



**ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7**

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**ORIGINATING SECTION: ADMINISTRATION**

**CONTACT: Osborn Solitei**

**AGENDA DATE:** October 17, 2018

**ITEM NO. 9**

**SUBJECT:** Treated Water Rates for Calendar Years 2019-2022

**SUMMARY:**

- In 2015, Zone 7 hired Raftelis to prepare a Wholesale Water Rate Study to determine treated water rates for Calendar Years 2016, 2017 and 2018.
- Calendar Year 2018 is the last year of the adopted rate schedule. Zone 7 has hired Raftelis to conduct another Wholesale Water Rate Study to determine a four-year rate schedule for Calendar Years 2019, 2020, 2021 and 2022. There is separate process for determining untreated water rates.
- On September 5, 2018, staff presented four rate scenarios at a Board Workshop on Water Rates.
- On September 19, 2018 staff presented two additional rate scenarios which included funding for water supply reliability projects ranging from \$9M to \$15.2M through FY 2021-22.
- Staff has taken a closer look at the proposed funding of future water supply reliability projects and recommends reducing the amount to \$3M over the next four years until more information is available.
- Staff also recommends funding the Operating, Emergency and Drought Contingency reserves at target levels and leave the Rate Stabilization Reserve unfunded during this study period. While this is a reasonable approach to reduce customer impacts, it's recommended that the Agency fund water supply reliability projects in the future and also review the current reserve policy based on industry standards and practices.
- Staff has prepared two additional rate scenarios for the Board's consideration. Staff recommends Scenario 1 - (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Three Reserves at Target Levels + 3.7% Rate Adjustments).
- Staff recommends that the Board adopt a four-year rate schedule with target levels met in four years, however the Board reserves the right to adopt a different rate schedule (i.e., 2 or 3 years).

**FUNDING:**

Treated Water Sales revenue accrues to Fund 100 – Water Enterprise and provides capital funding to Fund 120 – Renewal, Replacement and System-Wide Improvements.

**RECOMMENDED ACTION:**

Adopt the attached resolution approving treated water rates for calendar years 2019-2022.

**BACKGROUND:**

On September 19, 2018 staff presented two additional rate scenarios which included funding for water supply reliability projects ranging from \$9M to \$15.2M through FY 2021-22. Staff has taken a closer look at the proposed funding of future water supply reliability projects and recommends reducing the amount to \$3M over the next four years until more information is available. Staff also recommends funding the Operating, Emergency and Drought Contingency reserves at target levels and leave the Rate

Stabilization Reserve unfunded during this study period. While this is a reasonable approach to reduce customer impacts, it's recommended that the Agency fund water supply reliability projects in the future and review reserve fund requirements and fund reserves based on industry standards and practices.

Under these assumptions, two additional scenarios have been developed. The two scenarios are:

- › Scenario 1 - (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Three Reserves at Target Levels + 3.7% Rate Adjustments)
- › Scenario 2 - (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Two Reserves at Target Levels and the Drought Contingency at the minimum level + 3% Rate Adjustments)

All scenarios include gradually increasing the fixed charge component from 35% to 45% by CY 2022.

Staff recommends that the Board adopt Scenario 1. Proposed volume-based rates, fixed charge recovery and total fixed charges by Retailer and Direct Customer under Scenario 1 are shown in the tables below.

Staff recommends that the Board adopt a four-year rate schedule with target levels met in four years, however the Board reserves the right to adopt a different rate schedule (i.e., 2 or 3 years).

<b>Scenario 1 - Proposed Volume-Based Treated Water Rates per CCF</b>					
<b>Calendar Year</b>	<b>2018 Adopted</b>	<b>2019 Proposed</b>	<b>2020 Proposed</b>	<b>2021 Proposed</b>	<b>2022 Proposed</b>
<b>Volume-based Rate per CCF</b>	\$2.04	\$2.01	\$2.10	\$2.06	\$2.15

<b>Scenario 1 - Proposed Total Fixed Charges by Retailer and Direct Customer</b>					
<b>Calendar Year</b>	<b>2018 Adopted</b>	<b>2019 Proposed</b>	<b>2020 Proposed</b>	<b>2021 Proposed</b>	<b>2022 Proposed</b>
Fixed Charge Recovery	35%	37.5%	40%	42.5%	45%
Retailers	\$15,686,384	\$18,834,149	\$21,060,643	\$25,357,284	\$28,323,642
Direct Customers	\$163,226	\$528,949	\$437,276	\$359,421	\$389,819
<b>Total Fixed Charges</b>	<b>\$15,849,610</b>	<b>\$19,363,098</b>	<b>\$21,497,919</b>	<b>\$25,716,705</b>	<b>\$28,713,461</b>

### **ZONE 7 COST EFFICIENCY MEASURES**

Over the years the Agency has implemented several cost efficiency measures to reduce or minimize rate increases. The following is a summary of some cost efficiencies implemented by the Agency over the years:

#### **Labor Costs**

- › Continuing of a soft hiring freeze. In fiscal year 2018-19, the Agency added an additional six (6) positions to the soft hiring freeze. This brings the labor cost savings to approximately \$3 million annually with a total of 18 positions in soft hiring freeze.
- › Zone 7 employees pursuant to their collective bargaining agreement (“MOU”) with Alameda County increased their employee share of medical premium from the current 10% to 15% by fiscal year 2021-22.

## Operations & Maintenance Costs

- › In April 2017, the Agency purchased the North Canyons Administrative Building with a saving of approximately \$7.1 million through February 2020, or average savings of \$1.8 million per year.
  
- › In 2010, the Agency implemented energy savings from the PG&E peak-day pricing program and in 2011, implemented solar panels at Del Valle Water Treatment Plant (D VWTP) and now the Agency is implementing solar panels at its North Canyons Administrative Building for additional energy savings.
  
- › The Agency purchases most of its water treatment chemicals through the Bay Area Chemical Consortium at an average savings of 20%.
  
- › During the drought the Agency was granted \$3 million of grant funding for drought emergency projects.

## Debt Financing

In March 2018, the Agency received its first credit rating. The Standard & Poor’s Global Ratings assigned its ‘AA+’ long-term rating to the Livermore Valley Water Financing Authority’s series 2018 water revenue bonds. Fitch Ratings assigned a ‘AA’ rating to the same 2018 water revenue bonds. In announcing the credit rating, S&P cited the Agency’s very strong cash position, stable financial metrics and extremely strong credit quality of the Agency’s municipal customers. This translated to an estimated net present value savings of \$1.8 million in the refunding of the Cawelo capital payment and bonds sold at the lowest possible interest cost.

## CAPITAL IMPROVEMENT PLAN

The Agency prepares a Capital Improvement Plan (“CIP”) that outlines the plans for capital projects and programs needed to carry out the goals and policy objectives of the Agency. Formerly, the CIP incorporated the projects, costs, schedules, and priorities for both the Water System and the Flood Protection System. The Board adopted the FY 2018-19 Ten-Year Water System CIP in October 2017.

The Agency’s Asset Management Plan (“AMP”) documents how the Agency will fund and implement renewal and replacement projects for existing or planned assets. As part of the CIP update process, the Agency engaged HDR, Inc., to complete the 2017 Asset Management Plan Long-Term Funding Forecast Update. The 2017 AMP Update incorporated CIP projects that have been completed, assets that have been renewed since the last AMP update in 2011, future projects, and the long term renewal of assets. It also identified additional renewal and replacement projects. The 2017 AMP Update was adopted by the Board in October 2017 as part of FY 2018-19 Ten-Year Water System CIP. The Board-approved AMP funding level of \$12.3M (in 2017 dollars) annually was calculated based on debt financing the construction phases of the D VWTP and PPWTP Ozonation Projects. The AMP Board resolution is attached as Attachment B.

The adopted CIP can be found here:

<http://www.zone7water.com/component/content/article/36-public/content/82-capital-improvement-program>

A summary of the Fund 120 Water System CIP is shown in the table below.

Fund 120 Ten-Year CIP (\$millions)								
PROGRAM	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	TOTAL Five-Year CIP	FY 2023/24 - FY 2027/28	TOTAL 10-Year CIP
Buildings & Grounds	\$0.05					<b>\$0.05</b>	\$0.25	<b>\$0.30</b>
Groundwater Basin Management	\$0.25	\$0.51	\$0.17			<b>\$0.93</b>	\$0.80	<b>\$1.73</b>
Program Management	\$0.07	\$0.09	\$0.09	\$0.11	\$0.38	<b>\$0.75</b>	\$1.10	<b>\$1.85</b>
Regulatory Compliance	\$0.14	\$0.14	\$0.15	\$0.15	\$0.16	<b>\$0.74</b>	\$0.89	<b>\$1.63</b>
Transmission & Distribution	\$0.38	\$0.65	\$7.32	\$4.63	\$16.07	<b>\$29.05</b>	\$11.44	<b>\$40.49</b>
Water Supply & Conveyance <sup>1</sup>	\$0.51	\$0.13	\$0.80	\$2.10	\$1.08	<b>\$4.62</b>	\$33.50	<b>\$38.12</b>
Water Treatment Facilities <sup>2</sup>	\$32.37	\$4.49	\$2.95	\$4.74	\$18.77	<b>\$63.32</b>	\$18.29	<b>\$81.61</b>
Wells	\$3.47	\$1.91	\$0.24	\$1.73	\$1.21	<b>\$8.56</b>	\$8.79	<b>\$17.35</b>
<b>Grand Total</b>	<b>\$37.24</b>	<b>\$7.92</b>	<b>\$11.72</b>	<b>\$13.47</b>	<b>\$37.67</b>	<b>\$108.02</b>	<b>\$75.06</b>	<b>\$183.08</b>

<sup>1</sup> Near-term projects are related to Chain of Lakes

<sup>2</sup> Assumes bond proceeds of \$19M for the PPTWP Ozone Project and \$16M cash funding for the PPWTP Upgrades Project

Current Major CIP Projects:

*Del Valle Water Treatment Plant Ozone Project.* This project consists of improvements to the Del Valle Water Treatment Plant including, but not limited to: new ozone generation facility, new ozone contactor structure, new chemical facilities including liquid oxygen and carbon dioxide, new electrical facilities, new water softening facility, new utility water pump station, new emergency generator, new chlorine contact pipeline, modifications to existing filters, chemical systems, piping, utilities, structures and site. The estimated cost of the DVWTP ozone project is approximately \$49 million, with \$38 million paid bond proceeds and the remainder \$11 million will be paid from the Fund 120 capital projects reserve balance. The project is expected to be complete by May 2020.

*Patterson Pass Water Treatment Plant Upgrades and Ozonation Project.* This project consists of improvements to the Patterson Pass Water Treatment Plant including, but not limited to: new ozone generation facility, new ozone contactor structure, new chemical facilities including liquid oxygen and carbon dioxide, new electrical facilities, new emergency generator, new chlorine contactor structure, new filters with filter gallery, new clearwell and pump station, and modifications to existing chemical systems, piping, utilities, structures, and site. The plant expansion increases plant capacity from approximately 19 million gallons per day (mgd) to 24 mgd. The estimated total construction cost for this project is approximately \$75 million. The estimated construction cost for the ozonation portion is \$40 million, of which approximately \$19 million is expected to be paid from the proceeds of the Bonds. This project is expected to be complete by early-2022.

In addition to the DVWTP Ozone and PPWTP Upgrades projects, there are other significant projects underway that are designed to maintain existing infrastructure:

- › Chain of Lakes Well 1 Stabilization Project (\$3.4M)
- › Dougherty Reservoir Recoating and Rehabilitation Project (\$1.1M)
- › DVWTP Polymer Mixing System Replacement (\$0.6M)

Also, planning and design is proposed for other Chain of Lakes projects such as the Chain of Lakes - Cope Lake to DWWTP Pipeline and Chain of Lakes Facilities and Improvements for the Water System.

Projected end of fiscal year balances for Fund 120 are shown in the table below:

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
<b>Fund 120</b>						
Ending Balance	\$32,655,791	\$38,592,597	\$40,246,975	\$40,694,007	\$16,956,017	\$3,830,279

Water Supply Reliability Projects

In a normal year, over eighty percent of the Agency’s supply is derived from the State Water Project. The State Water Project reliability has been declining over the years due to increasingly stringent regulations, declining infrastructure and Delta conditions, and climate change. To protect the Livermore Valley’s major water supply, the Agency has been supporting the California WaterFix.

While the Agency’s current plan includes participation in the California WaterFix, the findings from the 2016 Water Supply Evaluation Update (WSE Update) indicated the Agency’s need to pursue additional water supply options to bolster interim reliability until California WaterFix is in place, to address the uncertainties of future regulatory requirements and impacts on Delta water supply, to potentially replace a water transfer agreement with Byron Bethany Irrigation District and to meet the demands of future customers. To that end, the Agency continues to evaluate alternative water supply and storage options such as the Bay Area Regional Desalination Project, Potable Reuse, Los Vaqueros Expansion, Sites Reservoir, and water transfers. Ultimately, the Agency may choose to implement one or a portfolio of these options depending on the results of the studies and planning efforts, the amounts and timing of development and conservation, and the determination of costs and benefits to the Livermore Valley.

The Water Supply Reliability projects under consideration are the Bay Area Regional Desalination Project, Potable Reuse, Los Vaqueros Expansion and water transfers. At this time, is anticipated that Sites Reservoir will be funded from Connection Fees and is not included in the water rates.

Moving forward, staff anticipates continued pursuit of a number of long-term water supply alternatives. With the 2018/2019 Water Supply Evaluation Update (2018/2019 WSE Update), the Board is expected to direct staff on which options to continue to pursue. While the analysis for the 2018/2019 WSE Update is still in progress, staff expects that Water Supply Reliability Projects will be needed to meet Zone 7’s Reliability Policy for existing customers as well as to meet future demands from development. Funding currently exists for development through Fund 130; a similar source of funding is required to serve the needs of existing customers.

For planning purposes, staff has assumed that California WaterFix and other water supply reliability projects could provide existing customers long-term reliability in accordance with Board policy. For example, Los Vaqueros Reservoir Expansion would provide storage and a source of emergency supply. Water transfer purchases would be needed in the interim before any large-scale water supply project is implemented in the next eight to fifteen years. Based on these assumptions—and accounting for available funds from Fund 310—staff estimates a need for a minimum of \$3M and up to \$15.2 million in Water Supply Reliability Projects funding from water rates from FY 2018-19 through FY 2021-22.

**RESERVES**

On April 17, 2013, the Zone 7 Board adopted an interim reserve policy (Resolution No. 13-4265). The purpose of the policy was to ensure the Agency’s ability to respond to changes in the economic environment and service demands with minimal impact on its customers while maintaining the financial integrity of the Agency. The policy also established minimum and maximum limits attributed to each reserve based on commonly exercised best practices from among industry peers. For Fund 100, the interim policy added a Drought Contingency Reserve and redefined the Rate Stabilization Reserve and its usage.

At the end of FY 2012-13, reserves within Fund 100 reached \$31.5M. During the drought \$26M of reserves were used, leaving the fund with a balance of \$5.4M at the end of FY 2015-16. The financial impacts of the drought provided the agency with a test case to review and revise the Interim Reserve Policy. On September 28, 2016, the Board adopted Resolution No. 16-166 approving a Final Reserve Policy. The revisions to the policy mostly impacted Fund 100. These revisions are summarized the table below.

Reserve		Former Policy	Adopted Policy
Operating	Minimum	32 days of operating expenses	60 days of operating expenses
	Target	60 days of operating expenses	90 days of operating expenses
	Maximum	90 days of operating expenses	120 days of operating expenses
Emergency	Minimum	1% of Water Enterprise assets	2% of Water Enterprise Assets
	Target	2% of Water Enterprise assets	2.5% of Water Enterprise Assets
	Maximum	3% of Water Enterprise assets	No change
Drought Contingency	Minimum	7% of budgeted water sales	5% of budgeted water sales
	Target	no target	10% of budgeted water sales
	Maximum	7% of budgeted water sales	20% of budgeted water sales
Rate Stabilization	Minimum	6% of budgeted water sales	10% of budgeted water sales
	Target	\$6.8M	15% of budgeted water sales
	Maximum	no maximum	20% of budgeted water sales

In November 2014, the American Water Works Association published an article, “*Why Water Agencies Need Reserves*” by Sanjay Gaur, Johnathan Cruz and Drew Atwater. This article discusses the many challenges faced by water agencies, including mandated conservation, drought, aging infrastructure and regulatory requirements related to water quality. These challenges underscore the need to have a formal reserve policy in place. A formal reserve policy is beneficial because it can help ensure that adequate cash is on hand to meet working capital needs and cope with revenue shortfalls, and achieve or maintain a strong credit rating for future debt issues.

A very strong cash position and prudent financial policies were cited as reasons why the agency received strong credit ratings. It is therefore prudent for the Agency to maintain or improve its financial position.

**DISCUSSION AND ANALYSIS:**

On September 19, 2018 staff presented two additional rate scenarios which included funding for water supply reliability projects ranging from \$9M to \$15.2M through FY 2021-22. Staff has taken a closer look at the proposed funding of future water supply reliability projects and recommends reducing the amount to \$3M over the next four years until more information is available.

Staff also recommends funding the Operating, Emergency and Drought Contingency reserves at target levels and leave the Rate Stabilization Reserve unfunded during this study period. While this is a reasonable approach to reduce customer impacts, it's recommended that the Agency fund water supply reliability projects and review the current reserve policy based on industry standards and practices.

Under these assumptions, two additional scenarios have been developed. The two scenarios are:

- › Scenario 1 - (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Three Reserves at Target Levels + 3.7% Rate Adjustments)
- › Scenario 2 - (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Two Reserves at Target Levels and the Drought Contingency at the minimum level + 3% Rate Adjustments)

All scenarios include gradually increasing the fixed charge component from 35% to 45% by CY 2022.

Cash flow and monthly customer impacts assuming 10, 15, and 20 CCF are shown for each scenario in the tables on the following pages.

## RATE SCENARIOS

### **Scenario 1: (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Three Reserves at Target Levels + 3.7% Rate Adjustments)**

- › Includes 3% CPI
- › Includes \$3 million (Water Supply Reliability Projects)
- › Funding three reserves at Target Levels (Operating, Emergency and Drought Contingency ), no funding for the Rate Stabilization Reserve
- › Includes Fixed Component gradually increasing to 45%

#### **Scenario 1 – Monthly Customer Rate Impacts**

	<b>CY 2018</b>	<b>CY 2019</b>	<b>CY 2020</b>	<b>CY 2021</b>	<b>CY 2022</b>
Variable Charge (\$/ccf)	\$2.04	\$2.01	\$2.10	\$2.06	\$2.15
Weighted Fixed Charge (\$/ccf)	\$1.14	\$1.32	\$1.43	\$1.67	\$1.81
<b>Total Charge (\$/ccf)</b>	<b>\$3.18</b>	<b>\$3.33</b>	<b>\$3.53</b>	<b>\$3.73</b>	<b>\$3.96</b>
Dollar Amount Difference					
10 ccf		\$1.50	\$2.03	\$2.02	\$2.31
15 ccf		\$2.24	\$3.04	\$3.03	\$3.47
20 ccf		\$2.99	\$4.06	\$4.03	\$4.63

#### **Scenario 1 – Proforma Cash Flow**

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>
<b>Revenue</b>				
Volume-Based Rate Revenue	\$30,010,113	\$31,789,243	\$33,648,218	\$35,668,479
Fixed Charge Revenue	\$16,087,355	\$16,569,978	\$17,067,078	\$17,579,088
Total Additional Revenue	\$852,803	\$2,717,039	\$4,831,308	\$7,230,384
<b>Total Rate Revenue</b>	<b>\$46,950,271</b>	<b>\$51,076,260</b>	<b>\$55,546,604</b>	<b>\$60,477,951</b>
Investment Earnings	\$127,019	\$142,463	\$154,054	\$187,846
Other Revenue <sup>1</sup>	\$1,146,345	\$1,177,925	\$1,207,666	\$1,238,300
<b>Total Revenue</b>	<b>\$48,223,635</b>	<b>\$52,396,647</b>	<b>\$56,908,324</b>	<b>\$61,904,097</b>
<b>Expenses</b>				
O&M Expenses	\$32,649,908	\$35,524,235	\$37,238,845	\$39,022,338
Water Supply Reliability Projects	\$500,000	\$500,000	\$1,000,000	\$1,000,000
Existing Debt Service	\$1,692,410	\$3,123,338	\$3,122,338	\$3,124,213
Proposed Debt Service	\$0	\$0	\$0	\$0
<b>Total Expenses</b>	<b>\$34,842,318</b>	<b>\$39,147,573</b>	<b>\$41,361,183</b>	<b>\$43,146,551</b>
<b>Net Cash Flow before Capital Funding</b>	<b>\$13,381,317</b>	<b>\$13,249,074</b>	<b>\$15,547,141</b>	<b>\$18,757,546</b>
ACO Transfers	\$197,406	\$203,328	\$203,328	\$203,328
Capital Funding	\$12,300,000	\$12,792,000	\$13,303,680	\$13,835,827
<b>Net Cash Flow</b>	<b>\$883,911</b>	<b>\$253,746</b>	<b>\$2,040,133</b>	<b>\$4,718,391</b>
<b>Fund 100</b>				
Ending Balance	\$14,131,548	\$14,385,295	\$16,425,428	\$21,143,819
Target (no Rate Stabilization)	\$18,059,759	\$19,181,096	\$20,050,911	\$20,983,811

<sup>1</sup>Other revenue include untreated revenue at approx. \$1M annually and other miscellaneous revenue (rents, royalties, well permit fees, inspection fees etc.)

**Scenario 2: (3% CPI + \$3M for Water Supply Reliability Projects + Fully Funding Two Reserves at Target Levels and the Drought Contingency at Minimum + 3% Rate Adjustments)**

- › Includes 3% CPI
- › Includes \$3 million (Water Supply Reliability Projects)
- › Funding two reserves at Target Levels (Operating, Emergency) and the Drought Contingency at Minimum Levels, no funding for the Rate Stabilization Reserve
- › Includes Fixed Component gradually increasing to 45%

**Scenario 2 – Monthly Customer Rate Impacts**

	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Variable Charge (\$/ccf)	\$2.04	\$2.00	\$2.07	\$2.02	\$2.09
Weighted Fixed Charge (\$/ccf)	\$1.14	\$1.31	\$1.41	\$1.64	\$1.77
<b>Total Charge (\$/ccf)</b>	<b>\$3.18</b>	<b>\$3.31</b>	<b>\$3.48</b>	<b>\$3.66</b>	<b>\$3.86</b>
Dollar Amount Difference					
10 ccf		\$1.31	\$1.72	\$1.79	\$1.95
15 ccf		\$1.97	\$2.57	\$2.68	\$2.92
20 ccf		\$2.63	\$3.43	\$3.57	\$3.90

**Scenario 2 – Proforma Cash Flow**

	FY 2019	FY 2020	FY 2021	FY 2022
<b>Revenue</b>				
Volume-Based Rate Revenue	\$30,010,113	\$31,789,243	\$33,648,218	\$35,668,479
Fixed Charge Revenue	\$16,087,355	\$16,569,978	\$17,067,078	\$17,579,088
Total Additional Revenue	\$691,462	\$2,197,927	\$3,895,619	\$5,810,263
<b>Total Rate Revenue</b>	<b>\$46,788,930</b>	<b>\$50,557,148</b>	<b>\$54,610,916</b>	<b>\$59,057,830</b>
Investment Earnings	\$127,019	\$138,233	\$142,470	\$164,308
Other Revenue <sup>1</sup>	\$1,146,345	\$1,177,925	\$1,207,666	\$1,238,300
<b>Total Revenue</b>	<b>\$48,062,294</b>	<b>\$51,873,305</b>	<b>\$55,961,052</b>	<b>\$60,460,438</b>
<b>Expenses</b>				
O&M Expenses	\$32,649,908	\$35,524,235	\$37,238,845	\$39,022,338
Water Supply Reliability Projects	\$500,000	\$500,000	\$1,000,000	\$1,000,000
Existing Debt Service	\$1,692,410	\$3,123,338	\$3,122,338	\$3,124,213
Proposed Debt Service	\$0	\$0	\$0	\$0
<b>Total Expenses</b>	<b>\$34,842,318</b>	<b>\$39,147,573</b>	<b>\$41,361,183</b>	<b>\$43,146,551</b>
<b>Net Cash Flow before Capital Funding</b>	<b>\$13,219,976</b>	<b>\$12,725,732</b>	<b>\$14,599,869</b>	<b>\$17,313,887</b>
ACO Transfers	\$197,406	\$203,328	\$203,328	\$203,328
Capital Funding	\$12,300,000	\$12,792,000	\$13,303,680	\$13,835,827
<b>Net Cash Flow</b>	<b>\$722,570</b>	<b>(\$269,596)</b>	<b>\$1,092,861</b>	<b>\$3,274,732</b>
<b>Fund 100</b>				
Ending Balance	\$13,970,207	\$13,700,611	\$14,793,473	\$18,068,204
Target (no Rate Stab., Drought at min.)	\$15,704,179	\$16,601,328	\$17,226,797	\$17,888,908

<sup>1</sup>Other revenue include untreated revenue at approx. \$1M annually and other miscellaneous revenue (rents, royalties, well permit fees, inspection fees etc.)

## OTHER TREATED WATER RATES

### Recharge Fee:

The annual rate schedule includes a recharge fee for retailer pumping beyond their respective independent/groundwater pumping quota. Staff has reviewed the Recharge Fee as part of the Cost of Service Study. The Recharge Fee applies only when Retailers exceed their respective groundwater pumping quota (GPQ). When Retailers pump beyond their GPQ, they are accessing Zone 7's water supply. Therefore, the recharge fee is being revised to capture the entire cost of Zone 7's water system (i.e. treated water rate) less the costs of chemicals and power, which are not incurred by Zone 7 in the process of recharging the basin. Historically, this fee has been rarely used and then only for small quantities since Retailers generally do not exceed their independent quota. The fee has been applied once in the past five years.

The adopted rate for CY 2018 proposed rates for CY 2019, CY 2020, CY 2021 and CY 2022 are shown in the table below:

Calendar Year	2018 Adopted	2019 Proposed	2020 Proposed	2021 Proposed	2022 Proposed
Recharge Fee per AF	\$870	\$1,380	\$1,455	\$1,468	\$1,471

### In-Lieu Water Rate:

In the event staff concludes that surplus surface water is available and that it would be cost-effective to offer it to retailers at a reduced rate to achieve groundwater management objectives, in-lieu treated water could be offered. In-lieu water is treated water that the Retailers can purchase from Zone 7 instead of pumping their respective GPQ. This rate was established in 1993 to encourage artificial recharge when surplus surface water is available. The current rate for CY 2018 is \$138 per AF.

The rate is based on the power and chemical costs at the Del Valle and Patterson Pass Water Treatment plants and is proposed at \$103 per AF CY 2019, CY 2020, CY 2021 and CY 2022.

### Temporary Treated:

The need for temporary services stems from the inability of customers to obtain water in the outlying areas of the valley. The use of these services is limited. The proposed Temporary Treated Water rate is equivalent to the treated water volume-based rate plus the weighted fixed charge.

Calendar Year	2018 Adopted	2019 Proposed	2020 Proposed	2021 Proposed	2022 Proposed
Temporary Treated Water per AF	\$1,446	\$1,451	\$1,538	\$1,625	\$1,725

Staff recommends that the Board adopt the attached resolution approving the proposed treated water rates for CY 2019, CY 2020, CY 2021 and CY 2022.

## ATTACHMENTS:

1. Board Resolution
2. Attachment A - Cost of Service Study Executive Summary
3. Attachment B - Asset Management Plan Board Resolution

ZONE 7  
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
BOARD OF DIRECTORS

RESOLUTION NO

INTRODUCED BY  
SECONDED BY

**Adoption of the Treated Water Service Rates for Calendar Years 2019, 2020, 2021, 2022**

WHEREAS the Agency engaged an independent water rate consultant, Raftelis, to prepare a Cost of Service Study to identify the cost of providing wholesale treated water service and the study recommends a four-year rate schedule.

WHEREAS the study recommends gradually increasing fixed charge revenue recovery from 35% in calendar year (CY) 2018 to 45% by CY 2022.

NOW, THEREFORE BE IT RESOLVED by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District to adopt the following treated water rate schedules for Calendar Years 2019, 2020, 2021, and 2022.

FIRST, a volume-based water delivery charge, per the table below for all metered water delivered to each customer per month per 100 cubic feet (CCF) for CY 2019, CY 2020, CY 2021 and CY 2022.

Calendar Year	2019	2020	2021	2022
<b>Volume-based Rate per CCF</b>	\$2.01	\$2.10	\$2.06	\$2.15

SECOND, gradually increasing fixed charge revenue recovery from 35% in CY 2018 to 45% by CY 2022 per the table below.

	CY 2019	CY 2020	CY 2021	CY 2022
<b>Fixed Revenue Recovery</b>	37.5%	40%	42.5%	45%

THIRD, a fixed charge of \$18,834,149 for Retailers and \$528,949 for Direct Customers for CY 2019 per the tables below. Actual Fixed Charge monthly billing will be 1/12 of the annual amount.

<b>Fixed Charge per Retailer</b>	<b>CY 2019</b>
City of Pleasanton	\$5,971,854
Dublin San Ramon Services District	\$5,811,601
California Water Service Company	\$3,672,251
City of Livermore	\$3,378,443
<b>Total Retailer Fixed Charge</b>	<b>\$18,834,149</b>

<b>Fixed Charge per Direct Customer</b>	<b>CY 2019</b>
Lawrence Livermore Lab	\$465,889
Veterans Hospital	\$41,034
Wente Brothers	\$11,184
East Bay Regional Park District	\$9,116
L.A.R.P.D.	\$1,704
State of California DWR	\$22
<b>Total Direct Customer Fixed Charge</b>	<b>\$528,949</b>

FOURTH, fixed charges per the table below for CY 2020, CY 2021 and CY 2022. The Total Fixed Charges for these years shall not be changed without Board approval, however the actual allocation among Retailers and Direct Customers may change based on updated two-year rolling average of proportional use. Actual Fixed Charge monthly billing will be 1/12 of the annual amount.

<b>Calendar Year</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Total Retailer Fixed Charges	\$21,060,643	\$25,357,284	\$28,323,642
Total Direct Customer Fixed Charge	\$437,276	\$359,421	\$389,819
<b>Total Fixed Charges</b>	<b>\$21,497,919</b>	<b>\$25,716,705</b>	<b>\$28,713,461</b>

FIFTH, authorize the General Manager to the reallocate CY 2020, CY 2021 and CY 2022 Fixed Charge per Retailer and Direct Customer based on updated two-year rolling average of proportional use, to be determined at the end of FY 2018-19 for the CY 2020 charges, FY 2019-20 for the CY 2021 charges and FY 2020-21 for the FY 2022 charges.

BE IT RESOLVED by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District that the following rate schedule for Recharge, Temporary Treated Water and In-Lieu services be adopted:

FIRST, for Recharge services a recharge fee per the table below for CY 2019, CY 2020, CY 2021 and CY 2022, which is the unit cost of replenishment water to achieve full cost of recovery when it is necessary to replenish the main groundwater basin when water is pumped in excess of a retailers Groundwater Pumping Quota or Independent Quota.

<b>Calendar Year</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>Recharge Fee per AF</b>	\$1,380	\$1,455	\$1,468	\$1,471

SECOND, the Temporary Treated Water service rate is equivalent to the treated water volume-based charge plus the weighted fixed charge per CCF. The rates for CY 2019, CY 2020, CY 2021 and CY 2022 are per the table below:

<b>Calendar Year</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>Temporary Treated Water per AF</b>	\$1,451	\$1,538	\$1,625	\$1,725

THIRD, for Temporary Treated Water service an initial service establishment charge \$162 per turnout for CY 2019, \$167 for CY 2020, \$172 for CY 2021 and \$177 for CY 2022 for each new direct connection to the Zone system; and

A monthly meter service charge of \$21.00 per turnout for CY 2019, CY 2020, CY 2021 and CY 2022; and

FOURTH, for In-Lieu water services, a water rate of \$103 for CY 2019, CY 2020, CY 2021 and CY 2022, authorize the General Manager of Zone 7 of Alameda County Flood Control and Water Conservation District to offer to any treated water contractor who takes delivery of treated water from Zone 7 in lieu of pumping groundwater per their Groundwater Pumping Quota should appropriate circumstances be identified; and Zone 7 may offer this rate to its treated water contractors who have a Groundwater Pumping Quota (GPQ) (including well pumping capacity) if sufficient surface water is available and if it is deemed financially and operationally prudent; and, In-Lieu quantities will be limited to each contractor's GPQ plus any accumulated carry-over.

BE IT FURTHER RESOLVED that said water rate schedules for all treated water service as adopted herein shall be effective on January 1, 2019 and shall end on the next effective date for such water rates as adopted by the Board.

BE IT FURTHER RESOLVED that the General Manager of Zone 7 of the Alameda County Flood Control and Water Conservation District is hereby authorized to continue to enter into, renew, modify and otherwise administer all Temporary Treated Water service agreements in accordance with said rate schedules adopted herein and as may be modified from time to time.

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSENT:

ABSTAIN:

I certify that the foregoing is a correct copy of a resolution adopted by the Board of Directors of Zone 7 of Alameda County Flood Control and Water Conservation District on October 17, 2018.

By \_\_\_\_\_  
President, Board of Directors

ATTACHMENT A

# ZONE 7

## WATER AGENCY

### Treated Wholesale Water Rate Study

Executive Summary / September 2018



# Executive Summary

## Background of the Agency

The Zone 7 Water Agency (Agency) was established in 1957 to provide both untreated water to support agriculture and treated wholesale water to the Livermore-Amador Valley area. In 1961, the Agency contracted for State Water Project (SWP) water deliveries through the South Bay Aqueduct.

The Agency's water resources include imported water from the SWP, 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 SWP; approximately 80 percent of the current water demand is met through SWP water.

Through its four retail water suppliers (retailers) – the City of Pleasanton, Dublin San Ramon Services District, California Water Service Company, and City of Livermore – the Agency provides water service to a population of approximately 250,000. The Agency also provides treated wholesale water service to six direct customers – Lawrence Livermore Lab, Livermore Area Recreation and Park District (L.A.R.P.D.), Veterans Hospital, Wente Brothers Vineyard, the State of California Department of Water Resources (California DWR), and the East Bay Regional Park District.

## Background of the Study

In 2018, the Agency engaged Raftelis to conduct a Treated Water Wholesale Rate Study (Study). Like many other utilities in California, the Agency is faced with financial challenges stemming from the water usage reductions due to increased conservation.

Historically, water usage projections from retailers and direct customers have been higher than actual water usage. The Agency currently relies on a variable charge per unit of water as its main source of rate revenue, encompassing approximately 65 percent of total rate revenue. The discrepancy between projected versus actual usage causes revenue shortfalls that negatively impact the financial sufficiency of the Agency's treated wholesale water enterprise.

The major objectives of the study include the following:

- Develop a financial plan for the treated wholesale water enterprise to ensure financial sufficiency, meet operation and maintenance (O&M) costs, fund capital projects, and develop sufficient reserve levels
- Develop a four-year rate structure that increases revenue stability while minimizing customer impacts
- Develop treated wholesale water rates that are fair and equitable to both the Agency's retailers and direct customers

This Executive Summary encompasses the key assumptions and inputs, various financial plan scenarios, financial recommendations, and proposed water rates that were developed in the Study.

## Key Assumptions

The Study period uses the fiscal year (FY) 2019 budget as the base year. The model projects the financial plan through FY 2022, including calculated rate revenues, projected non-rate revenues and expenses, estimated capital

funding, and the resulting cash flow and reserve balance projections. The rates developed in this study will recover the Agency’s required revenue in calendar years (CY) 2019 through 2022 based on the data and assumptions contained in this report. The Agency will periodically review rates and take a measured approach with any potential revenue adjustments hereafter if any changed circumstances arise.

Certain cost escalation assumptions and inputs are incorporated into the Study to adequately project future costs. These assumptions are based on discussions with and/or direction from Agency staff. The escalation assumptions include inflation factors to project future O&M expenses and a Consumer Price Index (CPI) adjustment to rates. **Table 1** presents all inflationary assumptions; any other cost or revenue not shown in this chart are not inflated (for example, miscellaneous non-rate revenues are not inflated in future years).

**Table 1: Inflationary Assumptions**

Inflation Factors	FY 2019	FY 2020	FY 2021	FY 2022
<b>General</b>	3%	3%	3%	3%
<b>Salary</b>	3%	3%	3%	3%
<b>Benefits</b>	3%	3%	3%	3%
<b>Utilities</b>	5%	5%	5%	5%
<b>Supplies</b>	3%	3%	3%	3%
<b>Capital</b>	0%	0%	0%	0%
<b>Energy</b>	5%	5%	5%	5%
<b>CPI for Rates</b>	3%	3%	3%	3%

Agency staff worked with retailers and direct customers to determine the projected water demand for the Study period. **Table 2** shows the annual water demand projections for all customers in acre-feet (AF); **Table 3** shows the same projections in hundred cubic feet (ccf).

**Table 2: Water Demand Projections (AF)**

Water Sales Projections (AF)	FY 2019	FY 2020	FY 2021	FY 2022
City of Pleasanton	10,360	10,670	10,990	11,320
Dublin San Ramon Services District	10,090	10,390	10,700	11,020
California Water Service Company	6,390	6,580	6,780	6,980
City of Livermore	5,970	6,150	6,330	6,520
Lawrence Livermore Lab	300	300	300	300
L.A.R.P.D.	3	3	3	3
Veterans Hospital	120	120	120	120
Wente Brothers	32	32	32	32
State of California DWR	0	0	0	0
East Bay Regional Park District	17	17	17	17
<b>Total Water Sales (AF)</b>	<b>33,282</b>	<b>34,262</b>	<b>35,272</b>	<b>36,312</b>

**Table 3: Water Demand Projections (ccf)**

Water Sales Projections (ccf)	FY 2019	FY 2020	FY 2021	FY 2022
City of Pleasanton	4,512,816	4,647,852	4,787,244	4,930,992
Dublin San Ramon Services District	4,395,204	4,525,884	4,660,920	4,800,312
California Water Service Company	2,783,484	2,866,248	2,953,368	3,040,488
City of Livermore	2,600,532	2,678,940	2,757,348	2,840,112
Lawrence Livermore Lab	130,680	130,680	130,680	130,680
L.A.R.P.D.	1,307	1,307	1,307	1,307
Veterans Hospital	52,272	52,272	52,272	52,272
Wente Brothers	13,939	13,939	13,939	13,939
State of California DWR	0	0	0	0
East Bay Regional Park District	7,405	7,405	7,405	7,405
<b>Total Water Sales (ccf)</b>	<b>14,497,639</b>	<b>14,924,527</b>	<b>15,364,483</b>	<b>15,817,507</b>

## Current Water Rates

The Agency's current treated wholesale water rates include a fixed charge per customer based on a two-year rolling average of water usage and a variable charge per ccf of water. The fixed charge recovers approximately 35 percent of rate revenue and the variable charge recovers the remaining 65 percent. **Table 4** shows the Agency's current rate structure for CY 2018 and beyond. The current rates for CY 2018 are multiplied with the CPI for Rates factor in **Table 1** to determine the water rates used to project revenues under the current rate structure in future years.

**Table 4: Current Water Rates with CPI Increase**

Current Rates	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Variable Charge (\$/ccf)	\$2.04	\$2.10	\$2.16	\$2.22	\$2.29
Annual Fixed Charge (all customers)	\$15,849,610	\$16,325,100	\$16,814,856	\$17,319,300	\$17,838,876

## Reserve Policy

The Agency has a current reserve policy for Fund 100 (Operating Fund) that includes minimum, target, and maximum reserve levels. Fund 100 has four reserves: Operating, Drought Contingency, Emergency, and Rate Stabilization Reserves. The Operating Reserve mitigates against cash flow risks and unanticipated O&M expenses. The Drought Contingency Reserve prepares for potential droughts and the revenue shortfalls that come with such conditions. The Emergency Reserve helps protect the Agency from asset failures, emergencies, and natural disasters. The Rate Stabilization Reserve allows the Agency to stabilize rates during periods of increased expenses.

The current reserve policy in effect is as follows:

### Operating Reserve

- Minimum: 60 days of O&M expenses
- Target: 90 days of O&M expenses
- Maximum: 120 days of O&M expenses

### Drought Contingency Reserve

- Minimum: 5.0 percent of water sales revenue
- Target: 10.0 percent of water sales revenue
- Maximum: 20.0 percent of water sales revenue

### Emergency Reserve

- Minimum: 2.0 percent of capital assets
- Target: 2.5 percent of capital assets
- Maximum: 3.0 percent of capital assets

### Rate Stabilization Reserve

- Minimum: 10.0 percent of water sales revenue
- Target: 15.0 percent of water sales revenue
- Maximum: 20.0 percent of water sales revenue

## Scenario Analyses

The Study involved an analysis of three financial plan scenarios. The three scenarios include the status quo and the two most likely cost scenarios. This section outlines the conditions of each scenario and presents the resulting financial plan and revenue adjustments.

### SCENARIO 1: BASE CASE

Scenario 1 includes projected costs and capital funding based on budget input from Agency staff. Projected costs include salaries and benefits, purchased water, treatment chemicals, debt service, capital funding, additional water supply reliability project costs, and other miscellaneous expenses. The additional water supply reliability project costs include \$9.0 million from FY 2019 to FY 2022 and represent costs associated with additional water supply to increase reliability in future years. Scenario 1 represents the status quo and shows the Agency's financial standing if there were no additional revenue adjustments above the 3.0 percent CPI factor. **Table 5** shows the cash flow projections under Scenario 1.

The rate revenues (Lines 1-4) are calculated using the water demand projections for each FY in **Table 3** and the average of CPI inflated CY rates from **Table 4**. The FY variable charge is equal to the average of the two CY charges<sup>1</sup>, equal to \$2.07 per ccf in FY 2019 (average of \$2.04 and \$2.10). The estimated FY 2019 variable charge is multiplied by the projections in **Table 3** to determine the volume-based rate revenue (Line 2). The fixed charge revenue (Line 3) in FY 2019 is equal to \$16,087,355, or the average between CY 2018 and CY 2019 fixed charges in **Table 4** (average of \$15,849,610 and \$16,325,100).

The expenses (Lines 11-16) include the projected O&M expenses from the Agency's budget (Line 12), additional water supply reliability costs (Line 13), and existing and proposed debt service (Lines 14-15). The Agency is not planning to issue debt during the Study period.

The net cash flow before capital funding is equal to the total revenues (Line 9) less total expenses (Line 16). The Accumulated Capital Outlay (ACO) transfer and capital funding are derived from data provided by Agency staff. The total net cash flow (Line 22) is equal to the net cash flow before capital funding (Line 18) less capital funding costs (Lines 19-20). The Fund 100 ending balance includes the net cash flow (Line 22). The Fund 100 reserve targets (excluding Rate Stabilization) are in line with the Agency's current reserve policy.

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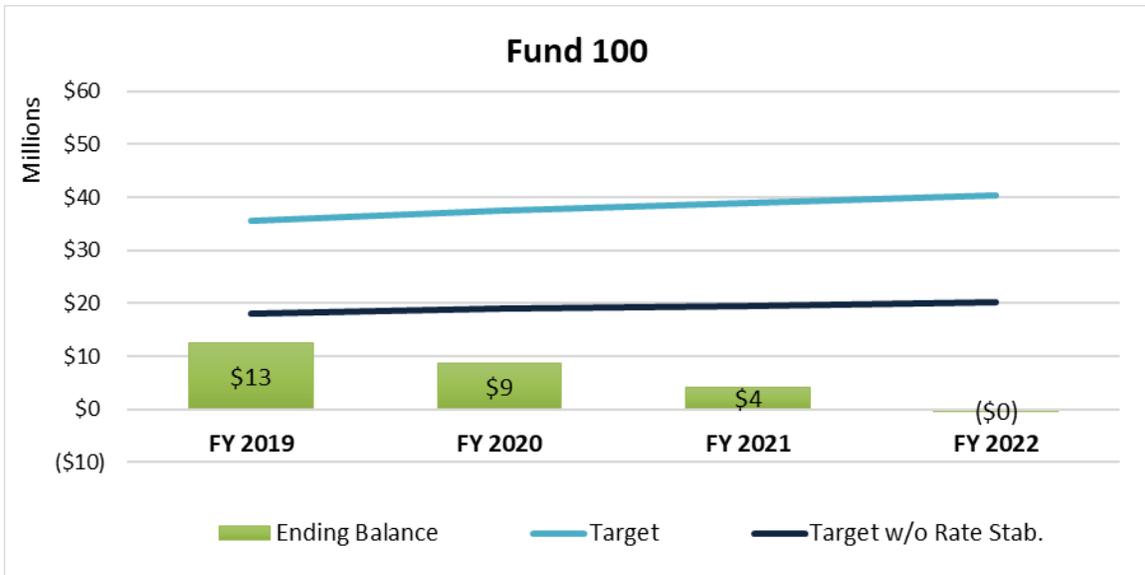
<sup>1</sup> FY 2019 is the period from July 2018 to June 2019, which incorporates half of the months in CY 2018 (July 2018 to December 2018) and half of the months in CY 2019 (January 2019 to June 2019). Therefore, the FY charge is estimated using the average of two CY charges.

**Table 5: Cash Flow Projections (Scenario 1)**

Line	Cash Flow Projections	FY 2019	FY 2020	FY 2021	FY 2022
1	<b>Revenue</b>				
2	Volume-Based Rate Revenue	\$30,010,113	\$31,789,243	\$33,648,218	\$35,668,479
3	Fixed Charge Revenue	\$16,087,355	\$16,569,978	\$17,067,078	\$17,579,088
4	Total Additional Revenue	\$0	\$0	\$0	\$0
5					
6	<b>Total Rate Revenue</b>	<b>\$46,097,468</b>	<b>\$48,359,221</b>	<b>\$50,715,296</b>	<b>\$53,247,567</b>
7	Investment Earnings	\$127,019	\$105,557	\$63,770	\$18,456
8	Other Revenue	\$1,146,345	\$1,177,925	\$1,207,666	\$1,238,300
9	<b>Total Revenue</b>	<b>\$47,370,832</b>	<b>\$49,642,703</b>	<b>\$51,986,733</b>	<b>\$54,504,323</b>
10					
11	<b>Expenses</b>				
12	O&M Expenses	\$32,649,908	\$35,524,235	\$37,238,845	\$39,022,338
13	Water Supply Reliability Projects	\$1,500,000	\$2,000,000	\$2,500,000	\$3,000,000
14	Existing Debt Service	\$1,692,410	\$3,123,338	\$3,122,338	\$3,124,213
15	Proposed Debt Service	\$0	\$0	\$0	\$0
16	<b>Total Expenses</b>	<b>\$35,842,318</b>	<b>\$40,647,573</b>	<b>\$42,861,183</b>	<b>\$45,146,551</b>
17					
18	<b>Net Cash Flow before Capital Funding</b>	<b>\$11,528,514</b>	<b>\$8,995,130</b>	<b>\$9,125,550</b>	<b>\$9,357,772</b>
19	ACO Transfers	\$197,406	\$203,328	\$203,328	\$203,328
20	Capital Funding	\$12,300,000	\$12,792,000	\$13,303,680	\$13,835,827
21					
22	<b>Net Cash Flow</b>	<b>(\$968,892)</b>	<b>(\$4,000,198)</b>	<b>(\$4,381,458)</b>	<b>(\$4,681,383)</b>
23					
24	<b>Fund 100</b>				
25	Ending Balance	\$12,567,960	\$8,567,762	\$4,186,304	(\$495,080)
26	Target (no Rate Stabilization)	\$17,974,479	\$18,909,392	\$19,567,781	\$20,260,773

Under Scenario 1, the Agency will have negative reserve levels in Fund 100 by the end of FY 2022. **Figure 1** shows the projected fund balances (green bars) with target reserve levels (blue line) and target reserve levels without the Rate Stabilization Reserve (black line).

Figure 1: Fund 100 Ending Balances (Scenario 1)



### SCENARIO 2: INCREASE FUND 100

This scenario includes the same costs as Scenario 1. The goal of this financial plan scenario is to increase Fund 100 reserve levels to target levels (without Rate Stabilization Reserve) by the end of the study period in FY 2022. The estimated revenue adjustments for this scenario is 5.0 percent above 3.0 percent CPI adjustment for each year of the Study.

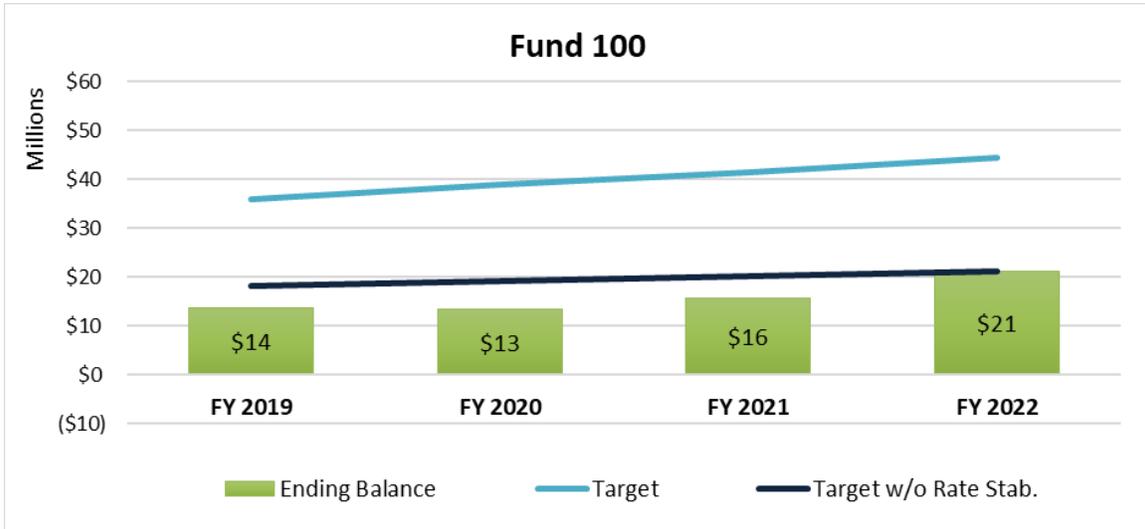
**Table 6** shows the cash flow projections for Scenario 2. The total additional revenue (Line 4) is equal to a 5.0 percent revenue adjustment each year (above the 3.0 percent CPI increase), implemented in January of each FY.

**Table 6: Cash Flow Projections (Scenario 2)**

Line	Cash Flow Projections	FY 2019	FY 2020	FY 2021	FY 2022
1	<b>Revenue</b>				
2	Volume-Based Rate Revenue	\$30,010,113	\$31,789,243	\$33,648,218	\$35,668,479
3	Fixed Charge Revenue	\$16,087,355	\$16,569,978	\$17,067,078	\$17,579,088
4	Total Additional Revenue	\$1,152,437	\$3,687,391	\$6,596,158	\$9,934,166
5					
6	<b>Total Rate Revenue</b>	<b>\$47,249,905</b>	<b>\$52,046,612</b>	<b>\$57,311,454</b>	<b>\$63,181,732</b>
7	Investment Earnings	\$127,019	\$135,669	\$145,861	\$184,439
8	Other Revenue	\$1,146,345	\$1,177,925	\$1,207,666	\$1,238,300
9	<b>Total Revenue</b>	<b>\$48,523,269</b>	<b>\$53,360,206</b>	<b>\$58,664,982</b>	<b>\$64,604,471</b>
10					
11	<b>Expenses</b>				
12	O&M Expenses	\$32,649,908	\$35,524,235	\$37,238,845	\$39,022,338
13	Water Supply Reliability Projects	\$1,500,000	\$2,000,000	\$2,500,000	\$3,000,000
14	Existing Debt Service	\$1,692,410	\$3,123,338	\$3,122,338	\$3,124,213
15	Proposed Debt Service	\$0	\$0	\$0	\$0
16	<b>Total Expenses</b>	<b>\$35,842,318</b>	<b>\$40,647,573</b>	<b>\$42,861,183</b>	<b>\$45,146,551</b>
17					
18	<b>Net Cash Flow before Capital Funding</b>	<b>\$12,680,951</b>	<b>\$12,712,633</b>	<b>\$15,803,799</b>	<b>\$19,457,920</b>
19	ACO Transfers	\$197,406	\$203,328	\$203,328	\$203,328
20	Capital Funding	\$12,300,000	\$12,792,000	\$13,303,680	\$13,835,827
21					
22	<b>Net Cash Flow</b>	<b>\$183,545</b>	<b>(\$282,695)</b>	<b>\$2,296,791</b>	<b>\$5,418,765</b>
23					
24	<b>Fund 100</b>				
25	Ending Balance	\$13,720,397	\$13,437,701	\$15,734,492	\$21,153,257
26	Target (no Rate Stabilization)	\$18,089,723	\$19,278,131	\$20,227,396	\$21,254,190

**Figure 2** shows the projected fund balances for Fund 100 for the Study period under Scenario 2. The black line represents the target reserve levels for Fund 100 without the Rate Stabilization Reserve requirement.

**Figure 2: Fund 100 Ending Balances (Scenario 2)**



**SCENARIO 3: ADDITIONAL WATER SUPPLY RELIABILITY PROJECTS**

This scenario includes the same costs as Scenarios 1 and 2, with an additional \$6.2 million in water supply reliability projects in FY 2021 and FY 2022. The goal of this scenario is the same as Scenario 2: increasing Fund 100 reserve levels to target without Rate Stabilization Reserve requirements. The estimated revenue adjustments for this scenario is 6.5 percent above the 3.0 percent CPI increase for each year of the Study.

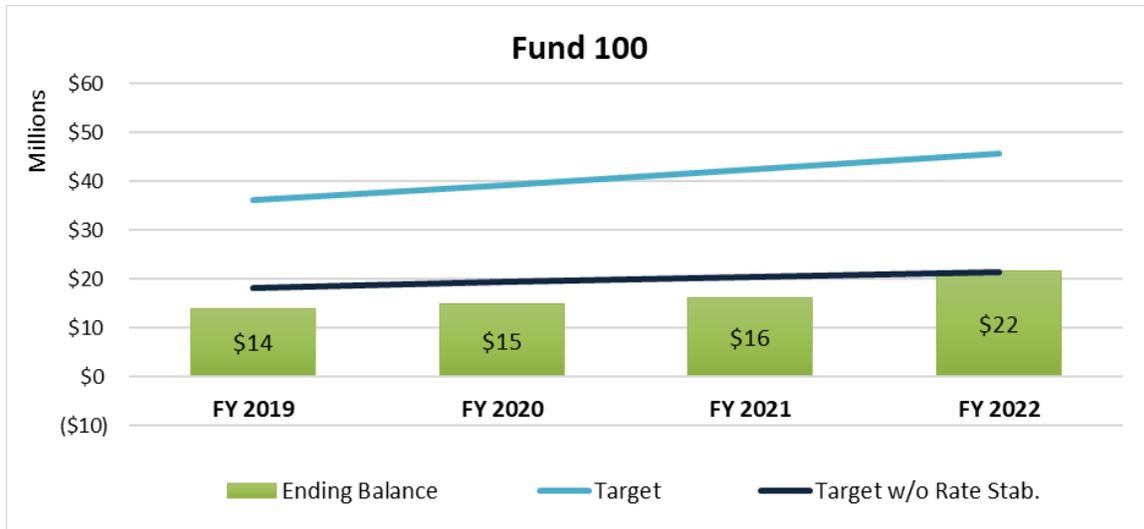
**Table 7** shows the cash flow projections for Scenario 3. The total additional revenue (Line 4) is equal to a 6.5 percent revenue adjustment each year (above the 3.0 percent CPI increase), implemented in January of each FY. The water supply reliability projects (Line 13) include approximately \$6.2 million in additional costs in the last two years.

**Table 7: Cash Flow Projections (Scenario 3)**

Line	Cash Flow Projections	FY 2019	FY 2020	FY 2021	FY 2022
1	<b>Revenue</b>				
2	Volume-Based Rate Revenue	\$30,010,113	\$31,789,243	\$33,648,218	\$35,668,479
3	Fixed Charge Revenue	\$16,087,355	\$16,569,978	\$17,067,078	\$17,579,088
4	Total Additional Revenue	\$1,498,168	\$4,817,183	\$8,676,744	\$13,163,224
5					
6	<b>Total Rate Revenue</b>	<b>\$47,595,636</b>	<b>\$53,176,404</b>	<b>\$59,392,040</b>	<b>\$66,410,791</b>
7	Investment Earnings	\$127,019	\$144,821	\$156,162	\$190,621
8	Other Revenue	\$1,146,345	\$1,177,925	\$1,207,666	\$1,238,300
9	<b>Total Revenue</b>	<b>\$48,869,000</b>	<b>\$54,499,150</b>	<b>\$60,755,868</b>	<b>\$67,839,711</b>
10					
11	<b>Expenses</b>				
12	O&M Expenses	\$32,649,908	\$35,524,235	\$37,238,845	\$39,022,338
13	Water Supply Reliability Projects	\$1,500,000	\$2,000,000	\$5,500,000	\$6,150,000
14	Existing Debt Service	\$1,692,410	\$3,123,338	\$3,122,338	\$3,124,213
15	Proposed Debt Service	\$0	\$0	\$0	\$0
16	<b>Total Expenses</b>	<b>\$35,842,318</b>	<b>\$40,647,573</b>	<b>\$45,861,183</b>	<b>\$48,296,551</b>
17					
18	<b>Net Cash Flow before Capital Funding</b>	<b>\$13,026,682</b>	<b>\$13,851,577</b>	<b>\$14,894,685</b>	<b>\$19,543,160</b>
19	ACO Transfers	\$197,406	\$203,328	\$203,328	\$203,328
20	Capital Funding	\$12,300,000	\$12,792,000	\$13,303,680	\$13,835,827
21					
22	<b>Net Cash Flow</b>	<b>\$529,276</b>	<b>\$856,249</b>	<b>\$1,387,677</b>	<b>\$5,504,005</b>
23					
24	<b>Fund 100</b>				
25	Ending Balance	\$14,066,128	\$14,922,377	\$16,310,054	\$21,814,059
26	Target (no Rate Stabilization)	\$18,124,296	\$19,391,111	\$20,435,455	\$21,577,095

Figure 3 shows the projected fund balances for Fund 100 for the Study period under Scenario 3, with additional water supply reliability project costs.

Figure 3: Fund 100 Ending Balances (Scenario 3)



## Recommendations

A discussion of the final recommendations and results should begin with reviewing the major objectives set forth in the beginning of the Study:

- Develop a financial plan to ensure financial sufficiency, meet O&M costs, fund capital projects, and develop sufficient reserve levels
- Develop a four-year rate structure that increases revenue stability while minimizing customer impacts
- Develop treated wholesale water rates that are fair and equitable

The financial plan scenarios in the previous section were analyzed carefully to determine the resulting financial and rate impacts of each scenario. Based on discussion with Agency staff, Scenario 3 represents the situation most likely to arise in future years. The additional water supply reliability costs, totaling approximately \$15.2 million in the four-year Study period, provide a contingency plan during periods of unreliable water supply.

Currently, 80 percent of water demand is met through SWP water. However, this demand can only be met if supply conditions for SWP are favorable. During unfavorable conditions, the Agency must purchase water from other sources which may drive up costs considerably. The funds used for additional water supply reliability projects will increase water supply reliability for the Agency.

The revenue adjustments proposed in Scenario 3 (3.0 percent CPI increase, with an additional 6.5 percent per year) produce sufficient revenues to ensure the utility's financial sufficiency and cover all costs. The Agency is expected to meet reserve targets without funding the Rate Stabilization Reserve. Although this is a reasonable approach to reduce customer impacts during this Study period, Raftelis recommends that the Agency fund the Rate Stabilization Reserve in the future to have the ability to stabilize rates in case of increased or unexpected expenses.

However, increasing revenues alone does not address another problem the Agency faces: revenue instability. Due to increased conservation over the past few years, fueled mainly by the five-year drought conditions in prior years and conservation mandates, there is a discrepancy between projected sales and actual sales. Agency staff receives projections from its customers, which are ultimately used to determine the variable charge. When actual sales are less than projected sales, there is a revenue shortfall. The Agency's costs, however, are mostly fixed; in instances of reduced revenue, the Agency must draw down reserves to offset the shortfall.

To address the issue of revenue instability, the proposed fixed revenue recovery percentages increase incrementally each year. The current fixed revenue recovery percentage is equal to 35.0 percent. Based on discussions with Agency staff, the fixed revenue percentage will increase to 45.0 percent by the end of the Study period, which is an increase of 2.5 percent each year. This incremental change in fixed revenue recovery will increase revenue stability over time and decrease potential customer bill impacts. By recovering a higher proportion of costs through the fixed charge, the Agency is better protected from fluctuations in water demand.

The final objective involves determining fair and equitable rates. The variable charge is divided proportionately between customers based on their water demand projections. The fixed charge is divided to each customer based on their two-year rolling average of water sales. For example, the fixed charge for CY 2019 is determined using the average of FY 2017 and FY 2018 water sales for each customer. Using a two-year rolling average serves to offset any yearly fluctuations in water demand, increase revenue stability for the Agency, and increase rate stability for its customers.

## Proposed Water Rates

The proposed water rates are based on Scenario 3 costs and include the revenue adjustments of 6.5 percent over the 3.0 percent CPI increase. The revenue requirement, or the revenue to be recovered from rates, is equal to the total rate revenue amount in **Table 7**. The revenue requirement is based on FY, and the resulting rates are for CY.

For example, the calculated rates assume that the revenues recovered in the first half of FY 2019 are determined by CY 2018 rates. The remainder of the FY revenue requirement is used to calculate CY 2019 rates based on a half-year amount of demand. **Table 8** shows the proposed CY 2019 rates that have a 37.5 percent fixed revenue recovery percentage (an increase of 2.5 percent).

**Table 8: Proposed Water Rates (CY 2019)**

Proposed Rates	Current CY 2018	Proposed CY 2019
<b>Variable Revenue Recovery</b>	65.0%	62.5%
<b>Variable Charge (\$/ccf)</b>	\$2.04	\$2.07
<b>Fixed Revenue Recovery</b>	35.0%	37.5%
<b>Annual Fixed Charge</b>		
City of Pleasanton	\$4,748,097	\$6,066,782
Dublin San Ramon Services District	\$4,934,327	\$5,903,981
California Water Service Company	\$3,086,763	\$3,906,856
City of Livermore	\$2,917,197	\$3,432,146
<b>Retailers</b>	<b>\$15,686,384</b>	<b>\$19,309,765</b>
Lawrence Livermore Lab	\$127,329	\$473,295
L.A.R.P.D.	\$708	\$1,731
Veterans Hospital	\$20,552	\$41,686
Wente Brothers	\$11,279	\$11,362
State of California DWR	\$18	\$22
East Bay Regional Park District	\$3,340	\$9,261
<b>Direct Customers</b>	<b>\$163,226</b>	<b>\$537,357</b>
<b>Total</b>	<b>\$15,849,610</b>	<b>\$19,847,122</b>

**Table 9** shows the proposed water rates for the entire Study period. The annual fixed charge amount shown is the total for all customers. The Agency will divide the fixed charge amount by the two-year rolling average as water sales data is updated each year.

**Table 9: Proposed Water Rates**

Proposed Rates	Current CY 2018	Proposed CY 2019	Proposed CY 2020	Proposed CY 2021	Proposed CY 2022
<b>Fixed Revenue Recovery</b>	35.0%	37.5%	40.0%	42.5%	45.0%
<b>Annual Fixed Charge</b>	\$15,849,610	\$19,847,122	\$22,694,011	\$27,789,233	\$31,980,488
<b>Variable Revenue Recovery</b>	65.0%	62.5%	60.0%	57.5%	55.0%
<b>Variable Charge (\$/ccf)</b>	\$2.04	\$2.07	\$2.21	\$2.24	\$2.38

## Customer Impacts

A simple way of determining customer impacts is to determine the total charge per unit of water. The variable charge is already charged on a per ccf basis. The fixed charge can be translated to a “variable charge” by determining the weighted fixed charge per ccf of water from the estimated two-year rolling average.

**Table 10** shows the resulting charges determined in **Table 9** as a total charge per ccf of water for all years of the Study.

**Table 10: Proposed Water Rates as Variable Charge**

Weighted Charges	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
Variable Charge (\$/ccf)	\$2.04	\$2.07	\$2.21	\$2.24	\$2.38
Weighted Fixed Charge (\$/ccf)	\$1.14	\$1.35	\$1.51	\$1.81	\$2.02
<b>Total Charge (\$/ccf)</b>	<b>\$3.18</b>	<b>\$3.42</b>	<b>\$3.72</b>	<b>\$4.05</b>	<b>\$4.40</b>

**Table 11** shows the proposed dollar amount impact to an average customer at different levels of usage derived from the weighted charges shown in **Table 10**.

**Table 11: Customer Impacts**

Customer Impacts	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022
<b>Monthly Water Usage (ccf)</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
Variable Charges	\$20.40	\$20.70	\$22.10	\$22.40	\$23.80
Fixed Charges	\$11.39	\$13.51	\$15.11	\$18.08	\$20.21
Total Charges	\$31.79	\$34.21	\$37.21	\$40.48	\$44.01
<b>Dollar Amount Difference</b>		<b>\$2.43</b>	<b>\$3.00</b>	<b>\$3.27</b>	<b>\$3.53</b>
<b>Monthly Water Usage (ccf)</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
Variable Charges	\$30.60	\$31.05	\$33.15	\$33.60	\$35.70
Fixed Charges	\$17.08	\$20.27	\$22.66	\$27.11	\$30.31
Total Charges	\$47.68	\$51.32	\$55.81	\$60.71	\$66.01
<b>Dollar Amount Difference</b>		<b>\$3.64</b>	<b>\$4.49</b>	<b>\$4.90</b>	<b>\$5.30</b>
<b>Monthly Water Usage (ccf)</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>
Variable Charges	\$40.80	\$41.40	\$44.20	\$44.80	\$47.60
Fixed Charges	\$22.77	\$27.02	\$30.21	\$36.15	\$40.41
Total Charges	\$63.57	\$68.42	\$74.41	\$80.95	\$88.01
<b>Dollar Amount Difference</b>		<b>\$4.85</b>	<b>\$5.99</b>	<b>\$6.54</b>	<b>\$7.06</b>

**Table 12** summarizes the information in **Table 11** and provides a quick overview of customer impacts by average level of usage.

**Table 12: Customer Impacts Summary**

Dollar Amount Difference	CY 2019	CY 2020	CY 2021	CY 2022
10 ccf	\$2.43	\$3.00	\$3.27	\$3.53
15 ccf	\$3.64	\$4.49	\$4.90	\$5.30
20 ccf	\$4.85	\$5.99	\$6.54	\$7.06

ATTACHMENT B

ZONE 7  
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
BOARD OF DIRECTORS

RESOLUTION NO 17-81

INTRODUCED BY DIRECTOR PALMER  
SECONDED BY DIRECTOR QUIGLEY

***2017 Asset Management Plan Long-Term Funding Forecast Update and FY 2018/19 Ten-Year Water System Capital Improvement Plan***

WHEREAS, HDR, Inc., prepared the 2017 Asset Management Plan Long-Term Funding Forecast Update (2017 AMP Update) to update renewal/replacement and system-wide improvement project costs and schedules over a forty-year horizon and to recommend the appropriate level of annual AMP funding; and

WHEREAS, staff has developed the Fiscal Year (FY) 2018-19 Ten-Year Water System Capital Improvement Plan, identifying the capital projects and programs needed to carry out the water system goals and policy objectives of the agency from FY 2018-19 through FY 2027-28, and incorporating the recommendations from the 2017 AMP Update.

NOW, THEREFORE BE IT RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District accepts the 2017 AMP Update with the revised annual AMP funding recommendations incorporated; and

BE IT FURTHER RESOLVED that the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District approves the AMP funding transfer from the Water Enterprise Operations Fund (Fund 100) to the Water Enterprise Renewal/Replacement & System-Wide Improvements Fund (Fund 120) as follows: \$12,300,000 in 2017 dollars beginning in FY 2018-19 with inflationary adjustments every year based on the Engineering News Record Construction Cost Index.

BE IT FURTHER RESOLVED that the the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District adopt the FY 2018-19 Ten-Year Water System Capital Improvement Plan.

ADOPTED BY THE FOLLOWING VOTE:

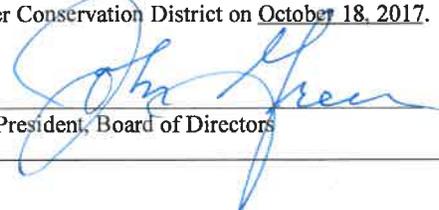
AYES: DIRECTORS FIGUERS, GRECI, PALMER, QUIGLEY, RAMIREZ HOLMES, STEVENS

NOES: NONE

ABSENT: DIRECTOR McGRAIL

ABSTAIN: NONE

I certify that the foregoing is a correct copy of a Resolution adopted by the Board of Directors of Zone 7 of the Alameda County Flood Control and Water Conservation District on October 18, 2017.

By:   
President, Board of Directors