LAS VIRGENES
MUNICIPAL WATER DISTRICT

2015 Potable Water, Recycled Water, and Sanitation Rate Study Report

FINAL OCTOBER 13, 2015

RAFTELIS
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October 13, 2015

Donald Patterson
Director of Finance & Administration
Las Virgenes Municipal Water District
4232 Las Virgenes Rd.
Calabasas, CA 91302

Subject: 2015 Potable Water, Recycled Water, and Sanitation Rate Study Report

Dear Mr. Patterson,

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide this 2015 Potable Water, Recycled Water and Sanitation Rate Study Report (Report) for Las Virgenes Municipal Water District (District).

The major objectives of the study include the following:

1. Develop financial plans for the Water, Recycled Water, and Sanitation Enterprises to ensure financial sufficiency, meet operation and maintenance (O&M) costs, and ensure sufficient funding for capital refurbishment and replacement (R&R) needs;
2. Conduct a cost-of-service analysis for the Potable Water, Recycled Water, and Sanitation Enterprises;
3. Develop a water budget tiered rate structure for its water and recycled water services to promote water use efficiency; and
4. Develop fair and equitable 5-year potable water, recycled water, and sanitation rates to enhance revenue stability for recovering fixed costs while in compliance with Proposition 218 requirements.

This Report summarizes the key findings and recommendations related to the development of the financial plans for Potable Water, Recycled Water, and Sanitation Funds and the development of the associated potable water, recycled water, and sanitation rates.

It has been a pleasure working with you, and we thank you and the District staff for the support provided during the course of this study.

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

Sanjay Gaur
Vice President

Khanh Phan
Senior Consultant

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GLOSSARY

Commonly Used Terms

Terms	Descriptions
AF	Acre foot / Acre feet, 1 AF = 435.6 CCF
AWWA	American Water Works Association
CIP	Capital Improvement Projects
COS	Cost of Service
CPI	Consumer Price Index/Indices
EMU	Equivalent Meter Unit
ERU	Equivalent Residential Unit
ENR CCI	Engineering News Records Construction Cost Indices
FY	Fiscal Year (July 1 – June 30)
GPCD	Gallons per capita per day
HCF	Hundred cubic feet or 100 cubic feet, 1 HCF = 748 gallons
IIP	Infrastructure Investment Plan
JPA	Joint Power Authority
M1 Manual	"Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1" published by AWWA
MFR	Multi-Family Residential
MGD	Million gallons per day
MWD	Metropolitan Water District of Southern California
O&M	Operations and Maintenance
PAYGO	Pay-As-You-Go
R&R	Refurbishment and Replacement
RFC	Raftelis Financial Consultants, Inc.
RTS	Readiness to Serve
SCADA	Supervisory Control and Data Acquisition
SFR	Single Family Residential

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1 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Las Virgenes Municipal Water District (District) serves the cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village as well as surrounding unincorporated areas of Western Los Angeles County. The District occupies 122 square miles and serves a population of approximately 75,000 people. The District provides potable water, recycled water, and sanitation services to its customers through three separate enterprise funds. Sanitation services are provided through a Joint Powers Authority (JPA) with Triunfo Sanitation District which serves a portion of Eastern Ventura County.

The District is organized under the Municipal Water District Act of 1911 (California Water Code Section 71000). A five-member board of directors, each elected by geographic divisions, provides governance. Directors serve overlapping four-year terms, and every two years - concurrent with the installation of the newly elected board – they select board officers. The board also selects a local representative from the District to serve on the Board of Directors of the Metropolitan Water District of Southern California.

The District has no local source of drinking water; all supplies must be imported from the Metropolitan Water District of Southern California (MWD), one of the world's largest water wholesalers. Most of the District's water originates in the Sierra Nevada Mountains, the water is then transported more than 400 miles through the State Water Project's California Aqueduct, entering the LVMWD service area at the east end of Calabasas. Water is then carried through the District through a system of more than 400 miles of water pipe. Providing reliable water service to customers in elevated areas requires 25 storage tanks and 24 pump stations.

About 20 percent of the total water served to District customers is recycled water used to irrigate streetscapes, golf courses, school grounds, and other public and commercial landscapes. This recycled water is produced through extensive treatment of wastewater and is delivered through 66 miles of recycled water lines, three storage tanks, one reservoir, and four pumping stations.

The District provides sanitation services to most residents in its service area, with a system of 56 miles of trunk sewer lines and two lift stations which pump wastewater to the Tapia Water Reclamation Facility (TWRF), operated by The Las Virgenes - Triunfo Joint Powers Authority (JPA).

The major objectives of the study include the following:

1. Develop financial plans for the Potable Water, Recycled Water and Sanitation Enterprises to ensure financial sufficiency, ability to fund operation and maintenance (O&M) needs necessary to ensure reliable service, and ensure sufficient funding for capital refurbishment and replacement (R&R) needs;
2. Conduct a cost-of-service analysis for the potable water, recycled water and sanitation services;
3. Develop a water budget rate structure for its potable water and recycled water services to promote water use efficiency; and

4. Develop fair and equitable 5-year potable water, recycled water, and sanitation rates in compliance with Proposition 218 requirements.

This Report summarizes the key findings and recommendations related to the development of the financial plans for Potable Water, Recycled Water and Sanitation Funds and the development of the associated potable water, recycled water, and sanitation rates.

1.2 LEGAL REQUIREMENTS AND RATE SETTING METHODOLOGY

1.2.1 Legal Requirements

In November 1996, California voters approved Proposition 218, which amended the California Constitution by adding Articles XIII C and Article XIII D. Article XIII D placed substantive limitations on the use of the revenue collected from property-related fees and on the amount of the fee that may be imposed on each parcel. Additionally, it established procedural requirements for imposing new, or increasing existing, property-related fees. Water and sanitation service fees were determined to be property-related fees by the California Supreme Court ruling issued in *Bighorn-Desert View Water Agency v. Verjil*.

In accordance with these provisions, a property-related fee must meet all of the following requirements: (1) revenues derived from the fee must not exceed the funds required to provide the property-related service; (2) revenues from the fee must not be used for any purpose other than that for which the fee is imposed; (3) the amount of a fee imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel; (4) the fee may not be imposed for a service, unless the service is actually used by, or immediately available to, the owner of the property subject to the fee. A fee based on potential or future use of a service is not permitted, and stand-by charges must be classified as assessments subject to the ballot protest and proportionality requirements for assessments; (5) no fee may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners. The five substantive requirements in Article XIII D are structured to place limitations on (1) the use of the revenue collected from property-related fees and (2) the allocation of costs recovered by such fees to ensure that they are proportionate to the cost of providing the service attributable to each parcel.

Pursuant to Public Resources Code Sections 21000 et seq. (commonly referred to as the California Environmental Quality Act or "CEQA"), the District must determine if the rates will have a significant adverse environmental impact. The determination must be set forth in an environmental impact statement, negative declaration, or exemption finding.

1.2.2 Rate Setting Methodology

This report was prepared using the principles established by the American Water Works Association's "Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1" (the "M1 Manual") which establishes commonly accepted professional standards for cost of service studies. The M1 Manual general principles of rate structure design and the objectives of the Study are described below.

According to the M1 Manual, the first step in ratemaking analysis is to determine the adequate and appropriate funding of a utility. This is referred to as the "revenue requirements" analysis. This analysis considers the short-term and long-term service objectives of the utility over a given planning horizon, including capital facilities and system operations and maintenance, to determine the adequacy of a utility's existing rates to recover its costs. A number of factors may affect these projections, including the number of customers served, water-use trends, nonrecurring sales, weather, conservation, use restrictions, inflation, interest rates, wholesale contracts, capital finance needs, changes in tax laws, and other changes in operating and economic conditions.

After determining a utility's revenue requirements, a utility's next step is determining the cost of service. Utilizing a public agency's approved budget, financial reports, operating data, and capital improvement plans, a rate study generally categorizes (functionalizes) the costs (such as treatment, storage, and pumping), expenses, and assets of the utility system among major operating functions to determine the cost of service.

After the assets and the costs of operating those assets are properly categorized by function, the rate study allocates those "functionalized costs" to the various customer classes (e.g., single-family residential, multi-family residential and commercial) by determining the characteristics of those classes and the contribution of each to incurred costs based on service characteristics and demand patterns. Rate design is the final part of the M1 Manual's rate-making procedure and generally uses the revenue requirement and cost of service analysis to determine appropriate rates for each customer class.

2 GENERAL ASSUMPTIONS

2.1 INFLATION

The Study period is for Fiscal Years (FY) 2016[1] to FY 2020. Various types of assumptions and inputs were incorporated into the Study based on discussions with and/or direction from District staff. These include the projected number of accounts and annual growth rates in consumption for different customer classes, inflation factors and other assumptions. The JPA Recycled Water Wholesale costs refers to the District's cost to purchase recycled water from the JPA after it is treated at the TWRF. The inflation factor assumptions are presented in Table 2-1, below.

Table 2-1: Inflation Factor Assumptions

KEY FACTORS	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
General & Administration	3.20%	3.20%	3.20%	3.20%	3.20%
Allocated Costs	2.30%	2.50%	2.00%	2.00%	2.00%
Chemical	5.00%	5.00%	5.00%	5.00%	5.00%
Electricity	3.50%	4.00%	4.00%	4.00%	4.00%
Odor Control	5.00%	5.00%	5.00%	5.00%	5.00%
Water Supply Costs	5.70%	5.60%	5.70%	5.70%	5.70%
JPA Recycled Water Wholesale Costs	2.10%	2.10%	2.10%	2.10%	2.10%
JPA Treatment Costs	2.30%	2.30%	2.30%	2.30%	2.30%
Construction	3.57%	3.57%	3.57%	3.57%	3.57%

2.2 PROJECTED DEMAND AND GROWTH

Since the District is nearly built out, the rates do not include a component for a significant expansion of service other than incidental to current customer demands such as an increase in the number of persons in a household. The cost of expansion to serve new customers is covered by capital facilities charges which are not the subject of this Study.

The estimated water demand for each year of the Study period shown below in Table 2-2 is based on District staff projections. FY 2014 sales figures (22,186 AF for potable water and 5,735 AF for recycled water) were used to determine the anticipated demand for FY 2015. For the purposes of this Study, normal sales are assumed for the study period (not considering the mandate cutbacks imposed by the State Water Resources Control Board for FY 2016), per District staff direction. The District anticipates that $2.7M of Rate Stabilization Reserve funds will be used to mitigate the impact of the reduced potable water sales in FY 2016.

[1] *FY 2016: Fiscal Year 2015/2016 (From July 1, 2015 to June 30, 2016)*

Table 2-2: Projected Account Growth Rate and Projected Water Sales

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Account Growth						
Potable Water		0.58%	0.58%	0.58%	0.58%	0.58%
Recycled Water[2]		0.00%	0.00%	0.00%	0.00%	0.00%
Sanitation		0.52%	0.52%	0.52%	0.52%	0.52%
Projected Water Sales						
Potable Water	20,025 AF	20,576 AF	21,152 AF	21,745 AF	22,354 AF	22,980 AF
Recycled Water	5,041 AF	5,041 AF	5,041 AF	5,041 AF	5,041 AF	5,041 AF

2.3 RESERVE POLICY

A reserve policy is a written document that provides a basis for the District to cope with unanticipated reductions in revenues, offset fluctuations in costs of providing services, and fiscal emergencies such as revenue shortfalls, asset failure, and natural disaster. It also provides guidelines for sound financial management with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs and emergencies. It also sets funds aside for replacement of capital assets as they age and for new capital projects. Additionally, adopting and adhering to a sustainable reserve policy enhances financial management transparency and helps achieve or maintain a certain credit rating for future debt issues.

The appropriate amount of reserves and reserve types are determined by a variety of factors, such as the size of the operating budget, the amount of debt, the type of rate structure, frequency of customer billing, and risk of natural disaster. With this being said, most reserves tend to fall into the following categories: operations & maintenance (O&M) cash flow, rate stabilization, capital repair and replacement (R&R), and emergency.

O&M Cash Flow – The purpose of an O&M reserve is to provide working capital to support the operation, maintenance and administration of the utility. From a risk management perspective, the O&M reserve supports the District's cash flow needs during normal operations and ensures that operations can continue should there be significant events that impact cash flows. As it is unlikely for a utility to precisely predict the revenues and revenue requirements for each billing period, a reserve set aside to hedge the risk of monthly negative cash positions is prudent financial planning. Another factor to consider when creating a cash flow reserve is the frequency of billing. A utility that bills once a month would require less minimum reserves than a utility that bills bi-monthly.

Rate Stabilization and Operating Emergency – While it is not typical for utilities to have substantial rate increases in a short period of time, factors such as declining potable water sales and rapidly increasing potable water supply costs may result in large rate increases. In order to minimize rate shocks, the District

[2] *Wholesale recycled water sales are projected to increase over the five-year study period; however, this table reflects only District retail sales, which are expected to experience a minimal increase over the study period.*

has established a rate stabilization reserve to smooth rate increases through gradual increases in rates as opposed to abrupt and large rate increases. A rate stabilization reserve acts as a buffer to protect customers from experiencing large shifts in their bills. The District's proposed rate structure is designed to minimize large fluctuations in revenue but incrementally increases the percentage of fixed costs recovered through its readiness-to-serve charge.

Capital Emergency – The purpose of an emergency fund is to allow the utility to provide uninterrupted service in light of a fiscal emergency, natural disaster or facility failure. An emergency reserve decreases risk by recognizing the high capital costs of the facilities and setting aside adequate funds to restart the system after an unanticipated event or replace an essential facility. Critical asset analysis completed by staff provides the basis for the target level of emergency reserve.

Capital R&R – Capital R&R reserves are used to fund future obligations that are necessary for maintaining a reliable infrastructure. Because water and sewer utilities are highly capital-intensive enterprises, it is important to accurately estimate long-term R&R costs and develop a reserve to fund the eventual replacement of the system and new capital projects.

As a result of this study, the District adopted changes to its Financial Polices on July 14, 2015. This report discusses the policies that were in place at the onset of the study, the recommended changes, and the Financial Policies adopted July 14, 2015.

The District's reserve policy (prior to July 14, 2015) is summarized in Table 2-3. The District's adopted reserve policy prior to July 2015 can be found in its entirety in Section 11.1 of the Appendix.

Table 2-3: Current Financial Policy

Reserves	Reserve Target
Restricted Reserves	
Bond Covenant	Annual payment for 2009 Revenue Bond
Rate Stabilization Fund	$8M
Insurance Reserve	$3.2
Unrestricted Reserves	
Operations	25% of O&M budget
Capital Emergency	2% of Capital Asset Value
Capital Replacement	Rolling future 3-year CIP
Debt Coverage[3]	1.10x by Current Official Statement for 2009 Revenue Bond

Applying the current financial policies to the FY 2015 budget yields the reserve targets for each enterprise found in Table 2-4 below.

[3] *Debt Coverage = (Total Revenues – O&M expenses)/Debt Service*

Table 2-4: Current Unrestricted Reserve Targets for FY 2015

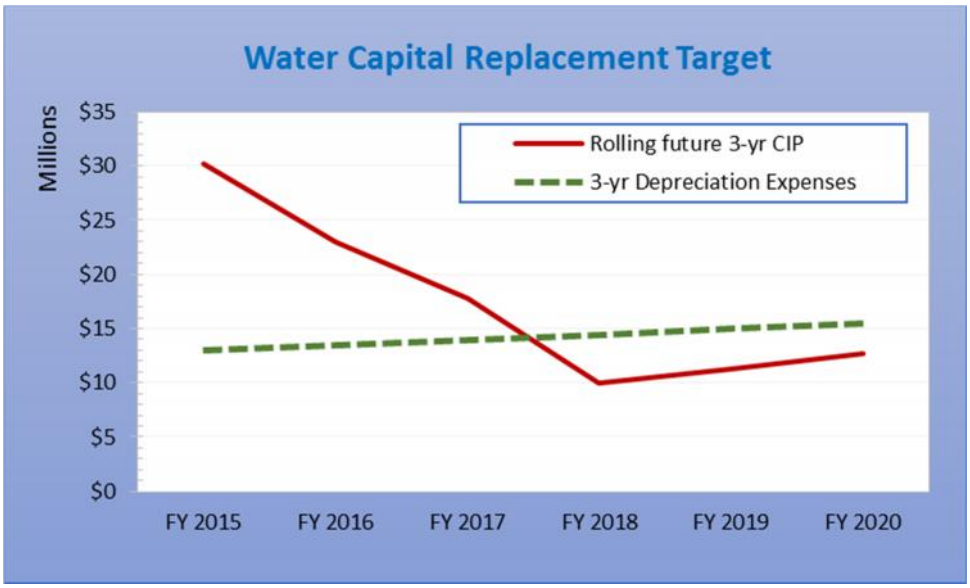
	Sanitation	Recycled Water	Potable Water
Operating Fund 25% of operating budget 1-year debt service	$4.6M	$994K	$8.7M
Emergency / Insurance Fund 2% of Capital Asset Value	$3.4M	$169K	$3.6M
Replacement & Maintenance Fund Rolling future 3-year CIP	$8.3M	$3,044K	$30.2M
Total Targets **Current Balance for Operations and Replacement Funds (as of 7/1/14)**	**$16.3M** **$19.8M**	**$4.2M** **$10.3M**	**$42.5M** **$29.8M**

After evaluation of the District's current Financial Policies, RFC identified a challenge with meeting the District's Capital Replacement reserve. As shown in Table 2-3, the Capital Replacement reserve policy requires the District to have sufficient cash to cover the projected next three-years of Capital Improvement Projects. This policy causes the required reserve level to vary significantly from year-to-year depending on the size and scope of projects programmed in the Infrastructure Investment Plan (IIP). For periods with heavy infrastructure investment, the reserve target would rise significantly, and potentially create the need for a revenue adjustment to maintain compliance with the existing reserve policy.

In order to stabilize the reserve target for capital replacement, RFC recommended that the District instead use the future three years of depreciation expenses as a reserve target. The resulting figure would be more predictable and significantly less volatile. The recommended capital replacement reserve target policy was formally adopted by the District Board on July 14, 2015. It can be found in its entirety in Section 11.2 of the Appendix.

Figure 2-1 contrasts the District's previous capital replacement reserve (indicated by the red line) with the recently adopted capital reserve (indicated by the dotted green line) over the course of the Study period. The 3-year depreciation expenses metric produces a more stable capital replacement reserve compared to the rolling future CIP metric.

Figure 2-1: Comparison of Water Capital Replacement Current and Proposed Targets



Applying the new capital replacement policy to the current budget yields the revised unrestricted reserve targets found in Table 2-5 below. Note that the Operating Fund and Emergency/Insurance Fund targets were not affected as a result of the newly adopted reserve policy.

Table 2-5: Revised Unrestricted Reserve Targets for FY 2015

	Sanitation	Recycled Water	Potable Water
Operating Fund 25% of operating budget 1-year debt service	$4.6M	$994K	$8.7M
Emergency / Insurance Fund 2% of Capital Asset Value	$3.4M	$169K	$3.6M
Replacement & Major Maintenance Fund 3-year depreciation expenses	$14.4M	$686K	$13.0M
Total Targets	**$22.5M**	**$1,849K**	**$25.3M**
Current Balance for Operations and Replacement Funds (as of 7/1/14)	**$19.8M**	**$10.3M**	**$29.8M**

2.4 KEY FINANCIAL INFORMATION

The Study utilized the following key financial documents and figures:

1. FY 2014/15 Budget provided by District staff in October 2014 and subsequent updates provided up through June 30, 2015.
2. Master 5-year IIP provided by District Staff in March 2015.
3. Water supply cost projections provided by District staff in November 2014.
4. Asset list for Potable Water, Recycled Water, and Sanitation Utilities as of 6/30/2013 provided by District staff in September 2014.
5. Reserve balances as of June 30, 2014 provided by District staff in November 2014 (Table 2-6).
6. Customer information database and individual bi-monthly consumption for FY 2014 provided by District Staff in November 2014 and subsequent updates for irrigated landscape areas for each residential and irrigation account.

Table 2-6: Reserve Balances as of 6/30/2014

Reserve Balances as of 6/30/2014	Potable Water	Recycled Water	Sanitation	Policy Restricted	Total District
Operations	$15,029,627	$8,391,238	$11,687,746		**$35,108,611**
Replacement	$14,778,829	$1,957,945	$8,082,739		**$24,819,513**
Bond Covenant				$2,766,387	**$2,766,387**
Rate Stabilization				$8,000,000	**$8,000,000**
Insurance Reserve				$3,277,259	**$3,277,259**
Construction	-$155,760	$401,889	$770,832		**$1,016,961**
Total Reserves	**$29,652,696**	**$10,751,072**	**$20,541,317**	**$14,043,646**	**$74,988,731**
Total w/o Construction Fund	**$29,808,456**	**$10,349,183**	**$19,770,485**	**$14,043,646**	**$73,971,770**

3 POTABLE WATER FINANCIAL PLAN

A review of a utility's revenue requirements is a key first step in the rate study process. The review involves an analysis of annual operating revenues under the status quo, operation and maintenance (O&M) expenses, transfers between funds, and reserve requirements. This section of the report provides a discussion of the projected revenues, O&M expenses, other reserve funding and revenue adjustments estimated as required, to ensure the fiscal sustainability and solvency of the Potable Water Fund.

3.1 REVENUES FROM CURRENT POTABLE WATER RATES

The current rates were last adjusted on January 1, 2015. The District's potable water service charges have three components – fixed readiness-to-serve charges, commodity charges, and elevation charges. Customers are grouped into one of the elevation zones, numbered one through five, increasing with the District's cost to pump potable water to a particular zone.

Starting in September 2015, the District switched from bi-monthly billing to monthly billing for all of its services. Table 3-1 (RTS charges) and Table 3-2 (commodity charges) and summarize the current potable water rates effective January 1, 2014 and January 1, 2015. Charges for temporary services[4] are also included. Table 3-3 summarizes the current tier definitions by meter size for both residential and non-residential services. Note that the tier widths for non-residential customers increases with meter size.

Table 3-1: Current Monthly Readiness-to-Serve (RTS) Charges

RTS for Regular Services	FY 2014	FY 2015
Effective Date	January 1, 2014	January 1, 2015
3/4"	$15.11	$15.87
3/4" x 1"	$15.11	$15.87
1"	$22.25	$23.36
1 1/2"	$40.09	$42.09
2"	$61.74	$64.83
3"	$118.52	$124.45
4"	$183.02	$192.17
6"	$361.07	$379.13
8"	$575.51	$604.29
10"	$825.23	$866.49

[4] *Temporary Service refers to water service related to construction and special events.*

Table 3-1: (cont.)

RTS for Temporary Services	FY 2014	FY 2015
Effective Date	January 1, 2014	January 1, 2015
1"	$33.37	$35.04
2 1/2"	$177.79	$186.68
4"	$274.53	$288.26
6"	$541.62	$568.71
8"	$863.26	$906.43
10"	$1,237.84	$1,299.74

Table 3-2: Current Commodity and Elevation Charges

Volumetric Charges	FY 2014	FY 2015
Effective Date	January 1, 2014	January 1, 2015
Commodity Charges ($/hcf[5])		
Tier 1	$2.19	$2.31
Tier 2	$2.60	$2.80
Tier 3	$3.56	$3.81
Tier 4	$5.02	$5.34
Temporary	$7.53	$8.01
Elevation Charge ($/hcf)		
Zone 1	$0.00	$0.00
Zone 2	$0.40	$0.42
Zone 3	$0.70	$0.74
Zone 4	$1.21	$1.28
Zone 5	$2.42	$2.55
Temporary Services Elevation Charge ($/hcf)		
Zone 1	$0.00	$0.00
Zone 2	$0.60	$0.63
Zone 3	$1.05	$1.11
Zone 4	$1.82	$1.92
Zone 5	$3.63	$3.83

[5] *1 hcf = 100 cubic feet = 748 gallons*

Table 3-3: Current Monthly Tier Definitions

Non-Residential by Meter Size	Tier 1	Tier 2	Tier 3	Tier 4
3/4"	0 - 8 hcf	9 - 34	35 - 100	above 100 hcf
3/4" x 1"	0 - 8 hcf	9 - 34	35 - 100	above 100 hcf
1"	0 - 14 hcf	15 - 58	59 - 170	above 170 hcf
1 1/2"	0 - 26 hcf	27 - 112	113 - 330	above 330 hcf
2"	0 - 42 hcf	43 - 180	181 - 530	above 530 hcf
3"	0 - 86 hcf	87 - 364	365 - 1,070	above 1,070 hcf
4"	0 - 134 hcf	135 - 568	569 - 1,670	above 1,670 hcf
6"	0 - 266 hcf	267 - 1,132	1,133 - 3,330	above 3,330 hcf
8"	0 - 426 hcf	427 - 1,812	1,813 - 5,330	above 5,330 hcf
10"	0 - 614 hcf	615 - 2,608	2,609 - 7,670	above 7,670 hcf
Residential (per dwelling unit)				
Single Family	0 - 8 hcf	9 - 34	35 - 100	above 100 hcf
Multi Family	0 - 6 hcf	6 - 7	8 - 12	above 12 hcf

Table 3-4 summarizes the projected number of accounts by meter size for the Study period. The existing number of accounts for FY 2014 were inflated by the account growth rate found in Table 2-2 (0.58 percent for each year of the Study period), to determine the number of accounts for future years. The account growth rate was only applied to regular service since no growth is anticipated for temporary services.

Table 3-4: Projected Potable Water Accounts

Regular Services	FY 2014 *Actual*	FY 2015 *Estimated*	FY 2016 *Projected*	FY 2017 *Projected*	FY 2018 *Projected*	FY 2019 *Projected*	FY 2020 *Projected*
3/4"	456	459	461	464	467	469	472
3/4" x 1"	16,043	16,136	16,230	16,324	16,418	16,514	16,609
1"	2,105	2,117	2,129	2,142	2,154	2,167	2,179
1 1/2"	588	591	595	598	602	605	609
2"	406	408	411	413	416	418	420
3"	41	41	41	42	42	42	42
4"	18	18	18	18	18	19	19
6"	16	16	16	16	16	16	17
8"	4	4	4	4	4	4	4
10"	0	0	0	0	0	0	0
Total	**19,677**	**19,791**	**19,906**	**20,021**	**20,137**	**20,254**	**20,372**
Temporary Services							
1"	5	5	5	5	5	5	5
2 1/2"	21	21	21	21	21	21	21
6"	1	1	1	1	1	1	1
Total	**27**	**27**	**27**	**27**	**27**	**27**	**27**

The projected potable water sales developed by District staff from Table 2-4 were used to project potable water usage in each tier. Based on consumption data from FY 2014, District staff estimates for FY 2015[6], and estimated demand factors for future years, RFC developed total usage for each year of the Study period. The percentage reduction/increase from year to year is used to adjust each zone's by the same percentage.

[6] *Actual demand for FY 2015 is likely to be lower than projected due to water conservation measures imposed by the State.*

Table 3-5: Projected Potable Water Sales

Usage by Tiers	FY 2014 *Actual*	FY 2015 *Estimated*	FY 2016 *Projected*	FY 2017 *Projected*	FY 2018 *Projected*	FY 2019 *Projected*	FY 2020 *Projected*
Tier 1	2,382,568	2,311,091	2,377,630	2,445,947	2,516,163	2,588,395	2,662,643
Tier 2	3,719,874	3,422,284	3,520,815	3,619,343	3,720,607	3,824,779	3,931,859
Tier 3	2,499,971	2,149,975	2,211,875	2,273,773	2,337,390	2,402,834	2,470,104
Tier 4	1,007,575	775,833	798,170	820,506	843,463	867,078	891,354
Temporary	54,339	63,630	54,339	54,339	54,339	54,339	54,339
Total (hcf)	**9,664,327**	**8,722,813**	**8,962,829**	**9,213,908**	**9,471,961**	**9,737,425**	**10,010,299**
Total (AF)	**22,186 AF**	**20,025 AF**	**20,576 AF**	**21,152 AF**	**21,745 AF**	**22,354 AF**	**22,980 AF**
Usage by Zones							
Zone 1	5,341,959	4,813,430	4,952,013	5,091,582	5,235,028	5,382,592	5,534,276
Zone 2	3,429,464	3,090,155	3,179,124	3,268,725	3,360,815	3,455,550	3,552,929
Zone 3	661,761	596,287	613,455	630,744	648,514	666,795	685,585
Zone 4	113,286	102,078	105,016	107,976	111,018	114,148	117,364
Zone 5	63,518	57,234	58,881	60,541	62,247	64,001	65,805
Total Regular	**9,609,988**	**8,659,183**	**8,908,490**	**9,159,569**	**9,417,622**	**9,683,086**	**9,955,960**
Zone 1	42,498	49,764	42,498	42,498	42,498	42,498	42,498
Zone 2	7,770	9,099	7,770	7,770	7,770	7,770	7,770
Zone 3	664	778	664	664	664	664	664
Zone 4	3,350	3,923	3,350	3,350	3,350	3,350	3,350
Zone 5	57	67	57	57	57	57	57
Total Temporary	**54,339**	**63,630**	**54,339**	**54,339**	**54,339**	**54,339**	**54,339**
Total Usage (hcf)	**9,664,327**	**8,722,813**	**8,962,829**	**9,213,908**	**9,471,961**	**9,737,425**	**10,010,299**

Table 3-6 shows the projected revenues for the Study period under the existing rates. Since the District adjusts rates in January, the FY 2015 rates includes ½ year under the old rates (July 2014 through December 2014) and ½ year under the new rates (January 2015 through June 2015). The commodity revenues shown for FY 2016 through FY 2020 are calculated by multiplying the projected usage by the January 2015 rate. For example, the commodity charge revenue from Tier 1 usage for FY 2019 can be calculated as follows:

$$Projected\ Tier\ 1\ Usage\ for\ FY\ 2019 \times Tier\ 1\ Rate$$

$$2{,}588{,}395 \times \$2.31 = \$5.98M$$

The same calculation is repeated for all tiers to determine the total commodity revenue for each year of the Study period.

The readiness-to-serve (RTS) charge revenue is the fixed portion of the water service charge that increases with meter size. For example, the RTS charge revenue from all single family homes with a 3/4" x 1" meter for FY 2016 is calculated as follows:

$$fixed\ charge\ rate \times number\ of\ accounts \times 12\ months$$
$$\$15.87 \times 16{,}230 \times 12 = \$3.09M$$

The same calculation is repeated for all meter sizes and then added together to determine the total RTS charge revenue for all customers. For FY 2016, the projected RTS charge revenue is $4.601M.

Table 3-6: Projected Revenues from Current Potable Water Rates (in Million $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
RTS for Regular Services	$4.465	$4.601	$4.628	$4.655	$4.682	$4.709
RTS for Temporary Services	$0.055	$0.056	$0.056	$0.056	$0.056	$0.056
Commodity Charges	$26.778	$28.475	$29.264	$30.075	$30.909	$31.766
Elevation Charges	$1.974	$2.086	$2.144	$2.205	$2.266	$2.330
Total Revenues from Current Rates	**$33.272**	**$35.219**	**$36.093**	**$36.990**	**$37.913**	**$38.861**

3.2 Miscellaneous Potable Water Revenues

In addition to revenue from rates, the Potable Water Fund also receives miscellaneous revenues from different sources such as interest earnings, property taxes, and other operating/non-operating sources. Total miscellaneous revenues for the Study period are shown in Table 3-7. Interest incomes are calculated based on actual reserves balances for Potable Water Funds. The figures below are based on District staff projections for the Study period.

Table 3-7: Projected Miscellaneous Potable Water Revenues (in Millions $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Other Operating Revenues	$2.073	$1.753	$2.044	$2.016	$2.005	$2.107
Stand-By Fee, Property Tax, Assessments	$0.798	$0.820	$0.837	$0.854	$0.871	$0.884
Interest Income	$0.141	$0.193	$0.159	$0.168	$0.225	$0.292
Other	$0.834	$0.861	$0.888	$0.916	$0.945	$0.959
Total Misc. Revenues	**$3.847**	**$3.627**	**$3.928**	**$3.954**	**$4.045**	**$4.242**

3.3 Potable Water O&M Expenses

3.3.1 Potable Water Supply Costs

Based on projections and inputs from District staff, the respective sources of water, per unit price, and expected purchase quantities are shown in Table 3-8 below. The total potable water supply costs at the bottom of the table are determined by multiplying the per unit costs for each source of potable water by the corresponding quantity purchased from that source, and adding in the fixed costs associated with each source. Estimated sales figures were used for FY 2015 and projected sales were used for FY 2016 and beyond.

Table 3-8: Projected Potable Water Supply Costs

			A	B	C	D	E	F
1	MWD Fiscal Year Rates		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
2	Tier 1 Supply Rate ($/AF)	*Projected by District*	$153	$157	$156	$156	$156	$158
3	Tier 2 Supply Rate ($/AF)	*Projected by District*	$290	$290	$290	$290	$290	$290
4	System Access Rate (SAR, $/AF)	*Projected by District*	$249	$258	$263	$273	$284	$299
5	Water Stewardship Rate ($/AF)	*Projected by District*	$41	$41	$41	$41	$41	$41
6	System Power Rate ($/AF)	*Projected by District*	$145	$131	$143	$156	$171	$188
7	Water Transfer/Delta Surcharge ($/AF)	*Projected by District*	$0	$0	$0	$0	$0	$0
8	Treatment Surcharge ($/AF)	*Projected by District*	$317	$344	$353	$359	$360	$360
9	***Tier 1 Variable Rate***	*Row 2+4+5+6+7+8*	***$905***	***$931***	***$956***	***$985***	***$1,012***	***$1,046***
10	***Tier 2 Variable Rate***	*Row 3+4+5+6+7+8*	***$1,042***	***$1,064***	***$1,090***	***$1,119***	***$1,146***	***$1,178***
11	Cap Reservation Charge (CRC, $/cfs)		$9,850	$11,000	$10,900	$11,200	$11,800	$12,100
12	LVMWD Peak Demand for MWD CRC (cfs)	*Projected by District*	43 cfs	43 cfs	43 cfs	43 cfs	43 cfs	43 cfs
13	LVMWD CRC	*Row 12 * Row 11*	$427,490	$477,400	$473,060	$486,080	$512,120	$525,140
14	LVMWD Annual RTS Charges	*Projected by District*	$1,832,747	$1,764,867	$1,730,928	$1,742,241	$1,764,867	$1,855,374
15	MWD Tier 1 Limit		20,699 AF	24,358 AF	24,358 AF	24,358 AF	24,358 AF	24,358 AF

Table 3-8B: Projected Potable Water Supply Costs (cont.)

16	MWD Water Purchases		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
17	Water Sales	*from Table 3-5*	20,025 AF	20,576 AF	21,152 AF	21,745 AF	22,354 AF	22,980 AF
18	Water Loss	*Projected by District*	6.37%	6.37%	6.37%	6.37%	6.37%	6.37%
19	***Net Water Sales***	*Row 17 *(1+Row 18)*	***21,301 AF***	***21,887 AF***	***22,500 AF***	***23,131 AF***	***23,779 AF***	***24,445 AF***
20	***Water Purchase to make Non-Sales needs***							
21	Recycled Water System Supplement	*Projected by District*	1,027 AF	830 AF	985 AF	947 AF	921 AF	951 AF
22	Plus LV Reservoir Filling	*Projected by District*	1,498 AF	2,000 AF	2,000 AF	2,000 AF	2,000 AF	2,000 AF
23	Less LV Reservoir Draw	*Projected by District*	-1,145 AF	-2,000 AF	-2,000 AF	-2,000 AF	-2,000 AF	-2,000 AF
24	Less Non-MWD Purchase							
25	Simi Valley	*Projected by District*	-20 AF	-20 AF	-21 AF	-21 AF	-22 AF	-22 AF
26	Ventura County	*Projected by District*	-120 AF	-122 AF	-125 AF	-127 AF	-129 AF	-132 AF
27	**Total MWD Purchase**	*Sum rows 19 to*	**22,541 AF**	**22,575 AF**	**23,340 AF**	**23,930 AF**	**24,549 AF**	**25,242 AF**
28	MWD Tier 1 Purchase	*Min of row 27 & row 15*	20,699 AF	22,575 AF	23,340 AF	23,930 AF	24,358 AF	24,358 AF
29	MWD Tier 2 Purchase	*Row 27 - row 28*	1,842 AF	0 AF	0 AF	0 AF	191 AF	884 AF
30								
31	**MWD Water Supply Costs**							
32	LVMWD CRC	*=Row 13*	$427,490	$477,400	$473,060	$486,080	$512,120	$525,140
33	LVMWD Annual RTS Charges	*=Row 14*	$1,832,747	$1,764,867	$1,730,928	$1,742,241	$1,764,867	$1,855,374
34	MWD Tier 1 Purchase	*Row 9 * Row 28*	$18,732,595	$21,017,014	$22,312,811	$23,570,777	$24,650,296	$25,478,468
35	MWD Tier 2 Purchase	*Row 10 * Row 29*	$1,919,578	$0	$0	$0	$218,407	$1,041,688
36	**Total MWD Purchase Costs**	*Sum rows 32 to 35*	**$22,912,410**	**$23,259,282**	**$24,516,798**	**$25,799,098**	**$27,145,690**	**$28,900,669**

Table 3-8C: Projected Potable Water Supply Costs (cont.)

37	Non MWD Water Supply Unit Costs		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
38	Simi Valley ($/AF)	*Projected by District*	$3,381	$3,574	$3,774	$3,989	$4,216	$4,457
39	Ventura County ($/AF)	*Projected by District*	$2,450	$2,590	$2,735	$2,891	$3,055	$3,229
40	Reservoir Draw ($/AF)		$722	$759	$796	$844	$895	$949
41	Reservoir Filling ($/AF)	*Row 36 / Row 27*	$1,016	$1,030	$1,050	$1,078	$1,106	$1,145
42								
43	**Water Supply Costs**							
44	Total MWD Purchase Costs	*=Row 36*	$22,912,410	$23,259,282	$24,516,798	$25,799,098	$27,145,690	$28,900,669
45	Less Reservoir Filling	*- Row 41* Row 22*	-$1,522,669	-$2,060,653	-$2,100,861	-$2,156,239	-$2,211,589	-$2,289,862
46	***Net MWD Purchase Costs***	***Sum rows 44 to 45***	***$21,389,741***	***$21,198,628***	***$22,415,937***	***$23,642,860***	***$24,934,101***	***$26,610,808***
47	Plus Simi Valley Purchases	*-Row 25 * Row 38*	$67,620	$72,832	$78,372	$84,413	$90,920	$97,929
48	Plus Ventura County Purchases	*-Row 26 * Row 39*	$294,000	$316,662	$340,749	$367,015	$395,306	$425,777
49	Plus LV Reservoir Draw	*-Row 23 * Row 40*	$826,690	$1,517,040	$1,592,892	$1,688,466	$1,789,773	$1,897,160
50	Plus Water Supply - LVR Adjustment	*Projected by District*	$135,000	$142,695	$150,686	$159,275	$168,354	$177,950
51	**Total Water Supply Costs**	***Sum rows 46 to 50***	**$22,713,051**	**$23,247,858**	**$24,578,636**	**$25,942,028**	**$27,378,454**	**$29,209,623**
52	**Projected Pass-through WS Costs**			**$534,807**	**$1,330,778**	**$1,363,392**	**$1,436,425**	**$1,831,169**

3.3.2 Potable Water Operating Expenses

Using the District's FY 2015 budget values, inflation factors were assigned to each line item to determine future O&M costs for the Potable Water Fund. Table 3-9 summarizes budgeted and projected O&M expenses for the Potable Water Fund during the Study period. The Potable Water Supply Costs are taken from the calculated values in Table 3-8 above. Other operating expenses include specialty expenses, public information, conservation and conservation education (please refer to the District's budget document for descriptions of each expense item).

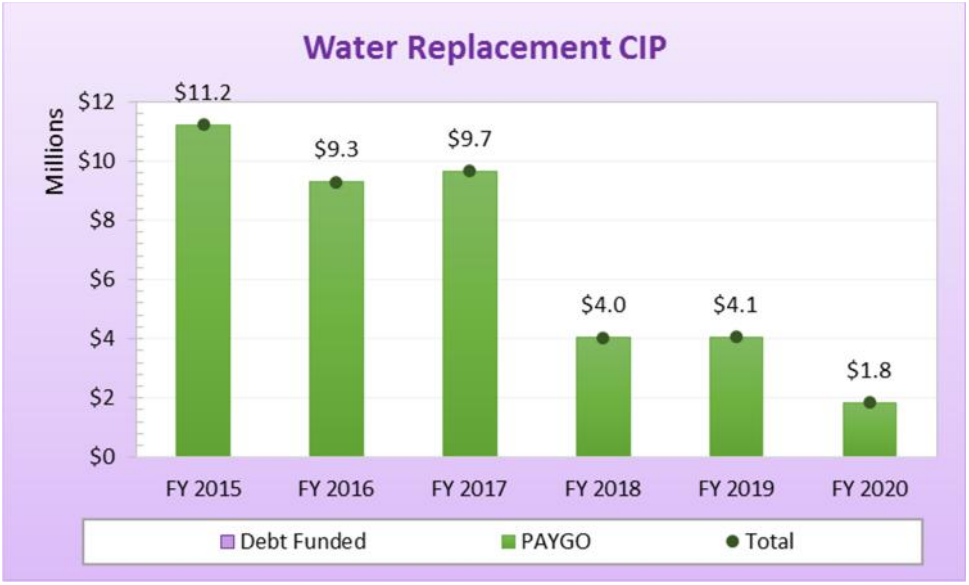
Table 3-9: Budgeted and Projected Potable Water Operating Expenses (in Millions $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Potable Water Supply Costs	$22.713	$23.248	$24.579	$25.942	$27.378	$29.210
O&M Expenses	$3.810	$3.987	$4.180	$4.382	$4.595	$4.819
Other Operating Expenses	$1.107	$1.139	$1.173	$1.207	$1.243	$1.280
Administrative Expenses	$7.285	$7.514	$7.752	$7.996	$8.248	$8.508
Total Water O&M Expenses	**$34.915**	**$35.889**	**$37.683**	**$39.527**	**$41.464**	**$43.816**

3.4 Projected Capital Replacement Projects

The District has programmed approximately $40M in capital expenditures during the Study period for the potable water enterprise, as shown in Figure 3-1. (A full list of projects and costs can be found in the Section 11.4). The capital improvement project (CIP) costs for future years is determined by using the programmed/budgeted costs and inflating the value by the capital cost inflation factor shown in Table 2-1. The District plans to fund all of the replacement CIP via 100 percent pay-as-you-go (PAYGO), as shown by the green bars in Figure 3-1 below.

Figure 3-1: Projected Potable Water Replacement CIP and Funding Sources



3.5 Debt Service

The Potable Water Fund currently has no outstanding debt. The District does not plan to issue any debt in the next five years.

3.6 STATUS QUO POTABLE WATER FINANCIAL PLAN

Table 3-10 displays the pro forma of the District's Potable Water Fund under current rates over the Study period. All projections shown in the table are based upon the District's current rate structure and do not include any rate adjustments or pass-through increases on wholesale potable water costs. The pro-forma incorporates the data shown in Table 3-6 for revenues from current rates, Table 3-7 for miscellaneous revenues, Table 3-8 for potable water supply costs, Table 3-9 for O&M expenses and Figure 3-1 for Replacement Capital Projects.

Under the "status-quo" scenario, revenues generated from current rates and other miscellaneous revenues are inadequate to sufficiently recover operating expenses of the utility beginning in FY 2020. Even in FY 2015, the District is unable to meet reserve requirements as set in the Reserve Policy discussed in Section 2.3 (projected ending balance of $20.8M is less than target balance of $23.4M) and to maintain fiscal sustainability and solvency under the current rates.

Table 3-10: Status Quo Potable Water Financial Plan (at Current Rates)

POTABLE WATER (OPERATIONS 101 + REPLACEMENT 301)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$33,271,769	$35,218,786	$36,092,718	$36,990,339	$37,913,122	$38,861,066
Revenue Adjustments		$0	$0	$0	$0	$0	$0
Pass-through WS Revenues		$0	$0	$0	$0	$0	$0
Other Operating Revenues		$2,073,415	$1,753,426	$2,043,974	$2,016,040	$2,005,206	$2,106,723
Non-Operating Revenues		**$1,773,370**	**$1,867,082**	**$1,851,945**	**$1,852,104**	**$1,869,886**	**$1,845,565**
Stand-By Fee, Property Tax, Assessments		$798,118	$819,667	$836,880	$853,618	$870,690	$883,750
Interest Income		$141,185	$186,688	$127,151	$82,526	$54,304	$2,750
Rental Income		$0	$0	$0	$0	$0	$0
Other		$834,067	$860,727	$887,914	$915,960	$944,892	$959,065
Transfers from Rate Stab Reserve		$0	$0	$0	$0	$0	$0
TOTAL REVENUES		**$37,118,554**	**$38,839,294**	**$39,988,638**	**$40,858,484**	**$41,788,214**	**$42,813,354**
OPERATING EXPENSES							
Water Supply Costs		$22,713,051	$23,247,858	$24,578,636	$25,942,028	$27,378,454	$29,209,623
O&M Expenses		$3,810,043	$3,987,417	$4,179,548	$4,381,763	$4,594,663	$4,818,822
Other Operating Expenses		$1,107,165	$1,139,478	$1,172,889	$1,207,434	$1,243,153	$1,280,087
Administrative Expenses		$7,284,638	$7,514,426	$7,751,869	$7,995,953	$8,247,785	$8,507,613
TOTAL OPERATING EXPENSES		**$34,914,897**	**$35,889,179**	**$37,682,942**	**$39,527,177**	**$41,464,054**	**$43,816,144**
NET REVENUES		**$2,203,657**	**$2,950,115**	**$2,305,695**	**$1,331,306**	**$324,159**	**-$1,002,790**
REPLACEMENT CAPITAL PROJECTS		**$11,223,754**	**$9,279,271**	**$9,657,470**	**$4,034,194**	**$4,053,671**	**$1,842,977**
PAYGO		$11,223,754	$9,279,271	$9,657,470	$4,034,194	$4,053,671	$1,842,977
Debt Funded		$0	$0	$0	$0	$0	$0
NET CASH CHANGES		**-$9,020,096**	**-$6,329,156**	**-$7,351,775**	**-$2,702,888**	**-$3,729,512**	**-$2,845,766**
BEGINNING BALANCES		**$29,808,456**	**$20,788,360**	**$14,459,203**	**$7,107,428**	**$4,404,540**	**$675,028**
ENDING BALANCES		**$20,788,360**	**$14,459,203**	**$7,107,428**	**$4,404,540**	**$675,028**	**-$2,170,738**
TARGET BALANCE		***$25,346,541***	***$26,183,368***	***$27,246,244***	***$28,343,674***	***$29,486,982***	***$30,757,623***
O&M	% of Operating budget	25%	$8,728,724	$8,972,295	$9,420,736	$9,881,794	$10,366,014	$10,954,036
Debt	% of Debt Service	100%	$0	$0	$0	$0	$0	$0
Replacement	% of 3-yr Depreciation Expenses	100%	$12,991,670	$13,455,473	$13,935,833	$14,433,342	$14,948,612	$15,482,278
Emergency	% of Capital Asset Value	2%	$3,626,147	$3,755,601	$3,889,676	$4,028,537	$4,172,356	$4,321,309
Debt Proceeds Balances			$0	$0	$0	$0	$0	$0

3.7 PROPOSED POTABLE WATER FINANCIAL PLAN

Assembly Bill (AB) 3030[7] enables retail utilities to establish a provision for directly passing through the increased costs of imported potable water from its wholesale suppliers to its retail customers as part of the five year rate adoption. RFC recommends that the District establish the pass-through water supply cost provision as allowed by AB 3030 as part of the proposed rate adoption. This provision reduces risk to the District by providing an additional source of revenue independent of rate increases that may be cumbersome to approve or be late in implementing. Actual wholesale water supply pass-through costs will be determined annually to align with actual water cost increases imposed on the District.

[7] *An act to add Section 53756 to the Government Code of the State of California*

In addition to the pass-through of water supply costs, the Potable Water Fund needs additional revenue adjustments as shown in Table 3-11 to meet the target reserve requirement and to maintain financial sufficiency for its expenses and other funding obligations through FY 2020.

Table 3-11: Proposed Potable Water Revenue Adjustments

Fiscal Year	Effective Date	Proposed Potable Water Revenue Adjustments
2016	Jan 1, 2016	4.5%
2017	Jan 1, 2017	4.5%
2018	Jan 1, 2018	4.5%
2019	Jan 1, 2019	4.5%
2020	Jan 1, 2020	4.5%

Table 3-12 shows the pro forma for the Potable Water Fund with revenues from the automatic pass-through increases for wholesale water and the proposed revenue adjustments shown above. Cumulatively, these factors result in the following:

- Positive net water revenues for the entirety of the Study period. As shown in Figure 3-2, the proposed revenue (shown by green line) meets all operating obligations (shown by stacked bars) and contributes to reserves for capital project funding and / or to meet reserve requirements.
- While the ending balance is below target levels for much of the Study period, it is much improved from the Status Quo scenario. As shown in Figure 3-3, the ending balance (shown by green bar) gradually moves closer to the target reserve level (shown by red line), surpassing it starting FY 2020. Years where Fund balance are not projected to reach target levels are shown as “Alert Balances.”

Table 3-12: Proposed Potable Water Financial Plan[8]

POTABLE WATER (OPERATIONS 101 + REPLACEMENT 301)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$33,271,769	$35,218,786	$36,092,718	$36,990,339	$37,913,122	$38,861,066
Revenue Adjustments		$0	$792,423	$2,472,802	$4,312,909	$6,325,515	$8,524,185
Pass-through WS Revenues		$0	$534,807	$1,865,586	$3,228,978	$4,665,403	$6,496,572
Other Operating Revenues		$2,073,415	$1,753,426	$2,043,974	$2,016,040	$2,005,206	$2,106,723
Non-Operating Revenues		**$1,773,370**	**$1,873,081**	**$1,883,610**	**$1,937,758**	**$2,040,089**	**$2,134,888**
Stand-By Fee, Property Tax, Assessments		$798,118	$819,667	$836,880	$853,618	$870,690	$883,750
Interest Income		$141,185	$192,687	$158,816	$168,180	$224,507	$292,072
Rental Income		$0	$0	$0	$0	$0	$0
Other		$834,067	$860,727	$887,914	$915,960	$944,892	$959,065
Transfers from Rate Stab Reserve		$0	$0	$0	$0	$0	$0
TOTAL REVENUES		**$37,118,554**	**$40,172,523**	**$44,358,690**	**$48,486,024**	**$52,949,334**	**$58,123,435**
OPERATING EXPENSES							
Water Supply Costs		$22,713,051	$23,247,858	$24,578,636	$25,942,028	$27,378,454	$29,209,623
O&M Expenses		$3,810,043	$3,987,417	$4,179,548	$4,381,763	$4,594,663	$4,818,822
Other Operating Expenses		$1,107,165	$1,139,478	$1,172,889	$1,207,434	$1,243,153	$1,280,087
Administrative Expenses		$7,284,638	$7,514,426	$7,751,869	$7,995,953	$8,247,785	$8,507,613
TOTAL OPERATING EXPENSES		**$34,914,897**	**$35,889,179**	**$37,682,942**	**$39,527,177**	**$41,464,054**	**$43,816,144**
NET REVENUES		**$2,203,657**	**$4,283,344**	**$6,675,748**	**$8,958,847**	**$11,485,279**	**$14,307,290**
REPLACEMENT CAPITAL PROJECTS		**$11,223,754**	**$9,279,271**	**$9,657,470**	**$4,034,194**	**$4,053,671**	**$1,842,977**
PAYGO		$11,223,754	$9,279,271	$9,657,470	$4,034,194	$4,053,671	$1,842,977
Debt Funded		$0	$0	$0	$0	$0	$0
NET CASH CHANGES		**-$9,020,096**	**-$4,995,927**	**-$2,981,723**	**$4,924,652**	**$7,431,608**	**$12,464,314**
BEGINNING BALANCES		**$29,808,456**	**$20,788,360**	**$15,792,433**	**$12,810,710**	**$17,735,362**	**$25,166,970**
ENDING BALANCES		**$20,788,360**	**$15,792,433**	**$12,810,710**	**$17,735,362**	**$25,166,970**	**$37,631,284**
TARGET BALANCE		***$25,346,541***	***$26,183,368***	***$27,246,244***	***$28,343,674***	***$29,486,982***	***$30,757,623***
O&M	% of Operating budget	25%	$8,728,724	$8,972,295	$9,420,736	$9,881,794	$10,366,014	$10,954,036
Debt	% of Debt Service	100%	$0	$0	$0	$0	$0	$0
Replacement	% of 3-yr Depreciation Expenses	100%	$12,991,670	$13,455,473	$13,935,833	$14,433,342	$14,948,612	$15,482,278
Emergency	% of Capital Asset Value	2%	$3,626,147	$3,755,601	$3,889,676	$4,028,537	$4,172,356	$4,321,309
Debt Proceeds Balances			$0	$0	$0	$0	$0	$0

[8] *In response to reduced consumption resulting from emergency drought regulations, the Board approved the use of $2.7 million from the Rate Stabilization Fund in FY 2016 to mitigate the financial impacts of reduced potable water sales. The Study does not include any reduction in the potable waters sales resulting from the emergency drought regulations (mandated cutback by the State Water Resource Control Board). Rate Stabilization Fund is part of the Restricted Reserves apart from the Water Funds shown in this Study.*

Figure 3-2: Potable Water Operating Financial Plan

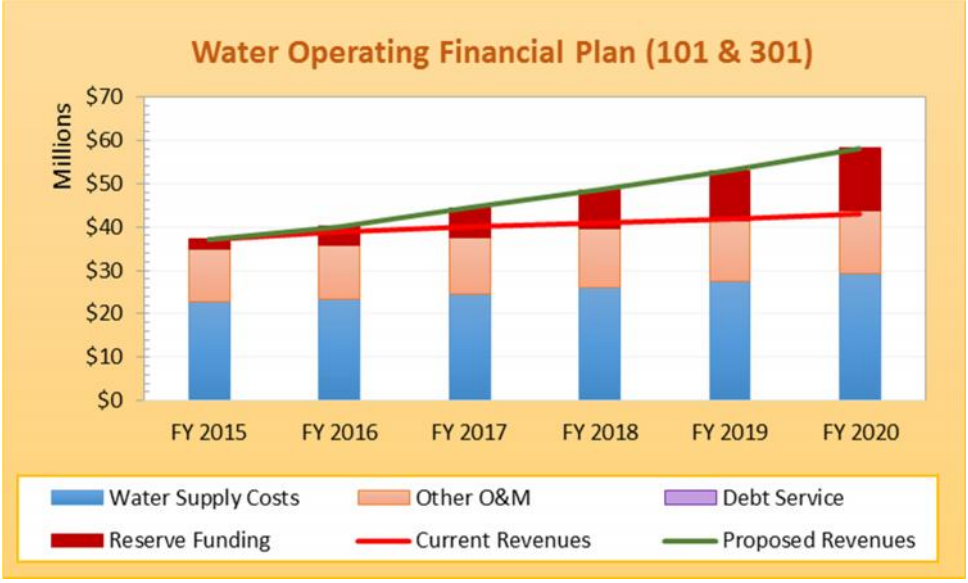
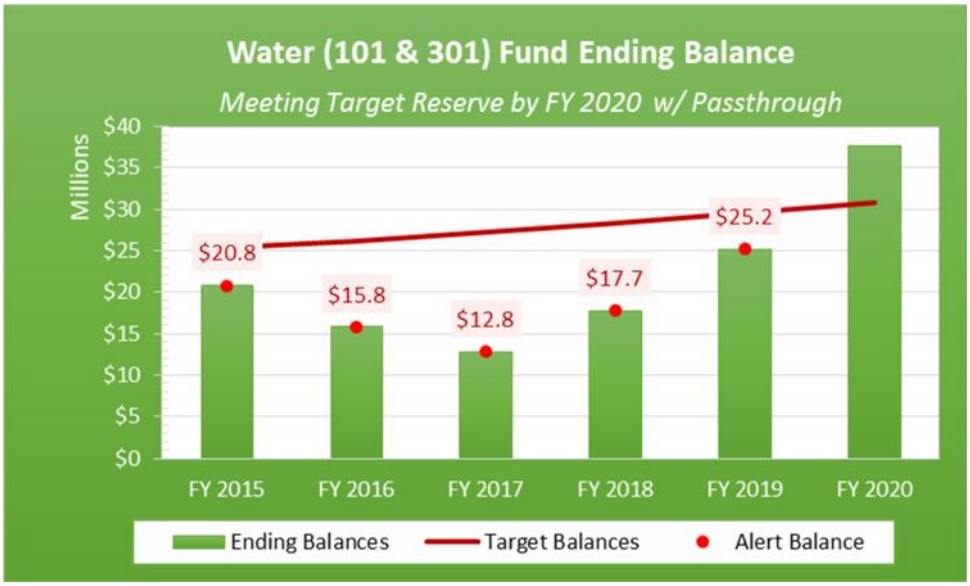


Figure 3-3: Projected Potable Water Fund (101 & 301) Ending Balances



4 RECYCLED WATER FINANCIAL PLAN

A review of a utility's revenue requirements is a key first step in the rate study process. The review involves an analysis of annual operating revenues under the status quo, O&M expenses, transfers between funds, and reserve requirements. This section of the report provides a discussion of the projected revenues, O&M expenses, other reserve funding and revenue adjustments estimated as required to ensure the fiscal sustainability and solvency of the Recycled Water Fund.

4.1 REVENUES FROM CURRENT RW RATES

The District's Recycled Water enterprise provides service to three different geographic zones – the Las Virgenes Valley Zone, the Western Zone, and the Calabasas Zone. Since the cost of transmission to the Las Virgenes Valley Zone customers is less, the commodity charges are slightly less as compared to the other zones.

The current rates were last adjusted on January 1, 2015. Starting September 2015, the District switched from bi-monthly to monthly billing for all its services. Table 4-1 summarizes the current recycled water rates effective January 1, 2014 and January 1, 2015. Table 4-2 summarizes the current tier definitions by meter size for recycled water services. There are currently no RTS charges for recycled water service.

Table 4-1: Current Commodity Charges

Commodity Charges ($/hcf)	FY 2014	FY 2015
Effective Date	January 1, 2014	January 1, 2015
Las Virgenes Valley Zone (L)		
Tier 1	$1.07	$1.09
Tier 2	$1.40	$1.42
Tier 3	$2.23	$2.26
Tier 4	$3.46	$3.51
Western/Calabasas Zones (C/M/W)		
Tier 1	$1.31	$1.33
Tier 2	$1.64	$1.67
Tier 3	$2.47	$2.51
Tier 4	$3.70	$3.76

Table 4-2: Current Recycled Water Monthly Tier Definitions

	Tier 1	Tier 2	Tier 3	Tier 4
3/4"	0 - 8 hcf	9 - 34	35 - 100	above 100 hcf
3/4" x 1"	0 - 8 hcf	9 - 34	35 - 100	above 100 hcf
1"	0 - 14 hcf	15 - 58	59 - 170	above 170 hcf
1 1/2"	0 - 26 hcf	27 - 112	113 - 330	above 330 hcf
2"	0 - 42 hcf	43 - 180	181 - 530	above 530 hcf
3"	0 - 86 hcf	87 - 364	365 - 1,070	above 1,070 hcf
4"	0 - 134 hcf	135 - 568	569 - 1,670	above 1,670 hcf
6"	0 - 266 hcf	267 - 1,132	1,133 - 3,330	above 3,330 hcf
8"	0 - 426 hcf	427 - 1,812	1,813 - 5,330	above 5,330 hcf
10"	0 - 614 hcf	615 - 2,608	2,609 - 7,670	above 7,670 hcf

Table 4-3 summarizes the projected number of accounts by meter size for the Study period. Based on the account growth rate assumptions found in Table 2-2 (0 percent for each year of the Study period), no growth is assumed for recycled water accounts. The District is currently undertaking a study to determine options for recycled water seasonal storage that would enable it to increase its recycled water customer base by preserving recycled water generated during winter months for use during summer months. Additionally, the implementation of water budgets for recycled water customers should increase the volume of recycled water available for sale during peak periods and the District would seek new accounts to best manage this resource.

Table 4-3: Projected Recycled Water Accounts

recycled water Services	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Actual	*Estimated*	*Projected*	*Projected*	*Projected*	*Projected*	*Projected*
3/4"	1	1	1	1	1	1	1
3/4" x 1"	10	10	10	10	10	10	10
1"	62	62	62	62	62	62	62
1 1/2"	201	201	201	201	201	201	201
2"	344	344	344	344	344	344	344
3"	6	6	6	6	6	6	6
4"	4	4	4	4	4	4	4
6"	9	9	9	9	9	9	9
8"	0	0	0	0	0	0	0
10"	1	1	1	1	1	1	1
Total	**638**	**638**	**638**	**638**	**638**	**638**	**638**

The projected recycled water sales developed by District staff from Table 2-4 of 5,041 AF were used to project the water usage in each tier. It assumed recycled water sales and the usage in each tier will remain constant throughout the Study period, as shown in Table 4-4.

Table 4-4: Projected Recycled Water Sales

Usage by Tiers	FY 2014 *Actual*	FY 2015 *Estimated*	FY 2016 *Projected*	FY 2017 *Projected*	FY 2018 *Projected*	FY 2019 *Projected*	FY 2020 *Projected*
Las Virgenes Valley Zone (L)							
Tier 1	11,669	10,258	10,258	10,258	10,258	10,258	10,258
Tier 2	29,137	25,613	25,613	25,613	25,613	25,613	25,613
Tier 3	51,971	45,685	45,685	45,685	45,685	45,685	45,685
Tier 4	45,250	39,777	39,777	39,777	39,777	39,777	39,777
Total L Zone	**138,027**	**121,332**	**121,332**	**121,332**	**121,332**	**121,332**	**121,332**
Other Zones (C/M/W)							
Tier 1	257,050	225,958	225,958	225,958	225,958	225,958	225,958
Tier 2	663,356	583,119	583,119	583,119	583,119	583,119	583,119
Tier 3	877,767	771,595	771,595	771,595	771,595	771,595	771,595
Tier 4	561,810	493,855	493,855	493,855	493,855	493,855	493,855
Total Other Zones	**2,359,983**	**2,074,528**	**2,074,528**	**2,074,528**	**2,074,528**	**2,074,528**	**2,074,528**
Total Recycled Water Sales (hcf)	**2,498,010**	**2,195,860**	**2,195,860**	**2,195,860**	**2,195,860**	**2,195,860**	**2,195,860**
Total Recycled Water Sales (AF)	**5,735 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**

Table 4-5 shows the projected commodity revenues for the Study period under the existing rates. Since the District adjusts rates in January, the FY 2015 rates includes ½ year under the old rates (July 2014 through December 2014) and ½ year under the new rates (January 2015 through June 2015). The commodity revenues shown for FY 2016 through FY 2020 are calculated by multiplying the projected usage by the January 2015 rate. For example, the commodity charge revenue from Tier 1 usage in the Las Virgenes Valley Zone for FY 2019 can be a calculated as follows:

$$Projected\ Tier\ 1\ Usage\ for\ FY\ 2019 \times Tier\ 1\ Rate$$
$$10{,}258 \times \$1.09 = \$11{,}181$$

The same calculation is repeated for all tiers and zones to determine the total commodity revenue for each year of the Study period.

Table 4-5: Projected Revenues from Current Recycled Water Rates (in Thousands $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Las Virgenes Valley Zone (L)	$326	$284	$286	$286	$286	$286
All other Zones	$5,671	$5,022	$5,068	$5,068	$5,068	$5,068
Total Revenues from Current Recycled Water Rates	**$5,997**	**$5,306**	**$5,354**	**$5,354**	**$5,354**	**$5,354**

4.2 Miscellaneous RW Revenues

In addition to revenue from rates, the Recycled Water Fund also receives miscellaneous revenues from different sources such as interest earnings, and other operating/non-operating sources. Total miscellaneous revenues for the Study period are shown in Table 4-6. Miscellaneous revenues are projected to increase at a rate of 1.5 percent per year (District staff estimates), except Interest incomes are calculated based on actual reserve balances for Water Funds.

Table 4-6: Projected Miscellaneous Recycled Water Revenues (in Thousands $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Other Operating Revenues	$609	$618	$627	$636	$646	$655
Interest Income	$53	$107	$117	$135	$156	$168
Total Misc. Revenues	**$662**	**$725**	**$743**	**$771**	**$802**	**$823**

4.3 Recycled Water O&M Expenses

4.3.1 Recycled Water Supply Costs

Based on projections and inputs from District staff, the respective sources of water, per unit price, and expected purchase quantities are shown in Table 4-7 below. The total water supply costs at the bottom of Table 4-7 are determined by multiplying the per unit costs for each source of water by the corresponding quantity purchased from that source, and adding in the fixed costs associated with each source. Estimated sales figures were used for FY 2015 and projected sales were used for FY 2016 and beyond.

Table 4-7: Projected Recycled Water Supply Costs

Row #			FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
1	Recycled Water Sales (AF)	*from Table 4-4*	5,041 AF	5,041 AF	5,041 AF	5,041 AF	5,041 AF	5,041 AF
2	Recycled Water Loss	*Projected by District*	0%	0%	0%	0%	0%	0%
3	**Quantity to be Purchased**	*Row 1 *(1+Row 2)*	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**	**5,041 AF**
4	From JPA RWTR	*Projected by District*	4,014 AF	4,211 AF	4,056 AF	4,094 AF	4,120 AF	4,090 AF
5	From Potable Water Fund	*Projected by District*	1,027 AF	830 AF	985 AF	947 AF	921 AF	951 AF
6	**Unit RW Costs ($/AF)**							
7	JPA RWTR	*Projected by District*	$416 /AF	$450 /AF	$460 /AF	$469 /AF	$479 /AF	$489 /AF
8	From Potable Water Fund	*Full O&M Potable Cost*	$1,639 /AF	$1,640 /AF	$1,675 /AF	$1,709 /AF	$1,744 /AF	$1,792 /AF
9	**RW Supply Costs (in Thousands $)**							
10	JPA RWTR	*Row 4 * Row 7*	$1,669	$1,897	$1,865	$1,922	$1,975	$2,002
11	From Potable Water Fund	*Row 5 * Row 8*	$1,683	$1,361	$1,649	$1,619	$1,605	$1,704
12	**Total RW Supply Costs (in Thousand $)**	***Sum rows 10 to 11***	**$3,353**	**$3,257**	**$3,514**	**$3,541**	**$3,580**	**$3,706**

4.3.2 Recycled Water Operating Expenses

Using the District's FY 2015 budget values, inflation factors were assigned to each line item to determine future O&M costs for the Water Fund. Table 4-8 summarizes budgeted and projected O&M expenses for the Recycled Water Fund during the Study period. The recycled water supply costs are taken from the calculated values in Table 3-7 above. Please refer to the District budget document for descriptions of each expense item.

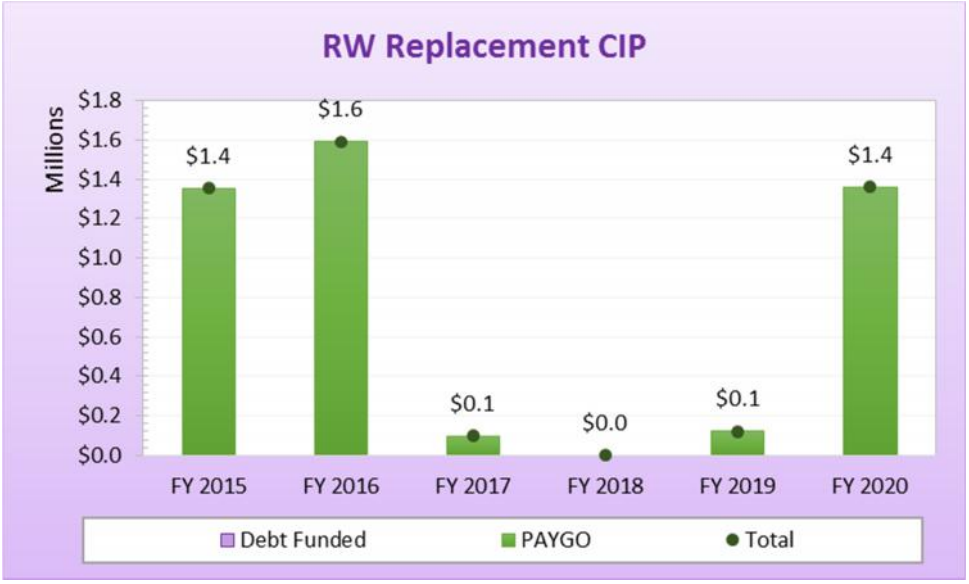
Table 4-8: Budgeted and Projected Recycled Water Operating Expenses (in Thousands $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Recycled Water Supply Costs	$3,353	$3,257	$3,514	$3,541	$3,580	$3,706
O&M Expenses	$157	$163	$170	$176	$183	$190
Other Operating Expenses	$33	$34	$35	$36	$37	$38
Administrative Expenses	$433	$447	$461	$476	$491	$507
Total recycled water O&M Expenses	**$3,976**	**$3,902**	**$4,180**	**$4,229**	**$4,292**	**$4,442**

4.4 Projected Capital Replacement Projects

The District has programmed approximately $4.5M in capital expenditures during the Study period for the recycled water enterprise, as shown in Figure 4-1. (A full list of projects and costs can be found in Section 11.4). The CIP costs for future years are determined by using the programmed/budgeted costs and inflating the value by the capital cost inflation factor shown in Table 2-1. The District plans to fund all of the replacement CIP via 100 percent pay-as-you go (PAYGO) as show by green bar in the figure below.

Figure 4-1: Projected Recycled Water Replacement CIP and Funding Sources



4.5 Debt Service

The Recycled Water Fund currently has no outstanding debt. The District does not plan to issue debt in the next five years.

4.6 Status Quo RW Financial Plan

Table 4-9 displays the pro forma of the Recycled Water Fund under current rates over the Study period. All projections shown in the table are based upon the District's current rate structure and do not include any rate adjustments. The pro forma incorporates the data shown in Table 4-5 through Table 4-8 and Figure 4-1.

Under the "status quo" scenario, revenues generated from current rates and other miscellaneous revenues are sufficient to meet the enterprise's operating and capital needs, while maintaining minimum target balances, as set in the Reserve Policy discussed in Section 2.3.

Table 4-9: Status Quo Recycled Water Financial Plan (at Current Rates)

RECYCLED WATER (OPERATIONS + REPLACEMENT)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$5,305,930	$5,354,013	$5,354,013	$5,354,013	$5,354,013	$5,354,013
Revenue Adjustments		$0	$0	$0	$0	$0	$0
Other Operating Revenues		$608,881	$617,834	$626,921	$636,145	$645,507	$655,010
Non-Operating Revenues		**$53,352**	**$106,609**	**$115,323**	**$131,885**	**$150,026**	**$157,746**
Stand-By Fee, Property Tax, Assessmer		$0	$0	$0	$0	$0	$0
Interest Income		$53,352	$106,609	$115,323	$131,885	$150,026	$157,746
Rental Income		$0	$0	$0	$0	$0	$0
Other		$0	$0	$0	$0	$0	$0
TOTAL REVENUES		**$5,968,163**	**$6,078,455**	**$6,096,257**	**$6,122,043**	**$6,149,546**	**$6,166,769**
OPERATING EXPENSES							
RW Supply Costs		$3,352,782	$3,257,490	$3,514,309	$3,540,652	$3,580,416	$3,706,078
O&M Expenses		$157,193	$163,288	$169,657	$176,275	$183,151	$190,296
Other Operating Expenses		$32,871	$33,923	$35,008	$36,129	$37,285	$38,478
Administrative Expenses		$433,215	$447,078	$461,384	$476,149	$491,385	$507,110
TOTAL OPERATING EXPENSES		**$3,976,061**	**$3,901,779**	**$4,180,359**	**$4,229,205**	**$4,292,238**	**$4,441,961**
NET REVENUES		**$1,992,102**	**$2,176,676**	**$1,915,898**	**$1,892,839**	**$1,857,309**	**$1,724,808**
REPLACEMENT CAPITAL PROJECTS		**$1,353,896**	**$1,590,763**	**$99,775**	**$0**	**$121,852**	**$1,360,540**
PAYGO		$1,353,896	$1,590,763	$99,775	$0	$121,852	$1,360,540
Debt Funded		$0	$0	$0	$0	$0	$0
NET CASH CHANGES		**$638,205**	**$585,913**	**$1,816,123**	**$1,892,839**	**$1,735,457**	**$364,267**
BEGINNING BALANCES		**$10,349,183**	**$10,987,388**	**$11,573,302**	**$13,389,424**	**$15,282,263**	**$17,017,720**
ENDING BALANCES		**$10,987,388**	**$11,573,302**	**$13,389,424**	**$15,282,263**	**$17,017,720**	**$17,381,988**
TARGET BALANCE		*$1,849,313*	*$1,861,277*	*$1,962,546*	*$2,007,510*	*$2,057,191*	*$2,129,755*
O&M % of Operating budget	25%	$994,015	$975,445	$1,045,090	$1,057,301	$1,073,059	$1,110,490
Debt of Debt Service	100%	$0	$0	$0	$0	$0	$0
Replacement % of 3-yr Depreciation Expense	100%	$686,040	$710,532	$735,898	$762,170	$789,379	$817,560
Emergency % of Capital Asset Value	2%	$169,257	$175,300	$181,558	$188,040	$194,753	$201,705

4.7 PROPOSED RECYCLED WATER FINANCIAL PLAN

The District previously adopted a resolution authorizing automatic adjustments to its rates by a percentage factor linked to the consumer price index[9] (CPI) for a five-year period. For the purposes of developing the financial plan, it is assumed that the annual CPI adjustment will be 2 percent per year for the entirety of the Study period. The proposed adjustments are shown in Table 4-10.

[9] *CPI adjustment is linked to U.S. Bureau of Labor Statistics "Consumer Price Index for All Urban Consumers (CPI-U); Los Angeles, Riverside-Orange Counties, CA; Commodity and Service Group All Items*

Table 4-10: Proposed Recycled Water Revenue Adjustments

Fiscal Year	Effective Date	Proposed Recycled Water Revenue Adjustments
2016	Jan 1, 2016	2%
2017	Jan 1, 2017	2%
2018	Jan 1, 2018	2%
2019	Jan 1, 2019	2%
2020	Jan 1, 2020	2%

The District is preparing for large capital investments for the recycled water enterprise beyond the Study period (after FY 2020) to provide for seasonal storage of recycled water. On July 6, 2015, the JPA Board approved a Recycled Water Seasonal Storage Plan of Action, outlining the steps necessary to minimize discharges to Malibu Creek and beneficially reuse all of the JPA's recycled water. As approved, the Plan of Action includes proceeding on a parallel path with Scenario No. 4, use of Las Virgenes Reservoir for indirect potable reuse, and Scenario No. 5, re-purposing of Encino Reservoir for seasonal storage. Scenario No. 4 has an estimated capital cost of $80 to $95 million with additional estimated annual operations and maintenance costs of $3 to $4 million. Scenario No. 5 has an estimated capital cost of $30 to $35 million with additional estimated annual operations and maintenance costs of $2 to $2.5 million. Funding for these capital improvements would be provided by the JPA's two member agencies with 70.6% from the District and 29.4% from Triunfo Sanitation District. Given the substantial future capital investment needs and to minimize issuance of debt, the District proposes to build its recycled water reserves well above "Target Balances" as called for by the District's Adopted Financial Policies, which set a minimum standard for reserve balances.

Table 4-11 shows the pro forma for the Water Fund with revenues from the automatic CPI adjustments as shown in Table 4-10 above. Cumulatively, these factors result in the following:

- Positive net water revenues for the entirety of the Study period with strong contributions to reserves every year, as shown in Figure 4-2.
- As shown in Figure 4-3, the ending balance (shown by green bars) increases every year and begins to approach the District's goal of $20M in FY 2020.

Table 4-11: Proposed Recycled Water Financial Plan

RECYCLED WATER (OPERATIONS + REPLACEMENT)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$5,305,930	$5,354,013	$5,354,013	$5,354,013	$5,354,013	$5,354,013
Revenue Adjustments		$0	$53,540	$161,691	$272,005	$384,526	$499,296
Other Operating Revenues		$608,881	$617,834	$626,921	$636,145	$645,507	$655,010
Non-Operating Revenues		**$53,352**	**$106,851**	**$116,540**	**$135,074**	**$156,211**	**$167,982**
Stand-By Fee, Property Tax, Assessmer		$0	$0	$0	$0	$0	$0
Interest Income		$53,352	$106,851	$116,540	$135,074	$156,211	$167,982
Rental Income		$0	$0	$0	$0	$0	$0
Other		$0	$0	$0	$0	$0	$0
TOTAL REVENUES		**$5,968,163**	**$6,132,238**	**$6,259,166**	**$6,397,237**	**$6,540,257**	**$6,676,302**
OPERATING EXPENSES							
RW Supply Costs		$3,352,782	$3,257,490	$3,514,309	$3,540,652	$3,580,416	$3,706,078
O&M Expenses		$157,193	$163,288	$169,657	$176,275	$183,151	$190,296
Other Operating Expenses		$32,871	$33,923	$35,008	$36,129	$37,285	$38,478
Administrative Expenses		$433,215	$447,078	$461,384	$476,149	$491,385	$507,110
TOTAL OPERATING EXPENSES		**$3,976,061**	**$3,901,779**	**$4,180,359**	**$4,229,205**	**$4,292,238**	**$4,441,961**
NET REVENUES		**$1,992,102**	**$2,230,459**	**$2,078,807**	**$2,168,033**	**$2,248,019**	**$2,234,341**
REPLACEMENT CAPITAL PROJECTS		**$1,353,896**	**$1,590,763**	**$99,775**	**$0**	**$121,852**	**$1,360,540**
PAYGO		$1,353,896	$1,590,763	$99,775	$0	$121,852	$1,360,540
Debt Funded		$0	$0	$0	$0	$0	$0
NET CASH CHANGES		**$638,205**	**$639,695**	**$1,979,031**	**$2,168,033**	**$2,126,168**	**$873,800**
BEGINNING BALANCES		**$10,349,183**	**$10,987,388**	**$11,627,084**	**$13,606,115**	**$15,774,148**	**$17,900,315**
ENDING BALANCES		**$10,987,388**	**$11,627,084**	**$13,606,115**	**$15,774,148**	**$17,900,315**	**$18,774,115**
TARGET BALANCE		*$1,849,313*	*$1,861,277*	*$1,962,546*	*$2,007,510*	*$2,057,191*	*$2,129,755*
O&M	% of Operating budget	25%	$994,015	$975,445	$1,045,090	$1,057,301	$1,073,059	$1,110,490
Debt	of Debt Service	100%	$0	$0	$0	$0	$0	$0
Replacement	% of 3-yr Depreciation Expense	100%	$686,040	$710,532	$735,898	$762,170	$789,379	$817,560
Emergency	% of Capital Asset Value	2%	$169,257	$175,300	$181,558	$188,040	$194,753	$201,705

Figure 4-2: Recycled Water Operating Financial Plan

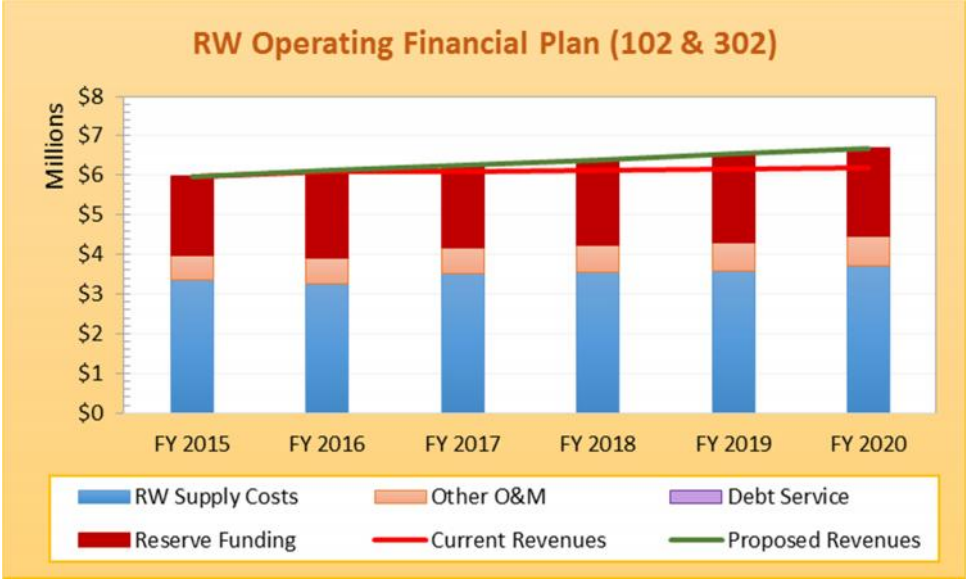
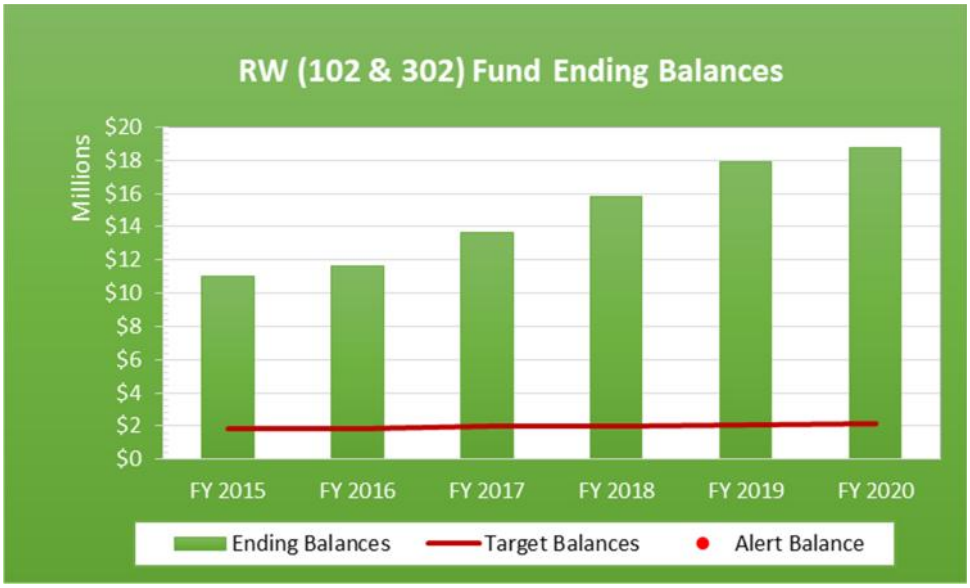


Figure 4-3: Projected Recycled Water Fund (102 & 302) Ending Balances



5 SANITATION FINANCIAL PLAN

A review of a utility's revenue requirements is a key first step in the rate study process. The review involves an analysis of annual operating revenues under the status quo, O&M expenses, transfers between funds, and reserve requirements. This section of the report provides a discussion of the projected revenues, O&M expenses, other reserve funding and revenue adjustments estimated as required to ensure the fiscal sustainability and solvency of the Sanitation Fund.

5.1 REVENUES FROM CURRENT SANITATION RATES

The current rates were last adjusted on July 1, 2014. Starting in September 2015, the District switched from bi-monthly to monthly billing for all its services. Table 5-1 shows the current sanitation rates effective July 1st 2014. Single Family Residential (SFR) charges are based on monthly average winter use (December through March), because it is assumed that there is less outdoor water usage during this period and is a more accurate estimate of water use that flows as sewage to the District's treatment plant. The monthly winter average determines the sanitation charge for the full fiscal year that follows, beginning every July. Multi-Family Residential (MFR) customers are charged a flat rate of $34.99 per month per dwelling unit for sanitation service. Commercial sanitation rates include three components: account service charges, equivalent residential unit (ERU[10]) charges, and variable charges by commercial class and effluent strength for usage in excess of minimum ERU usage.

Table 5-1: Current Sanitation Rates

	FY 2014	FY 2015
Effective Date	**7/1/2013**	**7/1/2014**
Single Family Monthly Sanitation Service Charges		
10 hcf or less	$37.16	$37.90
11 hcf	$40.01	$40.82
12 hcf	$42.87	$43.73
13 hcf	$45.72	$46.64
14 hcf	$48.58	$49.55
15 hcf	$51.43	$52.46
16 hcf or more	$54.28	$55.37
Multi Family Monthly Sanitation Service Charges	$34.30	$34.99

[10] *Equivalent Residential Unit - unit of measure used to equate non-residential wastewater flow to a specific number of single-family residences.*

Table 5-1: Current Sanitation Rates (cont.)

	FY 2014	FY 2015
Effective Date	**7/1/2013**	**7/1/2014**
Commercial		
Account Service Charges	$8.61	$8.78
Per ERU Charge	$45.68	$46.59
Excess Usage Charges ($/hcf)		
Class 1 (In Excess of 14.75hcf / ERU)	$3.10	$3.16
Class 2 (In Excess of 8.65 hcf / ERU)	$5.29	$5.39
Class 3 (In Excess of 5.7 hcf / ERU)	$8.02	$8.18
Class 4 (Varied)	N/A	N/A

Table 5-2 summarizes the projected number of accounts and ERU by customer class for the Study period. The existing number of accounts/ERUs for FY 2015 provided by the District were inflated by the account growth rate found in Table 2-2 (0.52 percent for each year of the Study period), to determine the number of ERUs for future years. Note that that while there are 659 Commercial accounts for FY 2015, this translates to 4,242 ERUs based on actual usage and strength characteristics of each commercial account. The ERUs were provided by District staff for FY 2014.

Table 5-2: Projected Sanitation ERUs and Excess Usage Summary

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Single Family	**15,700**	**15,700**	**15,782**	**15,864**	**15,946**	**16,029**	**16,112**
10 hcf or less	1,044	1,044	1,049	1,054	1,060	1,065	1,071
11 hcf	193	193	194	195	196	197	198
12 hcf	191	191	192	193	194	195	196
13 hcf	185	185	186	187	187	188	189
14 hcf	190	190	191	192	193	194	195
15 hcf	189	189	190	191	192	193	194
16 hcf or more	13,708	13,708	13,780	13,851	13,923	13,996	14,069
Multi Family	**6,878**	**6,878**	**6,914**	**6,950**	**6,986**	**7,022**	**7,059**

Table 5-2: Projected Sanitation ERUs and Excess Usage Summary (cont.)

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Commercial							
# of Accounts	**659**	**659**	**662**	**666**	**669**	**673**	**676**
Class 1	544	544	547	550	553	555	558
Class 2	94	94	94	95	95	96	96
Class 3	21	21	21	21	21	21	22
Class 4	0	0	0	0	0	0	0
# of ERU	**4,242**	**4,242**	**4,264**	**4,286**	**4,309**	**4,331**	**4,353**
Class 1	3,136	3,136	3,152	3,169	3,185	3,202	3,218
Class 2	965	965	970	975	980	985	990
Class 3	141	141	142	142	143	144	145
Class 4	0	0	0	0	0	0	0
Excess Usage (hcf)	**336,616**	**326,770**	**335,761**	**345,167**	**354,834**	**364,779**	**375,001**
Class 1	176,454	171,293	176,006	180,937	186,004	191,217	196,576
Class 2	130,196	126,388	129,866	133,504	137,243	141,089	145,043
Class 3	29,965	29,089	29,889	30,727	31,587	32,472	33,382

Revenues from the current sanitation rates can be determined by multiplying the current rates by the ERUs for the given year. For example, the annual sanitation revenues for MFR customers under current rates are calculated as follows:

$$MFR\ Sanitation\ Rate \times Number\ of\ projected\ MFR\ ERUs\ for\ 2016 \times 12\ months$$
$$\$34.99 \times 6{,}878 \times 12 = \$2{,}887{,}934$$

The same calculation is repeated for other customer classes and for each commercial customer class. The total revenues from current sanitation rates are shown in Table 5-3 below.

Table 5-3: Calculated Revenues from Current Sanitation Rates (in Thousands $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Single Family	$10,113	$10,166	$10,219	$10,272	$10,325	$10,379
Multi Family	$2,888	$2,903	$2,918	$2,933	$2,948	$2,963
Commercial	$3,902	$3,954	$4,009	$4,065	$4,123	$4,181
Account Service Charges	*$69*	*$70*	*$70*	*$71*	*$71*	*$71*
Per ERU Charge	*$2,372*	*$2,384*	*$2,396*	*$2,409*	*$2,421*	*$2,434*
Variable Charges	*$1,460*	*$1,501*	*$1,543*	*$1,586*	*$1,630*	*$1,676*
Total Revenues from Current Sanitation Rates	**$16,902**	**$17,023**	**$17,146**	**$17,270**	**$17,396**	**$17,524**

5.2 Miscellaneous Sanitation Revenues

In addition to revenue from rates, the Sanitation Fund also receives miscellaneous revenues from different sources such as interest earnings, and other operating/non-operating sources. Total miscellaneous revenues for the Study period are shown in Table 5-4. Miscellaneous revenues are projected based on District staff estimates, except Interest incomes are calculated based on actual reserve balances for the Sanitation Fund.

Table 5-4: Projected Miscellaneous Sanitation Revenues (in Thousands $)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Other Operating Revenues	$260	$264	$268	$272	$276	$288
Stand-By Fee, Property Tax, Assessments	$91	$94	$96	$98	$100	$101
Interest Income	$103	$220	$227	$228	$239	$261
Total Misc. Sanitation Revenues	**$454**	**$578**	**$590**	**$598**	**$615**	**$642**

5.3 Sanitation O&M Expenses

Using the District's FY 2015 budget values, inflation factors were assigned to each line item to determine future O&M costs for the Sanitation Fund. Table 5-5 summarizes budgeted and projected O&M expenses for the Sanitation Fund during the Study period. Purchased Services expenses include the District's share of JPA net expenses and payments to the City of Los Angeles[11] for additional sanitation treatment services. O&M expenses include Operating and Maintenance expenses and Other Operating Expenses include Specialty Expenses. Please refer to the District budget document for descriptions of each expense item.

[11] *Refer to official budget documentation for detail.*

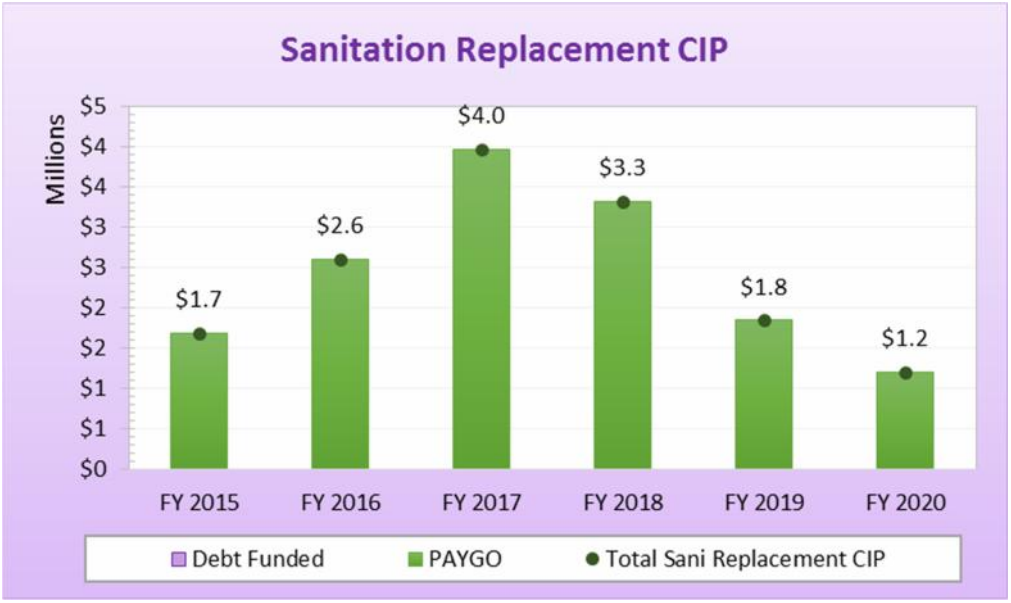
Table 5-5: Projected Sanitation O&M Expenses

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Purchased Services	$9,774	$10,086	$10,410	$10,744	$11,090	$11,448
O&M Expenses	$317	$329	$343	$357	$372	$388
Other Operating Expenses	$6	$6	$6	$7	$7	$7
Administrative Expenses	$1,152	$1,189	$1,227	$1,267	$1,307	$1,349
Total Sanitation O&M Expenses	**$11,249**	**$11,611**	**$11,986**	**$12,374**	**$12,776**	**$13,191**

5.4 Projected Capital Replacement Projects

The District has programmed approximately $14.6M in capital replacement expenditures during the Study period for the Sanitation Fund, as shown in Figure 5-1. (A full list of projects and costs can be found in Section 11.4). The CIP costs for future years are determined by using the programmed/budgeted costs and inflating the value by the capital cost inflation factor shown in Table 2-1. The District plans to fund all the replacement CIP via 100 percent pay-as-you-go (PAYGO) as show by the green bars in Figure 5-1 below.

Figure 5-1: Projected Sanitation Replacement CIP and Funding Sources



5.5 Debt Service

The Sanitation Enterprise currently has one outstanding debt, 2009 Refunding Bonds, shown in Table 5-6. The Sanitation Construction Fund (Fund 230) is responsible for 33 percent of the total annual debt service (principal and interest), and the Sanitation Replacement Fund (Fund 330) is responsible for the remaining 67 percent. Each Fund's share of the annual debt service obligation is summarized in Table 5-6.

Table 5-6: Current Sanitation Debt Service

		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Principal		$1,840	$1,925	$2,025	$2,125	$2,210	$2,305
Interest		$915	$830	$731	$628	$541	$450
Total Current Debt Service for 2009 Refunding Bonds		**$2,755**	**$2,755**	**$2,756**	**$2,753**	**$2,751**	**$2,755**
Sanitation Construction Fund 230	33.00%	$909	$909	$910	$908	$908	$909
Sanitation Replacement Fund 330	67.00%	$1,846	$1,846	$1,847	$1,844	$1,843	$1,846

5.6 Status Quo Sanitation Financial Plan

Table 5-7 displays the pro forma of the District's Sanitation Funds under current rates over the Study period. All projections shown in the table are based upon the District's current rate structure and do not include any rate adjustments. The pro forma incorporates revenues from current rates (Table 5-3), miscellaneous revenues (Table 5-4), O&M expenses (Table 5-5), capital expenditures (Figure 5-1), and debt service (Table 5-6).

Under the "status quo" scenario, the District is unable to meet reserve requirements as set in the Reserve Policy discussed in Section 2.3 (projected ending balances are less than target balances) and does not maintain fiscal sustainability and solvency under the current rates through the five-year study period.

Table 5-7: Status Quo Sanitation Financial Plan (at Current Rates)

SANITATION (OPERATIONS + REPLACEMENT)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$16,902,328	$17,022,811	$17,145,565	$17,269,906	$17,395,909	$17,523,578
Revenue Adjustments		$0	$0	$0	$0	$0	$0
Other Operating Revenues		$260,040	$263,941	$267,900	$271,918	$275,997	$280,137
Non-Operating Revenues		**$194,150**	**$312,795**	**$318,694**	**$316,056**	**$318,917**	**$329,067**
Stand-By Fee, Property Tax, Assessmer		$91,467	$93,936	$95,909	$97,828	$99,784	$101,281
Interest Income		$102,683	$218,859	$222,785	$218,228	$219,133	$227,787
TOTAL REVENUES		**$17,356,518**	**$17,599,546**	**$17,732,158**	**$17,857,880**	**$17,990,824**	**$18,132,782**
OPERATING EXPENSES							
Purchased Services		$9,774,372	$10,086,317	$10,409,612	$10,743,970	$11,089,846	$11,447,633
O&M Expenses		$316,636	$329,238	$342,906	$357,164	$372,040	$387,560
Other Operating Expenses		$5,953	$6,144	$6,341	$6,545	$6,755	$6,972
Administrative Expenses		$1,152,340	$1,189,215	$1,227,270	$1,266,542	$1,307,072	$1,348,898
TOTAL OPERATING EXPENSES		**$11,249,301**	**$11,610,914**	**$11,986,129**	**$12,374,222**	**$12,775,712**	**$13,191,063**
NET REVENUES		**$6,107,217**	**$5,988,632**	**$5,746,029**	**$5,483,658**	**$5,215,111**	**$4,941,719**
REPLACEMENT CAPITAL PROJECTS		**$1,684,699**	**$2,599,261**	**$3,967,194**	**$3,320,881**	**$1,848,120**	**$1,199,964**
PAYGO		$1,684,699	$2,599,261	$3,967,194	$3,320,881	$1,848,120	$1,199,964
Debt Funded		$0	$0	$0	$0	$0	$0
DEBT SERVICE		**$1,845,800**	**$1,845,850**	**$1,846,688**	**$1,844,175**	**$1,843,321**	**$1,846,152**
Current Debt Service		$1,845,800	$1,845,850	$1,846,688	$1,844,175	$1,843,321	$1,846,152
TRANSFERS TO OTHER FUNDS		**$621,925**	**$208,500**	**$550,596**	**$607,825**	**$454,532**	**$455,927**
230 Construction		$621,925	$208,500	$550,596	$607,825	$454,532	$455,927
NET CASH CHANGES		**$1,954,793**	**$1,335,021**	**-$618,448**	**-$289,224**	**$1,069,138**	**$1,439,677**
BEGINNING BALANCES		**$19,770,485**	**$21,725,278**	**$23,060,298**	**$22,441,850**	**$22,152,627**	**$23,221,765**
ENDING BALANCES		**$21,725,278**	**$23,060,298**	**$22,441,850**	**$22,152,627**	**$23,221,765**	**$24,661,442**
TARGET BALANCE		*$22,461,715*	*$23,187,756*	*$23,940,676*	*$24,716,966*	*$25,522,603*	*$26,360,599*
O&M % of Operating budget	25%	$2,812,325	$2,902,729	$2,996,532	$3,093,555	$3,193,928	$3,297,766
Debt % of of Debt Service	100%	$1,845,800	$1,845,850	$1,846,688	$1,844,175	$1,843,321	$1,846,152
Replacement % of 3-yr Depreciation Expense	100%	$14,440,814	$14,956,351	$15,490,293	$16,043,297	$16,616,042	$17,209,235
Emergency % of Capital Asset Value	2%	$3,362,775	$3,482,827	$3,607,163	$3,735,939	$3,869,312	$4,007,447
DEBT COVERAGE		**2.22**	**2.17**	**2.08**	**1.99**	**1.90**	**1.79**
TARGET DEBT COVERAGE	1.1	1.10	1.10	1.10	1.10	1.10	1.10

5.7 Proposed Sanitation Financial Plan

The Sanitation Fund needs additional revenue adjustments as shown in Table 5-8 to meet the target reserve requirement and maintain financial sufficiency for its expenses and other funding obligations by FY 2020. The proposed adjustment is 2 percent for each year of the Study period, the anticipated CPI inflationary factor.

Table 5-8: Proposed Sanitation Revenue Adjustments

Fiscal Year	Effective Date	Proposed Sanitation Revenue Adjustments
2016	Jan 1, 2016	2%
2017	Jan 1, 2017	2%
2018	Jan 1, 2018	2%
2019	Jan 1, 2019	2%
2020	Jan 1, 2020	2%

Table 5-9 shows the pro forma for the Sanitation Fund with revenues from the proposed revenue adjustments shown above. The proposed revenue adjustment results in the following:

- Positive net cash changes for each year of the Study period, with the exception of FY 2017 which has sizable capital expenditures. As shown in Figure 5-2, the proposed revenue (shown by the green line) meets all operating obligations (shown by stacked bars) and contributes to reserves each year of the Study period for future capital replacement projects and for meeting reserve requirements set by adopted financial policy.
- The ending balance hovers near the target balance for much of the Study period. It is below the target balance for FY 2015 and FY 2017, but is above the target balance for all other years of the Study period. By FY 2020, the ending balance has a $2.8M buffer above the target balance, as shown in Figure 5-3.
- An increase of 2 percent is anticipated to be sufficient during the Study period due to a decreased level of capital projects and sufficient current reserves. With the 2 annual percent revenue adjustment, the Sanitation Fund is able to maintain a debt coverage ratio above 2.0 for every year of the Study period. Although operating costs are projected to rise with each year of the Study period, the additional revenue from the proposed revenue adjustment is able cover costs while still providing for capital costs.

Table 5-9: Proposed Sanitation Financial Plan

SANITATION (OPERATIONS + REPLACEMENT)		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
REVENUES							
Revenues from Current Rates		$16,902,328	$17,022,811	$17,145,565	$17,269,906	$17,395,909	$17,523,578
Revenue Adjustments		$0	$170,228	$517,796	$877,380	$1,249,376	$1,634,187
Other Operating Revenues		$260,040	$263,941	$267,900	$271,918	$275,997	$280,137
Non-Operating Revenues		**$194,150**	**$313,564**	**$322,580**	**$326,284**	**$338,852**	**$362,217**
Stand-By Fee, Property Tax, Assessmer		$91,467	$93,936	$95,909	$97,828	$99,784	$101,281
Interest Income		$102,683	$219,628	$226,671	$228,456	$239,068	$260,936
TOTAL REVENUES		**$17,356,518**	**$17,770,544**	**$18,253,841**	**$18,745,488**	**$19,260,134**	**$19,800,119**
OPERATING EXPENSES							
Purchased Services		$9,774,372	$10,086,317	$10,409,612	$10,743,970	$11,089,846	$11,447,633
O&M Expenses		$316,636	$329,238	$342,906	$357,164	$372,040	$387,560
Other Operating Expenses		$5,953	$6,144	$6,341	$6,545	$6,755	$6,972
Administrative Expenses		$1,152,340	$1,189,215	$1,227,270	$1,266,542	$1,307,072	$1,348,898
TOTAL OPERATING EXPENSES		**$11,249,301**	**$11,610,914**	**$11,986,129**	**$12,374,222**	**$12,775,712**	**$13,191,063**
NET REVENUES		**$6,107,217**	**$6,159,630**	**$6,267,712**	**$6,371,266**	**$6,484,421**	**$6,609,056**
REPLACEMENT CAPITAL PROJECTS		**$1,684,699**	**$2,599,261**	**$3,967,194**	**$3,320,881**	**$1,848,120**	**$1,199,964**
PAYGO		$1,684,699	$2,599,261	$3,967,194	$3,320,881	$1,848,120	$1,199,964
Debt Funded		$0	$0	$0	$0	$0	$0
DEBT SERVICE		**$1,845,800**	**$1,845,850**	**$1,846,688**	**$1,844,175**	**$1,843,321**	**$1,846,152**
Current Debt Service		$1,845,800	$1,845,850	$1,846,688	$1,844,175	$1,843,321	$1,846,152
TRANSFERS TO OTHER FUNDS		**$621,925**	**$208,500**	**$550,596**	**$607,825**	**$454,532**	**$455,927**
230 Construction		$621,925	$208,500	$550,596	$607,825	$454,532	$455,927
NET CASH CHANGES		**$1,954,793**	**$1,506,018**	**-$96,766**	**$598,385**	**$2,338,448**	**$3,107,014**
BEGINNING BALANCES		**$19,770,485**	**$21,725,278**	**$23,231,296**	**$23,134,530**	**$23,732,916**	**$26,071,364**
ENDING BALANCES		**$21,725,278**	**$23,231,296**	**$23,134,530**	**$23,732,916**	**$26,071,364**	**$29,178,378**
TARGET BALANCE		*$22,461,715*	*$23,187,756*	*$23,940,676*	*$24,716,966*	*$25,522,603*	*$26,360,599*
O&M % of Operating budget	25%	$2,812,325	$2,902,729	$2,996,532	$3,093,555	$3,193,928	$3,297,766
Debt % of of Debt Service	100%	$1,845,800	$1,845,850	$1,846,688	$1,844,175	$1,843,321	$1,846,152
Replacement % of 3-yr Depreciation Expense	100%	$14,440,814	$14,956,351	$15,490,293	$16,043,297	$16,616,042	$17,209,235
Emergency % of Capital Asset Value	2%	$3,362,775	$3,482,827	$3,607,163	$3,735,939	$3,869,312	$4,007,447
DEBT COVERAGE		**2.22**	**2.24**	**2.27**	**2.31**	**2.36**	**2.40**
TARGET DEBT COVERAGE	1.1	1.10	1.10	1.10	1.10	1.10	1.10

Figure 5-2: Sanitation Operating Financial Plan

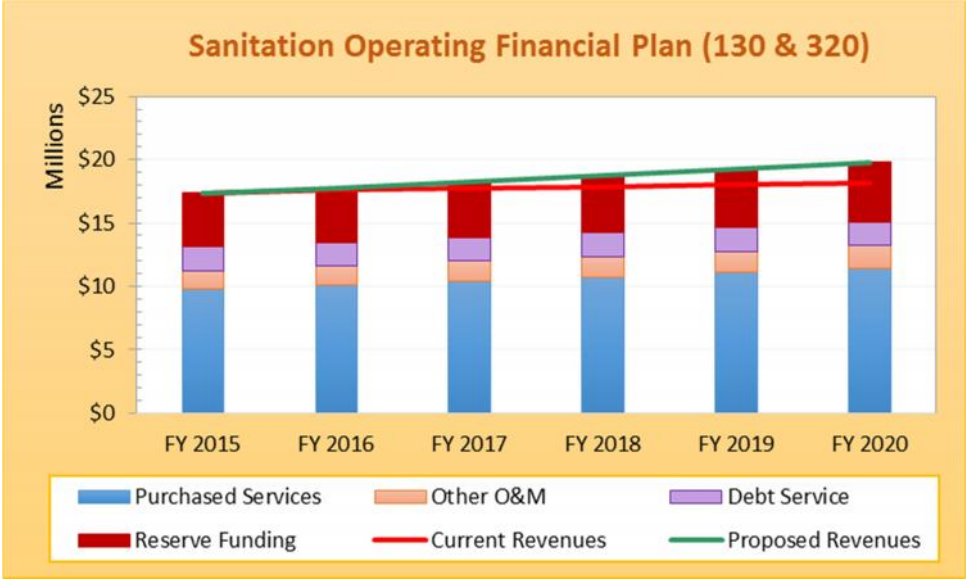
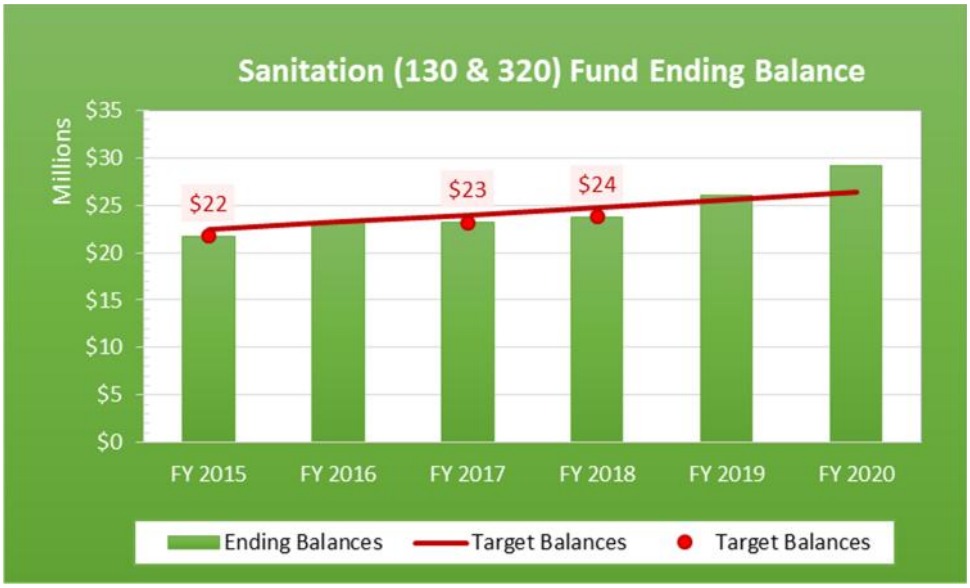


Figure 5-3: Projected Sanitation Fund (130 & 320) Ending Balances



6 WATER BUDGET TIERED RATE STRUCTURE

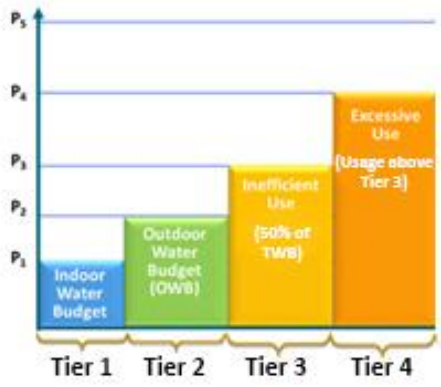
The District proposes to implement a water budget rate structure to promote conservation and efficiency for all potable water customers (residential, irrigation, and commercial) and all recycled water customers. The description of the allocations to individual customers and the development of water budgets is described in this Section of the Report.

6.1 WATER BUDGET DEFINITIONS

The American Water Works Association Journal defines a water budget as "the quantity of water required for an efficient level of water use by that customer" *(Source: American Water Works Association Journal, May 2008, Volume 100, Number 5).* Figure 6-1 shows an example of how tier breaks can be set for water budget customers.

- Tier 1 is defined by the allotment for indoor use.
- Tier 2 is defined by the allotment for efficient outdoor use.
- Tier 3 is defined by 50 percent of the Total Water Budget (TWB)[12]. For example, if the Tier 1 indoor water budget (IWB) is 10 units and the Tier 2 outdoor water budget (OWB) is 12 units, then Tier 3 would be 11 units ([10+12]/2 = 11) .
- Any use beyond Tier 3 is considered wasteful and falls into Tier 4.

Figure 6-1: Example of Water Budget Tier Definitions[13]

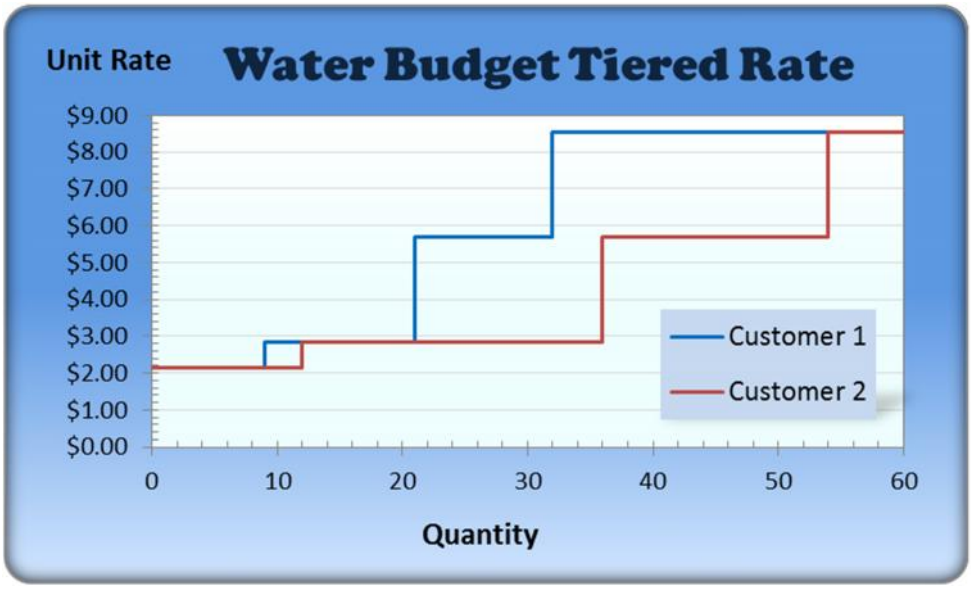


It is worth noting that water budget rate structures are customized for each customer, which will result in different Tier breaks for different customers. For example, as illustrated by Figure 6-2[14], the first 9 units consumed by Customer 1 are charged at the Tier 1 rate, whereas Customer 2 has 12 units at the Tier 1 rate for indoor use. The next 12 units (10 – 21 units) consumed by Customer 1 are reserved for outdoor use, which is charged at the Tier 2 rate, and usage from 22 – 32 units falls into Tier 3[15]. Any usage exceeding 32 units will be deemed excessive and charged at the Tier 4 Rate. Similarly, for Customer 2, Tier 2 spans

[12] *Total Water Budget = Indoor Water Budget + Outdoor Water Budget*
[13] *For illustrative purpose only, not actual water budget definitions for the District*
[14] *For illustrative purpose only, not actual rates of the District*
[15] *Tier 3 = 50% of Total Water Budget (TWB)*

from 13 – 36 units, Tier 3 spans from 37 – 54 units, and usage exceeding 54 units will be charged at the Tier 4 Rate. Customer 2, with a larger indoor and outdoor water budget (or allotment), represents a residential customer with a larger family and more irrigated landscape area than Customer 1.

Figure 6-2: Customized Water Budget Tiers



6.2 Water Budget Development Methodology

6.2.1 Indoor Water Budget for Single Family and Multi-Family Residential services

The indoor water budget (IWB) is determined by a customer's household size and a standard consumption per person. The proposed IWB formula is as follows:

$$IWB = \frac{GPCD \times Household\ size \times Dwelling\ units \times Days\ of\ Service \times DF_{indoor}}{748} + V_{indoor}$$

Where:

- GPCD – Gallons per capita per day. The standard consumption per person per day will be set at 55 gallons. The Water Conservation Act of 2010 (SBx7-7) sets the efficient level of indoor residential water use at 55 gallons per person per day.
- Household Size – Number of residents per dwelling unit. The default values for household size will be set at 3 persons per household for both Single Family and Multi-Family residential units based on 2015 California Department of Finance demographic data. However, the District customers to contact the District and/or fill-out an adjustment form to petition for a variance to the actual

household size served by the meter. Average housing densities for the District service area are as follows:[16]

- City of Agoura Hills: 2.82 persons per household
- City of Calabasas: 2.75 persons per household
- City of Hidden Hills: 3.19 persons per household
- City of Westlake Village: 2.54 person per household

- Dwelling Units – The number of dwelling units served by the meter. By way of example, a single family residence is one dwelling unit.
- Days of Service – The number of days of service varies with each billing cycle for each customer. The actual number of days of service will be applied to calculate the indoor water budget for each billing cycle.
- DF_{indoor} – Indoor drought factor. This part of the budget equation will be used in extreme water shortage conditions only if needed, because of local supply conditions or if required by regional and/or State agencies. A lower percentage of the typical or usual indoor water budget could be allocated during extreme water shortages, supply shortage or emergency conditions. Changing the drought factor will be subject to the approval of the District's Board of Directors. The indoor drought factor will be set at 100 percent, representing a 100 percent water budget allotment, in times where no water shortage exists in the District's service area.
- V_{indoor} – Indoor variance. A water allotment can be adjusted to fit the unique circumstances of any customer. If the District chooses to allow a variance program, customers need to contact the District and/or fill-out an adjustment form and return to the District with supporting documentation. However, the District will render a decision when the full water budget rates with individualized lots are implemented.
- 748 is the conversion unit from gallons to a billing unit of one hundred cubic feet (hcf).

For illustrative purposes, the following indoor water budget calculations for two different customers are provided.

Customer #1: Household Size = 4 persons, 1 Dwelling Unit, Days of Service in January bill = 30 days

$$IWB = \frac{55\ gallons\ per\ person\ per\ day\ \times 1\ unit\ \times 4\ persons\ \times 30\ days\ \times 100\%}{748\ gallons\ per\ hcf} = 9\ hcf$$

Customer #2: Household Size = 6 persons, 1 Dwelling Unit, Days of Service in January bill = 28 days

$$IWB = \frac{55\ gallons\ per\ person\ per\ day\ \times 1\ unit\ \times 6\ persons\ \times 28\ days\ \times 100\%}{748\ gallons\ per\ hcf} = 13\ hcf$$

6.2.2 Outdoor Water Budget (applies to both residential and irrigation services)

The outdoor water budget (OWB) is determined by three main variables: irrigated landscape area, weather data, and an evapotranspiration (ET) Adjustment Factor. The irrigated landscape area is

[16] *"Report E-5 Population and Housing Estimates for Cities, Counties and the State, January 1, 2011-2015 with 2010 Benchmark" prepared by California Department of Finance.*

measured as the square footage of irrigated landscape surface on a customer's property. The weather data is based on the reference evapotranspiration (ET_0), which is the amount of water loss to the atmosphere over a given time period at given specific atmospheric conditions. ET_0 is the amount of water (in inches of water) needed for a hypothetical reference crop to maintain its health and appearance. The ET Adjustment Factor (ETAF) is a coefficient that adjusts ET_0 values based on plant factor and irrigation system efficiency.

The formula to calculate an outdoor water budget is as follows:

$$OWB = \left(\frac{\text{Landscape Area x } ET_0 \text{ x ETAF}}{1200} + V_{outdoor} \right) \text{x } DF_{outdoor}$$

- Landscaped Area, also referred to as Irrigated Landscape Area (in square feet, sq. ft.), is the measured irrigable landscape area served by a specific water meter.
    - For the analysis included in this Report, the District provided individual landscape data for approximately 13,970 Single Family (or 78 percent of Single Family meters), 470 Multi Family (or 68 percent of Multi Family meters), 135 Irrigation (or 51 percent of irrigation meters) and 267 recycled water meters (or 42 percent of recycled water meters). At the time of implementation, the District will have landscape area data for each meter measured to be used to determine the individual OWB.
- ET_0 is measured in inches of water during the billing period based on daily weather data from the three weather stations within or adjacent to the District's service area: California Irrigation Management Information System (CIMIS) Station 99 at Santa Monica, Station 219 (West Hills) and Westlake station. When the District is ready to implement a full water budget rate structure, live weather data may be selected for better accuracy.
- ETAF is a State-legislated efficiency standard in the form of a coefficient that adjusts the outdoor water budget value based on the crop types and irrigation efficiency:
    - ETAF = 80% for single family and irrigation accounts[17]
- $DF_{outdoor}$ – Outdoor drought factor. This part of the budget equation will be used in extreme water shortage conditions only if needed because of local supply conditions or if required by regional and State agencies. A lower percentage of the typical or usual outdoor water budget could be allocated during extreme drought, supply shortage or emergency conditions. Changing the drought factor will be subject to the approval of the District's Board of Directors. The outdoor drought factor will be set at 100 percent, representing a 100 percent water budget allotment, in times where no water shortage exists in the District's service area.
- $V_{outdoor}$ – Outdoor variance. A water budget may be adjusted to fit the circumstances of any customer. If the District chooses to allow variance program, customers need to contact the District and/or fill-out an adjustment form and return to the District with the necessary documentation.

[17] *Consistent with Updated Model Water Efficient Landscape Ordinance (aka AB 1881) or California Code of Regulation Title 23 Chapter 2.7*

- 1,200 is the factor used to convert to billing units in hundred cubic feet (hcf).

For illustrative purposes, the following outdoor water budget calculations for two different customers are shown. Note that the water budgets are rounded up to the nearest hcf.

- **Customer #1** –Single Family: Landscape Area = 8,000 sq ft, ET_0 for 30-day January bill = 2.28 inches, ETAF = 0.80 , no variance:

$$OWB = \frac{8{,}000\,\text{sq ft} \times 2.28\,\text{inches} \times .80}{1{,}200} \times 100\% = 13\ hcf \text{ (rounded up from 12.16hcf)}$$

- **Customer #2** – Single Family: Landscape Area = 4,000 sq ft, ET_0 for 28-day January bill = 2.05 inches, ETAF for January = 0.80, Variance = 1 hcf per billing cycle for approved special needs:

$$OWB = \frac{4{,}000\,\text{sq ft} \times 2.05\,\text{inches} \times .80}{1{,}200} \text{ x } 100\% + 1\text{ hcf} = 7\ hcf \text{ (rounded up from 6.47 hcf)}$$

6.2.3 Commercial Water Budget

The remaining classes—commercial, industrial and institutional (CII) — will be allocated water based on the customer's historical billing-period usage. The water budget rate structure and individualized allocations recognizes that business needs may vary dramatically depending on the type of business. For example, a car wash and an office building may contain the same number of employees, lot size or even building footprint, but their water needs are quite different. The District will calculate each individual billing-period allocation based on 90 percent of a rolling 3-year billing period average use[18].

The formula to calculate commercial water budget (CWB) is as follows:

$$CWB(hcf) = (90\%\ of\ DailyCWB_x \times Days_x + V_{com}) \times DF_{com}$$

$$\text{With } DailyCWB_X = \frac{(Usage_x + Usage_{x-1} + Usage_{x-2})}{(Days_x + Days_{x-1} + Days_{x-2})}$$

Where

- $Usage_x$ – usage in the current billing period.
- $Usage_{x-1}$ – usage in the prior year billing period of the same month as current billing period.
- $Usage_{x-2}$ – usage in 2-year prior billing period of the same month as current billing period.
- $Days_x$ – days of service in the current billing period.
- $Days_{x-1}$ – days of service in in the prior year billing period of the same month as current billing period.
- $Days_{x-2}$ – days of service in in 2-year prior billing period of the same month as current billing period.

[18] *SB x7-7 (Chapter 3) defined the new performance standards for commercial use as follows: "For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020."*

- DF_{com} –drought factor for commercial water budget. This part of the budget equation will be used in extreme dry conditions only if needed because of local supply conditions or if required by regional and State agencies. A lower percentage of the commercial water budget could be allocated during extreme drought, supply shortage or emergency conditions. Changing the drought factor will be subject to the approval of the District's Board of Directors. The commercial drought factor will be set at 100 percent, representing 100 percent water budget allotment, in times where no water shortage exists in the District's service area.
- V_{com} – commercial variance. If the District chooses to allow a variance program, customers need to contact the District and/or fill-out an adjustment form and return to the District with the necessary documentation. An "adjustment" to the water budget may be requested for changing or updating the average use and/or change in water need for any business or institutional customer. Commercial variances will be subject to the drought factor during extreme shortage conditions.

For illustrative purposes, the following commercial water budget calculations for two different customers are shown.

- **Customer #1** – Commercial A has the following historical billed usage: Aug 2015 bill – 40 units for 35 days, Aug 2014 bill – 28 units for 30 days and Aug 2013 bill – 34 units for 32 days. No adjustment has been requested. CWB for current bill (Aug 2015) for 35 days is calculated as follows:
  - $CWB = (90\% \times \frac{40\,units+28\,units+34\,units}{35\,days+30\,days+32\,days} \times 35) \times 100\% = 34\ hcf$[19]

- **Customer #2** – Commercial B has the following historical billed usage: Jul 2015 bill – 140 units for 35 days, Jul 2014 bill – 182 units for 30 days and Jan 2013 bill – 134 units for 32 days. Variance = 2 ccf per billing cycle for increase in employees over base years. CWB for current bill (Jul 2015) for 35 days is calculated as follows:
  - $CWB = (90\% \times \frac{140\,units+182\,units+134\,units}{35\,days+30\,days+32\,days} \times 35 + 2) \times 100\% = 151\ hcf$[20]

6.3 Tier Definitions

The tier definitions will be tailored to the unique consumption patterns of the District's customers and subject to the District's policy decisions. The proposed tier definitions found in Table 6-1 are based on usage analysis modeling, customer impact analysis using actual customer data, and efficiency standards written into California laws, codes, policies and ordinances. District staff proposed setting the CWB Tier 1 use cap at 33 percent, which is the estimated percentage of the residential indoor use. For all customer classes, Tier 3 is set to 50 percent of the combined water budget for Tiers 1 and 2. Similarly, Tier 4 for all customer classes is defined as all use beyond Tier 3. With the transition to water budgets, the number of tiers for irrigation accounts goes from 4 to 3 because there is no indoor usage.

[19] *rounded up from 33.12 hcf*
[20] *rounded up from 150.08 hcf*

Table 6-1: Proposed Tier Definitions

Tiers	Residential (Single Family / Multi Family)	Irrigation (Both Potable & Recycled)	Commercial
Tier 1 — Efficient Indoor Use	100% IWB	N/A	0 – 33% CWB
Tier 2 — Efficient Outdoor Use	100% OWB	100% OWB	34 – 100% CWB
Tier 3 — Inefficient Use	100 – 150% TWB	100 – 150% OWB	100 – 150% CWB
Tier 4 — Excessive Use	Above Tier 3	Above Tier 3	Above Tier 3

6.4 Model Development and Usage Analysis

6.4.1 Model Development

As part of this study, RFC developed a Microsoft Excel-based Water Budget Rate Model (Model). The Model was designed to examine multiple rate structures and customer impacts resulting from various water cost, water supply and water budget scenarios. As with any computer model, the value of the output is highly dependent on the inputs. The major inputs for Single Family Residents (SFR); Multi Family Residential (MFR); Irrigation (IRR); and Commercial customers are as follows:

- Water bi-monthly consumption records[21] – FY 2014 (July 2013 to June 2014) consumption records served as the basis for the rate structure calculations.
- Model contains
    - 13,974 Single Family accounts out of 18,030 accounts, or 78 percent.
    - 469 Multi-Family accounts out of 685 accounts, or 68 percent.
    - 135 Irrigation accounts out of 264 accounts, or 51 percent. Landscape area was measured by the District through a variety of means (GIS imagery, site visitation and customer supplied data).
    - 267 recycled water accounts out of 638 accounts, or 42 percent. Landscape area was determined by the District using a variety of means (GIS imagery, site visitation, aerial photography and customer supplied data).
    - 803 Commercial accounts out of 803 accounts, or 100 percent. Their 2014 consumption was compared against the three-year monthly average consumption, which was used as the total water budget, to evaluate the efficiency of Commercial usage.

The usage analyses were performed for all four customer classes on aggregate level to ensure that:

- The water budget allocation will provide an adequate, reasonable amount of water for the District's customers;
- The District will be able to prepare for customers who may potentially apply for water budget adjustments or variances;

[21] *Prior to September 2015, the District is billing the customers on bi-monthly billing cycle*

- The District's water use efficiency team will be able to develop customer support programs for inefficient customers;
- The District will be able to make informed policy decisions in consideration of the water budget rate structure both prior to adoption and during implementation, if adopted.

6.4.2 Usage Analyses

6.4.2.1 Potable Water Usage Analysis

Figure 6-3 shows the frequency of bills as a percentage of their respective total water budgets, based on the tier definitions shown in Table 6-1. About 40 percent of all customers stay within their TWB (0 to 100 percent) and 31 percent of customers enter Tier 4 (150 percent and above).

Figure 6-3: Bill Frequency for Potable Water Meters

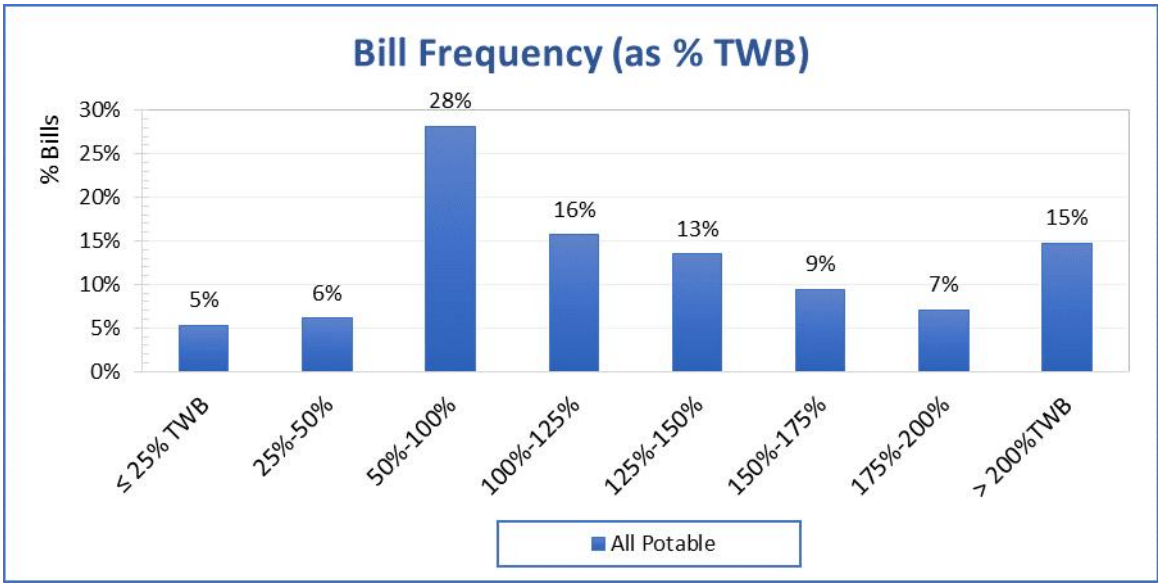


Figure 6-4 shows the tiered potable water usage by all customers compared to which tiers correspond with their usage levels. About 39 percent of potable customers and 68 percent of usage stays within their TWB. The 31 percent of customers that enter Tier 4 are responsible for all Tier 4 usage.

Figure 6-4: Usage and Bill Distribution in Tiers for Potable Water Accounts

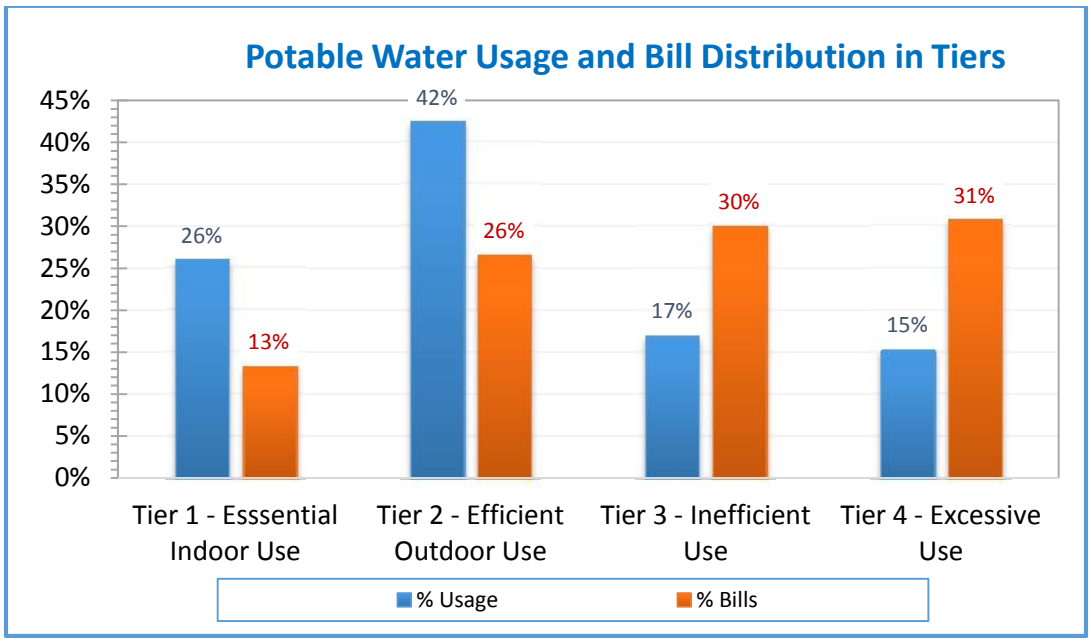


Figure 6-5 compares the tiered distribution for residential water use comparing the current tier structure to the proposed water budget structure. Under the proposed water budget structure, approximately 68 percent of residential usage is considered efficient (within indoor and outdoor water budget) and 32 percent is considered inefficient and excessive. When compared to the water budget structure, the current tier structure is much more generous, and will be less likely to promote conservation and efficiency.

Figure 6-5: Usage Distribution in Current and Water Budget Tiers for Residential[22] Accounts

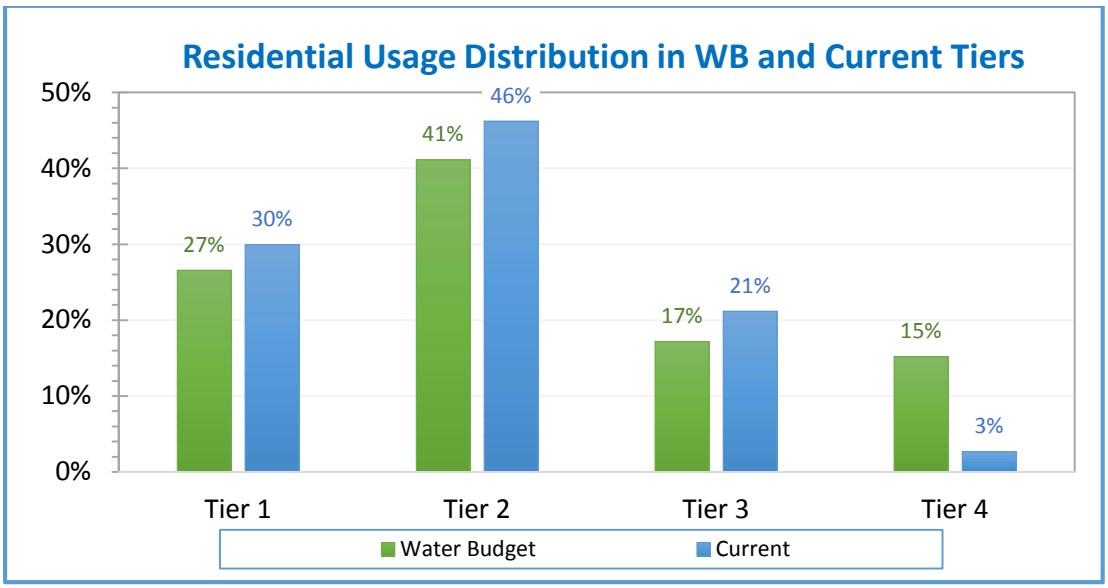


Figure 6-6 compares the usage distribution for irrigation water use under the current tier structure and the proposed water budget structure. Note that under the proposed water budget structure there is no Tier 1 because there is no indoor water usage associated with irrigation accounts (per tier definitions found in Table 6-1). Approximately 36 percent of usage is considered efficient under the water budget rate structure (within Tier 2), and 50% of irrigation usage is considered excessive for using more than 150 percent of outdoor water budget. The current tier structure is much more generous, thus, approximately 48 percent (16+32) of irrigation usage is within Tier 1 and Tier 2, and only 11 percent of usage is charged at highest rate (Tier 4).

[22] *Residential accounts include single family and multi- family accounts*

Figure 6-6: Usage Distribution in Current and Water Budget Tiers for Irrigation Accounts

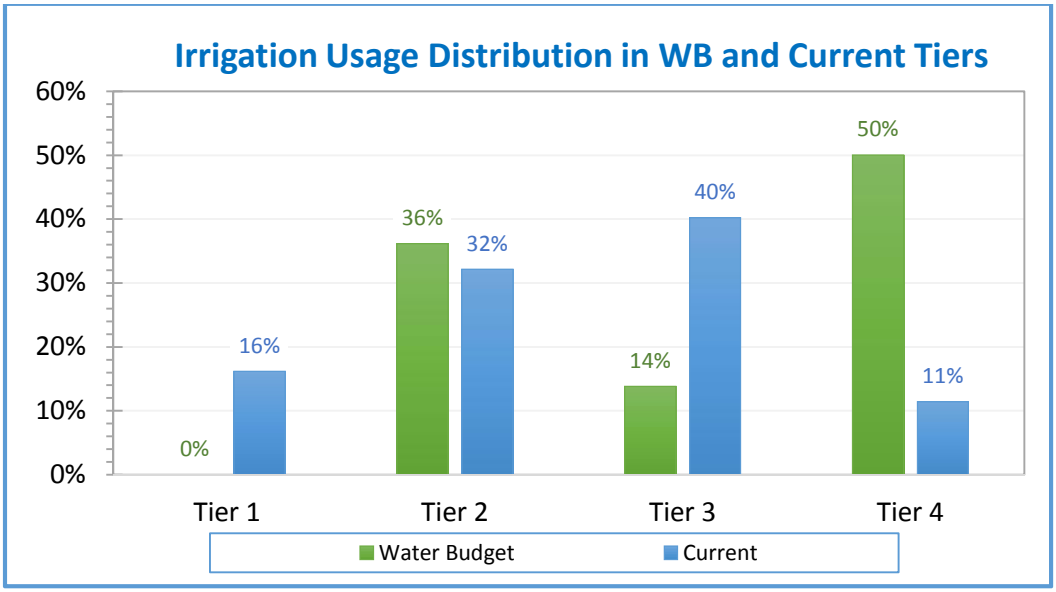


Figure 6-7 compares the tiered distribution for commercial water use under the current tier structure and the proposed water budget structure. Under the proposed water budget structure, over 80 percent of commercial use stays within the efficiency benchmark (Tiers 1 and 2) (28+53), compared to just 55 percent for the current tier structure. Furthermore, only 4 percent of commercial uses enter Tier 4 under the proposed water budget structure.

Figure 6-7: Usage Distribution in Current and Water Budget Tiers for Commercial Accounts

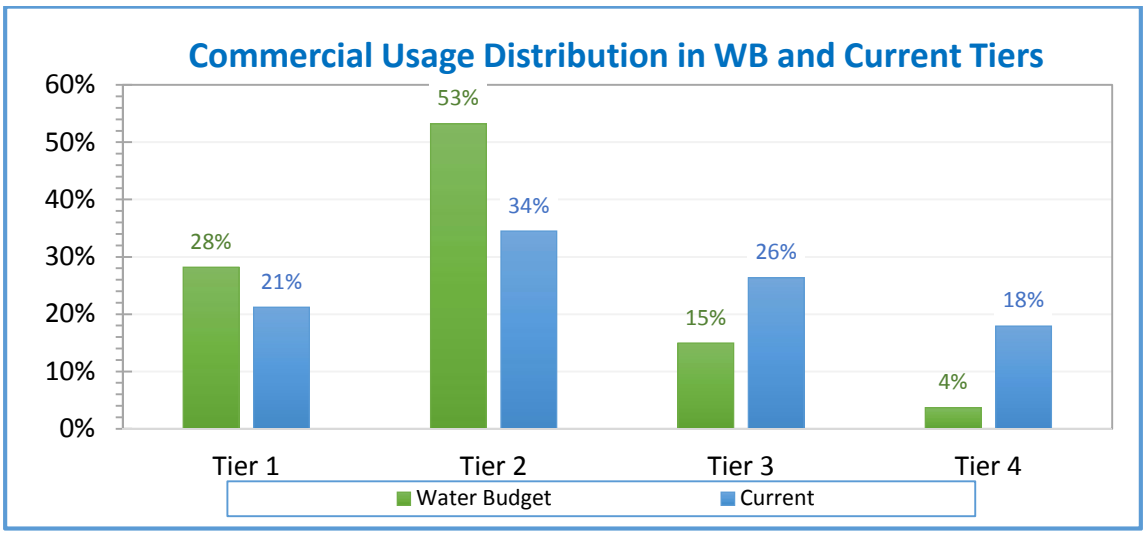


Figure 6-8 compares the tiered distribution for all potable water usage under the current tier structure and the proposed water budget structure. While the percentage of water usage in Tiers 1 and 2 are similar for both rate structures, the current tier structure has more usage in Tier 3 and less in Tier 4 compared to the proposed water budget structure.

Figure 6-8: Usage Distribution in Current and Water Budget Tiers for Potable Water Accounts

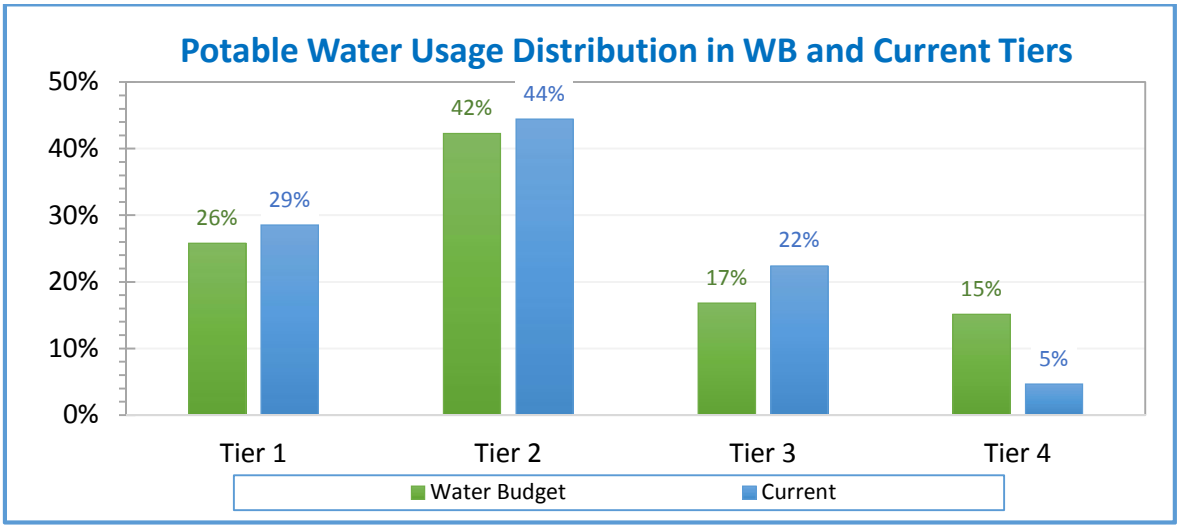


Figure 6-9 shows the bi-monthly potable water usage for all accounts distributed by tier throughout the year. As described in Section 6.2, the water budget formula takes into account evapotranspiration and historical usage data (for commercial accounts) which causes a reduction in the water budget allocation during the winter months. Tier 1 usage is relatively stable throughout the year, while usage in Tiers 2 through 4 fluctuates. March/April has the least usage and September/October has the most usage.

Figure 6-9: Bi-Monthly Usage in Tiers for Potable Water Accounts

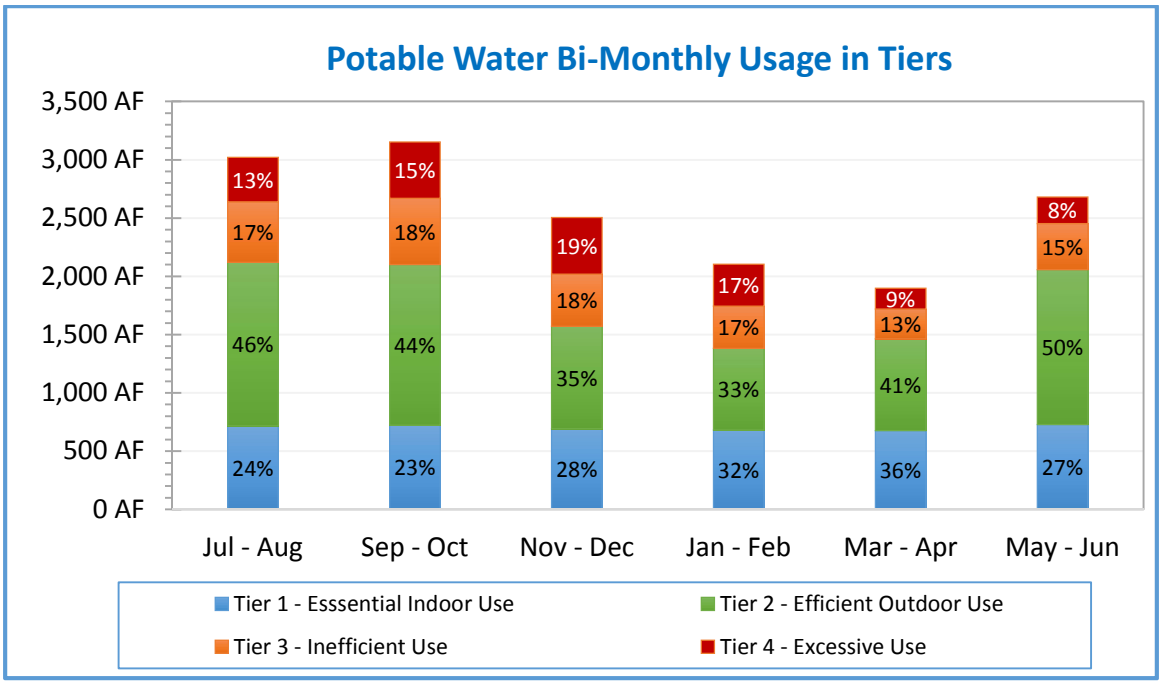


Table 6-2 compares the minimum and maximum seasonal system usage for each tier to determine the tier's peaking factor. The peaking factors (referenced again in Section 7.2.3) for each tier and customer class play an integral role in determining the cost of providing service to said customer class or tier.

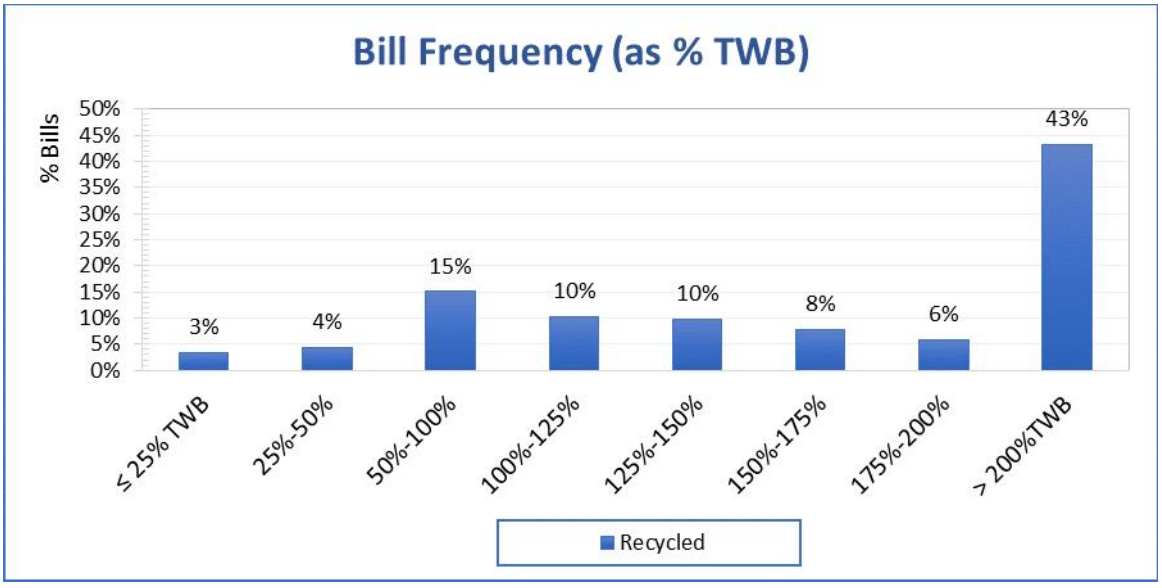
Table 6-2: Peaking Characteristics for Potable Water Tiered Usage

	(A)	(B)	(A/B) -1 = C
Tiers	**Max System Usage (Sep – Oct)**	**Min System Usage (Mar-Apr)**	**Peaking Factors**
Tier 1 — Essential Indoor Use	723 AF	677 AF	0%[23]
Tier 2 — Efficient Outdoor Use	1,377 AF	788 AF	75%
Tier 3 — Inefficient Use	571 AF	255 AF	124%
Tier 4 — Excessive Use	481 AF	179 AF	169%
Temporary Use	36.2 AF	6.7 AF	443%

6.4.2.2 Recycled Water Usage Analysis

Figure 6-10 shows the frequency of bills as a percentage of their respective total water budgets, based on the tier definitions shown in Table 6-1. Over half of all recycled water bills are above 150% of their TWB and enter Tier 4.

Figure 6-10: Recycled Water Bill Frequency



[23] *This figure has been adjusted to 0% because there is no peaking associated with indoor use.*

Figure 6-11: Usage and Bill Distribution in Tiers for Recycled Water Accounts

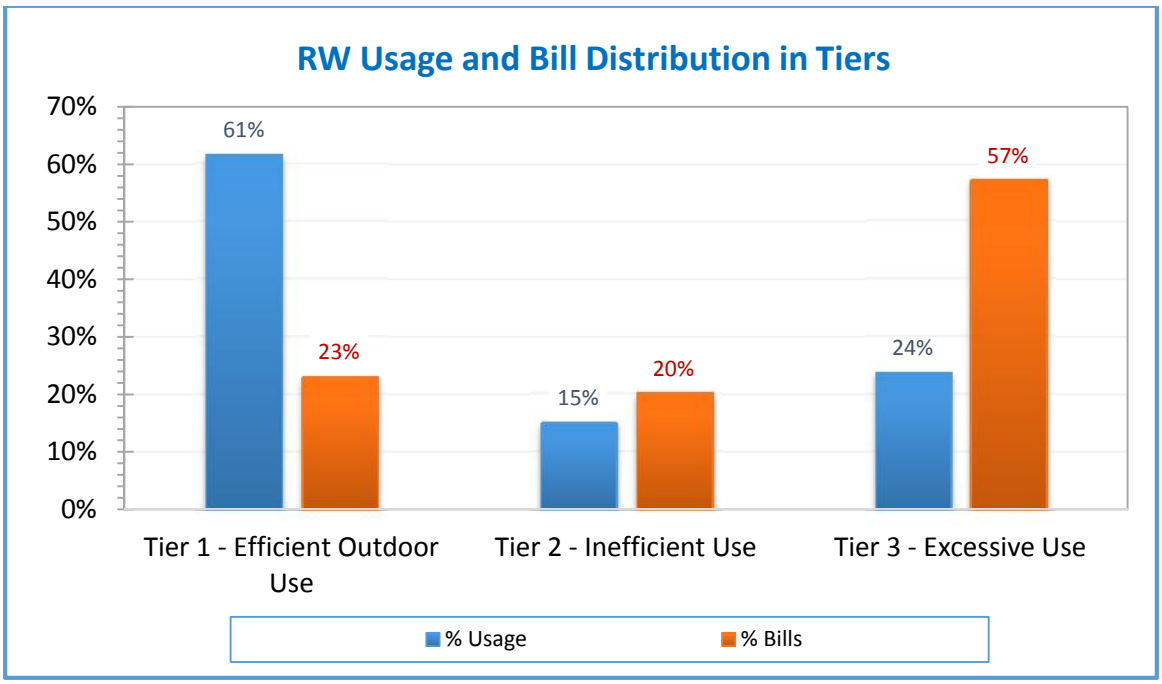


Figure 6-12 shows the bi-monthly recycled water usage distributed by tier throughout the year.

Figure 6-12: Bi-Monthly Usage in Tiers for Recycled Water Accounts

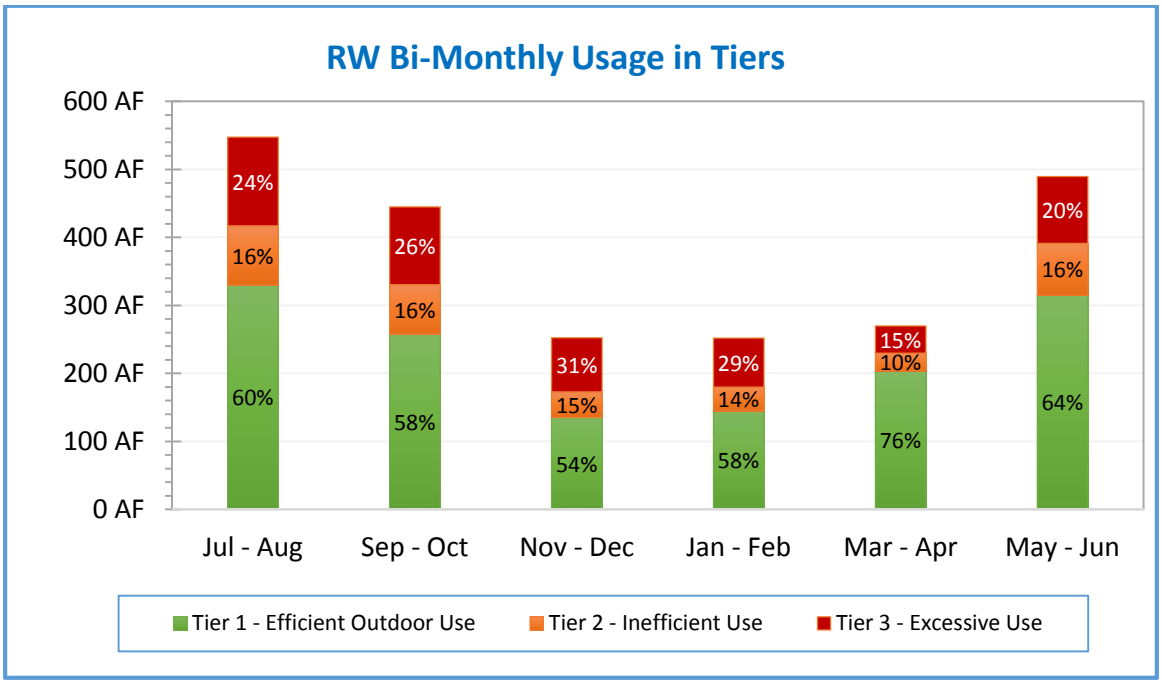


Figure 6-3 compares the minimum and maximum seasonal system usage for each tier to determine the tier's peaking factor. The peaking factors (referenced again in Section 8) for each tier play an integral role in determining the cost of providing service.

Table 6-3: Peaking Characteristics for Recycled Water Tiered Usage

	(A)	(B)	(A/B) -1 = C
Tiers	**Max System Usage** *(Sep – Oct[24])*	**Min System Usage** *(Mar-Apr[25])*	**Peaking Factors**
Tier 1 (Efficient Use)	258 AF	204 AF	26%
Tier 2 (Inefficient Use)	72 AF	26 AF	181%
Tier 3 (Excessive Use)	115 AF	40 AF	187%

[24] *Same month as Potable Water Peak Usage Month*
[25] *Same month as Potable Water Min Usage Month*

7 WATER COST OF SERVICE ANALYSIS & RATE DESIGN

7.1 POTABLE WATER COST OF SERVICE ANALYSIS

Proposition 218 requires a nexus between the rates charged and the costs of providing service. Based on the proposed financial plan, the cost of service analysis translates this financial requirement into actual rates. The first step in the cost of service analysis is to determine how much revenue is required to be collected from rates. The methodology used is based upon the premise that the utility must generate annual revenues adequate to meet its estimated annual expenses. As part of the cost of service analysis, several adjustments are made to determine the annual revenues needed from rates. Revenues from sources other than potable water rates and charges (e.g. revenues from miscellaneous services) are deducted. The financial plan (from Section 3) shows the required revenue adjustment for FY 2016 effective in January 2016, or 6 months of revenues under new rates, however, the calculated revenue requirement shown in Table 7-1 is annualized.

Table 7-1: Annualized Potable Water Revenue Requirement for FY 2016

		FY 2016	Notes
1	**REVENUE REQUIREMENTS**		
2	Potable Water O&M Expenses	$35,889,179	*Table 3-12*
3	Debt Service	$0	*Table 3-12*
4	Rate Funded Replacement CIP	$9,279,271	*Table 3-12*
5	Reserve Funding	-$5,788,350	*Table 3-12*[26]
6	**SUBTOTAL REVENUE REQUIREMENTS**	**$39,380,101**	
7			
8	**Less Non-Operating Revenues**		
9	Other Operating Revenues	$1,753,426	*Table 3-12*
10	Stand-By Fee, Property Tax, Assessments	$819,667	*Table 3-12*
11	Interest Income	$192,687	*Table 3-12*
12	Other	$860,727	*Table 3-12*
13	Pass-through Potable Water Supply Cost Revenue	$534,807	*Table 3-12*
14	**SUBTOTAL NON-OPERATING REVENUES**	**$4,161,314**	
15			
16	**NET REVENUE REQUIREMENTS FROM CURRENT RATES**	**$35,218,786**	*Row 6 - Row 14*
17	Proposed Revenue Adjustment for FY 2016	4.5%	*Table 3-11*
18	Annualized Proposed Revenue Adjustment[27]	$1,584,845	
19	Pass-through Potable Water Supply Cost Revenue	$534,807	*Table 3-12*
20	**TOTAL REVENUE REQUIREMENTS FROM PROPOSED RATES**	**$37,338,439**	***Sum of rows 16,18 & 19***

[26] *Net Cash Balance for FY 2016 (-$4.99M) – Revenue Adjustment ($.792M) = -$5.788M*

[27] *Revenue Adjustments effective for FY 2016 (6 months) shown in the pro-forma in = $35.219M * 4.5% * 6 months / 12 months = $792K (in Table 3-12)*

According to the M1 Manual, the costs incurred by a water utility are based upon the specific service requirements or cost drivers imposed on the system by its customers. Each of the various water utility facilities are designed and sized to meet one or more of these cost drivers. The capital costs incurred in the construction/installation of these facilities, as well as the O&M expenses incurred in running the system, are linked to these service requirements. The principal service requirements that drive costs include the annual volume of water consumed, the peak water demands incurred, the number of customers in the system, and the number of fire services required to maintain adequate fire protection. Accordingly, these service requirements are the basis for the selection of the cost components used in the second step in the cost-of-service allocation process.

The American Water Works Association recommends two methods for classifying costs among various customers: (1) the Base-Extra Capacity method in which costs are allocated to the different customer categories proportionate to their use of the water system; and (2) the Commodity-Demand method in which costs are proportionately allocated to each customer category based on their peak demand. Although the two methods vary in the way in which costs are allocated, both result in rates designed to recover the reasonable cost of service during periods of both average and peak demands. This Study uses the Base-Extra Capacity method, which is widely used in the water industry to serve retail customers.

The second step in the cost of service analysis is to functionalize the revenue requirements into cost components. This analysis employs the "Base-Extra Capacity" method, under which water utility costs of service are assigned to basic functional cost components including:

- **Potable water supply costs –** the cost of procuring water to meet customer demands.
- **Base costs** — fixed costs incurred to meet average demand. Base costs include operations and maintenance and capital costs under average (base) demand conditions, a portion of operations and maintenance costs associated with storage, treatment, pumping and distributions facilities, and certain water capital cost investments.
- **Extra capacity or peaking costs** — fixed water system costs to meet maximum day and maximum hour, or peaking, demand. Extra capacity costs are associated with meeting water demands that exceed average (base) levels of use by system customers. These costs are incurred because of water use variations and peak demands of customers.
- **Conservation**
- **Meter service**
- **Customer-service**
- **Administration (e.g.: HR, IS, Facility Costs, Accounting, Governance,**

Both base and peaking costs are considered fixed costs along with billing and customer service costs, fire protection and meter service costs. Customer costs are costs associated with serving customers, such as meter reading, billing, customer service, etc. Direct fire protection costs are related to the costs that apply solely to the fire protection function of the water system, both public and private, such as fire hydrants and related branch mains and valves, and the additional capacity required in the system to accommodate fire flow in case of an emergency.

Table 7-2 summarizes the peaking characteristics of the District's water system determined by the District's Water Master Plan 2014[28]. The following definitions are used to determine the water system peaking factors:

- **Average Daily Flow–** volume of water delivered to the system over the course of a year divided by 365 days.
- **Average Hourly Flow–** volume of water delivered to the system over the course of a year divided by 8,760 hours (hours in a year).
- **Peak Day Demand –** largest volume of water delivered to the system in a single day.
- **Peak Hour Demand –** maximum volume of water delivered to the system in a single hour.

The Max Day peaking factor[29] is calculated as follows:

$$\frac{\text{Peak Day Demand}}{\text{Average Daily Flow}} = 2.10$$

The Max Hour peaking factor[30] (Peak Hour Demand) is calculated as follows:

$$\frac{\text{Peak Hour Demand}}{\text{Average Hourly Flow}} = 2.50$$

These ratios are used to determine the appropriate percentage allocation of total O&M and capital costs towards peaking, as shown in Section 11.5 and Section 11.6 of the Appendix.

Table 7-2: Potable Water System Peaking Factors

	Peaking Factors
Base	1.00
Max Day	2.10
Max Hour	2.50

The revenue to be recovered from rates is allocated according to the categories listed below in Table 7-3. Note that the annualized revenue adjustment (shown in row 19 of Table 7-1) applies only to water system costs (Base Fixed, Peaking, B&CS and Meter). The water supply costs reflect the anticipated water costs for FY 2016 with pass-through. For further detail please see Section 11.6 of the Appendix, which shows the step-by-step allocations.

Aside from the variable water supply costs and revenue offset, the revenue adjustment is applied to each line item of the revenue requirement by its proportion to the total revenue requirement (less water supply

[28] *Water Master Plan Chapter 7 Section 7.6*
[29] *Figure provided by District staff*
[30] *Figure provided by District staff*

and revenue offset). The revenue adjustment (Column C in Table 7-3) for peaking revenue requirement is calculated as follows:

$$\frac{Rev\ requirement\ for\ peaking}{Power + Base + Peaking + Conservation + Meters + Billing\ \&\ CS} = Allocation\ factor$$

$$\frac{\$10.41M}{\$2.35M + \$4.17M + \$10.41M + \$0.27M + \$0.52M + \$0.34M} = 58\%$$

$$Allocation\ factor \times Total\ Revenue\ adjustment = Revenue\ adjustment\ applied\ to\ line\ item$$

Revenue adjustment for peaking costs = 58% x $1.58M = $0.92M

Table 7-3: Allocated Potable Water System Costs

Revenue Requirements	FY 2016 @ Current Rates (A)	Pass-through Water Supply (B)	Revenue Adjustment (C)	FY 2016 @ Proposed Rates (D = A + B + C)
Variable Water Supply	$17,977,557	$534,807		$18,512,364
Power	$2,351,230		$201,667	$2,552,898
Base	$4,170,490		$367,196	$4,537,686
Peaking	$10,408,883		$916,464	$11,325,347
Conservation	$267,128		$23,520	$290,648
Revenue Offset	-$819,667		$0	-$819,667
Meters	$524,122		$46,147	$570,269
Billing & Customer Service	$339,042		$29,851	$368,893
Total	**$35,218,786**	**$534,807**	**$1,584,845**	**$37,338,439**

According to the M1 Manual, the cost-of-service approach to setting water rates results in the proportionate distribution of costs to each customer or customer class based on the costs that each incurs. A dual set of fees—fixed and variable—is an extension of this cost causation theory. For example, a utility incurs some costs associated with serving customers irrespective of the amount or rate of water they use, such as billing and customer service costs. These types of costs are referred to as customer-related costs and typically are costs that would be recovered through a fixed charge. These costs are usually recovered on a per-customer basis or some other non-consumptive basis. Regardless of the level of a customer's consumption, a customer will be charged this minimum amount in each bill.

Utilities invest in and continue to maintain facilities to provide capacity to meet all levels of desired consumption including the peak[31] demand plus fire protection, and these costs must be recovered regardless of the amount of water used during a given period. Thus, peaking costs along with base costs

[31] *Peaking costs are the costs related to providing water during high-demand periods.*

and fixed water system costs to meet average demand are generally considered as fixed water system costs. It is ideal that agencies recover 100 percent of their fixed costs through monthly base fees, however, it forgoes the affordability for essential use and heavily impacts efficient users. To balance between affordability and revenue stability, it is a common practice that a portion of the base costs and peaking costs are recovered in the monthly base fee along with customer-related costs and meter-related costs.

The most common method for levying base fees is by meter size. Meter size is a proxy for the potential demand that each customer places on the water system. The District's base meter is most commonly a ¾ by 1-inch meter. The ratio at which the meter charge increases is a function of the meter's safe operating capacity. For example, based on the AWWA meter capacity ratios, a customer that has a 2-inch meter has the capacity equivalency of 5.33 ¾-inch meters. (A 2-inch meter has a safe operating capacity of 160 gallons per minute (gpm) compared to a ¾-inch meter which has a safe operating capacity of 30 gpm as listed in Table B-1 in the M1 Manual).

Billing and customer service costs related to meter reading, billing and collections are distributed among customers based on the total number of bills rendered in a test year, which is FY 2016 for this Study. Meter service costs, costs related to maintenance and costs related to customer meters and services, are distributed to customers in proportion to estimated costs for meters and services installed. Capacity costs, costs related to capital and costs related to customer meters and services, are distributed in proportion to meter demand capacity as provided by the M1 Manual. According to the M1 Manual, distribution of meter service costs and capacity costs by equivalent meter and service ratios recognizes that meter and service costs vary, depending on considerations such as the size of service pipe, materials used, locations of meters and other local characteristics for various size meters as compared to 1-inch meters and services.

The components of water system costs (column D of Table 7-3) are recovered through either RTS charge revenues, commodity charge revenues, elevation charge revenues, or a combination of the three. As shown in Table 7-4 below, the entirety of the water supply is recovered from commodity charges (column C). On the other hand, meter costs and billing & customer service costs are entirely recovered from RTS charges (column D). Base and peaking costs are recovered from both RTS charges and commodity charges (columns C & D). Power costs are recovered from a combination of elevation charges and commodity charges (columns B & C).

Table 7-4: Potable Water Revenue Requirements Allocated to Rate Components

Revenue Requirement by Cost Categories	FY 2016 @ Proposed Rates (A)	Elevation Charges (B)	Commodity Charges (C)	Readiness-to-serve Charges (D)
Variable Water Supply	$18,512,364		$18,512,364	
Power[32]	$2,552,898	$2,120,278	$432,619	
Base	$4,537,686		$3,139,585	$1,398,101
Peaking	$11,325,347		$7,835,907	$3,489,440
Conservation	$290,648		$290,648	$0
Rev Offset	-$819,667		-$819,667	$0
Meters	$570,269		$0	$570,269
Billing & Customer Service	$368,893		$0	$368,893
Total Revenue Requirement	**$37,338,439**	**$2,120,278**	**$29,391,457**	**$5,826,703**

Table 7-5 allocates the commodity charge revenue requirements of $29.48M (found in Column C of Table 7-4 for each cost category) to the various commodity rate components: (1) Base Power, (2) Water Supply, (3) Delivery, (4) Peaking, (5) Conservation, and (6) Revenue Offset.

Table 7-5: Potable Water Commodity Revenue Requirements Allocated to Rate Components

	FY 2016 Commodity Rev Req (Column C of Table 7-4)	Commodity Rate Components					
		Base Power	Water Supply	Delivery	Peaking	Conservation	Rev Offset
Variable Water Supply	$18,512,364		$18,512,364				
Power	$432,619	$432,619					
Base	$3,139,585			$3,139,585			
Peaking	$7,835,907				$7,835,907		
Conservation	$290,648					$290,648	
Rev Offset	-$819,667						-$819,667
Total Revenue Requirement	**$29,391,457**	**$432,619**	**$18,512,364**	**$3,139,585**	**$7,835,907**	**$290,648**	**-$819,667**

[32] *Base power costs associated with production and delivery of water to all users to base zone. Incremental power costs associated with pumping water to elevated zones, which are recovered through the elevation charges*

Table 7-6 allocates the RTS charge rate revenue of $5.83M (found in Column D of Table 7-4) to the various RTS rate components: (1) Billings and Customer Service, (2) Meters and Capacity, and (3) Temporary Service.

Table 7-6: Water RTS Revenue Requirements Allocated to Rate Components

	FY 2016 RTS Rev Req (Column D of Table 7-4)	Readiness-to Server (RTS) Rate Components		
		Billing & Customer Service	Meters & Capacity	Temporary RTS
Base	$1,398,101		$1,361,306	$36,796[33]
Peaking	$3,489,440		$3,397,604	$91,836
Meters	$570,269		$570,269	
Billing & Customer Service	$368,893	$368,893		$500
Total Revenue Requirement	**$5,826,703**	**$368,393**	**$5,329,179**	**$129,131**

7.2 Potable Water Rate Calculations

7.2.1 Readiness-to-Serve Charges

In order to create parity across the various meter sizes, each meter size is assigned a factor relative to a ¾" meter, which has a value of 1. According to the AWWA M1 Manual, a particular meter size's ratio of meter and capacity servicing costs relative to that of a ¾" meter is its "Equivalent Meter Units" (EMU). For example, as noted earlier, a 2-inch meter has 5.33 times the throughput capacity of a ¾" meter and therefore has a multiplication factor of 5.33 to determine its EMU to ¾" meter. The Meter & Capacity factor escalates as meter size increases because the District's cost to service a meter increases with its size. Table 7-7 and Table 7-8 summarize the EMUs for the regular and temporary services.

[33] *Allocated to Temporary RTS using the equivalent meter units of temporary services with respect to regular services (~0.8% of base and peaking costs are allocated to temporary services)*

Table 7-7: Equivalent Meter Units (EMUs) for FY 2016 for Regular Services

Regular Services	Number of Accts (A)	Meter & Capacity Factor (B)	# of Bills per Year C = A x 12	Capacity EMUs per Year D = B x C[34]
¾"	461	1.00	5,536	5,536
¾" x 1"	16,230	1.00	194,756	194,756
1"	2,129	1.67	25,554	42,590
1 ½"	595	3.33	7,138	23,794
2"	411	5.33	4,929	26,286
3"	41	11.67	498	5,807
4"	18	21.00	219	4,589
6"	16	53.33	194	10,359
8"	4	93.33	49	4,532
10"	0	140.00	0	0
Total	**19,906 accounts**		**238,871 bills**	**318,248 EMUs**

Table 7-8: Equivalent Meter Units (EMUs) for FY 2016 for Temporary Services

Temporary Services	Number of Accts (A)	Meter & Capacity Factor (B)	# of Bills per Year C = A x 12	Capacity EMUs per Year D = B x C
¾"		1.00		
¾" x 1"		1.00		
1"	5	1.67	60	100
1 ½"		3.33		
2"	21	11.67	252	2,940
3"		11.67		
4"		21.00		
6"	1	53.33	12	640
8"		93.33		
10"		140.00		
Total	**27 accounts**		**324 bills**	**3,680 EMUs**

RTS Charge components include two components: Billing & Customer Service, which is uniform for all accounts, and meter service and capacity costs, which increase with meter capacity ratios. Since the cost of Billing & Customer Service does not fluctuate with usage, the unit cost is simply the line item's revenue requirement divided by the number of bills issued. Meter & Capacity costs do increase with capacity of usage for each meter size; therefore, the revenue requirement must be divided by the EMUs to determine

[34] *Figures in column are rounded may not be exactly as calculated in formula*

the unit rate. The unit rate for each Regular Service RTS component for FY 2016, is shown in Table 7-9. The same calculation is repeated for Temporary Services in Table 7-10.

Table 7-9: Components for FY 2016 RTS Charge for Regular Services

	Rev Requirement *(From Table 7-6)* *(A)*	Units of Service *(From Table 7-7)* *(B)*		Unit Cost of Service *(A / B)*
Billing & CS	$368,393	238,871	bills / yr	$1.55 / bill
Meters & Capacity	$5,329,179	318,248	EMUs / yr	$16.75 / EMU
Total	**$5,697,573**			**$18.30 / EMU**

Table 7-10: Components for FY 2016 RTS Charge for Temporary Services

	Rev Requirement *(From Table 7-6)* *(A)*	Units of Service *(From Table 7-8)* *(B)*		Unit Cost of Service *(A / B)*
Billing & CS	$500	324	bills / yr	$1.55 / bill
Meters & Capacity	$128,631	3,680	EMUs / yr	$34.96 / EMU
Total	**$129,131**			**$36.51 / EMU**

The RTS charges proposed for FY 2016 in Table 7-11 are built from adding up the monthly service charge components – Billing & Customer Service and Meters & Capacity. As noted above, the customer service cost is the same for each account regardless of meter size. The capacity component of the monthly base fee is determined by multiplying the unit cost of $16.75 (found in Table 7-9) by the appropriate meter factor found in column B of Table 7-7. Adding these two components together yields the total proposed monthly base fee for each meter size for FY 2016, as shown in Table 7-11 below. Similarly, Table 7-12 shows the proposed monthly RTS for Temporary Services.

Table 7-11: FY 2016 Readiness-to-Serve Charges for Regular Services

Meter Size	Number of Accounts	Billing & CS (A)	Capacity (B)	Proposed Monthly RTS Charges C = A + B
¾"	461	$1.55	$16.75	**$18.30**
¾" x 1"	16,230	$1.55	$16.75	**$18.30**
1"	2,129	$1.55	$27.92	**$29.47**
1 ½"	595	$1.55	$55.84	**$57.39**
2"	411	$1.55	$89.34	**$90.89**
3"	41	$1.55	$195.42	**$196.97**
4"	18	$1.55	$351.75	**$353.30**
6"	16	$1.55	$893.34	**$894.89**
8"	4	$1.55	$1,563.34	**$1,564.89**
10"	0	$1.55	$2,345.00	**$2,346.55**

Table 7-12: FY 2016 Readiness-to-Serve Charges for Temporary Services

Meter Size	Number of Accounts	Billing & CS (A)	Capacity (B)	Proposed Monthly RTS Charges C = A + B
¾"		$1.55	$34.96	**$36.51**
¾" x 1"		$1.55	$34.96	**$36.51**
1"	5	$1.55	$58.27	**$59.82**
1 ½"		$1.55	$116.53	**$118.08**
2"	21	$1.55	$407.87	**$409.42**
3"		$1.55	$407.87	**$409.42**
4"		$1.55	$734.16	**$735.71**
6"	1	$1.55	$1,864.53	**$1,866.08**
8"		$1.55	$3,262.93	**$3,264.48**
10"		$1.55	$4,894.40	**$4,895.95**

One of the District's policy goals is to enhance revenue stability by the end of the Study period in FY 2020. More specifically, the District would like to recover 50 percent of the base and peaking costs through RTS charges along with the entirety of the Meters and Billing & Customer Service costs projected for the Study period. Table 7-13 shows the proposed 5-year RTS charges for regular and temporary services to achieve the District's enhanced revenue stability goals. The percentage of Base and Peaking Costs recovered from the RTS charge increases by 5 percent each year, from 30 percent in FY 2016 to the District goal of 50 percent in FY 2020.

Table 7-13: Proposed 5-Year Readiness-To-Serve Charges

RTS Charges *Rev from Fixed* *% of Base/Peaking from RTS*	Current *13.4%*	FY 2016 *15.6%* *30%*	FY 2017 *17.7%* *35%*	FY 2018 *19.4%* *40%*	FY 2019 *21.1%* *45%*	FY 2020 *22.7%* *50%*
Effective Date	**Jan 1, 2015**	**Jan 1, 2016**	**Jan 1, 2017**	**Jan 1, 2018**	**Jan 1, 2019**	**Jan 1, 2020**
Regular						
¾"	$15.87	$18.30	$21.73	$25.43	$29.42	$33.72
¾" x 1"	$15.87	$18.30	$21.73	$25.43	$29.42	$33.72
1"	$23.36	$29.47	$35.14	$41.25	$47.87	$54.97
1 ½"	$42.09	$57.39	$68.65	$80.80	$93.95	$108.07
2"	$64.83	$90.89	$108.86	$128.26	$149.25	$171.80
3"	$124.45	$196.97	$236.20	$278.55	$324.37	$373.61
4"	$192.17	$353.30	$423.85	$500.02	$582.43	$671.00
6"	$379.13	$894.89	$1,073.94	$1,267.29	$1,476.47	$1,701.28
8"	$604.29	$1,564.89	$1,878.17	$2,216.48	$2,582.49	$2,975.84
10"	$866.49	$2,346.55	$2,816.44	$3,323.86	$3,872.84	$4,462.83

Temporary						
¾"	N/A	$36.51	$38.16	$39.88	$41.68	$43.56
¾" x 1"	N/A	$36.51	$38.16	$39.88	$41.68	$43.56
1"	$70.08	$59.82	$62.51	$65.33	$68.27	$71.35
1 ½"	N/A	$118.08	$123.40	$128.96	$134.77	$140.84
2 ½"	$373.36	$409.42	$427.85	$447.11	$467.23	$488.26
3"	$373.36	$409.42	$427.85	$447.11	$467.23	$488.26
4"	$576.52	$735.71	$768.82	$803.42	$839.58	$877.37
6"	$1,137.42	$1,866.08	$1,950.06	$2,037.82	$2,129.53	$2,225.36
8"	$1,812.86	$3,264.48	$3,411.39	$3,564.91	$3,725.34	$3,892.99
10"	$2,599.48	$4,895.95	$5,116.27	$5,346.51	$5,587.11	$5,838.53

7.2.2 Elevation Charges

Elevation charges recover the costs associated with pumping water to the District's various geographic areas, or pumping zones. The per-unit cost to pump water to each zone increases along with the zone number. Since the costs to deliver water to these areas can vary widely, customers are charged only for the costs to deliver water to their specific zone. Table 7-14 shows each zone's share of every cost component related to pumping. Energy costs are divided among the zones based on actual energy costs incurred by each zone. The pump stations and tanks costs are distributed by the number of pump stations and tanks serving each zone, respectively.

Table 7-14: Allocation Factors for Power Costs to Zones

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Energy Costs[35]	23%	53%	19%	5%	
Pump Stations w/o Energy [36]	13%	65%	17%	4%	
Tanks[37]	5%	62%	29%	5%	
System Operations[38]	17%	58%	20%	5%	
Other Costs[39]	13%				87%

Using the percentages shown in Table 7-14, the total cost for each line item is distributed to each zone, as shown in Table 7-15. The total power costs for each zone (Row F) are then divided by the total potable water delivered to each zone (Row G) to develop the unit elevation cost (Row H).

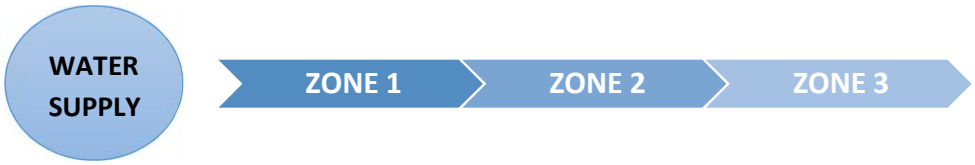
[35] Based on average actual energy costs over two-year period, for FY 2013 and FY 2014. Figure provided by District staff.
[36] Based on number of pump stations in zone as a percentage of total pump stations.
[37] Based on number of tanks in zone as a percentage of total tanks.
[38] Base on average allocated energy, pump, and tanks costs
[39] Estimated incremental pumping costs to pump to zone 5 (in similar elevated level as zone 3) to be recovered in Base Power and elevation charges

Table 7-15: Power Costs (before Rev Adjustment) Allocated to Zones

		FY 2016[40]	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Energy Costs	(A)	$861,890	$202,460	$452,632	$163,600	$43,199	
Pump Stations	(B)	$643,572	$83,944	$419,721	$111,926	$27,981	
Tanks	(C)	$241,755	$11,512	$149,658	$69,073	$11,512	
System Operations	(D)	$543,252	$92,629	$317,768	$107,144	$25,711	
Other Costs	(E)	$60,761	$7,899				$52,862
Total Power Costs	F = A+B+C+D+E	**$2,351,230**	**$398,444**	**$1,339,778**	**$451,742**	**$108,404**	**$52,862**
Water Flow Through Each Zone (hcf)[41]	(G)		8,962,829	3,538,159	614,119	108,366	58,938
Unit Elevation Cost	H = F/G		**$0.05**	**$0.38**	**$0.74**	**$1.01**	**$0.90**

Potable water delivered to the District's higher zones must first be pumped through lower zones. For example, water being delivered to Zone 3 must first pass through Zones 1 and 2. A summary of water delivery for each zone is presented in the graphics below.

Water delivery to Zone 3:



Water delivery to Zone 4:

In order to accurately develop a per-unit elevation charge rate for Zones 1 and 2, the water usage in Zone 3 must be subtracted out[42]. Note that since all water usage must be pumped through Zone 1, the cost to pump through Zone 1 is recovered in the Base Power Unit rate and no adjustments are applied to Zone 1. Table 7-16 summarizes the necessary adjustments to each zone's power costs to account for the zone-to-zone pumping.

[40] *Based on actual costs provided by District Staff before revenue adjustments*
[41] *Estimated using FY 2014 actual data provided by District staff for water flow through each zone and projected FY 2016 sales. Zone 3 has to go through Zone 1 then zone 2. Zone 4 has to go through Zone 1 then Zone 2.*
[42] *Only a portion of Zone 3 usage passes through Zones 1 and 2*

Table 7-16: Elevation Charges and Base Power Rate Calculations

	FY 2016	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Unit Elevation Cost		**$0.05**	**$0.38**	**$0.74**	**$1.01**	**$0.90**
Total Power Costs (before Rev Adj)	**$2,351,230**	**$398,444**	**$1,339,778**	**$451,742**	**$108,404**	**$52,862**
Units through zone 2 to zone 3[43]	257,600 hcf		-$97,888[44]	$97,888		
Units through zone 2 to zone 4[45]	121,326 hcf		-$46,104[46]		$46,104	
Adjusted Power Costs (before Rev Adj)	**$2,351,230**[47]	**$398,444**	**$1,195,786**[48]	**$549,630**	**$154,507**	**$52,862**
Unit of Service (hcf)		8,962,829	3,159,234	614,119	108,366	58,938
Unit Elevation Cost before Rev Adj.		$0.05	$0.38	$0.90	$1.43	$0.90
Elevation Charges with Rev Adj.[49]		**$0.06/hcf**	**$0.42/hcf**	**$0.98/hcf**	**$1.56/hcf**	**$0.98/hcf**

The elevation charges developed for each zone in Table 7-16 are shown in the FY 2016 column for the 5-Year Proposed Elevation Charges listed in Table 7-17 below. The elevation charges are increased each year of the Study period, per the proposed revenue adjustments found in Table 3-11.

Table 7-17: 5-Year Proposed Elevation Charges

	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Rev Adjustment			*4.5%*	*4.5%*	*4.5%*	*4.5%*
Effective Date	*Jan 1, 2015*	*Jan 1, 2016*	*Jan 1, 2017*	*Jan 1, 2018*	*Jan 1, 2019*	*Jan 1, 2020*
Zone 1	$0.00 /hcf	$0.00 /hcf	$0.00 /hcf	$0.00 /hcf	$0.00 /hcf	$0.00 /hcf
Zone 2	$0.42 /hcf	$0.42 /hcf	$0.44 /hcf	$0.46 /hcf	$0.49 /hcf	$0.52 /hcf
Zone 3	$0.74 /hcf	$0.98 /hcf	$1.03 /hcf	$1.08 /hcf	$1.13 /hcf	$1.19 /hcf
Zone 4	$1.28 /hcf	$1.56 /hcf	$1.64 /hcf	$1.72 /hcf	$1.80 /hcf	$1.89 /hcf
Zone 5	$2.55 /hcf	$0.98 /hcf	$1.03 /hcf	$1.08 /hcf	$1.13 /hcf	$1.19 /hcf

[43] *Units based on District staff estimates*
[44] *-$97,888 = 257,600*$0.38*
[45] *Units based on District staff estimates*
[46] *-$46,104 = 121,326*$0.38*
[47] *From Table 7-3*
[48] *$1,339,778-$97,888-$46,104 = $1,195,786*
[49] *Revenue adjustments from $2.351M to $2.553M (from Table 7-3) (~108.6%) except for Zone 5, rounded up to nearest cents*

7.2.3 Commodity Charges

RFC conducted a cost of service analysis and identified six different rate components for the potable water commodity rates, including Base Power, Water Supply, Delivery, Peaking, Conservation and Revenue Offsets. Each of the rate components is described in Table 7-18, below.

Table 7-18: Descriptions of Proposed Potable Water Volumetric Rate Components

Rate Components	Description
Base Power	To recover power costs to produce and deliver potable water to base zone (Zone 1)[50]
Water Supply	To recover potable water supply costs using the following supply allocation: 1. Blended MWD Tier 1 water and other local purchases to meet Tiers 1, 2 and 3 demand for regular services 2. MWD Tier 2 to meet Tier 4 demand and temporary services
Delivery	To recover remaining base water system costs (costs to meet average daily flow)
Peaking Costs	To recover remaining peaking water system costs (costs to meet peak demand)
Conservation	To recover the District's conservation program costs from inefficient and excessive usage (Tiers 3 and 4)
Revenue Offsets	To provide affordability for essential usage, ad valorem property tax revenues are dedicated to offset essential and efficient use (Tiers 1 & 2) revenue requirements.

Due to the configuration of the District, water for certain areas is purchased from other agencies, such as Ventura County. Blended water supply sources from these local purchases and MWD Tier 1 (shown in Table 3-8); this water is designated for regular usage in Tiers 1 through 3. As discussed and agreed with District staff, excessive use (Tier 4) and temporary use should pay for the next available marginal water supply costs at the MWD Tier 2 unit cost to signal the true value of water supplies. If a significant number of customers use water excessively, the District will need to acquire more expensive water from MWD Tier 2.

The water supply cost components in Table 7-19 are based on FY 2016 water supply costs from the respective sources (see Table 3-8). The blended water supply unit cost is calculated using the variable water supply costs shown in Table 7-5 divided by net water sales (in row 19 of Table 3-8). The unit rate is calculated to include 6.4 percent water loss and converted to per hcf (100 cubic feet or 748 gallons). The MWD Tier 2 unit cost is shown in row 10 of Table 3-8 and the unit rate is calculated to include water loss and converted to hcf. The actual water supply rates for FY 2017 to FY 2020 will be calculated annually to reflect the actual water supply costs for that particular year. Calculating actual supply costs annually will allow the District to accurately pass-through wholesale water supply cost increases to retail customers.

[50] *All water delivered to upper elevated pressure zones have to be produced and deliver to base zone first, thus all usage share base power costs equally. The base power rates are calculated Table 7-16*

Table 7-19: FY 2016 Potable Water Supply Rate Component of Commodity Charges

FY 2016 Water Supply Rate	Supply Sources	Unit Cost ($ / AF) (1 AF = 435.6 hcf)	Unit Rate (with 6.4% water loss)
Tier 1 — Essential Indoor Use	Blended	$846 / AF	$2.07 / hcf
Tier 2 — Efficient Outdoor Use	Blended	$846 / AF	$2.07 / hcf
Tier 3 — Inefficient Use	Blended	$846 / AF	$2.07 / hcf
Tier 4 — Excessive Use	MWD Tier 2	$1,064 / AF	$2.60 / hcf
Temporary Use	MWD Tier 2	$1,064 / AF	$2.60 / hcf

Using the total projected usage from Table 3-5 and the usage distribution by water budget tier shown in Figure 6-8, Table 7-20 shows the projected hcf sales for each tier in FY 2016.

Table 7-20: Projected Potable Water Sales in Water Budget Tiers

		Usage Distribution *(Figure 6-8)* *(A)*	Projected Sales (hcf) (B)	Notes
1	**Tier 1 — Essential Indoor Use**	25.8%	2,299,271	*A1 * B6*
2	**Tier 2 — Efficient Outdoor Use**	42.3%	3,764,775	*A2 * B6*
3	**Tier 3 — Inefficient Use**	16.8%	1,496,663	*A3 * B6*
4	**Tier 4 — Excessive Use**	15.1%	1,347,780	*A4 * B6*
5	**Temporary Use**		54,339	*Table 3-5*
6	**Total WB Use**		8,908,490	*Table 3-5*
7	**Total Water Sales**		**8,962,829 hcf** **20,576 AF**	***Sum of rows 5 & 6*** ***(total from Table 3-5)***

Table 7-5 shows the revenue requirements associated with each rate component for the commodity charges. Base power (the elevation charges for Zone 1 from Table 7-16) and delivery costs (Table 7-21) are recovered uniformly through all usage in all tiers and usage types. The conservation program costs (Table 7-22) are allocated uniformly for inefficient and excessive usage in Tiers 3 and 4[51]. Revenue offsets (revenues from property tax dedicated to provide affordability for essential and efficient use) are allocated uniformly for Tiers 1 and 2, as shown in Table 7-23. Peaking costs (Table 7-24) are recovered through all usage based on their respective peaking characteristics determined in Table 6-2.

[51] *Conservation programs are designed to reduce inefficient and excessive water use in upper tiers. Unlike usage in lower tiers, usage in upper tiers is considered reducible. For this reason, conservation costs are allocated exclusively to Tiers 3 and 4. Theoretically, if there is no inefficient usage in the system, there would be no conservation program.*

Table 7-21: Delivery Rate Component of Commodity Charges

	FY 2016	Notes
Revenue Requirement	$3,139,585	*Table 7-5*
Unit of Service	8,962,829 hcf	*Row 7 of Table 7-20*
Unit Rate	**$0.36/hcf**	*Rounded up to nearest cent*

Table 7-22: Conservation Rate Component of Commodity Charges

	FY 2016	Notes
Revenue Requirement	$290,648	*Table 7-5*
Unit of Service	2,844,443 hcf	*Row 3 + Row 4 of Table 7-20*
Unit Rate	**$0.11/hcf**	*Rounded up to nearest cent*

Table 7-23: Revenue Offset Rate Component of Commodity Charges

	FY 2016	Notes
Revenue Requirement	-$819,667	*Table 7-5*
Unit of Service	6,064,046 hcf	*Row 3 + Row 4 of Table 7-20*
Unit Rate	**-$0.13/hcf**	*Rounded down to nearest cent*

Table 7-24 calculates the unit rate peaking factors for each tier. The projected sales for each tier from Table 7-20 are multiplied by the peaking factors developed in Table 6-2, to determine the "equivalent peaking usage total". The equivalent peaking usage total is divided by the peaking revenue requirement of $7.8M found in Table 7-5. The resulting unit peaking rate of $1.09 is then multiplied by the peaking factor percentages for each tier to determine the peaking rate component for each tier.

Table 7-24: Peaking Rate Component of Commodity Charges

		Projected Sales *(Table 7-20)*	Peaking Factors *(Table 6-2)*	Equivalent Peaking Use	Unit Rate ($ / hcf)	Notes
Row		A	B	C = A*B	F = C8 *B	
1	Tier 1 — Efficient Indoor Use	2,299,271	0%	0	**$0.00**	
2	Tier 2 — Efficient Outdoor Use	3,764,775	75%	2,823,582	**$0.82**	
3	Tier 3 — Inefficient Use	1,496,663	124%	1,855,862	**$1.36**	
4	Tier 4 — Excessive Use	1,347,780	169%	2,277,748	**$1.85**	
5	Temporary Use	54,339	443%	240,722	**$4.83**	
6	**Total**	**8,962,829**		**7,197,914 hcf**		*Sum rows 1 to 5*
7	Peaking Rev Requirements			$7,835,907		*Table 7-5*
8	**Unit Peaking Rate ($/equiv hcf)**			**$1.09 / hcf**		***C7 / C6***

Adding together the various commodity charge components produces the total proposed commodity charge for each tier, as found below in Table 7-25. Note that the Revenue Offset of $.13/hcf is deducted for Tiers 1 and 2 (essential and efficient use) and the conservation costs are only applied to Tiers 3 and 4 (inefficient and excessive use).

Table 7-25: Proposed Commodity Charges for FY 2016

	Water Supply (A) *Table 7-19*	Base Power (B) *Table 7-16*	Delivery (C) *Table 7-21*	Peaking (D) *Table 7-24*	Conservation (E) *Table 7-22*	Rev Offset (F) *Table 7-23*	Proposed Sum(A to F)
Tier 1 (Essential Use)	$2.07	$0.06	$0.36	$0.00		-$0.13	**$2.36/hcf**
Tier 2 (Efficient Use)	$2.07	$0.06	$0.36	$0.82		-$0.13	**$3.18/hcf**
Tier 3 (Inefficient Use)	$2.07	$0.06	$0.36	$1.36	$0.11		**$3.96/hcf**
Tier 4 (Excessive Use)	$2.60	$0.06	$0.36	$1.85	$0.11		**$4.98/hcf**
Temporary Use	$2.60	$0.06	$0.36	$4.83			**$7.85/hcf**

The proposed commodity charges developed for each tier in Table 7-25 are shown in the FY 2016 column for the 5-Year Proposed Commodity Charges listed in Table 7-26 below. The commodity charges are increased each year of the Study period, per the proposed revenue adjustments found in Table 3-11. The rates shown in Table 7-26 below reflect the appropriate remaining base and peaking costs not recovered from the RTS charges shown in Table 7-13 above.

Table 7-26: Proposed 5-Year Commodity Charges without Pass-through beyond FY 2016

Commodity	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Rev from Fixed	*13.4%*	*15.6%*	*17.7%*	*19.4%*	*21.1%*	*22.7%*
Effective Date	***Jan 1, 2015***	***Jan 1, 2016***	***Jan 1, 2017***	***Jan 1, 2018***	***Jan 1, 2019***	***Jan 1, 2020***
Tier 1 (Essential Use)	$2.31 /hcf	**$2.36 /hcf**	$2.43 /hcf	$2.51 /hcf	$2.58 /hcf	$2.66 /hcf
Tier 2 (Efficient Use)	$2.80 /hcf	**$3.18 /hcf**	$3.21 /hcf	$3.24 /hcf	$3.28 /hcf	$3.31 /hcf
Tier 3 (Inefficient Use)	$3.81 /hcf	**$3.96 /hcf**	$3.97 /hcf	$3.98 /hcf	$4.00 /hcf	$4.01 /hcf
Tier 4 (Excessive Use)	$5.34 /hcf	**$4.98 /hcf**	$4.99 /hcf	$5.00 /hcf	$5.01 /hcf	$5.03 /hcf
Temporary Use	$8.01 /hcf	**$7.85 /hcf**	$7.71 /hcf	$7.55 /hcf	$7.39 /hcf	$7.22 /hcf

8 RECYCLED WATER COST OF SERVICE ANALYSIS & RATE DESIGN

8.1 RECYCLED WATER COST OF SERVICE ANALYSIS

Proposition 218 requires a nexus between the rates charged and the costs of providing service. Based on the proposed financial plan, the cost of service analysis translates this financial requirement into actual rates. The first step in the cost of service analysis is to determine how much revenue is required to be collected from rates. The methodology used is based upon the premise that the utility must generate annual revenues adequate to meet its estimated annual expenses. As part of the cost of service analysis, several adjustments are made to the appropriate cost elements to ensure the adequate collection of revenues by determining the annual revenues needed from rates. Revenues from sources other than recycled water rates and charges (e.g. revenues from miscellaneous services) are deducted.

Currently, Recycled Water (recycled water) customers only pay the 4-tier commodity charges and elevation charges based on total recycled water usage (see Section 4.1), with no RTS charge component. RFC recommends that the District assess the same monthly RTS charges for both potable and recycled water services, which reflects the similar Billing & Customer Service and Capacity costs associated with each type of meter service. To ease the impacts of introducing a RTS charge to recycled water customers, District staff proposes to phase-in the RTS charges over a 5-year period, as shown in Table 8-1. By FY 2020, the RTS charges for recycled water service will be aligned with the RTS charges for potable water service.

Table 8-1: 5-year Proposed Monthly RTS Charges for Recycled Water Services

	# of Accounts	Current	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
3/4"	1	$0.00	$9.15	$13.04	$19.08	$25.01	$33.72
3/4" x 1"	10	$0.00	$9.15	$13.04	$19.08	$25.01	$33.72
1"	62	$0.00	$14.74	$21.09	$30.94	$40.69	$54.97
1 1/2"	201	$0.00	$28.70	$41.19	$60.60	$79.86	$108.07
2"	344	$0.00	$45.45	$65.32	$96.20	$126.87	$171.80
3"	6	$0.00	$98.49	$141.72	$208.92	$275.72	$373.61
4"	4	$0.00	$176.65	$254.31	$375.02	$495.07	$671.00
6"	9	$0.00	$447.45	$644.37	$950.47	$1,255.00	$1,701.28
8"	0	$0.00	$782.45	$1,126.91	$1,662.36	$2,195.12	$2,975.84
10"	1	$0.00	$1,173.28	$1,689.87	$2,492.90	$3,291.92	$4,462.83
Total / Projected Rev[52]	**638**	**$0**	**$346,991**	**$498,685**	**$734,427**	**$968,575**	**$1,311,604**

[52] *Annualized Revenues (12 billing periods) for 638 accounts under proposed rates*

The financial plan (from Section 4) shows the required revenue adjustment for FY 2016 effective in January 2016, or 6 months of revenues under new rates, however, the calculated revenue requirement shown in Table 8-2 is annualized.

Table 8-2: Annualized FY 2016 Recycled Water Revenue Requirement

		FY 2016	Notes
1	**REVENUE REQUIREMENTS**		
2	Recycled Water O&M Expenses	$3,901,779	*Table 4-11*
3	Debt Service	$0	*Table 4-11*
4	Rate Funded Replacement CIP	$1,590,763	*Table 4-11*
5	Reserve Funding	$586,155	*Table 4-9*
6	**SUBTOTAL REVENUE REQUIREMENTS**	**$6,078,697**	
7			
8	**Less Non-Operating Revenues**		
9	Other Operating Revenues	$617,834	*Table 4-11*
10	Interest Income	$106,851	*Table 4-11*
11	**SUBTOTAL NON-OPERATING REVENUES**	**$724,684**	
12			
13	**NET REVENUE REQUIREMENTS FROM CURRENT RATES**	**$5,354,013**	*Row 6 - Row 11*
14	Proposed Revenue Adjustment for FY 2016	2.0%	*Table 4-10*
15	Annualized Proposed Revenue Adjustment[53]	$107,080	*Row 13*Row 14*
16	**TOTAL REV REQ FROM PROPOSED RECYCLED WATER RATES**	**$5,461,093**	***Row 13 + Row 15***

Table 8-3 summarizes the peaking characteristics of the District's water system determined by the District's recycled water Master Plan. These ratios are used to determine the appropriate percentage allocation of total O&M and capital costs towards peaking, as shown in Section 11.5 and Section 11.6 of the Appendix. As detailed in Section 7, the Max Day and Max Hour peaking factors are calculated as follows:

$$Max\ Day = \frac{\text{Peak Day Demand}}{\text{Average Daily Flow}} = 2.50$$

$$Max\ Hour = \frac{\text{Peak Hour Demand}}{\text{Average Hourly Flow}} = 5.00$$

[53] *Revenue Adjustments effective for FY 2016 (6 months) shown in the pro-forma in = $5.35M * 2% * 6 months / 12 months = $53,540*

Table 8-3: Recycled Water System Peaking Factors

	Peaking Factors
Base	1.00
Max Day	2.50
Max Hour	5.00

Similar to cost of service for water services, the second step in the cost of service analysis for recycled water services is to functionalize the revenue requirement into cost components. This analysis employs the "Base-Extra Capacity" method, under which utility costs of service are assigned to basic functional cost components including: supply costs; base costs (fixed costs incurred to meet average demand); extra capacity or peaking costs (fixed water system costs to meet maximum day and maximum hour, or peaking, demand); and conservation, meter service and customer-service related costs as described in the M1 Manual. The Base-Extra Capacity method is widely used in the water industry to serve retail customers. The revenue to be recovered from rates of $5.46M is allocated according to the categories in Table 8-4. See Section 11.7 of the Appendix for detailed step by step allocations of recycled water System costs into cost categories.

Table 8-4: Allocated Recycled Water System Costs

	FY 2016 (A)	Commodity (B)	Elevation (C)	RTS (D)
JPA Supply	$917,549	$917,549		
Potable Water Supplement	$1,360,971	$1,360,971		
Base	$811,281	$811,281		
Peaking	$1,353,902	$1,006,911		$346,991[54]
JPA Power & Delivery	$1,017,390	$343,693	$673,697	
Total recycled water System Cost	**$5,461,093**	**$4,440,406**	**$673,697**	**$346,991**

8.2 RW Rates Calculations

8.2.1 Recycled Water Commodity Charges

Similar to Water, commodity charges for recycled water usage will also utilize a Water Budget Tiered Rate Structure. The methodology for determining the tier structure for Irrigation accounts is discussed in Section 6. Out of 638 recycled water accounts, 267 (42 percent) have landscape areas confirmed and are included in the analysis.

[54] *From Table 8-1*

In meeting Proposition 218 requirements, RFC conducted a cost of service analysis and identified three different rate components for recycled water commodity rates, including Base Power and Delivery, Water Supply, and Peaking Costs. Each of the rate components is described in Table 8-5, below.

Table 8-5: Descriptions of Proposed Recycled Water Commodity Rate Components

Rate Components	Description
Base Power and Delivery	To recover power costs to produce and deliver water to base zone to meet average demand (Zone L)[55]
Water Supply	To recover water supply costs using the following supply allocation: 1. Recycled water purchased from JPA used to meet all usage, with highest priority for Tier 1 (Efficient) usage 2. 25% of Potable Water Supplement is used to meet Tier 2 (Inefficient) demand along with JPA supply (estimated by District Staff) 3. Remaining 75% of Potable Supplement and JPA supply are used to meet Tier 3 (Excessive) demand
Peaking Costs	To recover remaining peaking water system costs (costs to meet peak demand)

In Table 8-6, the total commodity revenue to be recovered from rates of $4.44M (shown in Column B of Table 8-4) is allocated according to the categories listed above in Table 8-5. Unlike the potable water enterprise, each commodity charge is entirely allocated to a single rate component. In other words, no two rate components contribute to the same commodity charge.

Table 8-6: Recycled Water Commodity Charges by Rate Components

		FY 2016 Commodity Rev Req *(From Table 8-4)*	Water Supply (A)	Base Power & Delivery (B)	Peaking Costs (C)
1	JPA Supply	$917,549	$917,549		
2	Potable Water Supplement	$1,360,971	$1,360,971		
3	JPA Power & Delivery	$343,693		$343,693	
4	Base	$811,281		$811,281	
5	Peaking	$1,006,911			$1,006,911
6	**Total recycled water System Cost**	**$4,440,406**	**$2,278,520**	**$1,154,974**	**$1,006,911**

Table 8-7 summarizes the per-unit cost for recycled water supply for the District's two sources. Recycled water usage beyond 4,211 AF/year requires the District to use higher priced potable water to meet

[55] *All water delivered to upper elevated pressure zones have has to be produced and delivered to a base zone first, thus all usage shares base power costs equally.*

demands. The District's projected recycled water demand of 5,041 AF for the total Study period is established in Table 2-2.

Table 8-7: Recycled Water Supply Unit Rate by Sources

	Costs *(Table 4-7)* (A)	Quantity for Sales *(from Table 4-7)* (B)		Unit Rate ($/AF) (C = A/B)	Unit Rate ($/hcf)[56] (D = C /435.6)
JPA Water Supply	$917,549	4,211 AF	1,834,312 hcf	$218 /AF	$0.51 /hcf
Potable Water Supplement	$1,360,971	830 AF	361,548 hcf	$1,640 /AF	$3.77 /hcf
Total	**$2,278,520**	**5,041 AF**	**2,195,860 hcf**		

Using the total projected usage from Table 4-4 and the usage distribution by water budget tier shown in Figure 6-12, Table 8-8 shows the projected hcf sales for each tier in FY 2016.

Table 8-8: Projected Recycled Water Sales by Water Budget Tiers

		Usage Distribution *(Figure 6-12)* (A)	Projected Sales (hcf) (B)	Notes
1	Tier 1 — Efficient Use	61%	1,349,981	*A1 * B4*
2	Tier 2 — Inefficient Use	15%	325,877	*A2 * B4*
3	Tier 3 — Excessive Use	24%	520,002	*A3 * B4*
4	**Total recycled water Sales**		**2,195,860 hcf 5,041 AF**	*From Table 4-4*

The District has two sources of recycled water which vary in cost. The recycled water supply of 1.8M hcf from the JPA is the least expensive source and is used to meet Tier 1 needs. After Tier 1 needs are met, the remaining JPA recycled water supply (235K hcf) is used to fulfill a portion of the needs of Tiers 2 and 3. Approximately 25% of projected potable water supplement is estimated by District staff to be used to meet peak demand for Tier 2 and 75% of the projected potable water supplement is used to meet peak demand of Tier 3 usage. Since Tier 2 is fulfilled by two different sources of water, a weighted average must be used to determine the unit price. The calculation is as follows:

$$Tier\ 2\ Weighted\ Average = \frac{(JPA\ Quantity\ \times JPA\ Unit\ Rate) + (Potable\ Quantity\ \times Potable\ Unit\ Rate)}{hcf\ per\ Acre\ Foot}$$

$$\$1.42 = \frac{(235{,}490\ \times \$.51) + (90{,}387\ \times \$3.77)}{325{,}877}$$

[56] *Rounded up to the nearest cent*

The unit water supply rate for each tier is summarized in Table 8-9.

Table 8-9: FY 2016 Recycled Water Supply Rate Component of Commodity Charges

		Projected Sales (hcf) *(Table 8-8)*	JPA *(Table 8-7)*	Potable Supplement *(Table 8-7)*	Unit Water Supply Rate
1	**Unit Rate**		**$0.51 /hcf**	**$3.77 /hcf**	
2	**Quantity Available**		**1,834,312 hcf**	**361,548 hcf**	
3	Tier 1 (Efficient Use)	1,349,981	1,349,981		**$0.51 /hcf**
4	Tier 2 (Inefficient Use)	325,877	235,490	90,387 hcf	**$1.42 /hcf**
5	Tier 3 (Excessive Use)	520,002	248,841	271,161 hcf	**$2.21 /hcf**
6	**Total**	**2,195,860**	**1,834,312**	**361,548**	

Delivery costs (Table 8-10) are recovered uniformly. The revenue requirement for the rate component is divided by the total number of recycled water units sold to determine the unit rate.

Table 8-10: Base Power & Delivery Rate Component of Recycled Water Commodity Charges

	FY 2016	Notes
Revenue Requirement	$1,154,974	*Column B, Row 6 of Table 8-6*
Unit of Service	2,195,860 hcf	*Row 4 of Table 8-8*
Unit Rate	**$0.53/hcf**	*Rounded up to nearest cent*

Table 8-11 calculates the unit rate peaking factors for each tier. The projected sales for each tier from Table 8-8 are multiplied by the peaking factors developed in Table 6-3, to determine the "equivalent peaking usage total". The equivalent peaking usage total is divided by the peaking revenue requirement of $1.0M found in Table 8-6. The resulting unit peaking rate of $.53 is then multiplied by the peaking factor percentages for each tier to determine the peaking rate component for each tier (Column F).

Table 8-11: Peaking Rate Component of Recycled Water Commodity Charges

		Projected Sales (Table 8-8)	Peaking Factors (Table 6-3)	Equivalent Peaking Use	Unit Rate ($ / hcf)	Notes
Row		A	B	C = A*B	F = C6 *B	
1	Tier 1 (Efficient Use)	1,349,981	26%	350,995	$0.14	
2	Tier 2 (Inefficient Use)	325,877	181%	589,837	$0.96	
3	Tier 3 (Excessive Use)	520,002	187%	972,404	$0.99	
4	**Total**	**2,195,860 hcf**		**1,913,236 hcf**		*Sum rows 1 to 3*
5	Rev Requirements			**$1,006,949**		*Column C Row 6 of Table 8-6*
6	**Unit Peaking Rate ($/equiv hcf)**			**$0.53 / hcf**		***C7 / C6***

Adding together the various commodity charge components (Water Supply, Base Power & Delivery, and Peaking) produces the total proposed commodity charge for each tier, as found below in Table 8-12.

Table 8-12: Proposed Recycled Water Commodity Charges for FY 2016

	Water Supply (A)	Base Power & Delivery (B)	Peaking (C)	Proposed Sum(A to C)
	Table 8-9	*Table 8-10*	*Table 8-11*	
Tier 1 (Efficient Use)	$0.51	$0.53	$0.14	**$1.18/hcf**
Tier 2 (Inefficient Use)	$1.42	$0.53	$0.96	**$2.91/hcf**
Tier 3 (Excessive Use)	$2.21	$0.53	$0.99	**$3.73/hcf**

The RTS charge that is proposed to be introduced in FY 2016 for recycled water customers will be responsible for a portion of the peaking costs, reducing the revenue requirement for peaking costs. However, to reduce the impact to recycled water customers, the RTS charge is proposed to be phased in over five years. In Table 8-13 below, the total peaking costs in Row 1 are reduced by the RTS charge revenue in Row 2, resulting in the Peaking Revenue Requirement in Row 3. Note that as the RTS charge revenue grows each fiscal year, the Peaking Revenue Requirement is reduced. The Peaking Revenue Requirement is then divided by the Equivalent Peaking Use (found in Table 8-11) to determine the Unit Peaking Rate. Finally, the Unit Peaking Rate is multiplied by the peaking factors found in Table 6-3.

Table 8-13: Projected 5-Year Recycled Water Peaking Costs[57]

	Peaking Factors[58]		FY 2016 (A)	FY 2017 (B)	FY 2018 (C)	FY 2019 (D)	FY 2020 (E)
1		Total Peaking Costs[59]	$1,353,902	$1,380,980	$1,408,600	$1,436,772	$1,465,507
2		RTS Charges[60]	$346,991	$498,685	$734,427	$968,575	$1,311,604
3		**Peaking Rev Req**	**$1,006,911**	**$882,295**	**$674,172**	**$468,197**	**$153,903**
4		Equiv Peaking Use (hcf)[61]	1,913,236	1,913,236	1,913,236	1,913,236	1,913,236
5		**Unit Peaking Rate[62]**	**$0.53**	**$0.46**	**$0.35**	**$0.24**	**$0.08**
6	26%	Tier 1 (Efficient Use)	$0.14	$0.12	$0.10	$0.07	$0.03
7	181%	Tier 2 (Inefficient Use)	$0.96	$0.84	$0.64	$0.45	$0.15
8	187%	Tier 3 (Excessive Use)	$0.99	$0.87	$0.66	$0.46	$0.16

Unlike the unit peaking rate in Table 8-13 (above) which is calculated for each year of the Study period, the Water Supply and Base Power & Delivery costs are inflated by the proposed percentage adjustment factor of 2 percent from Table 4-10. From Table 8-12, the Water Supply (Column A) and Base Power & Delivery (Column B) are added together for each tier to determine the FY 2016 commodity rate exclusive of peaking costs, found in Table 8-14 below. The FY 2016 rates are inflated by the proposed rate adjustment of 2 percent to determine rates for future years.

[57] Similar calculations as shown in Table 8-11 for Peaking Rates in each tier
[58] From Table 6-3
[59] Adjusted with Proposed RW Revenue Adjustments shown in Table 4-10
[60] From Total / Projected Revenues shown in Table 8-1
[61] From Table 8-11
[62] Rate = Revenue Requirement (row 3) / Equivalent Peaking Use (row 4)

Table 8-14: Projected 5-Year Recycled Water Commodity Rates Excluding Peaking Rates ($/hcf) [63]

	Recycled Water Commodity w/o Peaking	FY 2016[64] (A)	FY 2017 (B)	FY 2018 (C)	FY 2019 (D)	FY 2020 (E)
	Revenue Adjustment[65]		2.00%	2.00%	2.00%	2.00%
1	Tier 1 (Efficient Use)	$1.04	$1.06	$1.08	$1.10	$1.13
2	Tier 2 (Inefficient Use)	$1.95	$1.99	$2.03	$2.07	$2.12
3	Tier 3 (Excessive Use)	$2.74	$2.80	$2.86	$2.91	$2.97

The unit rate peaking costs for each tier from Table 8-13 are added to the commodity rates exclusive of peaking from Table 8-14 to determine the proposed FY 2016 commodity rate. For example, the commodity rate for FY 2016 Tier 1 is calculated by adding together the unit peaking rate of $.14 (Row 6, Column A in Table 8-13) and commodity rate exclusive of peaking of $1.04 (Row 1, Column A in Table 8-14), for a total of $1.18. The same calculation is repeated for all tiers for each year of the Study period. The recycled water RTS charge as a percentage of the potable RTS charge is also provided for each of the Study period in Table 8-15 below. Tier 4 is proposed to be discontinued beginning in FY 2016.

Table 8-15: Proposed 5-Year Commodity Charges ($/hcf)[66]

Commodity *RTS (% of Potable RTS)*	Current	FY 2016 *50%*	FY 2017 *60%*	FY 2018 *75%*	FY 2019 *85%*	FY 2020 *100%*
Effective Date	***Jan 1, 2015***	***Jan 1, 2016***	***Jan 1, 2017***	***Jan 1, 2018***	***Jan 1, 2019***	***Jan 1, 2020***
Tier 1	$1.09 /hcf	$1.18 /hcf	$1.19 /hcf	$1.19 /hcf	$1.18 /hcf	$1.16 /hcf
Tier 2	$1.42 /hcf	$2.91 /hcf	$2.83 /hcf	$2.67 /hcf	$2.52 /hcf	$2.27 /hcf
Tier 3	$2.26 /hcf	$3.73 /hcf	$3.67 /hcf	$3.52 /hcf	$3.37 /hcf	$3.13 /hcf
Tier 4	$3.51 /hcf			N/A		

8.2.2 Recycled Water Elevation Charges

Elevation charges recover the costs associated with pumping water to the District's various geographic areas, or zones. The District does not add elevation charges to recycled water customers within the Las Virgenes Valley Zone (Zone L), but does assess elevation charges for all other zones. Table 8-16 summarizes the recycled water sales in hcf delivered to Zone L versus all other Zones.

[63] *FY 2016 = Column A + Column B of Table 8-12, FY 2017 Rate = FY 2016 Rate * (1+2%), etc.*
[64] *Column A + Column B of Table 8-12*
[65] *From Table 4-10*
[66] *Adding Peaking Rates in Table 8-13 and Commodity Rates excluding Peaking Rates in Table 8-14*

Table 8-16: FY 2016 Projected Recycled Water Sales in Zones

		Projected Sales *(From Table 4-4)*
1	Zone L	121,332
2	All Other Zones	2,074,528
3	**Total**	**2,195,860 hcf**

Since Zone L does not incur elevation charges, the revenue requirement is recovered from the sales to all other zones. Table 8-17 shows the calculation to determine the per unit rate for elevation charges to recycled water customers outside of Zone L.

Table 8-17: FY 2016 Elevation Charges

	FY 2016	Notes
Revenue Requirement	$673,697	*Table 8-4*
Unit of Service	2,074,528 hcf	*Row 2 of Table 8-16*
Unit Rate	**$0.33/hcf**	*Rounded up to nearest cent*

The elevation charge unit rate of $.33/hcf for all recycled water usage outside of Zone L, is increased by the proposed revenue adjustment percentage found in Table 4-10 for each year of the Study period.

Table 8-18: Proposed 5-Year Elevation Charges ($/hcf)[67]

Commodity *Revenue Adjustment*[68]	Current	FY 2016	FY 2017 *2%*	FY 2018 *2%*	FY 2019 *2%*	FY 2020 *2%*
Effective Date	***Jan 1, 2015***	***Jan 1, 2016***	***Jan 1, 2017***	***Jan 1, 2018***	***Jan 1, 2019***	***Jan 1, 2020***
Zone L	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
All Other Zones	$0.25	$0.33	$0.34	$0.35	$0.36	$0.37

Table 8-19 summarizes the combined commodity and elevation charges for each tier for every year of the Study period. Note that because Zone L does not incur elevation charges, the commodity rates shown match those shown in Table 8-15. For all other zones, the combined rates are the sum of the commodity rates shown in Table 8-15 and the elevation charges shown in Table 8-18.

[67] *FY 2016 = Table 8-17 for all other zones, FY 2017 Rate = FY 2016 Rate * (1+2%), etc. Elevation Charges applied to usage in all tiers.*
[68] *From Table 4-10*

Table 8-19: Proposed 5-Year Combined Commodity and Elevation Charges ($/hcf)[69]

Commodity *RTS (% of Potable RTS)*	Current	FY 2016 *50%*	FY 2017 *60%*	FY 2018 *75%*	FY 2019 *85%*	FY 2020 *100%*
Effective Date	***Jan 1, 2015***	***Jan 1, 2016***	***Jan 1, 2017***	***Jan 1, 2018***	***Jan 1, 2019***	***Jan 1, 2020***
Las Virgenes Zone (Zone L)						
Tier 1	$1.09 /hcf	$1.18 /hcf	$1.19 /hcf	$1.19 /hcf	$1.18 /hcf	$1.16 /hcf
Tier 2	$1.42 /hcf	$2.91 /hcf	$2.83 /hcf	$2.67 /hcf	$2.52 /hcf	$2.27 /hcf
Tier 3	$2.26 /hcf	$3.73 /hcf	$3.67 /hcf	$3.52 /hcf	$3.37 /hcf	$3.13 /hcf
Tier 4	$3.51 /hcf	N/A	N/A	N/A	N/A	N/A
All Other Zones (Zone C/Q/M/W)						
Tier 1	$1.33 /hcf	$1.51 /hcf	$1.53 /hcf	$1.54 /hcf	$1.54 /hcf	$1.53 /hcf
Tier 2	$1.67 /hcf	$3.24 /hcf	$3.17 /hcf	$3.02 /hcf	$2.88 /hcf	$2.64 /hcf
Tier 3	$2.51 /hcf	$4.06 /hcf	$4.01 /hcf	$3.87 /hcf	$3.73 /hcf	$3.50 /hcf
Tier 4	$3.76 /hcf	N/A	N/A	N/A	N/A	N/A

[69] *Table 8-15 + Table 8-18. For example, FY 2016 Tier 1 Rate for Other zone = $1.18 / hcf + $0.33 / hcf = $1.51 / hcf*

9 SANITATION COST OF SERVICE ANALYSIS & RATE DESIGN

9.1 SANITATION COST OF SERVICE ANALYSIS

This section of the Report discusses the allocation of O&M expenses and capital costs to the appropriate parameters consistent with industry standards, the determination of unit costs, and calculation of costs by customer class for the Sanitation Utility.

To allocate the cost of service among the different customer classes, costs first need to be allocated to the appropriate wastewater parameters. The following sections describe the allocation of the operating and capital costs of service to the appropriate parameters of the sanitation system.

The total cost of sanitation service is analyzed by system function in order to equitably distribute costs of service to the various classes of customers. For this analysis, sanitation utility costs of service are developed consistent with the guidelines for allocating costs detailed in the Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 2004.

The sanitation COS analysis consists of seven major steps, as outlined below:

1. Determine non-residential customer flow and strength loadings based on water usage.
2. Conduct plant balance to estimate the flow and strength of the residential customer class taking into consideration infiltration and inflow (I&I).
3. Functionalize O&M and capital costs into categories such as Collection, Treatment, and Billing and Customer Service, etc.
4. Allocate each functional category into cost components such as Flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Billing and Customer Service.
5. Develop customer class characteristics by cost component.
6. Calculate the cost component rates by dividing the total cost in each cost component in Step 4 by the customer class characteristics in Step 5.
7. Calculate the cost by customer class by multiplying the unit cost in Step 6 by the customer class characteristics in Step 5.

9.1.1 Current Sanitation Classes of Service

The District currently has three classes of service – single family residential (SFR), multi-family residential (MFR), and Commercial. As detailed in Section 5.1, MFR customers are charged a flat rate of $34.99 per month for sanitation service.

Currently, SFR charges are based on monthly average winter use (December through March), because it is assumed there is less outdoor water usage during this period and it is a more accurate estimation of water use that flows as sewage to the District's treatment plant. The District is considering the implementation of a water budget rate structure for water services, which includes estimates of indoor use using individual household size (see Section 6.2) and estimated GPCD. For the purposes of estimating

wastewater flow, the District would be able to use the indoor use component of each customer's water budget.

For this Study, the District's existing definitions for commercial classes were retained, as outlined in Table 9-1. See the Appendix 3: Administrative Code Provision for Sanitation Classes of Service for detailed descriptions of each sanitation classes of service.

Table 9-1: Commercial Sanitation Classes of Service and Sanitation Strength Concentrations

Classes	Descriptions	BOD (mg/L)	TSS (mg/L)
Class 1	Light users: Schools and Offices, etc.	235	282
Class 2	Medium users: gas stations, shopping centers, etc.	635	415
Class 3	Moderately heavy users: restaurants, markets and mortuaries, etc.	1,000	700
Class 4	Heavy Industrial users	> 1,000	> 700

9.1.2 Plant Balance Analysis

The plant balance analysis is used to estimate and validate the sanitation loadings (flow and strength) generated by each customer class. While sanitation discharged into sewers is not metered when it enters the sanitation system, the total amount of flow and strength entering the treatment plant every day is a known quantity[70]. Additionally, non-residential customer flows and strengths can be estimated based on their water usage; non-residential customer strength concentrations are estimated based on the District's current classes of service (see Section 11.3 of the Appendix), as summarized in Table 9-1. The remaining loadings, net of the total less infiltration and inflow[71] (I&I), and non-residential and industrial, are assigned to residential customers. Based on this plant balance, the estimated residential flow for a regular single family residential customer is determined to be 149 gallons per day or 55 gallons per capita per day[72], which is an industry standard estimate of the amount of indoor water usage per person. The estimated residential strength concentration is 228 and 334 milligrams per liter (mg/l) of BOD and TSS, respectively, which is also an industry standard estimate of residential strength concentration.

The estimated loadings by customer class are shown in Table 9-2 including the assumed BOD and TSS loadings.

[70] *Provided by the District Staff for FY 2014*
[71] *Estimated by the District Staff*
[72] *Average density for the District residential classes = 2.75 (see Section 6.2). See Section 11.8 for detailed calculations for residential flows estimates*

Table 9-2: FY 2014 Plant Balance

Data for FY 2014		Flow (MGD)	BOD (lbs/day)	TSS (lbs/day)	Flow (hcf)	BOD (mg/L)	TSS (mg/L)
Total Treatment Plant Influent		4.93	11,196	13,315	2,403,897	272	324
Less I&I	5.8%	0.29	238	238	139,426	100	100
Net Plant		**4.64**	**10,957**	**13,077**	**2,264,471**	**283**	**338**
Non-Residential							
	Class 1	0.97	1,900	2,279	472,631	235	282
	Class 2	0.46	2,421	1,582	222,892	635	415
	Class 3	0.08	667	467	39,006	1,000	700
	Class 4	0.00	0	0	0	1,365	985
Total Non-Residential		**1.51**	**4,987**	**4,328**	**734,529**	**397**	**345**
Residential		**3.14**	**5,970**	**8,749**	**1,529,942**	**228**	**334**

Recommendations:

1. District Staff recommends using the indoor water budget to more accurately estimate sanitation flows generated by each service based on household size and 55 gallons per capita per day and to be consistent with the water usage and indoor water budget discussed in Section 6.2.1
2. RFC recommends that the District revise the hcf inclusive in the current ERU charges to 6.62 hcf/ ERU[73] for all commercial classes. This change would promote consistency with the estimated residential sanitation flows for a single residential unit, in a 30 day billing period, with 3 people per household (the standard household size for the District's service area, as estimated District staff).

9.1.3 Allocation of Revenue Requirements by Function

The sanitation 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 collecting the total amount of wastewater generated, but also treating and removing various nutrients from the flow. The separation of costs by function allows allocation of such costs to the functional cost components. Table 9-3 shows the FY 2015 O&M expenses by the different functional categories, as classified by District staff.

[73] *55 GPCD * 30 days / (748 gallons/hcf) * 3 people per household = 6.62 hcf / month*

Table 9-3: Allocation of Sanitation O&M Expenses by Function

	FY 2015	*Note*
Treatment	$9,780,325	*Purchased Services from JPA and City of LA, SCADA expenses*
Collection	$102,480	*Energy Cost (5405.1) of the Operating Expenses*
General - Billing & Customer Service	$1,152,340	*Administrative expenses of Operating budget*
General – Fixed Costs	$214,156	*Remaining Operating Budget – Other fixed costs*
Total	**$11,249,301**	

Similar to the District's O&M expenses, Assets are also functionalized by category. Table 9-5 summarizes the total value of the Sanitation Enterprise's assets by function, and the type of assets included.

Table 9-4: Allocation of Sanitation Assets by Function

Function	Asset Types	Total Asset Value as of June 30, 2013
General	Land & Land Rights	$111,235
Collection	Trunk Sewer	$4,154,604
Lift Stations	Lifting Plants	$3,272,791
Treatment	Investment in JPA **	$118,807,020
Treatment	Invest in JPA/Capitalized Interest	$6,737,157
Treatment	Investment in AWFP JPA	$35,038,646
General	Shop & Garage Equipment	$17,320
General	General Asset Allocated to Sanitation	$17,686,259
General	Construction In Progress	$182,615
	Total Asset	**$186,007,648**

9.1.4 Allocation of Functional Costs to Cost Components

In order to allocate costs of service to different customer classes, unit costs of service are developed. O&M expenses and capital costs are functionalized as collection, treatment, billing, administrative, etc. These total costs are then allocated to the flow, BOD, TSS, and customer parameters based on the design of each facility (Table 9-5). Collection systems are allocated to flow parameters. Treatment plant costs are allocated to flow, BOD, and TSS since the treatment plant is designed to treat those three components. The treatment allocations were confirmed by District staff based on their estimates of the JPA treatment plant's characteristics, which is consistent with the industry's observed standards.

Table 9-5: Allocation Factors of Functions to Cost Components

Sanitation Functions	Allocation Cost Components				
	Flow	BOD	TSS	Billing & CS	Fixed Costs
General Fixed Costs					100%
General – Billing & CS				100%	
Collection	100%				
Lift Stations	100%				
Treatment	60%	20%	20%		

The functionalized O&M expenses from Table 9-3 are allocated to each cost component based on the percentages found in Table 9-5 above. Table 9-6 summarizes the resulting totals allocated to each cost component for the Enterprise's O&M costs.

Table 9-6: Allocation Factors of O&M Functions to Cost Components

	FY 2015 *(From Table 9-3)*	Flow	BOD	TSS	Billing & CS	General
Treatment	$9,780,325	60%	20%	20%		
Collection	$102,480	100%				
General - Billing & Customer Service	$1,152,340				100%	
General Fixed Costs	$214,156					100%
Total	**$11,249,301**	**$5,970,675**	**$1,956,065**	**$1,956,065**	**$1,152,340**	**$214,156**

The functionalized asset list from Table 9-4 allocates each cost component based on the percentages found in Table 9-5 above. Table 9-7 summarizes the resulting totals allocated to each cost component for the District's sanitation-related assets. The sum of all the assets assigned to each cost component is divided by the total value of the assets to produce the capital cost allocation factor for each cost component, found at the bottom Table 9-7.

Table 9-7: Allocation of Sanitation Assets to Cost Components

	Asset Functions	Asset Value (in $M)	Flow	BOD	TSS	Billing & CS	General
1	Treatment	$160.582	60%	20%	20%		
2	Collection	$4.155	100%				
3	Lift Stations	$3.273	100%				
4	General - Billing & CS	$0				100%	
5	General	$17.997					100%
6	**Total**	**$186.007 (A)**	**$103.777 (B)**	**$32.116 (C)**	**$32,116 (D)**	**$0 (E)**	**$17.997 (F)**
7	**Capital Cost Allocation Factors**		**56% (B/A)**	**17% (C/A)**	**17% (D/A)**	**0% (E/A)**	**10% (F/A)**

9.1.5 Allocation of Revenue Requirements & Development of Unit Costs of Service

Proposition 218 requires a nexus between the rates charged and the costs of providing service. Based on the proposed financial plan, the cost of service analysis translates this financial requirement into actual rates. The first step in the cost of service analysis is to determine how much revenue is required to be collected from rates. The methodology used is based upon the premise that the utility must generate annual revenues adequate to meet its estimated annual expenses. As part of the cost of service analysis, several adjustments are made to the appropriate cost elements to ensure the adequate collection of revenue by determining the annual revenues needed from rates: revenues from sources other than rates and charges (e.g. revenues from miscellaneous services) which are deducted as shown in Table 9-8.

Table 9-8: Sanitation Revenue Requirement for FY 2015

		FY 2015	Notes
1	**REVENUE REQUIREMENTS**		
2	O&M Expenses	$11,249,301	*Table 5-9*
3	Debt Service	$1,845,800	*Table 5-9*
4	Rate Funded Replacement CIP	$1,684,699	*Table 5-9*
5	Transfers to Other Funds	$621,925	*Table 5-9*
6	Reserve Funding	$1,954,793	*Table 5-9*
7	**SUBTOTAL REVENUE REQUIREMENTS**	**$17,356,518**	
8			
9	***Less Non-Operating Revenues***		
10	Other Operating Revenues	$260,040	*Table 5-9*
11	Stand-By Fee, Property Tax, Assessments	$91,467	*Table 5-9*
12	Interest Income	$102,683	*Table 5-9*
13	**SUBTOTAL NON-OPERATING REVENUES**	**$454,190**	
14			
15	**NET REVENUE REQUIREMENTS**	**$16,902,328**	***Row 7 – Row 13***

In order to allocate costs of service to different customer classes, a unit cost of service needs to be developed for each cost component, which can be calculated as follows:

$$Unit\ Cost\ of\ Service = \frac{Total\ annual\ component\ costs}{Total\ annual\ service\ units}$$

This calculation is repeated for all components, such as flow, BOD, TSS, and accounts for billing costs.

Table 9-9 shows the service units, such as annual flow, total pounds of BOD and TSS, dwelling units, accounts, etc. for each customer class based on plant data. These service units are determined from the plant balance shown in Table 9-2 and from the customer data shown in Table 5-2. For residential customers, the indoor water budget values were used to estimate wastewater flow. In addition, the commercial ERU definitions were revised to 6.62 ERUs as recommended in Section 9.1.2.

Table 9-9: Revised Units of Service for FY 2015

		Flow	BOD	TSS	# of Bills	BOD	TSS	# of ERU
		hcf	lbs / day	lbs / day		mg / L	mg / L	
1	**Single Family**	**1,120,602**	**4,373**	**6,408**	**188,400**			
2	10 hcf or less	62,614	244	358	12,523	228	334	
3	11 hcf	12,214	48	70	2,315	228	334	
4	12 hcf	12,635	49	72	2,293	228	334	
5	13 hcf	12,635	49	72	2,215	228	334	
6	14 hcf	13,365	52	76	2,282	228	334	
7	15 hcf	13,554	53	78	2,271	228	334	
8	16 hcf or more	993,585	3,877	5,682	164,501	228	334	
9	**Multi Family**	**412,680**	**1,610**	**2,360**	**82,536**	228	334	
10	**Commercial**	**336,865**	**2,025**	**1,879**	**7,908**			**4,242**
11	Class 1	249,035	1,001	1,201	6,528	235	282	3,136
12	Class 2	76,632	832	544	1,128	635	415	965
13	Class 3	11,197	191	134	252	1,000	700	141
14	**Class 4**	0	0	0	0	1,365	985	0
15	**Commercial - Excess Usage**	**387,818**	**2,886**	**2,387**				
16	Class 1	218,435	878	1,053		235	282	
17	Class 2	142,451	1,547	1,011		635	415	
18	Class 3	26,932	461	322		1,000	700	
19	Class 4	0	0	0		1,365	985	
20								
21	**Residential Total**[74]	**1,533,282**	**5,983**	**8,768**	**270,936**			
22	**Commercial Total** [75]	**724,683**	**4,910**	**4,266**	**7,908**			**4,242**
23	Class 1	467,470	1,879	2,255	6,528			
24	Class 2	219,084	2,379	1,555	1,128			
25	Class 3	38,130	652	456	252			
26	Class 4	0	0	0	0			
27	**Total**	**2,257,965**	**10,893**	**13,034**	**278,844**			

[74] *Rows 1 + 9*

[75] *Rows 11 + 12 + 13 + 14 + 16 + 17 + 18 + 19 (or Rows 10 + 15)*

To determine the unit cost for each cost component, the total revenue requirement for each cost component must first be established. The cost components from O&M expenses (Row 1 in Table 9-10 below) are taken from Table 9-6. The cost component allocation for Debt Service (Row 2), Rate Funded Replacement CIP (Row 3), Transfer to Other Funds (Row 4), and Reserve Funding (Row 5) are determined by the Capital Cost Allocation Factors, found on Row 7 of Table 9-7. For example, the flow component for Debt Service is calculated as follows:

$$FY\ 2015\ Debt\ Service\ Revenue\ Requirement \times Capital\ Cost\ Allocation\ Factor\ for\ Flow\ (\%)$$
$$\$1{,}845{,}800 \times 55.79\% = \$1{,}029{,}806$$

The same calculation is repeated for Rows 3 through 5 for each cost component.

The net revenue requirement for each cost component is divided by their respective units of service from Table 9-9 to determine the unit cost of service for each cost component (shown on Row 14).

Table 9-10: Development of Unit Cost of Sanitation Service in FY 2015

		FY 2015	Flow	BOD	TSS	Billing & CS	General
1	O&M Expenses	$11,249,301	$5,970,675	$1,956,065	$1,956,065	$1,152,340	$214,156
2	Debt Service	$1,845,800	$1,029,806	$318,701	$318,701	$0	$178,593
3	Rate Funded Replacement CIP	$1,684,699	$939,924	$290,884	$290,884	$0	$163,005
4	Transfers to Other Funds	$621,925	$346,984	$107,383	$107,383	$0	$60,175
5	Reserve Funding	$1,954,793	$1,090,615	$337,520	$337,520	$0	$189,139
6	**TOTAL REVENUE REQUIREMENTS**	**$17,356,518**	**$9,378,004**	**$3,010,553**	**$3,010,553**	**$1,152,340**	**$805,068**
7			54%	17%	17%	7%	5%
8	**Less Non-Operating Revenues**[76]	$454,190	$245,406	$78,781	-$78,781	-$30,155	$21,067
9	**NET REVENUE REQUIREMENTS**[77]	**$16,902,328**	**$9,132,597**	**$2,931,772**	**$2,931,772**	**$1,122,185**	**$784,001**
10	Units of Service[78]		2,257,965	10,893	13,034	278,844	278,844
11			(hcf)	(lbs/day)	(lbs/day)	(bills/year)	(bills/year)
12	**Unit Cost of Service**[79]		**$4.04/hcf**	**$269.13/lb**	**$224.94/lb**	**$4.03/bill**	**$2.81/bill**

[76] *Allocated based on the allocation factors from Row 7 (based on revenue requirements allocated to cost components: Flows, BOD, TSS, Billing & CS, General)*
[77] *Row 6 – Row 8*
[78] *From Row 26 of Table 9-9*
[79] *Row 9 / Row 10*

9.1.6 Allocation of Costs to Customer Class

The unit cost of each of the cost categories shown in Table 9-10 is then applied to the revised FY 2015 service units (Table 9-9) of each customer class to derive customer class costs shown in Table 9-11. Fixed Costs include billing and customer service and general costs. The residential class includes single family and multi-family residential services.

Table 9-11: Sanitation COS Allocation to Customer Class

		Flow	BOD	TSS	Fixed Costs
Unit Cost of Service	*From Table 9-10*	**$4.04**	**$269.13**	**$224.94**	**$6.84**
		$ / hcf	$ / lb	$ / lb	$ / bill
Residential	*Units of Service*	1,533,282 hcf	5,983 lbs	8,768 lbs	270,936 bills
	$	**$6,201,533**	**$1,610,295**	**$1,972,187**	**$1,852,127**
Commercial	*Units of Service*	724,683 hcf	4,910 lbs	4,266 lbs	7,908 bills
	$	**$2,931,064**	**$1,321,477**	**$959,585**	**$54,059**
Total		**$9,132,597**	**$2,931,772**	**$2,931,772**	**$1,906,186**

Table 9-12 summarizes the flow-based costs (includes flow, BOD, and TSS) versus the fixed costs for both residential and commercial customers.

Table 9-12: FY 2015 Sanitation COS Allocation to Customer Class Summary

	Flow Based[80]	Fixed Costs[81]	Total	% of Rev
Residential	$9,784,015	$1,852,127	$11,636,142	69%
Commercial	$5,212,126	$54,059	$5,266,186	31%
Total	**$14,996,141**	**$1,906,186**	**$16,902,328**	

To determine the unit rate for residential customers for both flow-based costs and fixed costs, the total flow-based costs are divided by the units of service, yielding $6.39 per hcf treated. The same calculation is performed for fixed costs, using accounts as the units of service, yielding $6.84 per bill – as shown in Table 9-13

Table 9-13: FY 2015 Residential Unit Sanitation Rate by Rate Component

Residential	FY 2015	Units of Service	Unit Rate
Flow Based	$9,784,015	1,533,282 hcf	**$6.39 /hcf**
Fixed Costs	$1,852,127	270,936 bills	**$6.84 /bill**

[80] *Include Flow, BOD and TSS Costs*
[81] *Include Billing & Customer Service and General Costs*

Similar to the calculation performed above for residential customers, the flow-based unit rate for each commercial class is shown in Table 9-14 below. Note that the fixed cost unit rate of $6.84 per bill is identical for both residential and commercial customers.

Table 9-14: FY 2015 Commercial Unit Sanitation Rate by Rate Component

Commercial	FY 2015	Units of Service	Unit Rate
Fixed Costs	$54,059	7,908 bills	**$6.84 /bill**
Flow Based	$5,212,126		
Class 1	$2,903,514	467,470 hcf	**$6.22 /hcf**
Class 2	$1,876,211	219,084 hcf	**$8.57 /hcf**
Class 3	$432,401	38,130 hcf	**$11.35 /hcf**
Class 4[82]	$0	0 hcf	**$14.29 /hcf**

9.1.7 Proposed Sanitation Rates

The proposed sanitation rates for residential and commercial customers for the Study period is summarized in Table 9-15 below. The "Revised COS" rates shown in Column A are taken from Table 9-13 (residential) and Table 9-14 (commercial). The Revised COS rates for FY 2015 are then multiplied by the revenue adjustment factor to determine the rates for each of the Study period.

Table 9-15: Proposed 5-year Sanitation Rates by Rate Components

		Revised COS	1/1/2016	1/1/2017	1/1/2018	1/1/2019	1/1/2020
		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		A	B	C	D	E	F
1	**Proposed Rev Adjustment**		2%	2%	2%	2%	2%
2	**Residential**						
3	**Fixed Costs**	$6.84 /bill	$6.98 /bill	$7.12 /bill	$7.27 /bill	$7.42 /bill	$7.57 /bill
4	**Flow Based**	$6.39 /hcf	$6.52 /hcf	$6.66 /hcf	$6.80 /hcf	$6.94 /hcf	$7.08 /hcf
5							
6	**Commercial**						
7	**Fixed Costs**	$6.84 /bill	$6.98 /bill	$7.12 /bill	$7.27 /bill	$7.42 /bill	$7.57 /bill
8	**Flow Based**						
9	**Class 1**	$6.22 /hcf	$6.35 /hcf	$6.48 /hcf	$6.61 /hcf	$6.75 /hcf	$6.89 /hcf
10	**Class 2**	$8.57 /hcf	$8.75 /hcf	$8.93 /hcf	$9.11 /hcf	$9.30 /hcf	$9.49 /hcf
11	**Class 3**	$11.35 /hcf	$11.58 /hcf	$11.82 /hcf	$12.06 /hcf	$12.31 /hcf	$12.56 /hcf
12	**Class 4**	$14.29 /hcf	$14.58 /hcf	$14.88 /hcf	$15.18 /hcf	$15.49 /hcf	$15.80 /hcf

[82] *Estimated based on 1,365 mg/L BOD, 985 mg/L TSS strengths, the rates will be calculated based on actual strengths of each customer in this class. Currently, the District does not have any users classified as Class 4.*

Based on the recommendation found in Section 9.1.2, the District proposes to use the indoor water budget for residential customers to estimate wastewater flow. Column A in Table 9-16 is the estimated flow for the corresponding household size found in Column B. The value in Column A for a three-person household is calculated as follows:

$$\frac{30\ Days\ of\ service\ \times Household\ size\ \times 55\ Gallons\ per\ capita\ per\ day}{Gallons\ per\ hcf}$$

$$\frac{30\ Days\ of\ Service\ \times 3\ persons\ \times 55\ gallons\ per\ capita\ per\ day}{748\ gallons} = 6.62$$

The total bill for sanitation service in FY 2016 for a three-person household is calculated as follows:

$$(Estimated\ sanitation\ flows\ \times residential\ \ flow\ based\ unit\ rate^{83}) + fixed\ rate$$
$$(6.62\ hcf\ \times \$6.52) + \$6.98$$
$$\$50.13 + \$6.98 = \$57.11$$

Table 9-16: Proposed 5-year Residential Sanitation Rates

	Est. Sanitation Flows for 30 days of service (A)	Household Size (B)	1-Jan-16 FY 2016 (C)	1-Jan-17 FY 2017 (D)	1-Jan-18 FY 2018 (E)	1-Jan-19 FY 2019 (F)	1-Jan-20 FY 2020 (G)
1	2.2 hcf	1	$21.37	$21.82	$22.27	$22.73	$23.19
2	4.4 hcf	2	$35.75	$36.51	$37.27	$38.04	$38.81
3	6.6 hcf	3	$50.13	$51.20	$52.27	$53.35	$54.43
4	8.8 hcf	4	$64.51	$65.89	$67.27	$68.66	$70.05
5	11.0 hcf	5	$78.90	$80.58	$82.27	$83.97	$85.66
6	13.2 hcf	6	$93.28	$95.27	$97.27	$99.28	$101.28

Sanitation rates for commercial customers for each year of the Study period are shown in Table 9-17 below. The account service charges (Rows 2-5) are from the fixed rates established in Row 7 of Table 9-15. As noted earlier, the account service charges are the same for both residential and customers.

The ERU charges for commercial customers recovers the flow-based costs for 6.62 hcf, equivalent sanitation flows of a single residential unit in a 30 day billing period. Any flows beyond the 6.62 hcf/ERU are subject to the excess use charges found in Table 9-17 below. For example, the sanitation bill for a Class

[83] *Unit hcf rate and fixed rate for residential customers for FY 2016 are found in Column B of Table 9-15*

3 commercial customer, with a 5 ERU assignment, with 50 units of flow, would be calculated as follows for FY 2016:

$$(ERU \times Class\ 3\ ERU\ rate) + \{[Usage - (6.62\,hcf\ Included\ flow\ per\ ERU\ per\ month \times ERU)] \times Class\ 3\ excess\ usage\ rate\} + fixed\ rate$$

$$5\ ERUs \times \$76.56/ERU + \{[50 - (6.62hcf/ERU \times 5ERUs)] \times \$11.58\} + \$6.98$$
$$\$382.80 + (16.91\ hcf \times \$11.58/hcf) + \$6.98$$
$$\$382.80 + \$195.82 + \$6.98 = \$585.60$$

Table 9-17: Proposed 5-year Commercial Sanitation Rates

			FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
			1/1/2016	1/1/2017	1/1/2018	1/1/2019	1/1/2020
	A		B	C	D	E	F
1	**Account Service Charges ($ / bill)**						
2	Class 1		$6.98	$7.12	$7.27	$7.42	$7.57
3	Class 2		$6.98	$7.12	$7.27	$7.42	$7.57
4	Class 3		$6.98	$7.12	$7.27	$7.42	$7.57
5	Class 4		$6.98	$7.12	$7.27	$7.42	$7.57
6							
7	**ERU Charges ($ / month)**						
8	Class 1	6.62 hcf	$41.94	$42.78	$43.64	$44.52	$45.42
9	Class 2	6.62 hcf	$57.82	$58.98	$60.16	$61.37	$62.60
10	Class 3	6.62 hcf	$76.56	$78.10	$79.67	$81.27	$82.90
11	Class 4	6.62 hcf	$96.36	$98.29	$100.26	$102.27	$104.32
12							
13	**Excess Usage Charges ($ / hcf)**						
14	Class 1	In excess of 6.62hcf	$6.35	$6.48	$6.61	$6.75	$6.89
15	Class 2	In excess of 6.62hcf	$8.75	$8.93	$9.11	$9.30	$9.49
16	Class 3	In excess of 6.62hcf	$11.58	$11.82	$12.06	$12.31	$12.56
17	Class 4	In excess of 6.62hcf	$14.58	$14.88	$15.18	$15.49	$15.80

10 CUSTOMER IMPACT ANALYSIS

10.1 POTABLE WATER CUSTOMER IMPACT ANALYSIS

The customer impacts shown in Figure 10-1 compares the dollar impact of FY 2015 versus the proposed FY 2016 rates, using FY 2014 account-level potable water usage data. The data set includes all potable accounts in the analysis. As shown below, nearly a third of potable customers would see an increase in their potable water bills in the amount of $10 to $25 per billing cycle.

Figure 10-1: Potable Water Customer Impacts

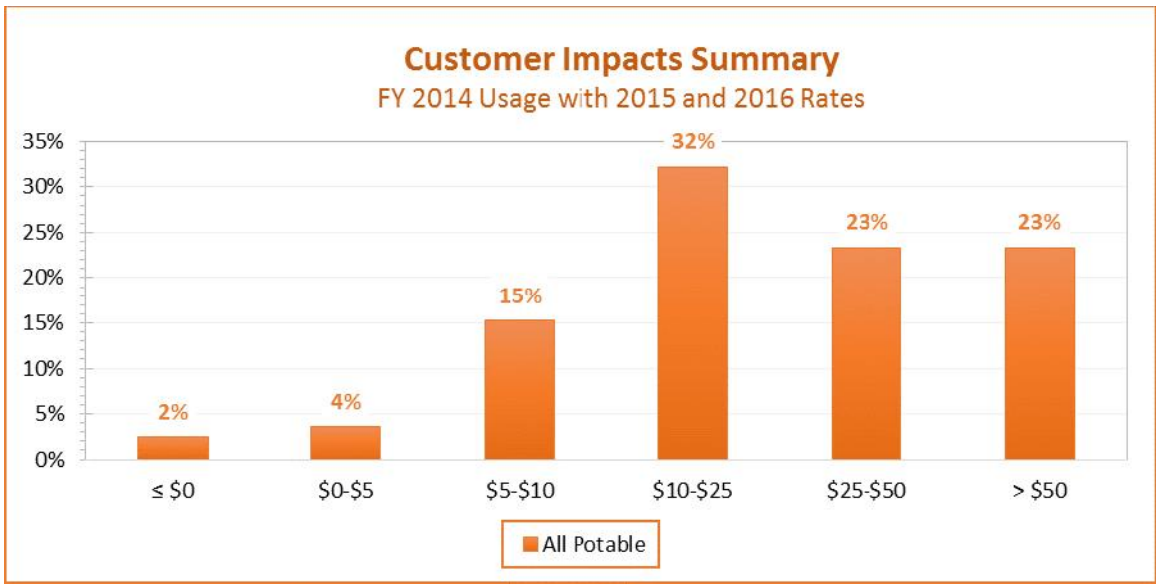
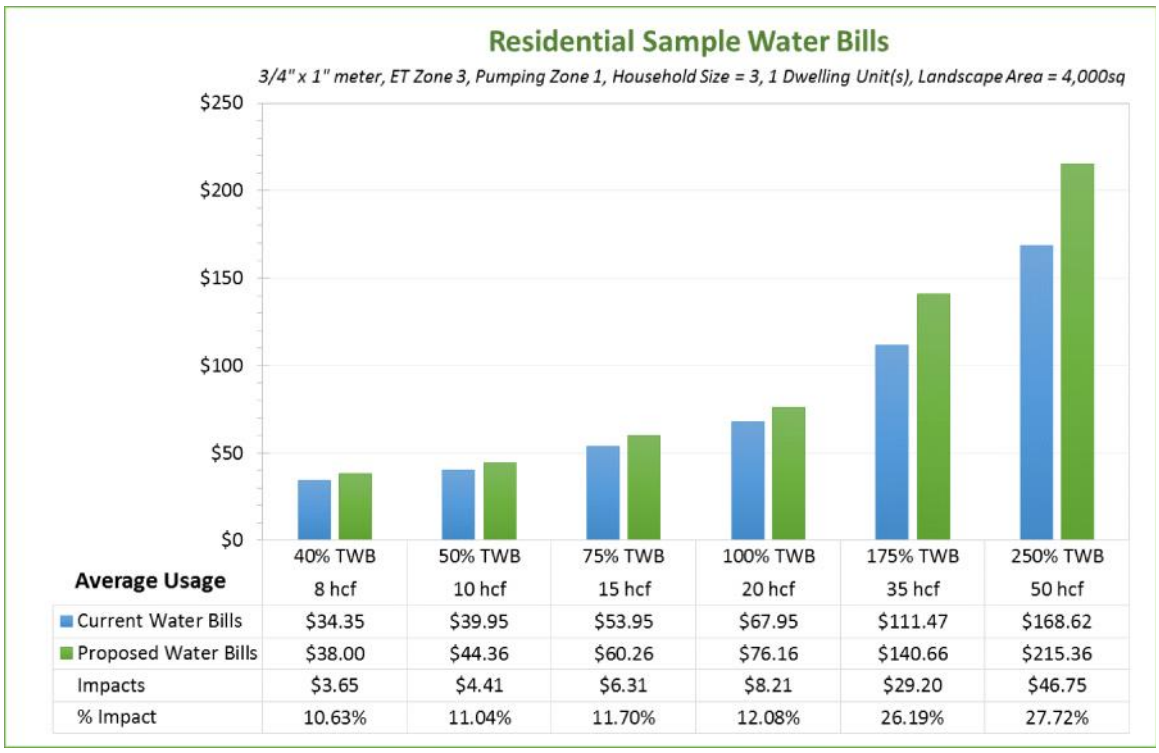


Figure 10-2[84] compares the average month of potable water usage for residential customers for the current rates and the proposed rates. While customers who stay within the newly defined proposed water budget will experience a 10-12 percent increase, residential customers using over 35 hcf will experience increases over 25 percent.

[84] *See Figure 10-5 for impacts of combined potable water and sanitation residential bills*

Figure 10-2: Residential Sample Potable Water Bills for Average Month at Proposed FY 2016 Rates



Average Usage	40% TWB	50% TWB	75% TWB	100% TWB	175% TWB	250% TWB
	8 hcf	10 hcf	15 hcf	20 hcf	35 hcf	50 hcf
Current Water Bills	$34.35	$39.95	$53.95	$67.95	$111.47	$168.62
Proposed Water Bills	$38.00	$44.36	$60.26	$76.16	$140.66	$215.36
Impacts	$3.65	$4.41	$6.31	$8.21	$29.20	$46.75
% Impact	10.63%	11.04%	11.70%	12.08%	26.19%	27.72%

10.2 Recycled Water Customer Impact Analysis

As a result of the proposed recycled water rates and water budget definitions, roughly 20 percent of recycled water customers will experience a decrease in their bill (Figure 10-3). Figure 10-4 shows the sample recycled water bills under proposed water budget rates for recycled water service with 1 ½ inch meter, in pumping zone L, ET Zone 3 (West Lake station) with an irrigable area of 50,000 sq ft. Recycled water services with different meter sizes and irrigable areas in different pumping zone and ET zones will have different billed amounts and customer impacts for the same usage level, as the water budget will be different.

Figure 10-3: Recycled Water Customer Impacts

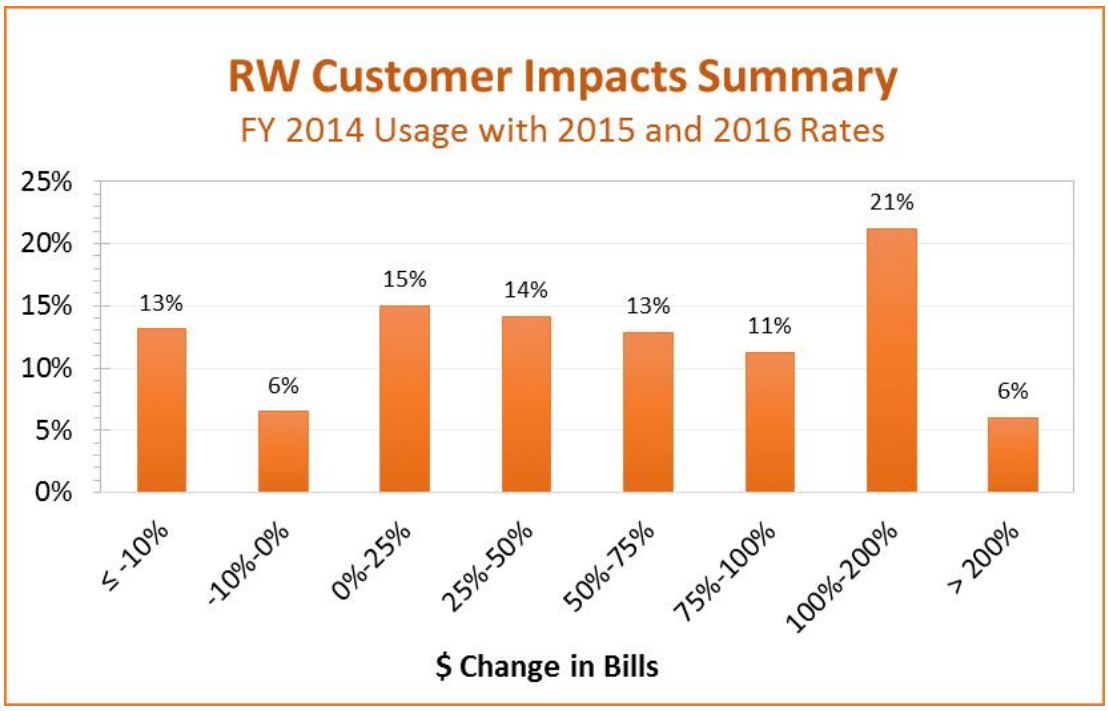
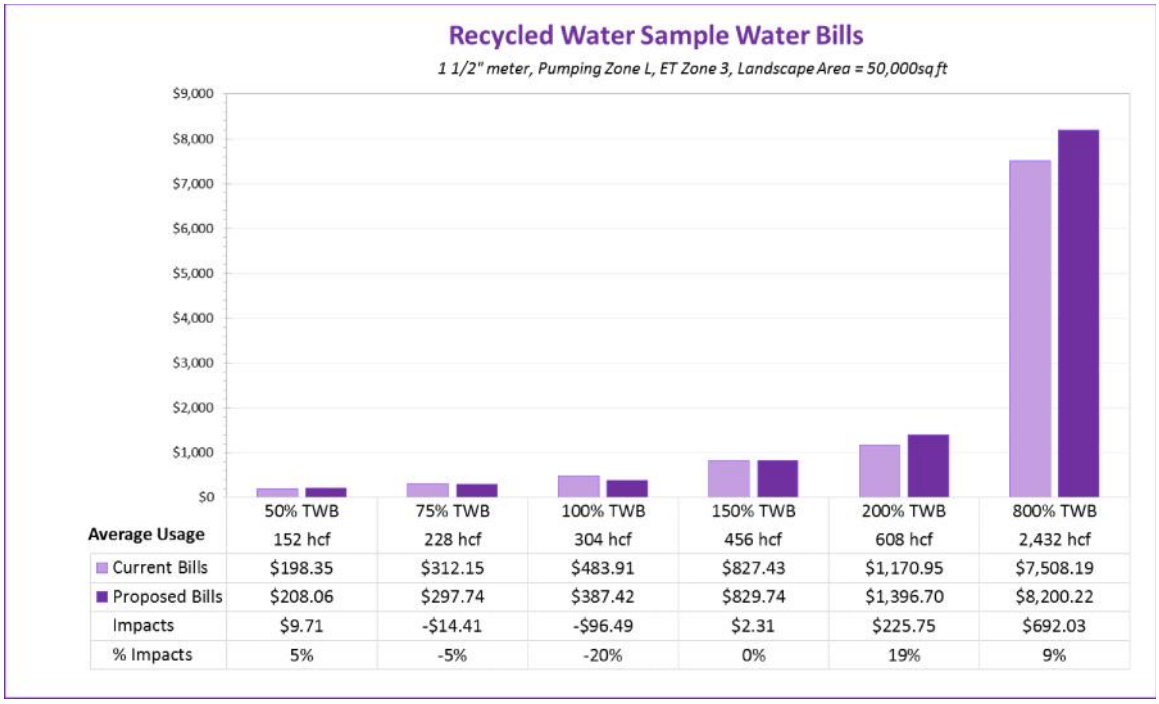


Figure 10-4: Recycled Water Sample Bills for Average Month at Proposed FY 2016 Rates



Average Usage	50% TWB 152 hcf	75% TWB 228 hcf	100% TWB 304 hcf	150% TWB 456 hcf	200% TWB 608 hcf	800% TWB 2,432 hcf
Current Bills	$198.35	$312.15	$483.91	$827.43	$1,170.95	$7,508.19
Proposed Bills	$208.06	$297.74	$387.42	$829.74	$1,396.70	$8,200.22
Impacts	$9.71	-$14.41	-$96.49	$2.31	$225.75	$692.03
% Impacts	5%	-5%	-20%	0%	19%	9%

10.3 Sanitation Customer Impact Analysis

As a result of the COS analysis for the Sanitation Enterprise, the revenue requirement for residential customers is 10 percent lower than the status quo. Conversely, the revenue requirement for commercial customers is 35 percent higher than the status quo. These percentage changes to respective revenue requirements results in a zero sum gain/loss for the enterprise, as shown in Table 10-1 below.

Table 10-1: Sanitation Customer Impact Analysis for Revised COS Rates

	FY 2015 Revised COS	Current Rev	% Change
Residential	$11,636,142	$13,000,814	-10%
Commercial	$5,266,186	$3,901,514	35%
Total	**$16,902,328**	**$16,902,328**	**0%**

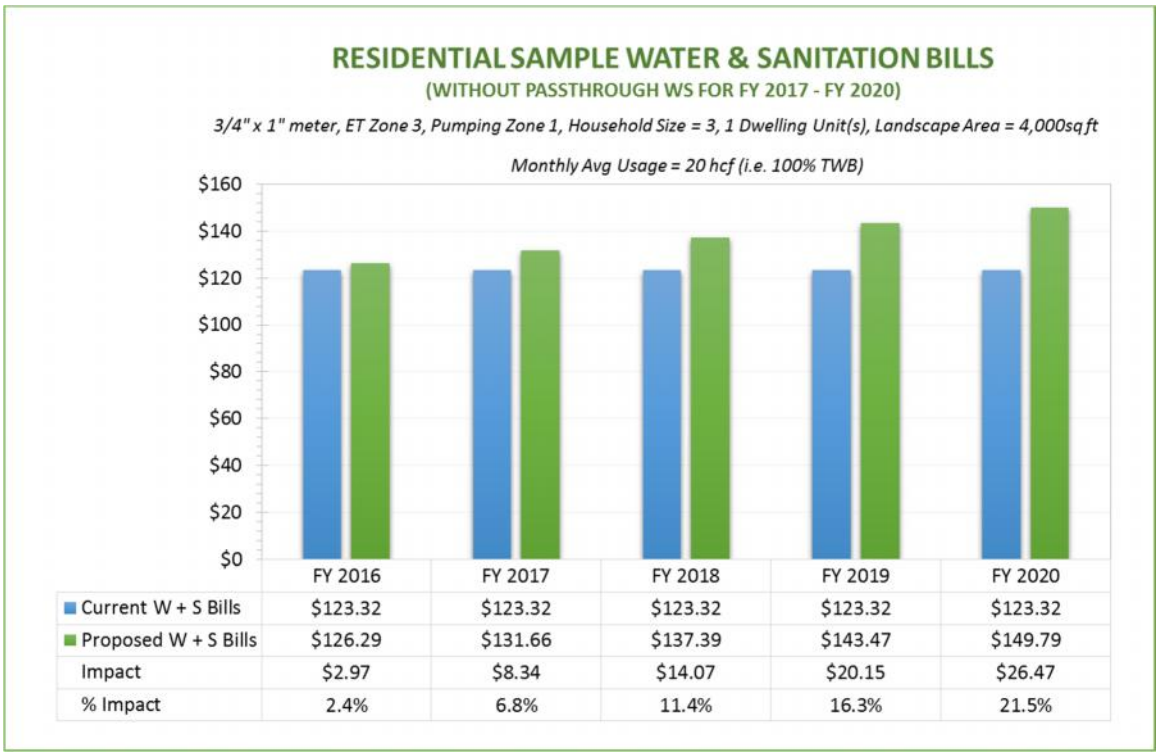
Based on the new COS, typical residential sanitation customer will initially experience a 10 percent reduction in their bills. The required revenue adjustment will increase residential sanitation rates over the Study period, but rates in FY 2020 will still be below the status quo residential rates. For commercial customers, the rates are proposed to increase by 35 percent initially, with marginal revenue adjustments for each year of the Study period.

Table 10-2: Multi-Year Sanitation Customer Impact Analysis for Proposed Rates

	FY 2015 Current	FY 2015 Revised	FY 2016 Proposed	FY 2017 Proposed	FY 2018 Proposed	FY 2019 Proposed	FY 2020 Proposed
Residential	$13.001	$11.636	$11.869	$12.106	$12.348	$12.595	$12.847
Commercial	$3.902	$5.266	$5.372	$5.479	$5.589	$5.700	$5.814
Total Revenues (in Millions $)	**$16.902**	**$16.902**	**$17.240**	**$17.585**	**$17.937**	**$18.296**	**$18.662**
% Impact (w.r.t Current Rev)		**0.0%**	**2.0%**	**4.0%**	**6.1%**	**8.2%**	**10.4%**
Residential		-10.5%	-8.7%	-6.9%	-5.0%	-3.1%	-1.2%
Commercial		35.0%	37.7%	40.4%	43.2%	46.1%	49.0%

Figure 10-5 compares the bill totals for combined residential potable water and sanitation service at currents rates versus the proposed rates for a typical residential account with 3 people per household and 4,000 sq ft landscape area on average month. The analysis uses the most common meter size of ¾" x 1" for residential customers at an average monthly usage of 20 hcf (using at 100% TWB).

Figure 10-5: 5-year Residential Potable Water & Sanitation Combined Bill Impacts



	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Current W + S Bills	$123.32	$123.32	$123.32	$123.32	$123.32
Proposed W + S Bills	$126.29	$131.66	$137.39	$143.47	$149.79
Impact	$2.97	$8.34	$14.07	$20.15	$26.47
% Impact	2.4%	6.8%	11.4%	16.3%	21.5%

11 APPENDICES

11.1 APPENDIX 1: PRIOR RESERVE POLICY (ADOPTED PRIOR TO JULY 2015)

ADOPTED FINANCIAL POLICIES

POLICY 1: Restricted Cash

The District will maintain cash, to be used solely for its intended purpose, in an amount equal to funds restricted by legal requirements, contractual agreements and trustee requirements.

The District is limited in the means in which it may use certain cash ("restricted cash") due to legal and contractual requirements.

Other reserves/funds are unrestricted; they are established by Board direction to address potential needs as defined in the policies that follow. Unrestricted reserves may be adjusted in amount and directed for needs other that those initially contemplated, but funds described in Policy 7 for replacement/major maintenance must be used only for needs of the enterprise from which the funds were generated.

AB 1600 requires that development impact fees ("capacity fees") and interest generated from such can only be used for capital projects related to expansion, not replacement or enhancement. These funds are maintained separately in the appropriate enterprise **Construction Fund**.

Vested sick leave results from contractual obligations with employees. Cash is maintained in an amount equal to the vested sick leave obligation. Upon voluntary termination, retirement or death of an employee, the vested sick leave accrual is paid to the employee or their beneficiary.

Trust funds hold cash that has been deposited with the District for future obligations that may or may not occur. These obligations include developer/customer deposits and pre-funding by Triunfo Sanitation District for their portion of JPA capital projects and 3 months operating expense.

A **Bond covenant** is cash held as a surety that the annual bond payment and interest will be made. The official documents of the bond transactions require that funds be deposited and maintained with the trustee until the final bond payment is made or the bond issue is defeased. If the District had to draw on this reserve to pay any portion of the debt service payment before the issue had fully matured, the District would be in technical default and the trustee could require the District to pay off the bondholders at once. The District's refunding bond reserve has been deposited through the bond trustee, Bank of New York, in the state of California's Local Agency Investment Fund ("LAIF"). The current bond coverage required for the district is that net operating income must be at least 110% of the maximum annual debt service.

POLICY 2: Balanced Budget/Annual Board Review

The District will maintain a balanced operating budget for each enterprise fund with annual revenues equal to or greater than annual expenditures. However, the Board may determine that reserves be used to augment operating revenues under certain circumstances. The Board will review annually the working capital, cash, projected income and bond coverage levels to determine the adequacy of each.

If in any given fiscal year operating expenditures will exceed the operating revenue projected in the same year, causing a budget imbalance, cost cutting measures or revenue enhancements may be addressed before spending reserves to support on-going operations. Cost cutting measures may include reductions in capital improvement projects, reductions in staff or reductions in expenditures for materials, services, or supplies. Such expenditure or staff reductions may result in reduced service levels. Alternatively, the Board may determine that circumstances warrant taking money from reserves to offset expenses larger than operating income.

At year-end, net revenue after expenses ("income") will be transferred to funds as directed by the Board, subject to any legal limitations on the Board's discretion. Funds balances are addressed annually as part of the budgeting process.

Available cash in the various funds reflects the District's ability to pay current bills and commitments, as well as underwriting the risk level the District is willing to accept.

POLICY 3: Rate Stabilization Fund

The District will maintain a Rate Stabilization Fund to maintain rate stability for customers in times when short or mid-term cash needs are volatile.

The District's potable water operating revenue can vary greatly based on climatic conditions. During periods of heavy rain, potable water revenue drops significantly from the three year average at which revenues are budgeted. During significantly hot, dry periods, a reverse trend is seen wherein significant revenue is generated by higher sales than the three year average. During periods of extended water shortage, when customers are asked to reduce consumption, the impact on potable water revenue is similar to the effect of heavy rain. Rather than raising water rates on a temporary basis to cover expenses during these times, the Rate Stabilization Fund (RSF) allows the Board to balance operating revenue to operating expenses by a transfer.

POLICY 4: Financing Alternatives

As part of the annual Infrastructure Investment Plan (IIP) budgeting process, the District will examine options available to pay for the proposed projects, including the option of financing.

Each year the Board reviews needs for capital improvements and major maintenance over the next five years (the capital improvement plan "CIP"). Expenditures are projected on an annual basis, but the

available fund balance for replacement or major maintenance is not always adequate to cover the need when it arises. The Board favors a pay-as-you-go program for the IIP program, but the District may not have funds available to pay for projects in any given year, or projects anticipated in future years may be of a type that would be difficult to finance. Such considerations may dictate financing as the preferred alternative. If a project requires substantial expenditures over several years and interest rates are low, the District may consider issuing financing now and reserving the available funds for need at times when interest rates are higher.

The Board has determined that debt service should not exceed 15% percent of reliable revenue sources.

POLICY 5: Fiscal Impact Analysis

Staff shall prepare a fiscal impact analysis for each budget appropriation request not included as part of the Annual Budget. Available fund balances are intended to be appropriated only for "one-time" nonrecurring expenditures not covered by the current annual budget.

When non-budgeted items are brought before the Board for consideration, the resulting fiscal impact will be analyzed. The Board requires all requests for new or supplemental budget appropriations to be accompanied by a fiscal impact statement including:

- Amount of funds requested
- Source of funds requested
    - New revenue
    - Reallocation of existing appropriations
    - Grants
- Impact of Request
    - New rates or fees
    - Decrease in one activity to support another activity
    - Effect on fund balance

POLICY 6: Operating Funds Cash Requirement

The District will maintain cash (net of restricted cash) in the Operations Fund of each enterprise equivalent to 25% of the operating budget (and eliminate the requirement for one-year's debt service obligation. This change in policy will increase the potable water reserve balance but should be tempered with a requirement to maintain a working capital reserve for operations and one year's debt service in the sanitation operating fund each year, which would be approximately $5.2 million.)

An available cash reserve to cover operating shortfalls is a prudent management practice to be used for both short term cash flow and contingency planning for unforeseen situations. Examples Include:

- Unexpected increases in costs or declines in revenues
- Legislative or judicial mandate to provide a new or expanded service or program
- Natural disaster emergencies which exceed the Emergency/Insurance Fund
- One-time Board approved non-capital expenditures or capital need if the IIP fund is inadequate

- Interruptions in billing process to customers

If such unforeseen circumstances occur, staff will present the Board with options for curing the deficiency, including use of this fund.

POLICY 7: Replacement and Major Maintenance Fund by Enterprise (potable water, sanitation, recycled water)

Each of the District's three enterprises will maintain a Replacement Fund for major maintenance, replacement and improvement of facilities and infrastructure not related to growth. The source of funds will be current user fees. Each Replacement Fund will maintain cash levels deemed adequate to cover that enterprise's projected needs for three years according to annually revised, five year Infrastructure Investment Plan (IIP). If a replacement fund's cash target is exceeded, the Board will consider using the excess for prepayment of outstanding debt, if appropriate.

Prudent stewardship of assets requires that maintenance be performed to postpone or decelerate the aging process. As a general rule, maintenance costs for an item become more expensive as the asset ages. Also, changes in technology could result in replacing an asset with one which provides lower operating expenses or greater revenues or replacement of assets may be required due to changes in regulatory standards.

Major maintenance and replacement are on-going operating costs that should be paid for by user fees. Appropriate cash levels within a Replacement Fund enables the District to pay for planned or unplanned projects in any given year.

The water stand-by charge is levied against developed and undeveloped land and is dedicated to maintenance and replacement of potable water infrastructure and facilities. Recognizing that undeveloped land has added value because of the availability of potable water service, these owners have a vested interest in seeing the system maintained.

POLICY 8: New Construction Fund by Enterprise

The District will pay for expansion or new facilities necessitated by growth from capacity fees collected from new development and maintained in the appropriate enterprise's Construction Fund.

Current ratepayers should not be burdened with costs associated with growth due to new development. The fair share of cost of expansion will be borne by the developers through capacity fees.

The District has a master plan that identifies projected infrastructure and facility needs through build-out and is used as the basis for determining capacity fees. Capacity fees may be pledged for debt service payments, if the need for the expansion occurs before adequate capacity fees can be collected.

Prepaid capacity fees not used are subject to refund with interest, provided the developer has not started his project and the District has not begun construction on the system.

POLICY 9: Internal Service Replacement Fund for Buildings, Vehicles and Equipment

The Internal Service Fund will have revenues (i.e. user charges, interest income and all other income) sufficient to meet operating expenses, maintenance costs, depreciation expense, an inflation factor for other needs not exclusive to one of the three enterprises.

The District uses the internal service fund as an internal accounting and budget mechanism to equitably distribute general operating costs such as for buildings, vehicle and equipment replacement and maintenance costs among District user programs and to assure that adequate funding is on hand to replace or maintain these assets.

POLICY 10: Emergency/Insurance Fund

The District will maintain an Emergency/Insurance Fund to cover deductibles, self-insurance retentions, claims not covered by insurance, fines and penalties imposed by regulatory agencies and disaster repairs and expenses. The target for this Fund is two percent (2%) of the total value of capital assets, including LVMWD's share of the Joint Power's Authority capital assets. The Board must approve any expenditure from this Fund.

To protect the investment in assets and to ensure continuation of District operations, the District purchases insurance for general liability, property and worker's compensation. The District has the responsibility to pay for deductibles or self-insurance retentions. Also, the District has some risks that may not be economically or actually insured, such as certain types of pollution (odor), flood, and mold. Also, the insurance on District's sewer lines or water lines is limited to the cost of emergency clean-up and does not include the cost of repairing the failure. Because of this potential exposure, the District has established the Emergency/Insurance Fund at two-percent of the value of capital assets less the value of land, which amount will be determined annually after the audit. The Fund can only be used when approved by the Board.

This policy is in line with our experience in having to pay damages that are not covered by insurance and cover expenses that are not reimbursed on a timely basis by FEMA. Like the Rate Stabilization Fund, not having the Emergency/Insurance Fund available in the event of a disaster could significantly impact our cash flow and possibly impact future utility rates during troublesome times.

POLICY 11: Recycled Water Operations Reserves

When the operating reserves for recycled water exceed the amount required in Policy 6 (Operating Funds Cash Requirement) plus Policy 7 (Replacement and Major Maintenance Fund by Enterprise), the District may use the net reserves to pay for research, studies and construction of projects to increase the beneficial use of recycled water and/or set aside funds to ultimately pay for (pay-go) or service the debt

associated with a seasonal storage reservoir for recycled water, if the expenditure is approved by the Board.

The Tapia Water Reclamation Facility treats wastewater to such a level that the result can be sold as recycled water. Although the recycled water is considered a valuable asset to the District because recycled water can replace some irrigation uses, thus lowering the demand for potable water, there are times of the year that the District accumulates more recycled water than customers can use and the District has to pay to dispose of the excess recycled water.

The District's goal is to make recycled water available to as many customers as is practical as a way of conserving potable water. To that end, funds in the Recycled Water Operations reserve that are available after the fund has met its requirements for having a cash balance equivalent to 25% of the operating budget for recycled water and for having funds available for replacement and major maintenance as specified in the annual Infrastructure Investment Plan (reserves equivalent to three years of capital improvement projects) can, at the Board's discretion and upon approval, be used to pay for research, studies and construction of projects to increase the beneficial use of recycled water and/or to set funds aside to ultimately pay for (pay-go) or service the debt associated with a seasonal storage reservoir for recycled water.

11.2 Appendix 2: Revised Reserve Policy (Adopted as of July 14, 2015)

ADOPTED FINANCIAL POLICIES

POLICY 1: Restricted Cash

The District will maintain cash, to be used solely for its intended purpose, in an amount equal to funds restricted by legal requirements, contractual agreements and trustee requirements.

The District is limited in the means in which it may use certain cash ("restricted cash") due to legal and contractual requirements.

Other reserves/funds are unrestricted; they are established by Board direction to address potential needs as defined in the policies that follow. Unrestricted reserves may be adjusted in amount and directed for needs other that those initially contemplated, but funds described in Policy 7 for replacement/major maintenance must be used only for needs of the enterprise from which the funds were generated.

AB 1600 requires that development impact fees ("capacity fees") and interest generated from such can only be used for capital projects related to expansion, not replacement or enhancement. These funds are maintained separately in the appropriate enterprise **Construction Fund**.

Vested sick leave results from contractual obligations with employees. Cash is maintained in an amount equal to the vested sick leave obligation. Upon voluntary termination, retirement or death of an employee, the vested sick leave accrual is paid to the employee or their beneficiary.

Trust funds hold cash that has been deposited with the District for future obligations that may or may not occur. These obligations include developer/customer deposits and pre-funding by Triunfo Sanitation District for their portion of JPA capital projects and 3 months operating expense.

A **Bond covenant** is cash held as a surety that the annual bond payment and interest will be made. The official documents of the bond transactions require that funds be deposited and maintained with the trustee until the final bond payment is made or the bond issue is defeased. If the District had to draw on this reserve to pay any portion of the debt service payment before the issue had fully matured, the District would be in technical default and the trustee could require the District to pay off the bondholders at once. The District's refunding bond reserve has been deposited through the bond trustee, Bank of New York, in the state of California's Local Agency Investment Fund ("LAIF"). The current bond coverage required for the district is that net operating income must be at least 110% of the maximum annual debt service.

POLICY 2: Balanced Budget/Annual Board Review

The District will maintain a balanced operating budget for each enterprise fund with annual revenues equal to or greater than annual expenditures. However, the Board may determine that reserves be used to augment operating revenues under certain circumstances. The Board will review annually the working capital, cash, projected income and bond coverage levels to determine the adequacy of each.

If in any given fiscal year operating expenditures will exceed the operating revenue projected in the same year, causing a budget imbalance, cost cutting measures or revenue enhancements may be addressed before spending *reserves* to support on-going operations. Cost cutting measures may include reductions in capital improvement projects, reductions in staff or reductions in expenditures for materials, services, or supplies. Such expenditure or staff reductions may result in reduced service levels. Alternatively, the Board may determine that circumstances warrant taking money from reserves to offset expenses larger than operating income.

At year-end, net revenue after expenses ("income") will be transferred to funds as directed by the Board, subject to any legal limitations on the Board's discretion. Funds balances are addressed annually as part of the budgeting process.

Available cash in the various funds reflects the District's ability to pay current bills and commitments, as well as underwriting the risk level the District is willing to accept.

POLICY 3: Rate Stabilization Fund

The District will maintain a Rate Stabilization Fund in an amount of $8 million to maintain rate stability for customers in times when short or mid-term cash needs are volatile.

The District's potable water operating revenue can vary greatly based on climatic conditions. During periods of heavy rain, potable water revenue drops significantly from the three year average at which revenues are budgeted. During significantly hot, dry periods, a reverse trend is seen wherein significant revenue is generated by higher sales than the three year average. During periods of extended water shortage, when customers are asked to reduce consumption, the impact on potable water revenue is similar to the effect of heavy rain. Rather than raising water rates on a temporary basis to cover expenses during these times, the Rate Stabilization Fund (RSF) allows the Board to balance operating revenue to operating expenses by a transfer.

POLICY 4: Financing Alternatives

As part of the annual Infrastructure Investment Plan (IIP) budgeting process, the District will examine options available to pay for the proposed projects, including the option of financing.

Each year the Board reviews needs for capital improvements and major maintenance over the next five years (the capital improvement plan "CIP"). Expenditures are projected on an annual basis, but the available fund balance for replacement or major maintenance is not always adequate to cover the need when it arises. The Board favors a pay-as-you-go program for the IIP program, but the District may not have funds available to pay for projects in any given year, or projects anticipated in future years may be of a type that would be difficult to finance. Such considerations may dictate financing as the preferred alternative. If a project requires substantial expenditures over several years and interest rates are low, the District may consider issuing financing now and reserving the available funds for need at times when interest rates are higher.

The Board has determined that debt service should not exceed 15% percent of reliable revenue sources.

POLICY 5: Fiscal Impact Analysis

Staff shall prepare a fiscal impact analysis for each budget appropriation request not included as part of the Annual Budget. Available fund balances are intended to be appropriated only for "one-time" nonrecurring expenditures not covered by the current annual budget.

When non-budgeted items are brought before the Board for consideration, the resulting fiscal impact will be analyzed. The Board requires all requests for new or supplemental budget appropriations to be accompanied by a fiscal impact statement including:

- Amount of funds requested
- Source of funds requested
    - New revenue
    - Reallocation of existing appropriations
    - Grants
- Impact of Request
    - New rates or fees
    - Decrease in one activity to support another activity
    - Effect on fund balance

POLICY 6: Operating Funds Cash Requirement

The District will maintain cash (net of restricted cash) in the Operations Fund of each enterprise equivalent to 25% of the operating budget (and eliminate the requirement for one-year's debt service obligation. This change in policy will increase the potable water reserve balance but should be tempered with a requirement to maintain a working capital reserve for operations and one year's debt service in the sanitation operating fund each year, which would be approximately $5.2 million.)

An available cash reserve to cover operating shortfalls is a prudent management practice to be used for both short term cash flow and contingency planning for unforeseen situations. Examples Include:

- Unexpected increases in costs or declines in revenues
- Legislative or judicial mandate to provide a new or expanded service or program
- Natural disaster emergencies which exceed the Emergency/Insurance Fund
- One-time Board approved non-capital expenditures or capital need if the IIP fund is inadequate
- Interruptions in billing process to customers

If such unforeseen circumstances occur, staff will present the Board with options for curing the deficiency, including use of this fund.

POLICY 7: Replacement and Major Maintenance Fund by Enterprise (potable water, sanitation, recycled water)

Each of the District's three enterprises will maintain a Replacement Fund for major maintenance, replacement and improvement of facilities and infrastructure not related to growth. The source of funds will be current user fees. Each Replacement Fund will maintain cash levels equal to the most current three-years of actual depreciation expense. If a replacement fund's cash target is exceeded, the Board will consider using the excess for prepayment of outstanding debt, if appropriate.

Prudent stewardship of assets requires that maintenance be performed to postpone or decelerate the aging process. As a general rule, maintenance costs for an item become more expensive as the asset ages. Also, changes in technology could result in replacing an asset with one which provides lower operating expenses or greater revenues or replacement of assets may be required due to changes in regulatory standards.

Major maintenance and replacement are on-going operating costs that should be paid for by user fees. Appropriate cash levels within a Replacement Fund enables the District to pay for planned or unplanned projects in any given year.

The water stand-by charge is levied against developed and undeveloped land and is dedicated to maintenance and replacement of potable water infrastructure and facilities. Recognizing that undeveloped land has added value because of the availability of potable water service, these owners have a vested interest in seeing the system maintained.

POLICY 8: New Construction Fund by Enterprise

The District will pay for expansion or new facilities necessitated by growth from capacity fees collected from new development and maintained in the appropriate enterprise's Construction Fund.

Current ratepayers should not be burdened with costs associated with growth due to new development. The fair share of cost of expansion will be borne by the developers through capacity fees.

The District has a master plan that identifies projected infrastructure and facility needs through build-out and is used as the basis for determining capacity fees. Capacity fees may be pledged for debt service payments, if the need for the expansion occurs before adequate capacity fees can be collected.

Prepaid capacity fees not used are subject to refund with interest, provided the developer has not started his project and the District has not begun construction on the system.

POLICY 9: Internal Service Replacement Fund for Buildings, Vehicles and Equipment

The Internal Service Fund will have revenues (i.e. user charges, interest income and all other income) sufficient to meet operating expenses, maintenance costs, depreciation expense, an inflation factor for other needs not exclusive to one of the three enterprises.

The District uses the internal service fund as an internal accounting and budget mechanism to equitably distribute general operating costs such as for buildings, vehicle and equipment replacement and

maintenance costs among District user programs and to assure that adequate funding is on hand to replace or maintain these assets.

POLICY 10: Emergency/Insurance Fund

The District will maintain an Emergency/Insurance Fund to cover claims not covered by insurance, fines and penalties imposed by regulatory agencies and disaster repairs and expenses. The target for this Fund is two percent (2%) of the total value of capital assets, including LVMWD's share of the Joint Power's Authority capital assets. The Board must approve any expenditure from this Fund. Self-insurance retentions will be paid out of operating budgets.

To protect the investment in assets and to ensure continuation of District operations, the District purchases insurance for general liability, property and worker's compensation. The District has the responsibility to pay for deductibles or self-insurance retentions. Also, the District has some risks that may not be economically or actually insured, such as certain types of pollution (odor), flood, and mold. Also, the insurance on District's sewer lines or water lines is limited to the cost of emergency clean-up and does not include the cost of repairing the failure. Because of this potential exposure, the District has established the Emergency/Insurance Fund at two-percent of the value of capital assets less the value of land, which amount will be determined annually after the audit. The Fund can only be used when approved by the Board.

This policy is in line with our experience in having to pay damages that are not covered by insurance and cover expenses that are not reimbursed on a timely basis by FEMA. Like the Rate Stabilization Fund, not having the Emergency/Insurance Fund available in the event of a disaster could significantly impact our cash flow and possibly impact future utility rates during troublesome times.

POLICY 11: Recycled Water Operations Reserves

When the operating reserves for recycled water exceed the amount required in Policy 6 (Operating Funds Cash Requirement) plus Policy 7 (Replacement and Major Maintenance Fund by Enterprise), the District may use the net reserves to pay for research, studies and construction of projects to increase the beneficial use of recycled water and/or set aside funds to ultimately pay for (pay-go) or service the debt associated with a seasonal storage reservoir for recycled water, if the expenditure is approved by the Board.

The Tapia Water Reclamation Facility treats wastewater to such a level that the result can be sold as recycled water. Although the recycled water is considered a valuable asset to the District because recycled water can replace some irrigation uses, thus lowering the demand for potable water, there are times of the year that the District accumulates more recycled water than customers can use and the District has to pay to dispose of the excess recycled water.

The District's goal is to make recycled water available to as many customers as is practical as a way of conserving potable water. To that end, funds in the Recycled Water Operations reserve that are available

after the fund has met its requirements for having a cash balance equivalent to 25% of the operating budget for recycled water and for having funds available for replacement and major maintenance as specified in the annual Infrastructure Investment Plan (reserves equivalent to three years of capital improvement projects) can, at the Board's discretion and upon approval, be used to pay for research, studies and construction of projects to increase the beneficial use of recycled water and/or to set funds aside to ultimately pay for (pay-go) or service the debt associated with a seasonal storage reservoir for recycled water.

11.3 Appendix 3: Administrative Code Provision for Sanitation Classes of Service

5-1.2051 CLASSES OF SERVICE

(a) Single Family Class – A single family residential dwelling or a multi-family residential dwelling unit served by a dedicated water meter.

(b) Multi Family Class – A multi-family residential dwelling complex served by a single water meter.

(c) Class 1 -- "Class 1 Discharger" or "Class 1" refers to any nonresidential discharger who discharges sewage containing not more than 235 mg/L B.O.D. and 282 mg/L S.S. on an average daily basis. Light industrial users and commercial users, such as schools and offices, are presumed to be Class 1 Dischargers; however, dischargers in this class must demonstrate that the discharge does not and will not exceed the stated limits. In relation to the single family class customer, a Class 1 Discharger has a strength factor of 62 percent.

(d) Class 2 -- "Class 2 Discharger" or "Class 2" refers to any nonresidential discharger who discharges sewage containing more than 235 mg/L B.O.D. and 282 mg/L S.S. but less than 635 mg/L B.O.D. and 415 mg/L S.S. on an average daily basis. Moderate industrial users and commercial users such as shopping centers and gas stations are presumed to be Class 2 Dischargers; however, dischargers in this class must demonstrate that the discharge does not and will not exceed the stated limits. In relation to the single family class customer, a Class 1 Discharger has a strength factor of 106 percent.

(e) Class 3 -- "Class 3 Discharger" or "Class 3" refers to any nonresidential discharger who discharges sewage containing more than 635 mg/L B.O.D. and 415 mg/L S.S. but less than 1000 mg/L B.O.D. and 700 mg/L S.S. on an average daily basis. Moderately heavy industrial users and commercial users such as restaurants, markets and mortuaries are presumed to be Class 3 Dischargers; however, dischargers in this class must demonstrate that the discharge does not and will not exceed the stated limits. In relation to the single family class customer, a Class 1 Discharger has a strength factor of 160 percent.

(f) Class 4 -- "Class 4 Discharger" or "Class 4" refers to any industrial waste permittee or others discharging wastes who discharge sewage containing more than 1000 mg/L B.O.D. and 700 mg/L S.S. on an average daily basis and/or sewage quality or flow or other factors of waste discharge that will adversely affect the sewage transmission lines, treatment or disposal processes. Industrial users are in this category.

11.4 Appendix 4: Capital Improvement Plan

Las Virgenes Municipal Water District Master IIP						Rate Study Model FY 2015						
	Sources:	LVMWD_IIP_03062015.xlsx sent by Douglas Anders 3/6/15 at 9:43AM										
		RateModelNov2014.xlsx sent by Mike Hamilton 11/6/14										
Category	**CIP Fund: Job #**	**CIP Info: Priority #**	**CIP Info: Title**	**Category Code**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
POTABLE WAT	10236	2	Raise Air Vacuum Valves and Abandon Protective Structures	7		$34,000	$420,000	$0	$0	$0	$0
RECYCLED WA	10418	3	Rehabilitation of 18" RW Pipe (Tapia/Mulholland Highway)	9		$125,809	$31,770	$0	$0	$0	$0
POTABLE WAT	10430	2	Twin Lakes Pump Station Pipeline Project	7		$85,000	$0	$854,015	$841,015	$0	$0
RANCHO/FARI	10446	3	Buffer Land at Rancho	12		$0	$0	$176,500	$0	$0	$0
POTABLE WAT	10476	2	5-MG Tank near Las Virgenes Reservoir	7		$7,710,000	$0	$0	$0	$0	$0
TAPIA	10493	3	Tapia Sludge Screening	11		$0	$0	$0	$0	$88,956	$0
POTABLE WAT	10508	2	Tank Renovation: Calabasas Tank	7		$2,620,000	$0	$0	$0	$0	$0
TAPIA	10512	2	Tapia: Primary Tank Rehabilitation	11		$157,438	$44,478	$185,678	$185,678	$185,678	$185,678
TAPIA	10513	2	Tapia Sluice Gate and Drive Replacement	11		$0	$9,884	$290,590	$121,150	$121,150	$121,150
ADMINISTRAT	10520	2	SCADA System Communication Upgrades	15		$23,897	$39,633	$27,029	$0	$0	$0
ADMINISTRAT	10521	2	SCADA System Communication Upgrades (LV Only)	15		$189,780	$1,237,010	$986,400	$0	$0	$0
RECYCLED WA	10522	1	Reservoir #2 Improvements (Lining Cover)	9		$1,104,890	$0	$0	$0	$0	$0
TAPIA	10537	2	Raw Sludge Wet Well Mixing Improvements	11		$70,600	$89,662	$0	$0	$0	$0
TAPIA	10538	2	Tapia Channel Mixing Improvements	11		$289,460	$754,341	$0	$0	$0	$0
POTABLE WAT	10539	2	Saddletree Tank improvements	7		$0	$538,350	$0	$0	$0	$0
RECYCLED WA	10540	2	Lost Hills Overpass Recycled Water Main Relocation	9		$0	$406,830	$0	$0	$0	$0
ADMINISTRAT	10541	2	Building 8 Computer Center Upgrades	15		$115,000	$180,000	$0	$0	$0	$0
POTABLE WAT	10542	2	Vault Lid Replacement	7		$170,000	$170,000	$0	$0	$0	$0
ADMINISTRAT	10543	2	Building 7 & 8 HVAC Integration	15		$257,000	$0	$0	$0	$0	$0
RANCHO/FARI	10544	2	Centrate Tank Cathodic Protection (CP) System Replacement	12		$0	$0	$0	$0	$0	$0
RANCHO/FARI	10549	2	Rancho Las Virgenes Compost Facility Agitator Control Upgra	12		$9,884	$0	$0	$0	$0	$0
RANCHO/FARI	10551	2	Centrate System - New Pump Impellers	12		$24,710	$0	$0	$0	$0	$0
POTABLE WAT	10553	2	Potable Water System Rehabilitation	7		$270,000	$230,000	$105,000	$105,000	$105,000	$105,000
POTABLE WAT	10556	2	Interconnection With CMWD	7		$56,842	$360,000	$1,303,000	$1,293,000	$0	$0
POTABLE WAT	10557	1	Westlake Filtration Plant Expansion	7		$320,000	$2,006,600	$2,906,900	$0	$0	$0
POTABLE WAT	10558	2	Westlake Pump Station Upgrade	7		$230,000	$2,071,600	$3,025,400	$0	$0	$0
SEWER/LIFT ST	10559	2	Manhole Rehabilitation, F2/F3 Line	13		$6,015	$105,062	$81,403	$81,804	$0	$0

Category	CIP Fund: Job #	CIP Info: Priority #	CIP Info: Title	Category Code	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
TAPIA	10561	2	NPDES Permit Renewal	11		$0	$35,300	$0	$0	$0	$0
TAPIA	10562	1	Tapia Structural Repairs	11		$0	$0	$0	$0	$0	$0
TAPIA	10563	2	Tapia Supplemental Carbon Study	11		$60,010	$60,010	$199,445	$0	$0	$0
TAPIA	10564	2	Centrate Equalization Tank	11		$99,821	$840,506	$0	$0	$0	$0
RANCHO/FARI	10565	1	Rancho Las Virgenes Digester Cleaning and Repair	12		$353,353	$202,975	$185,325	$0	$0	$0
TAPIA	10566	1	Tapia Alternative Disinfection Safety Improvements	11		$60,540	$0	$0	$0	$0	$0
TAPIA	10567	2	Programmable Logic Controller Upgrades	11		$152,849	$0	$227,685	$213,812	$0	$0
POTABLE WAT	10568	1	Twin Lakes Tank Drainage Project	7		$88,500	$262,500	$0	$0	$0	$0
POTABLE WAT	10569	1	Security Fencing, Potable Water Tank Sites	7		$121,000	$0	$0	$0	$0	$0
RANCHO/FARI	10570	3	Rancho Las Virgenes Composting Facility: Purchase of New Lc	12		$127,080	$0	$0	$0	$0	$0
PROGRAMS	10571	2	Vehicle Replacement Program FY14/15	14		$175,000	$0	$0	$0	$0	$0
POTABLE WAT	10572	1	Agoura Road Widening Project	7		$60,000	$0	$0	$0	$0	$0
SEWER/LIFT ST	10573	2	Sewer Grit Handling	13		$35,300	$0	$0	$0	$0	$0
RANCHO/FARI	10574	3	Rancho Facility Improvements	12		$123,197	$211,800	$0	$0	$0	$0
POTABLE WAT	10575	3	Building No. 8 Improvements	7		$12,750	$0	$0	$0	$0	$0
ADMINISTRAT	10576	3	Building No. 7 Improvements	15		$24,500	$24,500	$0	$0	$0	$0
POTABLE WAT	10577	3	Potable Water Pump Station Improvements	7		$5,000	$28,500	$87,500	$0	$0	$0
PROGRAMS	10578	3	Security Upgrades - LVMWD	14		$5,000	$26,000	$30,000	$0	$0	$0
PROGRAMS	10579	3	Security Upgrades - JPA	14		$3,530	$20,121	$12,355	$0	$0	$0
TAPIA	10580	2	Tapia Equipment Replacement	11		$49,950	$0	$0	$0	$0	$0
POTABLE WAT	10581	2	Potable Water System Equipment Upgrades	7		$38,500	$0	$0	$0	$0	$0
TAPIA	10582	2	Tapia Balancing Pond Sealant Replacement & RAS Pump Stati	11		$89,662	$0	$0	$0	$0	$0
ADMINISTRAT	10583	2	Fleet Maintenance - Oil Lubrication System	15		$21,500	$0	$0	$0	$0	$0
ADMINISTRAT	10584	2	Electrical/Instrumentation Equipment Purchase	15		$14,500	$0	$0	$0	$0	$0
POTABLE WAT	10586	2	AMR Implementation - FY 14-15	7		$1,297,000	$1,297,000	$0	$0	$0	$0
RECYCLED WA	10587	2	Recycled Water Storage Study - PH-II	9		$141,200	$176,500	$176,500	$0	$0	$0
RECYCLED WA	10588	2	Woodland Hills Golf Course RW Pipeline Extension	9		$218,860	$991,930	$4,077,150	$3,667,670	$0	$0
ADMINISTRAT	10589	1	WIMS Software Implementation	15		$0	$0	$0	$0	$0	$0
RECYCLED WA	10591	3	Tract 44352 Calabasas Ridge Recycled Water Extension	9		$60,100	$0	$0	$0	$0	$0
RECYCLED WA	10592	1	Agoura Road Recycled Water Main Extension (LV Only: Contir	9		$0	$479,782	$0	$0	$0	$0
POTABLE WAT	80644	3	Tank Renovation: Equestrian Tank	7		$0	$0	$0	$358,000	$300,000	$0
ADMINISTRAT	80713	3	Vehicle Replacement Program	15		$0	$0	$175,000	$175,000	$175,000	$175,000
RANCHO/FARI	80748	3	Rancho: Replace Agitators	12		$0	$0	$360,060	$360,060	$0	$0
ADMINISTRAT	90001	1	CIS Infinity Software Upgrade	15		$0	$95,000	$0	$0	$0	$0
ADMINISTRAT	90002	1	CIS Infinity Modifications - Budget Based Rates	15		$0	$95,000	$0	$0	$0	$0
TAPIA	99910	3	Process Air Improvements	11		$0	$0	$1,193,987	$1,243,125	$0	$0
RANCHO/FARI	99911	3	Rancho Las Virgenes: FOG Receiving Facilities	12		$0	$0	$0	$17,650	$491,376	$0
RANCHO/FARI	99926	2	Rancho Las Virgenes Sludge Thickening	12		$0	$0	$0	$0	$423,600	$0
TAPIA	99928	1	Tapia Primary Flow Diversion	11		$0	$31,064	$289,460	$0	$0	$0
RANCHO/FARI	99930	3	Rancho Las Virgenes Aerated Static Pile Pilot Study	12		$0	$0	$28,099	$0	$0	$0
TAPIA	99933	2	Tapia BNR Improvements	11		$0	$0	$141,200	$876,852	$0	$0

Category	CIP Fund: Job #	CIP Info: Priority #	CIP Info: Title	Category Code	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
POTABLE WAT	99940	1	AMR IMPLEMENTATION FY17-19	7		$0	$0	$1,200,000	$1,200,000	$1,200,000	$0
SEWER/LIFT S	99941	2	Lift Stations Programmable Logic Controller Upgrades	13		$0	$47,180	$0	$0	$0	$0
TAPIA	99950	3	Tapia Electrical and Instrumentation Upgrades	11		$0	$96,899	$93,016	$0	$0	$0
POTABLE WAT	99964	3	Potable Pipeline System Upgrade (2014 MP)	7		$0	$0	$0	$0	$522,000	$405,000
TAPIA	99967	3	Tapia Automated Filter Wash down	11		$0	$0	$0	$0	$81,896	$0
PROGRAMS	99968	1	Vehicle Replacement Program FY15-16	14		$0	$175,000	$0	$0	$0	$0
ADMINISTRAT	99969	2	Construction Services Truck	15		$0	$150,000	$0	$0	$0	$0
RECYCLED WA	99970	1	RW Reservoir #2 Cover (Shade Balls)	9		$0	$308,850	$0	$0	$0	$0
TAPIA	99971	3	Tapia Water Reclamation Facility Secondary Clarifier Polymer	11		$0	$0	$308,946	$0	$0	$0
TAPIA	99972	3	Primary Effluent Equalization Study	11		$0	$0	$0	$0	$0	$35,300
TAPIA	99973	3	Tapia Water Reclamation Facility Reliability Improvements	11		$0	$70,600	$70,600	$70,600	$70,600	$70,600
TAPIA	99974	3	Sanitation Master Plan Update	11		$0	$0	$0	$0	$0	$70,600
TAPIA	99975	3	A/B Bus Electrical Modification	11		$0	$0	$0	$0	$70,600	$0
RANCHO/FARI	99977	2	Rancho Reliability Improvements	12		$0	$70,600	$70,600	$70,600	$70,600	$70,600
RANCHO/FARI	99978	3	Ovation Upgrade	12		$0	$0	$0	$0	$0	$353,000
RECYCLED WA	99979	2	Miscellaneous RW Extension	9		$0	$74,836	$74,836	$74,836	$74,836	$74,836
RECYCLED WA	99980	3	Recycled Water Master Plan Update	9		$0	$0	$0	$0	$0	$70,600
RECYCLED WA	99981	3	Agoura Road Extension Phase II	9		$0	$0	$0	$0	$105,900	$1,094,300
SEWER/LIFT S	99982	3	Lift Station Reliability Improvements	13		$0	$0	$0	$0	$50,000	$50,000
SEWER/LIFT S	99983	3	Trunk Sewer System Improvements	13		$0	$0	$0	$0	$50,000	$50,000
POTABLE WAT	99984	3	Potable Water Master Plan Update	7		$0	$0	$0	$0	$0	$100,000
POTABLE WAT	99985	3	McCoy Pump Station Expansion	7		$0	$0	$0	$0	$1,095,000	$0
POTABLE WAT	99986	3	Mulwood Pump Station Expansion	7		$0	$0	$0	$0	$0	$646,000
POTABLE WAT	99987	1	Corrosion Control Study	7		$0	$25,000	$0	$0	$0	$0
POTABLE WAT	99988	1	Nitrification Study	7		$0	$50,000	$0	$0	$0	$0
POTABLE WAT	99989	2	Nitrification Measures Implementation	7		$0	$0	$93,000	$113,000	$0	$0
POTABLE WAT	99990	3	Water System PLC Upgrade Phase 1	7		$0	$0	$0	$0	$126,000	$0
POTABLE WAT	99991	3	Westlake Filter Plant PLC Upgrade	7		$0	$0	$0	$116,000	$0	$0
POTABLE WAT	99992	3	Seminole Subsystem Improvement Study	7		$0	$0	$0	$0	$0	$50,000
ADMINISTRAT	99994	3	Building #1 Tenant Improvements	15		$0	$405,000	$0	$0	$0	$0
RECYCLED WA	99996	2	OFFSET OF IIP #10588	9		$0	-$991,930	-$4,077,150	-$3,667,670	$0	$0
POTABLE WAT	99998	3	Water System PLC Upgrade Phase 2	7		$0	$0	$0	$0	$0	$115,000
			FY 2014 Potable Water Replacement CIP		$7,608,893						
			FY 2014 Potable Water Construction CIP		$2,992,134						
			FY 2014 RW Replacement CIP		$160,851						
			FY 2014 RW Construction CIP		-$47,452						
			FY 2014 Sanitation Replacement CIP		$3,283,080						
			FY 2014 Sanitation Construction CIP		$679,960						
			TOTAL		**$14,677,466**	**$17,309,027**	**$14,055,743**	**$14,959,528**	**$7,517,182**	**$5,408,192**	**$3,842,664**

11.5 APPENDIX 5: ASSET LIST & ALLOCATION FACTORS

Las Virgenes Municipal Water District Asset List								Rate Study Model FY 2015					
		6/30/2013											
		BALANCE		Water	RW	Sanitation	General		Water	RW	Sanitation	General	Total	
	CONSTRUCTION IN PROGRESS													
201.1880/9	Potable Water Construction	$468,250		100%			0%		$468,250	$0	$0	$0	$468,250	TRUE
203.1880/9	Recycled Water Construction	$101,902			100%		0%		$0	$101,902	$0	$0	$101,902	TRUE
230.1880/9	Sanitation Construction	$52,176				100%	0%		$0	$0	$52,176	$0	$52,176	TRUE
301.1880/9	Potable Water Replacement	$2,157,602		100%			0%		$2,157,602	$0	$0	$0	$2,157,602	TRUE
302.1880/9	Recycled Water Replacement	$0			100%		0%		$0	$0	$0	$0	$0	TRUE
330.1880/9	Sanitation Replacement	$130,439				100%	0%		$0	$0	$130,439	$0	$130,439	TRUE
Tracts.1617	Meter Installation - Non Tract	$50,154		100%			0%		$50,154	$0	$0	$0	$50,154	TRUE
Tracts.1622	Meter Installation - In Tract-Other	$33,747		100%			0%		$33,747	$0	$0	$0	$33,747	TRUE
	Total C-I-P	**$2,994,270**							**$2,709,754**	**$101,902**	**$182,615**	**$0**	**$2,994,270**	TRUE
	GENERAL UTILITY PLANT													
101.1651	Shop & Garage Equipment	$304,972					100%		$0	$0	$0	$304,972	$304,972	TRUE
101.1652	Radio/Comm. Equipment	$624,422					100%		$0	$0	$0	$624,422	$624,422	TRUE
101.1653	Vehicle & Special Equipment	$2,813,516					100%		$0	$0	$0	$2,813,516	$2,813,516	TRUE
101.1654	Furniture & Fixtures	$4,567,507					100%		$0	$0	$0	$4,567,507	$4,567,507	TRUE
101.1656	Headquarters Building	$11,359,050					100%		$0	$0	$0	$11,359,050	$11,359,050	TRUE
101.1657	Tenant Improvement	$289,179					100%		$0	$0	$0	$289,179	$289,179	TRUE
101.1658	Buildings & Telemetery	$10,144,338					100%		$0	$0	$0	$10,144,338	$10,144,338	TRUE
101.1659	Computer Equipment	$2,398,978					100%		$0	$0	$0	$2,398,978	$2,398,978	TRUE
101.1660	Laboratory Equipment	$38,389					100%		$0	$0	$0	$38,389	$38,389	TRUE
101.1661	SCADA System	$1,775,595					100%		$0	$0	$0	$1,775,595	$1,775,595	TRUE
	WATER													
101.1600	Land & Land Rights	$6,800,683		100%			0%		$6,800,683	$0	$0	$0	$6,800,683	TRUE
101.1611	Source of Supply (Tanks)	$24,215,218		100%			0%		$24,215,218	$0	$0	$0	$24,215,218	TRUE
101.1611.1	Source of Supply (Tanks)-Intangible	$87,723		100%			0%		$87,723	$0	$0	$0	$87,723	TRUE
101.1612	Pumping Plant	$19,514,877		100%			0%		$19,514,877	$0	$0	$0	$19,514,877	TRUE
101.1613	Water Treatment Plant (WLR)	$15,435,423		100%			0%		$15,435,423	$0	$0	$0	$15,435,423	TRUE
101.1614	Transmission & Distribution Plant	$63,277,115		100%			0%		$63,277,115	$0	$0	$0	$63,277,115	TRUE
101.1614.1	Transmission & Distri/Intangible	$129,849		100%			0%		$129,849	$0	$0	$0	$129,849	TRUE
101.1615	Distribution Mains	$27,790		100%			0%		$27,790	$0	$0	$0	$27,790	TRUE
101.1617	Meter Installation - Non Tract	$4,934,460		100%			0%		$4,934,460	$0	$0	$0	$4,934,460	TRUE
101.1618	Cost of Meters - Installed	$1,956,869		100%			0%		$1,956,869	$0	$0	$0	$1,956,869	TRUE
101.1619	Fire Hydrants Installed	$3,662,724		100%			0%		$3,662,724	$0	$0	$0	$3,662,724	TRUE
101.1621	Meter Installation - In Tract-Donated	$5,246,866		100%			0%		$5,246,866	$0	$0	$0	$5,246,866	TRUE
101.1622	Meter Installation - In Tract-Other	$1,617,774		100%			0%		$1,617,774	$0	$0	$0	$1,617,774	TRUE
101.1637	Other Construction	$84,044		100%			0%		$84,044	$0	$0	$0	$84,044	TRUE
	Total Potable Water	**$146,991,415**							**$146,991,415**	**$0**	**$0**	**$0**	**$146,991,415**	TRUE

Las Virgenes Municipal Water District															
Asset List								Rate Study Model FY 2015							
		6/30/2013													
		BALANCE		Water	RW	Sanitation	General		Water	RW	Sanitation	General	Total		
	RECYCLED WATER														
102.1600	Land & Land Rights	$3,397			100%		0%		$0	$3,397	$0	$0	$3,397	TRUE	
102.1611	Source of Supply (Tanks)	$692,617			100%		0%		$0	$692,617	$0	$0	$692,617	TRUE	
102.1612	Pumping Plant	$309,040			100%		0%		$0	$309,040	$0	$0	$309,040	TRUE	
102.1614	Transmission & Distribution Plant	$6,656,160			100%		0%		$0	$6,656,160	$0	$0	$6,656,160	TRUE	
102.1617	Meter Installation - Non Tract	$219,875			100%		0%		$0	$219,875	$0	$0	$219,875	TRUE	
102.1618	Cost of Meters - Installed	$176,772			100%		0%		$0	$176,772	$0	$0	$176,772	TRUE	
102.1621	Meter Installation - In Tract-Donated	$288,531			100%		0%		$0	$288,531	$0	$0	$288,531	TRUE	
102.1622	Meter Installation - In Tract-Other	$88,456			100%		0%		$0	$88,456	$0	$0	$88,456	TRUE	
102.1637	Other Construction	$28,015			100%		0%		$0	$28,015	$0	$0	$28,015	TRUE	
	Total Recycled Water	**$8,462,862**							**$0**	**$8,462,862**	**$0**	**$0**	**$8,462,862**	TRUE	
	TOTAL WATER - Excl. C-I-P														
	SANITATION														
130.1600	Land & Land Rights	$111,235				100%	0%		$0	$0	$111,235	$0	$111,235	TRUE	
130.1632	Trunk Sewer	$4,154,604				100%	0%		$0	$0	$4,154,604	$0	$4,154,604	TRUE	
130.1635	Lifting Plants	$3,272,791				100%	0%		$0	$0	$3,272,791	$0	$3,272,791	TRUE	
130.1641	Investment in JPA **	$118,807,020				100%	0%		$0	$0	$118,807,020	$0	$118,807,020	TRUE	
130.1643	Invest in JPA/Capitalized Interest	$6,737,157				100%	0%		$0	$0	$6,737,157	$0	$6,737,157	TRUE	
130.1646	Investment in AWFP JPA	$35,038,646				100%	0%		$0	$0	$35,038,646	$0	$35,038,646	TRUE	
130.1651	Shop & Garage Equipment	$17,320				100%	0%		$0	$0	$17,320	$0	$17,320	TRUE	
	SUB-TOTAL 1641, 1643 & 1646	***$160,582,823***							***$0***	***$0***	***$160,582,823***	***$0***	***$160,582,823***	TRUE	
	TOTAL SANITATION	**$168,138,774**							**$0**	**$0**	**$168,138,774**	**$0**	**$168,138,774**	TRUE	
	GRAND TOTAL	**$360,903,268**							**$149,701,168**	**$8,564,764**	**$168,321,389**	**$34,315,947**	**$360,903,268**		
		TRUE													
	General Asset Allocation to Funds	**$34,315,947**		46%	3%	52%	-100%		$15,729,751	$899,937	$17,686,259	-$34,315,947	$0	TRUE	

	Total Asset	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General
POTABLE WATER												
Land & Land Rights	$6,800,683											100%
Source of Supply (Tanks)	$24,215,218			48%	52%	0%						0%
Source of Supply (Tanks)-Intangible	$87,723			48%	52%	0%						0%
Pumping Plant	$19,514,877			48%	52%	0%						0%
Water Treatment Plant (WLR)	$15,435,423			48%	52%	0%						0%
Transmission & Distribution Plant	$63,277,115			40%	44%	16%						0%
Transmission & Distri/Intangible	$129,849			40%	44%	16%						0%
Distribution Mains	$27,790			40%	44%	16%						0%
Meter Installation - Non Tract	$4,934,460									100%		0%
Cost of Meters - Installed	$1,956,869									100%		0%
Fire Hydrants Installed	$3,662,724								100%			0%
Meter Installation - In Tract-Donated	$5,246,866									100%		0%
Meter Installation - In Tract-Other	$1,617,774									100%		0%
Other Construction	$84,044											100%
General Asset Allocation to Funds	$15,729,751											100%
CONSTRUCTION IN PROGRESS	$2,709,754											100%
Total Asset	**$165,430,920**	**$0**	**$0**	**$53,589,730**	**$58,948,703**	**$10,149,561**	**$0**	**$0**	**$3,662,724**	**$13,755,969**	**$0**	**$25,324,232**
Capital Allocation Factors		**0%**	**0%**	**32%**	**36%**	**6%**	**0%**	**0%**	**2%**	**8%**	**0%**	**15%**

	Total Asset	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
RECYCLED WATER													
Land & Land Rights	$3,397											100%	100%
Source of Supply (Tanks)	$692,617			40%	60%	0%						0%	100%
Pumping Plant	$309,040			40%	60%	0%						0%	100%
Transmission & Distribution Plant	$6,656,160			40%	60%	0%						0%	100%
Meter Installation - Non Tract	$219,875			40%	60%	0%						0%	100%
Cost of Meters - Installed	$176,772			20%	30%	50%						0%	100%
Meter Installation - In Tract-Donated	$288,531			20%	30%	50%						0%	100%
Meter Installation - In Tract-Other	$88,456			20%	30%	50%						0%	100%
Other Construction	$28,015											100%	100%
General Asset Allocation to Funds	$899,937											100%	100%
CONSTRUCTION IN PROGRESS	$101,902											100%	100%
Total Asset	**$9,464,701**	**$0**	**$0**	**$3,261,828**	**$4,892,743**	**$276,880**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,033,250**	**$9,464,701**
Capital Allocation Factors		**0%**	**0%**	**34%**	**52%**	**3%**	**0%**	**0%**	**0%**	**0%**	**0%**	**11%**	**100%**

Functions	Asset Types	Total Asset	Flow	BOD	TSS	B&CS	General	Total
	SANITATION							
General	Land & Land Rights	$111,235					100%	100%
Pipes	Trunk Sewer	$4,154,604	100%				0%	100%
Lift Stations	Lifting Plants	$3,272,791	100%				0%	100%
Treatment	Investment in JPA **	$118,807,020	60%	20%	20%		0%	100%
Treatment	Invest in JPA/Capitalized Interest	$6,737,157	60%	20%	20%	0%	0%	100%
Treatment	Investment in AWFP JPA	$35,038,646	60%	20%	20%	0%	0%	100%
General	Shop & Garage Equipment	$17,320					100%	100%
General	General Asset Allocated to Sanita	$17,686,259					100%	100%
General	CONSTRUCTION IN PROGRESS	$182,615					100%	100%
	Total Asset	**$186,007,648**	**$103,777,089**	**$32,116,565**	**$32,116,565**	**$0**	**$17,997,429**	**$186,007,648**
	Capital Allocation Factors		**56%**	**17%**	**17%**	**0%**	**10%**	**100%**

11.6 Appendix 6: Water Cost allocation Factors

	Peaking Factors	Base	Max Day	Max Hour
Base	1.00	100.0%		
Max Day	2.10	47.6%	52.4%	
Max Hour	2.50	40.0%	44.0%	16.0%

Las Virgenes Municipal Water District — Rate Study Model FY 2015
Water O&M Allocation

		FY 2016	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
	SOURCE OF SUPPLY													
	5000 Purchased Water - MWD	$21,198,628	89%		4%	5%	2%	0%					0%	100%
	5054 Draw from Reservoir	$1,517,040	0%			100%							0%	100%
	5105 Purchased Water - Ventura Co.	$316,662	84.4%	15.6%									0%	100%
	5110 Purchased Water - Simi Dist. #8	$72,832	84.4%	15.6%									0%	100%
	5125 Water Supply - LVR Adjustment	$142,695	0%			100%							0%	100%
	Sub-total	***$23,247,858***												
	OPERATING EXPENSES													
	5400 Labor	$1,253,508		49.7%	20%	22%	8%						0%	100%
	5405.1 Energy	$965,166		87.4%	5%	6%	2%						0%	100%
	5405.2 Telephone	$53,043		75.0%	10%	11%	4%						0%	100%
	5405.3 Gas	$48,024		45.3%	22%	24%	9%						0%	100%
	5405.4 Water	$11,594		35.2%	26%	29%	10%						0%	100%
	5410 Supplies/Material	$224,873		31.7%	27%	30%	11%						0%	100%
	5410.2 Chlorine	$0		0.0%	40%	44%	16%						0%	100%
	5410.10 Hypochlorite	$14,970		0.0%	40%	44%	16%						0%	100%
	5410.12 Septum	$3,113		0.0%	40%	44%	16%						0%	100%
	5415 Outside Services	$105,843		56.3%	17%	19%	7%						0%	100%
	5420 Permits and Fees	$50,917		39.7%	24%	27%	10%						0%	100%
	5425 Consulting Services	$0		0.0%	40%	44%	16%						0%	100%
	5430 Capital Outlay	$0		0.0%	40%	44%	16%						0%	100%
	Sub-total	***$2,731,050***												
	MAINTENANCE EXPENSES													
	5500 Labor	$820,893		26.3%	29%	32%	12%	0%	0%	0%	0%	0%	0%	100%
	5510 Supplies/Material	$168,170		20.4%	32%	35%	13%	0%	0%	0%	0%	0%	0%	100%
	5515 Outside Services	$216,800		23.2%	31%	34%	12%	0%	0%	0%	0%	0%	0%	100%
	5518 Building Maintenance	$25,970		0.0%	40%	44%	16%	0%	0%	0%	0%	0%	0%	100%
	5520 Permits and Fees	$19,354		0.0%	40%	44%	16%	0%	0%	0%	0%	0%	0%	100%
	5525 Consulting Services	$0		0.0%	40%	44%	16%	0%	0%	0%	0%	0%	0%	100%
	5530 Capital Outlay	$5,179		0.0%	32%	36%	6%	0%	0%	2%	8%	0%	15%	100%
	Sub-total	***$1,256,367***												
	INVENTORY EXPENSE													
	5536 Inventory Adjustment	$0		0.0%	100%								0%	100%
	SPECIALTY EXPENSES													
	5700 SCADA Services	$120,114		62.8%	15%	16%	6%	0%	0%	0%	0%	0%	0%	100%
	5710.2 Technical Services	$55,903		16.5%	33%	37%	13%	0%	0%	0%	0%	0%	0%	100%
	5715.2 Other Lab Services	$11,662		82.3%	7%	8%	3%	0%	0%	0%	0%	0%	0%	100%
	5715.3 Tapia Lab Sampling	$65,188		86.3%	5%	6%	2%	0%	0%	0%	0%	0%	0%	100%
	5725 Gen Supplies/Small Tools	$30,960		0.0%	40%	44%	16%	0%	0%	0%	0%	0%	0%	100%
	7202 Allocated Lab Expense	$204,416		76.3%	9%	10%	4%	0%	0%	0%	0%	0%	0%	100%
	Sub-total	***$488,243***												

Las Virgenes Municipal Water District — **Rate Study Model FY 2015**

Water O&M Allocation

	FY 2016	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
PUBLIC INFORMATION													
6602 School Education Program	$182,865		0.0%									100%	100%
6604 Public Education Program	$76,702		0.0%									100%	100%
6606 Community Group Outreach	$47,425		0.0%									100%	100%
6608 Intergovernmental Coordination	$4,462		0.0%									100%	100%
Sub-total	***$311,455***												
FIELD CONSERVATION													
6629 Customer Water Budgets	$0		0.0%				100%					0%	100%
6634 Weather Stations	$0		0.0%				100%					0%	100%
6639 Turf Removal Program	$148,165		0.0%				100%					0%	100%
6662 Sprinkler Nozzles	$0		0.0%				100%					0%	100%
6681 Brochures	$0		0.0%				100%					0%	100%
6704 ULFT Rebates	$0		0.0%				100%					0%	100%
6706 Rotating Sprinkler Nozzle	$0		0.0%				100%					0%	100%
6707 Plumbing Retrofits	$0		0.0%				100%					0%	100%
6708 MWD Clothes Washer	$0		0.0%				100%					0%	100%
6709 ET Irrigation Controller	$0		0.0%				100%					0%	100%
Sub-total	***$148,165***												
COMMUNITY CONSERVATION EDUCATION													
6741 Demonstration Garden	$0		0.0%									100%	100%
6742 Demonstration Garden Grant	$15,954		0.0%									100%	100%
6748 Professional Landscape & Irr Wkshp	$3,317		0.0%									100%	100%
6749 Residential Customer Training	$62,686		0.0%									100%	100%
Sub-total	***$81,956***												
SCHOOL CONSERVATION EDUCATION													
6772 Weather Information Network	$0		0.0%									100%	100%
Sub-total	***$0***												
RESOURCE CONSERVATION													
6785 Watershed Programs	$14,479		0.0%									100%	100%
6790 Back Flow Protection	$95,180		0.0%									100%	100%
Sub-total	***$109,659***												
ADMINISTRATIVE EXPENSES													
6230 Safety Equipment	$0		0.0%									100%	100%
6260 Rental Charge - Facility Repl	$287,629		0.0%									100%	100%
7135 General Insurance	$0		0.0%									100%	100%
7135.1 Property Insurance	$28,435		0.0%									100%	100%
7135.4 Earthquake Insurance	$52,329		0.0%									100%	100%
7145 Claims Paid	$0		0.0%									100%	100%
7155 Other Expense	$0		0.0%									100%	100%
7160 Direct Charged Supplies & Services	$0		0.0%									100%	100%
7203 Allocated Building Maint	$75,110		0.0%									100%	100%
7205 Allocated Legal	$102,300		0.0%									100%	100%
7206 Allocated G & A	$0		0.0%									100%	100%
7209 Allocated Rental Property Exp	$0		0.0%									100%	100%
7225 Allocated Support Services	$1,880,523		0.0%								10%	90%	100%
7226 Allocated Operations Services	$5,088,102		0.0%									100%	100%
Sub-total	***$7,514,426***												
TOTAL OPERATING EXPENSES	**$35,889,179**	**$19,285,094**	**$2,351,230**	**$1,770,589**	**$3,607,383**	**$707,882**	**$148,165**	**$0**	**$115**	**$431**	**$188,052**	**$7,830,237**	**$35,889,179**
O&M Allocation Factors		**54%**	**7%**	**5%**	**10%**	**2%**	**0%**	**0%**	**0%**	**0%**	**1%**	**22%**	**100%**

		Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
O&M		53.7%	6.6%	4.9%	10.1%	2.0%	0.4%	0.0%	0.0%	0.0%	0.5%	22%	100.0%
Recycled Funding							100%					0%	100.0%
Rev Offset								100%				0%	100.0%
Capital		0.0%	0.0%	32.4%	35.6%	6.1%	0.0%	0.0%	2.2%	8.3%	0.0%	15%	100.0%
Rev Req excl WS				14.4%	24.1%	4.6%	0.7%	0.0%	0.4%	1.4%	0.9%	53%	100.0%
Rev Req		49.0%	6.0%	7.4%	12.3%	2.3%	0.4%	0.0%	0.2%	0.7%	0.5%	21%	100.0%
General Cost												100%	100.0%
General Cost Reallocation				26.5%	55.7%	10.6%	1.7%			3.3%	2.2%		100.0%

CURRENT REVENUE REQUIREMENTS	FY 2016	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
REVENUE REQUIREMENTS													
O&M Expenses	$35,889,179	$19,285,094	$2,351,230	$1,770,589	$3,607,383	$707,882	$148,165	$0	$115	$431	$188,052	$7,830,237	$35,889,179
Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Rate Funded Replacement CIP	$9,279,271	$0	$0	$3,005,929	$3,306,522	$569,304	$0	$0	$205,448	$771,593	$0	$1,420,475	$9,279,271
Transfers to Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transfers to Recycled Water Operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Transfers to Other Restricted Policy Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reserve Funding	-$5,788,350	$0	$0	-$1,875,079	-$2,062,587	-$355,128	$0	$0	-$128,157	-$481,315	$0	-$886,083	($5,788,350)
SUBTOTAL REVENUE REQUIREMENTS	**$39,380,101**	**$19,285,094**	**$2,351,230**	**$2,901,439**	**$4,851,318**	**$922,058**	**$148,165**	**$0**	**$77,405**	**$290,709**	**$188,052**	**$8,364,629**	**$39,380,101**
Less Non-Operating Revenues													
Other Operating Revenues	-$1,753,426	-$772,730		-$588,241								-$392,455	($1,753,426)
Stand-By Fee, Property Tax, Assessments	-$819,667	$0	$0	$0	$0	$0	$0	-$819,667	$0	$0	$0	$0	($819,667)
Interest Income	-$192,687	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$192,687	($192,687)
Rental Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	-$860,727	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$860,727	($860,727)
Transfers from Rate Stab Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SUBTOTAL NON-OPERATING REVENUES	**-$3,626,507**	**-$772,730**	**$0**	**-$588,241**	**$0**	**$0**	**$0**	**-$819,667**	**$0**	**$0**	**$0**	**-$1,445,869**	**-$3,626,507**
NET REVENUE REQUIREMENTS	**$35,753,593**	**$18,512,364**	**$2,351,230**	**$2,313,198**	**$4,851,318**	**$922,058**	**$148,165**	**-$819,667**	**$77,405**	**$290,709**	**$188,052**	**$6,918,759**	**$35,753,593**
Reallocation of General Costs		$0	$0	$1,836,743	$3,852,080	$732,140	$117,647	$0	$0	$230,831	$149,319	-$6,918,759	$0
Reallocation of Public Fire Protection Costs		$0	$0	$20,549	$43,096	$8,191	$1,316	$0	-$77,405	$2,582	$1,671		($0)
NET ADJUSTED REV REQMT FROM CURRENT RATES	**$35,753,593**	**$18,512,364**	**$2,351,230**	**$4,170,490**	**$8,746,494**	**$1,662,389**	**$267,128**	**-$819,667**	**$0**	**$524,122**	**$339,042**	**$0**	**$35,753,593**

				FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Total Revenue Requirements @ Prior Yr Rates				$37,338,439	$37,716,890	$40,394,375	$43,265,170	$46,342,544
	Rev Adjustments				4.5%	4.5%	4.5%	4.5%
	Annualized Rev Adjustments				**$1,697,260**	**$1,817,747**	**$1,946,933**	**$2,085,414**
	Cumulative Rev Adjustments			100%	104.5%	109.2%	114.1%	119.3%
culate Multi-Year w/o Rev Adjustments and Pass-through				**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
				% to be Recovered in Bi-Monthly RTS				
	Base			30.0%	35.0%	40.0%	45.0%	50.0%
	Peaking			30.0%	35.0%	40.0%	45.0%	50.0%
	Meters			100.0%	100.0%	100.0%	100.0%	100.0%
	Base			$4,537,686	$4,564,005	$4,590,476	$4,617,101	$4,643,880
	Peaking			$11,325,347	$11,391,034	$11,457,102	$11,523,553	$11,590,390
	Meters			$570,269	$573,577	$576,904	$580,250	$583,615
	Meters & Capacity in RTS			$5,329,179	$6,157,841	$6,995,935	$7,843,544	$8,700,750
	Delivery			$3,139,585	$2,929,594	$2,717,062	$2,501,966	$2,284,283
	Peaking			$7,835,907	$7,311,804	$6,781,357	$6,244,511	$5,701,210
	Meters	**Capacity**						
	3/4"	1.00		461	464	467	469	472
	3/4" x 1"	1.00		16,230	16,324	16,418	16,514	16,609
	1"	1.67		2,129	2,142	2,154	2,167	2,179
	1 1/2"	3.33		595	598	602	605	609
	2"	5.33		411	413	416	418	420
	2 1/2"	11.67		0	0	0	0	0
	3"	11.67		41	42	42	42	42
	4"	21.00		18	18	18	19	19
	6"	53.33		16	16	16	16	17
	8"	93.33		4	4	4	4	4
	10"	140.00		0	0	0	0	0
	Total EMU			**26,521**	**26,674**	**26,829**	**26,985**	**27,141**

				FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Meters & Capacity in RTS Unit Rate / EMU			$16.75	$19.24	$21.73	$24.23	$26.72
	3/4"	1.00		$16.75	$19.24	$21.73	$24.23	$26.72
	3/4" x 1"	1.00		$16.75	$19.24	$21.73	$24.23	$26.72
	1"	1.67		$27.92	$32.07	$36.22	$40.39	$44.54
	1 1/2"	3.33		$55.84	$64.14	$72.44	$80.77	$89.07
	2"	5.33		$89.34	$102.62	$115.90	$129.23	$142.51
	2 1/2"	11.67		$195.42	$224.47	$253.52	$282.69	$311.74
	3"	11.67		$195.42	$224.47	$253.52	$282.69	$311.74
	4"	21.00		$351.75	$404.04	$456.33	$508.83	$561.12
	6"	53.33		$893.34	$1,026.14	$1,158.94	$1,292.27	$1,425.07
	8"	93.33		$1,563.34	$1,795.74	$2,028.14	$2,261.47	$2,493.87
	10"	140.00		$2,345.00	$2,693.60	$3,042.20	$3,392.20	$3,740.80
	Bi-Monthly RTS prior to any Rev Adjustment beyond FY 2016							
	3/4"			$18.30	$20.79	$23.28	$25.78	$28.27
	3/4" x 1"			$18.30	$20.79	$23.28	$25.78	$28.27
	1"			$29.47	$33.62	$37.77	$41.94	$46.09
	1 1/2"			$57.39	$65.69	$73.99	$82.32	$90.62
	2"			$90.89	$104.17	$117.45	$130.78	$144.06
	2 1/2"			$196.97	$226.02	$255.07	$284.24	$313.29
	3"			$196.97	$226.02	$255.07	$284.24	$313.29
	4"			$353.30	$405.59	$457.88	$510.38	$562.67
	6"			$894.89	$1,027.69	$1,160.49	$1,293.82	$1,426.62
	8"			$1,564.89	$1,797.29	$2,029.69	$2,263.02	$2,495.42
	10"			$2,346.55	$2,695.15	$3,043.75	$3,393.75	$3,742.35
	Bi-Monthly RTS with Rev Adjustments							
	3/4"			$18.30	$21.73	$25.43	$29.42	$33.72
	3/4" x 1"			$18.30	$21.73	$25.43	$29.42	$33.72
	1"			$29.47	$35.14	$41.25	$47.87	$54.97
	1 1/2"			$57.39	$68.65	$80.80	$93.95	$108.07
	2"			$90.89	$108.86	$128.26	$149.25	$171.80
	2 1/2"			$196.97	$236.20	$278.55	$324.37	$373.61
	3"			$196.97	$236.20	$278.55	$324.37	$373.61
	4"			$353.30	$423.85	$500.02	$582.43	$671.00
	6"			$894.89	$1,073.94	$1,267.29	$1,476.47	$1,701.28
	8"			$1,564.89	$1,878.17	$2,216.48	$2,582.49	$2,975.84
	10"			$2,346.55	$2,816.44	$3,323.86	$3,872.84	$4,462.83

				FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Usage in Tiers							
	Tier 1	100%	0%	2,299,271	2,365,337	2,433,239	2,503,090	2,574,891
	Tier 2	100%	75%	3,764,775	3,870,130	3,978,411	4,089,801	4,204,301
	Tier 3	100%	124%	1,496,663	1,538,546	1,581,593	1,625,875	1,671,394
	Tier 4	100%	169%	668,539	687,248	706,476	726,256	746,589
	Tier 5	100%	169%	679,241	698,249	717,785	737,882	758,540
	Temporary Servic	100%	443%	54,339	54,339	54,339	54,339	54,339
	Delivery Equivalent Units of Service			8,962,829	9,213,849	9,471,842	9,737,244	10,010,054
	Peaking Equivalent Units of Service			7,197,914	7,392,606	7,592,706	7,798,552	8,010,144
	Delivery Unit Rate			$0.35	$0.32	$0.29	$0.26	$0.23
	Peaking Unit Rate			$1.09	$0.99	$0.89	$0.80	$0.71
	Delivery Rates							
	Tier 1	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Tier 2	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Tier 3	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Tier 4	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Tier 5	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Temporary Servic	100%		$0.36	$0.32	$0.29	$0.26	$0.23
	Peaking Rates							
	Tier 1	0%		$0.00	$0.00	$0.00	$0.00	$0.00
	Tier 2	75%		$0.82	$0.75	$0.67	$0.61	$0.54
	Tier 3	124%		$1.35	$1.23	$1.11	$1.00	$0.89
	Tier 4	169%		$1.84	$1.68	$1.51	$1.36	$1.21
	Tier 5	169%		$1.84	$1.68	$1.51	$1.36	$1.21
	Temporary Servic	443%		$4.83	$4.39	$3.96	$3.55	$3.16
	Commodity Rates before Revenue Adjustment and Pass-through							
	Tier 1			$2.36	$2.32	$2.29	$2.26	$2.23
	Tier 2			$3.18	$3.07	$2.96	$2.87	$2.77
	Tier 3			$3.95	$3.79	$3.64	$3.50	$3.36
	Tier 4			$4.97	$4.77	$4.57	$4.39	$4.21
	Tier 5			$4.97	$4.77	$4.57	$4.39	$4.21
	Temporary Services			$7.85	$7.37	$6.91	$6.47	$6.05
	Commodity Rates with Revenue Adjustment & No Pass-through							
	Tier 1			$2.36	$2.43	$2.51	$2.58	$2.66
	Tier 2			$3.18	$3.21	$3.24	$3.28	$3.31
	Tier 3			$3.95	$3.97	$3.98	$4.00	$4.01
	Tier 4			$4.97	$4.99	$5.00	$5.01	$5.03
	Tier 5			$4.97	$4.99	$5.00	$5.01	$5.03
	Temporary Services			$7.85	$7.71	$7.55	$7.39	$7.22

11.7 APPENDIX 7: RW COST ALLOCATION FACTORS

	FY 2016	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
SOURCE OF SUPPLY													
5100 Purchased Water - JPA RWTR	$1,896,519	48%	52%									0%	100%
5115 Purchased Water - Potable Suppl	$1,360,971	100%	0%									0%	100%
Sub-total	***$3,257,490***												
OPERATING EXPENSES													
5400 Labor	$150,484			20%	30%	50%						0%	100%
5405.1 Energy	$7,576			20%	30%	50%						0%	100%
5410 Supplies/Material	$0			20%	30%	50%						0%	100%
5415 Outside Services	$0			20%	30%	50%						0%	100%
5420 Permits and Fees	$0			20%	30%	50%						0%	100%
Sub-total	***$158,060***												
MAINTENANCE EXPENSES													
5500 Labor	$4,312			20%	30%	50%	0%	0%	0%	0%	0%	0%	100%
5510 Supplies/Material	$916			20%	30%	50%	0%	0%	0%	0%	0%	0%	100%
5515 Outside Services	$0			20%	30%	50%	0%	0%	0%	0%	0%	0%	100%
5530 Capital Outlay	$0			20%	30%	50%	0%	0%	0%	0%	0%	0%	100%
Sub-total	***$5,228***												
RESOURCE CONSERVATION													
6787 Incentive Program	$0											100%	100%
6790 Back Flow Protection	$33,923											100%	100%
Sub-total	***$33,923***												
ADMINISTRATIVE EXPENSES													
6260 Rental Charge - Facility Repl	$17,064											100%	100%
7160 Direct Charged Supplies & Services	$0											100%	100%
7145 Claims Paid	$0											100%	100%
7155 Other Expense	$0											100%	100%
7206 Allocated G & A	$0											100%	100%
7225 Allocated Support Services	$117,063											100%	100%
7226 Allocated Operations Services	$312,951											100%	100%
Sub-total	***$447,078***												
TOTAL OPERATING EXPENSES	**$3,901,779**	**$2,278,520**	**$978,970**	**$32,658**	**$48,986**	**$81,644**	**$0**	**$0**	**$0**	**$0**	**$0**	**$481,001**	**$3,901,779**
O&M Allocation Factors		**58%**	**25%**	**1%**	**1%**	**2%**	**0%**	**0%**	**0%**	**0%**	**0%**	**12%**	**100%**

		Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
O&M		58.4%	25.1%	0.8%	1.3%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	12%	100.0%
Recycled Funding							100%					0%	100.0%
Rev Offset								100%				0%	100.0%
Capital		0.0%	0.0%	34.5%	51.7%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	11%	100.0%
Rev Req excl WS				20.6%	30.9%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	45%	100.0%
Rev Req		37.5%	16.1%	12.9%	19.3%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	12%	100.0%
General Cost												100%	100.0%
General Cost Reallocation				37.2%	55.9%	6.9%	0.0%			0.0%	0.0%		100.0%

CURRENT REVENUE REQUIREMENTS	FY 2016	Water Supply	Power	Base	Max Day	Max Hour	Conservation	Rev Offset	Fire	Meters	B&CS	General	Total
REVENUE REQUIREMENTS													
O&M Expenses	$3,901,779	$2,278,520	$978,970	$32,658	$48,986	$81,644	$0	$0	$0	$0	$0	$481,001	$3,901,779
Rate Funded Replacement CIP	$1,590,763	$0	$0	$548,226	$822,339	$46,536	$0	$0	$0	$0	$0	$173,662	$1,590,763
Reserve Funding	$586,155	$0	$0	$202,007	$303,011	$17,147	$0	$0	$0	$0	$0	$63,990	$586,155
SUBTOTAL REVENUE REQUIREMENTS	**$6,078,697**	**$2,278,520**	**$978,970**	**$782,891**	**$1,174,336**	**$145,327**	**$0**	**$0**	**$0**	**$0**	**$0**	**$718,652**	**$6,078,697**
Less Non-Operating Revenues													
Other Operating Revenues	($617,834)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	($617,834)	($617,834)
Interest Income	($106,851)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	($106,851)	($106,851)
SUBTOTAL NON-OPERATING REVENUES	**($724,684)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**($724,684)**	**($724,684)**
NET REVENUE REQUIREMENTS	**$5,354,013**	**$2,278,520**	**$978,970**	**$782,891**	**$1,174,336**	**$145,327**	**$0**	**$0**	**$0**	**$0**	**$0**	**($6,032)**	**$5,354,013**
Reallocation of General Costs		$0	$0	($2,246)	($3,369)	($417)	$0	$0	$0	$0	$0	$6,032	$0
Reallocation of Public Fire Protection Costs		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		$0
NET ADJUSTED REV REQMT FROM CURRENT RATES	**$5,354,013**	**$2,278,520**	**$978,970**	**$780,645**	**$1,170,967**	**$144,910**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,354,013**
Less Monthly RTS RW Services Rev	($346,991)				($346,991)								($346,991)
NET RW COMMODITY REV BEFORE REV ADJMT	**$5,007,022**	**$2,278,520**	**$978,970**	**$780,645**	**$823,977**	**$144,910**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,007,022**

11.8 APPENDIX 8: SANITATION COST ALLOCATION FACTORS

	FY 2015	Flow	BOD	TSS	B&CS	General	Total
PURCHASED SERVICES							
5735 Share of JPA Net Expenses	$9,391,472	60%	20%	20%		0%	100%
5740 City of Los Angeles	$382,900	60%	20%	20%		0%	100%
Sub-total	***$9,774,372***						
OPERATING EXPENSES							
5400 Labor	$32,661					100%	100%
5405.1 Energy	$102,480	100%				0%	100%
5405.2 Telephone	$18,744					100%	100%
5405.4 Water	$600					100%	100%
5417 Odor Control	$4,000					100%	100%
5420 Permits and Fees	$11,085					100%	100%
5425 Consulting Services	$0					100%	100%
5430 Capital Outlay	$0					100%	100%
Sub-total	***$169,570***						
MAINTENANCE EXPENSES							
5500 Labor	$95,865					100%	100%
5510 Supplies/Material	$31,000					100%	100%
5515 Outside Services	$20,201					100%	100%
5520 Permits and Fees	$0					100%	100%
5525 Consulting Services	$0					100%	100%
5530 Capital Outlay	$0					100%	100%
Sub-total	***$147,066***						
SPECIALTY EXPENSES							
5700 SCADA Services	$5,865	60%	20%	20%		0%	100%
5710.2 Tech Services	$88	60%	20%	20%		0%	100%
Sub-total	***$5,953***						
ADMINISTRATIVE EXPENSES							
6260 Rental Charge - Facility Repl	$30,107				100%	0%	100%
7160 Direct Charged Supplies & Se	$0				100%	0%	100%
7205 Allocated Legal (TSD)	$0				100%	0%	100%
7206 Allocated G & A	$0				100%	0%	100%
7225 Allocated Support Services	$301,649				100%	0%	100%
7226 Allocated Operations Service	$820,584				100%	0%	100%
Sub-total	***$1,152,340***						
TOTAL OPERATING EXPENSES	**$11,249,301**	**$5,970,675**	**$1,956,065**	**$1,956,065**	**$1,152,340**	**$214,156**	**$11,249,301**
O&M Allocation Factors		**53%**	**17%**	**17%**	**10%**	**2%**	**100%**

		Flow	BOD	TSS	B&CS	General	Total
O&M		53.1%	17.4%	17.4%	10.2%	1.9%	100.0%
Capital		55.8%	17.3%	17.3%	0.0%	9.7%	100.0%
Rev Req		54.0%	17.3%	17.3%	6.6%	4.6%	100.0%

URRENT REVENUE REQUIREMENTS	FY 2015	Flow	BOD	TSS	B&CS	General	Total
REVENUE REQUIREMENTS							
O&M Expenses	$11,249,301	$5,970,675	$1,956,065	$1,956,065	$1,152,340	$214,156	$11,249,301
Debt Service	$1,845,800	$1,029,806	$318,701	$318,701	$0	$178,593	$1,845,800
Rate Funded Replacement CIP	$1,684,699	$939,924	$290,884	$290,884	$0	$163,005	$1,684,699
Transfers to Other Funds	$621,925	$346,984	$107,383	$107,383	$0	$60,175	$621,925
Reserve Funding	$1,954,793	$1,090,615	$337,520	$337,520	$0	$189,139	$1,954,793
SUBTOTAL REVENUE REQUIREMEI	**$17,356,518**	**$9,378,004**	**$3,010,553**	**$3,010,553**	**$1,152,340**	**$805,068**	**$17,356,518**
Less Non-Operating Revenues							
Other Operating Revenues	-$260,040	-$140,504	-$45,105	-$45,105	-$17,265	-$12,062	($260,040)
Stand-By Fee, Property Tax, Asses	-$91,467	-$49,421	-$15,865	-$15,865	-$6,073	-$4,243	($91,467)
Interest Income	-$102,683	-$55,481	-$17,811	-$17,811	-$6,817	-$4,763	($102,683)
Rental Income	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0
Transfers from Rate Stab Reserve	$0	$0	$0	$0	$0	$0	$0
SUBTOTAL NON-OPERATING REVE	**-$454,190**	**-$245,406**	**-$78,781**	**-$78,781**	**-$30,155**	**-$21,067**	**-$454,190**
NET REVENUE REQUIREMENTS	**$16,902,328**	**$9,132,597**	**$2,931,772**	**$2,931,772**	**$1,122,185**	**$784,001**	**$16,902,328**
Reallocation of General Costs		$0	$0	$0	$0	$0	$0
NET ADJUSTED REV REQMT FROM	**$16,902,328**	**$9,132,597**	**$2,931,772**	**$2,931,772**	**$1,122,185**	**$784,001**	**$16,902,328**
Units of Service		2,257,965	10,893	13,034	278,844	278,844	
		(hcf)	(lbs/day)	(lbs/day)	(bills/year)	(bills/year)	
Unit Cost of Service		**$4.04**	**$269.13**	**$224.94**	**$4.02**	**$2.81**	
		$ / hcf	$ / lb	$ / lb	$ / bill	$ / bill	
		60.9%	**19.6%**	**19.6%**			