

Zone 7 Water Agency

Wholesale Water Rate Study

Final Report / October 2016





October 10, 2016

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Subject: Wholesale Water Rate Study

Dear Mr. Solitei,

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide this annual update to the Wholesale Water Rate Study (Study) for Zone 7 Water Agency (Agency). This Study includes a comprehensive review of the Agency's water sales to establish equitable water rates that provide sufficient revenue over a three-year planning period. The proposed rate structure is consistent with direction provided to RFC from Agency staff and Retailers.

The major objectives of the Study include the following:

1. Develop a multi-year financial plan for the Agency to ensure financial sufficiency
2. Develop a rate structure that provides the Agency with increased revenue stability
3. Develop rates that are fair and equitable for the Agency's Retailers and Direct Customers

This Report summarizes the key findings and recommendations related to the development of the financial plan and wholesale water rates.

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

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

Habib Isaac
Manager

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Associate Consultant

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1 EXECUTIVE SUMMARY

1.1 BACKGROUND OF THE ZONE 7 WATER AGENCY

The Agency was established in 1957 for flood protection and as a water agency to provide both untreated water to support area agriculture and as the wholesale potable 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 suppliers, the Agency provides wholesale water services to approximately 220,000 residents and businesses, in Dublin, Livermore, Pleasanton, and, by special agreement with the Dublin San Ramon Services District, the Dougherty Valley portion of San Ramon. Zone 7 also provides treated water service to six direct customers (Direct Customers) including Lawrence Livermore National Laboratory, Livermore Area Recreation and Park District, Veterans Hospital, Wente Vineyards, State of California Department of Water Resources and East Bay Regional Park District. 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 financial challenges related to the reduction in water usage as a result of conservation. As a result, Zone 7 imposed a temporary surcharge on January 1, 2016 to recover the shortfall in revenue due to reduced water sales. Zone 7's water rates are currently 100% volume-based and therefore more susceptible to revenue volatility as usage patterns of its Retailers change from year-to-year. As part of the 2015 Water Rate Study (2015 Study), RFC recommended the following: 1) implement 10% revenue adjustments each year for 3 years, 2) eliminate volumetric tiers, 3) establish a monthly fixed charge that would recover 35% of the Agency's revenue requirements irrespective of usage and 4) implement a temporary surcharge to cover each year's revenue shortfall for meeting the Agency's revenue requirements, including reserves. Through discussions with Agency Staff, Retailers, and direction from the Board, the 2016 rates included the 10% revenue adjustment at one uniform rate and the temporary surcharge for Calendar Year (CY) 2016. However, the new rates remained 100% volume-based and did not include a fixed charge component. With a 10% rate increase and the inclusion of a new temporary surcharge component, Retailers recommended postponing the restructuring to incorporate the fixed charge to allow additional time for collaboration with the retailers and to help provide guidance as to how it would be passed on to individual customers of each Retailer.

1.2 CURRENT RATES

The current water rate structure of the Agency consists of two components: a very minor monthly service charge per turnout and a uniform volume-based rate. **Table 1-1** identifies the Agency's current rate structure.

Table 1-1 Current Treated Water Rates

Rate Components	2016 Rates (Jan 1, 2016)	2017 Rates (Jan 1, 2017)	2018 Rates (Jan 1, 2018)
Fixed Turnout Charge	\$148	\$153	\$157
Treated Water Service (\$/ccf)	\$2.58	\$2.93	\$3.32
Temporary Surcharge (\$/ccf)	\$0.57	\$0.00	\$0.00
Total Variable	\$3.15	\$2.93	\$3.32

1.3 RECOMMENDATIONS

For Fiscal Year 2016-17, the Agency's Water Enterprise Operations Fund (Fund 100) unaudited beginning fund balance is approximately \$5.8M. If the Agency retains its current rates, with a 3% annual increase beginning in FY 2018-2019 to account for the Consumer Price Index (CPI), the Agency will experience a negative net cash flow in Fiscal Year 2016-17 and Fiscal Year 2017-18. Without additional revenue adjustments or temporary surcharges, the Agency's revenues will not be able to cover all of its operating expenses. In addition, the Agency's current rates are calculated almost entirely as a volume-based rate calculated from the Retailers' and Direct Customers' water demand projections.

In the 2015 Study, temporary surcharges of \$7M and \$5M were projected for Calendar Year 2017 and Calendar Year 2018, respectively. However, due to the prior year's revenue shortfall from reduced water sales, the Agency also needs to recover an additional \$4.1M as part of the temporary surcharge recalibration. The total required revenue to recover over the last two fiscal years remaining for the temporary surcharge is \$16.1M (\$7M + \$5M + \$4.1M). In order to smooth out the temporary surcharge, RFC recommends that the Agency recover the total required revenue evenly over the course of the two years. The proposed temporary surcharge would be \$8.03M for both Calendar Year 2017 and Calendar Year 2018, totaling \$16.1M over two years. However, similar to this year's updated analysis, the temporary surcharge for CY 2018 would be revaluated next year.

Additionally, RFC recommends that the Agency implements a fixed rate component that would recover 35% of the Agency's revenue requirements. The Agency currently recovers all of its revenue (greater than 99%) through variable rates although most of its expenses are fixed. Furthermore, the variable rates are calculated based on the Retailers and Direct Customers' water demand projections, which may increase risk of a revenue shortfall if the Retailers and/or Direct Customers use less water than was previously projected. Establishing a fixed charge component would not entirely eliminate the revenue volatility, but it would mitigate a good portion of the volatility that exists in revenue collection and secure a baseline level of stable revenue to the Agency each month. As a result of incorporating a fixed charge component, the current variable rate would be reduced as it would only recover 65% of revenue versus 100% of revenue.

The proposed volume-based rates and temporary surcharges are calculated based on water demand projections, and the proposed fixed charge allocations are based on the proportional share of each Retailer and Direct Customer’s average usage over the past two years. **Table 1-2** shows the proposed variable rate per hundred cubic feet (CCF) and the proposed temporary surcharge as an additional variable rate component per CCF. **Table 1-3** shows the proposed annual fixed charges for each Retailer, and **Table 1-4** shows the proposed annual fixed charges for each Direct Customer.

Table 1-2: Proposed Variable Rates

Variable Rates	1/1/2017	1/1/2018
Variable Rate (\$/CCF)	\$1.98	\$2.04
Temporary Surcharge (\$/CCF)	\$0.62	\$0.49
Total Charge (\$/CCF)	\$2.60	\$2.53

Table 1-3: Proposed Annual Fixed Charges by Retailer

Annual Fixed Charge – Retailers	CY 2017 Fixed Charge	Monthly Fixed Charge
City of Pleasanton	\$4,468,719	\$372,393
Dublin San Ramon Services District	\$4,363,160	\$363,597
California Water Service Company	\$2,751,052	\$229,254
City of Livermore	\$2,640,824	\$220,069

Table 1-4: Proposed Annual Fixed Charges by Direct Customer

Annual Fixed Charge – Retailers	CY 2017 Fixed Charge	Monthly Fixed Charge
Lawrence Livermore Lab	\$61,273	\$5,106
LARPD	\$863	\$72
Veterans Hospital	\$55,489	\$4,624
Wente Vineyards	\$19,941	\$1,662
State of CA DWR	\$15	\$1.25
East Bay Regional Park District	\$5,949	\$496

2 INTRODUCTION

2.1 STUDY APPROACH

The major objectives of the Study include the following:

1. Develop a multi-year financial plan for the Agency to ensure financial sufficiency
2. Develop a rate structure that provides the Agency with increased revenue stability
3. Develop rates that are fair and equitable for the Agency's Retailers and Direct Customers

As a part of the Study, RFC evaluated the Agency's prior and current water usage and rates to forecast the existing and projected revenues over the planning period. In addition, the Agency's revenue requirements, including operations and maintenance (O&M) expenses, capital expenditures, debt financing, and reserves 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 the inclusion of a monthly fixed charge and recalibrating the temporary surcharge for Calendar Year 2017 rates.

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 water suppliers' 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,"¹ in which the cost of service (COS) 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."

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 ten-year period. The Agency Board previously approved 10% rate adjustments above the CPI index through Fiscal Year 2017-18 and RFC does not recommend additional rate adjustments. However, the temporary surcharge was only approved for Calendar Year 2016 and part of this annual update is to determine the need of continuing the temporary surcharge and to recalculate any proposed temporary surcharge for Calendar Year 2017. The Study's revenue requirements analysis compares the current revenues of the utility to its operating and capital costs and evaluates the amount of revenue recovered when applying the Agency's current rates. Based on the most accurate information currently available, the current financial plan incorporates actual water sales for Fiscal Year 2015-16 to calculate current revenue, projected O&M costs, capital expenditures, asset management plan funding, existing debt service, and proposed future debt issues. The Agency also provided updated water demand projections for each Retailer for the next five fiscal years and

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.

these projections are utilized in the Financial Plan and are a primary driver to forecasted revenues that would be recovered under the existing and proposed rates.

- **Cost of Service Analysis:** The COS analysis proportionally allocates the revenue requirements for the Agency among its customers. 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 99% of its cost through commodity or volume-based rates, which are more susceptible to revenue volatility, especially when the Agency experiences water demand reductions as a result of conservation efforts achieved by each Retailer. This is aggravated by a large fixed-cost component of almost 70% which will undoubtedly increase if debt is incurred. This analysis included a review of Retailers and Direct Customers' historical usage and average yearly usage over the past two, three, four, and five years, current volumetric flow and peaking data, and projected water demand. These metrics were all used to determine available options to potentially allocate costs among the various Retailers and Direct Customers, based on their proportionate use of the system and contribution to the cost of its operation.
- **Rate Design:** Rate design is the final part of the analysis and determines how service fee revenues will be collected from the respective Retailers and Direct Customers in a manner that respects the results of the COS analysis and legal requirements, while also addressing Agency goals and objectives 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 or approximately half of the fixed costs, with fixed rate charges to be divided by 12 and added to each monthly billing, rather than assessing once or twice a year. Doing so would provide the Agency revenue stability and its Retailers and Direct Customers with more rate stability over the long term as significant changes in usage will not cause the same level of changes in revenue.

2.2 ASSUMPTIONS USED IN THE STUDY

The period for the Study uses the Fiscal Year 2016-17 budget as the base year and the model projects through Fiscal Year 2024-25; however, the proposed rates herein are for Calendar Years 2017, 2018 and 2019, 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 direction from Agency management. Assumptions include inflation factors, CPI indexing of rates, projected sales by retailer and other miscellaneous assumptions. **Table 2-1** shows the inflation factor assumptions utilized in the Study to inflate expenses. **Table 2-2** details the growth and demand assumptions that were used in the Study. **Table 2-3** and **Table 2-4** displays the projected demand in acre feet (AF) for Retailers and Direct Customers, respectively.

² The tables in this report show a five-year period, starting with Fiscal Year 2016-17 through Fiscal Year 2020-21. The graphs in this report show a six-year period, starting with Fiscal Year 2015-16 through Fiscal Year 2020-21.

Table 2-1: Inflation Factor Assumptions

Key Factors	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
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%
Energy	5%	5%	5%	5%	5%
CPI Index to Rates	3%	3%	3%	3%	3%

Table 2-2: Growth and Demand Assumptions

Key Factors	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
Water Demand	See Table 2-3 and 2-4				
Misc. Revenue	0%	0%	0%	0%	0%
Interest Earnings	1%	1%	1%	1%	1%
Proposed Debt		\$43M			
Interest Rate	5%	5%	5%	5%	5%
Debt Term (years)	30	30	30	30	30

Table 2-3: Projected Retailer Usage Assumptions

Projected Demand in Acre Feet (AF)						
Retailer	FYE 2016	FYE 2017 ¹	FYE 2018	FYE 2019	FYE 2020	FYE 2021
City of Pleasanton	6,675	9,333	10,130	11,140	11,760	12,050
Dublin San Ramon Services District	7,555	9,716	10,778	11,691	12,569	13,025
California Water Service Company	4,585	6,259	6,910	6,990	7,110	7,200
City of Livermore	4,537	5,372	5,160	5,170	5,240	5,280
	23,352	30,680	32,978	34,991	36,679	37,555

¹It is important to note the projected usage for Fiscal Year 2016-17 of 30,680 AF is approximately 30% increase from the actual usage that occurred in Fiscal Year 2015-16. RFC recommends monitoring this usage very closely and considering an adjustment to the temporary surcharge before it sunsets, if a revenue shortfall exists in actual sales versus projected sales.

Table 2-4: Projected Direct Customer Usage Assumptions

Projected Demand in Acre Feet (AF)						
Direct Customers	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021
Lawrence Livermore Lab	68	60	30	80	30	30
LARPD	1	3	3	3	3	3
Veterans Hospital	112	155	155	155	155	155
Wente Vineyards	15	32	32	32	32	32
State of CA DWR	0	0	0	0	0	0
East Bay Regional Park District	11	17	17	17	17	17
Total	207	267	237	287	237	237

3 FINANCIAL PLAN

3.1 FINANCIAL HEALTH OF THE AGENCY

For FY 2015/16, the Fund 100 unaudited ending fund balance is approximately \$5.8M and projected water sale revenue for FY 2016/17 is \$41.0M. Potential decreases in water sales affect the Agency's revenue stability as nearly 100% of the Agency's revenues are recovered through volume-based rates since the current fixed charges are negligible, even though nearly 70% of the Agency's costs are fixed, a percentage that is likely to increase should debt be incurred. **Table 3-1** shows the budgeted and projected revenues, expenses, and beginning and ending balances of Fund 100 for Fiscal Year 2015-16 and Fiscal Year 2016-17.

Table 3-1: Fund 100 Budget and Projections

Revenue / Expenses	FYE 2016 Unaudited Financials	Projected FYE 2017 ¹
Total Water Sales	\$28,466,414	\$41,449,388
Other Revenues	\$583,659	\$303,339
Total Revenues	\$29,050,072	\$41,752,727
Operating Expenses	\$30,623,196	\$33,204,284
AMP Transfer	\$7,000,000	\$12,661,760
Total Expenses	\$37,623,196	\$45,866,044
Net Cash	(\$8,573,123)	(\$4,113,317)
Fund 100 Beginning Balance	\$14,392,316	\$5,819,193
Projected Ending Balance	\$5,819,193	\$1,705,876

¹ Projected revenue does not include a Temporary Surcharge

The Agency's net cash for Fiscal Year 2015-16 is negative \$8.6M. For Fund 100, the Fiscal Year 2015-16 ending balance is approximately \$5.8M. Fund 100 includes four designated reserves, including the Operating Reserve, Drought Contingency Reserve, Emergency Reserve, and Rate Stabilization Reserve. The Agency has proposed a new reserve policy that was discussed at the September 8, 2016 Zone 7 Finance Committee Meeting. The proposed policy will increase the Agency's reserve targets. **Table 3-2** shows the change in reserve policy targets from the last Study performed in Fiscal Year 2015-16 to the current Study period. **Table 3-3** provides projected ending fund balances for each reserve in Fund 100.

Table 3-2: Reserve Policy Targets

Reserves	Interim Reserve Policy		Proposed Reserve Policy	
	Minimum Target	Maximum Target	Minimum Target	Maximum Target
Operating Reserve	8.8% of O&M	25.0% of O&M	16.4% of O&M	32.9% of O&M
Emergency Reserve	1% of assets	3% of assets	2% of assets	3% of assets
Drought Contingency Reserve	7% of water rev	20% of water rev	5% of water rev	20% of water rev
Rate Stabilization Reserve	6% of water rev	no maximum	10% of water rev	20% of water rev
Fund 120	100% of Year 2 CIP + 50% of Year 3 CIP		100% of CIP for Year 2	

Table 3-3: Fund 100 Reserve Balances

Fund 100 - Water Enterprise				
Reserves	Ending Balances FYE 2016	Minimum Target	Maximum Target	Actual Performance
Operating Reserve	\$3,158,227	16.4% of O&M	32.9% of O&M	10.3% of O&M
Emergency Reserve	\$2,246,460	2% of assets	3% of assets	1% of assets
Drought Contingency Reserve	\$0	5% of water rev	20% of water rev	0% of water rev
Rate Stabilization Reserve	\$414,506	10% of water rev	no maximum	1.5% of water rev
Total	\$5,819,193			

Figure 3-1 illustrates the operating position of the Agency, where the expenses are shown by stacked bars and total revenues at current rates are shown by the horizontal trend line. **Figure 3-2** summarizes the projected capital improvement plan (CIP) and its funding sources. **Figure 3-3** displays the total ending reserve balance for Fund 100, and **Figure 3-4** displays the total ending reserve balance for both Fund 100 and 120, excluding any proposed bond proceeds which would be approved by the Board separately.

Figure 3-1: Operating Position at Current Rates

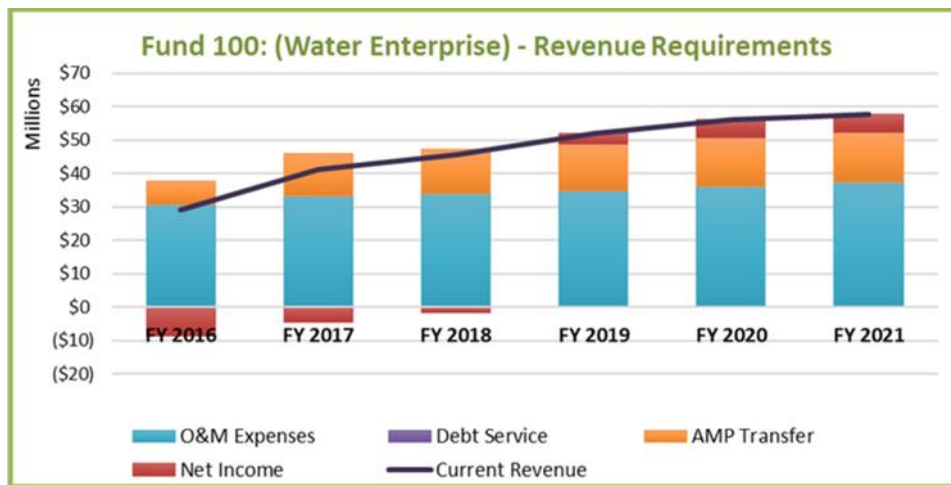


Figure 3-2: Capital Improvement Plan and Funding Sources

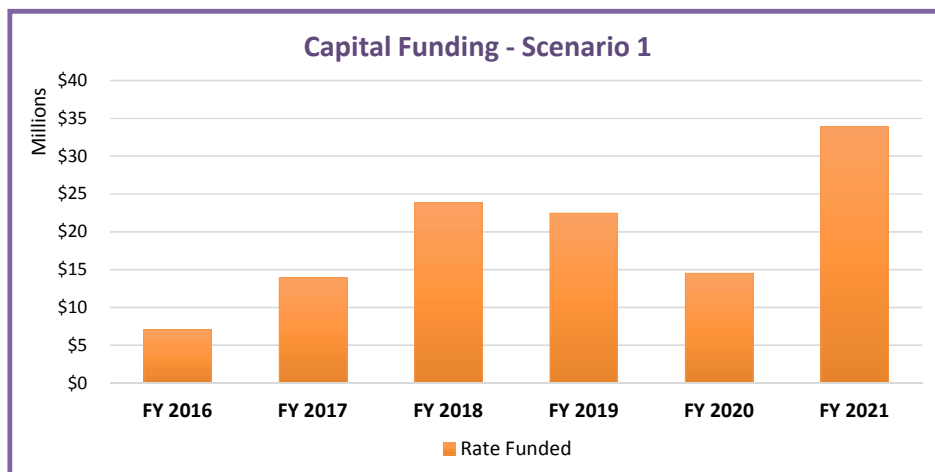


Figure 3-3: Projected Ending Balances at Current Rates for Fund 100 under proposed Reserve Policy

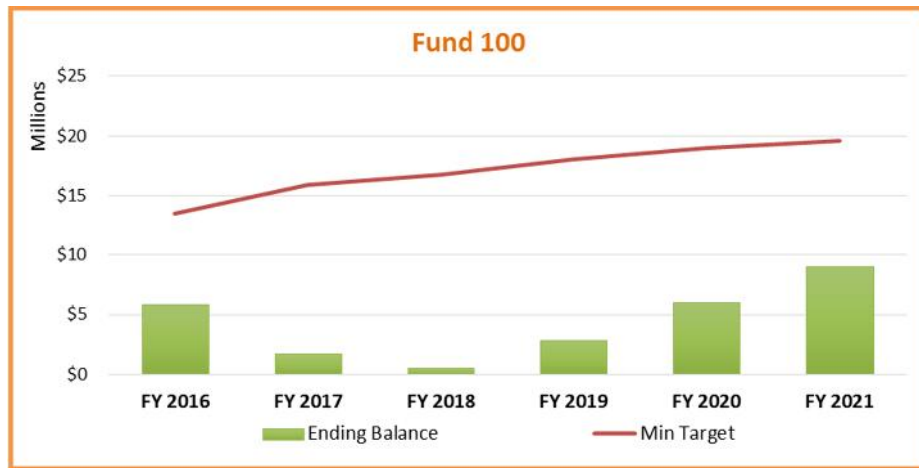
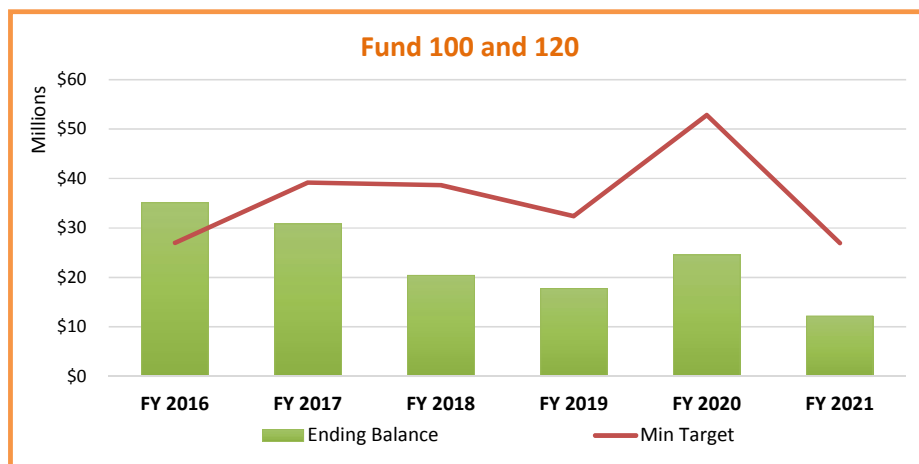


Figure 3-4: Projected Ending Balances at Current Rates for Fund 120



3.2 PROPOSED FINANCIAL PLAN

As part of the COS analysis and rate model development, RFC reviewed the Agency’s projected revenue requirements over a ten-year planning horizon to determine how current rates could support the utility’s revenue needs in the short-and long term.

Based on the initial review, if the Agency does not increase its rates or implement a temporary surcharge, it will have negative net cash flow at the end of Fiscal Year 2016-17 that will further deplete the extremely limited reserves to offset annual shortfalls, with cash flow already a challenge by the end of FY 15-16. Projections at the end of FY 17-18 could be significant if action is not taken and water sales are not realized. The Agency currently has capital reserves for Fiscal Year 2016-17, however, given the necessary reinvestment in the Agency’s water utility system, reserves would only cover the projected capital projects until Fiscal Year 2020-21. Therefore, approximately a \$43M debt issue is proposed in FY 2017-2018 to adequately fund capital projects and build up reserve levels to meet the Agency’s targets.

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

- Recover revenue shortfalls during the prior years that resulted from a reduction in sales by imposing a temporary surcharge for Calendar Year 2017
 - The Calendar Year 2017 temporary surcharge would sunset on December 31, 2017 and will need to be reconsidered before the sunset date to determine whether a temporary surcharge is still necessary for Calendar Year 2018
 - Based on the proposed financial plan, a temporary surcharge would likely be necessary through Calendar Year 2018
- Fund capital through a combination of rate and debt funding
 - A bond issue of approximately \$43M is proposed for Fiscal Year 2017-18, with proceeds of \$39M
 - Bond proceeds of \$39M would be deposited into Fund 120 and used for necessary capital projects
- Build up reserves to meet minimum levels over the two-year planning period. In the 2015 Study, minimum reserves were projected to be met by Fiscal Year End 2017-18; however, with the prior year's revenue shortfall from even lower than projected water sales plus the proposed change in reserve targets, the minimum reserves could not be achieved before Fiscal Year End 2018-19.
- Provide rate stability for future years outside the two-year planning period

Figure 3-5 illustrates the operating position of the Agency under the proposed revenue requirements, where the expenses are shown by stacked bars and total revenue at current and proposed rates are shown by the horizontal trend lines. Figure 3-6 summarizes the projected CIP and its funding sources with the proposed \$43M debt issue. **Figure 3-7 and Figure 3-8** display the total ending reserve balances for Fund 100 and Fund 100 plus Fund 120 combined, respectively. The horizontal trend lines indicate the target reserve balances as defined within the Agency's reserve policies, and the bars indicate the total ending reserve balance.

Figure 3-5: Proposed Operating Position

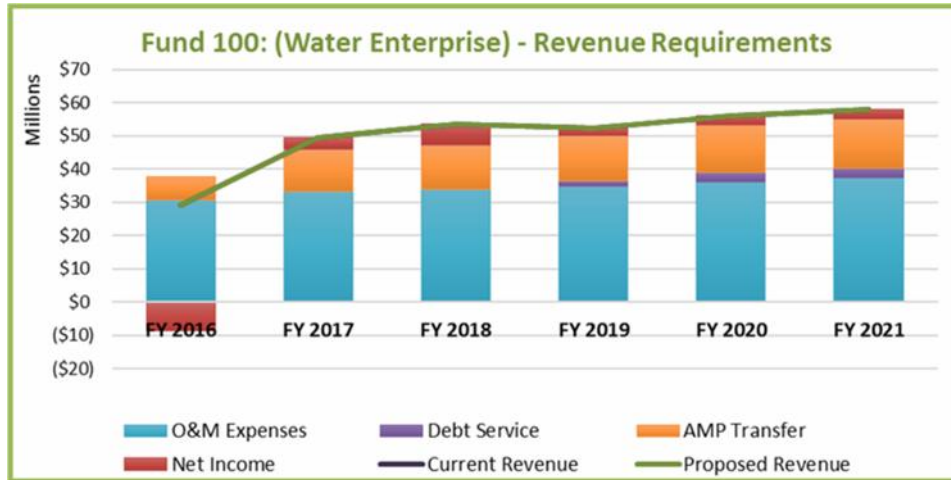


Figure 3-6: Fund 120 Proposed Capital Improvement Plan and Funding Sources

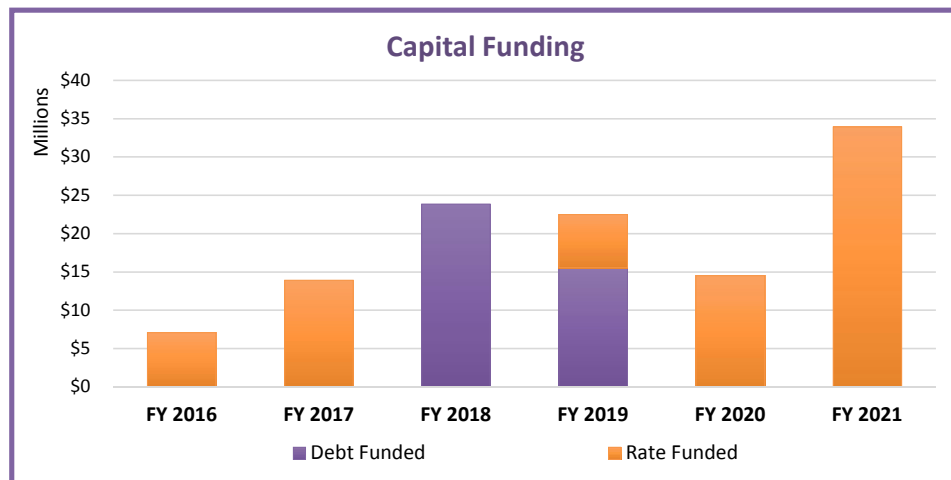


Figure 3-7: Proposed Ending Reserves for Fund 100 under proposed Reserve Policy

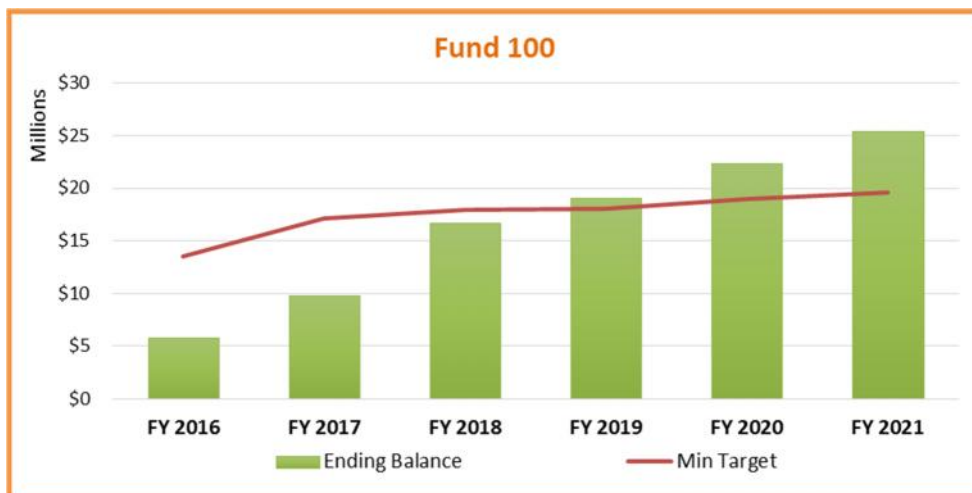
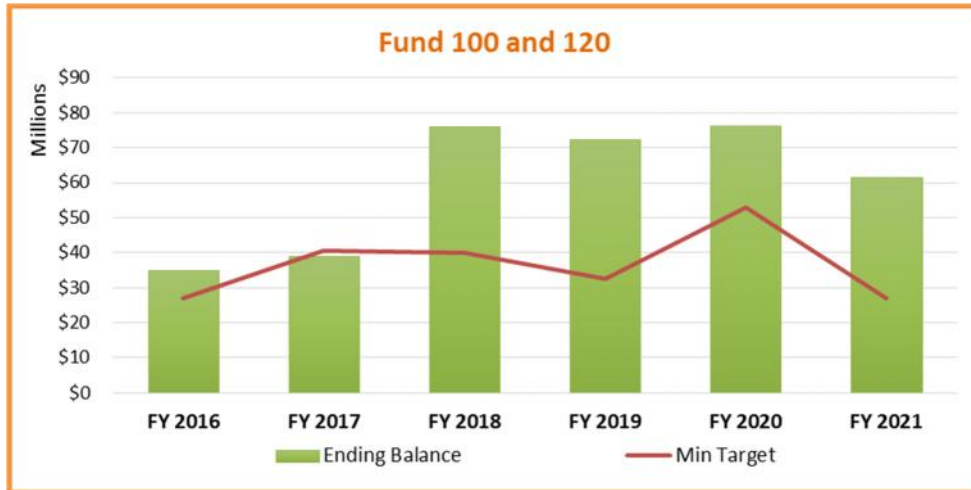


Figure 3-8: Proposed Ending Reserves for Funds 100 and 120



¹ Fund 120 Reserves in Fiscal Year 2017-18 includes bond proceeds of \$39M.

3.3 FIVE-YEAR CASH FLOW

Table 3-4 shows the five-year cash flow for the proposed financial plan, which reflects the recommendations identified in the previous section.

Table 3-4: Five-Year Operating Cash Flow¹

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue						
Water Sales - Existing Rate	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Additional Revenue Needs:						
Fiscal Year	Revenue Adjustment	Month Effective				
FY 2016	0%	January	\$0	\$0	\$0	\$0
FY 2017	0%	January	\$0	\$0	\$0	\$0
FY 2018	0%	January	\$0	\$0	\$0	\$0
FY 2019	0%	January	\$0	\$0	\$0	\$0
FY 2020	0%	January	\$0	\$0	\$0	\$0
FY 2021	0%	January	\$0	\$0	\$0	\$0
FY 2022	0%	January	\$0	\$0	\$0	\$0
FY 2023	0%	January	\$0	\$0	\$0	\$0
FY 2024	0%	January	\$0	\$0	\$0	\$0
FY 2025	0%	January	\$0	\$0	\$0	\$0
Total Additional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Revenue	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Conservation Surcharge	\$0	\$8,034,113	\$8,034,113	\$0	\$0	\$0
Investment Earnings	\$35,439	\$35,439	\$38,898	\$65,917	\$89,001	\$102,932
Other Revenue	\$548,220	\$667,900	\$669,297	\$669,297	\$669,297	\$669,297
Total Revenue	\$29,050,072	\$49,786,840	\$54,026,907	\$52,591,923	\$56,647,235	\$58,337,834
Expenses						
O&M Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$34,704,957	\$35,902,583	\$37,143,962
Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$0	\$1,398,606	\$2,797,212	\$2,797,212
Total Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$36,103,563	\$38,699,795	\$39,941,173
Net Cash Flow Before Transfers	(\$1,381,456)	\$16,774,212	\$20,477,459	\$16,488,359	\$17,947,440	\$18,396,661
Accumulated Capital Outlay (ACO Transfers)	\$191,667	\$191,656	\$191,656	\$191,656	\$191,656	\$191,656
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Net Cash Flow	(\$8,573,123)	\$3,920,796	\$6,886,803	\$2,346,703	\$3,225,784	\$3,075,005
Fund 100						
Beginning Balance	\$14,392,316	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279
Ending Balance	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279	\$25,274,284
Fund 120						
Beginning Balance	\$24,760,118	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515
Capital Revenues	\$944,519	\$602,500	\$602,500	\$1,652,500	\$602,500	\$602,500
AMP Transfer from Operations	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Bond Proceeds	\$0	\$0	\$39,342,788	\$0	\$0	\$0
Expenses	(\$3,583,013)	(\$13,483,326)	(\$23,379,489)	(\$22,019,783)	(\$14,425,662)	(\$33,921,000)
Interest	\$81,389	\$145,467	\$220,559	\$280,531	\$267,657	\$225,291
Ending Balance	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515	\$36,189,306
Total Beginning Balances	\$39,152,434	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794
Total Ending Balances	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794	\$61,463,590

¹ Fund 120 Balances include Building Sinking Fund Balance equal to approximately \$4M and a proposed bond issue in FYE 2018

4 RATE DESIGN

Rate design is the process of developing a rate structure and schedule such that the annual revenue requirements are equitably recovered from the Agency's customers, bearing a fair and reasonable relationship between the customers' burdens on the Agency and the benefits the customers receive from the Agency. 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 through the inclusion of a Fixed Charge
2. Reasonably reflects the Agency's costs of providing service
3. Is fair and equitable to its customers

4.1 RFC RATE RECOMMENDATIONS

Based on the previously identified objectives for rate design, RFC recommends that the Agency establish a fixed charge that would recover 35% of the Agency's revenue requirement, thereby adjusting its volume-based rate cost recovery proportion from nearly 100% to 65% and continuing to implement a volume-based temporary surcharge for January 1, 2017 – December 31, 2017 to recover previous and projected revenue shortfalls as part of Calendar Year 2017 rates. **Table 4-1** summarizes the overall recommended rate structure.

Table 4-1: Recommended Rate Structure

Rate Components	Recommended Rate Structure (Allocation Basis)
Fixed Charge (35% of Rev. Requirement)	2-Year Rolling Average of Historical Use
Temporary Conservation Surcharge	Uniform Rate per CCF
Volume-Based Rate (65% of Rev. Requirement)	Uniform Rate per CCF

4.2 RATE DERIVATION

The next step in calculating rates is determining the revenues required from rates over the three-year planning period. The Agency has miscellaneous operating and non-operating revenues that are included in Fund 100. These revenues are considered revenue offsets, which effectively reduce the total amount of revenue required from rates. **Table 4-2** shows the total projected O&M expenses, the total revenue offsets, which includes the temporary surcharge that will be recovered in a separate calculated rate component, and any adjustments needed to derive the net revenue requirements. The total revenue required from rates is used to determine the proposed fixed and variable rates. The projected net revenue requirements total \$41,049,388 in Fiscal Year 2016-17 based on the adopted budget; the fixed charge will recover 35% of the total requirement or \$14,367,286 and the volume-based rates will recover 65% of the total requirement or \$26,682,102.

Table 4-2: Two-Year Rate Revenue Requirements

Revenue Requirement	FY 2017	FY 2018
Operating Expenses		
O&M Expenses	\$33,012,628	\$33,549,448
Debt Service	\$0	\$0
Total Operating Expenses	\$33,012,628	\$33,549,448
Revenue Offsets		
Conservation Surcharge	\$8,034,113	\$8,034,113
Projected Untreated Water Sales	\$400,000	\$400,000
Investment Earnings	\$35,439	\$38,898
Other Revenue	\$267,900	\$269,297
Total Revenue Offsets	\$8,737,452	\$8,742,308
Adjustments		
Midyear Rate Increase	\$0	\$0
Annual Cash Balance	(\$16,774,212)	(\$20,477,459)
Total Adjustments	(\$16,774,212)	(\$20,477,459)
Net Revenue Requirements	\$41,049,388	\$45,284,599

RFC recommends implementing a fixed charge for each Retailer and Direct Customer to recover 35% of the Agency’s revenue requirements. The adoption of a fixed charge will provide increased revenue stability for the Agency and increase rate stability for its customers. In order to equitably recover the fixed charge, RFC recommends using historical usage to allocate the fixed charge. Our analysis provided multiple scenarios reflecting a two-year, three-year, four-year, or five-year average of actual usage for each Retailer and Direct Customer. These scenarios were reviewed and discussed with Agency staff and Retailers to determine the appropriate number of years of historical usage to determine each Retailer’s fixed charge allocation. At the request of the Retailers, the fixed charge for each Retailer and Direct Customer will be allocated proportionally to their average usage based on the previous two years. RFC recommends that the Agency collects the fixed charge evenly over the course of 12 months from each Retailer and Direct Customer in order to ensure financial stability.

Table 4-3 displays the total usage of each customer actual prior year usage and two, three, four, and five-year average usage. **Table 4-4** illustrates the percentage of usage of each customer usage in Table 4-3. **Table 4-5** summarizes the fixed charge calculations for each customer. The fixed charge is allocated based on percentage of the two-year average. The monthly obligation is the annual fixed charge allocation divided evenly between 12 months of the year.

Table 4-3: Total Usage Based on Averages

Retailer	Customer Usage in Hundred Cubic Feet (CCF)				
	FYE 2016 Actual Usage	2-Year Average	3-Year Average	4-Year Average	5-Year Average
City of Pleasanton	2,907,794	3,405,886	4,114,970	4,648,759	4,911,782
Dublin San Ramon Services District	3,290,936	3,325,433	3,749,793	3,983,720	4,066,135
California Water Service Company	1,997,191	2,096,746	2,477,442	2,742,078	2,859,088
City of Livermore	1,976,408	2,012,735	2,239,275	2,403,803	2,492,539
Direct Customers	128,606	109,394	101,448	95,754	120,870
Total	10,300,935	10,950,193	12,682,927	13,874,114	14,450,414

Table 4-4: Total Percentage of Usage Based on Averages

Retailer	Customer Usage as Percentage of Total				
	FYE 2016 Actual Usage	2-Year Average	3-Year Average	4-Year Average	5-Year Average
City of Pleasanton	28.2%	31.1%	32.4%	33.5%	34.0%
Dublin San Ramon Services District	32.0%	30.4%	29.6%	28.7%	28.2%
California Water Service Company	19.4%	19.1%	19.5%	19.8%	19.8%
City of Livermore	19.2%	18.4%	17.7%	17.3%	17.2%
Direct Customers	<0.01%	1.0%	0.8%	0.7%	0.8%
Total	100%	100%	100%	100%	100%

Table 4-5: Fiscal Year 2016-17 Fixed Charge Calculations

Retailer	2-Year Average	Fixed Charge Allocation	Monthly Obligation
City of Pleasanton	31.1%	\$4,468,719	\$372,393
Dublin San Ramon Services District	30.4%	\$4,363,160	\$363,597
California Water Service Company	19.1%	\$2,751,052	\$229,254
City of Livermore	18.4%	\$2,640,824	\$220,069
Direct Customers	1.0%	\$143,531	\$11,961
Total	100%	\$14,367,286	\$1,197,274

With the establishment of a fixed charge, the proposed volume-based rate would be set to recover the remaining 65% of the projected revenue requirements. The proposed variable rate is calculated based on projected usage for each Retailer and Direct Customer that was provided by the Agency to RFC. The proposed variable rate is calculated by dividing the remaining revenue requirements, identified in **Table 4-2** by the total projected water demand, identified in **Table 2-3**. **Table 4-6** calculates the base volume-based charges over the two-year planning period.

Table 4-6: Base Volume-Based Rate Calculations

Volume-Based Rate Calculation	FY 2017	FY 2018
Revenue Requirements	\$41,049,388	\$45,284,599
Volume-Based Recovery %	65%	65%
Volume-Based Revenue Requirement	\$26,682,102	\$29,434,989
Projected Sales (CCF)	13,480,513	14,468,454
Volume-Base Rate (\$/CCF)	\$1.98	\$2.04

In addition to the proposed volume-based or commodity rates, RFC recommends that the Agency implement a temporary surcharge to recover the prior and future years' revenue shortfalls in Calendar Year 2017 with reconsideration and recalculation for a possible extension into Calendar Year 2018. Although **Table 4-7** reflects the projected temporary surcharge over the next two years, the surcharge will sunset at the end of Calendar Year 2017 and Agency staff will determine the need and amount of any proposed temporary surcharge for Calendar Year 2018 for consideration and approval by the Board of Directors.

Table 4-7: Temporary Surcharge Calculations, assuming CY 2017 & CY 2018 surcharges

Conservation Surcharge Calculation	FY 2017	FY 2018
Conservation Surcharge	\$8,034,113	\$8,034,113
Previous Calendar Year Charge	\$0.57	\$0.62
Current Calendar Year Remaining Recover	\$4,192,167	\$3,534,717
Projected Sales (CCF)	6,740,257	14,468,454
Conservation Surcharge Unit Cost (\$/CCF)	\$0.62	\$0.49

Table 4-8 summarizes the total volume-based rate, which includes the base volume-based rate and the volume-based temporary surcharge. **Table 4-9** and **Table 4-10** show the annual fixed charge allocation for each Retailer and Direct Customer, respectively. Although the fixed charge is shown in these tables as an annual charge, RFC recommends recovering the fixed charge evenly over each monthly bill to Retailers and Direct Customers. **Appendix A** provides the cashflow pro forma at current rates and **Appendix B** provides the cashflow pro forma at the proposed rates recommended by RFC.

Based on the September 28th Board Workshop, **Appendix C** depicts the cash flow pro forma recommended by Agency staff with a Conservation Surcharge fixed at the current rate of \$0.57 for the next two years. It is important to note that the revenue generated from the two-year Conservation Surcharge will be approximately \$140k less than the RFC recommended surcharge recovery amount of approximately \$16.1M over the next two years. The total revenue generated from the two-year Temporary Surcharge at a rate of \$0.57 per CCF is approximately \$15.9M.

Table 4-8: Proposed Variable Rates

Volume-Based Rates	1/1/2017	1/1/2018
Variable Rate (\$/CCF)	\$1.98	\$2.04
Temporary Surcharge (\$/CCF)	\$0.62	\$0.49
Total Volume-Based Rate (\$/CCF)	\$2.60	\$2.53

Table 4-9: Proposed Annual Fixed Charges by Retailer

Annual Fixed Charge – Retailers	CY 2017 Fixed Charge	Monthly Fixed Charge
City of Pleasanton	\$4,468,719	\$372,393
Dublin San Ramon Services District	\$4,363,160	\$363,597
California Water Service Company	\$2,751,052	\$229,254
City of Livermore	\$2,640,824	\$220,069

Table 4-10: Proposed Annual Fixed Charges by Direct Customers

Annual Fixed Charge – Retailers	CY 2017 Fixed Charge	Monthly Fixed Charge
Lawrence Livermore Lab	\$61,273	\$5,106
LARPD	\$863	\$72
Veterans Hospital	\$55,489	\$4,624
Wente Vineyards	\$19,941	\$1,662
State of CA DWR	\$15	\$1.25
East Bay Regional Park District	\$5,949	\$496

APPENDIX A – PRO FORMA AT CURRENT RATES

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue						
Water Sales - Existing Rate	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Additional Revenue Needs:						
Fiscal Year	Revenue Adjustment	Month Effective				
FY 2016	0%	January	\$0	\$0	\$0	\$0
FY 2017	0%	January	\$0	\$0	\$0	\$0
FY 2018	0%	January	\$0	\$0	\$0	\$0
FY 2019	0%	January	\$0	\$0	\$0	\$0
FY 2020	0%	January	\$0	\$0	\$0	\$0
FY 2021	0%	January	\$0	\$0	\$0	\$0
FY 2022	0%	January	\$0	\$0	\$0	\$0
FY 2023	0%	January	\$0	\$0	\$0	\$0
FY 2024	0%	January	\$0	\$0	\$0	\$0
FY 2025	0%	January	\$0	\$0	\$0	\$0
Total Additional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Revenue	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Conservation Surcharge	\$0	\$8,034,113	\$8,034,113	\$0	\$0	\$0
Investment Earnings	\$35,439	\$35,439	\$38,898	\$65,917	\$89,001	\$102,932
Other Revenue	\$548,220	\$667,900	\$669,297	\$669,297	\$669,297	\$669,297
Total Revenue	\$29,050,072	\$49,786,840	\$54,026,907	\$52,591,923	\$56,647,235	\$58,337,834
Expenses						
O&M Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$34,704,957	\$35,902,583	\$37,143,962
Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$0	\$1,398,606	\$2,797,212	\$2,797,212
Total Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$36,103,563	\$38,699,795	\$39,941,173
Net Cash Flow Before Transfers	(\$1,381,456)	\$16,774,212	\$20,477,459	\$16,488,359	\$17,947,440	\$18,396,661
Accumulated Capital Outlay (ACO Transfers)	\$191,667	\$191,656	\$191,656	\$191,656	\$191,656	\$191,656
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Net Cash Flow	(\$8,573,123)	\$3,920,796	\$6,886,803	\$2,346,703	\$3,225,784	\$3,075,005
Fund 100						
Beginning Balance	\$14,392,316	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279
Ending Balance	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279	\$25,274,284
Fund 120						
Beginning Balance	\$24,760,118	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515
Capital Revenues	\$944,519	\$602,500	\$602,500	\$1,652,500	\$602,500	\$602,500
AMP Transfer from Operations	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Bond Proceeds	\$0	\$0	\$39,342,788	\$0	\$0	\$0
Expenses	(\$3,583,013)	(\$13,483,326)	(\$23,379,489)	(\$22,019,783)	(\$14,425,662)	(\$33,921,000)
Interest	\$81,389	\$145,467	\$220,559	\$280,531	\$267,657	\$225,291
Ending Balance	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515	\$36,189,306
Total Beginning Balances	\$39,152,434	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794
Total Ending Balances	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794	\$61,463,590

¹ Fund 120 Balances include Building Sinking Fund Balance equal to approximately \$4M and a proposed bond issue in FYE 2018

APPENDIX B – PRO FORMA AT RFC RECOMMENDED RATES

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue						
Water Sales - Existing Rate	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Additional Revenue Needs:						
Fiscal Year	Revenue Adjustment	Month Effective				
FY 2016	0%	January	\$0	\$0	\$0	\$0
FY 2017	0%	January		\$0	\$0	\$0
FY 2018	0%	January		\$0	\$0	\$0
FY 2019	0%	January		\$0	\$0	\$0
FY 2020	0%	January			\$0	\$0
FY 2021	0%	January				\$0
FY 2022	0%	January				
FY 2023	0%	January				
FY 2024	0%	January				
FY 2025	0%	January				
Total Additional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Revenue	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Conservation Surcharge	\$0	\$8,034,113	\$8,034,113	\$0	\$0	\$0
Investment Earnings	\$35,439	\$35,439	\$38,898	\$65,917	\$89,001	\$102,932
Other Revenue	\$548,220	\$667,900	\$669,297	\$669,297	\$669,297	\$669,297
Total Revenue	\$29,050,072	\$49,786,840	\$54,026,907	\$52,591,923	\$56,647,235	\$58,337,834
Expenses						
O&M Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$34,704,957	\$35,902,583	\$37,143,962
Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$0	\$1,398,606	\$2,797,212	\$2,797,212
Total Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$36,103,563	\$38,699,795	\$39,941,173
Net Cash Flow Before Transfers	(\$1,381,456)	\$16,774,212	\$20,477,459	\$16,488,359	\$17,947,440	\$18,396,661
Accumulated Capital Outlay (ACO Transfers)	\$191,667	\$191,656	\$191,656	\$191,656	\$191,656	\$191,656
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Net Cash Flow	(\$8,573,123)	\$3,920,796	\$6,886,803	\$2,346,703	\$3,225,784	\$3,075,005
Fund 100						
Beginning Balance	\$14,392,316	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279
Ending Balance	\$5,819,193	\$9,739,989	\$16,626,792	\$18,973,495	\$22,199,279	\$25,274,284
Fund 120						
Beginning Balance	\$24,760,118	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515
Capital Revenues	\$944,519	\$602,500	\$602,500	\$1,652,500	\$602,500	\$602,500
AMP Transfer from Operations	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Bond Proceeds	\$0	\$0	\$39,342,788	\$0	\$0	\$0
Expenses	(\$3,583,013)	(\$13,483,326)	(\$23,379,489)	(\$22,019,783)	(\$14,425,662)	(\$33,921,000)
Interest	\$81,389	\$145,467	\$220,559	\$280,531	\$267,657	\$225,291
Ending Balance	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515	\$36,189,306
Total Beginning Balances	\$39,152,434	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794
Total Ending Balances	\$35,022,205	\$38,869,402	\$75,941,563	\$72,151,515	\$76,351,794	\$61,463,590

¹ Fund 120 Balances include Building Sinking Fund Balance equal to approximately \$4M and a proposed bond issue in FYE 2018

APPENDIX C – PRO FORMA AT STAFF RECOMMENDED RATES

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue						
Water Sales - Existing Rate	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Additional Revenue Needs:						
Fiscal Year	Revenue Adjustment	Month Effective				
FY 2016	0%	January	\$0	\$0	\$0	\$0
FY 2017	0%	January	\$0	\$0	\$0	\$0
FY 2018	0%	January	\$0	\$0	\$0	\$0
FY 2019	0%	January	\$0	\$0	\$0	\$0
FY 2020	0%	January	\$0	\$0	\$0	\$0
FY 2021	0%	January	\$0	\$0	\$0	\$0
FY 2022	0%	January	\$0	\$0	\$0	\$0
FY 2023	0%	January	\$0	\$0	\$0	\$0
FY 2024	0%	January	\$0	\$0	\$0	\$0
FY 2025	0%	January	\$0	\$0	\$0	\$0
Total Additional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Revenue	\$28,466,414	\$41,049,388	\$45,284,599	\$51,856,709	\$55,888,937	\$57,565,605
Conservation Surcharge	\$0	\$7,683,893	\$8,247,019	\$0	\$0	\$0
Investment Earnings	\$35,439	\$35,439	\$38,022	\$64,696	\$88,307	\$102,233
Other Revenue	\$548,220	\$667,900	\$669,297	\$669,297	\$669,297	\$669,297
Total Revenue	\$29,050,072	\$49,436,619	\$54,238,937	\$52,590,702	\$56,646,541	\$58,337,135
Expenses						
O&M Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$34,704,957	\$35,902,583	\$37,143,962
Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
Proposed Debt Service	\$0	\$0	\$0	\$1,398,606	\$2,797,212	\$2,797,212
Total Expenses	\$30,431,529	\$33,012,628	\$33,549,448	\$36,103,563	\$38,699,795	\$39,941,173
Net Cash Flow Before Transfers	(\$1,381,456)	\$16,423,991	\$20,689,489	\$16,487,138	\$17,946,746	\$18,395,962
Accumulated Capital Outlay (ACO Transfers)	\$191,667	\$191,656	\$191,656	\$191,656	\$191,656	\$191,656
AMP Transfer to Fund 120	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Net Cash Flow	(\$8,573,123)	\$3,570,575	\$7,098,833	\$2,345,482	\$3,225,090	\$3,074,306
Fund 100						
Beginning Balance	\$14,392,316	\$5,819,193	\$9,389,768	\$16,488,601	\$18,834,083	\$22,059,174
Ending Balance	\$5,819,193	\$9,389,768	\$16,488,601	\$18,834,083	\$22,059,174	\$25,133,480
Fund 120						
Beginning Balance	\$24,760,118	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515
Capital Revenues	\$944,519	\$602,500	\$602,500	\$1,652,500	\$602,500	\$602,500
AMP Transfer from Operations	\$7,000,000	\$12,661,760	\$13,399,000	\$13,950,000	\$14,530,000	\$15,130,000
Bond Proceeds	\$0	\$0	\$39,342,788	\$0	\$0	\$0
Expenses	(\$3,583,013)	(\$13,483,326)	(\$23,379,489)	(\$22,019,783)	(\$14,425,662)	(\$33,921,000)
Interest	\$81,389	\$145,467	\$220,559	\$280,531	\$267,657	\$225,291
Ending Balance	\$29,203,012	\$29,129,414	\$59,314,772	\$53,178,020	\$54,152,515	\$36,189,306
Total Beginning Balances	\$39,152,434	\$35,022,205	\$38,519,182	\$75,803,373	\$72,012,103	\$76,211,688
Total Ending Balances	\$35,022,205	\$38,519,182	\$75,803,373	\$72,012,103	\$76,211,688	\$61,322,786

¹ Fund 120 Balances include Building Sinking Fund Balance equal to approximately \$4M and a proposed bond issue in FYE 2018