$0	$0	$0
31	97904	Well - Foster Park Well field	$0	$0	$0	$0	$0
32	97879	Storage Tank - Arroyo Verde (605 Zone)	$0	$0	$0	$0	$0
33	97864	Pipeline - Loma Vista 210/430 Improvement	$0	$0	$0	$0	$750,000
34	97896	Well - Golf Course Pump Station & Well Upgrade	$0	$0	$0	$0	$0
35	97897	Pipeline - Dead-End Main Connections/Improvement	$0	$0	$0	$0	$0
36	**Potential Projects**						
37	97893	Pipeline - Northbank (West) New	$0	$0	$0	$0	$0
38	97894	Pipeline - Northbank (East) New	$0	$0	$0	$0	$0
39	**Additional CIP not in Adopted CIP**						
40		Facility - 330 to 210 Pressure Zone Flow Control/Pressure	$0	$0	$0	$40,050	$165,975
41		Pipeline - Annual Replacement Program	$0	$0	$0	$1,781,550	$2,765,850
42		Facility - Energy Efficiency Projects	$0	$75,000	$75,000	$75,000	$75,000
43		Well - Saticoy Well #4 & Golf Course Parcel	$0	$0	$0	$0	$0
44		Pipeline - Olivas Park Drive Waterline	$0	$0	$860,625	$0	$0
45		Well - 87 Acre Parcel Well & Treatment Facility	$375,000	$759,225	$785,775	$649,800	$0
46		Conditioning - Water Quality Reverse Osmosis	$0	$0	$375,000	$375,000	$375,000
47		Conditioning - Reverse Osmosis Outfall	$0	$0	$0	$0	$0
48		Meters - Automated Reading Installation Citywide	$0	$0	$1,451,250	$1,530,000	$1,586,250
49							
50	**TOTAL CIP**		**$8,433,000**	**$7,677,067**	**$11,981,400**	**$7,151,400**	**$8,718,075**

Line #	Proj No.	Description	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	97917	Well - Saticoy #3	$0	$0	$0	$0	$0	$0
2	97927	Pipeline - North Catalina	$0	$0	$0	$0	$0	$0
3	97916	Storage Tank - Circulation Improvements	$0	$0	$0	$0	$0	$0
4	97928	Well - Saticoy Country Club #3	$0	$0	$0	$0	$0	$0
5	97930	Pump Station - Gosnell Rehab	$0	$0	$0	$0	$0	$0
6	97914	Pipeline - Harbor Blvd Replace & Improve	$0	$0	$0	$0	$0	$0
7	97929	Reservoir - Kingston Cover/Roof	$0	$0	$0	$0	$0	$0
8	97915	Pipeline - Montalvo Area Replace & Improve	$0	$0	$0	$0	$0	$0
9	97924	Well - Golf Course #7	$0	$0	$0	$0	$0	$0
10	97925	Facility - System Pressure Monitoring Stations	$0	$0	$0	$0	$0	$0
11	97931	Storage Tank - Hall Canyon & Mariano Retrofit	$0	$0	$0	$0	$0	$0
12	97920	Pipeline - Fairview Drive	$0	$0	$0	$0	$0	$0
13	97926	Pipeline - Market Street Area	$0	$0	$0	$0	$0	$0
14	73038	Pump Station - Fixed Emergency Power	$0	$0	$0	$0	$0	$0
15	97521	Treatment - Saticoy Conditioning Capacity & Facility Renovation	$0	$0	$0	$7,508,644	$0	$0
16	97907	Well - Mound #2	$2,659,451	$0	$0	$0	$0	$0
17	73037	Facility - Hall Canyon Pressure Reducing	$0	$0	$0	$0	$0	$0
18	73021	Pipeline - Navigator Drive	$0	$0	$0	$0	$0	$0
19	73042	Facility - 360 Zone Pressure Reducing	$0	$0	$0	$0	$0	$0
20	97887	Pump Station - Booster Motor Control Upgrades	$0	$0	$0	$0	$0	$0
21	73013	Treatment - Bailey Control & Equipment Upgrade	$1,425,000	$0	$0	$0	$0	$0
22	97895	Pipeline - Telephone Road Extension (210/330) Improvements	$0	$0	$0	$0	$0	$0
23	73004	Pipeline - Grant Park Improvements	$0	$1,125,000	$0	$0	$0	$0
24	73009	Treatment - Avenue Plant Phase II	$0	$0	$0	$0	$0	$0
25	73033	Facility - Ventura/Oxnard Emergency Interconnect	$0	$0	$0	$0	$0	$0
26	73032	Recycle - Reuse OVSD Effluent	$0	$0	$0	$2,250,000	$0	$0
27	73039	Pipeline - Small Diameter Replacement/Improvement	$0	$0	$0	$0	$0	$0
28	73040	Pipeline - Deficient Replacement/Improvement	$0	$0	$0	$0	$0	$0
29	73041	Pipeline - Looping Program/Improvement	$0	$1,500,000	$1,875,000	$0	$0	$0
30	73044	Treatment -Avenue Membrane Module Replacement	$0	$1,350,000	$0	$0	$0	$0
31	97904	Well - Foster Park Well field	$0	$0	$0	$5,993,069	$0	$0
32	97879	Storage Tank - Arroyo Verde (605 Zone)	$0	$0	$3,000,000	$0	$0	$0
33	97864	Pipeline - Loma Vista 210/430 Improvement	$1,500,000	$0	$0	$0	$0	$0
34	97896	Well - Golf Course Pump Station & Well Upgrade	$0	$0	$0	$0	$1,500,000	$0
35	97897	Pipeline - Dead-End Main Connections/Improvement	$0	$0	$0	$0	$0	$374,894
36	**Potential Projects**							
37	97893	Pipeline - Northbank (West) New	$0	$0	$0	$0	$0	$0
38	97894	Pipeline - Northbank (East) New	$0	$0	$0	$0	$0	$0
39	**Additional CIP not in Adopted CIP**							
40		Facility - 330 to 210 Pressure Zone Flow Control/Pressure	$0	$0	$0	$0	$0	$0
41		Pipeline - Annual Replacement Program	$2,862,600	$2,962,800	$3,066,525	$3,173,850	$3,284,925	$3,399,900
42		Facility - Energy Efficiency Projects	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
43		Well - Saticoy Well #4 & Golf Course Parcel	$477,075	$2,962,800	$0	$0	$0	$0
44		Pipeline - Olivas Park Drive Waterline	$0	$0	$0	$0	$0	$0
45		Well - 87 Acre Parcel Well & Treatment Facility	$0	$0	$0	$0	$0	$0
46		Conditioning - Water Quality Reverse Osmosis	$0	$0	$0	$2,469,000	$3,833,175	$6,612,150
47		Conditioning - Reverse Osmosis Outfall	$0	$0	$0	$0	$2,964,300	$4,602,075
48		Meters - Automated Reading Installation Citywide	$1,350,000	$0	$0	$0	$0	$0
49								
50	**TOTAL CIP**		**$10,349,126**	**$9,975,600**	**$8,016,525**	**$21,469,562**	**$11,657,400**	**$15,064,019**

Major Capital Improvement Financing Plan

Typical CIP funding sources include the following:

System Revenues	***Capital Financing***
Connection Fees	Bond proceeds
Pay-as-you-go revenues	Grant receipts and Contributions
Interest earnings	

Table 3-10 presents the proposed capital financing plan to finance major CIP projects over the ten-year period from FY 2012 to FY 2021. It is projected that the City will issue debt of $25 million in FY 2014, $20 million in FY 2016, $25 million in FY 2018, and $10 million in FY 2021 to adequately fund the capital improvement program since revenues from rates are insufficient to cover the costs. Other revenue shown below includes estimated connection fees revenues and grants.

Table 3-10
Capital Financing Plan

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	Debt Financing	$0	$0	$11,890,890	$7,060,437	$8,626,657
2	Rate Revenue	$8,343,000	$7,587,037	$0	$0	$0
3	Other Revenue	$90,000	$90,030	$90,510	$90,963	$91,418
4	**TOTAL CIP**	**$8,433,000**	**$7,677,067**	**$11,981,400**	**$7,151,400**	**$8,718,075**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Debt Financing	$10,257,251	$9,883,266	$7,923,729	$7,296,901	$8,991,304
2	Rate Revenue	$0	$0	$0	$14,079,402	$2,572,370
3	Other Revenue	$91,875	$92,334	$92,796	$93,260	$93,726
4	**TOTAL CIP**	**$10,349,126**	**$9,975,600**	**$8,016,525**	**$21,469,562**	**$11,657,400**

Debt Service Requirements

Debt service requirements consist of principal and interest payments on existing debt. The City currently has debt service obligations associated with its outstanding 2004 Water Certificates of Participation (COP) and its 2009 State Revolving Fund (SRF) loan. Existing and proposed debt service consists of annual payments in the range of $3 to $8.2 million. **Table 3-11** shows the existing and proposed debt service of the water utility.

Table 3-11
Existing and Proposed Debt Service

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	2009 SRF Loan from DWR	$1,263,820	$1,263,820	$1,263,820	$1,263,820	$1,263,820
2	2004 Water Revenue COP	$1,688,375	$1,685,887	$1,685,975	$1,684,275	$1,681,575
3	**Total Existing Debt Service**	**$2,952,195**	**$2,949,707**	**$2,949,795**	**$2,948,095**	**$2,945,395**
4						
5	**Total Proposed Debt Service**	**$0**	**$0**	**$885,869**	**$1,771,739**	**$2,480,434**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	2009 SRF Loan from DWR	$1,263,820	$1,263,820	$1,263,820	$1,263,820	$1,263,820
2	2004 Water Revenue COP	$1,680,937	$1,684,000	$1,682,100	$1,676,925	$1,668,900
3	**Total Existing Debt Service**	**$2,944,757**	**$2,947,820**	**$2,945,920**	**$2,940,745**	**$2,932,720**
4						
5	**Total Proposed Debt Service**	**$3,189,130**	**$4,074,999**	**$4,960,869**	**$4,960,869**	**$5,315,216**

Reserves

The City requires adequate cash reserves to meet operating, capital, and debt service requirements. Operating reserves may be used to meet ongoing cash flow requirements as well as emergency requirements. Typically, a balance in the range of 10 to 50 percent of annual operating expenses is considered appropriate. This represents one to six months of working capital. RFC proposes that the City maintain a minimum 90-day operating reserve. The operating reserve balances and the minimum operating reserves targets are shown in **Table 3-11**. Interest from reserve funds may be used to finance operations. The capital reserve is similar in function to the operating reserve, but it is a reserve used for replacement and refurbishment (R&R) related capital expenses. Standard practices recommend a 100 percent of annual capital replacement expenses. However, to reduce customer impacts, the capital reserve is set at 50 percent of the annual replacement CIP in FY 2012, gradually increasing to 100 percent by FY 2017, to cover unexpected increases in capital expenditures. The estimated FY 2012 total ending reserves balance is approximately $12.8 million, not including debt reserves. However, most of the funds are already earmarked for existing capital projects. The reserve levels are projected to be below the proposed target level in the early years of the study period but will meet the proposed target level in future years.

Table 3-11
Water Reserves/Fund Balance

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	**Ending Balance**					
2	Operating Fund	$791,063	$1,805,385	$2,496,372	$3,702,692	$5,747,841
3	Capital Improvement Fund	$12,012,979	$3,425,943	$3,425,943	$3,425,943	$3,425,943
4	Bond Fund	$0	$0	$10,587,371	$3,526,934	$12,882,886
5	Debt Reserve Fund	$0	$0	$1,771,739	$1,771,739	$3,189,130
6						
7	**Target Balance**					
8	Operating Fund	$4,517,441	$4,883,307	$4,844,879	$4,982,520	$5,131,074
9	Capital Improvement Fund	$1,801,057	$2,161,268	$2,521,480	$2,881,691	$3,241,902

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Ending Balance**					
2	Operating Fund	$7,670,194	$11,444,839	$13,873,625	$8,057,933	$10,669,913
3	Capital Improvement Fund	$4,425,943	$4,425,943	$6,425,943	$4,346,540	$6,774,171
4	Bond Fund	$2,625,635	$15,220,630	$7,296,901	$0	$0
5	Debt Reserve Fund	$3,189,130	$4,960,869	$4,960,869	$4,960,869	$5,669,564
6						
7	**Target Balance**					
8	Operating Fund	$5,285,139	$5,445,604	$5,611,135	$5,783,445	$5,963,916
9	Capital Improvement Fund	$3,602,114	$3,602,114	$3,602,114	$3,602,114	$3,602,114

Based on the terms of the debt issued, debt reserves provide protection to bond buyers for one year of debt service payments in times of financial difficulty. These are restricted reserves used only for meeting debt service payments. One year of debt service payments is required to be set aside in the reserve; each time the City issues a new bond, additional proceeds are required to be added to the debt reserves.

Proposed Revenue Adjustments

In order to meet projected revenue requirements, to achieve desired operating and capital reserve fund balances, and to minimize customer impacts, the following revenue adjustments are proposed to meet long term rate stability:

Effective Date	Increases
July 1, 2012	$1.7 million
July 1, 2013	$1.8 million

The operating financial plan presented in **Table 3-12** shows the revenues projected from rates based on the proposed revenue adjustment schedule shown above.

Table 3-12
Water Operating Financial Plan

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	Revenue Under Existing Rates	$19,850,082	$19,507,801	$19,281,022	$19,212,270	$19,144,386
2	Total Additional Revenue	$0	$1,658,163	$3,417,079	$5,327,354	$7,387,028
3	Total Revenue from Rates	$19,850,082	$21,165,964	$22,698,101	$24,539,624	$26,531,414
4						
5	Other Operating Revenue	$1,892,874	$2,377,896	$2,377,896	$2,435,432	$2,494,695
6	Outside City Revenue Offset		$202,196	$202,554	$206,373	$210,262
7	Interest Income	$350,000	$164,525	$83,343	$174,201	$303,282
8	**Total Revenue**	**$22,092,956**	**$23,910,580**	**$25,361,893**	**$27,355,631**	**$29,539,652**
9						
10	O&M Expenses	$18,069,763	$19,533,227	$19,379,517	$19,930,082	$20,524,296
11	State Water Project Payment	$1,374,829	$1,413,324	$1,455,724	$1,499,396	$1,544,378
12	Existing Debt Service	$2,952,195	$2,949,707	$2,949,795	$2,948,095	$2,945,395
13	Proposed Debt Service	$0	$0	$885,869	$1,771,739	$2,480,434
14	**Total Expenses**	**$22,396,787**	**$23,896,259**	**$24,670,905**	**$26,149,311**	**$27,494,503**
15						
16	**Net Cash Flow**	**($303,831)**	**$14,321**	**$690,988**	**$1,206,319**	**$2,045,150**
17						
18	Debt Coverage Ratio	136%	148%	156%	157%	166%
19	Required Coverage	125%	125%	125%	125%	125%

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Revenue Under Existing Rates	$19,076,988	$19,010,165	$18,943,821	$18,878,046	$18,959,341
2	Total Additional Revenue	$9,476,063	$11,719,112	$13,821,756	$16,059,392	$18,584,702
3	Total Revenue from Rates	$28,553,051	$30,729,277	$32,765,578	$34,937,438	$37,544,043
4						
5	Other Operating Revenue	$2,555,736	$2,618,608	$2,683,367	$2,750,068	$2,818,770
6	Outside City Revenue Offset	$214,222	$218,255	$222,361	$226,543	$233,339
7	Interest Income	$464,495	$652,170	$796,391	$1,043,863	$909,784
8	**Total Revenue**	**$31,787,504**	**$34,218,310**	**$36,467,697**	**$38,957,912**	**$41,505,936**
9						
10	O&M Expenses	$21,140,555	$21,782,415	$22,444,539	$23,133,780	$23,855,663
11	State Water Project Payment	$1,590,709	$1,638,430	$1,687,583	$1,738,211	$1,790,357
12	Existing Debt Service	$2,944,757	$2,947,820	$2,945,920	$2,940,745	$2,932,720
13	Proposed Debt Service	$3,189,130	$4,074,999	$4,960,869	$4,960,869	$5,315,216
14	**Total Expenses**	**$28,865,151**	**$30,443,665**	**$32,038,911**	**$32,773,604**	**$33,893,956**
15						
16	**Net Cash Flow**	**$2,922,352**	**$3,774,645**	**$4,428,786**	**$6,184,308**	**$7,611,980**
17						
18	Debt Coverage Ratio	174%	177%	177%	200%	214%
19	Required Coverage	125%	125%	125%	125%	125%

Debt Service Coverage

The City must meet debt service coverage requirements on its outstanding bond issues. Coverage requirements typically vary between 100 percent and 160 percent or higher. The City's required debt coverage is 125 percent, which means that the City's adjusted net system revenues shall amount to at least 125 percent of the annual debt service. The system revenues include funds derived from the ownership and operation of the system including water service charges from the City's users, miscellaneous service charges, revenues received from contracts, and interest income. Annual debt service includes annual principal and interest payments on outstanding debt. With the proposed revenue adjustments the City exceeds the coverage requirement during all ten years of the study.

COST OF SERVICE ANALYSIS

The City's user classifications and the revenue requirements reviewed and finalized through the operating and capital cash flow analysis provide the basis for performing the cost of service analysis. This section of the report discusses the allocation of operating and capital costs to the parameters and the determination of unit rates.

The total revenue requirements net of revenue credits from miscellaneous sources, is by definition, the cost of providing service as shown in **Table 3-13**. This cost is then used as the basis to develop unit rates for the water parameters and to allocate costs to the various user classes in proportion to the water services rendered. The concept of proportionate allocation to user classes implies that allocations should take into consideration not only the average quantity of water used but also the peak rate of

consumption. There are costs associated with design and construction of facilities used to meet peak demands, and these need to be allocated so that peaking costs can be calculated and appropriately passed on. In this study, water rates were calculated for FY 2013, and accordingly FY 2013 is defined as the Test Year. Test Year revenue requirements are used in the cost allocation process.

Cost of Service to be Allocated

The annual revenue requirements or costs of service to be recovered from commodity charges include operation and maintenance (O&M) expenses, costs associated with annual renewal and replacements, and other capital related costs. O&M expenses include costs directly related to the supply, treatment, and distribution of water as well as routine maintenance of system facilities. This maintenance is often referred to as routine capital and represents the annual recurring capital outlay for minor system improvements and purchases of materials and supplies.

The total FY 2013 cost of service to be recovered from the City's users, shown in **Table 3-13**, is estimated at approximately $21.2 million, of which approximately $16.8 million is operating costs and the remaining $4.4 million is capital costs, which consists of State Water Project (SWP) payment and existing debt service. The cost of service analysis is based upon the premise of generating annual revenues adequate to meet the estimated annual revenue requirements. As part of the cost of service analysis, revenues from other sources except water rates and charges, such as revenues from miscellaneous services, are deducted from the appropriate cost elements. Additional deductions are made to reflect interest income and other non-operating income during FY 2013. Adjustments are also made to account for cash balances to ensure adequate collection of revenue and to determine annual revenues needed from rates.

To allocate the cost of service among the different user classes, costs first need to be allocated to the appropriate water parameters. The following section describes the allocation of the operating and capital costs of service to the appropriate parameters of the water system.

Table 3-13
Allocation of Revenue Requirements

	FY 2013		
	Operating	**Capital**	**Total**
Revenue Requirements			
O&M Expenses	$19,533,227		**$19,533,227**
State Water Project Payment		$1,413,324	**$1,413,324**
Existing Debt Service		$2,949,707	**$2,949,707**
Proposed Debt Service		$0	**$0**
Subtotal Revenue Requirements	**$19,533,227**	**$4,363,031**	**$23,896,259**
Less: Other Revenues			
Other Operating Revenue	$2,377,896		**$2,377,896**
Outside City Revenue Offset	$202,196		**$202,196**
Interest Income	$164,525		**$164,525**
Subtotal Other Revenues	**$2,744,616**	**$0**	**$2,744,616**
Less: Adjustments			
Adjustments to Annual Cash Balance	($14,321)		**($14,321)**
Adjustments to Annualize Rate Increase	$0		**$0**
Subtotal Adjustments	**($14,321)**	**$0**	**($14,321)**
Revenue to be Recovered from Rates	**$16,802,932**	**$4,363,031**	**$21,165,964**

Functional Cost Components

The total cost of water service is analyzed by system function in order to equitably distribute costs of service to the various classes of customers. For this analysis, water utility costs of service are assigned to three basic functional cost components including base costs, extra capacity costs and customer service related costs.

Base costs are those operating and capital costs of the water system associated with serving customers at a constant average rate of use. Extra capacity costs represent those costs incurred to meet customer peak demands for water in excess of average day usage. Total extra capacity costs are subdivided into costs associated with maximum day (Max Day) and maximum hour (Max Hour) demands and are explained below.

Customer service costs include customer related and meter related costs. Customer costs are uniform for all customers and include such costs as meter reading, billing, collecting, and accounting. Meter service costs include maintenance and capital costs associated with meters and capacity related costs. These costs are assigned based on meter size or equivalent meter capacity.

The allocation of costs of service into these principal components provides the means for determining the costs to the various customer classes on the basis of their respective base, extra capacity and customer requirements for service.

Allocation to Functional Cost Components

The water utility is comprised of various facilities each designed and operated to fulfill a given function. In order to provide adequate service to its customers at all times, the utility must be capable of not only providing the total amount of water used, but also supplying water at peak or maximum rates of demand. Facilities are designed to meet specific design parameters. For example, a treatment plant is designed to meet the maximum demands that the utility would experience in a day (Max Day). Therefore costs related to the treatment plant would be allocated on the basis of Max Day. The distribution of costs to the functional components of Base, Max Day and Max Hour is described below. The separation of costs into these functional components provides a means for distributing such costs to the various classes of customers on the basis of respective responsibilities for each particular type of service.

Determination of Allocation Percentages

Allocation percentages are usually derived from actual historical data as is the case in this Study. RFC performed the following steps to derive the allocation percentages for apportioning the City's O&M and capital costs. Customer service related costs are allocated directly to their cost component so no allocation percentages are necessary. Costs related to meter maintenance are allocated to meter service. The methodology for calculating volume related cost allocation is explained below. **Table 3-14** will help in understanding the allocation calculations.

To ensure that costs related to peaking are captured appropriately, the first step is to define system peaking factors. Peaking factors are defined by comparing against the average daily demand (ADD) or Base (in the Base-Extra Capacity Method). Since the peaking factors are compared to the Base, it is assigned a value of 1.0. The City's maximum day (Max Day) demand is estimated to be 1.52 times the ADD. This means that facilities that are designed for Max Day have to provide 152 percent of the ADD. The Max Day factor is therefore 52 out of the 152, the remaining 100 being assigned to Base. The maximum instantaneous usage is approximated by the Max Hour usage and is estimated to be 3.97 times the ADD. Max Hour is therefore assigned a value of 2.45 calculated as follows:

3.97 – 1.00 for Base - 0.52 for Max Day = 2.45

Allocations are calculated based on these factors. Cost components that are solely Base related, such as source of supply, are allocated 100 percent to Base. Facilities that are designed to meet Max Day peaks, such as treatment plants, are allocated to Base and Max Day factors. Therefore facilities designed for Max Day are allocated as follows:

Base:	65.8%	=	(1.00/1.52)x100
Max Day:	34.2%	=	(1.52-1.00)/1.52x100

Facilities such as distribution systems that are designed for Max Hour are allocated similarly.

Base:	25.2%	=	(1.00/3.97)x100
Max Day:	13.1%	=	(0.52/3.97)x100
Max Hour:	61.7 %	=	(2.45/3.97)x100

Since facilities such as reservoirs and distribution systems are also designed to handle fire flow, a small allocation is also provided for fire flow.

The percentages calculated above are used to spread the operating and capital improvement costs amongst Base, Max Day, and Max Hour parameters for cost of service calculations.

Allocation of Operating Expense

Projected net operating expenses for FY 2013 are allocated to cost components on the basis of the design criteria of the facilities. Water supply costs are allocated to base; storage or reservoir costs are allocated to max day; distribution system costs are allocated to max hour; billing costs are allocated to customer service, etc.

Administration and general expenses are related to total system operations and are allocated the same as the remaining operating expenses. The resulting allocation of operation and maintenance expense serves as the basis for allocating the FY 2013 net operating costs shown in **Table 3-13** to the base, extra capacity and customer costs functions.

Allocation of Plant Investment and Capital Costs

Capital costs include capital improvements financed from annual revenues, debt service and other sources. A reasonable method of assigning capital costs to functional components is to allocate such costs on the basis of net plant investment.

Net plant investment is represented by the total cost of water utility facilities less accumulated depreciation. The estimated fiscal year net plant investment in water facilities consists of net plant in service as of June 30, 2011.

Costs are allocated based on the design criteria of each facility. The investment in general plant is allocated to each cost component on the basis of all other plant investment. The resulting allocation of net plant investment serves as the basis for allocating the capital costs shown in **Table 3-13**.

Unit Cost of Service

In order to allocate costs of service to the different user classes, the unit costs of service need to be developed for each cost component. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual units for the respective component.

Different units are used for the different cost components. The volume related cost components are based on volumetric units of one hundred cubic feet or HCF (about 748 gallons). Customer related cost components are based on number of accounts or bills. Meter related costs are based on equivalent meters. **Table 3-14** shows the total number of units allocated to each component.

Table 3-14
Determination of Total Annual Units

Customer Class	Annual Use (hcf)	Average Daily Use (hcf/day)	Maximum Day Requirements			Maximum Hour Requirements			Monthly Bills	Equiv. Meters
			Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	Capacity Factor	Total Capacity (hcf/hour)	Extra Capacity (hcf/hour)		
Inside City										
SFR	2,817,471	7,719	1.52	11,733	4,014	3.97	30,644	18,911	131,760	22,829
MFR	1,512,169	4,143	1.52	6,297	2,154	3.97	16,448	10,151	14,946	6,553
Non-residential	1,450,861	3,975	1.52	6,042	2,067	3.97	15,781	9,739	15,546	8,720
City Parks	136,607	374	1.52	568	194	3.97	1,485	917	1,290	771
Outside City										
SFR	126,393	346	1.52	526	180	3.97	1,374	848	6,096	1,055
MFR	37,831	104	1.52	158	54	3.97	413	255	570	144
Non-residential	123,808	339	1.52	515	176	3.97	1,346	831	966	527
Groundwater	11,083	30	1.52	46	16	3.97	119	73	0	0
TOTAL WATER USAGE	**6,216,223**	**17,030**		**25,885**	**8,855**		**67,610**	**41,725**	**171,174**	**40,599**

Once the total number of units is known they can be used to calculate unit costs. **Table 3-15** shows the costs allocated to the different cost components spread against the appropriate units of service and the development of the FY 2013 unit costs for each of the cost components. To ensure that the costs are appropriately shared between fixed and variable components, a portion of the extra capacity related costs are allocated to meters to recognize the demand that meters place on the system. The allocated costs are simply divided by the total number of units for each component to determine the unit costs of each component as shown in **Table 3-15**. The uniform average commodity rate is $2.40 per hcf and includes the peaking costs. The High Use column represents a portion of the costs of the Water Efficiency program which promotes conservation and efficient water use. Since it is a conservation program, the associated costs are spread to only 15 percent of the total water usage representing the high usage residential customers. This cost is allocated to all customer classes based on 15 percent of each class total water usage.

Table 3-15
Development of Unit Costs

	Base	Max Day	Max Hour	Meter	Billing	High Use	General	Total
Operating Expenses	$7,278,192	$2,672,445	$1,645,608	$0	$694,444	$365,289	$3,044,414	$16,802,932
Capital Expenses	$1,801,398	$750,822	$1,278,813	$9,991	$221	$0	$72,377	$4,363,031
Total Cost	**$9,079,590**	**$3,423,267**	**$2,924,421**	**$9,991**	**$694,665**	**$365,289**	**$3,116,791**	**$21,165,964**
Allocation of General Costs	$1,715,391	$646,752	$552,506	$1,888	$131,242	$69,013	($3,116,791)	
Allocation of Public Fire Costs				$1,051,858				
Allocation Peak to Meter		($1,831,508)	($1,564,617)	$3,396,125				
Total Cost of Service	**$10,794,981**	**$2,238,510**	**$1,912,310**	**$4,459,862**	**$825,907**	**$434,303**	**$0**	**$21,165,964**
Total Units of Service	6,216,223	8,855	41,725	243,594	171,174	6,216,223		
Unit of Measure	hcf	hcf/day	hcf/day	Equiv meters	bi-monthly bill	hcf		
Total Unit Cost of Service	$1.74	$252.80	$45.83	$18.31	$4.82	$0.07		
Unit Rate	$1.74	$0.36	$0.31					

The meter and billing costs shown in **Table 3-15** are used to calculate the meter charges and the Base, Max Day, Max Hour and High Use costs for each class are used to develop the unit commodity rates for each class of customers.

User Class Costs

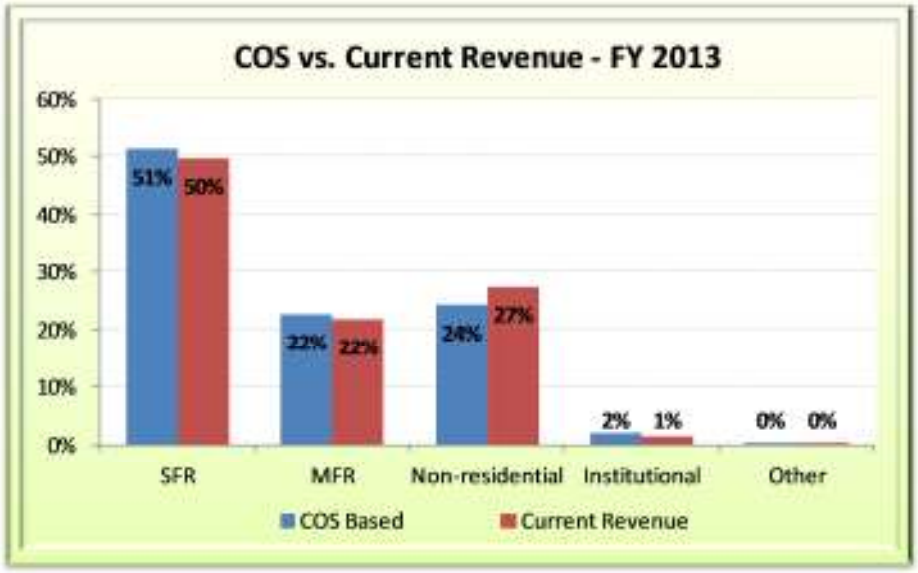
The unit costs shown in **Table 3-15** are then applied to the projected FY 2013 units for each user class to derive user class costs. **Table 3-16** shows the FY 2013 cost responsibility for each user class.

Table 3-16
Allocation of Costs to Customer Classes

Customer Class	Base	Max Day	Max Hour	Meter	Billing	High Use	Total
Inside City							
SFR	$4,892,769	$1,014,724	$866,715	$2,507,837	$635,736	$196,845	**$10,114,626**
MFR	$2,626,005	$544,523	$465,233	$719,894	$72,114	$105,649	**$4,533,418**
Non-residential	$2,519,540	$522,530	$446,351	$957,869	$75,009	$101,366	**$4,622,663**
City Parks	$237,229	$49,042	$42,027	$84,659	$6,224	$9,544	**$428,726**
Outside City							
SFR	$219,492	$45,503	$38,865	$115,857	$29,413	$8,831	**$457,961**
MFR	$65,696	$13,651	$11,687	$15,855	$2,750	$2,643	**$112,282**
Non-residential	$215,004	$44,492	$38,086	$57,892	$4,661	$8,650	**$368,784**
Groundwater	$19,246	$4,045	$3,346	$0	$0	$774	**$27,410**
TOTAL COST OF SERVICE	**$10,794,981**	**$2,238,510**	**$1,912,310**	**$4,459,862**	**$825,907**	**$434,303**	**$20,665,871**

The SFR user class (inside and outside the City) has the highest assignment of costs at $10.6 million and is responsible for 51 percent of the total cost of service. The non-residential user classes are responsible for the next 26 percent of the annual cost of service. MFR customers are responsible for the remaining 22 percent of the total cost of service. **Figure 3-3** compares the existing revenue and the revenues based on the cost of service to be recovered by customer class. Under the cost of service approach non-residential customers will receive a small benefit as compared to the current rate structure.

Figure 3-3
Comparison of Revenue under COS and Existing Rate Structure



RATE DESIGN

The revenue requirements and cost of service analysis described in the preceding sections of this report provide a basis for the design of cost of service based water rates. Rate design is the process of developing rate schedules for each user class such that the annual cost of service determined for each user class is equitably recovered from the users in that class. In this study, the focus of rate design is on the development of rate schedules for each of the City's retail service user classes. This subsection of the report discusses the current water rate structure and develops a schedule of water rates for the City's residential user class and rates for the non-residential class that would improve the equitability of cost recovery by class and customer and meet the City's pricing objectives. Finally, this subsection analyzes the impact of the proposed cost allocations and rate designs on residential customers.

Proposed Rate Structure

Rate structures should be designed to ensure that users pay their proportionate share of costs. In addition, rate structures should be easy to understand, simple to administer, and comply with regulatory requirements. A review of the current rate structure provides insights into the equitability of the current methodology and changes, if any, that should be considered.

The proposed changes to the rate structure are based on the results of the pricing objectives exercise that was conducted with the citizens Advisory Committee (Committee) at the beginning of the study to prioritize the most important objectives that would be used to design the final rate structure. The results show that the three most important objectives of the Committee are cost of service based allocations, rate and revenue stability, and water conservation. The complete process is detailed in Appendix A.

Along with the Committee members and staff, RFC evaluated two alternative rate structures before finalizing the proposed rate structure. Based on the results of the pricing objectives exercise, RFC computed rates under two alternatives: revising the tier cutoffs and adding an additional tier for the residential customers. The current usage characteristics indicate that adding an additional tier would not provide more benefits than just revising the tier cutoffs. The Committee also reviewed customer impacts for both of the options with different increased levels of the meter charge to enhance revenue stability and agreed that recovering more revenue through the service charge was desirable.

The Committee members also selected the revised tiers alternative as the preferred rate structure. The current structure for meter service charges that varies with meter size would remain unchanged. The changes to the service charge and the suggested commodity rates for the various user classes are discussed in detail below.

Outside City Customers Rate Differential

The City currently charges Outside City customers 170 percent of the Inside City rates, based on a calculation determined in the 1970s. As part of the rate study, RFC reviewed the methodology and determined that the existing method is no longer defensible under Proposition 218 requirements. Based on further analysis, RFC proposes that the Outside City customers be assessed an additional $0.73 per hcf per unit the first year and $0.76 per hcf per unit the second year of water consumed in order to recover the benefits that Outside City customers receive from Inside City customers.

The proposed Outside City rate has three components: property tax on water utility's assets, police and fire protection costs of water utility's assets, and the marginal cost of different water supply costs. The cost components are as follows:

- Property tax on water utility's assets: $0.05/HCF. As the utilities' assets are City property and do not pay property taxes, the City's General Fund and its residents absorb this revenue loss through their property taxes, for which there is no contribution from Outside City customers. Thus, Outside City customers need to pay their share of this cost. The calculation is based on the estimated property taxes the City would receive on the water utility's assets, divided by the total annual water consumption to arrive at the unit cost per hcf.
- Police and fire protection costs on water utility's assets: $0.10/HCF. The water utility assets are protected by Ventura's Police and Fire personnel who are funded by the City's General Fund. Inside City customers support these costs through property taxes; Outside City customers who receive this benefit should pay their share of the police and fire costs that relate to water utility's assets. The calculation is based on the water utility assets' share of the police and fire costs, as shown in the General Fund budget, divided by the total annual water consumption to arrive at the unit cost per hcf.
- Differential water supply costs: $0.58/HCF. The water utility's first responsibility is to provide water to Inside City customers. The incremental costs associated with the higher cost water supply and long-term planning is passed on to Outside City customers through this differential.

The calculation of the different cost components is shown in Appendix B.

Bi-Monthly Service Charges

A service charge is a cost recovery mechanism that is generally included in the rate structure to recover some of the fixed costs including meter and customer related costs, and a portion of the capacity related cost and is a stable source of revenue independent of water consumption.

Customer related costs are fixed expenditures that relate to operational support activities including accounting, water billing, customer service, and administrative and technical support. The customer related costs are essentially common-to-all customers that are reasonably uniform across the different user classes. In addition, there are capacity related costs such as meter maintenance and peaking charges that are included based on the hydraulic capacity of the meters. Since facilities are designed to meet peaking requirements, RFC has assigned some of the costs related to peaking to the service charge. Increasing the fixed charge also tends to reduce the variable rates and to provide incentive for conservation. A service charge provides a mechanism for recovering a portion of the fixed costs and ensures a stable source of user revenues for the utility. A guideline used in deciding the amount of revenue that should be recovered from fixed charges is provided by the California Urban Water Conservation Council's Best Management Practice #11 which states that the maximum amount of the fixed revenue should not exceed 30 percent of the total rate revenue. The City's costs to be collected from monthly service charges for FY 2013 are set at 25 percent of the total rate revenue or $5.3 million.

The Meter Unit Cost is multiplied by the meter capacity ratios from the AWWA M22 Manual *Sizing Water Service Lines and Meters* to calculate the Meter Capacity Cost. The Meter Capacity Cost is then added to the Customer Service or Billing Cost, which as stated before, does not vary by meter size, to compute the cost based service charge for the first year shown in the right hand column of **Table 3-17**.

Table 3-17
Bi-Monthly Service Charge Calculation for FY 2013

Meter Size	Meter Ratio	Meter Component	Billing Component	Bi-monthly Charge
3/4"	1.00	$18.31	$4.82	$23.14
1"	1.67	$30.51	$4.82	$35.34
1 1/2"	3.33	$61.03	$4.82	$65.86
2"	5.33	$97.65	$4.82	$102.48
3"	11.67	$213.60	$4.82	$218.43
4"	21.00	$384.48	$4.82	$389.31
6"	43.33	$793.37	$4.82	$798.20
8"	80.00	$1,464.69	$4.82	$1,469.52
10"	126.67	$2,319.09	$4.82	$2,323.92
12"	166.67	$3,051.43	$4.82	$3,056.26

Bi-Monthly Fireline Charges

Fireline charges are assessed to private fire protection meters. Based on the cost of service analysis discussed above, a portion of the total costs are allocated to private fire protection. The proposed bi-monthly charges are shown for the first year in **Table 3-18** below.

Table 3-18
Bi-Monthly Fireline Charge Calculation for FY 2013

Fire Line Charges	Bi-monthly Charge
1" Ubranch	$5.96
1"	$5.96
1 1/2"	$5.96
2"	$5.96
3"	$17.30
4"	$36.87
6"	$107.09
8"	$228.21
10"	$410.40
12"	$662.91

Commodity Rate

The commodity rate is the rate developed for each user class which will recover the City's variable volume related costs. The annual estimated FY 2013 revenues required, less annual cost based service charge revenues, are the revenues that need to be recovered through commodity rates. A uniform water commodity rate for each user class can be computed based on the user class' annual usage revenues required and the estimated annual volume of water usage.

Proposed Changes

A review of the current tiers shows that there are some inequities in the tier widths for residential customers (as shown in **Figure 3-1**). RFC proposed that the City adjust the tier widths to ensure greater equity for SFR and MFR customers. RFC reviewed alternative inclining tier structures for residential customers; the recommended tiers are shown in **Table 3-19**. Because non-residential water users are non-homogenous, RFC recommends a uniform rate structure for all non-residential users. **Table 3-19** shows a comparison of the usage and bills distribution between the current tier widths and the proposed tier widths.

Table 3-19
Comparison of Usage and Bills Distribution

SFR Current Tiers	HCF	% of Usage	% of Total Bills
Tier 1	0 – 16	62%	44%
Tier 2	17 – 42	30%	49%
Tier 3	> 42	8%	7%

SFR Proposed Tiers	HCF	% of Usage	% of Total Bills
Tier 1	0 – 14	56%	37%
Tier 2	15 – 30	29%	45%
Tier 3	> 30	14%	19%

MFR Current Tiers	HCF	% of Usage	% of Total Bills
Tier 1	0 – 10	70%	38%
Tier 2	11 – 24	28%	59%
Tier 3	> 24	2%	3%

MFR Proposed Tiers	HCF	% of Usage	% of Total Bills
Tier 1	0 – 10	70%	38%
Tier 2	11 – 16	21%	42%
Tier 3	> 16	9%	21%

Proposed Water Rates

Table 3-20 shows the proposed water rates for the next two years, from FY 2013 to FY 2014.

Table 3-20
Proposed Bi-Monthly Service Charge – Based on Meter Size (Per Meter)

	Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Bi-Monthly Service Charge			
Meter Size			
3/4"	$15.03	$23.14	$25.11
1"	$28.74	$35.34	$38.35
1 1/2"	$47.76	$65.86	$71.46
2"	$66.76	$102.48	$111.20
3"	$150.42	$218.43	$237.00
4"	$245.49	$389.31	$422.41
6"	$483.06	$798.20	$866.05
8"	$720.60	$1,469.52	$1,594.43
10"	$958.15	$2,323.92	$2,521.46
12"	$1,100.68	$3,056.26	$3,316.05

Proposed Bi-Monthly Fireline Service Charge – Based on Meter Size (Per Meter)

	Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Bi-Monthly Fireline Charge			
Meter Size			
1" Ubranch	$2.11	$5.96	$6.47
1"	$6.93	$5.96	$6.47
1 1/2"	$6.93	$5.96	$6.47
2"	$6.93	$5.96	$6.47
3"	$20.80	$17.30	$18.78
4"	$41.60	$36.87	$40.00
6"	$115.58	$107.09	$116.20
8"	$242.71	$228.21	$247.61
10"	$416.08	$410.40	$445.29
12"	$429.94	$662.91	$719.26

Proposed Bi-Monthly Water Rates – Commodity Rates

		Current Rates*	Effective July 1, 2012	Effective July 1, 2013
Volume Rates ($/hcf)				
SFR				
Tier 1	0 to 14	$2.02	$1.98	$2.15
Tier 2	15 to 30	$2.66	$2.69	$2.92
Tier 3	> 30	$4.27	$4.41	$4.79
MFR				
Tier 1	0 to 10	$2.02	$1.98	$2.15
Tier 2	11 to 16	$2.66	$2.69	$2.92
Tier 3	> 16	$4.27	$4.41	$4.79
Non-Residential		$2.66	$2.48	$2.70
Institutional/Interruptible Rate		$1.40	$1.98	$2.15
Reclaimed Water		$0.50	$0.64	$0.68
Untreated Water		$1.40	$1.88	$2.04
Outside City Rates		170% of Inside	Add $0.73/hcf	Add $0.76/hcf

*Current rates have different tiers

IMPACT ANALYSIS

RFC performed an analysis to evaluate the impact of the proposed rate structure on various users. The impacts of each of these changes among user classes and within user classes are discussed below.

Residential Customer Impacts

For SFR customers, the bill impacts at various usage levels for SFR customers are shown below in **Table 3-21**.

Table 3-21
SFR Bi-Monthly Customer Impacts

SFR	Usage (hcf)	Current	July 1, 2012	July 1, 2013	Difference 1	Difference 2
Very Low	5	$25.13	$33.04	$35.86	$7.91	$2.82
Low	12	$39.27	$46.90	$50.91	$7.63	$4.01
Average	21	$60.65	$69.69	$75.65	$9.04	$5.96
High	35	$97.89	$115.95	$125.88	$18.06	$9.93
Very High	50	$150.67	$182.10	$197.73	$31.43	$15.63

Note: Assume 3/4" meter

For MFR customers, the bi-monthly bill impacts will vary depending on the meter size and the number of units in each account. For comparison purposes, the MFR bill impacts at various usage levels are shown in **Table 3-22**, also assuming a 3/4" meter.

Table 3-22
MFR Bi-Monthly Customer Impacts

MFR	Usage (hcf)	Current	July 1, 2012	July 1, 2013	Difference 1	Difference 2
Very Low	3	$21.09	$29.08	$31.56	$7.99	$2.48
Low	8	$31.19	$38.98	$42.31	$7.79	$3.33
Average	13	$43.21	$51.01	$55.37	$7.80	$4.36
High	22	$67.15	$85.54	$92.87	$18.39	$7.33
Very High	35	$119.44	$142.87	$155.14	$23.43	$12.27

Note: Assume 3/4" meter

Non-Residential Customer Impacts

Under the proposed rate structure, non-residential customers' rate impacts vary depending on the meter size and the level of usage for each customer. For illustration purposes, **Table 3-23** shows the impacts of non-residential customers at various usage levels, assuming a 1" meter.

Table 3-23
Non-Residential Bi-Monthly Customer Impacts

Non-Residential	Usage (hcf)	Current	July 1, 2012	July 1, 2013	Difference 1	Difference 2
Very Low	20	$81.94	$84.94	$92.35	$3.00	$7.41
Low	50	$161.74	$159.34	$173.35	($2.40)	$14.01
Average	100	$294.74	$283.34	$308.35	($11.40)	$25.01
High	200	$560.74	$531.34	$578.35	($29.40)	$47.01
Very High	300	$826.74	$779.34	$848.35	($47.40)	$69.01

Note: Assume 1" meter

SECTION 4 – WASTEWATER RATE STUDY

The following subsections present the findings and recommendations of the rate study pertaining to the wastewater utility.

WASTEWATER SYSTEM

Below is a brief description of the City's current wastewater system and rate structure.

Wastewater System Infrastructure

The City's wastewater system collects, and transports wastewater from approximately 44,300 (each multi-family dwelling unit is counted as an account) residential and commercial customers at the start of FY 2012. Wastewater is transported and treated at Ventura Water Reclamation Facility, a tertiary treatment facility located in the Ventura Harbor area near the mouth of the Santa Clara River. Approximately 9 million gallons per day (MGD) of wastewater is delivered to the treatment plant through more than 300 miles of sewer mains and 11 lift stations.

Wastewater Rates

Currently, residential customers have a six-tier bi-monthly wastewater rate structure, with usage determined using the lowest water usage on bills received during the previous winter, from November 1 through April 30. Commercial customers pay a fixed charge varying with strength up to 8 hcf and a rate for usage above 8 hcf. They are divided into 6 strength groups. Churches pay a fixed bi-monthly charge equal to the highest residential charge. Schools pay a fixed charge based on average daily attendance (ADA) that varies depending on whether or not they have showers or no showers. Industrial customers are billed monthly based on flow, chemical oxygen demand (COD), and total suspended solids (SS).

Wastewater Accounts and Flow Projections

Customer accounts and water usage (or winter water for residential customers) information for FY 2011 are used as the basis for projecting wastewater revenues during the study period. RFC has made certain assumptions regarding the growth and water usage (or winter water for residential customers) in the City.

Growth Assumptions

Table 4-2 shows that the majority of the City's wastewater accounts are residential customers (SFR and MFR). Similar to growth used in the water projections, the wastewater accounts are projected to grow at an average of 0.4 percent per year during the study period. Additionally, the accounts and usage data have been normalized to ensure that the actual revenues collected matched the calculated revenues based on the number of accounts.

Table 4-1
Existing Wastewater Rates

SFR & MFR	HCF*	Bi-Monthly Rate
Tier 1	0 - 8	$34.27
Tier 2	9 - 10	$42.24
Tier 3	11 - 12	$50.00
Tier 4	13 - 14	$57.76
Tier 5	15 - 16	$65.51
Tier 6	17+	$73.27
Schools (with showers - 100 ADA)		$131.89
Schools (no showers - 100 ADA)		$102.58
Churches		$73.27

*HCF determined based on lowest billing between November through April

Commercial	HCF	Bi-Monthly Rate
Group 1		
Tier 1	0 - 8	$16.07
Tier 2	9+	$2.63
Group 2		
Tier 1	0 - 8	$24.26
Tier 2	9+	$3.15
Group 3		
Tier 1	0 - 8	$36.38
Tier 2	9+	$5.39
Group 4		
Tier 1	0 - 8	$56.79
Tier 2	9+	$7.03
Group 5		
Tier 1	0 - 8	$47.74
Tier 2	9+	$6.57
Group 6		
All		$73.27
Industrial (Monthly)		
Flow	(MG)	$2,470.10
COD	(klbs)	$280.51
SS	(klbs)	$597.62

Table 4-2
Wastewater Accounts and Usage by Customer Class

Line #			FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	SFR						
2	Tier 1	0 - 8	5,778	5,778	5,778	5,807	5,836
3	Tier 2	9 - 10	4,737	4,737	4,737	4,761	4,785
4	Tier 3	11 - 12	2,263	2,263	2,263	2,274	2,285
5	Tier 4	13 - 14	1,999	1,979	1,959	1,949	1,939
6	Tier 5	15 - 16	1,678	1,661	1,644	1,636	1,628
7	Tier 6	17+	5,836	5,778	5,720	5,691	5,662
8	**Subtotal SFR**		**22,291**	**22,196**	**22,101**	**22,118**	**22,135**
9							
10	MFR						
11	Tier 1	0 - 8	7,278	7,278	7,278	7,314	7,351
12	Tier 2	9 - 10	3,350	3,350	3,350	3,367	3,384
13	Tier 3	11 - 12	4,498	4,498	4,498	4,520	4,543
14	Tier 4	13 - 14	2,106	2,085	2,064	2,054	2,044
15	Tier 5	15 - 16	1,060	1,049	1,039	1,034	1,029
16	Tier 6	17+	885	876	867	863	859
17	**Subtotal MFR**		**19,177**	**19,136**	**19,096**	**19,152**	**19,210**
18							
19	Schools (with showers - 100 ADA)		223	223	223	223	223
20	Schools (no showers - 100 ADA)		126	126	126	126	126
21	Churches		47	47	47	47	47
22							
23	**Commercial**						
24	Group 1						
25	Tier 1	0 - 8	1,489	1,489	1,489	1,489	1,489
26	Tier 2	9+	521,233	516,021	510,861	505,752	500,694
27	Group 2						
28	Tier 1	0 - 8	37	37	37	37	37
29	Tier 2	9+	66,832	66,164	65,502	64,847	64,199
30	Group 3						
31	Tier 1	0 - 8	9	9	9	9	9
32	Tier 2	9+	45,947	45,488	45,033	44,583	44,137
33	Group 4						
34	Tier 1	0 - 8	11	11	11	11	11
35	Tier 2	9+	8,370	8,286	8,203	8,121	8,040
36	Group 5						
37	Tier 1	0 - 8	228	228	228	228	228
38	Tier 2	9+	145,622	144,166	142,724	141,297	139,884
39	Group 6						
40	All		0	0	0	0	0

Line #			FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	SFR						
2	Tier 1	0 - 8	5,865	5,894	5,923	5,953	5,983
3	Tier 2	9 - 10	4,809	4,833	4,857	4,881	4,905
4	Tier 3	11 - 12	2,296	2,307	2,319	2,331	2,343
5	Tier 4	13 - 14	1,929	1,919	1,909	1,899	1,908
6	Tier 5	15 - 16	1,620	1,612	1,604	1,596	1,604
7	Tier 6	17+	5,633	5,605	5,577	5,549	5,577
8	**Subtotal SFR**		**22,152**	**22,170**	**22,189**	**22,209**	**22,320**
9							
10	MFR						
11	Tier 1	0 - 8	7,388	7,425	7,462	7,499	7,536
12	Tier 2	9 - 10	3,401	3,418	3,435	3,452	3,469
13	Tier 3	11 - 12	4,566	4,589	4,612	4,635	4,658
14	Tier 4	13 - 14	2,034	2,024	2,014	2,004	2,014
15	Tier 5	15 - 16	1,024	1,019	1,014	1,009	1,014
16	Tier 6	17+	855	851	847	843	847
17	**Subtotal MFR**		**19,268**	**19,326**	**19,384**	**19,442**	**19,538**
18							
19	Schools (with showers - 100 ADA)		223	223	223	223	223
20	Schools (no showers - 100 ADA)		126	126	126	126	126
21	Churches		47	47	47	47	47
22							
23	**Commercial**						
24	Group 1						
25	Tier 1	0 - 8	1,489	1,489	1,489	1,489	1,489
26	Tier 2	9+	495,687	490,730	485,823	480,965	480,965
27	Group 2						
28	Tier 1	0 - 8	37	37	37	37	37
29	Tier 2	9+	63,557	62,921	62,292	61,669	61,669
30	Group 3						
31	Tier 1	0 - 8	9	9	9	9	9
32	Tier 2	9+	43,696	43,259	42,826	42,398	42,398
33	Group 4						
34	Tier 1	0 - 8	11	11	11	11	11
35	Tier 2	9+	7,960	7,880	7,801	7,723	7,723
36	Group 5						
37	Tier 1	0 - 8	228	228	228	228	228
38	Tier 2	9+	138,485	137,100	135,729	134,372	134,372
39	Group 6						
40	All		0	0	0	0	0

WASTEWATER USER CLASSIFICATION

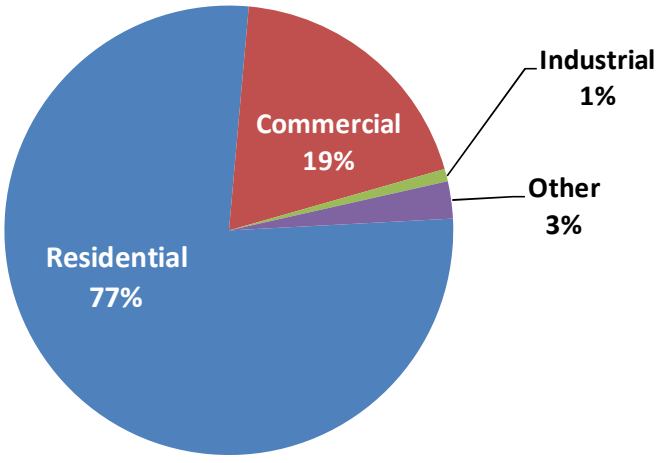
A review of the City's existing user classifications is presented in the following subsections.

Existing User Classification

Currently, the City classifies its non-residential users into six major groups. Churches, schools, and industrial customers are in their own separate groups. Group 1 consists of non-residential customers with low strength wastewater, such as laundromats, car washes, professional offices, retail establishments, gym, theaters, etc. Group 2 consists of customers with low-medium strength such as hotels and motels without dining facilities and commercial laundries. Group 3 consists of customers with medium strength such as hotels with dining facilities. Group 4 consists of medium-high strength customers, including groceries with garbage grinders and mortuaries. Group 5 consists of high strength customers, such as restaurants, bakeries and multi-use shopping centers. Group 6 consists of plant nurseries, which is considered low strength but typically uses a lot of water for irrigation purposes. It is appropriate to consider nurseries, churches, and schools as separate customer classes since their usage differs greatly from other non-residential customers. RFC finds that the existing non-residential customer classification is consistent with industry standards; thus, we are not proposing any changes to the classification.

Figure 4-1 shows the percentage of wastewater revenue collected from each customer class. Approximately 77 percent of the total revenue is from residential customers. The remainder is from non-residential customers.

Figure 4-1
FY 2012 Revenue by Customer Class



WASTEWATER REVENUE REQUIREMENTS

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under the current rates, capital revenues, operation and maintenance (O&M) expenses, capital expenditures, transfers between funds, and reserve requirements. This section of the report provides a discussion of the projected revenues, O&M and capital expenditures, capital improvement financing plan, debt service requirements, and the revenue adjustments required to ensure the financial stability of the wastewater utility.

Wastewater System Revenues

The City's wastewater utility operates the wastewater system. The City derives its required annual operating and capital revenues from a number of sources. The principal source of operating revenues from rates is the wastewater service charge revenues from the City's users which are expected to decrease from $16 million in FY 2012 to $15.9 million by FY 2021 due to reductions in water usage. Other revenue sources include miscellaneous operating revenues such as interest earnings, miscellaneous sewer services, etc. Capital revenue sources include wastewater connection fees, capital funds, bond proceeds, and grants and loans.

RFC reviewed the various sources of operating and capital revenues and the City's financing plan. **Table 4-3** presents the details of the operating and capital related revenues.

Table 4-3
Revenue Summary

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	**Service Charge Revenue**					
2	Residential	$12,215,957	$12,161,288	$12,107,012	$12,114,120	$12,121,733
3	Commercial	$3,064,572	$3,036,129	$3,007,963	$2,980,086	$2,952,486
4	Industrial	$140,787	$140,183	$139,585	$138,992	$138,406
5	Church	$20,662	$20,662	$20,662	$20,662	$20,662
6	School	$254,012	$254,012	$254,012	$254,012	$254,012
7						
8	Interest - Investment Earnings	$726,046	$285,402	$348,233	$357,096	$432,396
9	Wastewater - Connection Fees	$150,000	$150,000	$150,000	$150,750	$151,504
10	Other Miscellaneous Revenue	$375,710	$375,710	$375,710	$386,081	$397,488
11						
12	**TOTAL WASTEWATER REVENUE**	**$16,947,747**	**$16,423,387**	**$16,403,178**	**$16,401,799**	**$16,468,687**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Service Charge Revenue**					
2	Residential	$12,129,347	$12,137,400	$12,145,753	$12,154,312	$12,214,742
3	Commercial	$2,925,164	$2,898,107	$2,871,323	$2,844,813	$2,844,813
4	Industrial	$137,825	$137,250	$136,681	$136,118	$136,118
5	Church	$20,662	$20,662	$20,662	$20,662	$20,662
6	School	$254,012	$254,012	$254,012	$254,012	$254,012
7						
8	Interest - Investment Earnings	$493,638	$404,849	$1,069,590	$1,333,561	$724,597
9	Wastewater - Connection Fees	$152,261	$153,023	$153,788	$154,557	$155,329
10	Other Miscellaneous Revenue	$410,036	$423,839	$439,022	$455,724	$474,095
11						
12	**TOTAL WASTEWATER REVENUE**	**$16,522,947**	**$16,429,142**	**$17,090,832**	**$17,353,759**	**$16,824,369**

Wastewater System Expenditures

For sound financial operation of the City's wastewater system, revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include O&M expenses of allocation, treatment, and disposal, capital improvement program (CIP) expenditures, principal and interest payments on existing debt, and other obligations.

Operation and Maintenance Expenses

O&M expenditures include the cost of operating and maintaining wastewater collection, treatment, and disposal facilities. O&M expenses also include the costs of providing technical services such as laboratory services and other administrative costs of the wastewater system. These costs are a normal obligation of the system, and are met from operating revenues as they are incurred. The comprehensive forecasted annual O&M expenditures for the study are based upon the City's adopted FY 2012 budget and 2013 estimated expenditures, adjusted for changes since the budget was developed for anticipated changes in operations and the effect of inflation in future years. The City conservatively used an inflationary factor of three percent per year starting in FY 2014 to project all O&M expenditures,

except personnel, chemicals, and utilities. Salaries are projected to remain unchanged through FY 2015 due to union contracts, increasing at 0.5 percent per year in all other years. Benefits expenses are projected to remain unchanged through FY 2014, increasing at 0.3 percent per year in all other years. Chemical and utilities expenses are projected to increase at 5 percent per year during the study period. Projected O&M expenditures for the study period are summarized by functions in **Table 4-4**. It should be noted that water and wastewater utilities share certain facilities and services when it makes sense to do so in order to reduce overhead costs. The wastewater utility pays for a portion of the administrative expenses, such as customer care, water resource planning, general manager budget, etc. budgeted in the water utility. The payment to the water utility is included in the "Wastewater Administration" costs, line 1 of **Table 4-4**.

Table 4-4
Wastewater Operations & Maintenance Expenses

Line #		FY 2012 Budgeted	FY 2013 Projected	FY 2014 Projected	FY 2015 Projected	FY 2016 Projected
1	Wastewater Administration	$5,516,079	$6,078,850	$5,741,138	$5,915,904	$6,097,445
2	Wastewater Maintenance	$4,052,786	$4,080,143	$4,097,235	$4,170,543	$4,252,516
3	Wastewater Operations	$4,083,675	$4,029,989	$3,981,614	$4,105,766	$4,240,118
4	Wastewater Laboratory	$1,055,163	$1,045,790	$1,055,944	$1,071,062	$1,088,686
5	Rev Mgmt - Wastewater	$225,000	$231,300	$238,239	$245,386	$252,748
6	**TOTAL WASTEWATER O&M EXPENSES**	**$14,932,703**	**$15,466,071**	**$15,114,171**	**$15,508,661**	**$15,931,512**

Line #		FY 2017 Projected	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
1	Wastewater Administration	$6,285,026	$6,478,868	$6,687,445	$6,903,901	$7,128,604
2	Wastewater Maintenance	$4,336,825	$4,423,543	$4,512,746	$4,604,510	$4,698,918
3	Wastewater Operations	$4,380,400	$4,526,889	$4,679,873	$4,839,655	$5,006,554
4	Wastewater Laboratory	$1,106,775	$1,125,342	$1,144,402	$1,163,968	$1,184,056
5	Rev Mgmt - Wastewater	$260,330	$268,140	$276,184	$284,470	$293,004
6	**TOTAL WASTEWATER O&M EXPENSES**	**$16,369,357**	**$16,822,782**	**$17,300,650**	**$17,796,505**	**$18,311,135**

Wastewater Capital Improvement Program

The City has developed a comprehensive wastewater Capital Improvement Program (CIP) to address current (replacement) and future (expansion) wastewater system needs. As **Table 4-5** indicates, the total estimated wastewater CIP from FY 2012 to FY 2022 is $147 million. These projected costs include a 3.5 percent annual inflation factor due to anticipated increases in construction costs over time. This inflation rate is a conservative estimate and ensures that the City has adequate resources reserved to complete the necessary projects. Additionally, the CIP used in this study represents only 75 percent of the actual budgeted CIP. This percentage was based on the City's previous experiences of project completion.

Table 4-5
Wastewater Capital Improvement Program at 75% of Budget – inflated

Line #	Proj No.	Description	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	96907	Lift Station - Seaside & Sewer Forcemain Replacement	$240,000	$243,750	$0	$0	$0
2	96911	Pipeline - Ralston and Victoria/Capacity	$210,000	$0	$0	$0	$0
3	96903	Treatment - VWRF Electrical Switchgear Replacement	$1,357,500	$1,237,500	$0	$0	$0
4	96910	Pipeline - Ash St and Thompson Blvd/Capacity	$525,000	$0	$0	$0	$0
5	96904	Lift Station - State Beach Drywell Replacement	$41,250	$281,250	$0	$0	$0
6	74005	Treatment - VWRF Dewatering Equipment Replacement	$450,000	$1,350,000	$7,200,000	$0	$0
7	96913	Pipeline - Avenue Area/Capacity	$165,000	$0	$1,110,000	$0	$0
8	96909	Treatment - Plant Disinfection Facility (Pasteurization)	$918,750	$0	$513,750	$3,750,000	$3,750,000
9	96900	Treatment - Plant Nutrient Improvement	$832,500	$0	$0	$0	$0
10	96912	Pipeline - Callens Rd &Market St/Capacity	$1,282,500	$0	$0	$0	$0
11	96905	Pipeline - Harbor & Woolsey/Capacity	$0	$0	$39,863	$119,588	$637,800
12	74028	Recycled - Golf Course Drive Reclaimed Water Pipeline	$0	$0	$18,750	$56,250	$300,000
13	74036	Pipeline - HWY 126 Frontage Area/Capacity	$0	$0	$36,476	$109,429	$583,620
14	74037	Pipeline - College Dr. Area/Capacity	$0	$0	$70,125	$210,375	$1,122,000
15	74039	Pipeline - Ann Street Area/Capacity	$0	$0	$0	$0	$325,354
16	74038	Pipeline - Mills Rd and HWY 101 Area/Capacity	$0	$0	$0	$0	$0
17	74040	Pipeline - Aurora Dr. Area/Capacity	$0	$0	$0	$0	$0
18	74042	Pipeline - Ventura Ave & Franklin Lane Area/Capacity	$0	$0	$0	$0	$0
19	74043	Pipeline - Main St and Brent St Area/Capacity	$0	$0	$0	$0	$0
20	74034	Treatment - Plant Aeration Blowers	$0	$0	$0	$0	$0
21	74050	Pipeline - Sperry Avenue Area/Capacity	$0	$0	$0	$0	$0
22	96878	Treatment - VWRF Digester 4	$0	$0	$0	$0	$0
23	74044	Pipeline - Westside Area/Capacity	$0	$0	$0	$0	$0
24	74045	Pipeline - Catalina & Thompson Area/Capacity	$0	$0	$0	$0	$0
25	74046	Pipeline - Main St & Loma Vista Area/Capacity	$0	$0	$0	$0	$0
26	74047	Pipeline - Channel Dr Area/Capacity	$0	$0	$0	$0	$0
27	74051	Pipeline - Northbank Dr Area/Capacity	$0	$0	$0	$0	$0
28	74049	Pipeline - Telegraph Rd Area/Capacity	$0	$0	$0	$0	$0
29	74053	Pipeline - Neath St Area/Capacity	$0	$0	$0	$0	$0
30	**Projects with No Allocation**						
31	74030	Treatment - Wastewater Plant Wetlands Improvements	$0	$0	$0	$0	$0
32	74032	Treatment - Plant Chlorine Contact Chamber	$0	$0	$0	$0	$0
33	96874	Treatment - VWRF Tertiary Filter Replacement	$0	$0	$0	$0	$0
34	96884	Facility - VWRF Landscape Improvements	$0	$0	$0	$0	$0
35	96894	Facility - VWRF Maintenance Storage Area	$0	$0	$0	$0	$0
36	74052	Treatment - Effluent Pumping & Flow Measurement Upg	$0	$0	$0	$0	$900,000
37	**Additional CIP not in Adopted CIP**						
38		Transfer Station - Seaside Transfer Station & Force Main	$0	$0	$0	$0	$0
39		Pipeline - Remaining "E" Projects/Capacity	$0	$0	$0	$0	$0
40		Pipeline - Near Term Projects/Capacity	$0	$0	$0	$0	$0
41		Pipeline - Ultimate Projects/Capacity	$0	$0	$0	$0	$0
42		Pipeline - Olivas Park Dr Sewer Extension & Reclaimed lir	$0	$0	$0	$0	$0
43		Facility - Energy Efficiency Projects	$0	$75,000	$75,000	$75,000	$75,000
44		Facility - Reclaimed Water Structure	$0	$0	$0	$0	$0
45		Treatment - Diversion Structure	$0	$0	$0	$0	$0
46		Meters - Automated Reading Installation Citywide	$0	$0	$967,500	$1,020,000	$1,057,500
47							
48	**TOTAL CIP**		**$6,022,500**	**$3,187,500**	**$10,031,464**	**$5,340,641**	**$8,751,274**

Line #	Proj No.	Description	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	96907	Lift Station - Seaside & Sewer Forcemain Replacement	$0	$0	$0	$0	$0	$0
2	96911	Pipeline - Ralston and Victoria/Capacity	$0	$0	$0	$0	$0	$0
3	96903	Treatment - VWRF Electrical Switchgear Replacement	$0	$0	$0	$0	$0	$0
4	96910	Pipeline - Ash St and Thompson Blvd/Capacity	$0	$0	$0	$0	$0	$0
5	96904	Lift Station - State Beach Drywell Replacement	$0	$0	$0	$0	$0	$0
6	74005	Treatment - VWRF Dewatering Equipment Replacement	$0	$0	$0	$0	$0	$0
7	96913	Pipeline - Avenue Area/Capacity	$0	$0	$0	$0	$0	$0
8	96909	Treatment - Plant Disinfection Facility (Pasteurization)	$0	$0	$0	$0	$0	$0
9	96900	Treatment - Plant Nutrient Improvement	$0	$0	$0	$0	$0	$0
10	96912	Pipeline - Callens Rd &Market St/Capacity	$0	$0	$0	$0	$0	$0
11	96905	Pipeline - Harbor & Woolsey/Capacity	$0	$0	$0	$0	$0	$0
12	74028	Recycle - Golf Course Drive Reclaimed Water Pipeline	$0	$0	$0	$0	$0	$0
13	74036	Pipeline - HWY 126 Frontage Area/Capacity	$0	$0	$0	$0	$0	$0
14	74037	Pipeline - College Dr. Area/Capacity	$0	$0	$0	$0	$0	$0
15	74039	Pipeline - Ann Street Area/Capacity	$1,409,151	$2,015,495	$0	$0	$0	$0
16	74038	Pipeline - Mills Rd and HWY 101 Area/Capacity	$445,948	$1,189,052	$0	$0	$0	$0
17	74040	Pipeline - Aurora Dr. Area/Capacity	$678,517	$1,001,483	$0	$0	$0	$0
18	74042	Pipeline - Ventura Ave & Franklin Lane Area/Capacity	$122,251	$252,749	$0	$0	$0	$0
19	74043	Pipeline - Main St and Brent St Area/Capacity	$522,615	$977,385	$0	$0	$0	$0
20	74034	Treatment - Plant Aeration Blowers	$0	$0	$0	$3,750,000	$0	$0
21	74050	Pipeline - Sperry Avenue Area/Capacity	$0	$0	$1,500,000	$0	$0	$0
22	96878	Treatment - VWRF Digester 4	$0	$0	$0	$0	$5,250,000	$0
23	74044	Pipeline - Westside Area/Capacity	$0	$0	$519,976	$605,024	$0	$0
24	74045	Pipeline - Catalina & Thompson Area/Capacity	$0	$0	$851,858	$1,398,143	$0	$0
25	74046	Pipeline - Main St & Loma Vista Area/Capacity	$0	$0	$0	$0	$764,600	$1,485,400
26	74047	Pipeline - Channel Dr Area/Capacity	$0	$0	$0	$0	$660,404	$464,596
27	74051	Pipeline - Northbank Dr Area/Capacity	$0	$0	$0	$0	$732,867	$767,133
28	74049	Pipeline - Telegraph Rd Area/Capacity	$0	$0	$0	$0	$469,642	$1,030,358
29	74053	Pipeline - Neath St Area/Capacity	$0	$0	$0	$0	$0	$961,772
30	**Projects with No Allocation**							
31	74030	Treatment - Wastewater Plant Wetlands Improvements	$0	$0	$3,750,000	$0	$0	$0
32	74032	Treatment - Plant Chlorine Contact Chamber	$0	$0	$0	$0	$0	$0
33	96874	Treatment - VWRF Tertiary Filter Replacement	$4,500,000	$0	$0	$0	$0	$0
34	96884	Facility - VWRF Landscape Improvements	$0	$0	$450,000	$0	$0	$0
35	96894	Facility - VWRF Maintenance Storage Area	$0	$952,500	$0	$0	$0	$0
36	74052	Treatment - Effluent Pumping & Flow Measurement Upg	$0	$0	$0	$0	$0	$0
37	**Additional CIP not in Adopted CIP**							
38		Transfer Station - Seaside Transfer Station & Force Main	$0	$0	$0	$1,316,025	$3,300,375	$1,138,650
39		Pipeline - Remaining "E" Projects/Capacity	$0	$0	$0	$0	$0	$1,836,300
40		Pipeline - Near Term Projects/Capacity	$0	$0	$0	$0	$0	$0
41		Pipeline - Ultimate Projects/Capacity	$0	$0	$0	$0	$0	$0
42		Pipeline - Olivas Park Dr Sewer Extension & Reclaimed lir	$0	$0	$0	$0	$0	$0
43		Facility - Energy Efficiency Projects	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
44		Facility - Reclaimed Water Structure	$2,862,600	$7,900,875	$12,266,100	$12,695,400	$0	$0
45		Treatment - Diversion Structure	$0	$0	$2,862,600	$6,913,275	$10,221,750	$9,521,550
46		Meters - Automated Reading Installation Citywide	$900,000	$0	$0	$0	$0	$0
47								
48	**TOTAL CIP**		**$11,516,081**	**$14,364,540**	**$22,275,533**	**$26,752,867**	**$21,474,638**	**$17,280,758**

Major Capital Improvement Financing Plan

The CIP is to be funded through a combination of system revenues and debt financing. The typical CIP funding sources include the following:

System Revenues:	***Capital Financing:***
Connection Fees	Debt proceeds
Pay-as-you-go revenues	Grant receipts and Contributions
Interest earnings	

Table 4-6 presents the proposed capital financing plan to finance major CIP projects over the ten-year period from FY 2012 to FY 2021. It is projected that the City will issue debt of $10 million in FY 2016, $55 million in FY 2018, and $30 million in FY 2021 to adequately fund the capital improvement program

since revenues from rates are insufficient to cover the costs. Other revenue shown below includes estimated connection fees revenues and grants.

Table 4-6
Capital Financing Plan

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	Debt Financing	$0	$0	$0	$0	$7,806,645
2	Rate Revenue	$5,872,500	$3,037,500	$9,155,839	$4,424,891	$0
3	Other Revenue	$150,000	$150,000	$875,625	$915,750	$944,629
4	**TOTAL CIP**	**$6,022,500**	**$3,187,500**	**$10,031,464**	**$5,340,641**	**$8,751,274**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Debt Financing	$1,184,659	$14,211,517	$22,121,746	$13,118,912	$21,319,309
2	Rate Revenue	$9,504,160	$0	$0	$13,479,398	$0
3	Other Revenue	$827,261	$153,023	$153,788	$154,557	$155,329
4	**TOTAL CIP**	**$11,516,081**	**$14,364,540**	**$22,275,533**	**$26,752,867**	**$21,474,638**

Debt Service Requirements

Debt service requirements consist of principal and interest payments on existing debt. The City currently has debt service obligation associated with its 2004 Wastewater Certificates of Participation (COPs). Existing and projected debt service results in annual payments in the range of $1.7 to $7.1 million. **Table 4-7** shows the existing and proposed debt service of the wastewater utility.

Table 4-7
Existing and Proposed Debt Service

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	2004 Wastewater Revenue COP	$1,738,550	$1,740,613	$1,736,550	$1,739,550	$1,476,150
2	**Total Existing Debt Service**	**$1,738,550**	**$1,740,613**	**$1,736,550**	**$1,739,550**	**$1,476,150**
3						
4	**Total Proposed Debt Service**	**$0**	**$0**	**$0**	**$0**	**$354,348**

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	2004 Wastewater Revenue COP	$1,476,950	$1,475,963	$1,473,125	$1,474,225	$1,475,500
2	**Total Existing Debt Service**	**$1,476,950**	**$1,475,963**	**$1,473,125**	**$1,474,225**	**$1,475,500**
3						
4	**Total Proposed Debt Service**	**$708,696**	**$2,657,608**	**$4,606,521**	**$4,606,521**	**$5,669,564**

Reserves

The City requires adequate cash reserves to meet operating, capital, and debt service requirements. Operating reserves may be used to meet ongoing cash flow requirements as well as emergency requirements. Typically, a balance in the range of 10 to 50 percent of annual operating expenses is considered appropriate. This represents one to six months of working capital. RFC proposes that the City maintain a minimum 90-day operating reserve. The operating reserve balances and the minimum

operating reserves targets are shown in **Table 4-8**. Interest from reserve funds may be used to finance operations. The capital reserve is similar in function to the operating reserve, but it is a reserve established for repair and rehabilitation-related capital expenses. Standard practices recommend a 100 percent of annual capital replacement expenses. However, to reduce customer impacts, the capital reserve is set at 50 percent of the annual replacement CIP in FY 2012, gradually increasing to 100 percent by FY 2017, to cover unexpected increases in capital expenditures. The estimated FY 2012 total reserves balance is approximately $30 million, not including the debt reserves. However, most of the funds are already earmarked for existing capital projects. The reserves levels are at or above the proposed target level in all years in the study period.

Table 4-8
Wastewater Reserves/Fund Balance

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	**Ending Balance**					
2	Operating Fund	$1,726,694	$1,858,155	$2,956,155	$4,304,413	$5,869,556
3	Capital Improvement Fund	$28,239,052	$25,201,552	$16,045,713	$11,620,822	$11,620,822
4	Estuary Protection Fund	$0	$340,348	$1,059,748	$2,209,834	$3,851,093
5	Bond Fund	$0	$0	$0	$0	$1,184,659
6	Debt Reserve Fund	$0	$0	$0	$0	$708,696
7						
8	**Target Balance**					
9	Operating Fund	$3,733,176	$3,866,518	$3,778,543	$3,877,165	$3,982,878
10	Capital Improvement Fund	$2,062,209	$2,474,651	$2,887,093	$3,299,534	$3,711,976

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Ending Balance**					
2	Operating Fund	$5,373,964	$5,525,678	$5,528,784	$4,037,241	$5,363,806
3	Capital Improvement Fund	$4,832,312	$6,807,530	$11,527,205	$5,949,976	$8,505,413
4	Estuary Protection Fund	$5,340,030	$5,757,084	$3,636,483	$1,499,571	$1,866,000
5	Bond Fund	$0	$35,240,657	$13,118,912	$0	$5,654,605
6	Debt Reserve Fund	$708,696	$4,606,521	$4,606,521	$4,606,521	$6,732,607
7						
8	**Target Balance**					
9	Operating Fund	$4,092,339	$4,205,695	$4,325,162	$4,449,126	$4,577,784
10	Capital Improvement Fund	$4,124,418	$4,124,418	$4,124,418	$4,124,418	$4,124,418

Based on the terms of the debt issued, debt reserves provide protection to bond buyers for one year of debt service payments in times of financial difficulty. These are restricted reserves used only for meeting debt service payments. One year of debt service payments is required to be set aside in reserve; each time the City issues new bonds, additional proceeds are required to be added to the debt reserves.

Proposed Revenue Adjustments

In order to meet projected revenue requirements, to achieve desired operating and capital reserve fund balances, and minimize customer impacts, the following revenue adjustments are proposed to meet long term rate stability:

Effective Date	Increases
July 1, 2012	$1.4 million
July 1, 2013	$1.0 million

The operating financial plan presented in **Table 4-9** shows the revenues from rates based on the proposed revenue adjustment schedule shown above.

Table 4-9
Wastewater Operating Financial Plan

Line #		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1	Revenue Under Existing Rates	$15,695,991	$15,612,275	$15,529,234	$15,507,873	$15,487,299
2						
3	Total Additional Revenue	$0	$1,405,105	$2,413,243	$3,484,991	$4,618,428
4	Total Revenue from Rates	$15,695,991	$17,017,380	$17,942,477	$18,992,864	$20,105,727
5						
6	Other Operating Revenue	$375,710	$375,710	$375,710	$386,081	$397,488
7	Interest Income	$726,046	$285,402	$348,233	$357,096	$432,396
8	**Total Revenue**	**$16,797,747**	**$17,678,492**	**$18,666,421**	**$19,736,040**	**$20,935,611**
9						
10	O&M Expenses	$14,932,703	$15,466,071	$15,114,171	$15,508,661	$15,931,512
11	Existing Debt Service	$1,738,550	$1,740,613	$1,736,550	$1,739,550	$1,476,150
12	Proposed Debt Service	$0	$0	$0	$0	$354,348
13						
14	**Total Expenses**	**$16,671,253**	**$17,206,684**	**$16,850,721**	**$17,248,211**	**$17,762,010**
15						
16	**Net Cash Flow**	**$126,494**	**$471,808**	**$1,815,699**	**$2,487,829**	**$3,173,601**
17						
18	Debt Coverage Ratio	107%	127%	205%	243%	273%
19	Required Coverage	125%	125%	125%	125%	125%

Line #		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Revenue Under Existing Rates	$15,467,010	$15,447,431	$15,428,432	$15,409,917	$15,470,347
2						
3	Total Additional Revenue	$5,817,141	$7,085,210	$8,876,889	$10,808,329	$12,956,399
4	Total Revenue from Rates	$21,284,151	$22,532,641	$24,305,321	$26,218,247	$28,426,746
5						
6	Other Operating Revenue	$410,036	$423,839	$439,022	$455,724	$474,095
7	Interest Income	$493,638	$404,849	$1,069,590	$1,333,561	$724,597
8	**Total Revenue**	**$22,187,826**	**$23,361,329**	**$25,813,934**	**$28,007,532**	**$29,625,439**
9						
10	O&M Expenses	$16,369,357	$16,822,782	$17,300,650	$17,796,505	$18,311,135
11	Existing Debt Service	$1,476,950	$1,475,963	$1,473,125	$1,474,225	$1,475,500
12	Proposed Debt Service	$708,696	$2,657,608	$4,606,521	$4,606,521	$5,669,564
13						
14	**Total Expenses**	**$18,555,002**	**$20,956,352**	**$23,380,295**	**$23,877,250**	**$25,456,199**
15						
16	**Net Cash Flow**	**$3,632,824**	**$2,404,977**	**$2,433,638**	**$4,130,281**	**$4,169,240**
17						
18	Debt Coverage Ratio	266%	158%	140%	168%	158%
19	Required Coverage	125%	125%	125%	125%	125%

Debt Service Coverage

The City must meet debt service coverage requirements on its outstanding bond issues. Coverage requirements typically vary between 100 percent and 160 percent or higher. The City's required debt coverage is 125 percent, which means that the City's Adjusted Net System Revenues shall amount to at least 125 percent of the Annual Debt Service. The System Revenues include funds derived from the ownership and operation of the system including wastewater service charges from the City's users, miscellaneous service charges, revenues received from contracts, and interest income. Annual Debt Service includes annual principal and interest payments on outstanding debt. With the proposed revenue adjustments, the City exceeds the coverage requirement in all but the current fiscal year. Failure to meet debt service coverage results in a technical default, which without foreseeable remedial action, such as implementing rate increases, could result in a downgrade of credit rating, more restrictions or higher costs in future debt issuance, or even denial of credit.

COST OF SERVICE ANALYSIS

The determination of the City's user class flows and loadings and the revenue requirements reviewed and finalized through the operating and capital cash flow analysis provide the basis for performing the cost of service analysis. This section of the report discusses the allocation of operating costs and the determination of unit rates, and the calculation of user class cost responsibility.

The total revenue requirement net of miscellaneous revenue credits, by definition, is the net cost of providing service. This cost of service is then used as the basis to develop unit rates for the wastewater parameters and to allocate costs to the various user classes in proportion to the wastewater services

rendered. In this study, wastewater rates were calculated for FY 2013, and accordingly FY 2013 revenue requirements are used in the cost allocation process.

Costs of Service to be Allocated

The annual revenue requirement or cost of service to be recovered from wastewater charges includes operation and maintenance expenses and other non-operating expenses costs. O&M expenses include costs directly related to the collection, treatment, and disposal of wastewater and maintenance of system facilities.

The total FY 2013 net cost of service to be recovered from the City's wastewater users, as shown in **Table 4-10**, is estimated at over $17 million, of which approximately $15.3 million is operating costs and the remaining $1.7 million is capital costs, which consists of existing debt service. The cost of service analysis is based upon the need to generate annual revenues adequate to meet the estimated annual revenue requirement. As part of the cost of service analysis, revenues from other sources except wastewater rates and charges are deducted from the appropriate cost elements. Additional deductions are made to reflect interest income and other non-operating income during FY 2013. Adjustments are also made to account for cash balances to ensure adequate collection of revenue and to determine annual revenues needed from rates.

Table 4-10
Allocation of Revenue Requirements

	FY 2013		
	Operating	**Capital**	**Total**
Revenue Requirements			
O&M Expenses	$15,466,071		**$15,466,071**
Existing Debt Service		$1,740,613	**$1,740,613**
Proposed Debt Service		$0	**$0**
Subtotal Revenue Requirements	**$15,466,071**	**$1,740,613**	**$17,206,684**
Less: Other Revenues			
Other Operating Revenue	$375,710		**$375,710**
Interest Income	$285,402		**$285,402**
Subtotal Other Revenues	**$661,112**	**$0**	**$661,112**
Less: Adjustments			
Adjustments to Annual Cash Balance	($471,808)		**($471,808)**
Adjustments to Annualize Rate Increase	$0		**$0**
Subtotal Adjustments	**($471,808)**	**$0**	**($471,808)**
Revenue to be Recovered from Rates	**$15,276,767**	**$1,740,613**	**$17,017,380**

Mass Balance

The mass balance analysis is used to estimate the wastewater loadings (flow and strength) generated by each customer group. While wastewater discharged into sewers for most users is not metered when it enters the wastewater system, the total amount of flow and strength entering the treatment plant and treated every day is a known quantity. This total flow entering the treatment plant has to be corrected for infiltration and inflow (I&I), which is water that enters the collection system during rain-related events, run-off, or other ways. Additionally, non-residential and industrial customer loadings can be estimated based on their water usage. Non-residential and industrial customer strengths are estimated according to industry accepted standards. The remaining loadings, net of the total less infiltration and non-residential and industrial, are assigned to residential users. Based on this analysis, it is estimated that each person in a residential household generates approximately 53 gallons of wastewater per day. This number is reasonable given the average water usage in the City.

Table 4-11 shows the total annual units of flow, strength, and accounts for each customer class as a result of the mass balance analysis. Based on the City's average density of 2.6 people per household[1], the number of SFR and MFR dwelling units within the City, and using a ratio of MFR residential density (people per household) of 75% of SFR density, RFC calculated that an SFR unit has an average of 3 people per household and an MFR unit has an average of 2.25 people per household. These estimates are used to approximate the wastewater generation of the residential class, consistent with the mass balance analysis results.

Table 4-11
Determination of Total Annual units

Customer Class	Flow (hcf)	COD (lbs)	SS (lbs)	No. of Accounts
SFR	1,789,395	6,981,263	4,073,056	22,196
MFR	1,136,475	4,433,918	2,586,867	14,352
Commercial				
Group 1	616,924	1,324,766	531,447	1,489
Group 2	73,631	284,971	68,945	37
Group 3	49,837	373,321	124,440	9
Group 4	9,508	94,964	47,482	11
Group 5	166,124	1,703,801	529,910	228
Group 6	1	3	1	0
Industrial	54,118	254,002	87,607	3
Schools with showers	53,663	87,096	33,498	8
Schools without showers	30,321	49,211	18,927	34
Churches	19,206	35,967	17,984	47
TOTAL	**3,999,202**	**15,623,284**	**8,120,163**	**38,414**

[1] Source: State Department of Finance Report E-5 City/County Population and Housing Estimates, 1/1/2010

Unit Cost of Service

In order to allocate costs of service to the different user classes, unit costs of service are developed consistent with the guidelines for allocating costs detailed in the Manual of Practice titled Financing and Charges for Wastewater Systems published by the Water Environment Federation (WEF). Operating and capital costs are functionalized as collection, treatment, billing, administrative, etc. These costs are then allocated to the flow, COD and SS parameters based on the design of each facility. Collection costs are allocated entirely to flow. Since treatment plants are designed to treat flow, COD and SS, treatment costs are allocated to those three parameters: based on the design of each component of the treatment system. For example, the equipment in the primary clarifiers is designed to remove suspended solids. Along with suspended solids there is also some removal of COD, therefore the equipment is allocated to SS and COD based on the removal of those two parameters. Additionally the primary tank structure is designed for flow; therefore the structure is allocated to flow. Similarly other components of the treatment plant are analyzed to determine the appropriate allocation to flow, COD and SS. Administrative costs are assigned to general and then spread amongst the other costs centers proportionately. Costs related to recycled water are allocated to recycled water. The unit costs of service are developed by dividing the total annual costs by the appropriate service units, such as flow, COD and SS generated in the system and accounts for billing costs. **Table 4-12** shows the units of service and the development of the FY 2013 unit costs for each of the wastewater expense categories.

Table 4-12
Development of Unit Cost

	Flow	COD	SS	Billing	Recycled Water	General	Total
Operating Expenses	$7,476,313	$1,708,920	$1,649,299	$600,444	$127,381	$3,714,409	$15,276,767
Capital Expenses	$1,295,804	$191,084	$181,530	$33,969	$30,573	$7,651	$1,740,613
Total Cost	**$8,772,117**	**$1,900,004**	**$1,830,829**	**$634,414**	**$157,955**	**$3,722,061**	**$17,017,380**
Allocation of General Cost	$2,485,304	$538,307	$518,708	$179,741		($3,722,061)	
Cost of Service	**$11,257,422**	**$2,438,311**	**$2,349,537**	**$814,155**	**$157,955**	**$0**	**$17,017,380**
Total Units of Service	3,999,202	15,623,284	8,120,163	230,484	207,406		
Unit of Measure	hcf/yr	lb/yr	lb/yr	bills/yr	hcf/yr		
Total Unit Cost of Service	$2.81	$0.16	$0.29	$3.53	$0.76		

User Class Costs

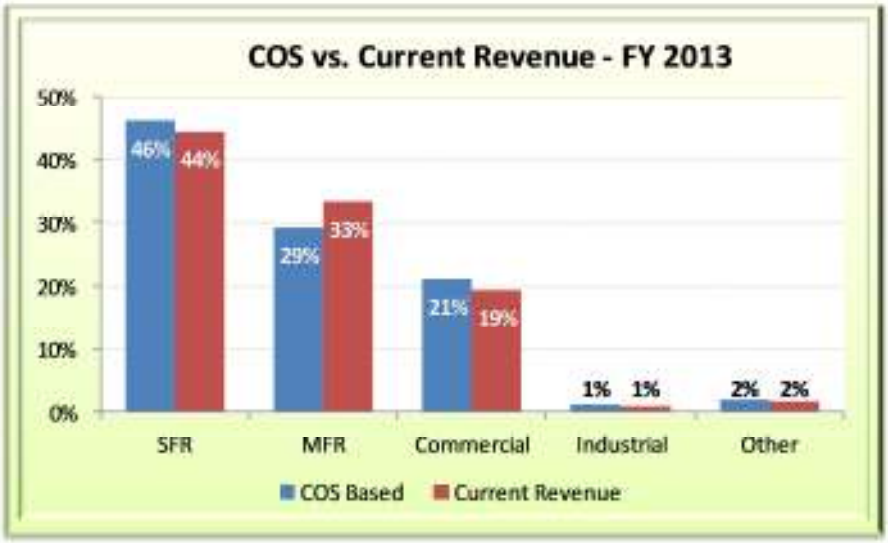
The unit costs shown in **Table 4-12** are then applied to the projected FY 2013 units and flow for each user class, shown in **Table 4-11**, to derive user class costs. **Table 4-13** shows the FY 2013 cost responsibility for each user class.

Table 4-13
Allocation of Costs to Customer Classes

Customer Class	Flow	COD	SS	Billing	Recycled Water	Total
SFR	$5,036,997	$1,089,559	$1,178,522	$470,427		$7,775,506
MFR	$3,199,082	$691,997	$748,500	$304,180		$4,943,759
Commercial						
Class 1	$1,736,590	$206,755	$153,772	$31,558		$2,128,675
Class 2	$207,265	$44,475	$19,949	$784		$272,473
Class 3	$140,287	$58,264	$36,006	$191		$234,748
Class 4	$26,764	$14,821	$13,739	$233		$55,557
Class 5	$467,625	$265,911	$153,327	$4,832		$891,696
Class 6	$3	$1	$0	$0		$4
Industrial	$152,336	$39,642	$25,349	$64		$217,391
Schools with showers	$151,057	$13,593	$9,693	$170		$174,512
Schools without showers	$85,351	$7,680	$5,477	$721		$99,228
Churches	$54,063	$5,613	$5,203	$996		$65,876
Reclaimed Water					$157,955	$157,955
TOTAL	**$11,257,422**	**$2,438,311**	**$2,349,537**	**$814,155**	**$157,955**	**$17,017,380**

The residential user class has the highest assignment of costs at $12.7 million and is responsible for 75 percent of the total cost of service. The non-residential user classes are responsible for the remaining 25 percent of the annual cost of service. **Figure 4-2** compares the existing revenue and the cost of service to be recovered by customer class. The COS analysis shows that single family residential and commercial customers, as a class, need to pay slightly more than they are currently paying and that multi-family customers will benefit from the proposed rates. Individual SFR and MFR customers will see different impacts depending on their actual average winter water usage. A majority of residential customers will see a benefit from the revised rate structure. Customers with high winter water use, up to 30 hcf bi-monthly, will see significant increases in their bill.

Figure 4-2
Comparison of Revenue under COS and Existing Rate Structure



RATE DESIGN

The revenue requirements and cost of service analyses described in the preceding sections of this report provide a basis for the design of wastewater rates. Rate design involves the development of rate schedule for each user class so as to recover the annual cost of service determined for each user class. This subsection of the report discusses alternative wastewater rate structures, presents a schedule of rates for the City's user classes, and analyzes the impact of the proposed changes in user classifications, cost allocation and rate design on the user classes.

Rate Structure Alternatives

The primary emphasis in the design of rate structures is ordinarily placed on achieving fairness and equity, with the objective of being able to ensure that each customer class pays its fair share of costs. In addition, rate structures should be easy to understand, simple to administer, and comply with regulatory requirements. A review of the existing City wastewater rate structures provides insights into the equitability of the current methodology and the changes, if any, that should be considered.

The proposed changes to the rate structure are based on the results of the pricing objectives exercise that was conducted with the citizens Advisory Committee (Committee) at the beginning of the study to prioritize the most important objectives that would be used to design the final rate structure. The results show that the three most important objectives of the Committee are cost of service based allocations, rate stability, and revenue stability. The complete process is detailed in Appendix A.

Similar to the water rates design process, RFC also evaluated two alternative wastewater rate structures: a fixed wastewater charge for residential customers and a fixed plus flow based charge for all customers. Non-residential rates are the same under both alternatives. During discussions, Committee

members agreed that a fixed wastewater charge would not be equitable and would overburden low volume users. The preferred rate structure is discussed in detail below.

Residential Customers

While the methodology for cost allocation to user classes for equitable cost recovery is covered in some detail by the previously referenced WEF guidelines, the City has some flexibility to design a rate structure that best meets its needs. For example, many California agencies levy flat charges on their residential customers; the City could take the total revenue recovery from residential customers and spread it equally amongst all residential customers. The Advisory Committee reviewed this alternative structure and decided against it. The second alternative was to retain the current system; however, the current system of rates overburdens low volume water users by having a high Tier 1 charge. RFC proposes that the City implement a fixed plus flow rate structure to stabilize revenues, and to recognize the fact that wastewater system costs are mostly fixed.

Table 4-14 shows the residential wastewater rates under the existing rate structure and the fixed plus flow rate structure for FY 2013 and 2014. The flow based rate is based on the average winter water usage for two bills received between February and May and capped at 30 hcf and 24 hcf bi-monthly for SFR and MFR customers, respectively. Committee members also evaluated the wastewater rates at different caps and agreed that a cap of 30 hcf and 24 hcf bi-monthly would provide sufficient incentives for conservation and be equitable for all residential customers as high winter usage for these groups would likely be for outdoor watering, water not returned to the collection system for treatment. Based on the estimated wastewater generation of 53 gallons per day per person, a cap of 30 hcf bi-monthly provides for a household of up to 7 people for SFR customers. A cap of 24 hcf bi-monthly provides for a household of up to 5.5 people for MFR customers.

Table 4-14
Current and Proposed Residential Wastewater Rates

Customer Class		Current	July 1, 2012	July 1, 2013
SFR				
Tier 1	0 - 8	$34.27		
Tier 2	9 - 10	$42.24		
Tier 3	11 - 12	$50.00		
Tier 4	13 - 14	$57.76		
Tier 5	15 - 16	$65.51		
Tier 6	17+	$73.27		
Bi-monthly Fixed Charge			$17.65	$18.35
Bi-monthly Flow Charge*			$2.67	$2.78
Maximum Bill (cap at 30 hcf)			$97.75	$101.75
MFR				
Tier 1	0 - 8	$34.27		
Tier 2	9 - 10	$42.24		
Tier 3	11 - 12	$50.00		
Tier 4	13 - 14	$57.76		
Tier 5	15 - 16	$65.51		
Tier 6	17+	$73.27		
Bi-monthly Fixed Charge			$13.06	$13.58
Bi-monthly Flow Charge*			$2.67	$2.78
Maximum Bill (cap at 24 hcf)			$77.14	$80.30

*Based on average winter usage for 2 full billing cycles for bills received February through May

Non-Residential Customers

A review of the non-residential customer wastewater rates indicates that there are inequities among non-residential customers in the different groups. RFC proposes that the City correct the inequities among non-residential customers in the different groups. Based on the unit rates indicated in the current rate schedule, RFC calculated the wastewater rates for each group.

Under the existing rate structure, churches and nurseries pay a fixed bi-monthly charge based on the highest residential charge. Since the amount of wastewater generated by churches can vary significantly based on their size and activity, to ensure proportionate cost recovery to meet Proposition 218 cost of service requirements, RFC proposes that churches and nurseries should be charged based on their actual water usage. Churches are assigned a return factor of 75 percent and nurseries are assigned a return factor of 30 percent based on their estimated wastewater generation. Additionally, they will pay the same fixed charges as all other customers.

Similarly, under the existing rate structure, schools pay a fixed bi-monthly charge based on a factor of 1.4 or 1.8 times the highest residential charge per student based on average daily attendance. To

ensure proportionate cost recovery, RFC proposes that the schools' rate be revised to recover their cost of service based on accepted industry standards. Schools are not typically charged on the basis of their water usage since a significant portion of their water usage is for irrigation purposes. Instead, schools are charged per student based on average daily attendance. The revised rate for schools assumes that each student generates 10 gallons of wastewater per day for the duration of the school year. The resultant rate is shown in **Table 4-15**.

Table 4-15 shows the non-residential wastewater rates under the existing rate structure and the proposed rate structure for FY 2013 and 2014 in each group. RFC recommends the City retain the current classification of customer groups based on their strength. Non-residential customers will pay the same fixed charges as residential customers and will be charged based on their actual water usage.

Table 4-15
Current and Proposed Non-Residential Wastewater Rates

Customer Class		Current	July 1, 2012	July 1, 2013
Commercial				
Group 1				
Tier 1	0 - 8	$16.07		
Tier 2	9+	$2.63		
Group 2				
Tier 1	0 - 8	$24.26		
Tier 2	9+	$3.15		
Group 3				
Tier 1	0 - 8	$36.38		
Tier 2	9+	$5.39		
Group 4				
Tier 1	0 - 8	$56.79		
Tier 2	9+	$7.03		
Group 5				
Tier 1	0 - 8	$47.74		
Tier 2	9+	$6.57		
Group 6				
All		$73.27		
Bi-monthly Fixed Charge			$17.65	$18.35
Bi-monthly Flow Charge**				
Group 1			$3.13	$3.26
Group 2			$3.58	$3.72
Group 3			$4.61	$4.80
Group 4			$5.61	$5.84
Group 5			$5.12	$5.33
Group 6			$1.08	$1.13
Churches			$2.33	$2.43
Schools (100 ADA)			$128.17	$133.25

** Based on actual water usage

Proposed Wastewater Rates

To prepare for costs associated with the Santa Clara River Estuary settlement with Heal the Bay and Wishtoyo Foundation's Ventura Coastkeeper Program, a charge equal to two percent of the wastewater bill in FY 2013 and four percent of the wastewater bill in FY 2014 is recommended. Revenues collected from this charge will be kept in a separate reserve and used for Estuary protection related planning studies only. **Table 4-16** shows the proposed wastewater rates for the next two years.

Table 4-16
Proposed Wastewater Rates

	Effective	
	July 1, 2012	July 1, 2013
SFR		
Bi-monthly Fixed Charge	$17.65	$18.35
Bi-monthly Flow Charge*	$2.67	$2.78
Maximum Bill (cap at 30 hcf)	$97.75	$101.75
Max Estuary Protection Fund Charge	$1.96	$4.07
MFR		
Bi-monthly Fixed Charge	$13.06	$13.58
Bi-monthly Flow Charge*	$2.67	$2.78
Maximum Bill (cap at 24 hcf)	$77.14	$80.30
Max Estuary Protection Fund Charge	$1.54	$3.21
Commercial		
Bi-monthly Fixed Charge	$17.65	$18.35
Bi-monthly Flow Charge**		
Group 1	$3.13	$3.26
Group 2	$3.58	$3.72
Group 3	$4.61	$4.80
Group 4	$5.61	$5.84
Group 5	$5.12	$5.33
Group 6	$1.08	$1.13
Churches	$2.33	$2.43
Schools (100 ADA)	$128.17	$133.25
Industrial		
Flow (MG)	$3,689.47	$3,835.63
COD (klbs)	$153.01	$159.08
SS (klbs)	$283.68	$294.92
Estuary Protection Fund Charge	2% of bill	4% of bill

*Based on average winter usage for 2 full billing cycles
for bills received February through May
** Based on actual water usage

IMPACT ANALYSIS

RFC performed an impact analysis to evaluate the impact of the recommended changes to the rate structure. The impacts of each of these changes among user classes and within user classes are discussed below.

Residential Customer Impacts

Under the proposed rate structure, residential customers will experience a range of impacts depending on their previous usage level. However, an average SFR customer, generating 15 hcf of wastewater per bi-monthly period, will see a decrease of approximately $6.66 in their bi-monthly bill compared to the existing rates.

Tables 4-17 and **4-18** show the bi-monthly bill impacts for SFR and MFR customers at each level of winter water consumption, respectively. The three columns within the box outline show the breakdown between the wastewater charge, the Estuary protection charge, and the total bi-monthly wastewater bills for each level of usage for the first year. The last three columns show the bills for the second year.

Table 4-17
SFR Bi-Monthly Rate Impacts

Winter Avg HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
0	$34.27	$17.65	$0.35	$18.00	$18.35	$0.73	$19.08
1	$34.27	$20.32	$0.41	$20.73	$21.13	$0.85	$21.98
2	$34.27	$22.99	$0.46	$23.45	$23.91	$0.96	$24.87
3	$34.27	$25.66	$0.51	$26.17	$26.69	$1.07	$27.76
4	$34.27	$28.33	$0.57	$28.90	$29.47	$1.18	$30.65
5	$34.27	$31.00	$0.62	$31.62	$32.25	$1.29	$33.54
6	$34.27	$33.67	$0.67	$34.34	$35.03	$1.40	$36.43
7	$34.27	$36.34	$0.73	$37.07	$37.81	$1.51	$39.32
8	$34.27	$39.01	$0.78	$39.79	$40.59	$1.62	$42.21
9	$42.24	$41.68	$0.83	$42.51	$43.37	$1.73	$45.10
10	$42.24	$44.35	$0.89	$45.24	$46.15	$1.85	$48.00
11	$50.00	$47.02	$0.94	$47.96	$48.93	$1.96	$50.89
12	$50.00	$49.69	$0.99	$50.68	$51.71	$2.07	$53.78
13	$57.76	$52.36	$1.05	$53.41	$54.49	$2.18	$56.67
14	$57.76	$55.03	$1.10	$56.13	$57.27	$2.29	$59.56
15	$65.51	$57.70	$1.15	$58.85	$60.05	$2.40	$62.45
16	$65.51	$60.37	$1.21	$61.58	$62.83	$2.51	$65.34
17	$73.27	$63.04	$1.26	$64.30	$65.61	$2.62	$68.23
18	$73.27	$65.71	$1.31	$67.02	$68.39	$2.74	$71.13
19	$73.27	$68.38	$1.37	$69.75	$71.17	$2.85	$74.02
20	$73.27	$71.05	$1.42	$72.47	$73.95	$2.96	$76.91
21	$73.27	$73.72	$1.47	$75.19	$76.73	$3.07	$79.80
22	$73.27	$76.39	$1.53	$77.92	$79.51	$3.18	$82.69
23	$73.27	$79.06	$1.58	$80.64	$82.29	$3.29	$85.58
24	$73.27	$81.73	$1.63	$83.36	$85.07	$3.40	$88.47
25	$73.27	$84.40	$1.69	$86.09	$87.85	$3.51	$91.36
26	$73.27	$87.07	$1.74	$88.81	$90.63	$3.63	$94.26
27	$73.27	$89.74	$1.79	$91.53	$93.41	$3.74	$97.15
28	$73.27	$92.41	$1.85	$94.26	$96.19	$3.85	$100.04
29	$73.27	$95.08	$1.90	$96.98	$98.97	$3.96	$102.93
30	$73.27	$97.75	$1.96	$99.71	$101.75	$4.07	$105.82

Table 4-18
MFR Bi-Monthly Rate Impacts - Per Dwelling Unit

Winter Avg HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
0	$34.27	$13.06	$0.26	$13.32	$13.58	$0.54	$14.12
1	$34.27	$15.73	$0.31	$16.04	$16.36	$0.65	$17.01
2	$34.27	$18.40	$0.37	$18.77	$19.14	$0.77	$19.91
3	$34.27	$21.07	$0.42	$21.49	$21.92	$0.88	$22.80
4	$34.27	$23.74	$0.47	$24.21	$24.70	$0.99	$25.69
5	$34.27	$26.41	$0.53	$26.94	$27.48	$1.10	$28.58
6	$34.27	$29.08	$0.58	$29.66	$30.26	$1.21	$31.47
7	$34.27	$31.75	$0.64	$32.39	$33.04	$1.32	$34.36
8	$34.27	$34.42	$0.69	$35.11	$35.82	$1.43	$37.25
9	$42.24	$37.09	$0.74	$37.83	$38.60	$1.54	$40.14
10	$42.24	$39.76	$0.80	$40.56	$41.38	$1.66	$43.04
11	$50.00	$42.43	$0.85	$43.28	$44.16	$1.77	$45.93
12	$50.00	$45.10	$0.90	$46.00	$46.94	$1.88	$48.82
13	$57.76	$47.77	$0.96	$48.73	$49.72	$1.99	$51.71
14	$57.76	$50.44	$1.01	$51.45	$52.50	$2.10	$54.60
15	$65.51	$53.11	$1.06	$54.17	$55.28	$2.21	$57.49
16	$65.51	$55.78	$1.12	$56.90	$58.06	$2.32	$60.38
17	$73.27	$58.45	$1.17	$59.62	$60.84	$2.43	$63.27
18	$73.27	$61.12	$1.22	$62.34	$63.62	$2.54	$66.16
19	$73.27	$63.79	$1.28	$65.07	$66.40	$2.66	$69.06
20	$73.27	$66.46	$1.33	$67.79	$69.18	$2.77	$71.95
21	$73.27	$69.13	$1.38	$70.51	$71.96	$2.88	$74.84
22	$73.27	$71.80	$1.44	$73.24	$74.74	$2.99	$77.73
23	$73.27	$74.47	$1.49	$75.96	$77.52	$3.10	$80.62
24	$73.27	$77.14	$1.54	$78.68	$80.30	$3.21	$83.51

Non-Residential Customer Impacts

Under the proposed rate structure, non-residential customers will experience different rate impacts depending on their group and usage level. **Table 4-19** shows the rate impact of an average user within each group.

Table 4-19
Non-Residential Bi-Monthly Rate Impacts

Customer Group	Bi-Monthly Usage HCF	Current Bill	7/1/2012 WW Bill	7/1/2012 Estuary	7/1/2012 Total Bill	7/1/2013 WW Bill	7/1/2013 Estuary	7/1/2013 Total Bill
Group 1	70	$179.13	$236.75	$4.74	$241.49	$246.55	$9.86	$256.41
Group 2	331	$1,041.71	$1,202.63	$24.05	$1,226.68	$1,249.67	$49.99	$1,299.66
Group 3	923	$4,968.23	$4,272.68	$85.45	$4,358.13	$4,448.75	$177.95	$4,626.70
Group 4	147	$1,033.96	$842.32	$16.85	$859.17	$876.83	$35.07	$911.90
Group 5	122	$796.72	$642.29	$12.85	$655.14	$668.61	$26.74	$695.35
Group 6	200	$73.27	$233.65	$4.67	$238.32	$244.35	$9.77	$254.12
Chuches	242	$73.27	$581.51	$11.63	$593.14	$606.41	$24.26	$630.67
Schools	704 ADA	$722.15	$902.32	$18.05	$920.37	$938.08	$37.52	$975.60

The City conducted a water and wastewater rate survey of the City's rates and those of neighboring and comparable agencies in Ventura County. Rate surveys can provide insights into a utility's pricing policies related to service. Care should be taken, however, in drawing conclusions from such a comparison as some factors including geographic location, demand, customer constituency, level of treatment, level of grant funding, age of system, sources of water costs, and rate-setting methodology can affect the cost of providing services. Rates for various agencies as of December 2011 (the time period at which the survey was conducted) are shown in **Figures 5-1 and 5-2** below. Some of these agencies are in the process of increasing their rates.

Figure 5-1 compares the total bi-monthly water and wastewater service charges for a low volume SFR customer with a 3/4" meter and 8 hcf of water usage bi-monthly.

Figure 5-1

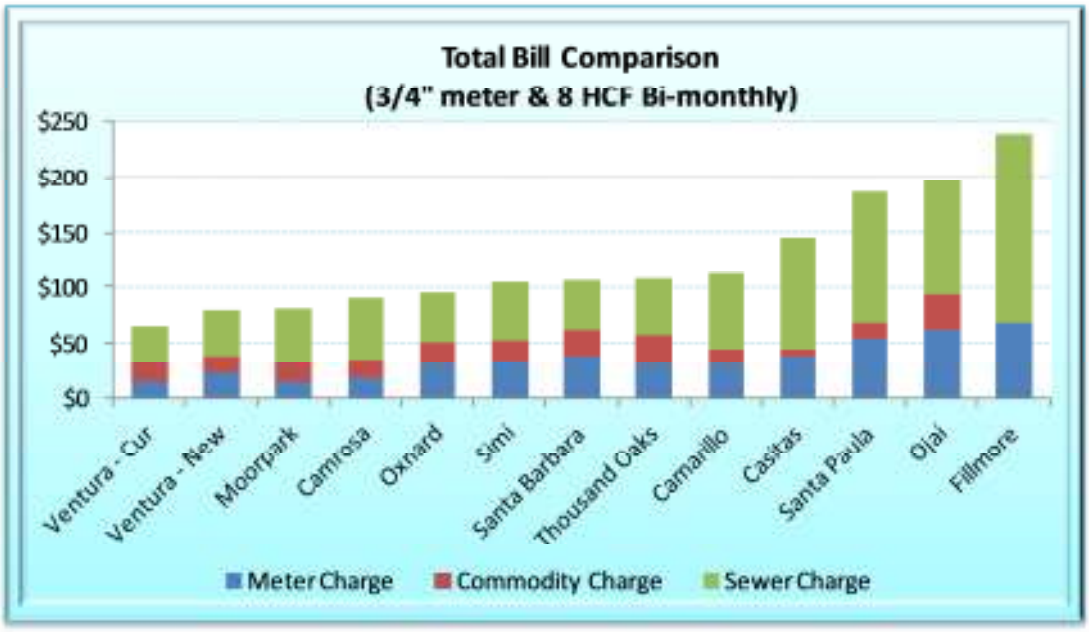
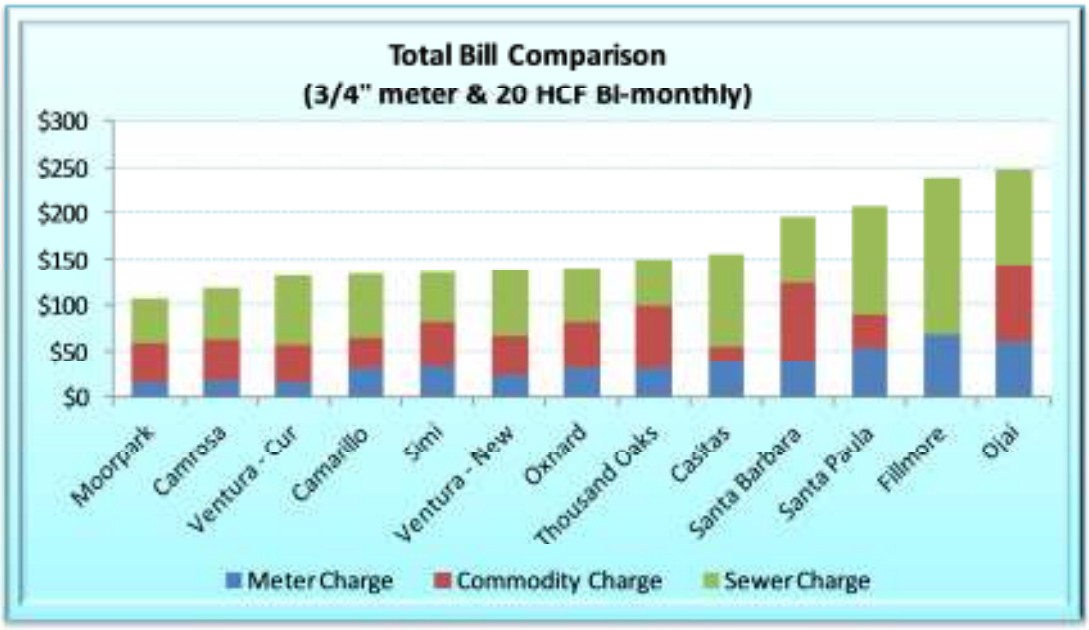


Figure 5-2 compares the total bi-monthly water and wastewater service charges for an average SFR customer with a 3/4" meter and 20 hcf of water usage bi-monthly.

Figure 5-2


Total Bill Comparison
(3/4" meter & 20 HCF Bi-monthly)
$300
$250
$200
$150
$100
$50
$0
Moorpark
Camrosa
Ventura - Cur
Camarillo
Simi
Ventura - New
Oxnard
Thousand Oaks
Casitas
Santa Barbara
Santa Paula
Fillmore
Ojai
Meter Charge
Commodity Charge
Sewer Charge

APPENDIX A

PRICING OBJECTIVES WORKSHOP

RFC conducted a pricing objectives public workshop with the stakeholders group and public to determine the objectives stakeholders considered to be most important in the design of water and wastewater rates. **Table A-1** shows a brief description of the 11 pricing objectives presented to the stakeholders.

Stakeholders were asked to rank a maximum of two objectives as "Most Important" and three objectives as "Very Important". The remaining objectives can be ranked as "Important" and "Least Important" depending on the views of each stakeholder. Additionally, stakeholders were asked to rank the sub-objectives under the Conservation objective from 1 to 6, 1 being the most important.

Table A-1
Pricing Objectives Description

Pricing Objective	Description
Cost of Service Based Allocations	The rate structure should ensure that each customer class is contributing equitably towards revenue requirements based upon the costs of providing service to each customer class.
Minimization of Customer Impacts	The rate structure should be developed such that adverse rate impacts on each customer class are minimized.
Equitable Contributions from New Customers	New customers should be responsible for the capital costs of providing them service.
Economic Development	The rate structure should incorporate a preferential rate that may be used to attract economic development to the City.
Rate Stability	The rate structure should minimize dramatic rate increases or decreases over the planning period.
Affordability	The rate structure should incorporate practices or procedures that help ensure that customers can afford water and wastewater service.
Simple to Understand and Update	The rate structure should be easy for City customers to understand, utilizing a moderate level of educational tools. In addition, the rate structure should be able to be effectively maintained by City staff in future years.
Ease of Implementation	The rate structure should be compatible with City's billing system. In addition, the rate structure should allow for the continuation of existing management and system reports.
Defensibility	The rate structure should be consistent with the rate setting methodologies provided by AWWA and applicable laws, in order to ensure that rates are defensible if challenged in court.
Revenue Stability	The rate structure should provide for a steady and predictable stream of revenues to the utility such that the utility is capable of meeting its current financial requirements.
Conservation/Demand Management ***Sub-Objectives***	The rate structure should encourage water conservation as well as assist in managing system demand. • Reduce Peak Consumption • Reduce Seasonal Consumption • Reduce Total Consumption • Reward Economically Efficient Water Users • Surcharge Nonessential and Non-efficient Water Use • Communicate Conservation Consciousness

The "Most Important" objectives were given a weight of 1; "Very Important" objectives were given a weight of 2; etc. **Table A-2** below shows the combined weighted scores of each objective from all stakeholders.

Table A-2
Pricing Objectives Results

Classification	Rank	Pricing Objectives	Total Score
Most Important	1	Cost of Service Based Allocations	11
Very Important	2	Rate Stability	18
	3	Revenue Stability	19
	4	Conservation	19
	5	Defensibility	19
Important	6	Minimization of Customer Impacts	21
	7	Simple to Understand and Update	22
	8	Equitable Contributions from New Customers	22
Least Important	9	Economic Development	25
	10	Ease of Implementation	26
	11	Affordability	26

The rankings were then used to compare four water and three wastewater alternative rate structures to determine which rate structures best meet the City's objectives. The selected alternatives for water rates are modifying the tier cut-offs and adding a fourth tier. The selected alternative for wastewater rates is a fixed plus flow structure. Water and wastewater rates were developed for the selected alternatives, as described in previous sections of the report.

Tables A-3 and A-4 show the comparison of the alternative water and wastewater rate structures.

Table A-3
Comparison of Alternative Water Rate Structures

Ranking	Classifications	Pricing Objectives	Current Rate Structure	Option 1: Revise Current Tiers	Option 2: Add New Tier	Option 3: Hybrid	Option 4: Water Budget Based
1	Most Important	Cost of Service Based Allocations	B-	A	A	A	A
2	Very Important	Rate Stability	A	A	A	A	A
3		Revenue Stability	B-	A-	A-	A-	A-
4		Conservation	B-	A	A+	A+	A
5		Defensibility	B-	A	A	A	A
6	Important	Minimization of Customer Impacts	A	A-	B+	B	C+
7		Simple to Understand and Update	A+	A	A-	A-	C-
8		Equitable Contributions from New Customers	B+	B+	B+	B+	B+
9	Least Important	Economic Development	B	B	B	B	B
10		Ease of Implementation	A+	A	A	A	C
11		Affordability	B	B+	A-	A	B+
		Overall Scores	**80.6**	**95.4**	**95.3**	**95.0**	**86.0**

Ranking	Classifications	Pricing Objectives	Current Rate Structure	Option 1: Revise Current Tiers	Option 2: Add New Tier	Option 3: Hybrid	Option 4: Water Budget Based
1	Most Important	Reward Efficient Water Users	B	B+	B+	B+	A+
2		Surcharge Nonessential and Non-efficient Usage	B	B+	B+	B+	A+
3	Very Important	Communicate Conservation Consciousness	C+	B+	A-	A	A
4		Reduce Total Consumption	B	B+	A-	A	B+
5	Important	Reduce Peak Consumption	B+	A-	A	A+	B
6	Least Important	Reduce Seasonal Consumption	B+	A-	A	A+	B
		Overall Scores	**49.8**	**57.3**	**60.6**	**63.3**	**65.3**

Table A-4
Comparison of Alternative Wastewater Rate Structures

Ranking	Classifications	Pricing Objectives	Current Rate Structure	Option 1: Fixed Charge Only	Option 2: Flow Based Only	Option 3: Fixed + Flow Based
1	Most Important	Cost of Service Based Allocations	B-	B	A	A
2	Very Important	Rate Stability	A	A	A	A
3		Revenue Stability	B+	A+	C+	A-
4		Conservation	B+	C	A+	A-
5		Defensibility	A	A	A	A
6	Important	Minimization of Customer Impacts	A	A-	A-	A
7		Simple to Understand and Update	A+	A+	B+	A
8		Equitable Contributions from New Customers	B+	B+	B+	B+
9	Least Important	Economic Development	B	B	B	B
10		Ease of Implementation	A+	A	B+	A
11		Affordability	B-	C+	A-	B+
		Overall Scores	**87.8**	**86.8**	**90.4**	**95.1**

APPENDIX B

OUTSIDE CITY CHARGES CALCULATION

Outside City customers are currently charged 170 percent of the Inside City rates, based on a calculation developed in the 1970s. Upon further review, RFC found that the methodology is no longer defensible under Proposition 218. Outside City customers do receive additional benefits from Inside City customers and this section develops a rationale for the Outside City surcharge.

In order to determine the Outside City rate differential, we need to determine the benefits Outside City customers receive but have not paid for because they reside outside the City limits. RFC identified three factors that can be used to calculate the rate differential. These are:

1. Property tax on water utility assets
2. Police and fire protection on water utility assets
3. Incremental cost of water supply

These cost components are further explained below:

- Property tax on water utility's assets – As the utilities' assets are City property and do not pay property taxes, the City's General Fund and its residents absorb this revenue loss through their property taxes, for which there is no contribution from Outside City customers. Thus, Outside City customers need to pay their share of this cost, which they would incur if they are served by a private utility. The calculation is based on the estimated property taxes the City would receive on the water utility's assets, divided by the total annual water consumption to arrive at the unit cost per hcf.

- Police and fire protection costs on water utility's assets – The water utility assets are protected by Ventura's Police and Fire personnel who are funded by the City's General Fund. Inside City customers support these costs through property taxes; Outside City customers who receive this benefit should pay their share of the police and fire costs that relate to water utility's assets. The calculation is based on the water utility assets' share of the police and fire costs, as shown in the General Fund budget, divided by the total annual water consumption to arrive at the unit cost per hcf.

- Differential water supply costs – The water utility's first responsibility is to provide water to Inside City customers. The incremental costs associated with the higher cost water supply and long-term planning is passed on to Outside City customers through this differential. The highest cost untreated water is United Water. The total cost of Water from United Water, including treatment is calculated in the rate model and shown below.

Table B-1 shows the detailed calculation of each component of the proposed Outside City rate.

Table B-1
Outside City Rate Calculation

Outside City Rate Differential Calculation	
Property Tax Component	
Total Utility Assets	$156,163,699
(a) Estimated property tax loss	$276,410
Total Water Sales (hcf)	6,216,223
Unit Cost ($/hcf)	$0.05
Police and Fire Component	
(b) Total City Assets (est. in $M)	$10,734
Percentage of Utility Assets	1.5%
(c) Police and Fire Budget	$44,000,000
Police & Fire Costs Allocated to Wate	$640,107
Total Water Sales (hcf)	6,216,223
Unit Cost ($/hcf)	$0.10
Water Supply Component	
United water total cost	$2.05
Average treatment cost	$1.47
Difference	$0.58
TOTAL RATE DIFFERENTIAL ($/HCF)	**$0.73**

Note:
(a) The City collects 17.7% of the 1% property tax
(b) Estimated from the unsecured property tax revenue the General Fund receives
(c) From the General Fund FY 2012 budget

ADDENDUM: RESIDENTIAL TIER DEFINITIONS

This addendum is intended to supplement information in the Rate Design subsection of Section 3 of this report. Table 3-19 showed the current and proposed tiers for SFR and MFR customers. The tiers are designed to provide sufficient water allocation for health and sanitation needs, some outdoor irrigation needs at a higher cost since this water usage is considered less essential, and a signal for conservation.

Tier 1 is considered essential usage and designed to provide sufficient indoor water usage for basic health and sanitation needs of residential customers. Tier 2 is designed to provide for outdoor irrigation needs. Any usage above Tier 2 is considered to be excessive and targeted for conservation. The design of the tiers for SFR and MFR are dictated by a couple of factors. In our experience, SFR customers typically have higher residential density than MFR customers per dwelling unit. Thus, the MFR Tier 1 is lower than SFR Tier 1. At the proposed 14 hcf bi-monthly, Table 3-19 shows that 37 percent of the SFR bills fall within that tier and at the 10 hcf bi-monthly 38 percent of the MFR bills fall within that tier. Thus Tier 1 is set at 14 hcf and 10 hcf for SFR and MFR customers, respectively. MFR usage is based on the number of dwelling units so an account with 4 dwelling units will receive a Tier 1 allocation of 40 hcf bi-monthly.

Tier 2 is designed to provide for outdoor irrigation usage. While indoor water usage is relatively easy to determine, outdoor irrigation needs are much harder to estimate since they depend on a multitude of factors such as landscape area, type of vegetation, weather, etc. MFR customers do not have the same level of irrigation needs as SFR customers. Therefore MFR customers are provided a minimal of 6 hcf bi-monthly for outdoor usage. Note that 21 percent of the MFR bills exceed this level of usage. This percentage is very similar to the 19 percent of the bills that exceed the 16 hcf bi-monthly allocated to SFR customers in Tier 2.

Thus by designing tiers so that approximately the same number of bills annually fall within those tiers for both SFR and MFR customers, the rate design proportionately recovers costs from the two residential classes.