

Zone 7 Water Agency

Wholesale Water Rate Study

Report / November, 2015

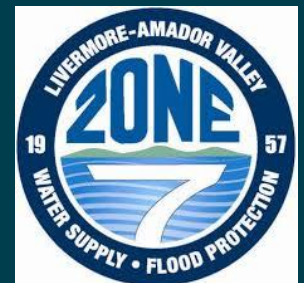


TABLE OF CONTENTS

- 1 EXECUTIVE SUMMARY..... 1**
 - 1.1 BACKGROUND OF ZONE 7 WATER AGENCY..... 1**
- 2 INTRODUCTION 2**
 - 2.1 STUDY APPROACH 2**
 - 2.2 ASSUMPTIONS USED IN THE STUDY 3**
 - 2.3 WATER UTILITY 4**
- 3 FINANCIAL PLAN..... 5**
 - 3.1 WHOLESALE WATER UTILITY FINANCIAL HEALTH 5**
 - 3.2 PROPOSED FINANCIAL PLAN..... 8**
 - 3.3 FIVE-YEAR CASH FLOW PRO FORMA 11**
- 4 RATE DESIGN 12**
 - 4.1 RFC RATE RECOMMENDATIONS..... 12**
 - 4.2 APPROVED RATE RECOMMENDATIONS 13**
 - 4.3 RATE DERIVATION..... 14**
- APPENDIX A – PROJECTED PRO FORMA – AT CURRENT RATES 17**
- APPENDIX B – DEFERRED CIP SUMMARY..... 18**
- APPENDIX B – DEFERRED CIP DETAIL (CONT)..... 19**
- APPENDIX C – DROUGHT RATES 20**
- APPENDIX C – DROUGHT RATES (CONT)..... 21**

LIST OF TABLES

- Table 2-1: Inflation Factor Assumptions4
- Table 2-2: Growth & Demand Assumptions4
- Table 2-3: Projected Retailer Usage Assumptions4
- Table 2-4: Current Treated Water Rates4
- Table 3-1: Fiscal Year 2015-16 Budget and Projections (Fund 100 – Water Enterprise).....5
- Table 3-2: Fund 100 –Water Enterprise Reserve Balances6
- Table 3-3: Five-Year Water Operating Cash Flow 11
- Table 4-1: Recommended Rate Structure..... 12
- Table 4-2: Approved Five-Year Water Operating Cash Flow 14
- Table 4-3: Three-Year Rate Revenue Requirements..... 15
- Table 4-4: Base Variable Rates (Without Temporary Conservation Surcharge)..... 15
- Table 4-5: Projected Temporary Conservation Surcharge 16
- Level 1 Drought- 10% Reduction in Water Use20
- Level 2 Drought- 20% Reduction in Water Use.....20
- Level 3 Drought- 30% Reduction in Water Use21
- Level 4 Drought- 40% Reduction in Water Use.....21

LIST OF FIGURES

- [Figure 3-1: Operating Position at Current Rates6](#)
- [Figure 3-2: Capital Improvement Program and Funding Source.....7](#)
- [Figure 3-3: Projected Ending Operating Fund \(Fund 100\) Reserves at Current Rates7](#)
- [Figure 3-4: Projected Ending Capital Reserve \(Fund 120\) Reserves – Master CIP7](#)
- [Figure 3-5: Proposed Necessary Revenue Requirements9](#)
- [Figure 3-6: Projected Revised CIP and Funding Source.....9](#)
- [Figure 3-7: Projected Ending Reserves \(Fund 100\).....10](#)
- [Figure 3-8: Projected Ending Reserves \(Fund 120\).....10](#)
- [Figure 3-9: Projected Ending Reserves \(Fund 100 and 120\)10](#)
- [Figure 4-1: Variable Rate Components16](#)

1 EXECUTIVE SUMMARY

1.1 BACKGROUND OF ZONE 7 WATER AGENCY

The Agency was established in 1957 for flood protection and as water agency providing both untreated water to support area agriculture and as a wholesale water agency to provide a reliable supply of high quality water to the Livermore-Amador Valley. In 1961, Zone 7 contracted for State Water Project water to be delivered through the South Bay Aqueduct. Through its four retail water purveyors, the Agency provides wholesale water services to approximately 220,000 residents and business within its service area, which encompasses Dublin, Livermore, Pleasanton, and, by special agreement with the Dublin San Ramon Services District, the Dougherty Valley portion of San Ramon. The Agency's water resources include imported water from the State Water Project, local groundwater storage, surface water captured in the Del Valle Reservoir and offsite groundwater banking in Kern County. Historically, the majority of the Agency's water demand has been met by imported water from the State Water Project, with almost 80% of the current total water demand supported by imported water. These supplies have been limited due to the severe drought conditions locally and throughout the State of California.

The Agency's Water Utility, like other agencies in California, is faced with challenges related to the reduction in water usage as a result of conservation. This is not a situation that is unique to the Agency, as many agencies throughout the State of California are faced with drought concerns while reinvesting in their utility systems to ensure the delivery of safe and reliable water.

2 INTRODUCTION

2.1 STUDY APPROACH

The major objectives of the study include the following:

1. Ensure financial sufficiency for the Agency.
2. Ensure that rates are fair and equitable, and are based on cost of service guidelines used in the industry.
3. Develop rates based on new water demand projections from each Retailer and create a multi-year financial plan for the Agency's use in future years.

As a part of the study, RFC evaluated the Agency's prior and current water usage and prior and existing rates to develop a projection of existing and projected revenues over the planning period. In addition, the Agency's revenue requirements, including operations and maintenance (O&M) expenses, capital expenditures, and debt service associated with existing debt issues, were evaluated and projected over the planning period. RFC worked with Agency staff and Retailers to evaluate the Agency's proposed financial plan, determining the level of revenue adjustments necessary for the Agency to meet its financial goals and objectives. Lastly, with extensive input from Agency staff and Retailers through a series of meetings, RFC developed a rate schedule that enhances the Agency's revenue sufficiency and stability through a temporary conservation surcharge, is equitable to all retail purveyors, and incentivizes conservation.

The study, in concert with the Agency's other planning documents and processes, will integrate operational planning into a coordinated program for the determination of water charges over the next three-year planning period. As proposed, the rates are fair and equitable, recover the reasonable costs of the Agency in providing water service, and allocate such costs in a manner that bears a fair and reasonable relationship to the retail purveyors' burdens on and benefits received from the Agency's services. The proposed rates also satisfy the rate setting guidelines detailed in the American Water Works Association's (AWWA) Manual M-1 "*Principles of Water Rates Fees and Charges*" that the cost of service analysis "should include specific conditions of service to wholesale customers, specific type and level of service provided, and consideration of the way in which the utility actually provides service to its customers"¹.

The Study approach is summarized as follows:

- **Financial Plan and Revenue Requirements:** Financial planning compares the overall revenues of the Agency's wholesale water enterprise to its overall revenue requirements to determine the rate adjustments needed over a multi-year period. RFC recommends 10% revenue adjustments, above CPI, for each of the next four years plus a temporary conservation surcharge to mitigate lost revenue Agency experienced over the current and previous fiscal year. However, the planning period and corresponding rates for the Board's consideration and approval is over the next three fiscal years, including Fiscal Year 2015-16, Fiscal Year 2016-17, and Fiscal Year 2017-18. The Study's revenue requirements analysis compares the current revenues of the utility to

¹ "Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1" (6th ed. 2012), which documents many of the standards used by professionals in the water utility rate-setting industry.

its operating and capital costs and evaluates the amount of revenue recovery when applying the Agency's current rates. Based on the best information currently available, the current financial plan incorporates projected operations and maintenance costs, capital expenditures, asset management plan funding, and existing debt service and proposed future debt issues. The Agency's provided updated water demand data for each Retailer to forecast the revenues that would be recovered under the existing rates. This forecast revenue was compared against a forecast of the Agency's O&M and capital expenditures to determine if rates needed to be updated to ensure revenue sufficiency.

- **Cost of Service Analysis:** The Cost-of-Service analysis proportionally allocates the revenue requirements for the Agency among its customers (Retailers). Following the determination of overall revenue requirements, the Agency's costs and expenses were categorized to appropriately allocate expenses based on how the costs are incurred for cost recovery. In addition, cost recovery also considers the current rate structure and policy decisions. Currently, the Agency's recovers over 98% of its cost through commodity rates, which causes revenue volatility, especially when the Agency experiences water demand reductions as a result of the current drought conditions. . This analysis included a review of Retailers' historical usage, current volumetric flow data, projected water demand, as well as water usage peaking behaviors as a potential option for allocating costs. These metrics were all used to determine how to potentially allocate costs among the various Retailers, based on their proportionate use of the system, and contribution to the cost of its operation.
- **Rate Design:** The final part of the analysis, Rate Design, determines how service fee revenues will be collected from the respective Retailers in a manner that respects the results of the cost-of-service analysis and legal requirements, while also addressing Agency goals and objectives and with consideration of the Agency's current rate structure. Based on the current rate structure, RFC recommends establishing a fixed charge component that would recover 35% of total required revenue. Doing so would provide the Agency revenue stability and predictability as well as rate stability to Retailers over the long-term as significant changes in usage wouldn't cause significant changes in revenue.

2.2 ASSUMPTIONS USED IN THE STUDY

The period for the Study uses Fiscal Year 2015-16 budget as the base year and the model projects through Fiscal Year 2024-25; however, the proposed rates herein are for Calendar Years 2016, 2017 and 2018, as the Agency will continue to periodically review rates and take a measured approach with any potential rate adjustments.² Certain cost escalation assumptions and inputs were incorporated into the Study to adequately model expected future costs of the Wholesale Water Enterprise. These assumptions were based on discussions with and/or direction from Agency management. Assumptions include inflation factors, CPI indexing of rates, projected sales by retailer and other miscellaneous assumptions. These assumptions are presented in **Tables 2-1, 2-2 and 2-3**.

² Tables in this report show a five-year period, starting with FY 2015-16 through FY 2019-20.

Table 2-1: Inflation Factor Assumptions

Key Factors	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
General	3%	3%	3%	3%	3%
Salary	3%	3%	3%	3%	3%
Benefits	3%	3%	3%	3%	3%
Utilities	5%	5%	5%	5%	5%
Supplies	3%	3%	3%	3%	3%
CPI Index to Rates	3%	3%	3%	3%	3%
Energy	5%	5%	5%	5%	5%

Table 2-2: Growth & Demand Assumptions

Key Factors	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Water Demand	<i>See Table 2-3</i>				
Miscellaneous Revenue	1%	1%	1%	1%	1%
Proposed Debt	\$43M				
Reserve Interest Rate	0.5%	0.5%	0.5%	0.5%	0.5%
Debt Interest Rate	5%	5%	5%	5%	5%
Debt Term (years)	30	30	30	30	30

Table 2-3: Projected Retailer Usage Assumptions

Retailers	Projected Demand in Acre Feet				
	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
City of Pleasanton	9,660	10,890	11,900	11,920	11,950
DSRSD	8,364	9,418	9,742	10,062	10,369
Cal Water	5,228	5,776	5,824	6,239	6,633
Livermore	4,921	5,080	5,160	5,170	5,240
Total	28,173	31,164	32,626	33,391	34,192

2.3 WATER UTILITY

The current water rate structure of the Agency consists of two components: a minor monthly service charge per turnout and a 4-tier variable water rate structure, with over 98% of all water sales falling into Tier 4. **Table 2-4** identifies the Agency’s current rate structure, the variable commodity rate structure is comprised of declining tiers.

Table 2-4: Current Treated Water Rates

Customer Class	Current Allotments	2015 Rates (Jan 1, 2015)	2016 Rates (Jan 1, 2016)
	Units (CCF)	\$	\$
Treated Water			
Tier 1	0-33	\$4.097	\$4.220
Tier 2	34 – 333	\$3.280	\$3.379
Tier 3	334 – 3,333	\$2.615	\$2.694
Tier 4	> 3,333	\$2.294	\$2.363
Fixed Charge (Turn-Outs)	Service Charge	\$144.00	\$148.00

3 FINANCIAL PLAN

3.1 WHOLESALE WATER UTILITY FINANCIAL HEALTH

The approved Fiscal Year 2015-16 budget, reflected a starting fund balance equal to \$15.4M and projected water sale revenue of \$34.1M. Based on unaudited actuals for Fiscal Year 2014-15, the ending balance for Fund 100 was only \$14.4M, or a reduction of approximately \$1M. During Calendar Year 2015, the Agency’s retailers are required to meet mandatory conservation through Executive Order B-29-15, which sets conservation goals to each retail water agency throughout the State to achieve an overall state-wide 25% reduction in water usage. These cutbacks also affect the Agency’s revenue stability as nearly 100% of the Agency’s revenue is recovered through variable rates and fixed revenue recovery is negligible, even though a majority of the Agency’s costs are fixed. Based on the most recent water demand projections provided by the Retailers and confirmed by Agency staff (as shown on Table 2-3), RFC recalculated expected water sale revenues using the Agency’s current rates (prices) and the new expected water demand figures (quantities). Recalculating water sales revenue using prices times new quantities, resulted in an amount equal to \$29.4M, which is a reduction of approximately \$4.7M in projected revenues for the current fiscal year. As a result, the new starting fund balance and the calculated water sales together generate an expected shortfall by Fiscal Year End 2015-16. Table 3-1 displays the differences between the adopted Fiscal Year 2015-16 budget and the new revised starting balance and projected ending balance for Fiscal Year 2015-16 and Fiscal Year 2016-17

Table 3-1: Fiscal Year 2015-16 Budget and Projections (Fund 100 – Water Enterprise)

FY 15-16 Budget	Adopted Budget FY 2015-16	Revised FY 2015-16	Projected FY 2016-17⁴
Total Water Sales	\$34,191,645	\$29,496,884 ¹	\$33,531,512
Other Revenues	\$360,991	\$360,991	\$286,534
Total Revenues	\$34,552,636	\$29,857,875	\$33,818,046
Operation Expenses	\$35,619,302	\$31,884,216²	\$33,946,534
AMP Transfer	\$7,000,000	\$7,000,000	\$12,661,760
Total Expenses	\$42,619,302	\$38,884,216	\$46,608,294
Net Cash	(\$8,066,666)	(\$9,026,341)	(\$12,790,248)
Fund 100 Beginning Balance	\$15,404,825	\$14,388,282³	\$5,361,941
Projected Ending Fund Balance	\$7,338,159	\$5,361,941	(\$7,428,307)

¹ Calculated Fiscal Year 2015-16 revenue based on Tables 2-3 and 2-4

² Revised Fiscal Year 2015-16 projected expenses

³ Unaudited Fiscal Year 2014-15 Actuals

⁴ Projected FY 2016-17 – No Rate Changes (Includes 3% CPI for FY 2016)

With the reduction in revenues, the Agency is projected to have a negative net cash flow of (\$9.0M). For Fund 100, the Fiscal Year 2015-16 ending fund balance is projected to be approximately \$5.36M. Fund 100 includes four designated reserves, including Operating Reserve, Drought Contingency Reserve, Emergency Reserve, and Rate Stabilization Reserve. Table 3-2 provides projected ending fund balances for each reserve.

Table 3-2: Fund 100 –Water Enterprise Reserve Balances

Reserves	Unaudited 2014-15 Ending	Adopted Budget 2015-16 Ending	Revised 2015-16 ¹ Ending	Actual Performance	Min Target	Max Target
Fund 100 – Water Enterprise						
Operating	\$6,123,594	\$3,122,788	\$2,795,328	32 days of O&M	32 days of O&M	90 days of O&M
Drought Contingency	\$0.00	\$0.00	\$0.00	0% of Sales	7% of Sales	20% of Sales
Emergency	\$4,353,940	\$2,246,460	\$1,989,152	1% of Assets	1% of Assets	3% of Assets
Rate Stabilization	\$3,910,748	\$1,968,911	\$577,461	2% of Sales	Min of 6% of Sales	
Total	\$14,388,282	\$7,338,159	\$5,361,941			

¹Emergency and Rate Stabilization set to minimum balance and difference transferred to operating.

Figure 3-1 illustrates operating position of the Water Utility, where the expenses are shown by stacked bars; and total revenues at current rates are shown by the horizontal green trend line. **Figure 3-2** summarizes the projected CIP and its funding sources (currently 100% PAYGO) and **Figure 3-3** displays the ending total reserve balance for Fund 100 – Water Enterprise and **Figure 3-4** displays the total reserve balance for Fund 120 – Water Renewal, Replacement & System-wide Improvements Capital Reserve (Capital Reserve).

Figure 3-1: Operating Position at Current Rates

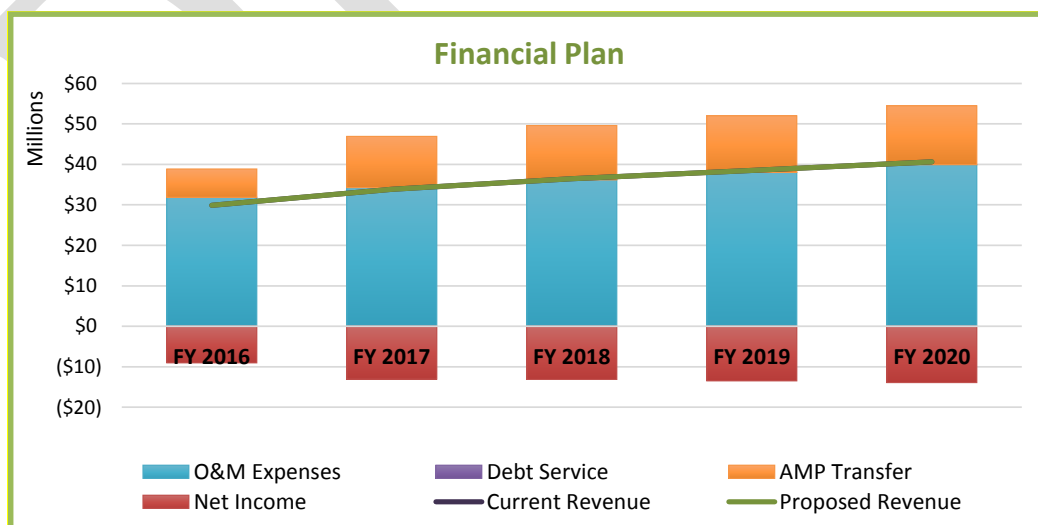


Figure 3-2: Capital Improvement Program and Funding Source

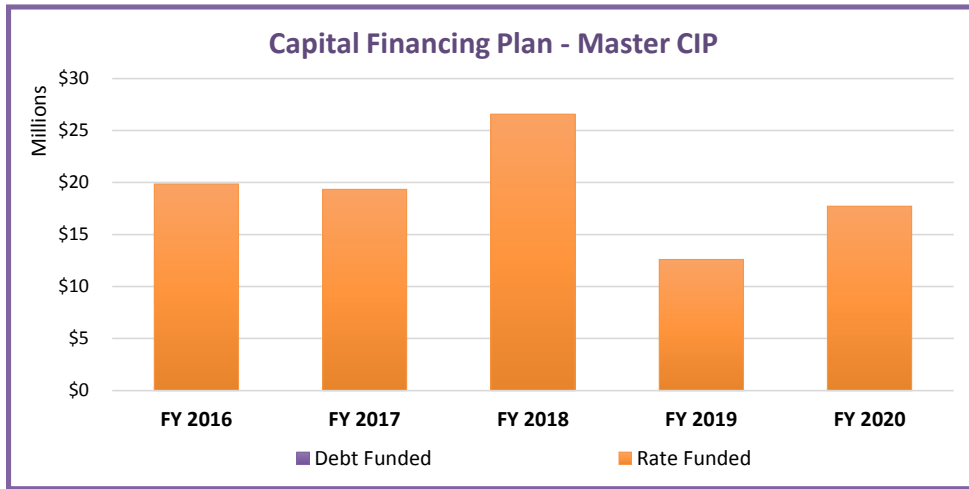


Figure 3-3: Projected Ending Operating Fund (Fund 100) Reserves at Current Rates

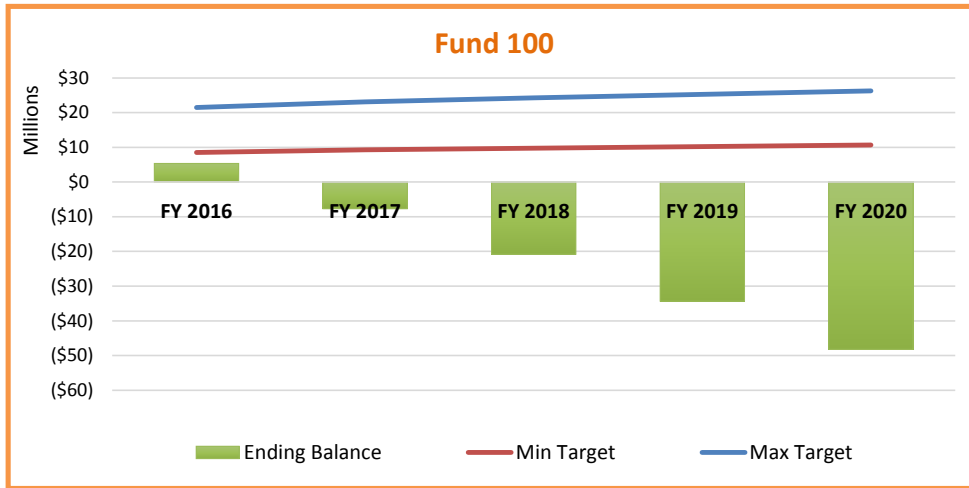
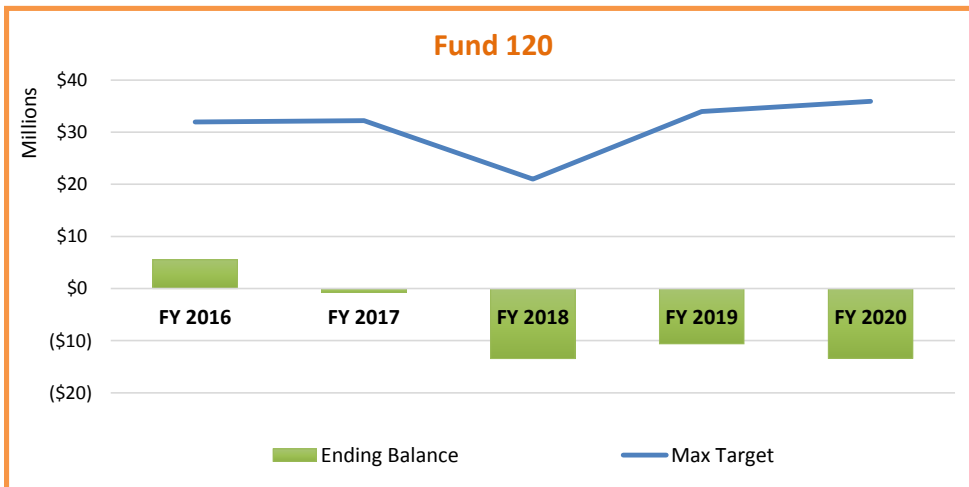


Figure 3-4: Projected Ending Capital Reserve (Fund 120) Reserves – Master CIP



3.2 PROPOSED FINANCIAL PLAN

Financial Plan Recommendations

As part of our cost of service study and rate model development, we first reviewed the Agency's projected revenue requirements over a 10-year planning horizon to determine how current rates could support the utility's revenue needs in the short-term and long-term.

Based on the initial review, if the Agency does not increase its rates, it will have negative net cash at Fiscal Year End 2015-16 that will deplete reserves to offset annual shortfalls. The Agency's reserves will be fully depleted by Fiscal Year 2016-17 if rates are not significantly increased. In addition, the Agency's annual planned capital improvement expenditures average approximately \$19.2M over the next five years. The Agency currently has a healthy level of capital reserves for Fiscal Year 2015-16; however, given the necessary reinvestment in the Agency's water utility system, reserves would only cover the scheduled capital projects for Fiscal Year 2015-16, and without revenue adjustments, reserves would be depleted after funding Fiscal Year 2016-17 projects. Therefore, revenue adjustments and capital project deferrals are necessary to ensure positive net operating cash, adequate liquidity to fund ongoing capital, and to build up reserves to meet the Agency's adopted reserve policies.

After reviewing the Agency's current financials, revenue requirements, reserve policies, and expected reduced water sale revenues, the proposed financial plan was developed to meet the following criteria:

- Recover lost revenue due to a reduction in sales through a Temporary Conservation Surcharge
 - The Temporary Conservation Surcharge would be in place while revenue adjustments are made to permanently replace revenue generated from the Temporary Conservation Surcharge
 - **Temporary Conservation Surcharge would sunset each Calendar and will be reconsidered each year to determine whether a Temporary Conservation Surcharge is still necessary. Based on the proposed Financial Plan, a Temporary Conservation Surcharge would be necessary through June 30, 2018.**
- Fund capital through a combination of Pay-As-You-Go (PAYGO) (cash on hand) and Debt financing
 - Proposed a bond issue in Fiscal Year 2017-18, equal to \$43M (See Appendix B)
 - Bond proceeds would be deposited into Fund 120 and used for necessary capital projects
- Build up reserves to meet minimum target level over the three year planning period
- Provide rate stability for future years outside the 3-year planning period

Given the severity of the drought and the financial impact on the Agency, staff revisited the master capital improvement program to determine whether certain capital projects could be deferred. As a result, the proposed financial plan and recommended rates incorporate the Capital Improvement Program with a revised schedule reflecting such deferrals (Revised CIP).

In conjunction with meeting the criteria referenced above and the schedule adjustments to the capital improvement plan, it is recommended that the Agency adjust revenue by 10% above CPI for each of the Calendar Years 2016, 2017 and 2018. Each revenue adjustment would occur in January, with the first adjustment taking place on January 1, 2016.

Figure 3-5 illustrates the operating position of the Water Utility under the proposed necessary revenue requirements, where the expenses are shown by stacked bars; and total revenues at current rates and proposed rates are shown by the horizontal trend lines. **Figure 3-6** summarizes the projected Revised CIP and its funding sources, either PAYGO or debt financed. **Figure 3-7** through **Figure 3-9** display the

ending total reserve balances for Fund 100, Fund 120, and both funds combined, where the horizontal trend line indicates the target reserve balance (as defined within the Agency’s reserve policies) and the bars indicate ending reserve balance.

Figure 3-5: Proposed Necessary Revenue Requirements

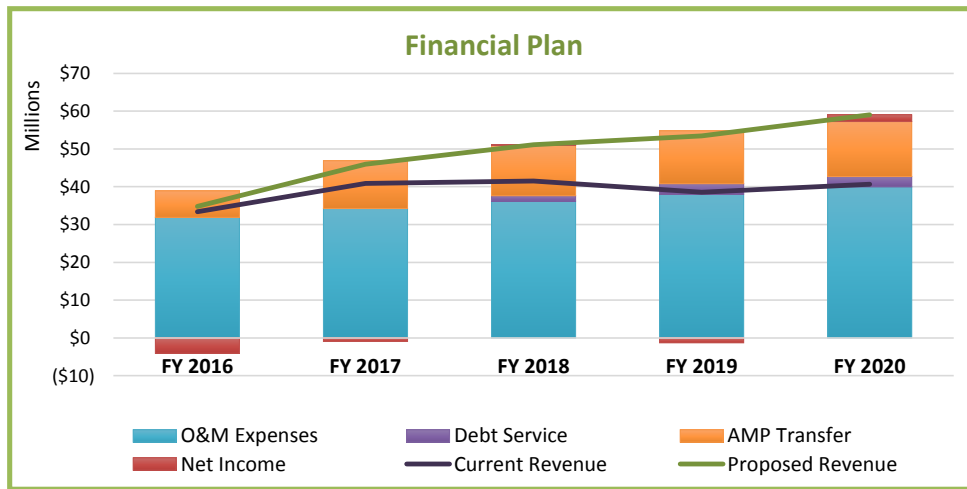


Figure 3-6: Projected Revised CIP and Funding Source

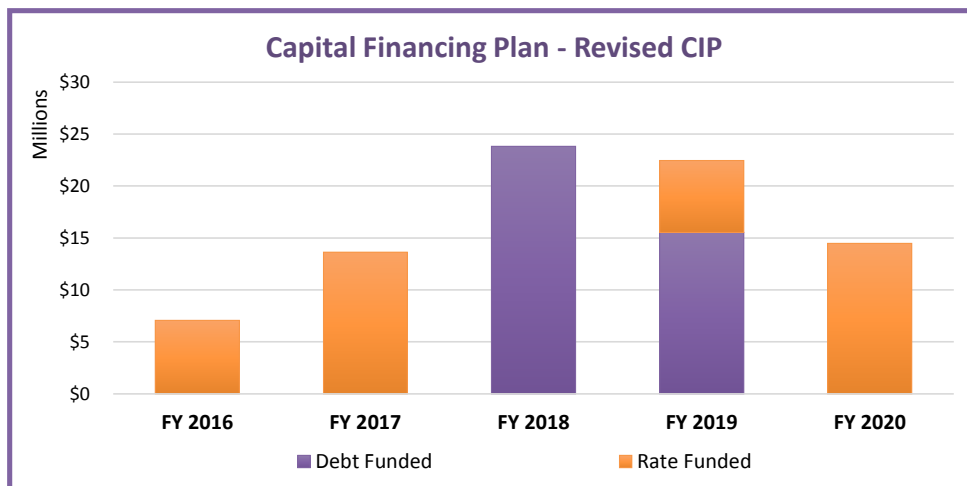


Figure 3-7: Projected Ending Reserves (Fund 100)

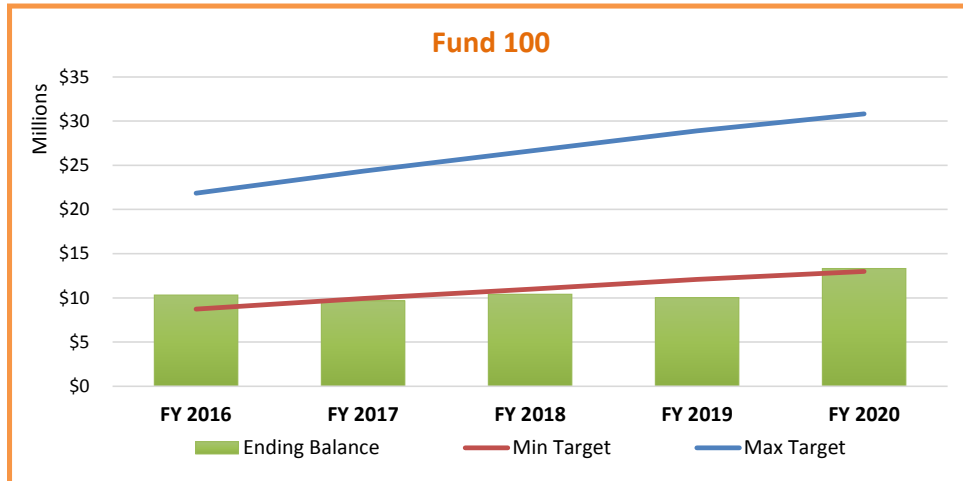


Figure 3-8: Projected Ending Reserves (Fund 120)

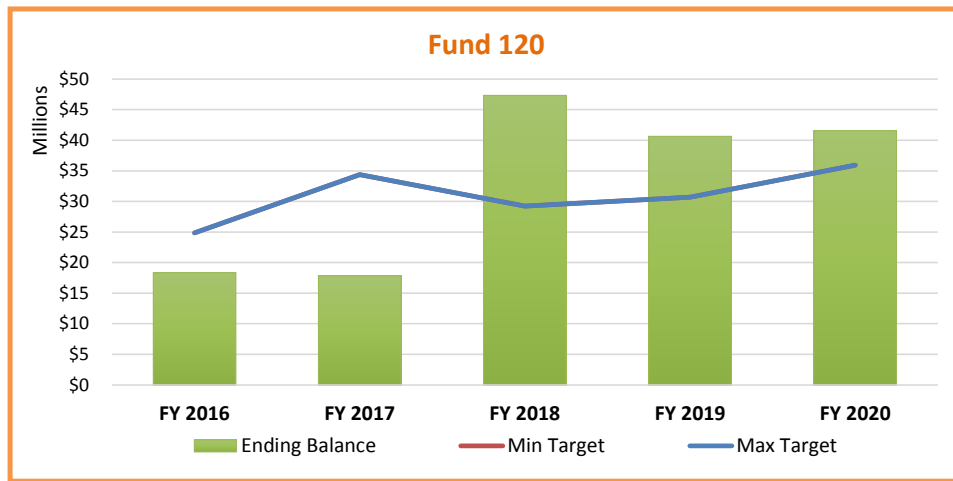
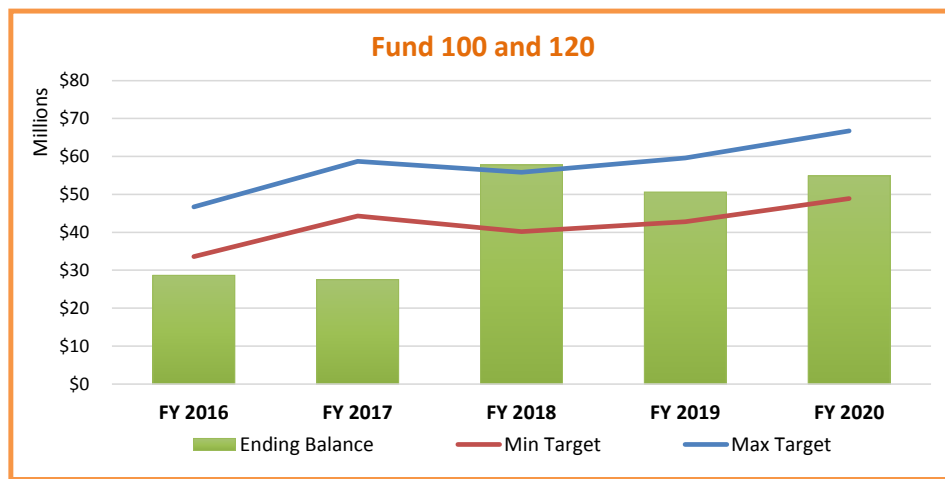


Figure 3-9: Projected Ending Reserves (Fund 100 and 120)



3.3 FIVE-YEAR CASH FLOW PRO FORMA

Table 3-3 shows the cash flow of the Proposed Financial Plan, which reflects the recommendations identified under Section 3.2 for the next three years plus two subsequent years.

Table 3-3: Five-Year Water Operating Cash Flow

	FY 2015 - 16	FY 2016 - 17	FY 2017 - 18	FY 2018 - 19	FY 2019 - 20
Revenue					
Water Sales - Existing Rate	\$28,911,884	\$32,940,662	\$35,594,219	\$37,595,390	\$39,691,412
Additional Revenue Needs:					
Fiscal Year	Revenue Adjustment	Month Effective			
FY 2015 - 16	10%	January	\$1,445,594	\$3,294,066	\$3,559,422
FY 2016 - 17	10%	January		\$1,811,736	\$3,915,364
FY 2017 - 18	10%	January			\$2,153,450
FY 2018 - 19	10%	January		\$2,501,973	\$5,282,927
FY 2019 - 20	1%	January			\$290,561
FY 2020 - 21	1%	January			
FY 2021 - 22	0%	January			
FY 2022 - 23	0%	January			
FY 2023 - 24	0%	January			
FY 2024 - 25	0%	January			
Total Additional Revenue	\$1,445,594	\$5,105,803	\$9,628,236	\$14,946,047	\$18,711,345
Total Rate Revenue	\$30,357,478	\$38,046,465	\$45,222,455	\$52,541,437	\$58,402,757
Conservation Surcharge	\$3,500,000	\$7,000,000	\$5,000,000	\$0	\$0
Investment Earnings	\$90,000	\$49,794	\$56,995	\$64,839	\$72,127
Other Revenue	\$855,991	\$864,551	\$873,196	\$881,928	\$890,748
Total Revenue	\$34,803,469	\$45,960,810	\$51,152,646	\$53,488,204	\$59,365,632
Expenses					
O&M Expenses	\$31,884,216	\$33,946,534	\$35,617,340	\$37,130,377	\$38,726,781
Existing Debt Service	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$1,398,606	\$2,797,212	\$2,797,212
Total Expenses	\$31,884,216	\$33,946,534	\$37,015,946	\$39,927,589	\$41,523,993
Net Cash Flow before Transfers	\$2,919,253	\$12,014,276	\$14,136,701	\$13,560,615	\$17,841,639
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000
Net Cash Flow	(\$4,080,747)	(\$647,484)	\$737,701	(\$389,385)	\$3,311,639
Fund 100 Beginning Balances	\$14,388,282	\$10,307,535	\$9,660,052	\$10,397,752	\$10,008,368
Fund 100 Ending Balances	\$10,307,535	\$9,660,052	\$10,397,752	\$10,008,368	\$13,320,007
Fund 120 Beginning Balances	\$24,725,199				
Sinking Fund	(\$3,884,630)				
Encumbrances/Carryovers	(\$2,876,245)				
Fund 120 Available Balances	\$17,964,324	\$18,327,784	\$17,806,619	\$47,341,630	\$40,630,398
Revenues	\$7,433,460	\$13,098,835	\$53,345,011	\$15,748,769	\$15,393,277
Expenses	(\$7,070,000)	(\$13,620,000)	(\$23,810,000)	(\$22,460,000)	(\$14,470,000)
Fund 120 Ending Balances	\$18,327,784	\$17,806,619	\$47,341,630	\$40,630,398	\$41,553,675
TOTAL BEGINNING BALANCE	\$32,352,606	\$28,635,319	\$27,466,671	\$57,739,382	\$50,638,766
TOTAL ENDING BALANCE	\$28,635,319	\$27,466,671	\$57,739,382	\$50,638,766	\$54,873,682

[1] Revenues in Fund 120 for Fiscal Year 2017-18 includes proceeds (~39M) from proposed bond issue to fund future capital needs while maintaining a healthy level of reserves.

[2] Fund 120 Ending Balances are designated for capital projects.

4 RATE DESIGN

Rate design is the process of developing a rate schedule such that the annual cost of service is equitably recovered from the customers and bears a fair and reasonable relationship to the Retailers burdens on and benefits from the Agency’s activities. In this study, the focus of rate design is on the development of a rate schedule that:

1. Provides revenue sufficiency and stability to the Agency
2. Is fair and equitable and reasonably reflects the Agency’s costs of providing service
3. Encourages water conservation and water use efficiency

4.1 RFC RATE RECOMMENDATIONS

Based on these objectives, RFC provided the following rate recommendations for adjusting the current rate structure:

- RFC recommends adjusting the current 4-tiered variable rate structure and increase the amount of revenue recovery from a fixed charge. **Currently, the monthly service charge only recovers approximately \$65,000** (less than 1%). RFC recommends establishing a fixed charge to recover approximately 35% of required revenue. Moving forward, the new fixed charge would provide increased revenue stability to the Agency and will provide its retailers rate stability in subsequent years after the temporary conservation surcharge sunsets. In order to equitably recover the new fixed charge, RFC recommends using historical water sales for allocating the 35% of revenue recovery to each retailer. This proposed fixed charge can be recovered based on a historical three-year or five-year rolling average of each Retailer.
- For the variable rate component, RFC recommends eliminating the use of tiers and establishing a uniform rate per hundred cubic feet for the retailers. As previously mentioned, more than 98% of total usage and charges occur in Tier 4; therefore, the current rate structure substantially reflects a uniform rate.
- RFC recommends implementing a Temporary Conservation Surcharge to recover the projected revenue shortfall over the next 3-years. **The Temporary Conservation Surcharge should be recovered as a fixed component to ensure stable revenue recovery and it is recommended to recover this surcharge using the 5-year rolling average of historical water sales.**

Based on the above recommendations, the Rate structure would be structured as shown in Table 4-1

Table 4-1: Recommended Rate Structure

Rate Component	Recommended Rate Structure (Allocation Basis)
Fixed Charges (35% of Revenue Requirements)	
Base	5-year rolling average
Peaking	3-year rolling average
Temporary Conservation Surcharge	5-year rolling average
Variable Rate (\$/CCF)	Uniform Rate per CCF

4.2 APPROVED RATE RECOMMENDATIONS

Based on Agency staff discussions with Retailers and direction from Zone 7's Board of Directors, the following adjustments were made to the current rate structure:

- Eliminate declining tiers and implement a uniform rate.
- Maintain current revenue recovery between fixed and variable, with nearly 100% of revenue recovered through commodity rate. The RFC recommended 35% fixed charge recovery component will not be implemented at this time and the current fixed charges, based on turn-outs, would remain in place and increase by the proposed revenue adjustments. Given the size of the required revenue adjustments, Retailers as well as the Agency Board didn't want to add another layer of complexity and education by introducing a new fixed charge structure. As a result, relying the commodity rates for nearly all revenues subjects the Agency to higher degree volatility and revenue instability.
- Implement a Temporary Conservation Surcharge, which will sunset at the end of each Calendar Year. In addition, the Temporary Conservation Surcharge will not be a fixed charge component based on historical water sales, but rather, an additional commodity rate above the base charges. As such, the amount proposed to be recovered from the Temporary Conservation Surcharge is not guaranteed and it will fluctuate with sales. Therefore, if actual water sales are less than the projected water demand identified in Table 2-3, the Temporary Conservation Surcharge will not recover the designated amount. Agency Staff will determined whether it is needed each subsequent Calendar Year and will calculate the necessary amount to charge.

This section of the report presents only the rate recommendations approved by the Board on October 21, 2015 Board meeting, which corresponds to the Financial Plan presented in Section 3.2. **Table 4-2** shows the cash flow of the Board Approved Financial Plan and Rate Components.

Table 4-2: Approved Five-Year Water Operating Cash Flow

	FY 2015 - 16	FY 2016 - 17	FY 2017 - 18	FY 2018 - 19	FY 2019 - 20
Revenue					
Water Sales - Existing Rate	\$28,911,884	\$32,494,408	\$34,054,814	\$34,844,579	\$35,671,509
3% CPI	\$0	\$446,254	\$1,539,404	\$2,750,811	\$4,019,903
10% Revenue Adjustment	\$1,445,594	\$5,105,803	\$9,628,236	\$14,946,047	\$18,711,345
Conservation Surcharge	\$3,500,000	\$3,500,000	\$0	\$0	\$0
Investment Earnings	\$90,000	\$41,044	\$26,951	\$26,819	\$29,243
Other Revenue	\$855,991	\$864,551	\$873,196	\$881,928	\$890,748
Total Revenue	\$34,803,469	\$42,452,060	\$46,122,603	\$53,450,184	\$59,322,747
Total Expenses	\$31,884,216	\$33,946,534	\$37,015,946	\$39,927,589	\$41,523,993
Net Cash Flow before Transfers	\$2,919,253	\$8,505,526	\$9,106,657	\$13,522,595	\$17,798,755
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000
Net Cash Flow	(\$4,080,747)	(\$4,156,234)	(\$4,292,343)	(\$427,405)	\$3,268,755
Fund 100 Beginning Balances	\$14,388,282	\$10,307,535	\$6,151,302	\$1,858,959	\$1,431,554
Fund 100 Ending Balances	\$10,307,535	\$6,151,302	\$1,858,959	\$1,431,554	\$4,700,309
Fund 120 Beginning Balances	\$24,725,199				
Sinking Fund	(\$3,884,630)				
Encumbrances/Carryovers	(\$2,876,245)				
Fund 120 Available Balances	\$17,964,324	\$18,327,784	\$17,806,619	\$47,341,630	\$40,630,398
Revenues	\$7,433,460	\$13,098,835	\$53,345,011	\$15,748,769	\$15,393,277
Expenses	(\$7,070,000)	(\$13,620,000)	(\$23,810,000)	(\$22,460,000)	(\$14,470,000)
Fund 120 Ending Balances	\$18,327,784	\$17,806,619	\$47,341,630	\$40,630,398	\$41,553,675
TOTAL BEGINNING BALANCE	\$32,352,606	\$28,635,319	\$23,957,921	\$49,200,588	\$42,061,952
TOTAL ENDING BALANCE	\$28,635,319	\$23,957,921	\$49,200,588	\$42,061,952	\$46,253,984

4.3 RATE DERIVATION

The next step in calculating rates is to determine the revenues required from rates over the three-year planning period. The Agency has miscellaneous operating and non-operating revenues that are included in the Water Enterprise Fund (Fund 100). These revenues are considered revenue offsets, which effectively reduce the total amount of revenue required from rates. **Table 4-3** shows the total projected O&M expenses, the total revenue offsets, which includes the Temporary Conservation Surcharge that is a separate calculated rate component, and any adjustments needed to derive the net revenue requirements. This is then used to determine the proposed base variable rates (less the Temporary Conservation Surcharge).

Table 4-3: Three-Year Rate Revenue Requirements

Revenue Requirement	FY 2015-16	FY 2016-17	FY 2017-18
Operating Expenses			
O&M Expenses	\$31,884,216	\$33,946,534	\$35,617,340
Debt Service	\$0	\$0	\$1,398,606
Total Operating Expenses	\$31,884,216	\$33,946,534	\$37,015,946
Revenue Offsets			
Conservation Surcharge	\$3,500,000	\$7,000,000	\$5,000,000
Investment Earnings	\$90,000	\$49,794	\$56,995
Other Revenue	\$855,991	\$864,551	\$873,196
Total Revenue Offsets	\$4,445,991	\$7,914,345	\$5,930,191
Adjustments			
Midyear Rate Increase	(\$1,445,594)	(\$1,811,736)	(\$2,153,450)
Annual Cash Balance	(\$2,919,253)	(\$12,014,276)	(\$14,136,701)
Total Adjustments	(\$4,364,848)	(\$13,826,013)	(\$16,290,151)
Net Revenue Requirements	\$31,803,072	\$39,858,201	\$47,375,905

The new proposed variable rate is calculated by dividing the remaining revenue requirements, identified in **Table 4-3** by the total projected water demand, identified in **Table 2-3**. **Table 4-4** calculates the base variable charges for Fiscal Year 2015-16 through Fiscal Year 2017-18.

Table 4-4: Base Variable Rates (Without Temporary Conservation Surcharge)

Revenue Requirement	FY 2015-16	FY 2016-17	FY 2017-18
Revenue Requirements	\$31,803,072	\$39,858,201	\$47,375,905
Projected Sales (CCF)	12,362,340	13,665,220	14,302,067
Variable Rate (\$/CCF)	\$2.58	\$2.92	\$3.32

In addition the Base Variable Rates, the Agency will implement a Temporary Conservation Surcharge to recover the revenue shortfall over the next three years. It should be noted RFC expects that the Agency will need another 10% revenue adjustment in Fiscal Year 2019-20; however, Fiscal Year 2019-20 is outside the three-year rate adoption. In addition, although **Table 4-5** reflects the projected Temporary Conservation Surcharge over the next three years, the Temporary Conservation Surcharge will sunset at the end of each Calendar Year and Agency Staff will recalculate the Temporary Conservation Surcharge each year for consideration and approval by Board of Directors.

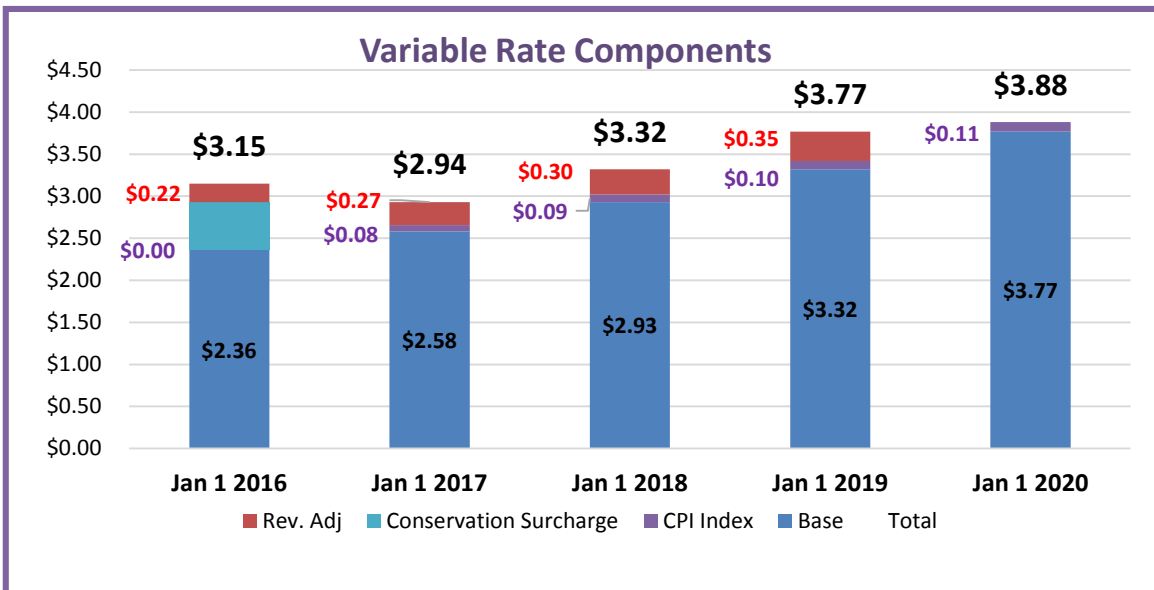
Table 4-5: Projected Temporary Conservation Surcharge

Revenue Requirement	FY 2015-16	FY 2016-17	FY 2017-18
Conservation Surcharge	\$3,500,000	\$7,000,000	\$5,000,000
Projected Sales (CCF) ¹	6,181,170	13,665,220	14,302,067
Conservation Surcharge Unit Cost (\$/CCF)	\$0.57	\$0.52	\$0.35

[1] For Fiscal Year 2015-16, \$3.5M is recovered over 6 months of water consumption.

Figure 4-1 reflects the proposed variable rates, segregated by each of the following rate components: Base Rate, CPI Index, Conservation Surcharge, and Revenue Adjustments. As previously stated, the Temporary Conservation Surcharge will sunset each year and must be resubmitted to the Board for approval. Therefore, **Figure 4-1** does not show the Temporary Conservation Surcharge as an Approved Rate Component for Calendar Year 2017 and Calendar Year 2018.

Figure 4-1: Variable Rate Components



[1] Calendar Year 2019 and Calendar 2020 is outside the planning period and is included for information purposes only.

APPENDIX A – PROJECTED PRO FORMA – AT CURRENT RATES

	FY 2015 - 16	FY 2016 - 17	FY 2017 - 18	FY 2018 - 19	FY 2019 - 20
Revenue					
Total Rate Revenue	\$28,911,884	\$32,940,662	\$35,594,219	\$37,595,390	\$39,691,412
Conservation Surcharge	\$0	\$0	\$0	\$0	\$0
Investment Earnings	\$90,000	\$12,833	\$12,833	\$12,833	\$12,833
Other Revenue	\$855,991	\$864,551	\$873,196	\$881,928	\$890,748
Total Revenue	\$29,857,875	\$33,818,046	\$36,480,248	\$38,490,151	\$40,594,993
Expenses					
O&M Expenses	\$31,884,216	\$33,946,534	\$35,617,340	\$37,130,377	\$38,726,781
Existing Debt Service	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$31,884,216	\$33,946,534	\$35,617,340	\$37,130,377	\$38,726,781
Net Cash Flow before Transfers	(\$2,026,341)	(\$128,488)	\$862,908	\$1,359,774	\$1,868,212
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000
Net Cash Flow	(\$9,026,341)	(\$12,790,248)	(\$12,536,092)	(\$12,590,226)	(\$12,661,788)
Fund 100 Beginning Balances	\$14,388,282	\$5,361,941	(\$7,428,307)	(\$19,964,398)	(\$32,554,624)
Fund 100 Ending Balances	\$5,361,941	(\$7,428,307)	(\$19,964,398)	(\$32,554,624)	(\$45,216,413)
Fund 120 Beginning Balances	\$24,725,199				
Sinking Fund	(\$3,884,630)				
Encumbrances/Carryovers	(\$2,876,245)				
Fund 120 Available Balances	\$17,964,324	\$18,327,784	\$17,806,619	\$7,998,841	\$1,090,896
Revenues	\$7,433,460	\$13,098,835	\$14,002,222	\$15,552,055	\$14,998,374
Expenses	(\$7,070,000)	(\$13,620,000)	(\$23,810,000)	(\$22,460,000)	(\$14,470,000)
Fund 120 Ending Balances	\$18,327,784	\$17,806,619	\$7,998,841	\$1,090,896	\$1,619,270
TOTAL BEGINNING BALANCE	\$32,352,606	\$23,689,725	\$10,378,312	(\$11,965,557)	(\$31,463,728)
TOTAL ENDING BALANCE	\$23,689,725	\$10,378,312	(\$11,965,557)	(\$31,463,728)	(\$43,597,143)

APPENDIX B – DEFERRED CIP SUMMARY

CIP Options	Capital Improvement Plan				
	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Master CIP	\$19.9M	\$19.3M	\$26.6M	\$12.6M	\$17.7M
Deferred CIP	\$7.1M	\$13.6M	\$23.8M	\$22.5M	\$14.5M
Difference	(\$12.8M)	(\$5.7M)	(\$2.8M)	\$9.9M	(\$3.2M)
Proposed Debt Issue			\$43M		
Debt Payments			\$1,398,606	\$2,797,212	\$2,797,212

APPENDIX B – DEFERRED CIP DETAIL (CONT)

Projects from Fund 120:	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	SUBTOTAL
Administrative & Engineering Building - Sinking Fund (Fund 120)	\$418,000	\$429,000	\$440,000	\$450,000	\$60,000	\$1,797,000
Administrative & Engineering Building Lease (Water System)	\$557,000	\$567,000	\$578,000	\$590,000	\$348,000	\$2,640,000
Arroyo del Valle Permit Extension	\$280,000	\$240,000				\$520,000
Asset Management Program Management	\$280,000	\$50,000	\$50,000	\$50,000	\$50,000	\$480,000
Booster Pump station	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$1,500,000
Capital Improvement Program Management	\$26,000	\$14,000	\$29,000	\$14,000	\$31,000	\$114,000
Chain of Lakes Facilities (COL Pipeline)				\$702,000	\$3,651,000	\$4,353,000
Chain of Lakes Master Planning			\$20,000	\$20,000	\$20,000	\$60,000
Corrosion Master Plan Update				\$270,000		\$270,000
Dougherty Reservoir Recoating				\$2,110,000		\$2,110,000
DVWTP Ammonia System Replacement			\$2,250,000			\$2,250,000
DVWTP Carbon Dioxide Installation Project		\$730,000				\$730,000
DVWTP Filter Rehabilitation - Phase 1			\$490,000	\$500,000	\$500,000	\$1,490,000
DVWTP Filter Valves Replacement	\$400,000					\$400,000
DVWTP Interior Coating Improvements to the 4.5 MG Steel Clearwell			\$2,390,000			\$2,390,000
DVWTP Main Plant Generator Replacement				\$30,000		\$30,000
DVWTP Parking Lot Repair			\$540,000			\$540,000
DVWTP Rehabilitation Project			\$400,000			\$400,000
DVWTP Roof Replacement and Rehabilitation for 3.0 MG Clearwell	\$80,000	\$1,030,000				\$1,110,000
Hopyard Well 6 & Stoneridge Sodium Hypochlorite Tank Replacement	\$500,000					\$500,000
Laboratory Equipment Replacement	\$120,000	\$130,000	\$120,000	\$130,000	\$140,000	\$640,000
MGDP Concentrate Disposal Pipeline Inspection and Cleaning	\$520,000					\$520,000
MGDP De-Mister Modifications		\$310,000				\$310,000
Minor Renewal/Replacement Projects	\$360,000	\$380,000	\$400,000	\$410,000	\$430,000	\$1,980,000
Mocho Well No.1 Sanding Investigation			\$300,000			\$300,000
Mocho 2 Well Improvements/Rehabilitation	\$200,000					\$200,000
Mocho Well 2 - VFD Retrofit			\$350,000			\$350,000
Mocho Well No. 3 OSG R/R					\$490,000	\$490,000
Mocho Wellfield Automation & Control Valves	\$100,000					\$100,000
Monitoring Well Replacements & Abandonments	\$110,000		\$150,000		\$160,000	\$420,000
Ozonation at DVWTP	\$1,000,000	\$3,160,000	\$11,900,000	\$12,250,000		\$28,310,000
PPWTP Aqua Ammonia Facility Installation				\$350,000	\$1,820,000	\$2,170,000
PPWTP Carbon Dioxide Installation		\$600,000				\$600,000
PPWTP Chemical Systems Replacement		\$160,000	\$600,000			\$760,000
PPWTP Clearwell Improvements (seismic)	\$100,000	\$520,000				\$620,000
PPWTP Filter Pipe Replacement Project			\$100,000	\$600,000		\$700,000
PPWTP Filter Rehabilitation			\$160,000	\$695,000	\$695,000	\$1,550,000
PPWTP HVAC Improvements					\$430,000	\$430,000
PPWTP Sludge Handling Improvements				\$890,000	\$2,730,000	\$3,620,000
SCADA Enhancements	\$240,000	\$240,000	\$260,000	\$1,200,000	\$280,000	\$2,220,000
System-Wide Installation of Line Valves	\$50,000		\$60,000		\$60,000	\$170,000
Wellfield Switchboard Replacement Project					\$1,300,000	\$1,300,000
Projects Split with Fund 130:						
40/60 Additional Treated Water Storage	\$600,000	\$4,000,000	\$1,148,000			\$5,748,000
30/70 Reliability Intertie (D/R)				\$132,000	\$201,000	\$333,000
35/65 Transmission System Planning Update	\$60,000					\$60,000
70/30 Water Quality Management Program	\$21,000	\$14,000	\$21,000	\$14,000	\$28,000	\$98,000
Contingency	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$3,750,000
Annual Totals:	\$7,072,000	\$13,624,000	\$23,806,000	\$22,457,000	\$14,474,000	\$81,433,000
Total 5-Year Existing Projects (Fund 120)						\$81,433,000
Adopted 5-Year CIP Total (Fund 120)						\$96,106,000
Offset in 5-Year CIP thru Deferral:						\$14,673,000

APPENDIX C – DROUGHT RATES

In conjunction with the rate study, Agency staff has developed drought rate surcharges in response to the drought conditions currently impacting the State. The District will include these proposed drought rates within the Proposition 218 notice and their Drought Ordinance number 14-120.1.

In the event that project water demand isn't realized and conservation generates a reduction in water usage and corresponding sales, the Zone 7 Water Agency has identified 4 stages of water conservation that would then trigger the need for Drought Rates to be imposed. The drought rates below are based on the following percentage reductions in overall water demand: 10%, 20%, 30%, and 40%. The Agency will include these proposed drought rates within their drought rate ordinance.

Level 1 Drought- 10% Reduction in Water Use

Drought Rates	10%	1/1/2016	1/1/2017	1/1/2018
Annual Water Demand [A]		12,362,340	13,665,220	14,302,067
Annual Water Demand Loss [B]		1,236,234	1,366,522	1,430,207
Reduced Annual Water Demand [C] = (A-B)		11,126,106	12,298,698	12,871,860
Reduced Water Demand (6 months) [D]		618,117		
Conservation Surcharge Revenue Loss [E] = (D x TCS ¹)		\$352,327		
Drought Surcharge for TCS		\$0.06		
Base Rate Revenue Loss [F] = (B x Base Rate)		\$ 3,189,484	\$4,714,501	\$5,247,028
Drought Surcharge for Base Rate [G] = (F/C)		\$0.29	\$0.38	\$0.41
Total Drought Surcharge		\$3.50	\$3.83	\$4.07

¹TCS = Temporary Conservation Surcharge

Level 2 Drought- 20% Reduction in Water Use

Drought Rates	20%	1/1/2016	1/1/2017	1/1/2018
Annual Water Demand [A]		12,362,340	13,665,220	14,302,067
Annual Water Demand Loss [B]		2,472,468	2,733,044	2,860,413
Reduced Annual Water Demand [C] = (A-B)		9,889,872	10,932,176	11,441,653
Reduced Water Demand (6 months) [D]		1,236,234		
Conservation Surcharge Revenue Loss [E] = (D x TCS ¹)		\$704,653		
Drought Surcharge for TCS		\$0.14		
Base Rate Revenue Loss [F] = (B x Base Rate)		\$ 6,378,967	\$9,429,001	\$10,494,057
Drought Surcharge for Base Rate [G] = (F/C)		\$0.65	\$0.86	\$0.92
Total Drought Surcharge		\$3.94	\$4.31	\$4.58

¹TCS = Temporary Conservation Surcharge

APPENDIX C – DROUGHT RATES (CONT)

Level 3 Drought– 30% Reduction in Water Use

Drought Rates	30%	1/1/2016	1/1/2017	1/1/2018
Annual Water Demand [A]		12,362,340	13,665,220	14,302,067
Annual Water Demand Loss [B]		3,708,702	4,099,566	4,290,620
Reduced Annual Water Demand [C] = (A-B)		8,653,638	9,565,654	10,011,447
Reduced Water Demand (6 months) [D]		1,854,351		
Conservation Surcharge Revenue Loss [E] = (D x TCS ¹)		\$1,056,980		
Drought Surcharge for TCS		\$0.24		
Base Rate Revenue Loss [F] = (B x Base Rate)	\$	9,568,451	\$14,143,502	\$15,741,085
Drought Surcharge for Base Rate [G] = (F/C)		\$1.11	\$1.48	\$1.57
Total Drought Surcharge		\$4.50	\$4.92	\$5.24

¹TCS = Temporary Conservation Surcharge

Level 4 Drought– 40% Reduction in Water Use

Drought Rates	40%	1/1/2016	1/1/2017	1/1/2018
Annual Water Demand [A]		12,362,340	13,665,220	14,302,067
Annual Water Demand Loss [B]		4,944,936	5,466,088	5,720,827
Reduced Annual Water Demand [C] = (A-B)		7,417,404	8,199,132	8,581,240
Reduced Water Demand (6 months) [D]		2,472,468		
Conservation Surcharge Revenue Loss [E] = (D x TCS ¹)		\$1,409,307		
Drought Surcharge for TCS		\$0.38		
Base Rate Revenue Loss [F] = (B x Base Rate)	\$	12,757,935	\$18,858,003	\$20,988,113
Drought Surcharge for Base Rate [G] = (F/C)		\$1.72	\$2.30	\$2.45
Total Drought Surcharge		\$5.25	\$5.75	\$6.11

¹TCS = Temporary Conservation Surcharge