

# VENTURA WATER

## Cost of Service and Rate Design Study Report



Raftelis Financial Consultants, Inc.

January 2014



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January 20, 2014

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 for the City's users.

The study involved a comprehensive review of the City's financial plan and rates for the water and wastewater utilities. Based on our findings, RFC recommends that the City implement the following revenue adjustments for fiscal years (FY) 2015 through 2018 in order to fund operating and capital expenses and meet Council-approved reserves and debt coverage requirements.

Effective Date	Water	Wastewater
July 1, 2014	\$1.7 million	\$1.7 million
July 1, 2015	\$1.8 million	\$1.8 million
July 1, 2016	\$2.0 million	\$1.9 million
July 1, 2017	\$2.1 million	\$2.1 million

All assumptions, including all increases in operating and capital costs, were factored into the rates. The rates were developed 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

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## SECTION 1 – EXECUTIVE SUMMARY

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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) 2014 to 2024 and develop cost of service water and wastewater rates for implementation for the four years FY 2015 to 2018. 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.

Additionally as part of this study, RFC reviewed the right-of-way fees charged to the utilities.

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 is from July 1 to June 30 the following year. Therefore, July 1, 2013 through June 30, 2014 is identified as FY 2014; July 1, 2014 through June 30, 2015 is identified as FY 2015 and so forth.

## WATER UTILITY

### System Background

The water utility provides service to over 28,700 customer accounts in a service area of over 32 square miles, which includes all areas within the City limits as well as portions of the unincorporated areas of Ventura County. Water is supplied through three main sources: local groundwater from the Mound, Santa Paula, and Oxnard Plain basins within United Water Conservation District (United) and within Fox Canyon Groundwater Management Agency's jurisdiction except for the Santa Paula Basin, and 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 \$155 per acre foot (AF) for groundwater to approximately \$454 per AF for treated water in FY 2013. The cost of water

supply has increased in the last several years due to continued years of drought, tightening water supplies 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 (FY 2014) Bi-Monthly Water Rate Structure**

<b>Bi-Monthly Service Charge</b>				
<b>Meter Size</b>	<b>Inside City</b>	<b>Outside City</b>	<b>Fire Line</b>	<b>Reclaimed</b>
3/4"	\$25.11	\$25.11	\$6.47	\$25.11
1"	\$38.35	\$38.35	\$6.47	\$38.35
1 1/2"	\$71.46	\$71.46	\$6.47	\$71.46
2"	\$111.20	\$111.20	\$6.47	\$111.20
3"	\$237.00	\$237.00	\$18.78	\$237.00
4"	\$422.41	\$422.41	\$40.00	\$422.41
6"	\$866.05	\$866.05	\$116.20	\$866.05
8"	\$1,594.43	\$1,594.43	\$247.61	\$1,594.43
10"	\$2,521.46	\$2,521.46	\$445.29	\$2,521.46
12"	\$3,316.05	\$3,316.05	\$719.26	\$3,316.05

<b>Volume Rates (\$/hcf)</b>		<b>Inside City</b>	<b>Outside City</b>
<b>SFR</b>			
Tier 1	1 to 14	\$2.15	\$2.91
Tier 2	15 to 30	\$2.92	\$3.68
Tier 3	> 30	\$4.79	\$5.55
<b>MFR</b>			
Tier 1	1 to 10	\$2.15	\$2.91
Tier 2	11 to 16	\$2.92	\$3.68
Tier 3	> 16	\$4.79	\$5.55
Non-Residential		\$2.70	\$3.46
Institutional/Interruptible Rate		\$2.15	
Reclaimed Water		\$0.68	
Untreated Water		\$2.04	\$2.80
<i>SFR – single family residential</i>			
<i>MFR – multi-family residential</i>			

## Financing Plan

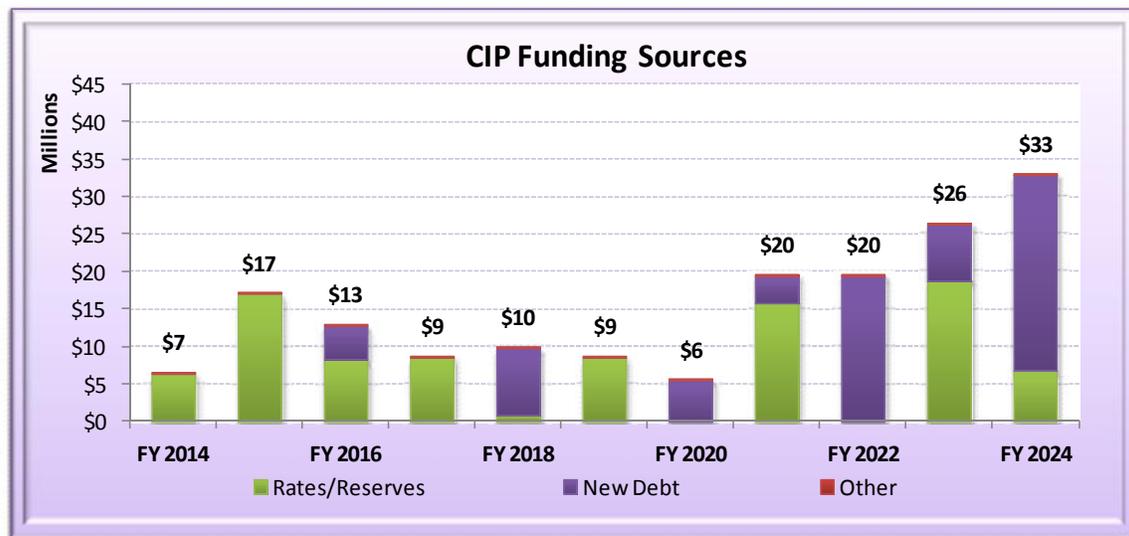
In order to determine water rates, RFC projected the revenue requirements, including operations and maintenance (O&M) expenses, capital improvement expenses, debt service costs, reserve requirements, etc., for the study period from FY 2014 to 2024. O&M expenses include the cost of operating and

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 2014 adopted and FY 2015-2018 estimated budgets using an inflationary factor of three percent per year starting in FY 2015 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to increase at three percent in FY 2015 and two percent per year in all other years. Benefits and chemical expenses are projected to increase at five percent per year during the study period. Utilities expenses are projected to increase at 6.7 percent in FY 2015 and five percent per year thereafter. Water supply costs, including rental charges paid to Casitas for water used outside of Casitas boundaries, are projected to increase an average of approximately 3.6 percent per year during the study period. The remaining water supply costs are more volatile and cannot be reasonably projected, therefore the projections assume that the water extraction/purchase rates remain at current levels and any increases in these costs from United and Casitas will be passed through directly to customers at a later date, if necessary.

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) – \$167.8 million over the next eleven years (FY 2014 to 2024) – the capital financing plan projects that approximately \$75.8 million will be funded through debt issues of \$84 million, which represents approximately 50 percent debt funding (\$84 million of \$167.8 million). Existing and anticipated annual debt service payments range from \$4.0 to \$9.9 million over the planning period. **Figure 1-1** shows the CIP funding plan over the planning period. Other funding sources include connection fees and/or any grants the City may receive.

Due to conservation efforts, water usage is projected to decrease two percent per year from FY 2014 through FY 2016 and one percent per year through FY 2020. This decrease is offset somewhat by increase in water accounts which are projected to grow at an average of 0.5 percent per year.

**Figure 1-1  
 Capital Financing Plan – Water**



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.

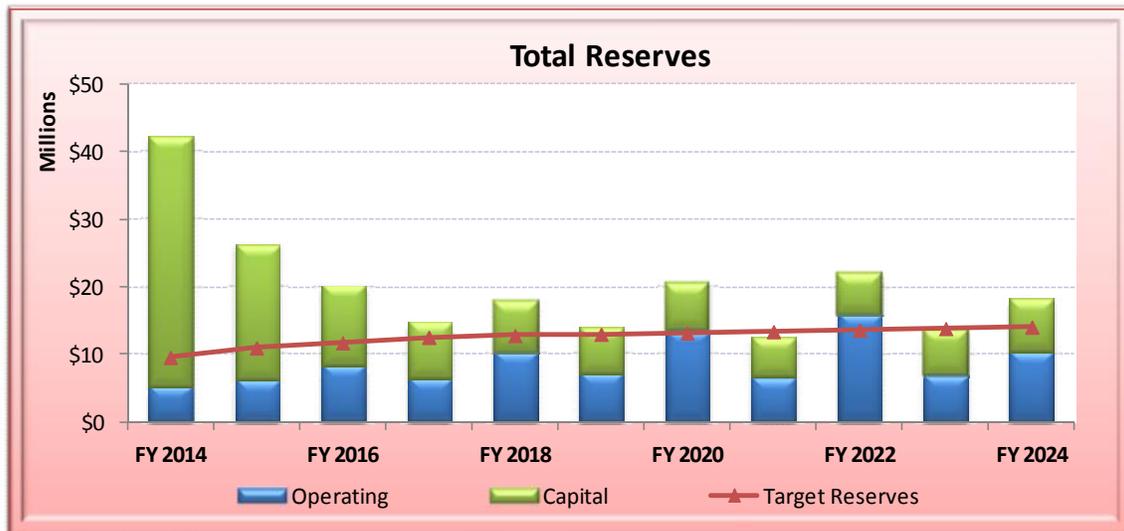
**Annual Revenue Increases – Water**

Effective Date	Increases
July 1, 2014	\$1.7 million
July 1, 2015	\$1.8 million
July 1, 2016	\$2.0 million
July 1, 2017	\$2.1 million

These increases are needed to finance the capital and inflationary expenses and increases in right of way fees.

**Figure 1-2** shows the resulting reserve balance, excluding 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 70 percent to 100 percent of average annual replacement capital expenditures by FY 2017.

**Figure 1-2  
 Reserves Balance – Water**



**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, meet peaking requirements, provide meter capacity and 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.

Since the water rate structure was revised during the last rate study, RFC recommends that the current rate structure be retained. However, the individual customer class rates are determined based on cost of service analysis.

## Proposed Water Rates

**Table 1-2** shows the proposed rates for FY 2015 through 2018. These rates are effective in July of each year.

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

Bi-Monthly Rates	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Bi-Monthly Service Charge</b>					
<b>Meter Size</b>					
3/4"	\$25.11	\$27.30	\$29.28	\$31.41	\$33.69
1"	\$38.35	\$41.36	\$44.36	\$47.58	\$51.03
1 1/2"	\$71.46	\$76.50	\$82.05	\$88.00	\$94.38
2"	\$111.20	\$118.68	\$127.29	\$136.52	\$146.42
3"	\$237.00	\$252.23	\$270.52	\$290.14	\$311.18
4"	\$422.41	\$449.05	\$481.61	\$516.53	\$553.98
6"	\$866.05	\$920.00	\$986.70	\$1,058.24	\$1,134.97
8"	\$1,594.43	\$1,693.21	\$1,815.97	\$1,947.63	\$2,088.84
10"	\$2,521.46	\$2,677.29	\$2,871.40	\$3,079.58	\$3,302.85
12"	\$3,316.05	\$3,520.79	\$3,776.05	\$4,049.82	\$4,343.44
 <b>Bi-Monthly Fireline Charge</b>					
<b>Meter Size</b>					
1" Ubranch	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
1"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
1 1/2"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
2"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
3"	\$18.78	\$20.65	\$22.15	\$23.76	\$25.49
4"	\$40.00	\$44.00	\$47.19	\$50.62	\$54.29
6"	\$116.20	\$127.81	\$137.08	\$147.02	\$157.68
8"	\$247.61	\$272.36	\$292.11	\$313.29	\$336.01
10"	\$445.29	\$489.79	\$525.31	\$563.40	\$604.25
12"	\$719.26	\$791.15	\$848.52	\$910.04	\$976.02

**Table 1-2 (contd.)  
Proposed Bi-Monthly Water Rates – Commodity Rates**

Bi-Monthly Rates		Current	Effective			
		Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Volume Rates (\$/hcf)</b>						
<b>SFR</b>						
Tier 1	0 to 14	\$2.15	\$2.23	\$2.40	\$2.58	\$2.77
Tier 2	15 to 30	\$2.92	\$3.12	\$3.35	\$3.60	\$3.87
Tier 3	> 30	\$4.79	\$5.27	\$5.66	\$6.08	\$6.53
<b>MFR</b>						
Tier 1	0 to 10	\$2.15	\$2.23	\$2.40	\$2.58	\$2.77
Tier 2	11 to 16	\$2.92	\$3.12	\$3.35	\$3.60	\$3.87
Tier 3	> 16	\$4.79	\$5.27	\$5.66	\$6.08	\$6.53
Non-Residential		\$2.70	\$2.88	\$3.09	\$3.32	\$3.57
Institutional/Interruptible Rate		\$2.15	\$2.22	\$2.39	\$2.57	\$2.76
Reclaimed Water		\$0.68	\$0.76	\$0.82	\$0.88	\$0.95
Untreated Water		\$2.04	\$2.32	\$2.49	\$2.68	\$2.88
Outside City Rates		\$0.76/hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf

The outside-City rate differential has dropped from \$0.76 per hcf to \$0.60 per hcf due to a decrease in the differential cost of water supply.

### Customer Impacts – Water

**Table 1-3** below shows the impacts of an average single-family residential (SFR) customer inside the City with a 3/4-inch meter using an average 21 hcf of water bi-monthly. For comparison purposes, the impacts on very low-end to very high-end users are also shown. Due to rounding in the calculations, some values may not add to the penny.

**Table 1-3  
SFR Water Bi-Monthly Rate Impacts**

SFR	Bi-monthly Usage (hcf)	Current Bill	FY 2015 Bill	FY 2016 Bill	FY 2017 Bill	FY 2018 Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Very Low	5	\$35.86	\$38.45	\$41.28	\$44.31	\$47.54	\$2.59	\$2.83	\$3.03	\$3.23
Low	12	\$50.91	\$54.06	\$58.08	\$62.37	\$66.93	\$3.15	\$4.02	\$4.29	\$4.56
Average	21	\$75.65	\$80.36	\$86.33	\$92.73	\$99.56	\$4.71	\$5.97	\$6.40	\$6.83
High	35	\$125.9	\$134.79	\$144.78	\$155.53	\$167.04	\$8.91	\$9.99	\$10.75	\$11.51
Very High	50	\$197.73	\$213.84	\$229.68	\$246.73	\$264.99	\$16.11	\$15.84	\$17.05	\$18.26

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 48,000 (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 fixed and variable bi-monthly wastewater rate structure, with the variable rate applied to the average winter water usage for two full billing cycles for bills received from February 1 through May 31, which represents water usage from December through March. Non-residential customers including commercial customers and churches also have a fixed and variable bi-monthly wastewater rate structure. Non-residential customers are classified into six groups based on their strength and the variable rate varies based on strength. Strength is characterized by chemical oxygen demand (COD) and total suspended solids (SS) of the wastewater generated. Schools pay a fixed charge based on average daily attendance (ADA). Industrial customers are billed monthly based on flow, COD, and SS. In addition, there is an Estuary Protection Fund charge that is equal to a percentage of each customer’s total wastewater bill.

**Table 1-4  
Existing (FY 2014) Bi-Monthly Wastewater Rates**

Customer Class	Bi-Monthly Fixed Charge	Bi-Monthly Flow Rate	Maximum Cap
SFR*	\$18.35	\$2.78	\$101.75
MFR*	\$13.58	\$2.78	\$80.30
Commercial**			
Group 1	\$18.35	\$3.26	
Group 2	\$18.35	\$3.72	
Group 3	\$18.35	\$4.80	
Group 4	\$18.35	\$5.84	
Group 5	\$18.35	\$5.33	
Group 6	\$18.35	\$1.13	
Churches	\$18.35	\$2.43	
Schools (100 ADA)		\$133.25	
Industrial (Monthly)			
Flow		\$3,835.63	
COD		\$159.08	
SS		\$294.92	
Estuary Protection Fund Charge			4% of bill

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

\*\* Based on actual water usage

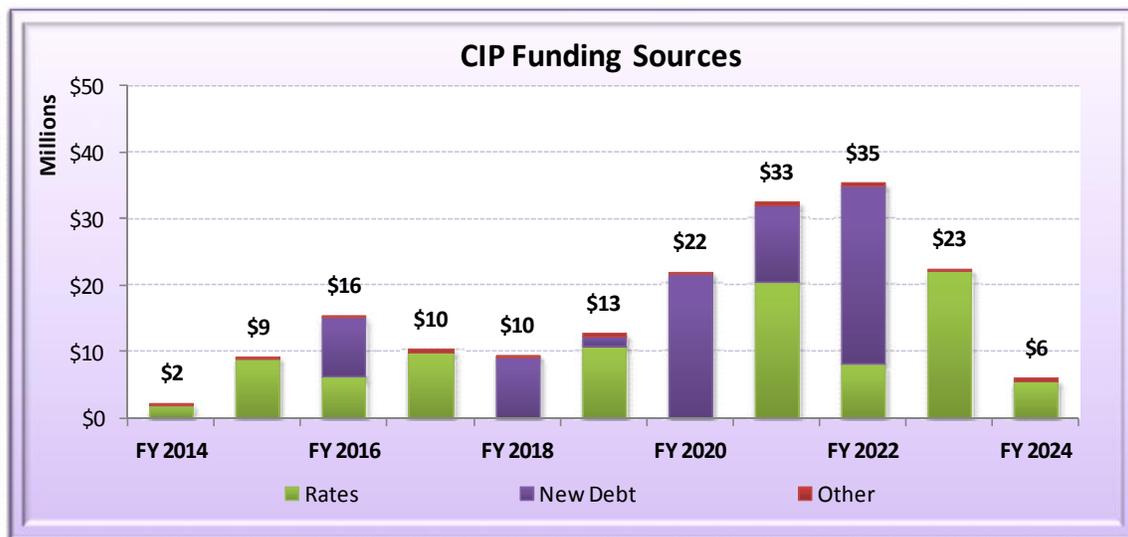
## Financing Plan

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 2014 to 2024. 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. O&M projections are based on the City’s FY 2014 adopted and FY 2015-2018 estimated budgets using an inflationary factor of three percent per year starting in FY 2015 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to increase at three percent in FY 2015 and two percent per year in all other years. Benefits and chemical expenses are projected to increase at five percent per year during the study period. Utilities (mostly power) expenses are projected to increase at 6.7 percent in FY 2015 and five percent per year thereafter.

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 – \$178.4 million over eleven years (FY 2014 to 2024) – the capital financing plan projects that approximately \$80 million will be funded through debt issues totaling \$89 million, which represents approximately 50 percent debt funding (\$89 million of \$178.4 million). Existing and anticipated debt service results in annual payments in the range of \$0.4 to \$7.6 million. **Figure 1-3** shows the CIP funding plan over the eleven-year period. Other funding sources include connection fees and/or any grants the City may receive.

Similar to growth used in the water projections, wastewater accounts are projected to grow at an average of approximately 0.5 percent per year. However, winter water usage, due to conservation efforts, is projected to decrease one percent per year from FY 2014 through FY 2020.

**Figure 1-3  
 Capital Financing Plan – Wastewater**



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.

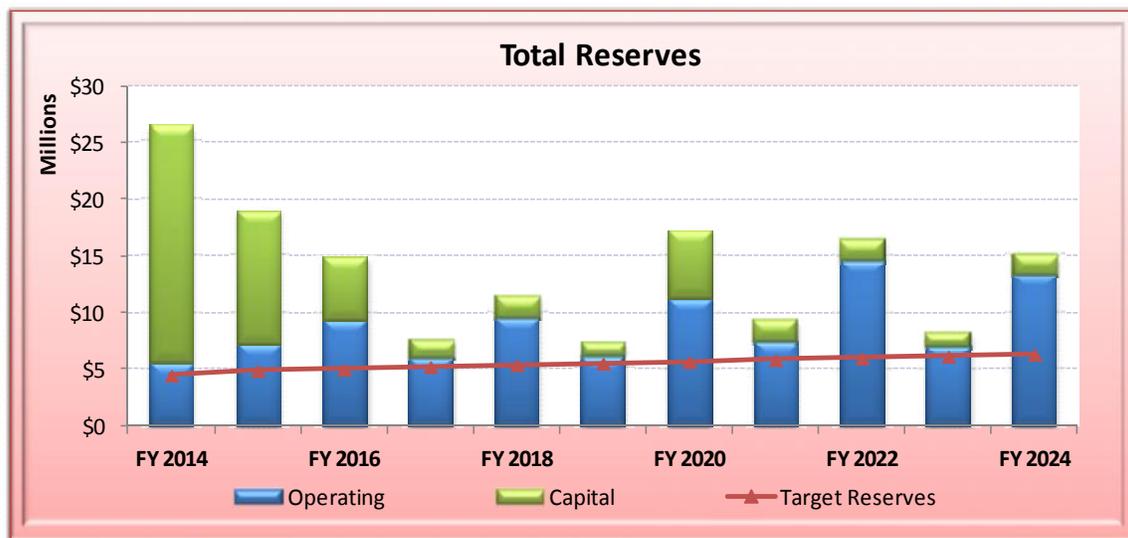
**Annual Revenue Increases – Wastewater**

<u>Effective Date</u>	<u>Increases</u>
July 1, 2014	\$1.7 million
July 1, 2015	\$1.8 million
July 1, 2016	\$1.9 million
July 1, 2017	\$2.1 million

The increases are needed to fund capital and inflationary expenses and increases in right-of-way fees.

**Figure 1-4** 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 1-4  
Reserves Balance – Wastewater**



**Cost of Service Analysis**

To calculate fair and equitable rates so that users pay in proportion to the cost of providing service, RFC allocated the total revenue requirements to wastewater flow, COD and SS 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, COD and SS) for each customer class through a mass balance analysis. Unit costs are calculated for flow, COD and SS and cost responsibility assigned to various customer classes in proportion to their loadings.

## Proposed Wastewater Rates

Since the wastewater rate structure was revised during the last rate study, RFC recommends that the current rate structure be retained. However, the individual customer class rates are determined based on cost of service analysis. More accurate wastewater flow readings into the plant resulted in lower flows from residential customers and proportionately higher costs to commercial customers based on their respective flow and strength loadings. In addition, to prepare for costs associated with the Santa Clara River Estuary settlement with Heal the Bay and Wishtoyo Foundation’s Ventura Coastkeeper Program, charges equal to six percent of the wastewater bill in FY 2015, eight percent of the wastewater bill in FY 2016, and ten percent in FY 2017 and FY 2018 are recommended. The plan will provide a revenue stream sufficient to fund the debt service payments on the diversion facilities (with a cap of \$155 million) in the future without causing rates spikes. Revenues collected from the Estuary Protection Fund charge will be used for Estuary protection-related planning studies and facilities.

**Table 1-5** shows the proposed wastewater rates for the next four 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.

**Table 1-5  
Proposed Bi-Monthly Wastewater Rates**

	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>SFR</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.96	\$21.71	\$23.61	\$25.68
Bi-monthly Flow Charge*	\$2.78	\$2.91	\$3.17	\$3.45	\$3.76
Maximum Bill (cap at 30 hcf)	\$101.75	\$107.26	\$116.81	\$127.11	\$138.48
Max Estuary Protection Fund Charge	\$4.07	\$6.44	\$9.34	\$12.71	\$13.85
<b>MFR</b>					
Bi-monthly Fixed Charge	\$13.58	\$14.77	\$16.07	\$17.48	\$19.01
Bi-monthly Flow Charge*	\$2.78	\$2.91	\$3.17	\$3.45	\$3.76
Maximum Bill (cap at 24 hcf)	\$80.30	\$84.61	\$92.15	\$100.28	\$109.25
Max Estuary Protection Fund Charge	\$3.21	\$5.08	\$7.37	\$10.03	\$10.93
Estuary Protection Fund Charge	4% of bill	6% of bill	8% of bill	10% of bill	10% of bill

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

**Table 1-5 (contd.)  
Proposed Bi-Monthly Wastewater Rates**

	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Commercial</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.96	\$21.71	\$23.61	\$25.68
Bi-monthly Flow Charge**					
Group 1	\$3.26	\$3.83	\$4.17	\$4.54	\$4.94
Group 2	\$3.72	\$4.36	\$4.75	\$5.17	\$5.63
Group 3	\$4.80	\$5.61	\$6.11	\$6.65	\$7.24
Group 4	\$5.84	\$6.94	\$7.55	\$8.22	\$8.94
Group 5	\$5.33	\$6.17	\$6.71	\$7.30	\$7.94
Group 6	\$1.13	\$1.34	\$1.46	\$1.59	\$1.73
Churches	\$2.43	\$2.86	\$3.12	\$3.40	\$3.70
Schools (100 ADA)	\$133.25	\$156.48	\$170.18	\$185.08	\$201.28
<b>Industrial (Monthly)</b>					
Flow (MG)	\$3,835.63	\$4,521.15	\$4,916.76	\$5,346.98	\$5,814.85
COD (klbs)	\$159.08	\$174.29	\$189.55	\$206.14	\$224.18
SS (klbs)	\$294.92	\$377.03	\$410.03	\$445.91	\$484.93
Estuary Protection Fund Charge	4% of bill	6% of bill	8% of bill	10% of bill	10% of bill

\*\* Based on actual water usage

### Customer Impacts – Wastewater

Tables 1-6 and 1-7 below show the total bill impacts to SFR and MFR customers at different levels of winter water usage. Due to rounding in the calculations, some values may not add to the penny.

**Table 1-6  
SFR Wastewater Bi-Monthly Rate Impacts**

SFR	Winter Use (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Very Low	5	\$33.54	\$36.58	\$40.56	\$44.95	\$48.93	\$3.04	\$3.98	\$4.38	\$3.98
Low	10	\$48.00	\$52.00	\$57.68	\$63.92	\$69.61	\$4.01	\$5.68	\$6.24	\$5.69
Average	15	\$62.45	\$67.43	\$74.80	\$82.90	\$90.29	\$4.97	\$7.37	\$8.10	\$7.39
High	25	\$91.36	\$98.27	\$109.04	\$120.85	\$131.65	\$6.91	\$10.76	\$11.81	\$10.80
Very High	30	\$105.82	\$113.70	\$126.15	\$139.82	\$152.33	\$7.88	\$12.46	\$13.67	\$12.51

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

**Table 1-7  
MFR Wastewater Bi-Monthly Rate Impacts**

MFR	Winter Use (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Very Low	3	\$22.80	\$24.91	\$27.63	\$30.61	\$33.32	\$2.11	\$2.72	\$2.99	\$2.71
Low	6	\$31.47	\$34.16	\$37.90	\$42.00	\$45.73	\$2.69	\$3.73	\$4.10	\$3.73
Average	10	\$43.04	\$46.50	\$51.59	\$57.18	\$62.27	\$3.47	\$5.09	\$5.59	\$5.09
High	15	\$57.49	\$61.93	\$68.71	\$76.15	\$82.95	\$4.43	\$6.78	\$7.44	\$6.80
Very High	24	\$83.51	\$89.69	\$99.52	\$110.31	\$120.18	\$6.17	\$9.84	\$10.79	\$9.87

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

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.

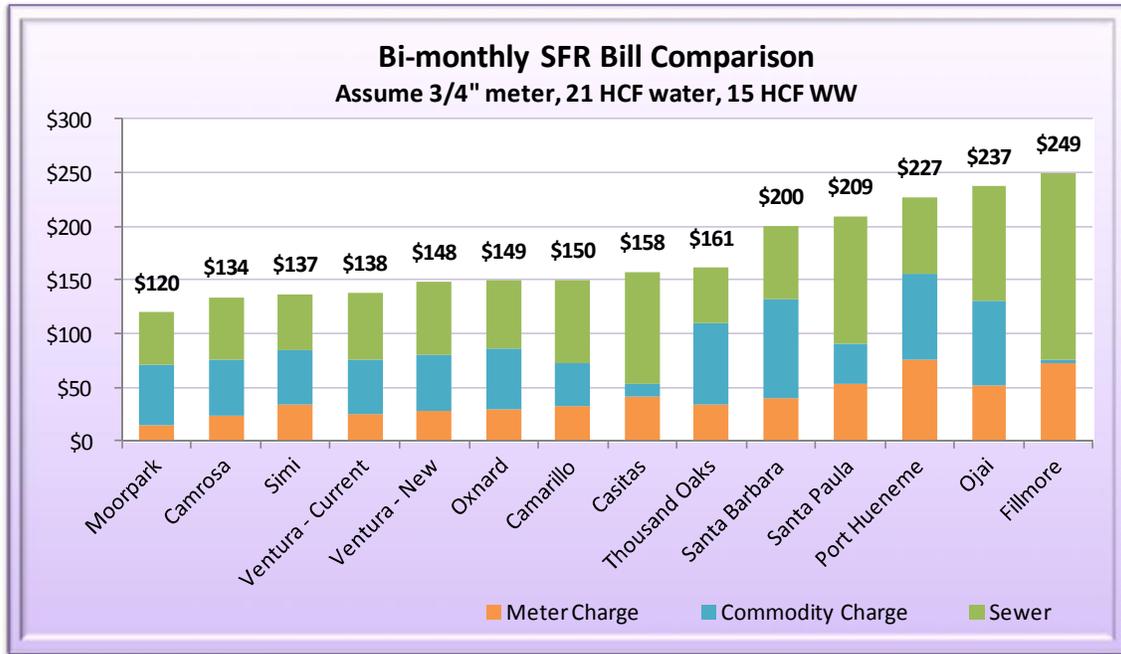
**Table 1-8  
Non-Residential Wastewater Bi-Monthly Rate Impacts**

Commercial	Bi-Monthly Usage	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Group 1	70	\$256.41	\$305.34	\$338.70	\$375.55	\$408.63	\$48.93	\$33.36	\$36.85	\$33.08
Group 2	331	\$1,299.66	\$1,550.91	\$1,721.48	\$1,908.37	\$2,078.13	\$251.25	\$170.57	\$186.89	\$169.76
Group 3	923	\$4,626.70	\$5,509.87	\$6,114.14	\$6,777.72	\$7,379.02	\$883.17	\$604.27	\$663.58	\$601.30
Group 4	147	\$911.90	\$1,102.55	\$1,222.08	\$1,355.15	\$1,473.85	\$190.65	\$119.54	\$133.06	\$118.70
Group 5	122	\$695.35	\$819.06	\$907.56	\$1,005.63	\$1,093.80	\$123.71	\$88.49	\$98.07	\$88.16
Group 6	200	\$254.12	\$305.24	\$338.81	\$375.77	\$408.85	\$51.11	\$33.57	\$36.96	\$33.08
Schools	704 ADA	\$938.08	\$1,167.72	\$1,293.91	\$1,433.26	\$1,558.71	\$229.64	\$126.20	\$139.35	\$125.45
Churches	242	\$606.41	\$754.80	\$838.89	\$931.05	\$1,013.19	\$148.39	\$84.09	\$92.16	\$82.14

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

**Figure 1-5** compares the total bi-monthly water and wastewater service charges for an average SFR customer with a 3/4" meter, 21 hcf of water usage, and 15 hcf of winter water usage bi-monthly with neighboring communities' rates as of November 2013.

Figure 1-5  
 Total Bill Comparison<sup>1</sup>



<sup>1</sup> Rates shown in survey were as of November 2013.

## SECTION 2 – INTRODUCTION

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### 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 28,700 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 48,000 residential (each multi-family dwelling unit is counted as an account for wastewater utility only – water utility accounts are per number of meters), commercial, and industrial accounts. Approximately 8.24 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.

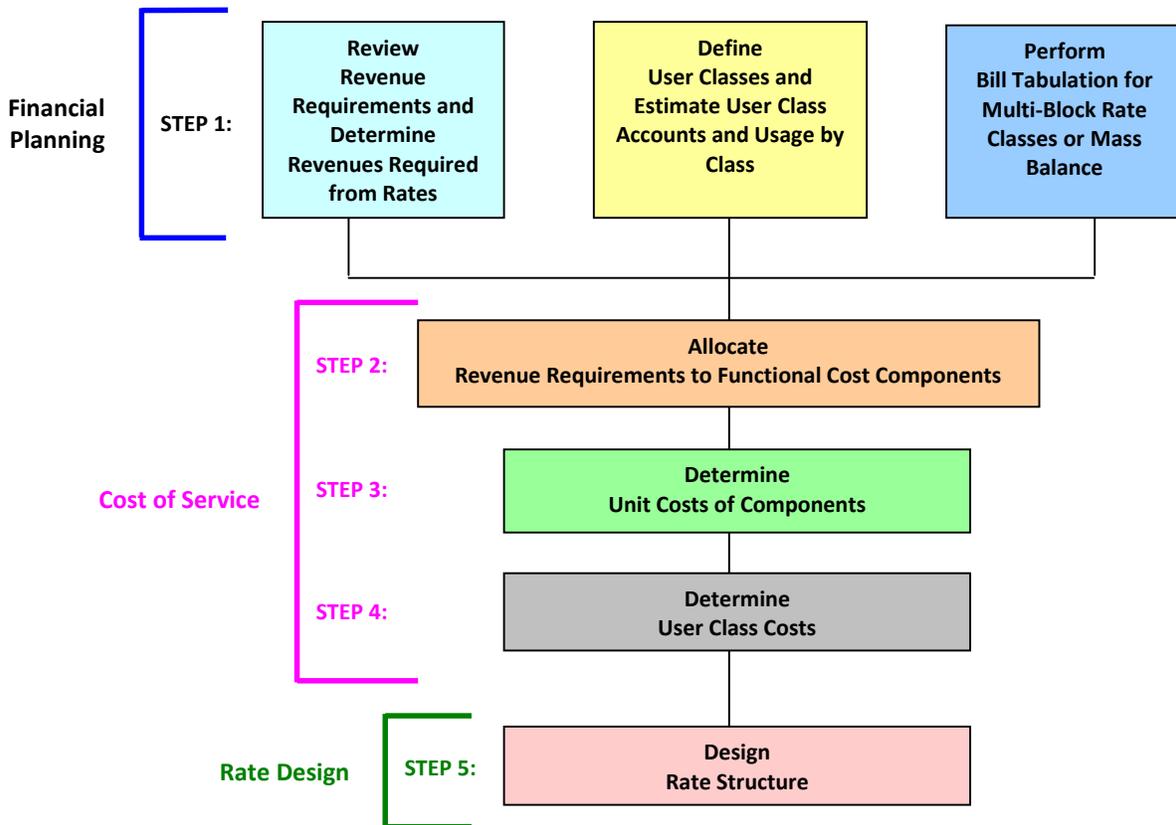
### Scope of the Study

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 for the different customer classes. The single family and multi-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 2015 through FY 2024. 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 schedule of rates for each of the different user classes to proportionately recover the costs associated with such user classes.

**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 2014 adopted and FY 2015-2018 estimated budgets.
2. Annual water and wastewater 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 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 proposed water rates.
- **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 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 proposed wastewater rates. The charges resulting from potential costs for Estuary protection are included.
- **Section 5** includes a comparison of water and wastewater charges of the City and neighboring and comparable agencies and a combined rate impacts for residential and non-residential customers.
- **Appendix A** includes the results of an alternative financing scenario with larger debt financing and associated water and wastewater rates.
- **Appendix B** presents the Right-of-Way fee calculations for the water and wastewater enterprises.
- **Appendix C** includes the reports from Ventura Appraisal Consulting Corporation which were the basis for developing the Right-of-Way fee calculations.

## SECTION 3 – WATER RATE STUDY

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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 28,700 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 \$155 per acre foot (AF) for untreated groundwater under the influence of surface water, to approximately \$454 per AF for treated Casitas water in FY 2013. The City’s FY 2013 treatment cost is approximately \$200 per AF. The cost of water supply 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. 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 an additional \$0.76 per hcf for each unit of water used. The bi-monthly service charge is shown in **Table 3-1** and the commodity rates are shown in **Table 3-2**.

**Table 3-1  
Existing (FY 2014) Bi-Monthly Water Service Charge – Based on Meter Size (Per Meter)**

<b>Bi-Monthly Service Charge</b>				
<b>Meter Size</b>	<b>Inside City</b>	<b>Outside City</b>	<b>Fire Line</b>	<b>Reclaimed</b>
3/4"	\$25.11	\$25.11	\$6.47	\$25.11
1"	\$38.35	\$38.35	\$6.47	\$38.35
1 1/2"	\$71.46	\$71.46	\$6.47	\$71.46
2"	\$111.20	\$111.20	\$6.47	\$111.20
3"	\$237.00	\$237.00	\$18.78	\$237.00
4"	\$422.41	\$422.41	\$40.00	\$422.41
6"	\$866.05	\$866.05	\$116.20	\$866.05
8"	\$1,594.43	\$1,594.43	\$247.61	\$1,594.43
10"	\$2,521.46	\$2,521.46	\$445.29	\$2,521.46
12"	\$3,316.05	\$3,316.05	\$719.26	\$3,316.05

**Table 3-2  
Existing (FY 2014) Bi-Monthly Commodity Rates (Per 100 Cubic Feet)**

<b>Volume Rates (\$/hcf)</b>		<b>Inside City</b>	<b>Outside City</b>
<b>SFR</b>			
Tier 1	1 to 14	\$2.15	\$2.91
Tier 2	15 to 30	\$2.92	\$3.68
Tier 3	> 30	\$4.79	\$5.55
<b>MFR</b>			
Tier 1	1 to 10	\$2.15	\$2.91
Tier 2	11 to 16	\$2.92	\$3.68
Tier 3	> 16	\$4.79	\$5.55
Non-Residential		\$2.70	\$3.46
Institutional/Interruptible Rate		\$2.15	
Reclaimed Water		\$0.68	
Untreated Water		\$2.04	\$2.80

## Water Accounts and Usage Characteristics

Customer accounts and usage information for FY 2013 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 0.5 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. Due to mandatory conservation requirements, water usage is

projected to decrease two percent per year in FY 2014 through 2016 and one 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 0.5 percent per year over the planning period.

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

Line #	Total Meters Summary	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Inside City						
2	3/4"	23,801	23,932	24,052	24,172	24,293	24,414
3	1"	2,140	2,152	2,162	2,172	2,182	2,192
4	1 1/2"	827	831	835	839	843	847
5	2"	660	663	666	669	672	675
6	3"	99	99	99	99	99	99
7	4"	60	60	60	60	60	60
8	6"	70	70	70	70	70	70
9	8"	7	7	7	7	7	7
10	10"	0	0	0	0	0	0
11	12"	0	0	0	0	0	0
12	<b>Subtotal Inside City</b>	<b>27,664</b>	<b>27,814</b>	<b>27,951</b>	<b>28,088</b>	<b>28,226</b>	<b>28,364</b>
13							
14	Outside City						
15	3/4"	881	873	873	873	873	873
16	1"	98	97	97	97	97	97
17	1 1/2"	10	10	10	10	10	10
18	2"	15	15	15	15	15	15
19	3"	5	5	5	5	5	5
20	4"	5	5	5	5	5	5
21	6"	0	0	0	0	0	0
22	8"	0	0	0	0	0	0
23	10"	1	1	1	1	1	1
24	12"	0	0	0	0	0	0
25	<b>Subtotal Outside City</b>	<b>1,015</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>
26							
27	<b>TOTAL METERS (EXCLUDE FIRELINE)</b>	<b>28,679</b>	<b>28,820</b>	<b>28,957</b>	<b>29,094</b>	<b>29,232</b>	<b>29,370</b>
28	<b>FIRELINE (EXCLUDE HYDRANTS)</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>

**Table 3-3 (contd.)  
 Customer Accounts/Meters – Current & Projected**

Line #	Total Meters Summary	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	Inside City						
2	3/4"	24,536	24,658	24,781	24,905	25,029	25,154
3	1"	2,202	2,212	2,222	2,232	2,243	2,254
4	1 1/2"	851	855	859	863	867	871
5	2"	678	681	684	687	690	693
6	3"	99	99	99	99	99	99
7	4"	60	60	60	60	60	60
8	6"	70	70	70	70	70	70
9	8"	7	7	7	7	7	7
10	10"	0	0	0	0	0	0
11	12"	0	0	0	0	0	0
12	<b>Subtotal Inside City</b>	<b>28,503</b>	<b>28,642</b>	<b>28,782</b>	<b>28,923</b>	<b>29,065</b>	<b>29,208</b>
13							
14	Outside City						
15	3/4"	873	873	873	873	873	873
16	1"	97	97	97	97	97	97
17	1 1/2"	10	10	10	10	10	10
18	2"	15	15	15	15	15	15
19	3"	5	5	5	5	5	5
20	4"	5	5	5	5	5	5
21	6"	0	0	0	0	0	0
22	8"	0	0	0	0	0	0
23	10"	1	1	1	1	1	1
24	12"	0	0	0	0	0	0
25	<b>Subtotal Outside City</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>	<b>1,006</b>
26							
27	<b>TOTAL METERS (EXCLUDE FIRELINE)</b>	<b>29,509</b>	<b>29,648</b>	<b>29,788</b>	<b>29,929</b>	<b>30,071</b>	<b>30,214</b>
28	<b>FIRELINE (EXCLUDE HYDRANTS)</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>	<b>3,107</b>

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 3-4  
 Equivalent Meters Ratio and Equivalent Meters (FY 2015)**

Meter Size	Meter Capacity (gpm)	AWWA Ratio	Number of Meters	Equivalent Meters
3/4"	30	1.00	24,925	24,925
1"	50	1.67	2,259	3,765
1 1/2"	100	3.33	845	2,817
2"	160	5.33	681	3,632
3"	350	11.67	104	1,213
4"	630	21.00	65	1,365
6"	1,300	43.33	70	3,033
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 2013 through 2024. Due to conservation requirements, the total water usage is projected to decrease approximately 3 percent over the planning period from FY 2014 to 2024.

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

Line #		FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	<b>Inside City</b>						
2	SFR	2,971,692	2,928,276	2,884,059	2,840,509	2,826,165	2,811,893
3	MFR	1,606,689	1,583,215	1,559,309	1,535,763	1,528,008	1,520,291
4	Non-Residential	1,653,372	1,628,406	1,603,817	1,579,600	1,571,623	1,563,686
5	Institutional/Interruptible	192,765	188,910	185,132	181,429	179,615	177,818
6	Reclaimed Water	225,859	225,859	248,445	273,290	300,619	330,681
7							
8	<b>Outside City</b>						
9	SFR	111,885	108,551	106,380	104,252	103,210	102,178
10	MFR	38,541	37,392	36,645	35,912	35,553	35,197
11	Non-Residential	123,162	120,699	118,285	115,919	114,760	113,612
12	Untreated Water	25,638	25,125	24,623	24,130	23,889	23,650
13							
14	<b>TOTAL WATER USAGE</b>	<b>6,949,603</b>	<b>6,846,433</b>	<b>6,766,693</b>	<b>6,690,804</b>	<b>6,683,439</b>	<b>6,679,006</b>

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

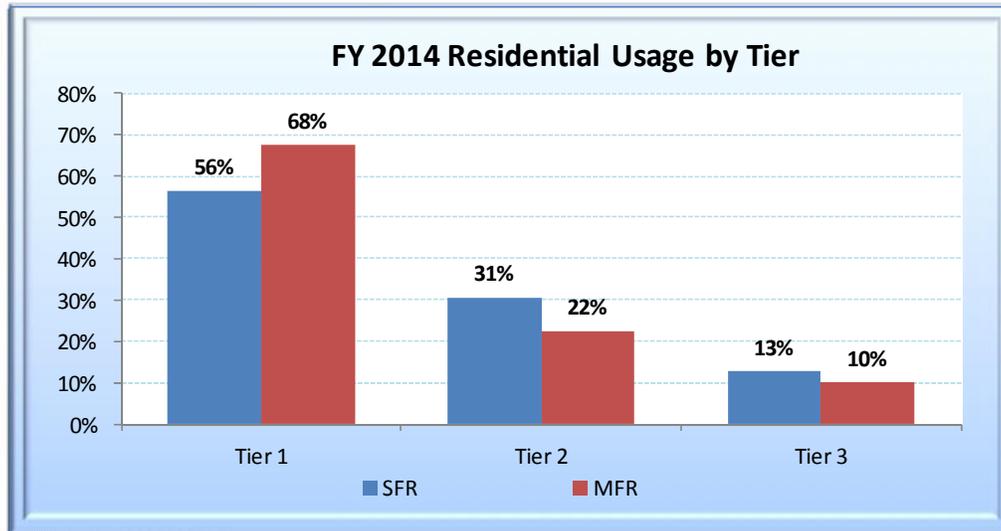
Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	<b>Inside City</b>						
2	SFR	2,797,693	2,783,564	2,797,482	2,811,469	2,825,527	2,839,654
3	MFR	1,512,614	1,504,975	1,512,500	1,520,062	1,527,663	1,535,301
4	Non-Residential	1,555,789	1,547,932	1,555,672	1,563,451	1,571,268	1,579,124
5	Institutional/Interruptible	176,040	174,280	174,280	174,280	174,280	174,280
6	Reclaimed Water	363,749	400,124	440,136	484,150	532,565	585,822
7							
8	<b>Outside City</b>						
9	SFR	101,156	100,144	100,144	100,144	100,144	100,144
10	MFR	34,845	34,497	34,497	34,497	34,497	34,497
11	Non-Residential	112,476	111,351	111,351	111,351	111,351	111,351
12	Untreated Water	23,414	23,179	23,179	23,179	23,179	23,179
13							
14	<b>TOTAL WATER USAGE</b>	<b>6,677,775</b>	<b>6,680,047</b>	<b>6,749,241</b>	<b>6,822,584</b>	<b>6,900,474</b>	<b>6,983,353</b>

\* hcf – hundred cubic feet

**Usage Characteristics**

**Figure 3-1** shows the projected usage by tier for SFR and MFR in FY 2014 under the existing rate structure. Usage records in FY 2013 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.

**Figure 3-1  
 FY 2014 Projected Water Usage by Current Tiers**



## WATER USER CLASSIFICATION

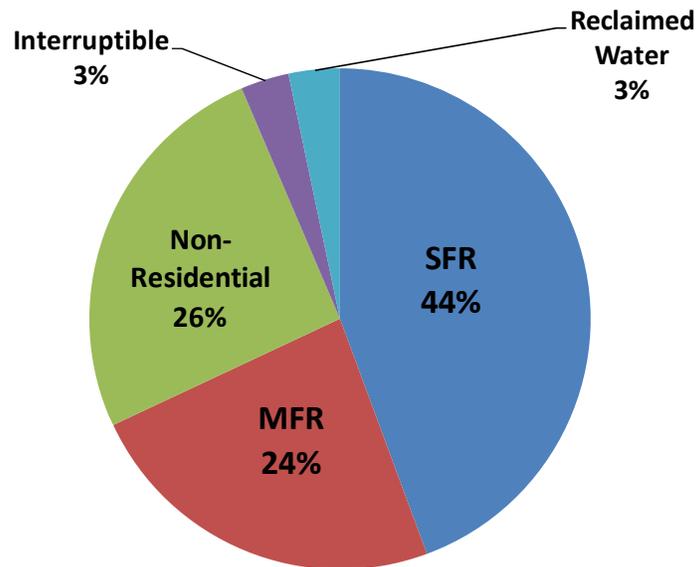
One of the major tasks in the cost of service and rate design process is the classification of users within the water system and the determination of annual demand and costs associated with each class. A review of the City’s existing user classifications is presented in the following subsection.

### 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 68 percent of the total usage and non-residential customers account for 26 percent, with institutional/interruptible users and reclaimed water making up the remainder. Outside-City customers account for approximately four percent of the total water usage in the system.

**Figure 3-2**  
 FY 2014 Projected Water 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 increase slightly from \$22.6 million in FY 2013 to \$23.9 million by FY 2024 due to projected growth and reductions 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 non-operating revenues.

**Table 3-6  
Revenue Summary at Existing Rates<sup>2</sup>**

Line #		FY 2013 Est. Actual	FY 2014 Budgeted	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected
1	<b>Inside City</b>						
2	Bi-Monthly Service Charge	\$5,647,410	\$6,154,361	\$6,178,457	\$6,202,554	\$6,226,802	\$6,251,049
3	Usage Revenues	\$15,730,590	\$16,838,235	\$16,581,988	\$16,329,649	\$16,245,254	\$16,161,303
4							
5	<b>Outside City</b>						
6	Bi-Monthly Service Charge	\$212,229	\$228,857	\$228,857	\$228,857	\$228,857	\$228,857
7	Usage Revenues	\$984,421	\$1,030,602	\$1,009,990	\$989,790	\$979,892	\$970,093
8							
9	Interest - Investment Earnings	\$242,646	\$70,000	\$459,374	\$435,262	\$359,832	\$366,988
10	Water - Connection Fees	\$75,935	\$100,000	\$100,475	\$100,951	\$101,430	\$101,908
11	Other Miscellaneous Revenue	\$5,952,253	\$2,356,605	\$2,866,745	\$2,901,364	\$2,969,012	\$3,174,563
12							
13	<b>TOTAL WATER REVENUE</b>	<b>\$28,845,484</b>	<b>\$26,778,659</b>	<b>\$27,425,885</b>	<b>\$27,188,427</b>	<b>\$27,111,077</b>	<b>\$27,254,762</b>

<sup>2</sup> FY 2013 revenues include \$3.3 million in one-time miscellaneous revenues (line 11). Revenues from usage (line 3) decrease in FY 2015 and beyond due to projected decrease in water demand.

**Table 3-6 (contd.)  
 Revenue Summary at Existing Rates**

Line #		FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected
1	<b><u>Inside City</u></b>						
2	Bi-Monthly Service Charge	\$6,275,447	\$6,299,846	\$6,324,394	\$6,349,094	\$6,374,023	\$6,399,104
3	Usage Revenues	\$16,077,796	\$15,994,730	\$16,072,830	\$16,151,321	\$16,230,204	\$16,309,481
4							
5	<b><u>Outside City</u></b>						
6	Bi-Monthly Service Charge	\$228,857	\$228,857	\$228,857	\$228,857	\$228,857	\$228,857
7	Usage Revenues	\$960,392	\$950,788	\$950,788	\$950,788	\$950,788	\$950,788
8							
9	Interest - Investment Earnings	\$354,829	\$494,069	\$535,655	\$778,212	\$771,037	\$1,051,430
10	Water - Connection Fees	\$102,391	\$102,873	\$103,359	\$103,848	\$104,341	\$104,837
11	Other Miscellaneous Revenue	\$3,253,097	\$3,334,141	\$3,417,780	\$3,504,108	\$3,593,218	\$3,685,211
12							
13	<b>TOTAL WATER REVENUE</b>	<b>\$27,252,810</b>	<b>\$27,405,303</b>	<b>\$27,633,663</b>	<b>\$28,066,227</b>	<b>\$28,252,468</b>	<b>\$28,729,708</b>

The City currently derives 25 percent of its rate revenues from fixed service charges and the remainder from the variable commodity rates. RFC proposes that the City retain the percentage of revenue collected from fixed charges.

## 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 2014 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 2015 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to increase at three percent in FY 2015 and two percent per year in all other years. Benefits and chemical expenses are projected to increase at five percent per year during the study period. Utilities expenses are projected to increase at 6.7 percent in FY 2015 and five percent per year thereafter. Water supply costs, including rental charges paid to Casitas for water used outside of Casitas boundaries, are projected to increase an average of approximately 3.6 percent per year during the study period. The remaining water supply costs are more volatile and cannot be reasonably projected, therefore the projections assume that the water

extraction/purchase rates remain at current levels and any increases in these costs from United and Casitas will be passed through directly to customers at a later date, if necessary.

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<sup>3</sup>**

Line #		FY 2013 Budgeted	FY 2014 Budgeted	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected
1	Ventura Water Utility Administration	\$585,909	\$625,406	\$633,685	\$651,974	\$670,590	\$689,541
2	Water Administration	\$2,612,378	\$2,765,868	\$3,147,723	\$2,947,321	\$2,968,665	\$3,032,004
3	Ventura Water SCADA	\$0	\$0	\$885,671	\$866,917	\$850,590	\$867,908
4	Water Distribution	\$3,174,393	\$3,229,408	\$3,555,723	\$3,607,193	\$3,626,003	\$3,606,485
5	Water Production	\$4,111,188	\$4,536,381	\$4,930,962	\$5,084,366	\$5,266,273	\$5,532,129
6	Water Purification	\$5,063,248	\$4,453,723	\$5,182,852	\$5,336,299	\$5,578,469	\$5,797,778
7	Customer Care - Billing	\$1,616,489	\$1,330,662	\$1,310,224	\$1,343,620	\$1,388,364	\$1,608,508
8	Water Efficiency	\$700,200	\$738,820	\$905,574	\$930,293	\$955,499	\$1,156,207
9	Resource Planning	\$1,522,410	\$1,488,966	\$1,483,120	\$1,506,062	\$1,584,333	\$1,613,162
10	Revenue Management	\$34,463	\$385,094	\$396,647	\$408,546	\$420,803	\$433,427
11	State Water Project Payment	\$1,413,324	\$1,510,000	\$1,555,300	\$1,601,959	\$1,650,018	\$1,699,518
12	<b>TOTAL WATER O&amp;M EXPENSES</b>	<b>\$20,834,002</b>	<b>\$21,064,328</b>	<b>\$23,987,481</b>	<b>\$24,284,550</b>	<b>\$24,959,606</b>	<b>\$26,036,667</b>

Line #		FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected
1	Ventura Water Utility Administration	\$709,308	\$729,722	\$750,807	\$772,587	\$795,090	\$818,342
2	Water Administration	\$3,116,377	\$3,203,189	\$3,292,513	\$3,384,426	\$3,479,004	\$3,576,330
3	Ventura Water SCADA	\$893,034	\$918,965	\$945,729	\$973,355	\$1,001,875	\$1,031,321
4	Water Distribution	\$3,713,042	\$3,823,064	\$3,936,677	\$4,054,010	\$4,175,197	\$4,300,379
5	Water Production	\$5,702,078	\$5,880,000	\$6,079,167	\$6,287,058	\$6,504,082	\$6,730,666
6	Water Purification	\$6,002,005	\$6,209,104	\$6,441,907	\$6,679,306	\$6,921,475	\$7,168,591
7	Customer Care - Billing	\$1,656,213	\$1,705,449	\$1,756,270	\$1,808,731	\$1,862,890	\$1,918,807
8	Water Efficiency	\$1,189,903	\$1,224,693	\$1,260,615	\$1,297,711	\$1,336,022	\$1,375,595
9	Resource Planning	\$1,660,156	\$1,708,613	\$1,758,579	\$1,810,108	\$1,863,249	\$1,918,060
10	Revenue Management	\$446,429	\$459,822	\$473,617	\$487,826	\$502,460	\$517,534
11	State Water Project Payment	\$1,750,504	\$1,803,019	\$1,857,110	\$1,912,823	\$1,970,208	\$2,029,314
12	<b>TOTAL WATER O&amp;M EXPENSES</b>	<b>\$26,839,050</b>	<b>\$27,665,640</b>	<b>\$28,552,990</b>	<b>\$29,467,940</b>	<b>\$30,411,554</b>	<b>\$31,384,939</b>

### Water Capital Improvement Program

The City has developed a comprehensive water CIP to address current water system needs. As **Table 3-8** indicates, the total estimated water CIP from FY 2014 to FY 2024 is \$167.8 million. These projected costs include a 2.3 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 to

<sup>3</sup> Right of way fees are included in Water Administration, United extraction charges are included in Water Production and Casitas purchases are included in Water Purification.

Ventura Water  
**Cost of Service and Rate Design Study Report**

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 3-8  
 Water Capital Improvement Program at 75% of Budget - inflated**

Line #	Proj No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	97936	Waterline Replacement- Navigator Drive	\$510,000	\$371,250	\$0	\$0	\$0
2	97941	Waterline Replacement - Pierpont Lanes - Was 73054	\$90,000	\$472,500	\$495,000	\$0	\$0
3	97935	Waterline Replacement - Darling Road - Was 73054	\$67,500	\$468,750	\$0	\$0	\$0
4	97937	Waterline Replacement - Ondulando Tract Phase 1	\$217,500	\$1,830,000	\$0	\$0	\$0
5	97939	Waterline Replacement - Ondulando Tract Phase 2	\$52,500	\$135,000	\$1,860,000	\$0	\$0
6	97940	Waterline Replacement - Ondulando Tract Phase 3	\$75,000	\$180,000	\$1,762,500	\$0	\$0
7	97938	Meters-Automatic Meter Reading Installation	\$75,000	\$3,517,313	\$2,036,813	\$0	\$0
8	73046	Waterline Replacement Program - FY 18-19	\$0	\$0	\$0	\$0	\$0
9	97915	Waterline Replacement - Montalvo Area	\$1,875,000	\$1,387,500	\$0	\$0	\$0
10	97916	Storage Tank - Circulation Improvements	\$393,750	\$93,750	\$82,500	\$0	\$0
11	73071	Waterline Replacement Program - FY 19-20	\$0	\$0	\$0	\$0	\$0
12	97921	Well - Foster Park Wellfield Production Restoration	\$6,935	\$394,315	\$213,750	\$210,000	\$450,000
13	97924	Well - Golf Course Well 7	\$551,250	\$3,753,750	\$0	\$0	\$0
14	97931	Storage Tank - Retrofit Hall Canyon and Mariano Tanks	\$105,000	\$37,500	\$1,560,000	\$0	\$0
15	97932	Pump Stations - Fixed Emergency Power	\$206,250	\$1,410,000	\$0	\$0	\$0
16	97933	Well - Foothill Well	\$90,000	\$375,000	\$1,575,000	\$1,500,000	\$0
17	97934	Treatment-Preliminary Design Water Quality Improvement	\$0	\$562,500	\$562,500	\$0	\$0
18	73013	Treatment - Bailey Plant Control and Equipment Upgrade	\$0	\$0	\$0	\$570,000	\$855,000
19	73044	Treatment-Avenue Plant Membrane Module Replacement	\$0	\$75,000	\$375,000	\$450,000	\$450,000
20	73047	Water-Energy Efficiency Projects	\$2,137,500	\$1,612,500	\$0	\$0	\$0
21	73048	Well - Saticoy Well #4	\$0	\$0	\$0	\$0	\$0
22	97887	Pump Station - Booster Motor Control Upgrades	\$0	\$0	\$0	\$300,000	\$1,200,000
23	97923	Well - Mound Well #2	\$0	\$0	\$675,000	\$2,062,500	\$2,437,500
24	73009	Treatment - Avenue Plant-Phase 2	\$0	\$0	\$0	\$0	\$0
25	73032	Recycled Water - Reuse of OVSD Effluent	\$0	\$0	\$0	\$0	\$0
26	73033	Waterline - Ventura/Oxnard Emergency Water Intertie	\$0	\$0	\$0	\$1,350,000	\$2,700,000
27	73072	Waterline Replacement Program - Future	\$0	\$0	\$0	\$0	\$0
28	73052	Treatment-Brine Disposal	\$0	\$0	\$0	\$0	\$0
29	73058	Treatment-Water Quality Improvement-Phase 2	\$0	\$0	\$0	\$0	\$0
30	73061	Treatment - Saticoy Conditioning Facility Upgrades	\$0	\$0	\$0	\$0	\$0
31	97879	Storage Tank - Arroyo Verde (605 Zone) New Tank	\$0	\$0	\$0	\$0	\$0
32	97895	Waterline - Telephone (210/330) Extension	\$0	\$0	\$0	\$0	\$0
33	97896	Well - Golf Course BPS & Wells Upgrade	\$0	\$0	\$0	\$300,000	\$1,200,000
34	97929	Reservoir - Kingston Raw Water Reservoir Cover/Roof	\$71,091	\$0	\$0	\$0	\$0
35	73063	Waterline Replacement - Ondulando Phase IV	\$0	\$105,000	\$97,500	\$1,732,500	\$0
36	73066	Storage Tanks-Interior Coating	\$0	\$56,250	\$408,750	\$0	\$0
37	73068	Restoration - Repair and Restoration of Intake Structure	\$0	\$161,250	\$243,750	\$0	\$0
38	73069	Treatment - Land Acquisition-Saticoy Cond. Facility-Well#4	\$0	\$0	\$22,500	\$22,500	\$22,500
39	73065	Waterline Replacement-Harbor/Peninsula to Beachmont	\$0	\$0	\$0	\$150,000	\$600,000
40	73067	Water-Energy Efficiency Projects (Future)	\$0	\$0	\$0	\$0	\$0
41	73064	Waterline Replacement - Golf Course PS to Bailey Reser	\$0	\$0	\$0	\$0	\$0
42	91019	Olivas Park Drive Extension-Waterline	\$0	\$105,000	\$937,500	\$0	\$0
43							
44	<b>TOTAL CIP</b>		<b>\$6,524,276</b>	<b>\$17,104,127</b>	<b>\$12,908,063</b>	<b>\$8,647,500</b>	<b>\$9,915,000</b>

**Table 3-8 (contd.)  
 Water Capital Improvement Program at 75% of Budget - inflated**

Line #	Proj No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	97936	Waterline Replacement- Navigator Drive	\$0	\$0	\$0	\$0	\$0	\$0
2	97941	Waterline Replacement - Pierpont Lanes - Was 73054	\$0	\$0	\$0	\$0	\$0	\$0
3	97935	Waterline Replacement - Darling Road - Was 73054	\$0	\$0	\$0	\$0	\$0	\$0
4	97937	Waterline Replacement - Ondulando Tract Phase 1	\$0	\$0	\$0	\$0	\$0	\$0
5	97939	Waterline Replacement - Ondulando Tract Phase 2	\$0	\$0	\$0	\$0	\$0	\$0
6	97940	Waterline Replacement - Ondulando Tract Phase 3	\$0	\$0	\$0	\$0	\$0	\$0
7	97938	Meters-Automatic Meter Reading Installation	\$0	\$0	\$0	\$0	\$0	\$0
8	73046	Waterline Replacement Program - FY 18-19	\$5,250,000	\$0	\$0	\$0	\$0	\$0
9	97915	Waterline Replacement - Montalvo Area	\$0	\$0	\$0	\$0	\$0	\$0
10	97916	Storage Tank - Circulation Improvements	\$0	\$0	\$0	\$0	\$0	\$0
11	73071	Waterline Replacement Program - FY 19-20	\$0	\$5,250,000	\$0	\$0	\$0	\$0
12	97921	Well - Foster Park Wellfield Production Restoration	\$375,000	\$300,000	\$1,800,000	\$2,250,000	\$3,750,000	\$3,750,000
13	97924	Well - Golf Course Well 7	\$0	\$0	\$0	\$0	\$0	\$0
14	97931	Storage Tank - Retrofit Hall Canyon and Mariano Tanks	\$0	\$0	\$0	\$0	\$0	\$0
15	97932	Pump Stations - Fixed Emergency Power	\$0	\$0	\$0	\$0	\$0	\$0
16	97933	Well - Foothill Well	\$0	\$0	\$0	\$0	\$0	\$0
17	97934	Treatment-Preliminary Design Water Quality Improvement	\$0	\$0	\$0	\$0	\$0	\$0
18	73013	Treatment - Bailey Plant Control and Equipment Upgrade	\$0	\$0	\$0	\$0	\$0	\$0
19	73044	Treatment-Avenue Plant Membrane Module Replacement	\$0	\$0	\$0	\$0	\$0	\$0
20	73047	Water-Energy Efficiency Projects	\$0	\$0	\$0	\$0	\$0	\$0
21	73048	Well - Saticoy Well #4	\$0	\$0	\$202,500	\$1,068,750	\$1,068,750	\$1,710,000
22	97887	Pump Station - Booster Motor Control Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
23	97923	Well - Mound Well #2	\$0	\$0	\$0	\$0	\$0	\$0
24	73009	Treatment - Avenue Plant-Phase 2	\$0	\$0	\$0	\$0	\$0	\$0
25	73032	Recycled Water - Reuse of OVSD Effluent	\$0	\$0	\$0	\$0	\$0	\$0
26	73033	Waterline - Ventura/Oxnard Emergency Water Intertie	\$2,700,000	\$0	\$0	\$0	\$0	\$0
27	73072	Waterline Replacement Program - Future	\$0	\$0	\$5,250,000	\$5,250,000	\$5,250,000	\$5,250,000
28	73052	Treatment-Brine Disposal	\$0	\$0	\$0	\$2,964,300	\$4,602,075	\$7,938,600
29	73058	Treatment-Water Quality Improvement-Phase 2	\$0	\$0	\$2,469,000	\$3,833,175	\$6,612,150	\$6,843,600
30	73061	Treatment - Saticoy Conditioning Facility Upgrades	\$0	\$0	\$2,750,000	\$2,750,000	\$2,750,000	\$0
31	97879	Storage Tank - Arroyo Verde (605 Zone) New Tank	\$0	\$0	\$3,000,000	\$0	\$0	\$0
32	97895	Waterline - Telephone (210/330) Extension	\$0	\$0	\$0	\$0	\$0	\$3,600,000
33	97896	Well - Golf Course BPS & Wells Upgrade	\$0	\$0	\$0	\$0	\$0	\$0
34	97929	Reservoir - Kingston Raw Water Reservoir Cover/Roof	\$0	\$0	\$3,750,000	\$0	\$0	\$0
35	73063	Waterline Replacement - Ondulando Phase IV	\$0	\$0	\$0	\$0	\$0	\$0
36	73066	Storage Tanks-Interior Coating	\$0	\$0	\$0	\$0	\$0	\$0
37	73068	Restoration - Repair and Restoration of Intake Structure	\$0	\$0	\$0	\$0	\$0	\$0
38	73069	Treatment - Land Acquisition-Saticoy Cond. Facility-Well#4	\$307,500	\$0	\$0	\$0	\$0	\$0
39	73065	Waterline Replacement-Harbor/Peninsula to Beachmont	\$0	\$0	\$0	\$0	\$0	\$0
40	73067	Water-Energy Efficiency Projects (Future)	\$0	\$0	\$150,000	\$150,000	\$150,000	\$150,000
41	73064	Waterline Replacement - Golf Course PS to Bailey Reser	\$0	\$0	\$150,000	\$1,350,000	\$2,250,000	\$3,750,000
42	91019	Olivas Park Drive Extension-Waterline	\$0	\$0	\$0	\$0	\$0	\$0
43								
44		<b>TOTAL CIP</b>	<b>\$8,632,500</b>	<b>\$5,550,000</b>	<b>\$19,521,500</b>	<b>\$19,616,225</b>	<b>\$26,432,975</b>	<b>\$32,992,200</b>

**Major Capital Improvement Financing Plan**

The model is set up for typical CIP funding sources include the following:

**System Revenues**

- Connection Fees
- Pay-as-you-go revenues
- Interest earnings

**Capital Financing**

- Bond proceeds
- Grant receipts and Contributions

**Table 3-9** presents the proposed capital financing plan to finance major CIP projects over the planning period from FY 2014 to FY 2024. It is projected that the City will issue debt of \$5 million in FY 2016, \$10 million in FY 2018 and FY 2020, \$30 million in FY 2022, and \$29 million in FY 2024 to adequately fund the capital improvement program since revenues from rates are insufficient to cover the costs. The total proposed debt issues of \$84 million represent approximately 50 percent of the total CIP costs. Other revenue shown below includes estimated connection fees revenues and grants. The City expects that

there may be grant funding available to offset some of the CIP costs, however, since there is no firm commitment as yet, there are no grant funds included at this time.

**Table 3-9  
 Water Capital Financing Plan**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Debt Financing	\$0	\$0	\$4,495,652	\$0	\$8,991,304
2	Rate Revenue	\$6,424,276	\$17,003,652	\$8,311,460	\$8,546,070	\$821,787
3	Other Revenue	\$100,000	\$100,475	\$100,951	\$101,430	\$101,908
4	<b>TOTAL CIP</b>	<b>\$6,524,276</b>	<b>\$17,104,127</b>	<b>\$12,908,063</b>	<b>\$8,647,500</b>	<b>\$9,915,000</b>

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	Debt Financing	\$0	\$5,447,127	\$3,544,177	\$19,512,377	\$7,461,536	\$26,074,783
2	Rate Revenue	\$8,530,109	\$0	\$15,873,964	\$0	\$18,867,098	\$6,812,580
3	Other Revenue	\$102,391	\$102,873	\$103,359	\$103,848	\$104,341	\$104,837
4	<b>TOTAL CIP</b>	<b>\$8,632,500</b>	<b>\$5,550,000</b>	<b>\$19,521,500</b>	<b>\$19,616,225</b>	<b>\$26,432,975</b>	<b>\$32,992,200</b>

### 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 2012 Series A and Series B Revenue Bonds and its Safe Drinking Water loan. Existing and proposed debt service consists of annual payments in the range of \$4 to \$9.9 million. **Table 3-10** shows the existing and proposed debt service of the water utility.

**Table 3-10  
 Existing and Proposed Water Debt Service**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	2012 Series A	\$1,098,800	\$1,095,888	\$1,100,681	\$1,101,689	\$1,100,669
2	2012 Series B	\$1,614,806	\$1,614,806	\$1,614,806	\$1,614,806	\$1,614,806
3	Safe Drinking Water Loan	\$1,263,820	\$1,263,820	\$1,263,820	\$1,263,820	\$1,263,820
4	<b>Total Existing Debt Service</b>	<b>\$3,977,426</b>	<b>\$3,974,514</b>	<b>\$3,979,307</b>	<b>\$3,980,315</b>	<b>\$3,979,295</b>

5						
6	<b>Total Proposed Debt Service</b>	<b>\$0</b>	<b>\$0</b>	<b>\$177,174</b>	<b>\$354,348</b>	<b>\$708,696</b>

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	2012 Series A	\$1,101,468	\$1,094,148	\$1,093,538	\$1,095,311	\$1,104,711	\$975,807
2	2012 Series B	\$1,614,806	\$1,614,806	\$1,614,806	\$1,614,806	\$1,614,806	\$1,744,806
3	Safe Drinking Water Loan	\$1,263,820	\$1,263,820	\$1,263,820	\$1,263,820	\$1,263,820	\$1,263,820
4	<b>Total Existing Debt Service</b>	<b>\$3,980,094</b>	<b>\$3,972,774</b>	<b>\$3,972,164</b>	<b>\$3,973,937</b>	<b>\$3,983,337</b>	<b>\$3,984,433</b>
5							
6	<b>Total Proposed Debt Service</b>	<b>\$1,063,043</b>	<b>\$1,417,391</b>	<b>\$1,771,739</b>	<b>\$2,834,782</b>	<b>\$3,897,825</b>	<b>\$5,953,042</b>

**Reserves**

The City requires adequate cash reserves to meet operating, capital, and debt service requirements. RFC is not recommending any changes to the reserves 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 used for replacement and refurbishment (R&R) related capital expenses. Standard practice is to have a reserve equal to 100 percent of annual capital replacement expenses. To ensure revenue and rate stability, RFC recommends a target of 100 percent of the ten-year average replacement CIP to provide cash flow for capital needs and to cover unexpected increases in capital expenditures. To minimize customer impacts, the capital reserve is increased by 10 percent each year from 70 percent in FY 2014 to 100 percent by FY 2017. The estimated FY 2014 total ending reserves balance is approximately \$42.4 million, not including debt reserves. However, most of the funds are already earmarked for existing and planned capital projects. The operating reserve levels are projected at or above the proposed target level in all years in the study period. The capital reserve levels are projected at or above the proposed target level in all but two years of the study period.

**Table 3-11  
 Water Reserves/Fund Balance<sup>4</sup>**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	<b>Ending Balance</b>					
2	Operating Fund	\$5,279,767	\$6,237,541	\$8,295,811	\$6,374,825	\$10,249,105
3	Capital Improvement Fund	\$37,114,671	\$20,111,019	\$11,799,559	\$8,253,489	\$7,431,702
4	Bond Fund	\$0	\$0	\$0	\$0	\$0
5	Debt Reserve Fund	\$631,918	\$758,302	\$1,239,034	\$1,365,418	\$2,200,497
6						
7	<b>Target Balance</b>					
8	Operating Fund	\$4,888,582	\$5,608,045	\$5,670,648	\$5,827,397	\$6,084,287
9	Capital Improvement Fund	\$4,730,727	\$5,406,545	\$6,082,364	\$6,758,182	\$6,758,182

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	<b>Ending Balance</b>						
2	Operating Fund	\$7,185,744	\$13,599,130	\$7,137,425	\$14,477,411	\$7,564,174	\$10,920,368
3	Capital Improvement Fund	\$6,901,593	\$6,901,593	\$5,527,629	\$7,527,629	\$6,160,531	\$7,347,951
4	Bond Fund	\$0	\$3,544,177	\$0	\$7,461,536	\$0	\$0
5	Debt Reserve Fund	\$2,326,881	\$3,035,577	\$3,035,577	\$5,161,663	\$5,161,663	\$7,216,880
6							
7	<b>Target Balance</b>						
8	Operating Fund	\$6,272,137	\$6,465,655	\$6,673,970	\$6,888,779	\$7,110,337	\$7,338,906
9	Capital Improvement Fund	\$6,758,182	\$6,758,182	\$6,758,182	\$6,758,182	\$6,758,182	\$6,758,182

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

<sup>4</sup> While the CIP shown in Table 3-8 represents 75 percent of the budgeted CIP, the CIP target reserves calculation is based on 100 percent of the budgeted CIP to ensure that the City has sufficient reserves to cover unexpected capital expenditures.

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, and are 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 water revenue adjustments are proposed to meet long term rate stability:

Effective Date	Increases
July 1, 2014	\$1.7 million
July 1, 2015	\$1.8 million
July 1, 2016	\$2.0 million
July 1, 2017	\$2.1 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 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Revenue Under Existing Rates	\$22,863,941	\$23,833,805	\$23,589,710	\$23,521,793	\$23,454,400
2						
3	Total Additional Revenue	\$0	\$1,727,951	\$3,544,501	\$5,495,863	\$7,577,869
4	Total Revenue from Rates	\$22,863,941	\$25,561,756	\$27,134,211	\$29,017,656	\$31,032,269
5						
6	Other Operating Revenue	\$2,356,605	\$2,866,745	\$2,901,364	\$2,969,012	\$3,174,563
7	Outside City Revenue Offset	\$204,921	\$158,279	\$154,847	\$153,166	\$151,502
8	Interest Income	\$70,000	\$459,374	\$435,262	\$359,832	\$366,988
9	<b>Total Revenue</b>	<b>\$25,495,467</b>	<b>\$29,046,153</b>	<b>\$30,625,685</b>	<b>\$32,499,666</b>	<b>\$34,725,322</b>
10						
11	O&M Expenses	\$19,554,328	\$22,432,181	\$22,682,591	\$23,309,588	\$24,337,149
12	State Water Project Payment	\$1,510,000	\$1,555,300	\$1,601,959	\$1,650,018	\$1,699,518
13	Existing Debt Service	\$3,977,426	\$3,974,514	\$3,979,307	\$3,980,315	\$3,979,295
14	Proposed Debt Service	\$0	\$0	\$177,174	\$354,348	\$708,696
15	<b>Total Expenses</b>	<b>\$25,041,754</b>	<b>\$27,961,995</b>	<b>\$28,441,030</b>	<b>\$29,294,269</b>	<b>\$30,724,657</b>
16						
17	<b>Net Cash Flow</b>	<b>\$453,713</b>	<b>\$1,084,158</b>	<b>\$2,184,654</b>	<b>\$3,205,397</b>	<b>\$4,000,665</b>
18						
19	Debt Coverage Ratio	149%	166%	191%	212%	222%
20	Required Coverage	120%	120%	120%	120%	120%

**Table 3-12 (contd.)  
 Water Operating Financial Plan**

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	Revenue Under Existing Rates	\$23,387,678	\$23,321,472	\$23,424,121	\$23,527,311	\$23,631,124	\$23,735,481
2							
3	Total Additional Revenue	\$9,799,751	\$12,171,287	\$14,809,410	\$17,658,792	\$20,735,878	\$24,058,263
4	Total Revenue from Rates	\$33,187,429	\$35,492,759	\$38,233,531	\$41,186,103	\$44,367,002	\$47,793,744
5							
6	Other Operating Revenue	\$3,253,097	\$3,334,141	\$3,417,780	\$3,504,108	\$3,593,218	\$3,685,211
7	Outside City Revenue Offset	\$149,854	\$148,223	\$148,223	\$148,223	\$148,223	\$148,223
8	Interest Income	\$354,829	\$494,069	\$535,655	\$778,212	\$771,037	\$1,051,430
9	<b>Total Revenue</b>	<b>\$36,945,209</b>	<b>\$39,469,191</b>	<b>\$42,335,188</b>	<b>\$45,616,645</b>	<b>\$48,879,479</b>	<b>\$52,678,608</b>
10							
11	O&M Expenses	\$25,088,547	\$25,862,621	\$26,695,881	\$27,555,118	\$28,441,346	\$29,355,625
12	State Water Project Payment	\$1,750,504	\$1,803,019	\$1,857,110	\$1,912,823	\$1,970,208	\$2,029,314
13	Existing Debt Service	\$3,980,094	\$3,972,774	\$3,972,164	\$3,973,937	\$3,983,337	\$3,984,433
14	Proposed Debt Service	\$1,063,043	\$1,417,391	\$1,771,739	\$2,834,782	\$3,897,825	\$5,953,042
15	<b>Total Expenses</b>	<b>\$31,882,187</b>	<b>\$33,055,804</b>	<b>\$34,296,893</b>	<b>\$36,276,660</b>	<b>\$38,292,716</b>	<b>\$41,322,414</b>
16							
17	<b>Net Cash Flow</b>	<b>\$5,063,022</b>	<b>\$6,413,387</b>	<b>\$8,038,295</b>	<b>\$9,339,986</b>	<b>\$10,586,763</b>	<b>\$11,356,194</b>
18							
19	Debt Coverage Ratio	235%	252%	272%	265%	259%	235%
20	Required Coverage	120%	120%	120%	120%	120%	120%

### 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 120 percent, which means that the City’s adjusted net system revenues – system revenues less operating expenses – shall amount to at least 120 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 in all years of the study period. 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 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 2015, and accordingly FY 2015 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 2015 cost of service to be recovered from the City's users, shown in **Table 3-13**, is estimated at approximately \$25.6 million, of which approximately \$20 million is operating costs and the remaining \$5.6 million is capital costs, which consists of the 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 2015. 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 Water Revenue Requirements**

	FY 2015		
	Operating	Capital	Total
<b>Revenue Requirements</b>			
O&M Expenses	\$22,432,181		\$22,432,181
State Water Project Payment		\$1,555,300	\$1,555,300
Existing Debt Service		\$3,974,514	\$3,974,514
Proposed Debt Service		\$0	\$0
<b>Subtotal Revenue Requirements</b>	<b>\$22,432,181</b>	<b>\$5,529,814</b>	<b>\$27,961,995</b>
<b>Less: Other Revenues</b>			
Other Operating Revenue	\$2,866,745		\$2,866,745
Outside City Revenue Offset	\$158,279		\$158,279
Interest Income	\$459,374		\$459,374
<b>Subtotal Other Revenues</b>	<b>\$3,484,397</b>	<b>\$0</b>	<b>\$3,484,397</b>
<b>Less: Adjustments</b>			
Adjustments to Annual Cash Balance	(\$1,084,158)		(\$1,084,158)
Adjustments to Annualize Rate Increase	\$0		\$0
<b>Subtotal Adjustments</b>	<b>(\$1,084,158)</b>	<b>\$0</b>	<b>(\$1,084,158)</b>
<b>Revenue to be Recovered from Rates</b>	<b>\$20,031,942</b>	<b>\$5,529,814</b>	<b>\$25,561,756</b>

**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 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:

$$3.97 - 1.00 \text{ for Base} - 0.52 \text{ for Max Day} = 2.45$$

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%	=	$(1.00/1.52) \times 100$
Max Day:	34.2%	=	$(1.52-1.00)/1.52 \times 100$

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

Base:	25.2%	=	$(1.00/3.97) \times 100$
Max Day:	13.1%	=	$(0.52/3.97) \times 100$
Max Hour:	61.7%	=	$(2.45/3.97) \times 100$

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

All customers are assigned the max day and max hour peaking factors shown above except Institutional/Irrigation customers who are not assigned the max hour factor because they would be interruptible in times of a drought or mandatory conservation requirements. 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 2015 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 2015 net operating costs shown in **Table 3-13** to the base, extra capacity, fire 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, 2012.

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 service units for the respective component.

Different service 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. Fire service units are based on the capacities of fire hydrants and private fire service connections. **Table 3-14** shows the total number of service units allocated to base and extra capacity components.

**Table 3-14**  
**Determination of Total Annual Service Units – Water**

Customer Class	Annual Use (hcf)	Average Daily Use (hcf/day)	Maximum Day Requirements			Maximum Hour Requirements			Bi-Monthly Bills	Equiv. Meters
			Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	Capacity Factor	Total Capacity (hcf/hour)	Extra Capacity (hcf/hour)		
<b>Inside City</b>										
SFR	2,884,059	7,902	1.52	12,011	4,109	3.97	31,371	19,360	135,114	23,387
MFR	1,559,309	4,272	1.52	6,493	2,221	3.97	16,960	10,467	15,372	6,698
Non-residential	1,603,817	4,394	1.52	6,679	2,285	3.97	17,444	10,765	15,870	9,076
Institutional/Interruptible	185,132	507	1.52	771	264	1.52	771	0	1,350	838
<b>Outside City</b>										
SFR	106,380	291	1.52	442	151	3.97	1,155	713	4,692	822
MFR	36,645	100	1.52	152	52	3.97	397	245	486	131
Non-residential	118,285	324	1.52	492	168	3.97	1,286	794	840	326
Untreated Water	24,623	67	1.52	102	35	3.97	266	164	18	159
<b>TOTAL WATER USAGE</b>	<b>6,518,248</b>	<b>17,857</b>		<b>27,142</b>	<b>9,285</b>		<b>69,650</b>	<b>42,508</b>	<b>173,742</b>	<b>41,437</b>

Once the total number of service 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 2015 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. This provides revenue stability to help retain the relative amounts of current fixed and variable revenue components of the rate structure. 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 \$2.63 per hcf and includes the peaking costs. The Conservation column represents the costs of the Water Efficiency and Resource Planning programs which promotes conservation and efficient water use. Since it is a conservation program, the associated costs are spread to the total water usage, excluding interruptible customers since this usage can be interrupted in events of drought.

**Table 3-15**  
**Development of Unit Costs – Water**

	Base	Max Day	Max Hour	Fire	Meter	Billing	Conservation	General	Total
Operating Expenses	\$6,920,477	\$3,299,232	\$2,074,381	\$1,366,010	\$0	\$877,244	\$1,193,523	\$4,301,076	\$20,031,942
Capital Expenses	\$2,283,137	\$951,610	\$1,620,799	\$569,593	\$12,662	\$280	\$0	\$91,733	\$5,529,814
<b>Total Cost</b>	<b>\$9,203,614</b>	<b>\$4,250,842</b>	<b>\$3,695,180</b>	<b>\$1,935,603</b>	<b>\$12,662</b>	<b>\$877,523</b>	<b>\$1,193,523</b>	<b>\$4,392,808</b>	<b>\$25,561,756</b>
Allocation of General Costs	\$2,102,064	\$970,873	\$843,962		\$2,892	\$200,422	\$272,595	(\$4,392,808)	
Allocation of Public Fire Costs				(\$1,322,914)	\$1,322,914				
Allocation Peak to Meter		(\$2,088,686)	(\$1,815,657)		\$3,904,343				
<b>Total Cost of Service</b>	<b>\$11,305,677</b>	<b>\$3,133,029</b>	<b>\$2,723,485</b>	<b>\$612,689</b>	<b>\$5,242,811</b>	<b>\$1,077,946</b>	<b>\$1,466,118</b>	<b>\$0</b>	<b>\$25,561,756</b>
Total Units of Service	6,518,248	9,285	42,508	4,794	248,622	173,742	6,333,116		
Unit of Measure	hcf	hcf/day	hcf/day	Private fire	Equiv meters	Bi-monthly bills	hcf		
Total Unit Cost of Service	\$1.73	\$337.43	\$64.07	\$127.81	\$21.09	\$6.20	\$0.23		
Unit Rate	\$1.73	\$0.48	\$0.42						
Average Cost of Service	\$2.63								

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 Conservation costs for each class are used to develop the unit commodity rates for each class of customers.

**User Class Costs**

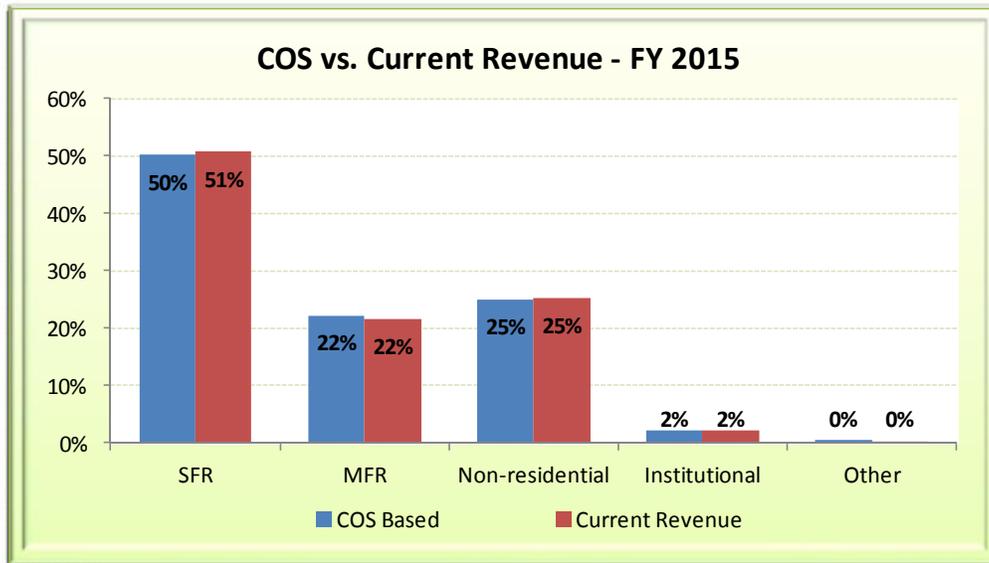
The unit costs shown in **Table 3-15** are then applied to the projected FY 2015 service units for each user class to derive user class costs. **Table 3-16** shows the FY 2015 cost responsibility for each user class.

**Table 3-16  
 Allocation of Water Costs to Customer Classes**

Customer Class	Base	Max Day	Max Hour	Meter	Billing	Conservation	Total
<u>Inside City</u>							
SFR	\$5,002,301	\$1,386,496	\$1,240,394	\$2,959,079	\$838,287	\$667,660	<b>\$12,094,217</b>
MFR	\$2,704,567	\$749,430	\$670,620	\$847,464	\$95,372	\$360,980	<b>\$5,428,434</b>
Non-residential	\$2,781,766	\$771,025	\$689,713	\$1,148,298	\$98,462	\$371,284	<b>\$5,860,548</b>
Institutional/Interruptible	\$321,104	\$89,081	\$0	\$106,028	\$8,376		<b>\$524,589</b>
<u>Outside City</u>							
SFR	\$184,512	\$50,952	\$45,682	\$103,961	\$29,111	\$24,627	<b>\$438,845</b>
MFR	\$63,559	\$17,546	\$15,697	\$16,575	\$3,015	\$8,483	<b>\$124,876</b>
Non-residential	\$205,161	\$56,688	\$50,872	\$41,247	\$5,212	\$27,383	<b>\$386,562</b>
Untreated Water	\$42,707	\$11,810	\$10,507	\$20,160	\$112	\$5,700	<b>\$90,996</b>
<b>TOTAL COST OF SERVICE</b>	<b>\$11,305,677</b>	<b>\$3,133,029</b>	<b>\$2,723,485</b>	<b>\$5,242,811</b>	<b>\$1,077,946</b>	<b>\$1,466,118</b>	<b>\$24,949,067</b>

The SFR user class (inside and outside the City) has the highest assignment of costs at \$12.5 million and is responsible for 50 percent of the total cost of service. The non-residential user classes are responsible for the next 25 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. The relative percentages of revenue to be recovered from the different classes remains fairly constant.

Figure 3-3  
 Comparison of Water Revenue under COS and Existing Rate Structure<sup>5</sup>



## 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 develops a schedule of water rates for the City’s residential user class and rates for the non-residential class that ensure 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 and non-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. Since the water rate structure was revised during the last rate study, RFC recommends that the current rate structure be retained. However, the individual customer class rates are determined based on cost of service analysis. The following subsections discuss how each rate component is calculated.

<sup>5</sup> Percentages shown may not add up due to rounding calculations. Actual difference without rounding for SFR customers is 0.5%, not 1% as shown in the Figure.

### *Outside City Customers Rate Differential*

In the last water rate study, the Outside City rate differential was calculated based on 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. RFC proposes that the Outside City rate differential be revised from \$0.76 per hcf to \$0.60 per hcf to reflect the change in the third component, the incremental costs associated with the higher cost water supply and long-term planning that is passed on to Outside City customers through this differential component. In future years, this differential cost would be applied to the Outside City customers according to the actual costs of water supply, along with the property tax and police and fire protection costs components.

### *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. 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 #1.4 which states that the maximum amount of the fixed revenue should not exceed 30 percent of the total rate revenue. The City's rate revenues to be collected from monthly service charges for FY 2015 are retained at 25 percent of the total rate revenue or \$6.3 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 Water Service Charge Calculation for FY 2015**

Meter Size	Meter Ratio	Meter Component	Billing Component	Bi-monthly Charge
3/4"	1.00	\$21.09	\$6.20	\$27.30
1"	1.67	\$35.15	\$6.20	\$41.36
1 1/2"	3.33	\$70.29	\$6.20	\$76.50
2"	5.33	\$112.47	\$6.20	\$118.68
3"	11.67	\$246.02	\$6.20	\$252.23
4"	21.00	\$442.84	\$6.20	\$449.05
6"	43.33	\$913.79	\$6.20	\$920.00
8"	80.00	\$1,687.00	\$6.20	\$1,693.21
10"	126.67	\$2,671.08	\$6.20	\$2,677.29
12"	166.67	\$3,514.58	\$6.20	\$3,520.79

**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. These costs are spread on public and private fire service connections in proportion to their capacity. The public fire service costs are included in the meter service charges. 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 2015**

Fire Line Charges	Bi-monthly Charge
1" Ubranch	\$7.11
1"	\$7.11
1 1/2"	\$7.11
2"	\$7.11
3"	\$20.65
4"	\$44.00
6"	\$127.81
8"	\$272.36
10"	\$489.79
12"	\$791.15

**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 2015 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.

The tiered rates need to send a signal for conservation. The first tier at 14 hcf bi-monthly provides for basic essential indoor needs. The second tier at 30 hcf bi-monthly provides for outdoor irrigation and encompasses the average usage of 21 hcf for single family residences. By setting Tier 2 at 30 hcf instead of the average usage level, the City recognizes that some customers have additional irrigation needs due to the size of their properties. The first and second tiers represent approximately 85 percent of the total single family residential usage. The last tier for usage in excess of 30 hcf bi-monthly, which represents 15 percent of the total usage for SFR customers, is targeted for conservation. A similar rationale is used to design tiers for MFR customers. In their case, Tier 3 accounts for 10 percent of the total usage for that class.

One of the key factors differentiating these usage patterns is the peaking component, which is smallest for the indoor use and higher for outdoor irrigation use and highest for the excessive usage in Tier 3. To help differentiate the rates for these water uses, the max day peaking cost is assigned to all three tiers. The max hour peaking cost is assigned only to Tiers 2 and 3; however, Tier 2 is assigned a smaller portion of the max hour peaking cost and the balance of the revenue to be recovered from the max hour peaking cost is assigned to Tier 3. Additionally, Tier 3 customers would be targeted for conservation and therefore all the conservation related costs are assigned to Tier 3.

**Table 3-19** shows the unit cost of each cost component for residential customers. Tier 1 usage, which is considered essential indoor water usage, is assigned base and max day costs. Tier 2 usage, which consists of irrigation usage, is assigned base, max day, and a portion of max hour costs to reflect the usage characteristics of Tier 2. To encourage conservation, 100 percent of the conservation costs are assigned to Tier 3 in addition to base, max day, and max hour costs. Overall, the total revenue recovered from residential customers is the cost of service revenue derived in previous sections. The tiered rate structure provides all residential users the benefit of the lower rates in Tiers 1 and 2 and only recovers the conservation costs that would be primarily targeted to Tier 3 usage customers.

**Table 3-19  
 Development of Bi-Monthly Residential Tiered Rates**

Residential Tier		Base	Max Day	Max Hour	Conservation	Total
<b>Total Cost</b>		<b>\$7,954,939</b>	<b>\$2,204,424</b>	<b>\$1,972,393</b>	<b>\$1,061,751</b>	
Tier 1	0-14 hcf	\$1.74	\$0.49	\$0.00	\$0.00	<b>\$2.23</b>
Tier 2	15-30 hcf	\$1.74	\$0.49	\$0.89	\$0.00	<b>\$3.12</b>
Tier 3	30+ hcf	\$1.74	\$0.49	\$1.37	\$1.67	<b>\$5.27</b>

Rates for all the other classes are uniform rates. Institutional/Interruptible customers are not assigned the max hour costs since their service are interruptible in case of water shortage. Untreated water customers are not assigned the treatment costs and recycled water customers rates are determined based on cost of service.

### Proposed Water Rates

**Table 3-20** shows the proposed water rates for the next four years, from FY 2015 to FY 2018. These rates are effective in July of each year.

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

Bi-Monthly Rates	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Bi-Monthly Service Charge</b>					
<b>Meter Size</b>					
3/4"	\$25.11	\$27.30	\$29.28	\$31.41	\$33.69
1"	\$38.35	\$41.36	\$44.36	\$47.58	\$51.03
1 1/2"	\$71.46	\$76.50	\$82.05	\$88.00	\$94.38
2"	\$111.20	\$118.68	\$127.29	\$136.52	\$146.42
3"	\$237.00	\$252.23	\$270.52	\$290.14	\$311.18
4"	\$422.41	\$449.05	\$481.61	\$516.53	\$553.98
6"	\$866.05	\$920.00	\$986.70	\$1,058.24	\$1,134.97
8"	\$1,594.43	\$1,693.21	\$1,815.97	\$1,947.63	\$2,088.84
10"	\$2,521.46	\$2,677.29	\$2,871.40	\$3,079.58	\$3,302.85
12"	\$3,316.05	\$3,520.79	\$3,776.05	\$4,049.82	\$4,343.44

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

Bi-Monthly Rates	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Bi-Monthly Fireline Charge</b>					
<b>Meter Size</b>					
1" Ubranch	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
1"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
1 1/2"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
2"	\$6.47	\$7.11	\$7.63	\$8.19	\$8.79
3"	\$18.78	\$20.65	\$22.15	\$23.76	\$25.49
4"	\$40.00	\$44.00	\$47.19	\$50.62	\$54.29
6"	\$116.20	\$127.81	\$137.08	\$147.02	\$157.68
8"	\$247.61	\$272.36	\$292.11	\$313.29	\$336.01
10"	\$445.29	\$489.79	\$525.31	\$563.40	\$604.25
12"	\$719.26	\$791.15	\$848.52	\$910.04	\$976.02

**Table 3-20 (contd.)  
Proposed Bi-Monthly Water Rates – Commodity Rates**

Bi-Monthly Rates		Current	Effective			
		Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Volume Rates (\$/hcf)</b>						
<b>SFR</b>						
Tier 1	0 to 14	\$2.15	\$2.23	\$2.40	\$2.58	\$2.77
Tier 2	15 to 30	\$2.92	\$3.12	\$3.35	\$3.60	\$3.87
Tier 3	> 30	\$4.79	\$5.27	\$5.66	\$6.08	\$6.53
<b>MFR</b>						
Tier 1	0 to 10	\$2.15	\$2.23	\$2.40	\$2.58	\$2.77
Tier 2	11 to 16	\$2.92	\$3.12	\$3.35	\$3.60	\$3.87
Tier 3	> 16	\$4.79	\$5.27	\$5.66	\$6.08	\$6.53
Non-Residential		\$2.70	\$2.88	\$3.09	\$3.32	\$3.57
Institutional/Interruptible Rate		\$2.15	\$2.22	\$2.39	\$2.57	\$2.76
Reclaimed Water		\$0.68	\$0.76	\$0.82	\$0.88	\$0.95
Untreated Water		\$2.04	\$2.32	\$2.49	\$2.68	\$2.88
Outside City Rates		\$0.76/hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf

## 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. Due to rounding in the calculations, some values may not add to the penny.

### *Residential Customer Impacts*

SFR customers will experience a range of impacts depending on their water usage level. However, an average SFR customer consuming 21 hcf of water bi-monthly will see an increase of approximately \$4.71 in their FY 2015 (rates effective July 1, 2014) bi-monthly bill compared to the existing rates. The bill impacts at various usage levels for SFR customers are shown below in **Table 3-21**.

**Table 3-21  
SFR Water Bi-Monthly Rate Impacts**

SFR	Bi-monthly Usage (hcf)	Current Bill	FY 2015 Bill	FY 2016 Bill	FY 2017 Bill	FY 2018 Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Very Low	5	\$35.86	\$38.45	\$41.28	\$44.31	\$47.54	\$2.59	\$2.83	\$3.03	\$3.23
Low	12	\$50.91	\$54.06	\$58.08	\$62.37	\$66.93	\$3.15	\$4.02	\$4.29	\$4.56
Average	21	\$75.65	\$80.36	\$86.33	\$92.73	\$99.56	\$4.71	\$5.97	\$6.40	\$6.83
High	35	\$125.9	\$134.79	\$144.78	\$155.53	\$167.04	\$8.91	\$9.99	\$10.75	\$11.51
Very High	50	\$197.73	\$213.84	\$229.68	\$246.73	\$264.99	\$16.11	\$15.84	\$17.05	\$18.26

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 since that represents the majority of the meter sizes within the MFR class.

**Table 3-22**  
**MFR Water Bi-Monthly Rate Impacts**

MFR	Bi-monthly Usage (hcf)	Current Bill	FY 2015 Bill	FY 2016 Bill	FY 2017 Bill	FY 2018 Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	3	\$31.56	\$33.99	\$36.48	\$39.15	\$42.00	\$2.43	\$2.49	\$2.67	\$2.85
Low	8	\$42.31	\$45.14	\$48.48	\$52.05	\$55.85	\$2.83	\$3.34	\$3.57	\$3.80
Average	13	\$55.37	\$58.96	\$63.33	\$68.01	\$73.00	\$3.59	\$4.37	\$4.68	\$4.99
High	22	\$92.87	\$99.94	\$107.34	\$115.29	\$123.79	\$7.07	\$7.40	\$7.95	\$8.50
Very High	35	\$155.14	\$168.45	\$180.92	\$194.33	\$208.68	\$13.31	\$12.47	\$13.41	\$14.35

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. The average usage for a 1" meter size is 100 hcf per bi-monthly period.

**Table 3-23**  
**Non-Residential Water Bi-Monthly Rate Impacts**

Non-Residential	Bi-monthly Usage (hcf)	Current Bill	FY 2015 Bill	FY 2016 Bill	FY 2017 Bill	FY 2018 Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	20	\$92.35	\$98.96	\$106.16	\$113.98	\$122.43	\$6.61	\$7.20	\$7.82	\$8.45
Low	50	\$173.35	\$185.36	\$198.86	\$213.58	\$229.53	\$12.01	\$13.50	\$14.72	\$15.95
Average	100	\$308.35	\$329.36	\$353.36	\$379.58	\$408.03	\$21.01	\$24.00	\$26.22	\$28.45
High	200	\$578.4	\$617.36	\$662.36	\$711.58	\$765.03	\$39.01	\$45.00	\$49.22	\$53.45
Very High	300	\$848.35	\$905.36	\$971.36	\$1,043.58	\$1,122.03	\$57.01	\$66.00	\$72.22	\$78.45

Note: Assume 1" meter

## SECTION 4 – WASTEWATER RATE STUDY

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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 48,000 (each multi-family dwelling unit is counted as an account) residential and commercial customers at the start of FY 2014. 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 8.24 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

**Table 4-1** shows the existing wastewater rate structure. Residential customers have a fixed and variable bi-monthly wastewater rate structure; the variable rate applies to the average winter water usage for two full billing cycles for bills received from February 1 through May 31, which represents water usage from December through March. Commercial customers and churches also have a fixed and variable bi-monthly wastewater rate structure. The variable rate applies to their bi-monthly water usage and varies based on strength, which is separated into six strength groups. Schools pay a fixed charge 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). In addition, there is an Estuary Protection Fund charge that is equal to a percentage of each customer’s total wastewater bill.

**Table 4-1  
Existing (FY 2014) Wastewater Rates**

Customer Class	Bi-Monthly Fixed Charge	Bi-Monthly Flow Rate	Maximum Cap
SFR*	\$18.35	\$2.78	\$101.75
MFR*	\$13.58	\$2.78	\$80.30
Commercial**			
Group 1	\$18.35	\$3.26	
Group 2	\$18.35	\$3.72	
Group 3	\$18.35	\$4.80	
Group 4	\$18.35	\$5.84	
Group 5	\$18.35	\$5.33	
Group 6	\$18.35	\$1.13	
Churches	\$18.35	\$2.43	
Schools (100 ADA)		\$133.25	
Industrial (Monthly)			
Flow		\$3,835.63	
COD		\$159.08	
SS		\$294.92	
Estuary Protection Fund Charge			4% of bill

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

\*\* Based on actual water usage

## Wastewater Accounts and Flow Projections

Customer accounts and water usage (or winter water for residential customers) information for FY 2013 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 usage 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 0.5 percent per year during the study period. However, water usage, due to conservation efforts, is projected to decrease one percent per year from FY 2014 through FY 2020.

**Table 4-2  
Wastewater Accounts and Usage by Customer Class**

Line #		FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	<b>Accounts Data</b>						
2	SFR	25,460	25,587	25,715	25,844	25,973	26,103
3	MFR	20,357	20,459	20,561	20,664	20,767	20,871
4	Commercial						
5	Group 1	1,500	1,507	1,515	1,522	1,530	1,538
6	Group 2	38	38	39	39	39	39
7	Group 3	10	10	10	10	10	10
8	Group 4	13	13	13	13	13	13
9	Group 5	230	230	230	230	230	230
10	Group 6	1	1	1	1	1	1
11	Churches	48	48	48	48	48	48
12	Schools (100 ADA - bimonthly)	378	378	378	378	378	378
13	<b>Total Accounts</b>	<b>48,035</b>	<b>48,271</b>	<b>48,509</b>	<b>48,749</b>	<b>48,988</b>	<b>49,230</b>
14							
15	<b>Consumption Data (hcf)</b>						
16	SFR	2,142,936	2,132,114	2,121,347	2,110,634	2,099,975	2,089,370
17	MFR	1,384,635	1,377,643	1,370,686	1,363,764	1,356,877	1,350,025
18	Commercial						
19	Group 1	622,877	619,731	616,602	613,490	610,392	607,309
20	Group 2	77,545	77,154	76,765	76,378	75,993	75,609
21	Group 3	53,500	53,230	52,961	52,694	52,428	52,163
22	Group 4	18,512	18,418	18,325	18,232	18,140	18,048
23	Group 5	201,026	200,011	199,000	197,996	196,997	196,002
24	Group 6	19,120	19,023	18,927	18,831	18,736	18,641
25	Churches	19,550	19,355	19,161	18,969	18,779	18,591
26	<b>Total Consumption</b>	<b>4,539,701</b>	<b>4,516,679</b>	<b>4,493,774</b>	<b>4,470,988</b>	<b>4,448,317</b>	<b>4,425,758</b>

**Table 4-2 (contd.)  
Wastewater Accounts and Usage by Customer Class**

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	<b>Accounts Data</b>						
2	SFR	26,234	26,365	26,497	26,629	26,762	26,896
3	MFR	20,975	21,080	21,185	21,291	21,397	21,504
4	Commercial						
5	Group 1	1,545	1,553	1,561	1,569	1,576	1,584
6	Group 2	39	39	40	40	40	40
7	Group 3	10	10	10	10	10	10
8	Group 4	13	13	13	13	13	13
9	Group 5	230	230	230	230	230	230
10	Group 6	1	1	1	1	1	1
11	Churches	48	48	48	48	48	48
12	Schools (100 ADA - bimonthly)	378	378	378	378	378	378
13	<b>Total Accounts</b>	<b>49,473</b>	<b>49,717</b>	<b>49,962</b>	<b>50,208</b>	<b>50,455</b>	<b>50,704</b>
14							
15	<b>Consumption Data (hcf)</b>						
16	SFR	2,078,819	2,068,321	2,078,663	2,089,056	2,099,501	2,109,999
17	MFR	1,343,207	1,336,424	1,343,106	1,349,822	1,356,571	1,363,354
18	Commercial						
19	Group 1	604,243	601,191	604,199	607,222	610,258	613,309
20	Group 2	75,227	74,847	75,221	75,597	75,975	76,355
21	Group 3	51,900	51,638	51,896	52,155	52,416	52,678
22	Group 4	17,956	17,866	17,955	18,044	18,134	18,224
23	Group 5	195,012	194,027	194,998	195,972	196,952	197,937
24	Group 6	18,547	18,453	18,545	18,638	18,731	18,825
25	Churches	18,405	18,221	18,221	18,221	18,221	18,221
26	<b>Total Consumption</b>	<b>4,403,316</b>	<b>4,380,988</b>	<b>4,402,804</b>	<b>4,424,727</b>	<b>4,446,759</b>	<b>4,468,902</b>

## WASTEWATER USER CLASSIFICATION

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

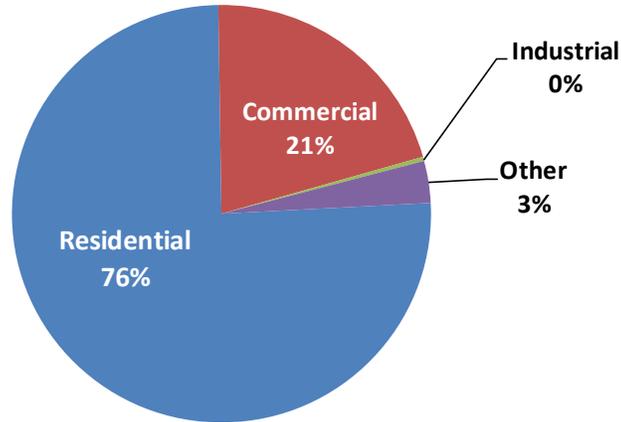
### Existing User Classification

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 76 percent of the total revenue is from residential customers. The remainder is from non-residential customers.

**Figure 4-1**  
**FY 2014 Projected Wastewater 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 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 increase from \$18.4 million in FY 2013 to \$19.6 million by FY 2024 due to projected growth. 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 non-operating revenues.

**Table 4-3  
Revenue Summary at Current Rates<sup>6</sup>**

Line #		FY 2013 Est. Actual	FY 2014 Budgeted	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected
1	<b>Service Charge Revenue</b>						
2	Residential	\$13,922,470	\$13,508,197	\$14,214,384	\$14,187,954	\$14,161,771	\$14,136,027
3	Commercial	\$3,699,425	\$3,784,955	\$3,939,356	\$3,921,323	\$3,903,401	\$3,885,560
4	Industrial	\$77,621	\$60,000	\$156,732	\$155,395	\$154,071	\$152,761
5	Church	\$49,164	\$60,000	\$51,846	\$51,379	\$50,918	\$50,461
6	School	\$290,990	\$290,187	\$302,211	\$302,211	\$302,211	\$302,211
7	Estuary Protection Fund	\$325,001	\$721,933	\$754,457	\$753,282	\$752,189	\$751,193
8							
9	Interest - Investment Earnings	\$215,640	\$118,199	\$289,859	\$264,830	\$271,968	\$225,262
10	Wastewater - Connection Fees	\$137,198	\$300,000	\$301,500	\$303,008	\$304,523	\$306,045
11	Other Miscellaneous Revenue	\$354,571	\$427,658	\$458,045	\$477,495	\$498,710	\$521,862
12							
13	<b>TOTAL WASTEWATER REVENUE</b>	<b>\$19,072,080</b>	<b>\$19,271,129</b>	<b>\$20,468,389</b>	<b>\$20,416,876</b>	<b>\$20,399,762</b>	<b>\$20,331,383</b>

Line #		FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected
1	<b>Service Charge Revenue</b>						
2	Residential	\$14,110,639	\$14,085,576	\$14,155,991	\$14,226,724	\$14,297,804	\$14,369,317
3	Commercial	\$3,867,817	\$3,850,169	\$3,866,480	\$3,885,666	\$3,904,950	\$3,924,323
4	Industrial	\$151,464	\$150,179	\$150,179	\$150,179	\$150,179	\$150,179
5	Church	\$50,009	\$49,562	\$49,562	\$49,562	\$49,562	\$49,562
6	School	\$302,211	\$302,211	\$302,211	\$302,211	\$302,211	\$302,211
7	Estuary Protection Fund	\$750,297	\$749,509	\$754,066	\$758,860	\$763,792	\$768,876
8							
9	Interest - Investment Earnings	\$366,049	\$391,406	\$752,998	\$704,424	\$822,337	\$671,439
10	Wastewater - Connection Fees	\$307,575	\$309,113	\$310,659	\$312,212	\$313,773	\$315,342
11	Other Miscellaneous Revenue	\$547,140	\$574,751	\$604,921	\$637,901	\$673,965	\$713,416
12							
13	<b>TOTAL WASTEWATER REVENUE</b>	<b>\$20,453,201</b>	<b>\$20,462,476</b>	<b>\$20,947,068</b>	<b>\$21,027,740</b>	<b>\$21,278,574</b>	<b>\$21,264,665</b>

## 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, 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

<sup>6</sup> Revenues from rates are decreasing due to projected reduction in water usage.

FY 2014 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 2015 to project all O&M expenditures, except personnel, chemicals, and utilities. Salaries are projected to increase at three percent in FY 2015 and two percent per year in all other years. Benefits and chemical expenses are projected to increase at five percent per year during the study period. Utilities expenses are projected to increase at 6.7 percent in FY 2015 and five percent per year thereafter.

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<sup>7</sup>**

Line #		FY 2013 Budgeted	FY 2014 Budgeted	FY 2015 Projected	FY 2016 Projected	FY 2017 Projected	FY 2018 Projected
1	Wastewater Administration	\$6,059,109	\$4,984,824	\$4,931,724	\$5,063,420	\$5,229,973	\$5,536,312
2	Wastewater Maintenance	\$3,993,381	\$4,458,089	\$4,595,172	\$4,720,045	\$4,845,623	\$4,967,833
3	Wastewater Operations	\$4,134,492	\$4,164,517	\$5,262,193	\$5,141,331	\$5,327,274	\$5,520,464
4	Wastewater Laboratory	\$1,166,606	\$1,109,571	\$1,218,809	\$1,249,752	\$1,276,591	\$1,303,124
5	Rev Mgmt - Wastewater	\$185,460	\$774,968	\$798,217	\$822,164	\$846,828	\$872,233
6	Rev Estuary Protection	\$0	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126
7	<b>TOTAL WASTEWATER O&amp;M EXPENSES</b>	<b>\$15,539,048</b>	<b>\$15,492,969</b>	<b>\$16,807,146</b>	<b>\$16,997,772</b>	<b>\$17,527,382</b>	<b>\$18,201,092</b>

Line #		FY 2019 Projected	FY 2020 Projected	FY 2021 Projected	FY 2022 Projected	FY 2023 Projected	FY 2024 Projected
1	Wastewater Administration	\$5,698,146	\$5,864,979	\$6,036,974	\$6,214,301	\$6,397,136	\$6,585,663
2	Wastewater Maintenance	\$5,114,656	\$5,266,130	\$5,422,416	\$5,583,678	\$5,750,088	\$5,921,822
3	Wastewater Operations	\$5,722,074	\$5,931,847	\$6,150,139	\$6,387,648	\$6,635,359	\$6,893,741
4	Wastewater Laboratory	\$1,335,470	\$1,368,652	\$1,402,691	\$1,437,612	\$1,473,437	\$1,510,190
5	Rev Mgmt - Wastewater	\$898,400	\$925,352	\$953,113	\$981,706	\$1,011,157	\$1,041,492
6	Rev Estuary Protection	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344
7	<b>TOTAL WASTEWATER O&amp;M EXPENSES</b>	<b>\$18,769,906</b>	<b>\$19,358,155</b>	<b>\$19,966,563</b>	<b>\$20,606,211</b>	<b>\$21,268,481</b>	<b>\$21,954,251</b>

### Wastewater Capital Improvement Program

The City has developed a comprehensive wastewater CIP to address current (replacement) and future (expansion) wastewater system needs. As **Table 4-5** indicates, the total estimated wastewater CIP from FY 2014 to FY 2024 is \$178.4 million. These projected costs include a 2.3 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 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, recognizing project

<sup>7</sup> Wastewater Operations increased in FY 2015 due to additional permitting costs, professional services, including legal services, fees and additional equipment purchase.

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

Line #	Proj No.	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	74040	Sewerline Replacement - Aurora Dr Area	\$0	\$195,000	\$615,000	\$615,000	\$0
2	74043	Sewerline Replacement - Main and Brent St. Area	\$0	\$206,250	\$1,443,750	\$1,312,500	\$0
3	74061	Wastewater Lift Station - North Bank Lift Station Upgrade	\$0	\$82,500	\$506,250	\$0	\$0
4	74062	Sewerline Replacement - Front Street (Hemlock to Ash)	\$0	\$71,250	\$457,500	\$0	\$0
5	74063	Sewerline Replacement - HWY 126 East End Sewer Crossing	\$0	\$138,750	\$416,250	\$0	\$0
6	74065	Transfer Station - Seaside Electrical Equipt. Upgrades	\$0	\$67,500	\$532,500	\$0	\$0
7	74067	Wastewater Plant - Lighting Improvements	\$43,500	\$162,000	\$150,000	\$0	\$0
8	96905	Sewerline Rehabilitation - Harbor & Woolsey	\$120,000	\$555,000	\$466,500	\$0	\$0
9	96909	Wastewater Plant - Disinfection Facility (Pasturization)	\$450,000	\$862,500	\$3,937,500	\$3,750,000	\$0
10	96913	Sewerline Replacement - Avenue Area	\$225,000	\$562,500	\$562,500	\$0	\$0
11	96914	Wastewater Plant- Dewatering Equipment Replacement	\$1,068,750	\$4,237,500	\$6,468,750	\$0	\$0
12	96915	Recycled Waterline - Golf Course Drive	\$60,000	\$626,250	\$0	\$0	\$0
13	96918	Wastewater Plant - Digester Improvement	\$157,500	\$892,500	\$0	\$0	\$0
14	73032	Recycled Water - Reuse of OVSD Effluent	\$0	\$0	\$0	\$0	\$375,000
15	74034	Wastewater Plant - Aeration Blowers	\$0	\$0	\$0	\$0	\$0
16	74039	Sewerline Replacement - Ann St. Area	\$0	\$0	\$0	\$675,000	\$1,350,000
17	74054	Transfer Station - Seaside Station and Forcemain	\$0	\$0	\$0	\$0	\$570,000
18	74066	Wastewater - Energy Efficiency Projects	\$0	\$0	\$0	\$0	\$0
19	74058	Recycled Waterline - Diversion Pipelines	\$0	\$0	\$0	\$0	\$0
20	74059	Wastewater Plant - Reclaimed Water Structure	\$0	\$0	\$0	\$0	\$0
21	74064	Sewerline Replacement - Harbor Blvd at Olivas Park Dr.	\$0	\$0	\$0	\$240,000	\$960,000
22	74068	Sewerline Replacement - Eastend Upgrades	\$0	\$0	\$0	\$420,000	\$1,680,000
23	96874	Wastewater Plant - Tertiary Filter Replacement	\$0	\$0	\$0	\$900,000	\$1,800,000
24	96894	Wastewater Plant - Maintenance Storage Building	\$0	\$0	\$0	\$0	\$0
25	74032	Wastewater Plant - Chlorine Chamber Rehab	\$0	\$0	\$0	\$0	\$0
26	74030	Wastewater Plant - Wetlands Improvements	\$0	\$0	\$0	\$0	\$1,050,000
27	74044	Sewerline Replacement - Westside Area	\$0	\$0	\$0	\$0	\$0
28	74045	Sewerline Replacement - Catalina/ Thompson Area	\$0	\$0	\$0	\$0	\$0
29	74046	Sewerline Replacement - Main and Loma Vista Area	\$0	\$0	\$0	\$0	\$0
30	74047	Sewerline Replacement - Channel Dr Area	\$0	\$0	\$0	\$0	\$0
31	74049	Sewerline Replacement - Telegraph Road Area	\$0	\$0	\$0	\$0	\$0
32	74050	Sewerline Replacement - Sperry Avenue Area	\$0	\$0	\$0	\$0	\$0
33	74053	Sewerline Replacement - Neath Street Area	\$0	\$0	\$0	\$0	\$0
34	74056	Sewerline Replacement Program - Future	\$0	\$0	\$0	\$0	\$0
35	96878	Wastewater Plant - Digester 4	\$0	\$0	\$0	\$0	\$0
36	96884	Wastewater Plant - Landscape Improvements	\$0	\$0	\$0	\$0	\$0
37	91019	Olivas Park Drive Extension-Reclaimed Waterline	\$150,000	\$600,000	\$0	\$0	\$0
38	97938	Meters-Automatic Meter Reading Installation	\$0	\$0	\$0	\$2,476,125	\$1,757,250
39							
40		<b>TOTAL CIP</b>	<b>\$2,274,750</b>	<b>\$9,259,500</b>	<b>\$15,556,500</b>	<b>\$10,388,625</b>	<b>\$9,542,250</b>

**Table 4-5 (contd.)  
Wastewater Capital Improvement Program at 75% of Budget – inflated**

Line #	Proj No.	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	74040	Sewerline Replacement - Aurora Dr Area	\$0	\$0	\$0	\$0	\$0	\$0
2	74043	Sewerline Replacement - Main and Brent St. Area	\$0	\$0	\$0	\$0	\$0	\$0
3	74061	Wastewater Lift Station - North Bank Lift Station Upgrade	\$0	\$0	\$0	\$0	\$0	\$0
4	74062	Sewerline Replacement - Front Street (Hemlock to Ash)	\$0	\$0	\$0	\$0	\$0	\$0
5	74063	Sewerline Replacement - HWY 126 East End Sewer Crossing	\$0	\$0	\$0	\$0	\$0	\$0
6	74065	Transfer Station - Seaside Electrical Equipmt. Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
7	74067	Wastewater Plant - Lighting Improvements	\$0	\$0	\$0	\$0	\$0	\$0
8	96905	Sewerline Rehabilitation - Harbor & Woolsey	\$0	\$0	\$0	\$0	\$0	\$0
9	96909	Wastewater Plant - Disinfection Facility (Pasturization)	\$0	\$0	\$0	\$0	\$0	\$0
10	96913	Sewerline Replacement - Avenue Area	\$0	\$0	\$0	\$0	\$0	\$0
11	96914	Wastewater Plant - Dewatering Equipment Replacement	\$0	\$0	\$0	\$0	\$0	\$0
12	96915	Recycled Waterline - Golf Course Drive	\$0	\$0	\$0	\$0	\$0	\$0
13	96918	Wastewater Plant - Digester Improvement	\$0	\$0	\$0	\$0	\$0	\$0
14	73032	Recycled Water - Reuse of OVSD Effluent	\$750,000	\$1,125,000	\$0	\$0	\$0	\$0
15	74034	Wastewater Plant - Aeration Blowers	\$750,000	\$1,500,000	\$1,500,000	\$0	\$0	\$0
16	74039	Sewerline Replacement - Ann St. Area	\$1,350,000	\$0	\$0	\$0	\$0	\$0
17	74054	Transfer Station - Seaside Station and Forcemain	\$1,710,000	\$4,560,000	\$4,560,000	\$0	\$0	\$0
18	74066	Wastewater - Energy Efficiency Projects	\$0	\$0	\$150,000	\$150,000	\$150,000	\$150,000
19	74058	Recycled Waterline - Diversion Pipelines	\$0	\$3,750,000	\$7,500,000	\$11,250,000	\$11,250,000	\$3,750,000
20	74059	Wastewater Plant - Reclaimed Water Structure	\$4,125,000	\$8,250,000	\$12,375,000	\$12,375,000	\$4,125,000	\$0
21	74064	Sewerline Replacement - Harbor Blvd at Olivias Park Dr.	\$0	\$0	\$0	\$0	\$0	\$0
22	74068	Sewerline Replacement - Eastend Upgrades	\$0	\$0	\$0	\$0	\$0	\$0
23	96874	Wastewater Plant - Tertiary Filter Replacement	\$1,800,000	\$0	\$0	\$0	\$0	\$0
24	96894	Wastewater Plant - Maintenance Storage Building	\$190,500	\$762,000	\$0	\$0	\$0	\$0
25	74032	Wastewater Plant - Chlorine Chamber Rehab	\$0	\$0	\$135,000	\$540,000	\$0	\$0
26	74030	Wastewater Plant - Wetlands Improvements	\$2,100,000	\$2,100,000	\$0	\$0	\$0	\$0
27	74044	Sewerline Replacement - Westside Area	\$0	\$0	\$226,500	\$906,000	\$0	\$0
28	74045	Sewerline Replacement - Catalina/ Thompson Area	\$0	\$0	\$450,000	\$900,000	\$900,000	\$0
29	74046	Sewerline Replacement - Main and Loma Vista Area	\$0	\$0	\$450,000	\$900,000	\$900,000	\$0
30	74047	Sewerline Replacement - Channel Dr Area	\$0	\$0	\$675,000	\$825,000	\$0	\$0
31	74049	Sewerline Replacement - Telegraph Road Area	\$0	\$0	\$345,000	\$1,155,000	\$0	\$0
32	74050	Sewerline Replacement - Sperry Avenue Area	\$0	\$0	\$300,000	\$1,200,000	\$0	\$0
33	74053	Sewerline Replacement - Neath Street Area	\$0	\$0	\$525,000	\$1,050,000	\$1,050,000	\$0
34	74056	Sewerline Replacement Program - Future	\$0	\$0	\$2,109,375	\$2,109,375	\$2,109,375	\$2,109,375
35	96878	Wastewater Plant - Digester 4	\$0	\$0	\$1,050,000	\$2,100,000	\$2,100,000	\$0
36	96884	Wastewater Plant - Landscape Improvements	\$0	\$0	\$187,500	\$0	\$0	\$0
37	91019	Olivias Park Drive Extension-Reclaimed Waterline	\$0	\$0	\$0	\$0	\$0	\$0
38	97938	Meters-Automatic Meter Reading Installation	\$0	\$0	\$0	\$0	\$0	\$0
39								
40	<b>TOTAL CIP</b>		<b>\$12,775,500</b>	<b>\$22,047,000</b>	<b>\$32,538,375</b>	<b>\$35,460,375</b>	<b>\$22,584,375</b>	<b>\$6,009,375</b>

**Major Capital Improvement Financing Plan**

The model is set up for typical CIP funding sources include the following:

**System Revenues:**

- Connection Fees
- Pay-as-you-go revenues
- Interest earnings

**Capital Financing:**

- Debt proceeds
- Grant receipts and Contributions

**Table 4-6** presents the proposed capital financing plan to finance major CIP projects over the study period from FY 2014 to FY 2024. It is projected that the City will issue debt of \$10 million in FY 2016, \$12 million in FY 2018, \$37 million in FY 2020, and \$30 million in FY 2022 to adequately fund the capital improvement program since revenues from rates are insufficient to cover the costs. The total proposed debt issues of \$89 million represent approximately 50 percent of the total CIP costs. Other revenue shown below includes estimated connection fees revenues and grants. The City expects that there may

be grant funding available to offset some of the CIP costs, however, since there is no firm commitment as yet, there are no grant funds included at this time.

**Table 4-6  
Wastewater Capital Financing Plan**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	Debt Financing	\$0	\$0	\$8,991,304	\$0	\$9,236,205
2	Rate Revenue	\$1,974,750	\$8,958,000	\$6,262,188	\$10,084,102	\$0
3	Other Revenue	\$300,000	\$301,500	\$303,008	\$304,523	\$306,045
4	<b>TOTAL CIP</b>	<b>\$2,274,750</b>	<b>\$9,259,500</b>	<b>\$15,556,500</b>	<b>\$10,388,625</b>	<b>\$9,542,250</b>

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	Debt Financing	\$1,553,361	\$21,737,887	\$11,529,940	\$26,973,913	\$0	\$0
2	Rate Revenue	\$10,914,564	\$0	\$20,697,776	\$8,174,249	\$22,270,602	\$5,694,033
3	Other Revenue	\$307,575	\$309,113	\$310,659	\$312,212	\$313,773	\$315,342
4	<b>TOTAL CIP</b>	<b>\$12,775,500</b>	<b>\$22,047,000</b>	<b>\$32,538,375</b>	<b>\$35,460,375</b>	<b>\$22,584,375</b>	<b>\$6,009,375</b>

### 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 2012 Series A and Series B Revenue Bonds. Existing and projected debt service results in annual payments in the range of \$0.4 to \$7.6 million. **Table 4-7** shows the existing and proposed debt service of the wastewater utility.

**Table 4-7  
Existing and Proposed Wastewater Debt Service**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	2012 SERIES A	\$19,396	\$896,677	\$902,280	\$637,504	\$176,453
2	2012 SERIES B	\$411,226	\$655,050	\$655,050	\$655,050	\$1,110,750
3	<b>Total Existing Debt Service</b>	<b>\$430,622</b>	<b>\$1,551,727</b>	<b>\$1,557,330</b>	<b>\$1,292,554</b>	<b>\$1,287,203</b>
4	<b>Total Proposed Debt Service</b>	<b>\$0</b>	<b>\$0</b>	<b>\$354,348</b>	<b>\$708,696</b>	<b>\$1,133,913</b>

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	2012 SERIES A	\$0	\$0	\$0	\$0	\$0	\$0
2	2012 SERIES B	\$1,283,250	\$1,281,350	\$1,278,450	\$1,279,450	\$1,284,150	\$1,282,550
3	<b>Total Existing Debt Service</b>	<b>\$1,283,250</b>	<b>\$1,281,350</b>	<b>\$1,278,450</b>	<b>\$1,279,450</b>	<b>\$1,284,150</b>	<b>\$1,282,550</b>
4	<b>Total Proposed Debt Service</b>	<b>\$1,559,130</b>	<b>\$2,870,217</b>	<b>\$4,181,304</b>	<b>\$5,244,347</b>	<b>\$6,307,390</b>	<b>\$6,307,390</b>

### Reserves

The City requires adequate cash reserves to meet operating, capital, and debt service requirements. RFC is not recommending any changes to the reserves 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 established for repair and rehabilitation-related capital expenses. Standard practice is to have a reserve equal to 100 percent of annual capital replacement expenses. To ensure revenue and rate stability, RFC recommends a target of 100 percent of the ten-year average replacement CIP to provide cash flow for capital needs and to cover unexpected increases in capital expenditures. To minimize customer impacts, the capital reserve is increased by 10 percent each year from 70 percent in FY 2014 to 100 percent by FY 2017. The estimated FY 2014 ending total reserves balance is approximately \$27.5 million, not including the debt reserves. However, most of the funds are already earmarked for existing and planned capital projects. The reserves levels are projected at or above the proposed target level in all years in the study period.

**Table 4-8  
Wastewater Reserves/Fund Balance<sup>8</sup>**

Line #		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	<b>Ending Balance</b>					
2	Operating Fund	\$5,611,779	\$7,082,525	\$9,189,151	\$5,963,150	\$9,472,751
3	Capital Improvement Fund	\$20,850,127	\$11,892,127	\$5,629,939	\$1,545,837	\$1,902,837
4	Estuary Protection Fund	\$1,078,172	\$2,316,087	\$4,119,092	\$6,586,065	\$8,949,848
5	Bond Fund	\$0	\$0	\$0	\$0	\$1,553,361
6	Debt Reserve Fund	\$0	\$0	\$708,696	\$708,696	\$1,559,130
7						
8	<b>Target Balance</b>					
9	Operating Fund	\$3,873,242	\$4,201,786	\$4,249,443	\$4,381,846	\$4,550,273
10	Capital Improvement Fund	\$585,200	\$668,800	\$752,400	\$836,000	\$836,000

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	<b>Ending Balance</b>						
2	Operating Fund	\$6,173,629	\$11,222,712	\$7,344,989	\$14,599,552	\$6,903,839	\$13,339,964
3	Capital Improvement Fund	\$1,104,773	\$5,898,773	\$1,958,496	\$1,816,747	\$1,273,645	\$1,854,612
4	Estuary Protection Fund	\$9,842,766	\$8,361,447	\$5,225,372	\$1,094,241	\$26,744	\$3,217,246
5	Bond Fund	\$0	\$11,529,940	\$0	\$0	\$0	\$0
6	Debt Reserve Fund	\$1,559,130	\$4,181,304	\$4,181,304	\$6,307,390	\$6,307,390	\$6,307,390
7							
8	<b>Target Balance</b>						
9	Operating Fund	\$4,692,477	\$4,839,539	\$4,991,641	\$5,151,553	\$5,317,120	\$5,488,563
10	Capital Improvement Fund	\$836,000	\$836,000	\$836,000	\$836,000	\$836,000	\$836,000

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.

<sup>8</sup> While the CIP shown in Table 4-5 represents 75 percent of the budgeted CIP, the CIP target reserves calculation is based on 100 percent of the budgeted CIP to ensure that the City has sufficient reserves to cover unexpected capital expenditures.

## 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 wastewater revenue adjustments are proposed to meet long term rate stability:

<u>Effective Date</u>	<u>Increases</u>
July 1, 2014	\$1.7 million
July 1, 2015	\$1.8 million
July 1, 2016	\$1.9 million
July 1, 2017	\$2.1 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**

<b>Line #</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
1	Revenue Under Existing Rates	\$17,872,317	\$18,861,413	\$18,832,042	\$18,804,735	\$18,779,826
2						
3	Total Additional Revenue	\$0	\$1,650,374	\$3,439,790	\$5,380,762	\$7,487,062
4	Total Revenue from Rates	\$17,872,317	\$20,511,787	\$22,271,832	\$24,185,497	\$26,266,888
5						
6	Other Operating Revenue	\$463,024	\$258,680	\$261,160	\$263,715	\$266,347
7	Interest Income	\$215,640	\$289,859	\$264,830	\$271,968	\$225,262
8	<b>Total Revenue</b>	<b>\$18,550,981</b>	<b>\$21,060,326</b>	<b>\$22,797,822</b>	<b>\$24,721,180</b>	<b>\$26,758,497</b>
9						
10	O&M Expenses	\$15,492,969	\$16,807,146	\$16,997,772	\$17,527,382	\$18,201,092
11	Existing Debt Service	\$430,622	\$1,551,727	\$1,557,330	\$1,292,554	\$1,287,203
12	Proposed Debt Service	\$0	\$0	\$354,348	\$708,696	\$1,133,913
13						
14	<b>Total Expenses</b>	<b>\$15,923,591</b>	<b>\$18,358,873</b>	<b>\$18,909,450</b>	<b>\$19,528,632</b>	<b>\$20,622,207</b>
15						
16	<b>Net Cash Flow</b>	<b>\$2,627,390</b>	<b>\$2,701,453</b>	<b>\$3,888,372</b>	<b>\$5,192,548</b>	<b>\$6,136,290</b>
17						
18	Debt Coverage Ratio	710%	274%	303%	359%	353%
19	Required Coverage	120%	120%	120%	120%	120%

**Table 4-9 (contd.)  
Wastewater Operating Financial Plan**

Line #		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
1	Revenue Under Existing Rates	\$18,757,430	\$18,737,724	\$18,851,658	\$18,971,507	\$19,094,793	\$19,221,893
2							
3	Total Additional Revenue	\$9,773,746	\$12,257,332	\$15,060,421	\$18,142,339	\$21,528,801	\$25,250,327
4	Total Revenue from Rates	\$28,531,176	\$30,995,056	\$33,912,079	\$37,113,846	\$40,623,594	\$44,472,221
5							
6	Other Operating Revenue	\$269,057	\$271,849	\$274,724	\$277,686	\$280,737	\$283,879
7	Interest Income	\$366,049	\$391,406	\$752,998	\$704,424	\$822,337	\$671,439
8	<b>Total Revenue</b>	<b>\$29,166,282</b>	<b>\$31,658,310</b>	<b>\$34,939,802</b>	<b>\$38,095,956</b>	<b>\$41,726,668</b>	<b>\$45,427,539</b>
9							
10	O&M Expenses	\$18,769,906	\$19,358,155	\$19,966,563	\$20,606,211	\$21,268,481	\$21,954,251
11	Existing Debt Service	\$1,283,250	\$1,281,350	\$1,278,450	\$1,279,450	\$1,284,150	\$1,282,550
12	Proposed Debt Service	\$1,559,130	\$2,870,217	\$4,181,304	\$5,244,347	\$6,307,390	\$6,307,390
13							
14	<b>Total Expenses</b>	<b>\$21,612,286</b>	<b>\$23,509,722</b>	<b>\$25,426,316</b>	<b>\$27,130,008</b>	<b>\$28,860,021</b>	<b>\$29,544,191</b>
15							
16	<b>Net Cash Flow</b>	<b>\$7,553,995</b>	<b>\$8,148,589</b>	<b>\$9,513,485</b>	<b>\$10,965,948</b>	<b>\$12,866,646</b>	<b>\$15,883,347</b>
17							
18	Debt Coverage Ratio	366%	296%	274%	268%	269%	309%
19	Required Coverage	120%	120%	120%	120%	120%	120%

### 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 120 percent, which means that the City’s adjusted net system revenues – system revenues less operating expenses – shall amount to at least 120 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 years. 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 is, by definition, 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 2015, and accordingly FY 2015 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 2015 net cost of service to be recovered from the City’s wastewater users, as shown in **Table 4-10**, is estimated at over \$20.5 million, of which approximately \$19 million is operating costs and the remaining \$1.5 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 2015. 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 Wastewater Revenue Requirements**

	FY 2015		
	Operating	Capital	Total
<b>Revenue Requirements</b>			
O&M Expenses	\$16,807,146		<b>\$16,807,146</b>
Existing Debt Service		\$1,551,727	<b>\$1,551,727</b>
Proposed Debt Service		\$0	<b>\$0</b>
<b>Subtotal Revenue Requirements</b>	<b>\$16,807,146</b>	<b>\$1,551,727</b>	<b>\$18,358,873</b>
<b>Less: Other Revenues</b>			
Other Operating Revenue	\$258,680		<b>\$258,680</b>
Interest Income	\$289,859		<b>\$289,859</b>
<b>Subtotal Other Revenues</b>	<b>\$548,539</b>	<b>\$0</b>	<b>\$548,539</b>
<b>Less: Adjustments</b>			
Adjustments to Annual Cash Balance	(\$2,701,453)		<b>(\$2,701,453)</b>
Adjustments to Annualize Rate Increase	\$0		<b>\$0</b>
<b>Subtotal Adjustments</b>	<b>(\$2,701,453)</b>	<b>\$0</b>	<b>(\$2,701,453)</b>
<b>Revenue to be Recovered from Rates</b>	<b>\$18,960,060</b>	<b>\$1,551,727</b>	<b>\$20,511,787</b>

## Mass Balance

The mass balance analysis is used to estimate and validate 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. Additionally, non-residential and industrial customer flows 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 inflow, 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 49 gallons of wastewater per day. This number, although on the low side, is reasonable given the average water usage in the City. This analysis results in residential strength of 715 mg/l of COD and 342 mg/l of SS. The strength numbers are on the higher side, however, to be expected given the lower flow numbers for residential customers.

**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 2.65 people per household<sup>9</sup>, 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 – Wastewater**

Customer Class	Flow (hcf)	COD (lbs)	SS (lbs)	No. of Units	No. of Bills
SFR	1,807,139	8,066,269	3,861,392	25,715	154,290
MFR	1,083,698	4,837,148	2,315,584	20,561	92,525
Commercial					
Group 1	622,877	1,325,884	536,575	1,515	9,088
Group 2	77,545	300,120	72,610	39	231
Group 3	53,500	400,760	133,587	10	59
Group 4	18,512	184,894	92,447	13	80
Group 5	201,026	1,996,510	624,929	230	1,379
Group 6	5,736	18,798	7,161	1	4
Churches	14,663	27,459	13,729	48	288
Schools	90,963	147,634	56,782	378	48
Industrial	47,545	80,213	34,849	3	18
<b>TOTAL</b>	<b>4,023,202</b>	<b>17,385,688</b>	<b>7,749,644</b>	<b>48,512</b>	<b>258,010</b>

<sup>9</sup> Source: State Department of Finance Report E-5 City/County Population and Housing Estimates, 1/1/2011

## 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 2015 unit costs for each of the wastewater expense categories.

**Table 4-12  
 Development of Unit Cost – Wastewater**

	Flow	COD	SS	Billing	Recycled Water	General	Total
Operating Expenses	\$9,676,120	\$2,241,905	\$2,164,183	\$556,345	\$189,960	\$4,131,546	\$18,960,060
Capital Expenses	\$1,155,188	\$170,348	\$161,831	\$30,283	\$27,256	\$6,821	\$1,551,727
<b>Total Cost</b>	<b>\$10,831,308</b>	<b>\$2,412,254</b>	<b>\$2,326,014</b>	<b>\$586,629</b>	<b>\$217,216</b>	<b>\$4,138,367</b>	<b>\$20,511,787</b>
Allocation of General Cost	\$2,774,409	\$617,892	\$595,802	\$150,263		(\$4,138,367)	
<b>Cost of Service</b>	<b>\$13,605,717</b>	<b>\$3,030,146</b>	<b>\$2,921,816</b>	<b>\$736,892</b>	<b>\$217,216</b>	<b>\$0</b>	<b>\$20,511,787</b>
	66%	15%	14%	4%	1%		
Total Units of Service	4,023,202	17,385,688	7,749,644	258,010	248,445		
Unit of Measure	hcf/yr	lb/yr	lb/yr	bills/yr	hcf/yr		
Total Unit Cost of Service	\$3.38	\$0.17	\$0.38	\$2.86	\$0.87		

### User Class Costs

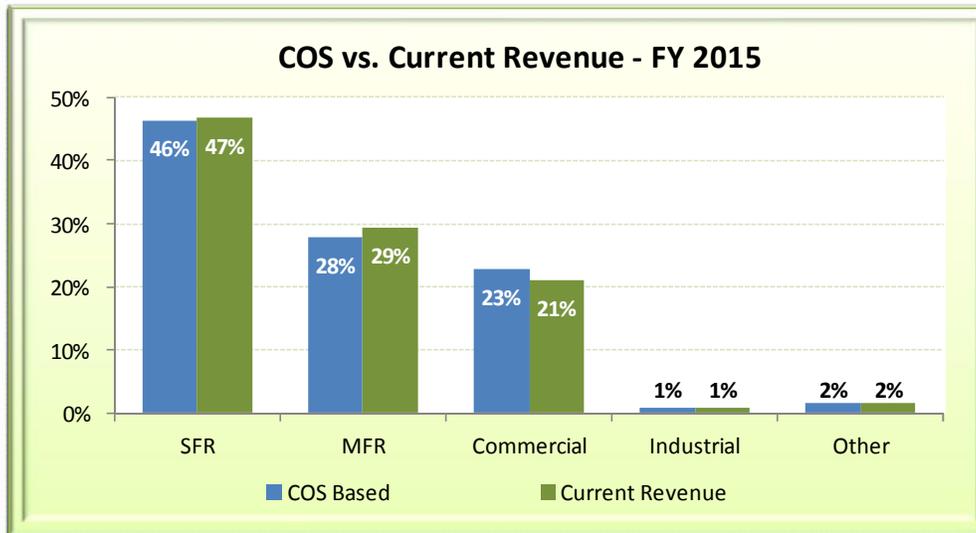
The unit costs shown in **Table 4-12** are then applied to the projected FY 2015 service units for each user class, shown in **Table 4-11**, to derive user class costs. **Table 4-13** shows the FY 2015 cost responsibility for each user class.

**Table 4-13  
Allocation of Wastewater Costs to Customer Classes**

Customer Class	Flow	COD	SS	Billing	Recycled Water	Total
SFR	\$6,111,405	\$1,405,867	\$1,455,845	\$440,662		\$9,413,779
MFR	\$3,664,863	\$843,065	\$873,035	\$264,256		\$5,645,219
Commercial						
Group 1	\$2,106,453	\$231,088	\$202,303	\$25,956		\$2,565,800
Group 2	\$262,243	\$52,308	\$27,376	\$660		\$342,586
Group 3	\$180,927	\$69,848	\$50,366	\$169		\$301,309
Group 4	\$62,604	\$32,225	\$34,855	\$228		\$129,913
Group 5	\$679,832	\$347,971	\$235,614	\$3,939		\$1,267,356
Group 6	\$19,398	\$3,276	\$2,700	\$11		\$25,386
Churches	\$49,586	\$4,786	\$5,176	\$823		\$60,370
Schools	\$307,618	\$25,731	\$21,408	\$137		\$354,895
Industrial	\$160,788	\$13,980	\$13,139	\$51		\$187,958
Reclaimed Water					\$217,216	\$217,216
<b>TOTAL</b>	<b>\$13,605,717</b>	<b>\$3,030,146</b>	<b>\$2,921,816</b>	<b>\$736,892</b>	<b>\$217,216</b>	<b>\$20,511,787</b>

The residential user class has the highest assignment of costs at \$15.1 million and is responsible for 74 percent of the total cost of service. The non-residential user classes are responsible for the remaining 26 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 non-residential customers, as a class, need to pay slightly more than they are currently paying and that residential customers will benefit from the cost of service analysis. The higher allocation for non-residential customers resulted from the updated mass balance analysis which included revised total loadings into the wastewater treatment plant. Individual SFR and MFR customers will see different impacts depending on their actual average winter water usage. SFR customers with high winter water use - up to 30 hcf bi-monthly – will see significant increases in their bill.

**Figure 4-2**  
**Comparison of Wastewater 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 schedules for each user class so as to recover the annual cost of service determined for each user class. This subsection of the report discusses the development of a schedule of wastewater rates for the City’s user classes and analyzes the impact of the proposed changes in cost allocations and rate design on the user classes.

### Proposed Rate Structure

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. Since the wastewater rate structure was revised during the last rate study, RFC recommends that the current rate structure be retained. However, the individual customer class rates are determined based on the cost of service analysis. The following subsections discuss how each rate component is calculated.

#### Residential Customers

RFC recommends that the City retain the current fixed plus flow rate structure to stabilize revenues, and to recognize the fact that wastewater system costs are mostly fixed. 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 so that customers that have high

irrigation demands in winter are not unduly impacted. The caps will allow recovery of wastewater charges on higher density households. Based on the estimated wastewater generation of 49 gallons per day per person, a cap of 30 hcf bi-monthly provides for a household of 7 people for SFR customers. A cap of 24 hcf bi-monthly provides for a household of 6 people for MFR customers.

**Non-Residential Customers**

Similarly, RFC recommends that the City retain the current rate structure and 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 and their user classification.

**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, charges equal to six percent of the wastewater bill in FY 2015, eight percent in FY 2016, and ten percent in FY 2017 and 2018 are recommended. The plan will provide a revenue stream sufficient to fund the debt service payments on the diversion facilities (with a cap of \$155 million) in the future without causing rates spikes. Revenues collected from the Estuary Protection Fund charge will be kept in a separate reserve and used for Estuary protection-related planning studies and facilities. **Table 4-14** shows the proposed wastewater rates for the next four years, from FY 2015 to FY 2018. These rates are effective in July of each year.

**Table 4-14  
Proposed Bi-Monthly Wastewater Rates**

	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>SFR</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.96	\$21.71	\$23.61	\$25.68
Bi-monthly Flow Charge*	\$2.78	\$2.91	\$3.17	\$3.45	\$3.76
Maximum Bill (cap at 30 hcf)	\$101.75	\$107.26	\$116.81	\$127.11	\$138.48
Max Estuary Protection Fund Charge	\$4.07	\$6.44	\$9.34	\$12.71	\$13.85
<b>MFR</b>					
Bi-monthly Fixed Charge	\$13.58	\$14.77	\$16.07	\$17.48	\$19.01
Bi-monthly Flow Charge*	\$2.78	\$2.91	\$3.17	\$3.45	\$3.76
Maximum Bill (cap at 24 hcf)	\$80.30	\$84.61	\$92.15	\$100.28	\$109.25
Max Estuary Protection Fund Charge	\$3.21	\$5.08	\$7.37	\$10.03	\$10.93
Estuary Protection Fund Charge	4% of bill	6% of bill	8% of bill	10% of bill	10% of bill

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

**Table 4-14 (contd.)  
Proposed Bi-Monthly Wastewater Rates**

	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>Commercial</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.96	\$21.71	\$23.61	\$25.68
Bi-monthly Flow Charge**					
Group 1	\$3.26	\$3.83	\$4.17	\$4.54	\$4.94
Group 2	\$3.72	\$4.36	\$4.75	\$5.17	\$5.63
Group 3	\$4.80	\$5.61	\$6.11	\$6.65	\$7.24
Group 4	\$5.84	\$6.94	\$7.55	\$8.22	\$8.94
Group 5	\$5.33	\$6.17	\$6.71	\$7.30	\$7.94
Group 6	\$1.13	\$1.34	\$1.46	\$1.59	\$1.73
Churches	\$2.43	\$2.86	\$3.12	\$3.40	\$3.70
Schools (100 ADA)	\$133.25	\$156.48	\$170.18	\$185.08	\$201.28
<b>Industrial (Monthly)</b>					
Flow (MG)	\$3,835.63	\$4,521.15	\$4,916.76	\$5,346.98	\$5,814.85
COD (klbs)	\$159.08	\$174.29	\$189.55	\$206.14	\$224.18
SS (klbs)	\$294.92	\$377.03	\$410.03	\$445.91	\$484.93
Estuary Protection Fund Charge	4% of bill	6% of bill	8% of bill	10% of bill	10% of bill

\*\* 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. Due to rounding in the calculations, some values may not add to the penny.

### *Residential Customer Impacts*

Under the proposed rates, residential customers will experience a range of impacts depending on their winter water usage level. However, an average SFR customer generating 15 hcf of wastewater per bi-monthly period will see an increase of approximately \$4.97 in their FY 2015 (rates effective July 1, 2014) bi-monthly bill compared to the existing rates.

**Tables 4-15** and **4-16** show the total bi-monthly bill impacts for SFR and MFR customers at different levels of winter water consumption, respectively.

**Table 4-15  
SFR Wastewater Bi-Monthly Rate Impacts**

SFR	Winter Use (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	5	\$33.54	\$36.58	\$40.56	\$44.95	\$48.93	\$3.04	\$3.98	\$4.38	\$3.98
Low	10	\$48.00	\$52.00	\$57.68	\$63.92	\$69.61	\$4.01	\$5.68	\$6.24	\$5.69
Average	15	\$62.45	\$67.43	\$74.80	\$82.90	\$90.29	\$4.97	\$7.37	\$8.10	\$7.39
High	25	\$91.36	\$98.27	\$109.04	\$120.85	\$131.65	\$6.91	\$10.76	\$11.81	\$10.80
Very High	30	\$105.82	\$113.70	\$126.15	\$139.82	\$152.33	\$7.88	\$12.46	\$13.67	\$12.51

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

**Table 4-16  
MFR Wastewater Bi-Monthly Rate Impacts - Per Dwelling Unit**

MFR	Winter Use (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	3	\$22.80	\$24.91	\$27.63	\$30.61	\$33.32	\$2.11	\$2.72	\$2.99	\$2.71
Low	6	\$31.47	\$34.16	\$37.90	\$42.00	\$45.73	\$2.69	\$3.73	\$4.10	\$3.73
Average	10	\$43.04	\$46.50	\$51.59	\$57.18	\$62.27	\$3.47	\$5.09	\$5.59	\$5.09
High	15	\$57.49	\$61.93	\$68.71	\$76.15	\$82.95	\$4.43	\$6.78	\$7.44	\$6.80
Very High	24	\$83.51	\$89.69	\$99.52	\$110.31	\$120.18	\$6.17	\$9.84	\$10.79	\$9.87

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

### Non-Residential Customer Impacts

Under the proposed rates, non-residential customers will experience different rate impacts depending on their group and usage level. **Table 4-17** shows the rate impact of an average user within each group.

**Table 4-17  
Non-Residential Wastewater Bi-Monthly Rate Impacts**

Commercial	Bi-Monthly Usage	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Group 1	70	\$256.41	\$305.34	\$338.70	\$375.55	\$408.63	\$48.93	\$33.36	\$36.85	\$33.08
Group 2	331	\$1,299.66	\$1,550.91	\$1,721.48	\$1,908.37	\$2,078.13	\$251.25	\$170.57	\$186.89	\$169.76
Group 3	923	\$4,626.70	\$5,509.87	\$6,114.14	\$6,777.72	\$7,379.02	\$883.17	\$604.27	\$663.58	\$601.30
Group 4	147	\$911.90	\$1,102.55	\$1,222.08	\$1,355.15	\$1,473.85	\$190.65	\$119.54	\$133.06	\$118.70
Group 5	122	\$695.35	\$819.06	\$907.56	\$1,005.63	\$1,093.80	\$123.71	\$88.49	\$98.07	\$88.16
Group 6	200	\$254.12	\$305.24	\$338.81	\$375.77	\$408.85	\$51.11	\$33.57	\$36.96	\$33.08
Schools	704 ADA	\$938.08	\$1,167.72	\$1,293.91	\$1,433.26	\$1,558.71	\$229.64	\$126.20	\$139.35	\$125.45
Churches	242	\$606.41	\$754.80	\$838.89	\$931.05	\$1,013.19	\$148.39	\$84.09	\$92.16	\$82.14

Note: Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

## SECTION 5 – BILL COMPARISON

Tables 5-1 through 5-3 show the combined water and wastewater bill impacts for residential customers at various usage levels and for non-residential customers at average usage level. Due to rounding in the calculations, some values may not add to the penny.

Table 5-1 shows that an average SFR customer with a 3/4 inch meter using 21 hcf of water and generating 15 hcf of wastewater per bi-monthly period will see an increase of approximately \$9.68 in their FY 2015 (rates effective July 1, 2014) bi-monthly bill compared to the existing rates.

**Table 5-1  
 SFR Combined Bi-Monthly Rate Impacts**

SFR	Winter Use (hcf)	Bi-monthly Usage (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	5	5	\$69.40	\$75.03	\$81.84	\$89.26	\$96.47	\$5.63	\$6.81	\$7.41	\$7.21
Low	10	12	\$98.91	\$106.06	\$115.76	\$126.29	\$136.54	\$7.16	\$9.70	\$10.53	\$10.25
<b>Average</b>	<b>15</b>	<b>21</b>	<b>\$138.10</b>	<b>\$147.79</b>	<b>\$161.13</b>	<b>\$175.63</b>	<b>\$189.85</b>	<b>\$9.68</b>	<b>\$13.34</b>	<b>\$14.50</b>	<b>\$14.22</b>
High	25	35	\$217.24	\$233.06	\$253.82	\$276.38	\$298.69	\$15.82	\$20.75	\$22.56	\$22.31
Very High	30	50	\$303.55	\$327.54	\$355.83	\$386.55	\$417.32	\$23.99	\$28.30	\$30.72	\$30.77

Note: Assume 3/4" meter. Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

Table 5-2 shows that an average MFR dwelling unit using 13 hcf of water and generating 10 hcf of wastewater per bi-monthly period will see an increase of approximately \$7.06 in their FY 2015 (rates effective July 1, 2014) bi-monthly bill compared to the existing rates.

**Table 5-2  
 MFR Combined Bi-Monthly Rate Impacts – Per Dwelling Unit**

MFR	Winter Use (hcf)	Bi-monthly Usage (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 $\Delta$ prior year	FY 2016 $\Delta$ prior year	FY 2017 $\Delta$ prior year	FY 2018 $\Delta$ prior year
Very Low	3	3	\$54.36	\$58.90	\$64.11	\$69.76	\$75.32	\$4.54	\$5.21	\$5.66	\$5.56
Low	6	8	\$73.78	\$79.30	\$86.38	\$94.05	\$101.58	\$5.52	\$7.07	\$7.67	\$7.53
<b>Average</b>	<b>10</b>	<b>13</b>	<b>\$98.41</b>	<b>\$105.46</b>	<b>\$114.92</b>	<b>\$125.19</b>	<b>\$135.27</b>	<b>\$7.06</b>	<b>\$9.46</b>	<b>\$10.27</b>	<b>\$10.08</b>
High	15	22	\$150.36	\$161.87	\$176.05	\$191.44	\$206.74	\$11.50	\$14.18	\$15.39	\$15.30
Very High	24	35	\$238.65	\$258.14	\$280.44	\$304.64	\$328.86	\$19.48	\$22.31	\$24.20	\$24.22

Note: Assume 3/4" meter. Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

**Table 5-3  
 Non-Residential Combined Bi-Monthly Rate Impacts**

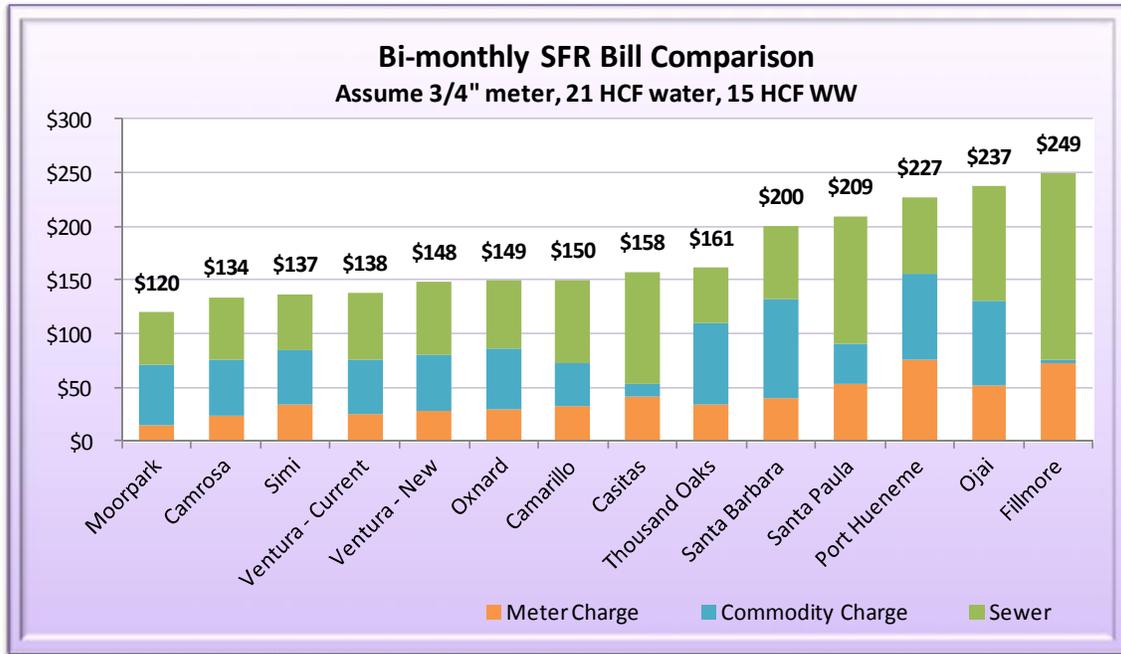
Non-Residential	Bi-monthly Usage (hcf)	Current Total Bill	FY 2015 Total Bill	FY 2016 Total Bill	FY 2017 Total Bill	FY 2018 Total Bill	FY 2015 Δ prior year	FY 2016 Δ prior year	FY 2017 Δ prior year	FY 2018 Δ prior year
Group 1	70	\$484	\$548	\$599	\$656	\$710	\$65	\$51	\$56	\$54
Group 2	331	\$2,232	\$2,546	\$2,789	\$3,055	\$3,311	\$314	\$243	\$266	\$256
Group 3	923	\$7,157	\$8,209	\$9,011	\$9,890	\$10,725	\$1,052	\$801	\$879	\$836
Group 4	147	\$1,347	\$1,566	\$1,719	\$1,888	\$2,046	\$219	\$153	\$168	\$159
Group 5	122	\$1,063	\$1,212	\$1,329	\$1,458	\$1,580	\$149	\$117	\$129	\$122
Group 6	200	\$832	\$923	\$1,001	\$1,087	\$1,174	\$90	\$79	\$86	\$87
Schools	704 ADA	\$2,326	\$2,648	\$2,882	\$3,140	\$3,394	\$322	\$234	\$257	\$254
Churches	242	\$1,298	\$1,491	\$1,626	\$1,777	\$1,923	\$192	\$135	\$151	\$146

Note: Assume 1" meter, bi-monthly usage for schools is 500 hcf. Estuary surcharge ranges from 6% in FY 2015 to 10% in FY 2018

The City conducted a survey of water and wastewater charges at the City neighboring and comparable agencies in Ventura County. Such 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. Charges at various agencies as of November 2013 (the time period at which the survey was conducted) are shown in **Figure 5-1** below. Some of these agencies may be in the process of increasing their rates.

**Figure 5-1** compares the total bi-monthly water and wastewater service charges for an average SFR customer with a 3/4" meter, 21 hcf of water usage, and 15 hcf of winter water usage bi-monthly.

Figure 5-1  
 Total Bill Comparison<sup>10</sup>



<sup>10</sup> Rates shown in survey were as of November 2013.

## APPENDIX A

### ALTERNATIVE FINANCING SCENARIO

RFC evaluated several financing alternatives for the City’s CIP. The recommended financial plan presented in this report funds 75 percent of the budgeted CIP at approximately 50 percent debt funding (total debt issues divided by total CIP over the planning period). A variation of the recommended financial plan also funds 75 percent of the budgeted CIP, but at approximately 69 percent debt funding. This variation resulted in lower revenue needs for the short term and increased interest expenses due to the level of debt funding. The scenarios were presented to the Citizens Advisory Committee, which expressed a preference for the lower debt funding option so as to not burden future generations with a high debt load.

Figures A-1 through A-4 show the financial plan results of the higher debt funding option for the water utility.

Figure A-1  
 Water Revenue Adjustments

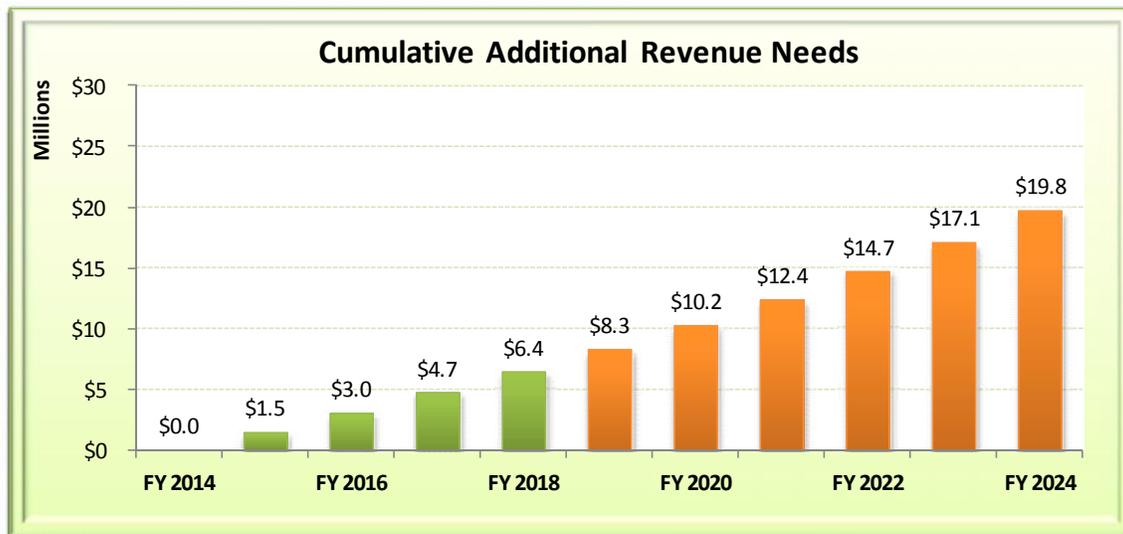


Figure A-2  
 Water Operating Financial Plan

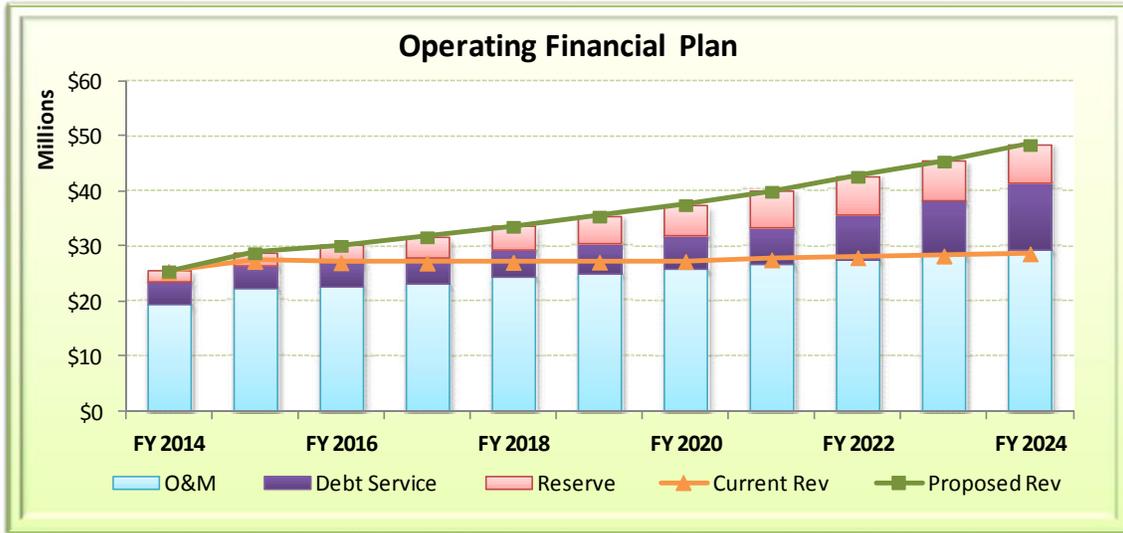


Figure A-3  
 Water CIP Funding Sources

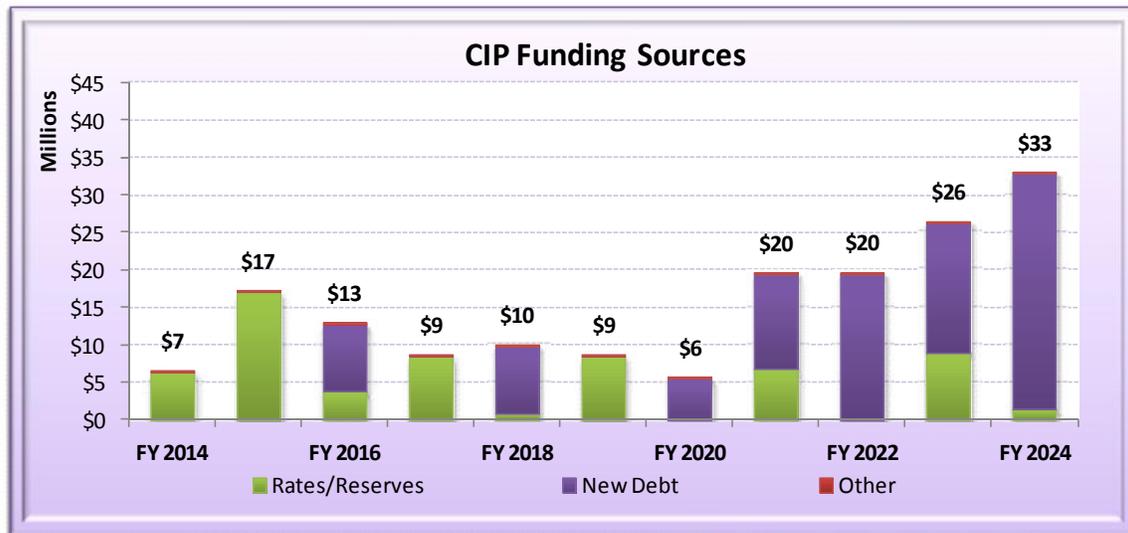


Figure A-4  
 Water Total Reserves Balance

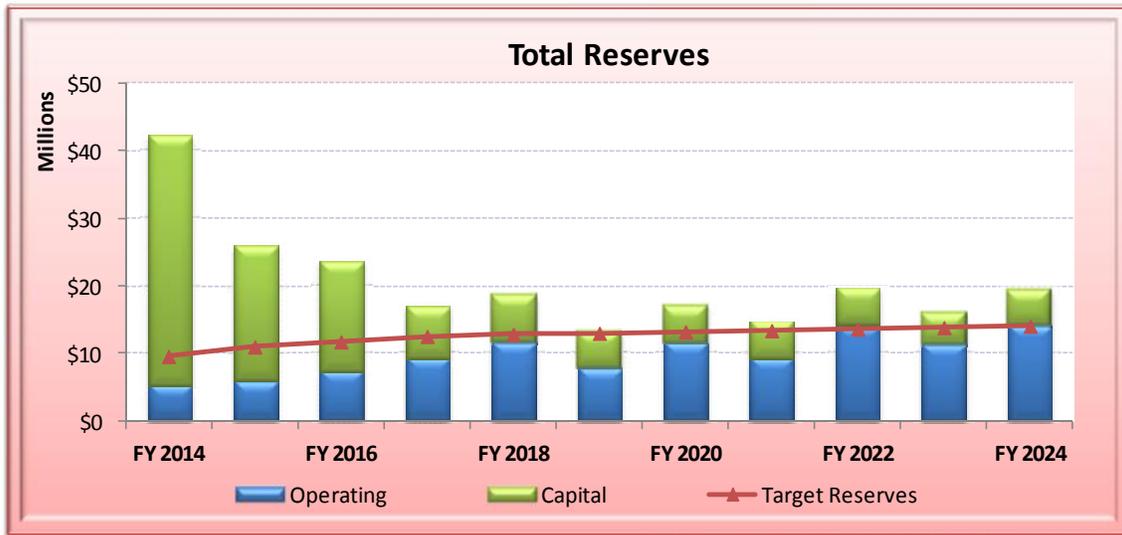


Table A-1 shows the water rates over the next four years under the higher debt funding alternative.

**Table A-1  
Proposed Bi-monthly Water Rates – Higher Debt Funding**

Bi-Monthly Rates	Current	Effective				
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017	
<b>Bi-Monthly Service Charge</b>						
<b>Meter Size</b>						
3/4"	\$25.11	\$27.04	\$28.73	\$30.53	\$32.44	
1"	\$38.35	\$40.98	\$43.55	\$46.28	\$49.18	
1 1/2"	\$71.46	\$75.83	\$80.57	\$85.61	\$90.97	
2"	\$111.20	\$117.64	\$125.00	\$132.82	\$141.13	
3"	\$237.00	\$250.06	\$265.69	\$282.30	\$299.95	
4"	\$422.41	\$445.21	\$473.04	\$502.61	\$534.03	
6"	\$866.05	\$912.16	\$969.17	\$1,029.75	\$1,094.11	
8"	\$1,594.43	\$1,678.80	\$1,783.73	\$1,895.22	\$2,013.68	
10"	\$2,521.46	\$2,654.52	\$2,820.43	\$2,996.71	\$3,184.01	
12"	\$3,316.05	\$3,490.86	\$3,709.04	\$3,940.86	\$4,187.17	
<b>Bi-Monthly Fireline Charge</b>						
<b>Meter Size</b>						
1" Ubranch	\$6.47	\$7.05	\$7.49	\$7.96	\$8.46	
1"	\$6.47	\$7.05	\$7.49	\$7.96	\$8.46	
1 1/2"	\$6.47	\$7.05	\$7.49	\$7.96	\$8.46	
2"	\$6.47	\$7.05	\$7.49	\$7.96	\$8.46	
3"	\$18.78	\$20.47	\$21.76	\$23.12	\$24.57	
4"	\$40.00	\$43.63	\$46.36	\$49.26	\$52.34	
6"	\$116.20	\$126.73	\$134.66	\$143.08	\$152.03	
8"	\$247.61	\$270.07	\$286.96	\$304.90	\$323.96	
10"	\$445.29	\$485.68	\$516.04	\$548.30	\$582.57	
12"	\$719.26	\$784.51	\$833.55	\$885.65	\$941.01	
<b>Volume Rates (\$/hcf)</b>						
<b>SFR</b>						
Tier 1	0 to 14	\$2.15	\$2.20	\$2.34	\$2.49	\$2.65
Tier 2	15 to 30	\$2.92	\$3.08	\$3.28	\$3.49	\$3.71
Tier 3	> 30	\$4.79	\$5.21	\$5.54	\$5.89	\$6.26
<b>MFR</b>						
Tier 1	0 to 10	\$2.15	\$2.20	\$2.34	\$2.49	\$2.65
Tier 2	11 to 16	\$2.92	\$3.08	\$3.28	\$3.49	\$3.71
Tier 3	> 16	\$4.79	\$5.21	\$5.54	\$5.89	\$6.26
Non-Residential		\$2.70	\$2.85	\$3.03	\$3.22	\$3.43
Institutional/Interruptible Rate		\$2.15	\$2.20	\$2.34	\$2.49	\$2.65
Reclaimed Water		\$0.68	\$0.76	\$0.81	\$0.87	\$0.93
Untreated Water		\$2.04	\$2.29	\$2.44	\$2.60	\$2.77
Outside City Rates		\$0.76/hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf	\$0.60 /hcf

Figures A-5 through A-8 show the financial plan results of the higher debt funding option for the wastewater utility.

Figure A-5  
 Wastewater Revenue Adjustments

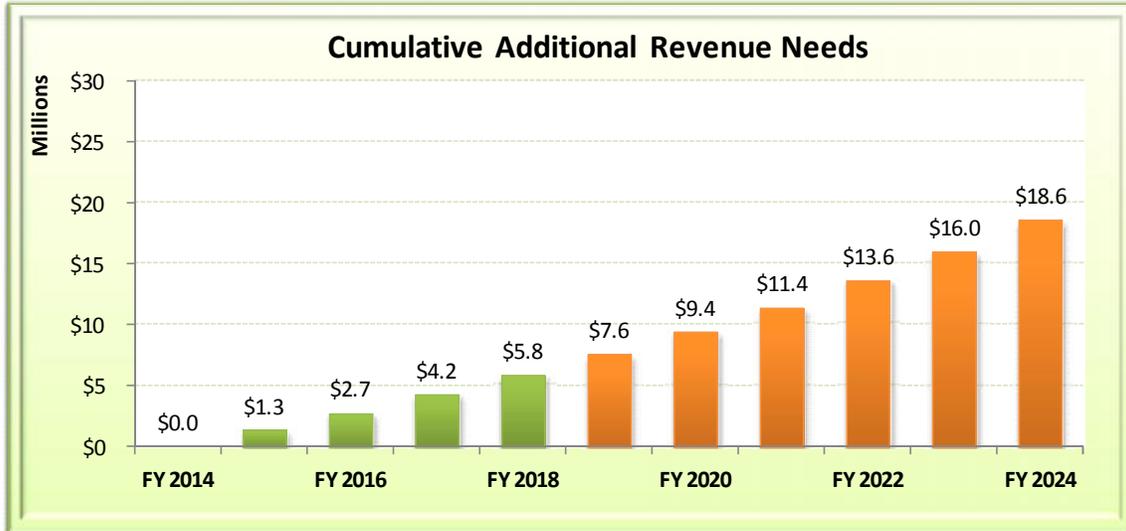


Figure A-6  
 Wastewater Operating Financial Plan

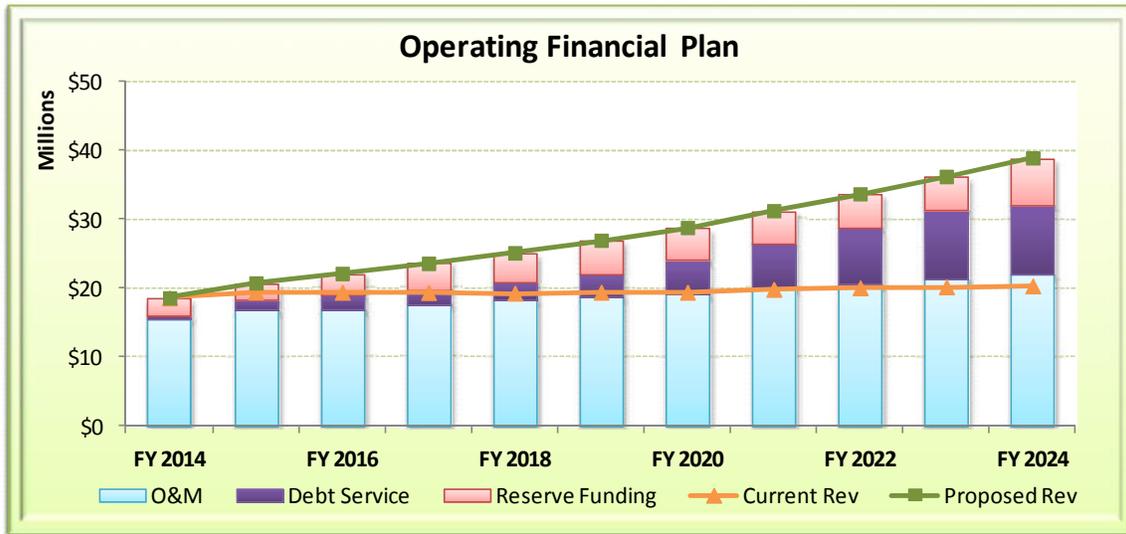


Figure A-7  
 Wastewater CIP Funding Sources

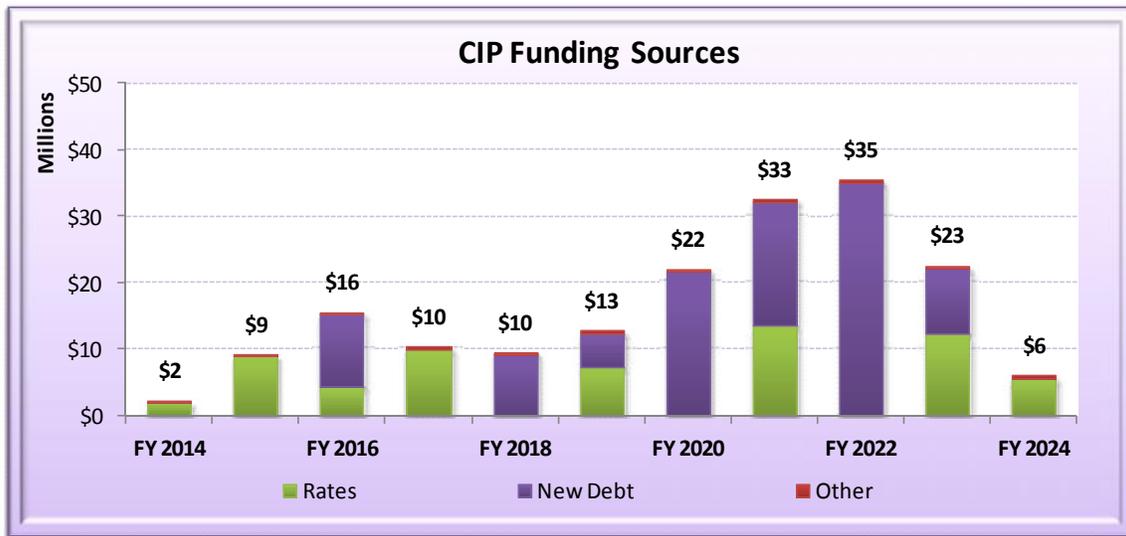


Figure A-8  
 Wastewater Total Reserves Balance



Table A-2 shows the wastewater rates over the next four years under the higher debt funding alternative.

**Table A-2  
Proposed Bi-Monthly Wastewater Rates – Higher Debt Funding**

	Current	Effective			
	Rates	July 1, 2014	July 1, 2015	July 1, 2016	July 1, 2017
<b>SFR</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.64	\$21.02	\$22.50	\$24.08
Bi-monthly Flow Charge*	\$2.78	\$2.87	\$3.08	\$3.30	\$3.54
Maximum Bill (cap at 30 hcf)	\$101.75	\$105.74	\$113.42	\$121.50	\$130.28
Max Estuary Protection Fund Charge	\$4.07	\$6.34	\$9.07	\$12.15	\$13.03
<b>MFR</b>					
Bi-monthly Fixed Charge	\$13.58	\$14.54	\$15.56	\$16.65	\$17.82
Bi-monthly Flow Charge*	\$2.78	\$2.87	\$3.08	\$3.30	\$3.54
Maximum Bill (cap at 24 hcf)	\$80.30	\$83.42	\$89.48	\$95.85	\$102.78
Max Estuary Protection Fund Charge	\$3.21	\$5.01	\$7.16	\$9.59	\$10.28
<b>Commercial</b>					
Bi-monthly Fixed Charge	\$18.35	\$19.64	\$21.02	\$22.50	\$24.08
Bi-monthly Flow Charge**					
Group 1	\$3.26	\$3.77	\$4.04	\$4.33	\$4.64
Group 2	\$3.72	\$4.29	\$4.60	\$4.93	\$5.28
Group 3	\$4.80	\$5.52	\$5.91	\$6.33	\$6.78
Group 4	\$5.84	\$6.82	\$7.30	\$7.82	\$8.37
Group 5	\$5.33	\$6.07	\$6.50	\$6.96	\$7.45
Group 6	\$1.13	\$1.32	\$1.42	\$1.52	\$1.63
Churches	\$2.43	\$2.81	\$3.01	\$3.23	\$3.46
Schools (100 ADA)	\$133.25	\$153.99	\$164.77	\$176.31	\$188.66
<b>Industrial (Monthly)</b>					
Flow (MG)	\$3,835.63	\$4,449.35	\$4,760.81	\$5,094.07	\$5,450.66
COD (klbs)	\$159.08	\$171.42	\$183.42	\$196.26	\$210.00
SS (klbs)	\$294.92	\$370.80	\$396.76	\$424.54	\$454.26
Estuary Protection Fund Charge	4% of bill	6% of bill	8% of bill	10% of bill	10% of bill

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

\*\* Based on actual water usage

## APPENDIX B

### RIGHT OF WAY FEES AND PAVEMENT OBLIGATIONS CALCULATIONS

As part of the scope of services, RFC reviewed the City's current Right of Way (ROW) fees, which consisted of 1.5 percent of the total gross revenues for the water and wastewater enterprises. The fees are payable to the City's general fund as rental fees for the right of use of the City's streets. The original calculations were completed in 2005, and the City wanted to review the methodology to ensure that it is consistent with cost of service principles and that the water and wastewater enterprises pay their fair share of the costs related to the use of the City's streets.

Based on RFC's review of the calculations and on discussion with the City's engineering staff, RFC recommends that the current ROW fees be revised to include a pavement obligation component to account for the additional wear and tear to the portions of the streets that are not part of the actual trench cut when utility work is performed. The rationale is that the heavy machinery used in the construction degrades the overall life of the streets, causing the City to repave the streets more regularly. Thus, it is appropriate to charge a pavement obligation component as part of the ROW fees. Additionally, RFC recommends that the ROW fees and pavement obligations be a fixed amount instead of a percentage of the gross revenues.

To assist in calculating the new ROW fees, RFC engaged Ventura Appraisal Consulting Corporation (VACC) to determine the rental value of the City's ROW. The complete VACC report is included in Appendix C. Using the estimated rental value, the length of the ROW, the miles of water and wastewater pipelines, and the estimated repaving costs, RFC calculated the proposed ROW fees and pavement obligations as shown in **Tables B-1** and **B-2**. For wastewater services, the laterals replacements are the customers' responsibility and are thus not included in the ROW fees calculation.

**Table B-1  
Proposed Right of Way Fees and Pavement Obligations – Water Enterprise**

<b>Water System</b>	
Right of Way Length - Mains Only	380 miles
Right of Way Length - Laterals in Street	114 miles
Total Length of Pipes in Right-of-Way	494 miles
	2,608,320 linear ft
for a 5 ft wide easement, Total Area	13,041,600 sq ft
<b>Base Valuation @</b>	
	<b>\$5 / sq ft    \$65,208,000</b>
<b>Easement Value for Buried Pipeline</b>	
	<b>10%    \$6,520,800</b>
Rental Value of 5% rate of return	5%
<b>Total Fair Rental Value</b>	<b>\$326,040</b>
<b>Pavement Obligations (Main Replacements)</b>	
Length of Pipelines in City	380 miles
Average Replacement Cycle	100 years
Annual Main Replacement	3.8 miles/yr
Annual Main Replacement	20,064 feet/year
Full Cost of Street Repaving (Main only)	\$36 per foot
Cost Portion to Water Utility (Main only)*	\$10 per foot
<b>Annual Cost to Water (Main only)</b>	<b>\$199,837</b>
<b>Pavement Obligations (Lateral Replacements)</b>	
Number of Water Meters/Services (citiwide)	28,679
Street Width (Average)	42 feet
Average Length of Laterals	21 feet
Total Feet of Laterals	602,259 feet
Effective Length (overlapping areas removed)	430,185 feet
Average Replacement Cycle	100 years
Annual Lateral Replacement	4,302 feet/year
Full Cost of Street Repaving (from Lateral Work)	\$18 per foot
Cost Portion to Water Utility (Lateral only)*	\$5 per foot
<b>Annual Cost to Water (Lateral only)</b>	<b>\$21,423</b>
<b>Pavement Obligations (Main and Lateral Breaks)</b>	
Number of Repairs per Year (requiring asphalt cuts)	30
Average length of trench	10 feet
Total feet of trench per year	300 feet
Full Cost of Street Repaving (Mains and Laterals)	\$36 per foot
Cost Portion to Wastewater Utility (Mains and Laterals)*	\$10 per foot
<b>Annual Cost to Water</b>	<b>\$2,988</b>
<b>Total Pavement Obligation</b>	<b>\$224,249</b>
<b>Proposed ROW Fee</b>	<b>\$550,289</b>
Increase (Decrease) from current	\$205,289

\*Note: Pavement obligations account for damage/degradation to surrounding pavement areas outside of the resurfaced trench at 50 cents per sq. ft. for affected areas

**Table B-2  
Proposed Right of Way Fees and Pavement Obligations – Wastewater Enterprise**

<b>Sewer System</b>	
Right of Way Length - Mains Only	300 miles
Right of Way Length - Laterals in Street	0 miles
Total Length of Pipes in Right-of-Way	300 miles
	1,584,000 linear ft
for a 5 ft wide easement, Total Area	7,920,000 sq ft
<b>Base Valuation @</b>	
	<b>\$5 / sq ft    \$39,600,000</b>
<b>Easement Value for Buried Pipeline</b>	
	<b>10%    \$3,960,000</b>
Rental Value of 5% rate of return	5%
<b>Total Fair Rental Value</b>	<b>\$198,000</b>
<b>Pavement Obligations (Main Replacements)</b>	
Length of Pipelines in City *	300 miles
Average Replacement Cycle	100 years
Annual Main Replacement	3.0 miles/yr
Annual Main Replacement	15,840 feet/year
Full Cost of Street Repaving (Main only)	\$54 per foot
Cost Portion to Wastewater Utility (Main only)*	\$15 per foot
<b>Annual Cost to Wastewater (Main only)</b>	<b>\$236,650</b>
<b>Pavement Obligations (Main Breaks)</b>	
Number of Repairs per Year (requiring asphalt cuts)	15
Average length of trench	10 feet
Total feet of trench per year	150 feet
Full Cost of Street Repaving	\$54 per foot
Cost to Wastewater Utility*	\$15 per foot
<b>Annual Cost to Wastewater</b>	<b>\$2,241</b>
<b>Total Pavement Obligation</b>	<b>\$238,891</b>
<b>Proposed ROW Fee</b>	<b>\$436,891</b>
Increase (Decrease) from current	\$193,891

\*Note: Pavement obligations account for damage/degradation to surrounding pavement areas outside of the resurfaced trench at 50 cents per sq. ft. for affected areas

For purposes of projections, the rental component of the total ROW fees does not increase in future years. The pavement obligation component, on the other hand, is projected to increase based on the Construction Cost Index published by the Engineering News-Record.

## APPENDIX C

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### VENTURA APPRAISAL CONSULTING CORPORATION REPORTS

# FAIR USE VALUE REPORT

For the

**CITY OF VENTURA**

**Water and Sewer Rights of Way  
In Ventura Public Streets**

**Ventura, California**



**November 19, 2013**

**Prepared For:**

**Sudhir Pardiwala, PE  
Raftelis Financial Consultants, Inc.  
Pasadena, California**

**Ventura Appraisal Consulting Corporation**



## Ventura Appraisal Consulting Corporation

November 19, 2013

Mr. Sudhir Pardiwala, PE  
Executive Vice President  
Raftelis Financial Consultants, Inc.  
201 S. Lake Avenue, Suite 301  
Pasadena, CA 91101

Re: City of Ventura  
Determination of Fair Use Values  
Water and Sewer Rights of Way

Dear Mr. Pardiwala:

This firm has been retained by your financial consulting firm to undertake an analysis of certain rights of way utilized by the Ventura water and sewer systems in public streets throughout the city of Ventura. This is to assist in determination of the reasonable and supportable use costs that would be attributable to these two public utilities which are considered separate enterprise entities by the City of Ventura.

As part of our investigation we have consulted with Shana Epstein, the manager of the Water and Sewer Departments and with Joe McDermott PE, Division Manager and Principal Engineer of the Capital Improvements Design and Land Development Engineering Department of the City of Ventura. We have consulted the City's General Plan and other resource documents from the city. Certain calculations for the repair, replacement and maintenance of public streets in the city have also been reviewed.

### **Valuation Analysis and Problem:**

This study is separated between the water system and the sewer system which, by law, use separate rights of way. These two pipeline systems are required to be separated by 10' either horizontally or vertically. The pipelines can not share the same rights of way. As a result, each system will be valued independently.

This firm has been provided the total length of both systems in lineal feet. We have, based on over 45 years of appraising numerous pipeline rights of way, determined that the appropriate width of easements for buried pipelines is five feet (5'). This allows for the width of the trench plus adequate excess area to allow necessary service equipment. It is then a simple calculation to determine the total area and, consequently, the value of the easements utilized .

In addition to the calculation of the value of easements rights within city streets, calculation of the reasonable assessment of the contributory allocation by these two utilities to the repair, maintenance and replacement of the city streets was made. This analysis was prepared by the City's engineering department but was supplemented by input from this firm to come to a contributory valuation for the street component of the overall calculation of reasonable rental for use of public streets within the city. The final conclusion would be the fair use value for the utilization of public streets by these two public utilities.

**Water System:**

According to the Ventura Utility Atlas there are 380 miles of main water lines and 114 miles of lateral pipelines for a total of 494 miles of buried water pipelines in public streets. This calculates to 2,608,320 lineal feet. Utilizing a 5' width as the reasonable width for these water pipeline easements, the total surface area of the entire water distribution system is 13,041,600 square feet or 299.4 acres.

In order to compute a value for the pipeline easements, this firm has considered the value of the easement predicated on equating the street values as though they were part of undeveloped lands that have had tentative track approval but without the actual offsite street improvements constructed. This is the same formula that the City of Ventura uses when determining the developer's contribution under its Quimby fee analysis. Street rights of way are donated to the City as a condition of approval. It is this firm's opinion, based on our numerous appraisals both for development and Quimby fee calculations that the fee value of streets, in their as is state with only tentative tract approvals under the Subdivision Map Act, is \$5.00 per square foot (\$218,600 per acre). Further, the value of an underground buried pipeline easement is generally considered to be 10% of fee value.

This valuation analysis for water system pipeline easements can be shown as follows:

- 1) 13,041,600 sq. ft. @ \$5.00/ sq.ft. = **\$65,208,000 for the fee value of the total easement area**
- 2) \$65,208,000 @ 10% of fee value = **\$6,520,800 for the fair market value of the water pipeline easements**

To determine the fair rental value attributable to the above value calculation of the water pipeline easements, this firm is relying on the fair market rates of return for vacant land in the Ventura area which have ranged from approximately 5% to 8% per annum. For this study, we are using a 5% per annum for the rate of return that the City could reasonably expect as

Mr. Pardiwalla  
November 19, 2013  
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rental for the use of its property. The following is the calculation of fair rental value for the water pipeline easements;

**\$6,520,800 @ 5% rate of return = \$326,000 (r) Annual Rental for water pipeline easements**

The second aspect of valuation of the necessary contribution toward its use of City streets is the proportional share that this utility should share in the costs to repair, maintain and replace the public streets. This firm has reviewed the study prepared by the Principal City Engineer for Capital Improvements and Development. The calculations determined the expected life of the 380 miles of streets that include the main water lines is 100 years or approximately 3.8 miles replacement per year. Utilizing an average width of a city street of 42' and a 5' width of the water pipeline easements, the calculation for contributory cost due to the water system is \$200,000.

For the 114 miles of lateral lines, the equivalent calculations were made which resulted in \$21,500 for the 5' wide easements for lateral lines. In addition, the senior City engineer has determined, based on past experience, that the water agency can expect approximately 30 street cuts per year due to breaks and/or needed repairs to the system. That calculation resulted in an additional \$3,000 per year.

The sum total of these three aspects of the proportional contribution to the street infrastructure in Ventura caused by the water system is **\$224,500 per year**.

The total fair rental value of the Ventura Water System reasonably related to its facilities located in the public streets is, in this firm's opinion, is:

**FIVE HUNDRED FIFTY THOUSAND, FIVE HUNDRED DOLLARS  
(\$550,500 per annum)**

**Sewer System:**

The is a total of 300 miles of sewer main line and an additional 114 miles of sewer laterals buried in city streets or a total of 414 miles of pipelines according to the City's Utility Atlas. This computes to 2,185,820 lineal feet of sewer lines. Utilizing a 5' width for the

proposed pipeline easement the total area of the easement is 10,929,600 square feet or 250.9 acres. Three feet is necessary for the actual trench in which the pipeline is laid, but the five foot wide easement allows a small additional area on either side of the trench for access for equipment.

Utilizing the same analysis that this firm used above for the water system, that is, \$5.00 per square foot for the value of the street in it tentative tract approval condition similar to the Quimby fee valuation process, the following valuation of the sewer easement can be made;

- 1) 10,929,600 square feet @ \$5.00 per sq.ft. = **\$54,648,000 fee value of easement area**
- 2) \$54,648,000 @ 10% of fee value = **\$5,464,800 fair market value of the sewer pipeline easement**

To determine the fair rental value of the easement area for the sewer system, this firm will utilize the same 5% rate of return that was used for the water utility analysis above. This results in the following calculation for annual fair rental value of these easements;

**\$5,464,800 fair market value of easements @ 5% per annum = \$273,500 (r) annual rental for use of easements in public streets for the sewer system facilities.**

The second aspect of the sewer easements in the city streets is the necessity for contribution for the repairs, maintenance and replacement for use of the public streets. Once again this firm is relying on the analysis provided by the City engineer, however, we are utilizing the width of 5' for the sewer easements. In addition, the City's engineering staff has determined that due to higher standards and deeper depths of the sewer system, the costs of repaving the streets runs slightly higher than water pipeline repairs.

Based on the length of the sewer pipelines, but utilizing the same standards for street replacement and width of streets, the proportionate costs for pavement replacement of the main sewer lines is determined to be: main lines - **\$236,700 per year**; for lateral lines - **\$25,700 per year** and street repairs for estimated 15 street cuts a year for repairs and replacement of sewer lines or **\$2,250 per year**.

This totals **\$264,500** for the contributory value to street pavement replacement and/or repairs attributable to the sewer system. The total annual fair rental value for the Ventura Sewer system for use of the public streets rights of way is:

**FIVE HUNDRED THIRTY EIGHT THOUSAND DOLLARS**

**(\$538,000 per annum rental)**

Mr. Pardiwalla  
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In summary, it is this firm's opinion that the fair use and rental value for each of the following utilities for use of the City of Ventura's streets is:

**Water System - \$550,500 per year**

**Sewer System - \$538,000 per year**

It must be noted that this is not a complete real estate appraisal but is an economic study of an appropriate basis for the use of public streets by these two utilities. It is an analysis that is suited to the needs of the client for purposes of a reasonable basis for adjustment for the use of public streets.

If, after review of this report, you wish to discuss it in more detail, we would be available to do so. Thank you for this opportunity to be of service to the City of Ventura once again.

Sincerely yours,

VENTURA APPRAISAL  
CONSULTING CORPORATION

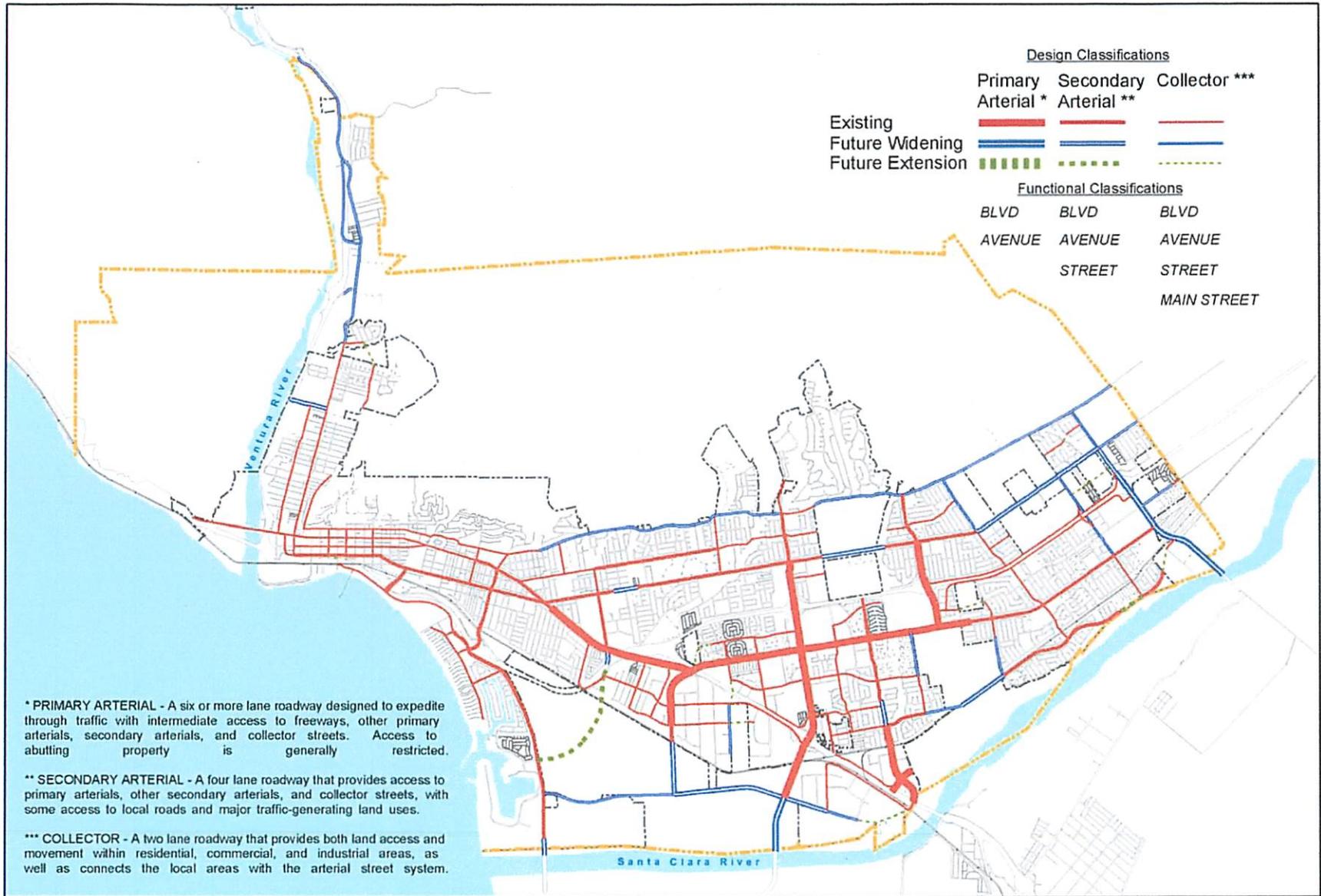


Lindsay F. Nielson, SCREA  
President



William U. Arnold, SCREA  
Appraiser

LFN/WUA:me



**Figure 4-3**  
Roadway Classification Plan

- - - City Limits
- - - Planning Boundary

**Note:** Future extensions shown are conceptual in nature, unless a specific alignment has been approved by the City Council.



## Ventura Appraisal Consulting Corporation

### **LINDSAY F. NIELSON, B.A., J.D.** **Appraisal Qualifications**

Born 1940 in Manila, Philippine Islands. Raised in Palm Springs, California. Attended University of Redlands and UCLA, graduating with Honors in 1962. Earned Certificate in Real Estate from UCLA Extension in 1966 with area of concentration in Real Estate Appraising. Awarded Juris Doctor law degree in July 1975. State of California- General Appraisal Certification #AG0 22318.

Hired by Financial Savings and Loan Association, Culver City, as a staff appraiser in 1963. Appraisal work was primarily single family and multiple-residential properties.

Employed by Hoffman, Vance and Worthington, Land Management, Ventura, 1965, where in addition to appraisal duties, responsibilities included management and leasing of major agricultural, commercial and residential properties, including the development of a shopping center in Ventura.

Formed own Appraisal and Real Estate Consulting firm in 1972.  
Incorporated business as Ventura Appraisal Consulting Corporation in 1975.

Formed Real Estate Arbitration Mediation Services, a company for resolution of real estate disputes.

Member of California State Bar since 1975. Acted as a Court appointed Receiver and/or Referee regarding real estate matters in over 450 cases.

#### **Special Education Courses Relative to Appraisal Profession:**

Principles of Real Estate Appraisal  
Advanced Real Estate Appraisal  
Real Estate Investment Analysis  
Real Estate Finance  
Real Estate Appraisal for Investment Purposes  
Legal Aspects of Real Estate  
Real Estate Finance - Advanced  
Income Tax Factors of Real Estate Investment  
Condemnation Appraising and Eminent Domain  
Ethics and Practice of Real Estate Appraising  
Earned Juris Doctor law degree in 1975 - Ventura College of Law  
Completed Certificate Program - Pepperdine University Law School Institute of Arbitration and Mediation

1.



## Ventura Appraisal Consulting Corporation

Have attended educational seminars of the International Right of Way Association and the American Institute of Real Estate Appraisers and Society of Real Estate Appraisers. Attended numerous courses on real estate law. Have been an Instructor in real estate appraisal, law and practice at Ventura College of Law, Ventura Community College and Ventura Unified School District Adult Education. Lifetime Teaching Credential, State of California Community Colleges.

### **Types of Appraisals Made:**

Residential - single-family units and multiple-dwelling units, recreational properties, special use properties including cemeteries, lakes, mining properties, debris basins, dams  
Commercial and investment properties

Ranches - pasture lands, croplands, orchard properties- citrus, olives, pistachios

Eminent Domain - pipelines, electrical transmission lines, public roads, tunnel easements  
freeways, flood control improvements, drainage channels, school and park sites, sewer easements, redevelopment projects and development rights.

Miscellaneous - lumber yards and industrial lands, industrial feasibility study, service station sites sand and gravel properties, estate appraisals, tax allocations, outdoor advertising billboards, cemeteries, unique valuation problems, minority interests, real estate fraud, casualty losses, leaseholds and property tax appeals. Have testified as an expert witness in state and Federal courts.

### **Appraisals Made in the Following Counties & States:**

Ventura, Los Angeles, Santa Barbara, Kern, San Benito, San Luis Obispo, Riverside, Fresno, San Bernardino, Tulare, Monterey, Alameda, Madera and Stanislaus, California.

Appraisal assignments include assignments in the states of Florida, Idaho, Nevada and Hawaii.

### **Partial List Of Appraisal Clients:**

Standard Oil Company, Bugle Boy Industries, Ojai Valley Inn, Kinko's Corporation, Insurance Company of North America, Kaiser-Aetna, Southern California Edison Company, Cal-Mat Company, Cities of Ventura, Oxnard, Thousand Oaks, Simi Valley, Fillmore, Santa Barbara, Camarillo and Ojai, County of Ventura, Ventura County Flood Control District, Bank of America, Bank of A. Levy, Crocker Bank, Texaco, Limoneira Company, 3-M National Advertising, Ventura, Ojai and Oxnard Redevelopment Agencies, Valley Oaks School District, Timber School District, Ventura Unified School District, Conejo Park and Recreation District, REIT of California, Ventura Port District, US Corps of Engineers, US Department of Justice, US Department of Air Force and many attorneys and landowners in the Ventura and Southern California area and others.

### **Civic and Professional Organizations:**

Member, International Right of Way Association  
Former Director, Society of Real Estate Appraisers, Chapter 180  
Former Commissioner, Ventura Redevelopment Agency  
Former Commissioner, Ventura Housing Authority

2.



## Ventura Appraisal Consulting Corporation

Member, 1972 Ventura County Grand Jury (Chairman of Fiscal and Audit Committee)  
Member, Urban Land Institute  
Member, National Association of Housing Redevelopment Officials (NAHRO)  
Member and Panelist, American Arbitration Association  
Member, Tax Assessment Appeals Board, County of Ventura (1974-1976)  
Ventura County Assessment Hearing Officer (1976-1978)  
Member of Adjunct Faculty, Ventura College of Law Instructor - Real Property; Property Transactions  
Part-time Faculty Member, Ventura Community College Instructor - Real Estate Principals  
Member, California Receiver's Forum

President and Director of Ventura County Taxpayer's Association (1992)  
President, Turning Point Foundation (Mental Health Assistance)  
Interim President, Weiss Global Corporation per Court order 1993  
President of Farmont Corporation (2000 Acre Development in Ojai)  
President, Shiells Ranch Co.  
President of Rancho Matilija Mutual Water Company  
President of Ventura Appraisal Consulting Corporation

Directorships; Faria Family Foundation, Community Hospital Foundation, VJF Ranch Co. and Director and Corporate Council for Center for Internee Rights - a Human Rights Organization concerned about the rights of Civilian Prisoners of War in World War II. Director of Legacy Corporation (Parent Corporation of Ventura/Santa Barbara Colleges of Law) and currently Trustee of Ventura and Santa Barbara Colleges of Law

Qualified as Expert Witness in Superior Court, State of California  
Qualified as Expert Witness in Federal District Court  
Qualified as Expert Witness in Bankruptcy Court  
Qualified as Expert Witness in United States Tax Court  
Qualified as General Services Administration (Federal) Appraiser  
Court Appointed Referee and Receiver in over 400 business and real estate matters for Superior Court, Ventura County including the following: Ahmanson Corporation where I completed the development of a 108 lot subdivision in Simi Valley; Boy's Market where I operated a market for one year pending litigation; FDIC for major land developments taken over from defunct banks; CCF and Equivest Investments where we disposed of approximately 15 properties throughout California pursuant to Court Order; appointed Trustee for numerous trusts per Superior Court Order; and, disposed of approximately \$300,000,000 worth of real estate pursuant to Court Order. Operated numerous business pendente lite as a receiver.  
Judge Pro Tempore, Ventura County Superior Court for over 20 years  
Appointed Member, "Blue Ribbon Commission"-1992- to establish Ventura County Supervisor's and elected officials compensation rates and benefits.  
Appointed Member, Ventura County Commission regarding Excess County-Owned Real Estate  
Founding Member "The Great Ventura Philosophical and Chowder Society"  
Automobile Club of Southern California – Former member of Advisory Board Representing Ventura County (2001-2008)

3.



## Ventura Appraisal Consulting Corporation

Appointed as the Citizen Member of the Ventura County Treasury Oversight Committee overseeing County of Ventura's \$2 billion investment portfolio

### **Articles and Cases Published:**

"Windbreak Condemnations - An Approach to Value" - February, 1970 - California Citrograph

Ventura County Flood Control vs. Security Pacific Bank, 15 Cal.App.3d 996

This was a condemnation action involving the capitalization of future earnings to determine severance damages which previously had been disallowed by California Courts.

Estate of Elizabeth G. Hughan, Deceased vs. Commissioner, United States Tax Court (Docket #23221-88.) T.C. Memo 1991-275 (filed June 17, 1991) Case reported in CCH Dec 47,413(M) - This case involved Special Use Valuation for farm land located adjoining a metropolitan area. It considered the impact on valuation by the spillover effect of Los Angeles County on Ventura County's agricultural lands.

"This Land is Your Land- No More" published in the International Right of Way Journal, (June 2008) critical of the U.S. Supreme Court decision in the Kelo case dealing with eminent domain law and the "Takings" clause in the 5<sup>th</sup> Amendment to the U.S. Constitution.

(4/30/12)

## **Ventura Appraisal Consulting Corporation**

**WILLIAM U. ARNOLD, JR.**

### **Appraisal Qualifications**

Born 1948 in Ventura, California.

Attended San Diego State University, graduating in 1974.

Hired by the firm of Hoffman, Vance and Worthington in 1974. Responsibilities included management and leasing of an 8-acre shopping center, consisting of approximately 20,000 sq. ft. of office space and 50,000 sq. ft. of commercial space. Duties also included management and leasing of 10,000 acres of agricultural land in Ventura County. Appraisal duties involved primarily the valuation of agricultural, industrial and commercial properties in Ventura County.

In 1980 started William Arnold & Associates. At the same time became affiliated with Ventura Appraisal Consulting Corporation. William Arnold & Associates is an appraisal, management and real estate firm. Primary emphasis is on real estate appraisal. Appraisals include industrial, commercial, agricultural and residential assignments.

In 1998 awarded General Accredited Appraiser (GAA) designation by the National Association of Realtors Appraisal Section.

### **Special Educational Courses Relative to Appraisal Profession:**

- Principle and Practices of Real Estate
- Real Estate Finance
- Real Estate Appraisal
- Real Estate Appraisal, Advanced
- Legal Aspects of Real Estate
- California and Federal Income and Estate Taxes Affecting Real Estate
- Society of Real Estate Appraisers Courses 101, R2 & 201
- Have attended educational seminars of the American Society of Farm Managers and Rural Appraisers, and the Society of Real Estate Appraisers.

Qualified Expert Witness \* Superior Court \* Ventura County \* State of California

Qualified Expert Witness \* Federal Bankruptcy Court

Certified General Real Estate Appraiser \* Number AG010037 \* State of California

Licensed Real Estate Broker \* Number 00619009 \* State of California

Member - National Association of Realtors - Appraisal Section and Realtor

Member - California Association of Realtors & Ventura County Coastal Association of Realtors



## Ventura Appraisal Consulting Corporation

December 2, 2013

Mr. Sudhir Pardiwala, PE  
Executive Vice President  
Raftelis Financial Consultants, Inc.  
201 S. Lake Avenue, Suite 301  
Pasadena, CA 91101

Re: City of Ventura  
Water and Sewer Rights of Way  
Supplemental Report

Dear Mr. Pardiwala:

I understand that the Water Rates Advisory Committee of the City of Ventura had an additional question regarding our November 19<sup>th</sup> report on the fair rental values of the use of public rights of way by the two city enterprise districts- the city water system and the city sewer system. The question posed was: How did this firm arrive at its fair use valuation analyses?

Keep in mind that there is no market for easements and rental of public rights of way. It is necessary to consider an approach to fair use rental value which is rational, reasonable and supportable. That is what this firm did.

The streets in Ventura have been in place for many decades. They are not being acquired today. Further, under both the State Subdivision Map Act and the subdivision policies of the City of Ventura, the City does not acquire and build new streets unless it is under particular circumstances. Further, any new development within the city limits, it is the City's requirements that the developer must improve and dedicate all public streets to the City. Thereafter, the City uses its allocation of gas taxes and other income such as franchise fees to maintain, repair and/or replace all city streets.

If the City were acquiring these rights of way through currently zoned and developed land within the city limits today, the prices that would be very high. Zoned and developed vacant parcels vary in price based on their highest and best use. For example; developed **residentially zoned** vacant land would generally be in the market value range of **\$20-\$30 per square foot (\$871,000-\$1,310,000 per acre)**; developed, **vacant commercially zoned** property would probably fall within a range of **\$18-\$30 per square foot (\$734,000 - \$1,310,000 per acre)** ; and vacant, **industrially zoned** and developed land would likely be **\$9-\$15 per square foot (\$392,000 - \$654,000 per acre)**. The many miles of public streets extend through a multitude of different types of properties such as residential, commercial and industrial. The

Mr. Pardiwala  
December 2, 2013  
Page Two

“across the fence” valuation approach to valuing streets is not considered appropriate as it is used when dealing with abandonment of railroad rights of way.

Of course, none of the streets are zoned or valued on the above basis unless they are being widened at which point the adjacent land use would establish the value of the street widening portion. Instead, what this firm did to arrive at the value of streets is similar to the formula which the City of Ventura Quimby Act ordinance requires for in lieu park dedication fees for new developments in the city. The value of the property is determined at a particular point along the development continuum after City approval of a tentative tract map but before actual development and approval of the final tract map. Based on that analysis, this firm concluded that the value of the street rights of way is \$5.00 per square foot or approximately \$218,000 per acre. That was the underlying basis of our further calculation of fair use value which was predicated on a reasonable rental rate on the size of the “easements” necessary for the pipelines for both the sewer and water systems. These pipelines are precluded from sharing the same easement according to law and therefore, we considered both systems separately.

If you have any further questions, or if it would be helpful to speak directly with the Water Rates Advisory Committee at their next meeting on December 11, I would be available to do so.

Sincerely yours,  
VENTURA APPRAISAL  
CONSULTING CORPORATION



Lindsay F. Nielson, SCREA  
President

LFN:me