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Triunfo Water & Sanitation District
Ventura County, California

UPDATE OF PROPOSITION 218 COST OF SERVICE ANALYSIS FOR POTABLE WATER PROPOSED CHANGES IN THE RATE STRUCTURE

Summary

Raftelis, the District's rate consultant, recently completed all elements of the proposed Triunfo Water & Sanitation District's rate plans, including the Cost of Service (COS) analysis. Mr. Sudhir Pardiwala (Raftelis) is here tonight to present the three completed rate studies.

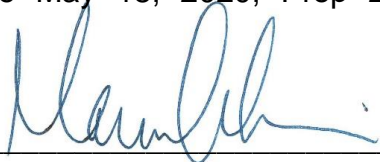
Based on the results of the COS, the proposed rates for Wastewater and Recycled Water are compliant with Proposition 218 requirements. However, the originally proposed Potable Water (PW) rates need minor adjustments to ensure costs are allocated in conformance with Proposition 218. They include the following changes to the rates presented within the Prop 218 Notice (highlighted):

Total Revenue Adjustments		Prop 218 Notice	COS	Recommended for FY21
Monthly Service Charge			<i>Table 3-15</i>	
3/4 inch		\$31.53	\$31.62	\$31.53
1 inch		\$49.76	\$50.31	\$49.76
1-1/2 inch		\$95.39	\$94.72	\$94.72
2 inch		\$150.14	\$148.02	\$148.02
3 inch		\$323.52	\$316.78	\$316.78
4 inch		\$579.01	\$565.49	\$565.49
6 inch		\$1,281.64	\$1,249.44	\$1,249.44
Quantity Rates (\$/hcf)			<i>Table 3-20</i>	
Tier 1	7	\$6.84	\$6.84	\$6.84
Tier 2	28	\$7.75	\$7.75	\$7.75
Tier 3	28+	\$9.48	\$9.54	\$9.48

The revised proposed rate plan varies slightly from the rates which resulted from the COS and will impact projected PW revenues downward by approximately \$14K/year. It is estimated that the revenue from the 4% escalator (not included in the rate study) for the

cell site revenues will cover this \$14K loss and have a net zero effect over the 5-year period. Subsequent fiscal year rates will also change from the Prop 218 Notice by a similar rate reduction and are included in the rate study report attached (Table 1-3). Staff recommends the Board review and approve this revised proposed rate structure and direct staff to include it in the May 18, 2020, Prop 218 PW Public Hearing for consideration.

REVIEWED AND APPROVED


Mark Norris - General Manager

Attachments: 1. Triunfo WSD Wastewater Rate Study
2. Triunfo WSD Water and Recycled Water Rate Study

TRIUNFO WATER & SANITATION DISTRICT

Wastewater Rate Study

Report / April 23, 2020

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April 23, 2020

Mr. Mark Norris
General Manager
1001 Partridge Drive, Suite 150
Ventura, CA 93003

Subject: Wastewater Rate Study Report

Dear Mr. Norris,

Raftelis is pleased to provide this Wastewater Rate Study Report to the Triunfo Water & Sanitation District (District). The study involved a comprehensive review of the District's current wastewater rate structures, long-term financial plan, and revenue requirements to determine proposed wastewater rates that are in line with the District's policy objectives. This report presents the analyses, rationales, and methodologies utilized in the study.

The main objectives that informed the study include:

- » Developing a long-term financial plan for wastewater
- » Ensuring financial sufficiency to fully fund operating and capital costs and meet reserve requirements
- » Determining wastewater rates that meet revenue requirements
- » Minimizing customer impacts to the extent possible
- » Maintaining the District's current rate structure

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

Sincerely,

A blue ink signature of Sudhir Pardiwala, written in a cursive style.

Sudhir Pardiwala
Executive Vice President

A blue ink signature of Nancy Phan, written in a cursive style.

Nancy Phan
Senior Consultant

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1. Executive Summary

Study Background

Triunfo Water & Sanitation District (District) engaged Raftelis in 2019 to complete a Wastewater Rate Study. The study consists of a long-range financial plan and rate derivation. It encompasses a six-year planning horizon for the financial plan and five years of proposed rates. The first year of proposed rates are for adoption beginning July 2020 and July of every year thereafter.

The objectives of the Wastewater Rate Study include:

- » Developing a long-term financial plan for wastewater
- » Ensuring financial sufficiency to fully fund operating and capital costs and meet reserve requirements
- » Determining wastewater rates that meet revenue requirements
- » Minimizing customer impacts to the extent possible
- » Maintaining the District's current rate structure

The study period is from fiscal year (FY) 2020 through FY 2025. For the purposes of this study, FY 2020 is the year starting in July 1, 2019 and ending in June 30, 2020.

Current Rates

Currently, the District charges the majority of customers a flat rate based on the number of customer units or Equivalent residential units (ERUs). Single family customers including condominiums are assigned one ERU; apartment units are assigned 0.8 ERU. Most commercial customers are also assigned one ERU, except shopping centers, restaurants, markets and mortuaries. The number of ERUs for shopping centers, restaurants, and markets, according to the District, are calculated using different methods. A total of six customers are billed on their water usage, with their ERUs calculated individually. The ERU assignment for these six customers is a mix of residential and commercial rate ERUs, based on the characteristics of their wastewater flow. **Table 1-1** shows the current wastewater rates for each customer class.

Table 1-1: Current Wastewater Rates

A	B	C
Line	Wastewater Rates	FY 2020
1	Monthly Charge per ERU	
2	Residential	\$59.98
3	Multiple Residential	\$59.98
4	Apartment	\$47.97
5	Mobile Dwelling Unit	\$47.97
6	Commercial	\$59.98
7	Shopping Center	\$106.51
8	Restaurants	\$137.98
9	Water Flow - Low	\$55.03
10	Water Flow - High	\$126.59

Legal Framework¹

The rate-making process, especially for water agencies in California, begins with a review of the legal requirements and framework currently in place. The major legal requirements include Proposition 218 and Article X, Section 2 of the California Constitution, which are outlined in the following sections.

California Constitution – Article XIII D, Section 6 (Proposition 218)

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of a service to a property (“property-related fees and charges”) are proportional to, and do not exceed, the cost of providing service. Water service fees and charges are property-related and subject to the provisions of Proposition 218. The principal requirements, as they relate to public water service fees and charges, are as follows:

1. Revenues derived from a property-related charge imposed by a public agency shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

Proposition 218 requires that wastewater rates cannot be “arbitrary and capricious,” meaning that the rate-setting methodology must establish a clear nexus between costs and the rates charged.

Results and Recommendations

After a comprehensive review of the District’s long-range financial plan for the wastewater enterprise, Raftelis identified that the District’s wastewater capital improvement plan (CIP) is the main financial driver for the study. The District plans to spend approximately \$29.8 million on capital projects from FY 2021 through FY 2025; this figure is adjusted for future years’ dollars. The vast majority of these capital costs are from the Joint Powers Agreement (JPA) plant projects and Pure Water Project, which makes up approximately \$29.2 million of the capital spending in five years.

While the District’s existing wastewater rate revenues are sufficient to fund all operations and maintenance (O&M) costs, the District must adopt revenue adjustments and/or issue debt over the study period to fund capital project costs and maintain adequate reserve balances. Raftelis worked closely with District staff to determine the balance of revenue adjustments and proposed debt to cover capital costs and recommends the following adjustments:

- » Revenue adjustments – 15 percent per year from FY 2021 through FY 2024 and 7 percent in FY 2025
- » Proposed State Revolving Fund (SRF) loans – \$3.0 million in both FY 2024 and FY 2025, resulting in \$6.0 million of debt proceeds over the study period.

¹ Raftelis does not practice law nor does it provide legal advice. The above discussion provides a general overview of Raftelis’ understanding as rate practitioners and is labeled “legal framework” for literary convenience only. The District should consult with its legal counsel for clarification and/or specific guidance.

Proposed Rates

Based on the results and recommendations in the previous section, Raffelis calculated proposed wastewater rates for the five-year planning horizon. The proposed wastewater rates, shown in **Table 1-2**, are based on the current rates in **Table 1-1** increased each year by the proposed revenue adjustments.

Table 1-2: Proposed Wastewater Rates

A	B	C	D	E	F	G
Line	Wastewater Rates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Charge per ERU					
2	Residential	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
3	Multiple Residential	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
4	Apartment	\$55.17	\$63.44	\$72.96	\$83.90	\$89.78
5	Mobile Dwelling Unit	\$55.17	\$63.44	\$72.96	\$83.90	\$89.78
6	Commercial	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
7	Shopping Center	\$122.49	\$140.86	\$161.99	\$186.29	\$199.33
8	Restaurants	\$158.68	\$182.48	\$209.85	\$241.33	\$258.22
9	Water Flow - Low	\$63.28	\$72.78	\$83.70	\$96.25	\$102.99
10	Water Flow - High	\$145.58	\$167.42	\$192.53	\$221.41	\$236.91

2. Financial Plan

This report section discusses O&M expenses, CIP, reserve funding, projected revenue under existing rates, and revenue adjustments needed to ensure the District's fiscal sustainability and solvency. The study period covers FY 2020 through FY 2025. The budget year, which for this study is FY 2020, is the year from which revenues and expenses are projected for the study period. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report.

Current Rates

Currently, the District charges the majority of customers a flat rate based on the number of customer units or Equivalent residential units (ERUs). Single family customers including condominiums are assigned one ERU; apartment units are assigned 0.8 ERU. Most commercial customers are also assigned one ERU, except shopping centers, restaurants, markets and mortuaries. The number of ERUs for shopping centers, restaurants, and markets, according to the District, are calculated using different methods. A total of six customers are billed on their water usage, with their ERUs calculated individually. The ERU assignment for these six customers is a mix of residential and commercial rate ERUs, based on the characteristics of their wastewater flow. The flat rate for one ERU is currently \$59.98. **Table 2-1** shows the current wastewater rates for each customer class.

Table 2-1: Current Wastewater Rates

A	B	C
Line	Wastewater Rates	FY 2020
1	Monthly Charge per ERU	
2	Residential	\$59.98
3	Multiple Residential	\$59.98
4	Apartment	\$47.97
5	Mobile Dwelling Unit	\$47.97
6	Commercial	\$59.98
7	Shopping Center	\$106.51
8	Restaurants	\$137.98
9	Water Flow - Low	\$55.03
10	Water Flow - High	\$126.59

Customer Data

Table 2-2 shows the number of wastewater ERUs by customer class for the study period. District staff provided estimated customer account data for FY 2020 and FY 2021. Additional growth is not expected for the remainder of the study, which is reflected in the projections for FY 2022 and beyond.

Table 2-2: Wastewater Accounts

A	B	C	D	E	F	G	H
Line	Wastewater ERUs	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Residential	8,174	8,174	8,174	8,174	8,174	8,174
2	Multiple Residential	2,425	2,425	2,425	2,425	2,425	2,425
3	Apartment	1,217	1,216	1,216	1,216	1,216	1,216
4	Mobile Dwelling Unit	0	0	0	0	0	0
5	Commercial	933	933	933	933	933	933
6	Shopping Center	102	102	102	102	102	102
7	Restaurants	215	215	215	215	215	215
8	Water Flow - Low - Commercial	481	481	481	481	481	481
9	Water Flow - High - Rest.	9	8	8	8	8	8
10	Total - Wastewater ERUs	13,557	13,554	13,554	13,554	13,554	13,554

Revenues

Table 2-3 shows the calculated wastewater rate revenues for the study period at the current rates. The current rates in **Table 2-1** for each customer class are multiplied by the number of ERUs for that class in **Table 2-2** by 12 months in a year.

Table 2-3: Calculated Wastewater Rate Revenues, Status Quo

A	B	C	D	E	F	G	H
Line	Wastewater Rate Revenues	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Charge per ERU						
2	Residential	\$5,883,318	\$5,883,318	\$5,883,318	\$5,883,318	\$5,883,318	\$5,883,318
3	Multiple Residential	\$1,745,418	\$1,745,418	\$1,745,418	\$1,745,418	\$1,745,418	\$1,745,418
4	Apartment	\$699,978	\$699,978	\$699,978	\$699,978	\$699,978	\$699,978
5	Mobile Dwelling Unit	\$0	\$0	\$0	\$0	\$0	\$0
6	Commercial	\$671,536	\$671,536	\$671,536	\$671,536	\$671,536	\$671,536
7	Shopping Center	\$130,368	\$130,368	\$130,368	\$130,368	\$130,368	\$130,368
8	Restaurants	\$355,988	\$355,988	\$355,988	\$355,988	\$355,988	\$355,988
9	Water Flow - Low	\$317,633	\$317,633	\$317,633	\$317,633	\$317,633	\$317,633
10	Water Flow - High	\$12,153	\$12,153	\$12,153	\$12,153	\$12,153	\$12,153
11	Total - Monthly Charge/ERU	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393

To project non-rate revenues, such as miscellaneous revenues and interest earnings, Raftelis uses the revenue escalation factors in **Table 2-4**. Miscellaneous revenues are not inflated for future years, and the reserve interest rate is used to calculate the interest earnings based on the wastewater fund balances.

Table 2-4: Revenue Escalation Factors

A	B	C	D	E	F	G
Line	Revenue Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Miscellaneous Revenue	0.0%	0.0%	0.0%	0.0%	0.0%
2	Reserve Interest Rate	1.0%	1.0%	1.0%	1.0%	1.0%

Table 2-5 shows the projected wastewater revenues for the study period. The wastewater charge revenue (Line 1) is based on the rate revenue calculation (**Table 2-3**, Line 11). Interest earnings (Line 4) are calculated based on the reserve interest rate (**Table 2-4**, Line 2) and the wastewater fund balance, which is shown in a later section of this report.

Table 2-5: Projected Wastewater Revenues, Status Quo

A	B	C	D	E	F	G	H
Line	Wastewater Revenues	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Wastewater Charge	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
2	Penalty	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000
3	Other	\$86,000	\$86,000	\$86,000	\$86,000	\$86,000	\$86,000
4	Interest Earnings	\$285,780	\$49,797	\$47,138	\$57,647	\$68,265	\$98,429
5	Total - Wastewater Revenues	\$10,202,512	\$9,964,190	\$9,961,531	\$9,972,040	\$9,982,658	\$10,012,822

O&M Expenses

Similarly to projecting revenues, Raftelis uses the expense escalation factors in **Table 2-6** to inflate O&M expenses for future years.

Table 2-6: Expense Escalation Factors

A	B	C	D	E	F	G
Line	Expense Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	General	3.0%	3.0%	3.0%	3.0%	3.0%
2	Salaries	3.0%	3.0%	3.0%	3.0%	3.0%
3	Benefits	3.0%	3.0%	3.0%	3.0%	3.0%
4	Wastewater Treatment	5.0%	5.0%	5.0%	5.0%	5.0%
5	Capital	4.0%	4.0%	4.0%	4.0%	4.0%

Table 2-7 shows the projected wastewater O&M expenses for the study period based on the FY 2020 budget. The main expense for the wastewater enterprise is for treatment (Line 1), which is inflated by the wastewater treatment expense escalation factor (**Table 2-6**, Line 4). All other expenses are inflated by the appropriate expense escalation factor (**Table 2-6**, Line 1).

Table 2-7: Projected Wastewater Expenses

A	B	C	D	E	F	G	H
Line	Wastewater Expenses	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Wastewater Treatment	\$4,824,819	\$5,066,060	\$5,319,363	\$5,585,331	\$5,864,598	\$6,157,828
2	VRSD Contract-Operations	\$1,794,915	\$1,848,762	\$1,904,225	\$1,961,352	\$2,020,193	\$2,080,798
3	VRSD Contract-Admin	\$105,932	\$109,110	\$112,383	\$115,755	\$119,227	\$122,804
4	Operating Materials and Supplies	\$0	\$0	\$0	\$0	\$0	\$0
5	Contract Services	\$0	\$0	\$0	\$0	\$0	\$0
6	Professional Services	\$67,461	\$69,485	\$71,569	\$73,716	\$75,928	\$78,206
7	Insurance	\$0	\$0	\$0	\$0	\$0	\$0
8	Board Member Fees and Expenses	\$12,798	\$13,182	\$13,577	\$13,985	\$14,404	\$14,836
9	Membership and Dues	\$13,498	\$13,903	\$14,320	\$14,750	\$15,192	\$15,648
10	Conference and Seminars	\$28,193	\$29,039	\$29,910	\$30,807	\$31,731	\$32,683
11	Management and Admin	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982
12	Utilities	\$46,200	\$47,586	\$49,014	\$50,484	\$51,999	\$53,558
13	Bank Service Charges	\$0	\$0	\$0	\$0	\$0	\$0
14	Permits, Licenses, Fees	\$209,252	\$215,530	\$221,995	\$228,655	\$235,515	\$242,580
15	Overhead Allocation	\$698,899	\$719,866	\$741,462	\$763,706	\$786,617	\$810,215
16	Total - Wastewater Expenses	\$7,826,967	\$8,158,272	\$8,504,342	\$8,865,859	\$9,243,542	\$9,638,140

Debt Service

The District does not currently have any existing debt for the wastewater enterprise.

To pay for the capital project costs, primarily associated with the JPA Plant and Pure Water Project, the District plans to issue low-cost State Revolving Fund (SRF) loans to offset rate impacts to customers. **Table 2-8** shows the proposed debt terms for the SRF loans.

Table 2-8: Proposed Debt Terms

A	B	C
Line	Proposed SRF Loan	Terms
1	Interest Rate	3.0%
2	Term (years)	20
3	Issuance Costs	0.0%

Table 2-9 shows the proposed debt proceeds from the SRF and timing for the study period. The District does not plan to issue revenue bonds for this period.

Table 2-9: Proposed Wastewater Debt Proceeds

A	B	C	D	E	F	G	H
Line	Wastewater Debt Proceeds	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Revenue Bonds	\$0	\$0	\$0	\$0	\$0	\$0
2	SRF Loans	\$0	\$0	\$0	\$0	\$3,000,000	\$3,000,000
3	Total - Wastewater Debt Proceeds	\$0	\$0	\$0	\$0	\$3,000,000	\$3,000,000

Table 2-10 shows the proposed annual debt service for the SRF loans issued (**Table 2-9**, Line 2). Debt service payments for SRF loans are assumed to be paid the year following the issuance but could be further postponed based on the completion of the projects financed.

Table 2-10: Proposed Wastewater Debt Service

A	B	C	D	E	F	G	H
Line	Wastewater Debt Service	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Revenue Bonds	\$0	\$0	\$0	\$0	\$0	\$0
2	SRF Loans	\$0	\$0	\$0	\$0	\$0	\$90,000
3	Total - Wastewater Debt Service	\$0	\$0	\$0	\$0	\$0	\$90,000

Capital Projects

Table 2-11 shows the wastewater CIP for all years of the study. District staff provided capital costs for the study period; these costs are inflated for future years' dollars using the capital expense escalation factor (**Table 2-6**, Line 5). The majority of costs are associated with the JPA Plant and Pure Water Project (Line 1).

Table 2-11: Wastewater Capital Projects

A	B	C	D	E	F	G	H
Line	Wastewater Capital Projects	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	JPA Tapia Plant and Pure Water Project	\$2,953,092	\$3,436,107	\$3,459,626	\$5,040,532	\$7,863,515	\$9,357,196
2	North Ranch Lift Station Improvements	\$0	\$0	\$0	\$0	\$0	\$63,266
3	Lakeside Lift System Improvements	\$312,000	\$0	\$0	\$0	\$0	\$0
4	Pipeline Rehabilitation	\$0	\$108,160	\$112,486	\$116,986	\$121,665	\$126,532
5	Total - Wastewater Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994

Table 2-12 shows the proposed capital financing plan. The total project costs (Line 1) are from the CIP (**Table 2-11**, Line 5), and the amount of debt funding is from the SRF loan proceeds (**Table 2-9**, Line 2). The remainder of capital costs are funded by rates (Line 4).

Table 2-12: Proposed Wastewater Capital Financing Plan

A	B	C	D	E	F	G	H
Line	Wastewater Capital Financing Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Total Project Costs	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994
2							
3	Debt Funded	\$0	\$0	\$0	\$0	\$3,000,000	\$3,000,000
4	Rate Funded	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$4,985,180	\$6,546,994
5	Total - Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994

Reserve Policy

The District's existing reserve policy is robust and ensures financial resilience in the face of unexpected events, such as natural disasters, asset failures, or reduced revenues. The reserve policy for the District's wastewater funds includes the following components:

- » Operating reserve – 3 (minimum) to 6 (maximum) months of annual O&M expenses
- » Capital reserve – 5-year average rate-funded CIP costs
- » Debt service – 1 year of annual debt service
- » Rate stabilization reserve – 3 (minimum) to 6 (maximum) months of operating revenues

Status Quo Financial Plan

Table 2-13 shows the wastewater financial plan under the status quo or “do nothing” scenario. This scenario shows no additional revenue adjustments and no proposed SRF loan proceeds. Net cash flow (Line 31) is equal to revenues (Line 17) less O&M expenses (Line 23) and debt and capital costs (Line 29). Net revenue (Line 32) is equal to revenues less O&M expenses. Net revenue, which is positive for all years of the study, shows that the District's existing wastewater rate revenues are sufficient to fund all O&M expenses. However, net cash flow is negative for all years of the study, which shows that existing rate revenues are not sufficient to recover all costs associated with capital projects.

Rate and miscellaneous revenues (Lines 12-17) are from **Table 2-5**. Note that the interest earnings shown in the status quo scenario are lower, due to lower wastewater fund balances. O&M expenses (Lines 19-23) are from **Table 2-7**. Debt service (Lines 26-27) is equal to zero because the District does not currently have debt associated with the

wastewater enterprise and the status quo scenario assumes no SRF loan proceeds. Since there are no SRF loan proceeds, rate funded capital projects (Line 28) is equal to the total project costs in **Table 2-12**.

Table 2-13: Wastewater Financial Plan, Status Quo

A	B	C	D	E	F	G	H
Line	Wastewater Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 0.0%		\$0	\$0	\$0	\$0	\$0
6	FY 2022 - 0.0%			\$0	\$0	\$0	\$0
7	FY 2023 - 0.0%				\$0	\$0	\$0
8	FY 2024 - 0.0%					\$0	\$0
9	FY 2025 - 0.0%						\$0
10	Total - Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
11							
12	Revenues						
13	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
14	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
15	Other Revenues	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000
16	Interest Earnings	\$285,780	\$49,797	\$32,414	\$11,117	(\$29,862)	(\$103,303)
17	Total - Revenues	\$10,202,512	\$9,964,190	\$9,946,807	\$9,925,510	\$9,884,531	\$9,811,090
18							
19	O&M Expenses						
20	Wastewater Treatment	\$4,824,819	\$5,066,060	\$5,319,363	\$5,585,331	\$5,864,598	\$6,157,828
21	VRSD Contract-Operations	\$1,794,915	\$1,848,762	\$1,904,225	\$1,961,352	\$2,020,193	\$2,080,798
22	Other Expenses	\$1,207,233	\$1,243,450	\$1,280,753	\$1,319,176	\$1,358,751	\$1,399,514
23	Total - O&M Expenses	\$7,826,967	\$8,158,272	\$8,504,342	\$8,865,859	\$9,243,542	\$9,638,140
24							
25	Debt and Capital						
26	Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
27	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
28	Rate Funded Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994
29	Total - Debt and Capital	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994
30							
31	Net Cash Flow	(\$889,547)	(\$1,738,349)	(\$2,129,648)	(\$4,097,867)	(\$7,344,190)	(\$9,374,044)
32	Net Revenue	\$2,375,545	\$1,805,918	\$1,442,465	\$1,059,651	\$640,990	\$172,950
33							
34	Calculated Debt Coverage	N/A	N/A	N/A	N/A	N/A	N/A
35	Required Debt Coverage	N/A	N/A	N/A	N/A	N/A	N/A

Table 2-14 shows the projected wastewater fund balances under the status quo scenario. The wastewater ending balance (Line 17) is below minimum reserve target levels (Line 18) for all years of the study. Without revenue adjustments or debt proceeds, the District's wastewater fund will be negative by the end of FY 2023.

Table 2-14: Wastewater Fund Balances, Status Quo

A	B	C	D	E	F	G	H
Line	Wastewater Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$5,869,259	\$4,979,712	\$3,241,362	\$1,111,715	(\$2,986,152)	(\$10,330,343)
2							
3	Sources of Funds						
4	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
5	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
6	Other Revenues	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0
8	Interest Earnings	\$285,780	\$49,797	\$32,414	\$11,117	(\$29,862)	(\$103,303)
9	Total - Sources of Funds	\$10,202,512	\$9,964,190	\$9,946,807	\$9,925,510	\$9,884,531	\$9,811,090
10							
11	Uses of Funds						
12	O&M Expenses	\$7,826,967	\$8,158,272	\$8,504,342	\$8,865,859	\$9,243,542	\$9,638,140
13	Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
14	Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994
15	Total - Uses of Funds	\$11,092,059	\$11,702,539	\$12,076,454	\$14,023,377	\$17,228,722	\$19,185,134
16							
17	Ending Balance	\$4,979,712	\$3,241,362	\$1,111,715	(\$2,986,152)	(\$10,330,343)	(\$19,704,387)
18	Minimum Reserve Target	\$9,140,759	\$10,479,381	\$12,672,758	\$15,150,684	\$16,761,450	\$16,306,147
19	Maximum Reserve Target	\$13,576,684	\$14,997,547	\$17,277,442	\$19,845,747	\$21,550,934	\$21,194,280
20							
21	Reserve Target						
22	Operating						
23	Minimum	\$1,956,742	\$2,039,568	\$2,126,085	\$2,216,465	\$2,310,885	\$2,409,535
24	Maximum	\$3,913,484	\$4,079,136	\$4,252,171	\$4,432,930	\$4,621,771	\$4,819,070
25	Capital Improvement	\$4,704,834	\$5,961,214	\$8,068,075	\$10,455,621	\$11,971,967	\$11,418,014
26	Debt Service Reserve	\$0	\$0	\$0	\$0	\$0	\$0
27	Rate Stabilization						
28	Minimum	\$2,479,183	\$2,478,598	\$2,478,598	\$2,478,598	\$2,478,598	\$2,478,598
29	Maximum	\$4,958,366	\$4,957,197	\$4,957,197	\$4,957,197	\$4,957,197	\$4,957,197

Figure 2-1 shows the wastewater financial plan under the status quo scenario in a graphical format. Current revenues are represented as the dotted line; O&M expenses and capital expenses are represented as the turquoise and yellow stacked bars, respectively. Since the current revenues are not sufficient to fund both O&M and capital expenses, the District will draw from its wastewater reserves to fund these costs. The drawdown on reserves is shown as the green bars.

Figure 2-1: Wastewater Financial Plan, Status Quo

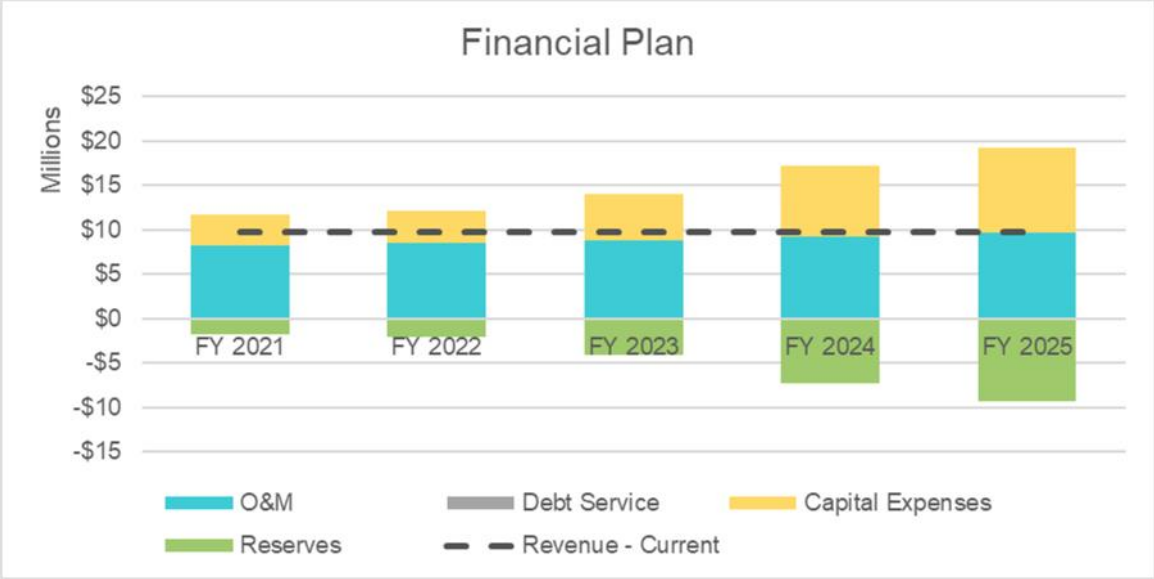
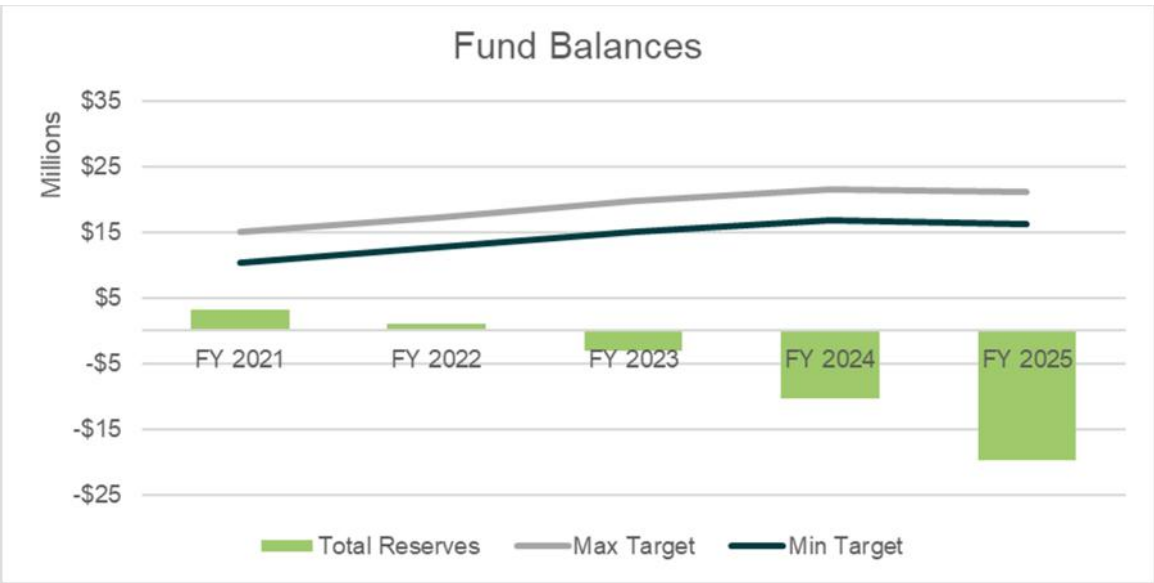


Figure 2-2 shows the wastewater fund balances under the status quo scenario in a graphical format. The fund balances are represented as the green bars; the minimum and maximum reserve targets are represented as the navy and grey lines, respectively. The District's wastewater funds are below minimum target levels for all years of the study and will become negative in FY 2023.

Figure 2-2: Wastewater Fund Balances, Status Quo



Proposed Financial Plan

Table 2-15 shows the proposed adjustments to the wastewater financial plan, which includes revenue adjustments for each year (Column C) and proposed debt proceeds (Column D).

Table 2-15: Proposed Wastewater Financial Plan Adjustments

A	B	C	D
Line	Proposed Wastewater Financial Plan	Revenue Adjustments	SRF Loan Proceeds
1	FY 2021	15.0%	\$0
2	FY 2022	15.0%	\$0
3	FY 2023	15.0%	\$0
4	FY 2024	15.0%	\$3,000,000
5	FY 2025	7.0%	\$3,000,000

Table 2-16 shows the wastewater financial plan with proposed adjustments. Rate revenues (Line 1) are increased each year by the revenue adjustment percentage (Lines 3-10). Rate funding needed for capital project costs (Line 28) are reduced by the proposed debt proceeds to reduce the impact to the District's wastewater reserves.

Net cash flow (Line 31) is negative for the first two years of the study and positive for the final four years. The District will be drawing down its reserves for the first two years and rebuild its reserve balances in the remaining years. Net revenue (Line 32) is positive for all years of the study, meaning that the District's revenues are sufficient to fund O&M expenses. Debt coverage calculations begin in FY 2024, which is the first year that the District issues debt. Debt coverage is calculated by dividing net revenue (Line 32) by annual debt service (Lines 26-27); the District's debt coverage ratio is well above the required ratio of 1.25 for each relevant year of the study.

Table 2-16: Wastewater Financial Plan, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Wastewater Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 15.0%		\$1,472,459	\$1,472,459	\$1,472,459	\$1,472,459	\$1,472,459
6	FY 2022 - 15.0%			\$1,693,328	\$1,693,328	\$1,693,328	\$1,693,328
7	FY 2023 - 15.0%				\$1,947,327	\$1,947,327	\$1,947,327
8	FY 2024 - 15.0%					\$2,239,426	\$2,239,426
9	FY 2025 - 7.0%						\$1,201,825
10	Total - Revenue Adjustments	\$0	\$1,472,459	\$3,165,787	\$5,113,114	\$7,352,540	\$8,554,365
11							
12	Revenues						
13	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
14	Revenue Adjustments	\$0	\$1,472,459	\$3,165,787	\$5,113,114	\$7,352,540	\$8,554,365
15	Other Revenues	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000
16	Interest Earnings	\$285,780	\$49,797	\$47,138	\$57,647	\$68,265	\$99,329
17	Total - Revenues	\$10,202,512	\$11,436,649	\$13,127,318	\$15,085,154	\$17,335,197	\$18,568,087
18							
19	O&M Expenses						
20	Wastewater Treatment	\$4,824,819	\$5,066,060	\$5,319,363	\$5,585,331	\$5,864,598	\$6,157,828
21	VRSD Contract-Operations	\$1,794,915	\$1,848,762	\$1,904,225	\$1,961,352	\$2,020,193	\$2,080,798
22	Other Expenses	\$1,207,233	\$1,243,450	\$1,280,753	\$1,319,176	\$1,358,751	\$1,399,514
23	Total - O&M Expenses	\$7,826,967	\$8,158,272	\$8,504,342	\$8,865,859	\$9,243,542	\$9,638,140
24							
25	Debt and Capital						
26	Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
27	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$90,000
28	Rate Funded Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$4,985,180	\$6,546,994
29	Total - Debt and Capital	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$4,985,180	\$6,636,994
30							
31	Net Cash Flow	(\$889,547)	(\$265,890)	\$1,050,864	\$1,061,776	\$3,106,476	\$2,292,954
32	Net Revenue	\$2,375,545	\$3,278,377	\$4,622,976	\$6,219,294	\$8,091,656	\$8,929,947
33							
34	Calculated Debt Coverage	N/A	N/A	N/A	N/A	N/A	99.22
35	Required Debt Coverage	N/A	N/A	N/A	N/A	N/A	99.22

Table 2-17 shows the projected fund balances with the proposed adjustments. The District's projected ending balances (Line 17) are lower than the minimum reserve target (Line 18) for all years of the study. However, the fund balances are positive for all years of the study and trends upward in each year. District staff opted for lower revenue adjustments and debt proceeds to minimize customer impacts. Capital project costs expect to normalize after the study period, which will allow the District to rebuild its reserve balances over time.

Table 2-17: Wastewater Fund Balances, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Wastewater Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$5,869,259	\$4,979,712	\$4,713,821	\$5,764,685	\$6,826,461	\$9,842,937
2							
3	Sources of Funds						
4	Rate Revenues	\$9,818,732	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393	\$9,816,393
5	Revenue Adjustments	\$0	\$1,472,459	\$3,165,787	\$5,113,114	\$7,352,540	\$8,554,365
6	Other Revenues	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000	\$98,000
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$3,000,000	\$3,000,000
8	Interest Earnings	\$285,780	\$49,797	\$47,138	\$57,647	\$68,265	\$98,429
9	Total - Sources of Funds	\$10,202,512	\$11,436,649	\$13,127,318	\$15,085,154	\$20,335,197	\$21,567,187
10							
11	Uses of Funds						
12	O&M Expenses	\$7,826,967	\$8,158,272	\$8,504,342	\$8,865,859	\$9,243,542	\$9,638,140
13	Debt Service	\$0	\$0	\$0	\$0	\$90,000	\$296,092
14	Capital Projects	\$3,265,092	\$3,544,267	\$3,572,112	\$5,157,518	\$7,985,180	\$9,546,994
15	Total - Uses of Funds	\$11,092,059	\$11,702,539	\$12,076,454	\$14,023,377	\$17,318,722	\$19,481,226
16							
17	Ending Balance	\$4,979,712	\$4,713,821	\$5,764,685	\$6,826,461	\$9,842,937	\$11,928,898
18	Minimum Reserve Target	\$8,540,759	\$9,647,495	\$11,064,205	\$12,828,962	\$14,399,585	\$14,934,738
19	Maximum Reserve Target	\$12,976,684	\$14,533,776	\$16,460,335	\$18,802,304	\$21,027,204	\$21,961,463
20							
21	Reserve Target						
22	Operating						
23	Minimum	\$1,956,742	\$2,039,568	\$2,126,085	\$2,216,465	\$2,310,885	\$2,409,535
24	Maximum	\$3,913,484	\$4,079,136	\$4,252,171	\$4,432,930	\$4,621,771	\$4,819,070
25	Capital	\$4,104,834	\$4,761,214	\$5,668,075	\$6,855,621	\$7,771,967	\$7,818,014
26	Debt Service	\$0	\$0	\$0	\$0	\$90,000	\$296,092
27	Rate Stabilization						
28	Minimum	\$2,479,183	\$2,846,713	\$3,270,045	\$3,756,877	\$4,316,733	\$4,617,189
29	Maximum	\$4,958,366	\$5,693,426	\$6,540,090	\$7,513,753	\$8,633,466	\$9,234,379

Figure 2-3 shows the wastewater financial plan with proposed adjustments in a graphical format. The dotted and solid lines represent the current and proposed revenues, respectively. The stacked bars represent operating, debt, and capital expenses. The green bar shows the annual reserve funding to build wastewater balances over time.

Figure 2-3: Wastewater Financial Plan, Proposed Adjustments

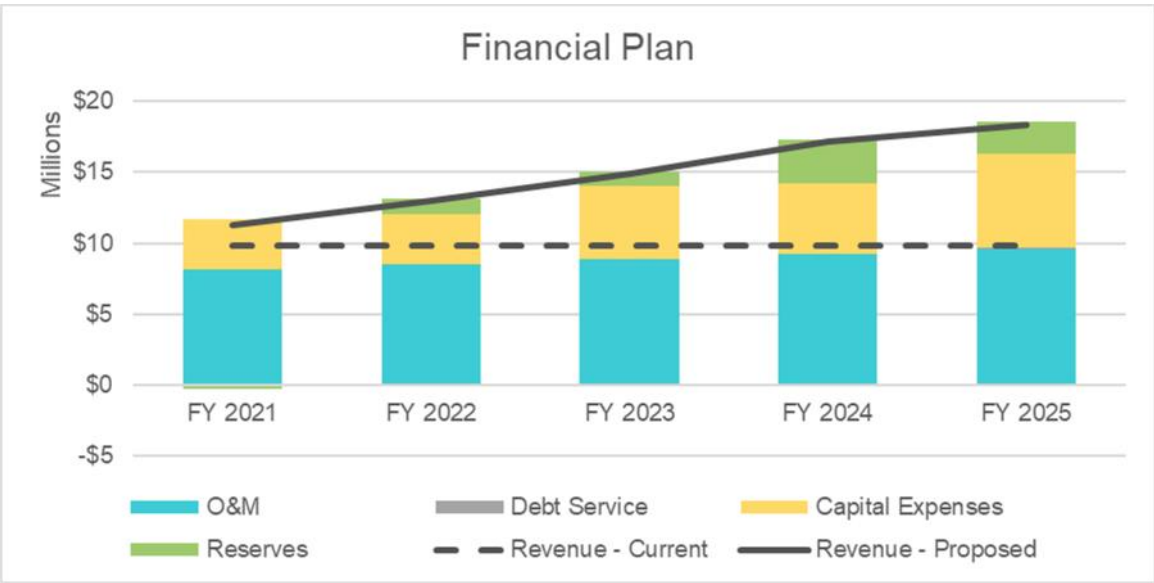


Figure 2-4 shows the wastewater debt coverage under the proposed scenario in a graphical format. Debt coverage calculations do not begin until FY 2025, which is the first year that the District will have debt service payments for the wastewater enterprise. Debt coverage is well above the required ratio of 1.25.

Figure 2-4: Wastewater Debt Coverage, Proposed Adjustments

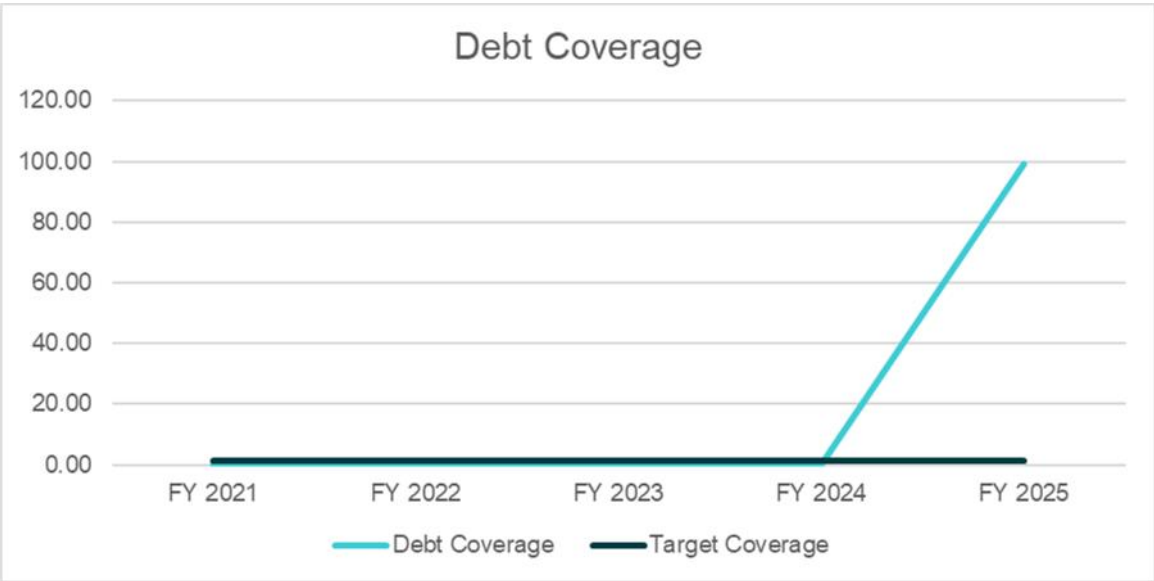
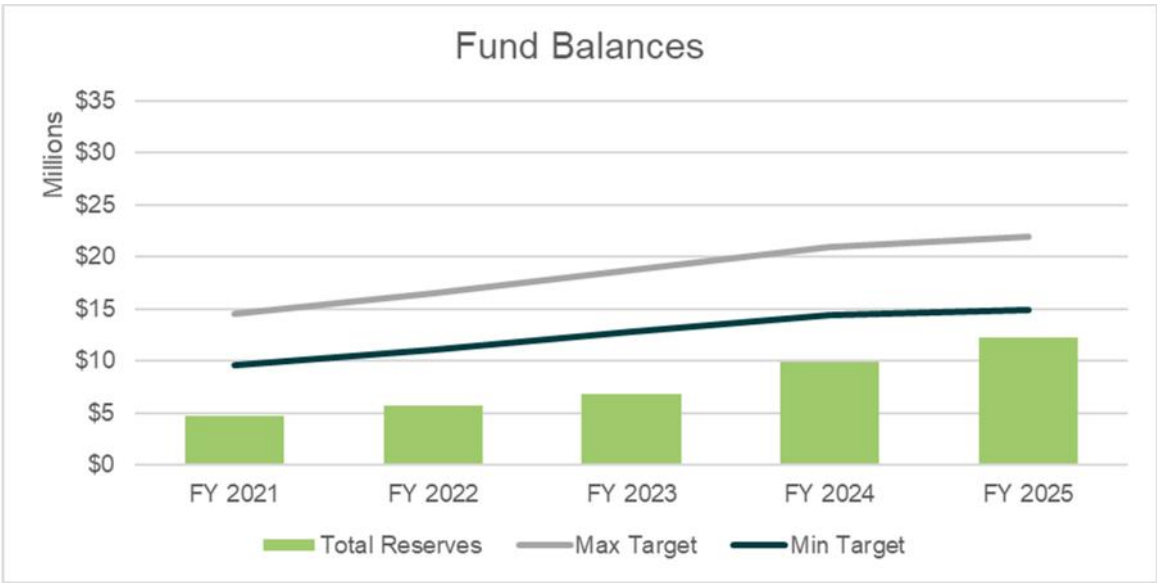


Figure 2-5 shows the wastewater fund balances with the proposed adjustments. Although the green bars, which represent wastewater reserves, are below the navy line, which represents the minimum target, the District is adding to its reserves each year to meet the target levels over time.

Figure 2-5: Wastewater Fund Balances, Proposed Adjustments



3. Rate Derivation

This section of the report details the calculation of the proposed wastewater rates that were developed in the study. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report.

Proposed Adjustments

Table 3-1 shows the proposed revenue adjustments from the financial plan. These revenue adjustment percentages are used to derive the proposed rates for this study.

Table 3-1: Proposed Revenue Adjustments

A	B	C
Line	Proposed Revenue Adjustments	Wastewater
1	FY 2021	15.0%
2	FY 2022	15.0%
3	FY 2023	15.0%
4	FY 2024	15.0%
5	FY 2025	7.0%

Wastewater Rates

Table 3-2 shows the proposed wastewater rates based on the proposed revenue adjustments (Line 1). Current rates (Column C) are multiplied by the proposed revenue adjustments in FY 2021 (Column D, Line 1) to determine the proposed rates for that year. For every year thereafter, the previous year's rates are multiplied by the revenue adjustments for that year. Each Residential customer will see an increase of \$9 per month in their wastewater bill.

Table 3-2: Proposed Wastewater Rates

A	B	C	D	E	F	G	H
Line	Wastewater Rates	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Proposed Revenue Adjustments		15.0%	15.0%	15.0%	15.0%	7.0%
2							
3	Monthly Charge per ERU						
4	Residential	\$59.98	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
5	Multiple Residential	\$59.98	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
6	Apartment	\$47.97	\$55.17	\$63.44	\$72.96	\$83.90	\$89.78
7	Mobile Dwelling Unit	\$47.97	\$55.17	\$63.44	\$72.96	\$83.90	\$89.78
8	Commercial	\$59.98	\$68.98	\$79.32	\$91.22	\$104.91	\$112.25
9	Shopping Center	\$106.51	\$122.49	\$140.86	\$161.99	\$186.29	\$199.33
10	Restaurants	\$137.98	\$158.68	\$182.48	\$209.85	\$241.33	\$258.22
11	Water Flow - Low	\$55.03	\$63.28	\$72.78	\$83.70	\$96.25	\$102.99
12	Water Flow - High	\$126.59	\$145.58	\$167.42	\$192.53	\$221.41	\$236.91

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TRIUNFO WATER & SANITATION DISTRICT

Water and Recycled Water Rate Study

Report / April 23, 2020

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April 23, 2020

Mr. Mark Norris
General Manager
1001 Partridge Drive, Suite 150
Ventura, CA 93003

Subject: Water and Recycled Water Rate Study Report

Dear Mr. Norris,

Raftelis is pleased to provide this Water and Recycled Water Rate Study Report to the Triunfo Water & Sanitation District (District). This report presents the analyses, rationales, and methodologies utilized in the study to determine cost of service-based water rates that meet the requirements of California Constitution Article XIII D, Section 6 (commonly referred to as Proposition 218).

The study involved a comprehensive review of the District's long-term financial plans, revenue requirements to fairly and equitably allocate costs, current water and recycled water rate structures, and determine proposed water and recycled water rates that are in line with the District's policy objectives. This report presents the analyses, rationales, and methodologies utilized in the study.

The main objectives that informed the study include:

- » Developing a long-term financial plan for water and recycled water
- » Ensuring financial sufficiency to fully fund operating and capital costs and meet reserve requirements
- » Determining water and recycled water rates that meet revenue requirements
- » Minimizing customer impacts to the extent possible

We are confident that the proposed rates developed within this study are fair and equitable to the District's customers and are compliant with Proposition 218. It has been a pleasure working with you and your team, and we wish to express the gratitude for the support you, other District staff, and the Board of Directors provided to us during the study.

Sincerely,

A blue ink signature of Sudhir Pardiwala.

Sudhir Pardiwala
Executive Vice President

A blue ink signature of Nancy Phan.

Nancy Phan
Senior Consultant

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1. Executive Summary

Study Background

Triunfo Water & Sanitation District (District) engaged Raftelis in 2019 to complete a Water and Recycled Water Rate Study. The study consists of developing a long-range financial plan, cost of service analysis, and water and recycled water rates. It encompasses a six-year planning horizon for the financial plan and five years of proposed rates. The first year of proposed rates are for adoption beginning July 2020 and July of every year thereafter.

The objectives of the Water and Recycled Water Study include:

- » Developing a long-term financial plan for water and recycled water
- » Ensuring financial sufficiency to fully fund operating and capital costs and meet reserve requirements
- » Determining water and recycled water rates that meet revenue requirements
- » Minimizing customer impacts to the extent possible

The study period is from fiscal year (FY) 2020 through FY 2025. For the purposes of this study, FY 2020 is the year starting in July 1, 2019 and ending in June 30, 2020.

Current Rates

The District's existing water rates include a monthly service charge based on meter size and a three-tiered quantity rate based on hundred cubic feet (hcf) of water usage. All customer classes are charged the same water rates. **Table 1-1** shows the current water rates.

Table 1-1: Current Potable Water Rates

A	B	C
Line	Potable Water Rates	FY 2020
1	Monthly Service Charge	
2	3/4 inch	\$29.74
3	1 inch	\$46.94
4	1-1/2 inch	\$89.99
5	2 inch	\$141.64
6	3 inch	\$305.20
7	4 inch	\$546.23
8	6 inch	\$1,209.09
9		
10	Quantity Rates (\$/hcf) (eff, 1-1-2020)	
11	Tier 1 (7 hcf)	\$6.45
12	Tier 2 (28 hcf)	\$7.31
13	Tier 3 (28+ hcf)	\$8.94

The District's existing recycled water rates include a monthly service charge based on meter size for retail customers only and a uniform quantity rate for both retail and wholesale customers, based on hcf and acre-feet (AF) of recycled water usage, respectively. **Table 1-2** shows the current recycled water rates.

Table 1-2: Current Recycled Water Rates

A	B	C
Line	Recycled Water Rates	FY 2020
1	Monthly Service Charge	
2	2 inch	\$153.66
3	3 inch	\$288.09
4	4 inch	\$480.16
5	6 inch	\$960.24
6		
7	Retail Quantity Rates (\$/hcf)	
8	All Usage	\$5.23
9		
10	Wholesale Quantity Rates (\$/AF)	
11	All Usage	\$1,138.40

Legal Framework¹

The rate-making process, especially for water agencies in California, begins with a review of the legal requirements and framework currently in place. The major legal requirements include Proposition 218 and Article X, Section 2 of the California Constitution, which are outlined in the following sections.

California Constitution – Article XIII D, Section 6 (Proposition 218)

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of a service to a property (“property-related fees and charges”) are proportional to, and do not exceed, the cost of providing service. Water service fees and charges are property-related and subject to the provisions of Proposition 218. The principal requirements, as they relate to public water service fees and charges, are as follows:

1. Revenues derived from a property-related charge imposed by a public agency shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

As stated in the American Water Works Association's Manual of Water Supply Practices M1, *Principles of Water Rates, Fees, and Charges, Seventh Edition* (M1 Manual), “water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” Proposition 218 requires that water rates cannot be

¹ Raftelis does not practice law nor does it provide legal advice. The above discussion provides a general overview of Raftelis' understanding as rate practitioners and is labeled “legal framework” for literary convenience only. The District should consult with its legal counsel for clarification and/or specific guidance.

“arbitrary and capricious,” meaning that the rate-setting methodology must establish a clear nexus between costs and the rates charged.

California Constitution – Article X, Section 2

Article X, Section 2 of the California Constitution was established in 1976 and states the following:

“It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.”

Article X, Section 2 of the California Constitution institutes the need to preserve the State’s water supplies and to discourage the wasteful or unreasonable use of water by encouraging conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

Process and Approach

The process and approach Raftelis utilized in the study is informed by the District’s policy objectives, the current water system and rates, and the legal requirements in California (namely, Proposition 218). The resulting cost of service analysis and rate design process considers all these factors and follows four key steps, outlined below, to derive proposed rates that fulfill the District’s policy objectives, meets industry standards, and complies with Proposition 218.

Step 1: Revenue Requirement Calculation

The rate-making process begins by determining the revenue requirement for the base year, also known as the rate-setting year. The base year for this study is FY 2021 (July 1, 2020 to June 30, 2021). The revenue requirement should sufficiently fund the utility’s operation and maintenance (O&M) costs, annual debt service, capital project expenses, and reserve funding as projected in the District’s budgets.

Step 2: Cost of Service Analysis

The annual cost of providing water service, or the revenue requirement, is then distributed among customer classes commensurate with their use of and burden on the system. A cost of service analysis involves the following steps:

1. Functionalize costs – the O&M expense budget is categorized into functions such as supply, treatment, pumping, transmission and distribution (T&D), etc.
2. Allocate to cost causation components – the functionalized costs are then allocated to system cost causation components such as supply, delivery, peaking, conservation, etc.
3. Develop unit costs – unit costs for each cost causation component is determined using appropriate units of service for each.
4. Distribute cost causation components – the cost causation components are allocated to each customer class using the unit costs in proportion to their demand and burden on the system.

A cost of service analysis considers both the average water demand and peak demand. Peaking costs² are incurred during maximum periods of consumption, most often coinciding with summertime irrigation usage. There are additional capacity-related³ costs associated with designing, constructing, operating, maintaining, and replacing

² Collectively, maximum day and maximum hour costs are known as peaking costs.

³ System capacity is the system’s ability to supply water to all delivery points at the time when demanded. The time of greatest demand is known as peak demand. Both the operating and capital costs incurred to accommodate peak flows are generally allocated to each customer class based upon the relative demand during the peak day and peak hour event.

and refurbishing facilities to meet peak demand. These peaking costs must be allocated to the customer classes whose water demand patterns generate additional costs for the utility, proportionate to their burden on the peaking-related facilities.

Step 3: Rate Design and Calculation

After allocating the revenue requirement to each water system and its corresponding customer classes, the rate design and calculation process can begin. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support the District's policy objectives, while adhering to cost of service principles. Rates are not only a financial instrument but act as a public information tool in communicating policy objectives to customers. The rate design process also includes a rate impact analysis to all customer classes and sample customer bill impact analysis.

Step 4: Administrative Record Preparation and Rate Adoption

The final step in a cost of service and rate study is to develop the administrative record in preparation for the rate adoption process. The administrative record, also known as the study report, documents the rate study results and presents the methodologies, rationale, justifications, and calculations utilized to derive the proposed rates. A thorough and methodical administrative record serves two important functions: maintaining defensibility in a litigious environment and communicating the rate adoption process to customers and important stakeholders.

Results and Recommendations

After a comprehensive review of the District's long-range financial plan for the water and recycled water enterprises, Raftelis has identified the financial drivers in the study for each utility:

- » Water – the District expects to spend approximately \$4.3 million on capital projects over the study period. Revenue adjustments are needed to rate fund all capital expenses and supplement depleted reserve balances.
- » Recycled water – while the recycled water reserve balances are healthy without revenue adjustments, the debt coverage ratio for the utility's two existing debt obligations will fall beneath the required coverage in the last two years of the study necessitating small revenue adjustments.

Based on these drivers, Raftelis recommends the following revenue adjustments for each utility:

- » Water – 6.0 percent per year from FY 2021 through FY 2023 and 4.0 percent per year from FY 2024 and FY 2025
- » Recycled water – 2.0 percent each year from FY 2021 through FY 2025
- » No additional debt for either utility

Proposed Rates

Based on the results and recommendations in the previous section, Raffelis calculated proposed water and recycled water rates for the five-year planning horizon. The proposed water rates for implementation are shown in **Table 1-3**.

Table 1-3: Proposed Potable Water Rates

A	B	C	D	E	F	G
Line	Potable Water Rates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	3/4 inch	\$31.53	\$33.43	\$35.44	\$36.86	\$38.34
3	1 inch	\$49.76	\$52.75	\$55.92	\$58.16	\$60.49
4	1-1/2 inch	\$94.72	\$100.41	\$106.44	\$110.70	\$115.13
5	2 inch	\$148.02	\$156.91	\$166.33	\$172.99	\$179.91
6	3 inch	\$316.78	\$335.79	\$355.94	\$370.18	\$384.99
7	4 inch	\$565.49	\$599.42	\$635.39	\$660.81	\$687.25
8	6 inch	\$1,249.44	\$1,324.41	\$1,403.88	\$1,460.04	\$1,518.45
9						
10	Quantity Rates (\$/hcf)					
11	Tier 1 (7 hcf)	\$6.84	\$7.26	\$7.70	\$8.01	\$8.34
12	Tier 2 (28 hcf)	\$7.75	\$8.22	\$8.72	\$9.07	\$9.44
13	Tier 3 (28+ hcf)	\$9.48	\$10.05	\$10.66	\$11.09	\$11.54

Proposed recycled water rates, shown in **Table 1-4**, are based on the total revenue requirement for recycled water resulting from the revenue adjustment. Wholesale quantity rates are based on 80 percent of the Calleguas Municipal Water District's Tier 1 rate. The revenue adjustment represents the amount of revenue for all recycled water customers, therefore, the retail quantity rate increases based on a different percentage. This calculation is explained in detail in a later section of this report.

Table 1-4: Proposed Recycled Water Rates

A	B	C	D	E	F	G
Line	Recycled Water Rates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	2 inch	\$154.37	\$157.46	\$160.61	\$163.83	\$167.11
3	3 inch	\$289.43	\$295.22	\$301.13	\$307.16	\$313.31
4	4 inch	\$482.38	\$492.03	\$501.88	\$511.92	\$522.16
5	6 inch	\$964.68	\$983.98	\$1,003.66	\$1,023.74	\$1,044.22
6						
7	Retail Quantity Rates (\$/hcf)					
8	All Usage	\$5.26	\$5.37	\$5.48	\$5.59	\$5.71
9						
10	Wholesale Quantity Rates (\$/AF)					
11	All Usage	<i>Based on Calleguas Municipal Water District rates</i>				

2. Water Financial Plan

This section of the report discusses the financial plan for the water utility, which includes the O&M expenses, CIP, reserve funding, projected revenue under existing rates, and revenue adjustments needed to ensure the utility's fiscal sustainability and solvency. The budget year, which for this study is FY 2020, is the year from which revenues and expenses are projected for the study period. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report.

Current Rates

The District's current water rates, shown in **Table 2-1**, include a monthly service charge based on meter size and a three-tiered quantity rate based on hcf of water usage.

Table 2-1: Current Potable Water Rates

A	B	C
Line	Potable Water Rates	FY 2020
1	Monthly Service Charge	
2	3/4 inch	\$29.74
3	1 inch	\$46.94
4	1-1/2 inch	\$89.99
5	2 inch	\$141.64
6	3 inch	\$305.20
7	4 inch	\$546.23
8	6 inch	\$1,209.09
9		
10	Quantity Rates (\$/hcf)	
11	Tier 1 (7 hcf)	\$6.45
12	Tier 2 (28 hcf)	\$7.31
13	Tier 3 (28+ hcf)	\$8.94

Customer Data

Table 2-2 and **Table 2-3** show the projected water accounts and usage for each customer class during the study period. District staff provided water account and usage data for FY 2019. Growth is not expected for all years of the study, which is reflected in the projections for FY 2020 and beyond.

Table 2-2: Projected Potable Water Accounts

A	B	C	D	E	F	G	H	I
Line	Potable Water Accounts	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Single Family Residential							
2	3/4 inch	4,852	4,852	4,852	4,852	4,852	4,852	4,852
3	1 inch	47	47	47	47	47	47	47
4	1-1/2 inch	0	0	0	0	0	0	0
5	2 inch	1	1	1	1	1	1	1
6	3 inch	0	0	0	0	0	0	0
7	4 inch	0	0	0	0	0	0	0
8	6 inch	0	0	0	0	0	0	0
9	Total - Single Family Residential	4,900	4,900	4,900	4,900	4,900	4,900	4,900
10								
11	Multi-Family Residential							
12	3/4 inch	1	1	1	1	1	1	1
13	1 inch	0	0	0	0	0	0	0
14	1-1/2 inch	0	0	0	0	0	0	0
15	2 inch	111	111	111	111	111	111	111
16	3 inch	0	0	0	0	0	0	0
17	4 inch	0	0	0	0	0	0	0
18	6 inch	0	0	0	0	0	0	0
19	Total - Multi-Family Residential	112	112	112	112	112	112	112
20								
21	Commercial							
22	3/4 inch	7	7	7	7	7	7	7
23	1 inch	10	10	10	10	10	10	10
24	1-1/2 inch	14	14	14	14	14	14	14
25	2 inch	10	10	10	10	10	10	10
26	3 inch	0	0	0	0	0	0	0
27	4 inch	0	0	0	0	0	0	0
28	6 inch	0	0	0	0	0	0	0
29	Total - Commercial	41	41	41	41	41	41	41
30								
31	Institutional							
32	3/4 inch	0	0	0	0	0	0	0
33	1 inch	0	0	0	0	0	0	0
34	1-1/2 inch	0	0	0	0	0	0	0
35	2 inch	2	2	2	2	2	2	2
36	3 inch	4	4	4	4	4	4	4
37	4 inch	1	1	1	1	1	1	1
38	6 inch	0	0	0	0	0	0	0
39	Total - Institutional	7	7	7	7	7	7	7
40								
41	Landscape							
42	3/4 inch	11	11	11	11	11	11	11

A	B	C	D	E	F	G	H	I
Line	Potable Water Accounts	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
43	1 inch	5	5	5	5	5	5	5
44	1-1/2 inch	8	8	8	8	8	8	8
45	2 inch	68	68	68	68	68	68	68
46	3 inch	2	2	2	2	2	2	2
47	4 inch	2	2	2	2	2	2	2
48	6 inch	0	0	0	0	0	0	0
49	Total - Landscape	96	96	96	96	96	96	96
50								
51	Recreation and Other							
52	3/4 inch	6	6	6	6	6	6	6
53	1 inch	1	1	1	1	1	1	1
54	1-1/2 inch	0	0	0	0	0	0	0
55	2 inch	6	6	6	6	6	6	6
56	3 inch	0	0	0	0	0	0	0
57	4 inch	0	0	0	0	0	0	0
58	6 inch	0	0	0	0	0	0	0
59	Total - Recreation and Other	13	13	13	13	13	13	13
60								
61	Total - Potable Water Accounts	5,169	5,169	5,169	5,169	5,169	5,169	5,169

Table 2-3: Projected Potable Water Usage (hcf)

A	B	C	D	E	F	G	H	I
Line	Potable Water Usage	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Single Family Residential							
2	Tier 1	308,856	308,856	308,856	308,856	308,856	308,856	308,856
3	Tier 2	329,642	329,642	329,642	329,642	329,642	329,642	329,642
4	Tier 3	68,232	68,232	68,232	68,232	68,232	68,232	68,232
5	Total - Single Family Residential	706,730	706,730	706,730	706,730	706,730	706,730	706,730
6								
7	Multi-Family Residential							
8	Tier 1	9,244	9,244	9,244	9,244	9,244	9,244	9,244
9	Tier 2	26,310	26,310	26,310	26,310	26,310	26,310	26,310
10	Tier 3	20,263	20,263	20,263	20,263	20,263	20,263	20,263
11	Total - Multi-Family Residential	55,817	55,817	55,817	55,817	55,817	55,817	55,817
12								
13	Commercial							
14	Tier 1	1,843	1,843	1,843	1,843	1,843	1,843	1,843
15	Tier 2	3,553	3,553	3,553	3,553	3,553	3,553	3,553
16	Tier 3	3,542	3,542	3,542	3,542	3,542	3,542	3,542
17	Total - Commercial	8,938	8,938	8,938	8,938	8,938	8,938	8,938
18								
19	Institutional							
20	Tier 1	570	570	570	570	570	570	570
21	Tier 2	1,610	1,610	1,610	1,610	1,610	1,610	1,610
22	Tier 3	4,291	4,291	4,291	4,291	4,291	4,291	4,291
23	Total - Institutional	6,471	6,471	6,471	6,471	6,471	6,471	6,471
24								
25	Landscape							
26	Tier 1	6,222	6,222	6,222	6,222	6,222	6,222	6,222
27	Tier 2	14,219	14,219	14,219	14,219	14,219	14,219	14,219
28	Tier 3	52,094	52,094	52,094	52,094	52,094	52,094	52,094
29	Total - Landscape	72,535	72,535	72,535	72,535	72,535	72,535	72,535
30								
31	Recreation and Other							
32	Tier 1	758	758	758	758	758	758	758
33	Tier 2	1,008	1,008	1,008	1,008	1,008	1,008	1,008
34	Tier 3	997	997	997	997	997	997	997
35	Total - Recreation and Other	2,763	2,763	2,763	2,763	2,763	2,763	2,763
36								
37	Total - Potable Water Usage	853,254	853,254	853,254	853,254	853,254	853,254	853,254

Revenues

Table 2-4 shows the calculated water revenues for FY 2021 and beyond at the current water rates. The financial plan uses the District's budgeted revenues for FY 2020. The current rates in **Table 2-1** are multiplied by the meter counts in **Table 2-2** and 12 months in a year (for the monthly meter charge) and the water usage in **Table 2-3** (for the quantity rates) to determine the calculated water rate revenues.

Table 2-4: Calculated Potable Water Rate Revenues at Current Rates

A	B	C	D	E	F	G
Line	Potable Water Rate Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	Single Family Residential	\$1,759,756	\$1,759,756	\$1,759,756	\$1,759,756	\$1,759,756
3	Multi-Family Residential	\$189,021	\$189,021	\$189,021	\$189,021	\$189,021
4	Commercial	\$40,246	\$40,246	\$40,246	\$40,246	\$40,246
5	Institutional	\$24,604	\$24,604	\$24,604	\$24,604	\$24,604
6	Landscape	\$151,394	\$151,394	\$151,394	\$151,394	\$151,394
7	Recreation and Other	\$12,903	\$12,903	\$12,903	\$12,903	\$12,903
8	Total - Monthly Service Charge	\$2,177,923	\$2,177,923	\$2,177,923	\$2,177,923	\$2,177,923
9						
10	Quantity Rates					
11	Single Family Residential	\$5,011,795	\$5,011,795	\$5,011,795	\$5,011,795	\$5,011,795
12	Multi-Family Residential	\$433,098	\$433,098	\$433,098	\$433,098	\$433,098
13	Commercial	\$69,527	\$69,527	\$69,527	\$69,527	\$69,527
14	Institutional	\$53,805	\$53,805	\$53,805	\$53,805	\$53,805
15	Landscape	\$609,792	\$609,792	\$609,792	\$609,792	\$609,792
16	Recreation and Other	\$21,172	\$21,172	\$21,172	\$21,172	\$21,172
17	Total - Quantity Rates	\$6,199,191	\$6,199,191	\$6,199,191	\$6,199,191	\$6,199,191
18						
19	Total - Potable Water Rate Revenues	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114

To project non-rate revenues, such as miscellaneous revenues and interest earnings, Raftelis uses the revenue escalation factors in **Table 2-5**. Miscellaneous revenues are not inflated for future years, and the reserve interest rate is used to calculate the interest earnings based on the water fund balances.

Table 2-5: Revenue Escalation Factors

A	B	C	D	E	F	G
Line	Revenue Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Miscellaneous Revenue	0.0%	0.0%	0.0%	0.0%	0.0%
2	Reserve Interest Rate	1.0%	1.0%	1.0%	1.0%	1.0%

Table 2-6 shows the projected water revenues for the study period. Water sales (Line 1) and service charge (Line 2) revenues for FY 2021 and beyond are based on the revenue calculation (**Table 2-4**, Lines 8 and 19). Interest earnings (Line 6) is calculated based on the reserve interest rate (**Table 2-5**, Line 2) and the water fund balance.

Table 2-6: Projected Potable Water Revenues at Current Rates

A	B	C	D	E	F	G	H
Line	Potable Water Revenues	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Sales	\$6,306,989	\$6,199,191	\$6,199,191	\$6,199,191	\$6,199,191	\$6,199,191
2	Service Charges	\$1,941,878	\$2,177,923	\$2,177,923	\$2,177,923	\$2,177,923	\$2,177,923
3	Cell Site Lease	\$176,020	\$176,020	\$176,020	\$176,020	\$176,020	\$176,020
4	Penalties and Late Fees	\$81,960	\$81,960	\$81,960	\$81,960	\$81,960	\$81,960
5	Other	\$11,500	\$11,500	\$11,500	\$11,500	\$11,500	\$11,500
6	Interest Earnings	\$14,928	\$46,530	\$55,649	\$66,409	\$77,990	\$90,808
7	Total - Potable Water Revenues	\$8,533,275	\$8,693,124	\$8,702,243	\$8,713,003	\$8,724,584	\$8,737,402

O&M Expenses

Table 2-7 shows the expense escalation factors used to inflate O&M expenses for future years. These factors were based on input from District staff.

Table 2-7: Expense Escalation Factors

A	B	C	D	E	F	G
Line	Expense Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	General	3.0%	3.0%	3.0%	3.0%	3.0%
2	Salaries	3.0%	3.0%	3.0%	3.0%	3.0%
3	Benefits	3.0%	3.0%	3.0%	3.0%	3.0%
4	Water Supply	5.0%	5.0%	5.0%	5.0%	5.0%
5	Utilities	5.0%	5.0%	5.0%	5.0%	5.0%
6	Capital	4.0%	4.0%	4.0%	4.0%	4.0%

Table 2-8 shows the water production and purchased by period. Water production is equal to water demand accounting for the water loss percentage (Line 1). Water demand is equal to the water usage projections for the study period (**Table 2-3**, Line 37) converted from hcf to AF. Total water purchased (Line 14) is equal to water produced (Line 9). The amount of water purchased in the first half of the fiscal year is based on the water use proportion (Line 4) provided by District staff.

Table 2-8: Potable Water Production

A	B	C	D	E	F	G
Line	Potable Water Production	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Water Loss Percentage	5%	5%	5%	5%	5%
2						
3	Water Use Proportion					
4	Jul-Dec	59%	59%	59%	59%	59%
5	Jan-Jun	41%	41%	41%	41%	41%
6						
7	Water Production (AF)					
8	Demanded	1,959	1,959	1,959	1,959	1,959
9	Produced	2,062	2,062	2,062	2,062	2,062
10						
11	Water Purchased (AF)					
12	Jul-Dec	1,217	1,217	1,217	1,217	1,217
13	Jan-Jun	845	845	845	845	845
14	Total - Water Purchased (AF)	2,062	2,062	2,062	2,062	2,062

Table 2-9 shows the water supply cost calculations for FY 2021 and beyond. Water supply costs for FY 2020 are from the District's budget. District staff provided variable costs for water purchase (Lines 1-19) based on each period of the fiscal year. Variable costs include charges from Calleguas Municipal Water District (CMWD) and Metropolitan Water District (MWD); the District purchases water from CMWD and is charged MWD passthrough costs for that water. District staff also supplied fixed costs (Lines 21-25) that do not vary with the amount of water purchased. Both fixed and variable water supply costs are inflated by the water supply escalation factor (**Table 2-7**, Line 4). Variable water supply costs (Lines 28-33) are calculated by multiplying the variable costs per AF by the amount of water purchased in each period (**Table 2-8**, Lines 12-13)

Table 2-9: Potable Water Supply Cost

A	B	C	D	E	F	G
Line	Potable Water Supply Cost	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Water Supply Variable Costs (\$/AF)					
2	MWD Tier 1 Rate					
3	Jul-Dec	\$219.45	\$230.42	\$241.94	\$254.04	\$266.74
4	Jan-Jun	\$230.42	\$241.94	\$254.04	\$266.74	\$280.08
5	MWD System Access Charge					
6	Jul-Dec	\$414.75	\$435.49	\$457.26	\$480.12	\$504.13
7	Jan-Jun	\$435.49	\$457.26	\$480.12	\$504.13	\$529.34
8	MWD System Power Charge					
9	Jul-Dec	\$133.35	\$140.02	\$147.02	\$154.37	\$162.09
10	Jan-Jun	\$140.02	\$147.02	\$154.37	\$162.09	\$170.19
11	MWD Treatment Charge					
12	Jul-Dec	\$334.95	\$351.70	\$369.28	\$387.75	\$407.13
13	Jan-Jun	\$351.70	\$369.28	\$387.75	\$407.13	\$427.49
14	CMWD O&M Charge					
15	Jul-Dec	\$82.95	\$87.10	\$91.45	\$96.02	\$100.83
16	Jan-Jun	\$87.10	\$91.45	\$96.02	\$100.83	\$105.87
17	CMWD Capital Construction Charge					
18	Jul-Dec	\$308.70	\$324.14	\$340.34	\$357.36	\$375.23
19	Jan-Jun	\$324.14	\$340.34	\$357.36	\$375.23	\$393.99
20						
21	Water Supply Fixed Costs (\$/year)					
22	Pumping Lindero 1	\$77,785	\$81,674	\$85,757	\$90,045	\$94,548
23	Pumping Lindero 2	\$125,254	\$131,517	\$138,092	\$144,997	\$152,247
24	Capacity Reservation Charge	\$172,149	\$180,756	\$189,794	\$199,284	\$209,248
25	Readiness-to-Serve Charge	\$175,999	\$184,799	\$194,039	\$203,740	\$213,928
26						
27	Water Supply Costs					
28	MWD Tier 1 Rate	\$461,759	\$484,847	\$509,089	\$534,544	\$561,271
29	MWD System Access Charge	\$872,702	\$916,337	\$962,154	\$1,010,262	\$1,060,775
30	MWD System Power Charge	\$280,590	\$294,620	\$309,351	\$324,818	\$341,059
31	MWD Treatment Charge	\$704,790	\$740,029	\$777,031	\$815,882	\$856,676
32	CMWD O&M Charge	\$174,540	\$183,267	\$192,431	\$202,052	\$212,155
33	CMWD Capital Construction Charge	\$649,556	\$682,033	\$716,135	\$751,942	\$789,539
34	Pumping Lindero 1	\$77,785	\$81,674	\$85,757	\$90,045	\$94,548
35	Pumping Lindero 2	\$125,254	\$131,517	\$138,092	\$144,997	\$152,247
36	Capacity Reservation Charge	\$172,149	\$180,756	\$189,794	\$199,284	\$209,248
37	Readiness-to-Serve Charge	\$175,999	\$184,799	\$194,039	\$203,740	\$213,928
38	Total - Water Supply Costs	\$3,695,123	\$3,879,879	\$4,073,873	\$4,277,567	\$4,491,445

Table 2-10 shows the projected water O&M expenses. District staff provided the budget for FY 2020; the budgeted values are inflated for future years using the expense escalation factors (**Table 2-7**). Note that the water purchase cost (Line 33) is equal to the calculated water supply cost (**Table 2-9**, Line 38) for FY 2021 and beyond.

Table 2-10: Projected Potable Water Expenses

A	B	C	D	E	F	G	H
Line	Potable Water Expenses	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Administration						
2	Board member fees	\$2,133	\$2,197	\$2,263	\$2,331	\$2,401	\$2,473
3	Membership and dues	\$27,795	\$28,629	\$29,488	\$30,372	\$31,284	\$32,222
4	Conference and seminars	\$11,070	\$11,402	\$11,744	\$12,096	\$12,459	\$12,833
5	Overhead cost allocation	\$600,345	\$618,355	\$636,906	\$656,013	\$675,694	\$695,964
6	Insurance	\$12,377	\$12,748	\$13,130	\$13,524	\$13,930	\$14,348
7	Permits	\$38,355	\$39,506	\$40,691	\$41,912	\$43,169	\$44,464
8	Contract services - VRSD	\$81,371	\$83,812	\$86,326	\$88,916	\$91,583	\$94,331
9	Subtotal - Administration	\$773,445	\$796,648	\$820,548	\$845,164	\$870,519	\$896,635
10							
11	Billing and CS						
12	Professional Services	\$24,716	\$25,458	\$26,221	\$27,008	\$27,818	\$28,653
13	Credit Card Service Fees	\$54,000	\$55,620	\$57,289	\$59,007	\$60,777	\$62,601
14	Utilities	\$2,530	\$2,606	\$2,684	\$2,765	\$2,848	\$2,933
15	Contract services - VRSD	\$395,640	\$407,509	\$419,734	\$432,326	\$445,296	\$458,655
16	Management and administrative	\$3,200	\$3,296	\$3,395	\$3,497	\$3,602	\$3,710
17	Subtotal - Billing and CS	\$480,086	\$494,489	\$509,323	\$524,603	\$540,341	\$556,551
18							
19	Distribution						
20	Contract services - VRSD	\$1,577,006	\$1,624,316	\$1,673,046	\$1,723,237	\$1,774,934	\$1,828,182
21	Professional Services	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982
22	Subtotal - Distribution	\$1,602,006	\$1,650,066	\$1,699,568	\$1,750,555	\$1,803,072	\$1,857,164
23							
24	Meters						
25	Contract services - VRSD	\$87,495	\$90,120	\$92,823	\$95,608	\$98,476	\$101,431
26	Subtotal - Meters	\$87,495	\$90,120	\$92,823	\$95,608	\$98,476	\$101,431
27							
28	Pumping						
29	Utilities	\$115,000	\$120,750	\$126,788	\$133,127	\$139,783	\$146,772
30	Subtotal - Pumping	\$115,000	\$120,750	\$126,788	\$133,127	\$139,783	\$146,772
31							
32	Supply						
33	Water Purchase	\$3,402,736	\$3,695,123	\$3,879,879	\$4,073,873	\$4,277,567	\$4,491,445
34	Subtotal - Supply	\$3,402,736	\$3,695,123	\$3,879,879	\$4,073,873	\$4,277,567	\$4,491,445
35							
36	Total - Potable Water Expenses	\$6,460,768	\$6,847,196	\$7,128,930	\$7,422,931	\$7,729,759	\$8,049,999

Debt Service

Table 2-11 shows the existing water debt service, provided by District staff. The District does not expect to incur additional debt for the water enterprise during this study period.

Table 2-11: Existing Potable Water Debt Service

A	B	C	D	E	F	G	H
Line	Potable Water Existing Debt	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	2011A Project	\$601,715	\$601,715	\$601,715	\$601,715	\$601,715	\$601,715
2	2014 Lease Purchase Agreement	\$214,719	\$214,719	\$214,719	\$214,719	\$214,719	\$214,719
3	Total - Potable Water Existing Debt	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435

Capital Projects

Table 2-12 shows the water CIP for all years of the study. District staff provided capital costs for the study period; these costs are inflated for future years using the capital expense escalation factor (**Table 2-7**, Line 6). Since the District does not plan to incur additional debt during this study period, all capital costs will be funded by rates.

Table 2-12: Potable Water Capital Projects

A	B	C	D	E	F	G	H
Line	Potable Water Capital Projects	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Savoy Pump Station Replacement	\$0	\$432,640	\$281,216	\$292,465	\$304,163	\$126,532
2	Deerhill Pump Station Improvements	\$0	\$82,202	\$62,992	\$65,512	\$68,133	\$70,858
3	Lindero Pump Station Improvements	\$0	\$0	\$44,995	\$116,986	\$121,665	\$202,451
4	Smoketree Pump Station Replacement	\$0	\$0	\$112,486	\$175,479	\$182,498	\$189,798
5	Lambourne Pump Station Improvements	\$0	\$0	\$33,746	\$58,493	\$60,833	\$63,266
6	Pipeline Rehabilitation	\$0	\$108,160	\$112,486	\$116,986	\$121,665	\$126,532
7	Reservoir Rehabilitation	\$0	\$108,160	\$112,486	\$116,986	\$121,665	\$126,532
8	Total - Potable Water Capital Projects	\$0	\$731,162	\$760,408	\$942,906	\$980,622	\$905,968

Reserve Policy

The District's existing reserve policy is robust and ensures financial resilience in the face of unexpected events, such as natural disasters, asset failures, or reduced revenues. The reserve policy for water includes the following components:

- » Operating reserve – 3 (minimum) to 6 (maximum) months of annual O&M expenses
- » Capital reserve – 5-year average rate-funded CIP costs
- » Debt service – 1 year of annual debt service
- » Rate stabilization reserve – 3 (minimum) to 6 (maximum) months of operating revenues

Reserves allow the District to have better ratings and lower interest rates if it issues debt.

Status Quo Financial Plan

Table 2-13 shows the water financial plan under the status quo or “do nothing” scenario. This scenario shows no revenue adjustments. Net cash flow (Line 34) is equal to revenue (Line 17) less O&M expenses (Line 26) and debt and capital costs (Line 32). Net revenue (Line 35) is equal to revenues less O&M expenses. Net revenue, which is positive for all years of the study, shows that the District's existing water rate revenues are sufficient to fund all O&M expenses. However, net cash flow is negative for the last four years of the study, which shows that existing rate revenues are not sufficient to recover all costs associated with capital projects. The calculated debt coverage ratio (Line 37), which is calculated by dividing net revenue by annual debt service, falls below the 1.25 requirement starting in FY 2024.

Rate and miscellaneous revenues (Lines 12-17) are from **Table 2-6**. Note that the interest earnings in the status quo scenario are lower, due to lower fund balances. O&M expenses (Lines 19-26) are from **Table 2-10**. Debt service (Lines 29-30) are from **Table 2-11**. Capital project costs (Line 31) are from **Table 2-12**.

Table 2-13: Potable Water Financial Plan, Status Quo

A	B	C	D	E	F	G	H
Line	Potable Water Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 0.0%		\$0	\$0	\$0	\$0	\$0
6	FY 2022 - 0.0%			\$0	\$0	\$0	\$0
7	FY 2023 - 0.0%				\$0	\$0	\$0
8	FY 2024 - 0.0%					\$0	\$0
9	FY 2025 - 0.0%						\$0
10	Total - Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
11							
12	Revenues						
13	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
14	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
15	Other Revenues	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480
16	Interest Earnings	\$14,928	\$44,017	\$45,420	\$42,900	\$36,250	\$26,582
17	Total - Revenues	\$8,533,275	\$8,690,611	\$8,692,014	\$8,689,494	\$8,682,844	\$8,673,176
18							
19	O&M Expenses						
20	Administration	\$773,445	\$796,648	\$820,548	\$845,164	\$870,519	\$896,635
21	Billing and Customer Service	\$480,086	\$494,489	\$509,323	\$524,603	\$540,341	\$556,551
22	Distribution	\$1,602,006	\$1,650,066	\$1,699,568	\$1,750,555	\$1,803,072	\$1,857,164
23	Meters	\$87,495	\$90,120	\$92,823	\$95,608	\$98,476	\$101,431
24	Pumping	\$115,000	\$120,750	\$126,788	\$133,127	\$139,783	\$146,772
25	Supply	\$3,402,736	\$3,695,123	\$3,879,879	\$4,073,873	\$4,277,567	\$4,491,445
26	Total - O&M Expenses	\$6,460,768	\$6,847,196	\$7,128,930	\$7,422,931	\$7,729,759	\$8,049,999
27							
28	Debt and Capital						
29	Existing Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
30	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
31	Rate Funded Capital Projects	\$0	\$731,162	\$760,408	\$942,906	\$980,622	\$905,968
32	Total - Debt and Capital	\$816,435	\$1,547,596	\$1,576,843	\$1,759,341	\$1,797,057	\$1,722,403
33							
34	Net Cash Flow	\$1,256,073	\$295,818	(\$13,758)	(\$492,777)	(\$843,972)	(\$1,099,226)
35	Net Revenue	\$2,072,507	\$1,843,415	\$1,563,084	\$1,266,563	\$953,085	\$623,177
36							
37	Calculated Debt Coverage	2.54	2.26	1.91	1.55	1.17	0.76
38	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25

Table 2-14 shows the projected water fund balances under the status quo scenario. The water ending balance (Line 17) is below minimum reserve target levels (Line 18) for all years of the study. The minimum reserve target is the sum of Lines 22, 23, 24, 26 and the maximum reserve target is the sum of Lines 22, 23, 24, 27.

Table 2-14: Potable Water Fund Balances, Status Quo

A	B	C	D	E	F	G	H
Line	Potable Water Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$3,019,709	\$4,275,782	\$4,571,600	\$4,557,842	\$4,065,064	\$3,221,092
2							
3	Sources of Funds						
4	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
5	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
6	Other Revenues	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0
8	Interest Earnings	\$14,928	\$44,017	\$45,420	\$42,900	\$36,250	\$26,582
9	Total - Sources of Funds	\$8,533,275	\$8,690,611	\$8,692,014	\$8,689,494	\$8,682,844	\$8,673,176
10							
11	Uses of Funds						
12	O&M Expenses	\$6,460,768	\$6,847,196	\$7,128,930	\$7,422,931	\$7,729,759	\$8,049,999
13	Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
14	Capital Projects	\$0	\$731,162	\$760,408	\$942,906	\$980,622	\$905,968
15	Total - Uses of Funds	\$7,277,203	\$8,394,793	\$8,705,772	\$9,182,272	\$9,526,816	\$9,772,402
16							
17	Ending Balance	\$4,275,782	\$4,571,600	\$4,557,842	\$4,065,064	\$3,221,092	\$2,121,866
18	Minimum Reserve Target	\$6,859,425	\$7,265,895	\$7,371,067	\$7,420,729	\$7,442,494	\$7,465,699
19	Maximum Reserve Target	\$8,989,012	\$9,427,543	\$9,532,716	\$9,582,377	\$9,604,143	\$9,627,348
20							
21	Reserve Target						
22	Operating	\$3,230,384	\$3,423,598	\$3,564,465	\$3,711,465	\$3,864,879	\$4,024,999
23	Capital	\$683,020	\$864,213	\$828,519	\$731,180	\$599,532	\$462,617
24	Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
25	Rate Stabilization						
26	Minimum	\$2,129,587	\$2,161,649	\$2,161,649	\$2,161,649	\$2,161,649	\$2,161,649
27	Maximum	\$4,259,174	\$4,323,297	\$4,323,297	\$4,323,297	\$4,323,297	\$4,323,297

Figure 2-1 shows the water financial plan under the status quo scenario in a graphical format. Current revenues are represented as the dotted line; O&M expenses, debt service, and capital expenses are represented as the turquoise, grey, and yellow stacked bars, respectively. Since the current revenues are not sufficient to fund both O&M and capital expenses, the District will draw from its water reserves to fund these costs. The drawdown on reserves is shown as the green bars.

Figure 2-1: Potable Water Financial Plan, Status Quo

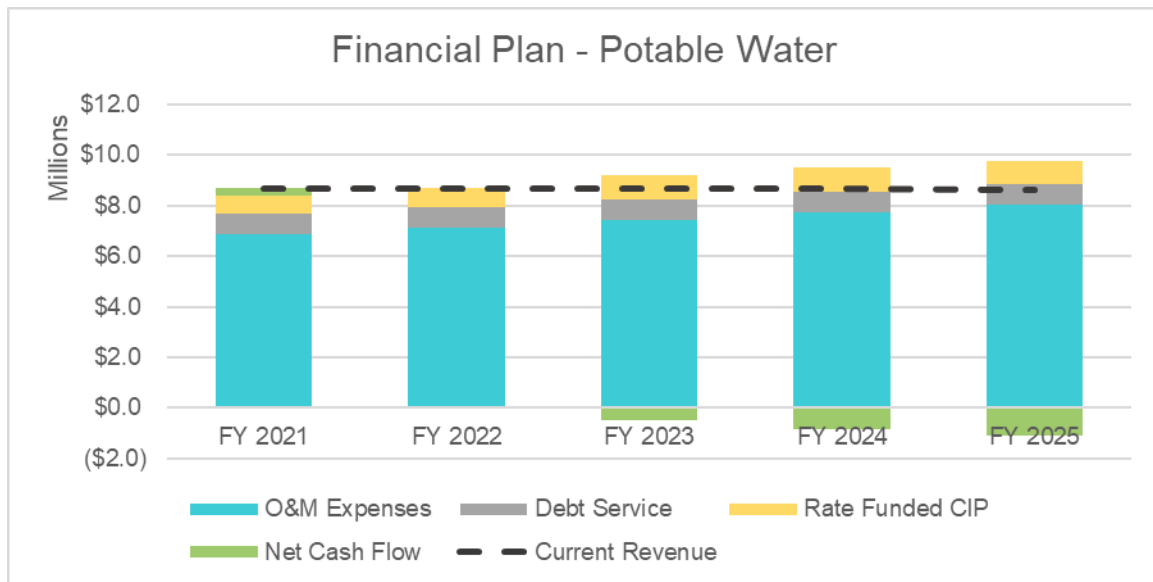


Figure 2-2 shows the water debt coverage under the status quo scenario in a graphical format. The debt coverage ratio falls below the required 1.25 ratio in FY 2024 without additional revenue adjustments.

Figure 2-2: Potable Water Debt Coverage, Status Quo

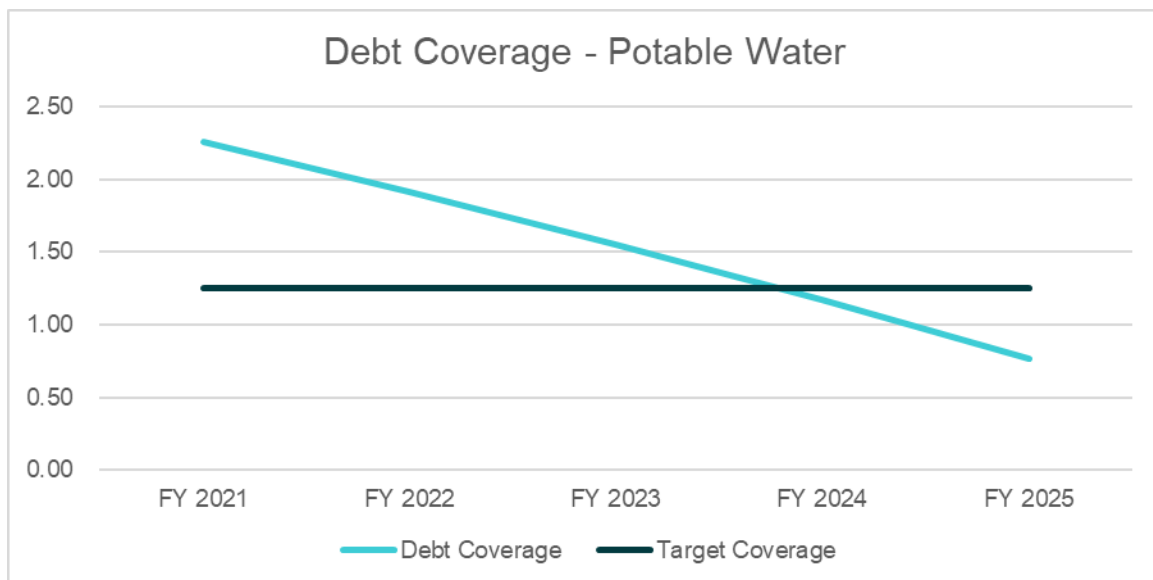
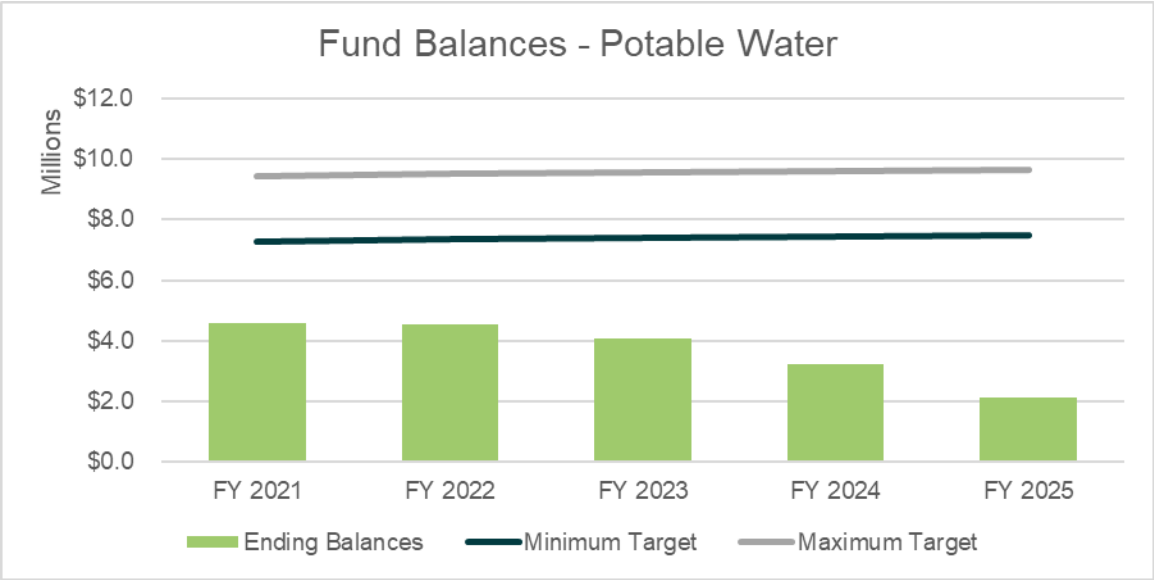


Figure 2-3 shows the water fund balances under the status quo scenario in a graphical format. The fund balances are represented as the green bars; the minimum and maximum reserve targets are represented as the navy and grey lines, respectively. The District’s water funds are below minimum target levels for all years of the study.

Figure 2-3: Potable Water Fund Balances, Status Quo



Proposed Financial Plan

Table 2-15 shows the proposed adjustments to the financial plan.

Table 2-15: Proposed Revenue Adjustments

A	B	C
Line	Proposed Revenue Adjustments	Potable Water
1	FY 2021	6.0%
2	FY 2022	6.0%
3	FY 2023	6.0%
4	FY 2024	4.0%
5	FY 2025	4.0%

Table 2-16 shows the water financial plan with the proposed adjustments. Rate revenues (Line 1) are increased each year by the revenue adjustment percentage (Lines 3-10).

Net cash flow (Line 34) and net revenue (Line 35) are positive for all years of the study, which means that the District's water revenues are sufficient to fund all operating and capital costs. Calculated debt coverage (Line 37) is also above the debt coverage requirement for all years of the study.

Table 2-16: Potable Water Financial Plan, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Potable Water Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 6.0%		\$502,627	\$502,627	\$502,627	\$502,627	\$502,627
6	FY 2022 - 6.0%			\$532,784	\$532,784	\$532,784	\$532,784
7	FY 2023 - 6.0%				\$564,752	\$564,752	\$564,752
8	FY 2024 - 4.0%					\$399,091	\$399,091
9	FY 2025 - 4.0%						\$415,055
10	Total - Revenue Adjustments	\$0	\$502,627	\$1,035,411	\$1,600,163	\$1,999,254	\$2,414,309
11							
12	Revenues						
13	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
14	Revenue Adjustments	\$0	\$502,627	\$1,035,411	\$1,600,163	\$1,999,254	\$2,414,309
15	Other Revenues	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480
16	Interest Earnings	\$14,928	\$46,530	\$55,649	\$66,409	\$77,990	\$90,808
17	Total - Revenues	\$8,533,275	\$9,195,751	\$9,737,654	\$10,313,165	\$10,723,838	\$11,151,710
18							
19	O&M Expenses						
20	Administration	\$773,445	\$796,648	\$820,548	\$845,164	\$870,519	\$896,635
21	Billing and Customer Service	\$480,086	\$494,489	\$509,323	\$524,603	\$540,341	\$556,551
22	Distribution	\$1,602,006	\$1,650,066	\$1,699,568	\$1,750,555	\$1,803,072	\$1,857,164
23	Meters	\$87,495	\$90,120	\$92,823	\$95,608	\$98,476	\$101,431
24	Pumping	\$115,000	\$120,750	\$126,788	\$133,127	\$139,783	\$146,772
25	Supply	\$3,402,736	\$3,695,123	\$3,879,879	\$4,073,873	\$4,277,567	\$4,491,445
26	Total - O&M Expenses	\$6,460,768	\$6,847,196	\$7,128,930	\$7,422,931	\$7,729,759	\$8,049,999
27							
28	Debt and Capital						
29	Existing Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
30	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
31	Rate Funded Capital Projects	\$0	\$731,162	\$760,408	\$942,906	\$980,622	\$905,968
32	Total - Debt and Capital	\$816,435	\$1,547,596	\$1,576,843	\$1,759,341	\$1,797,057	\$1,722,403
33							
34	Net Cash Flow	\$1,256,073	\$800,958	\$1,031,881	\$1,130,894	\$1,197,022	\$1,379,309
35	Net Revenue	\$2,072,507	\$2,348,554	\$2,608,724	\$2,890,235	\$2,994,079	\$3,101,712
36							
37	Calculated Debt Coverage	2.54	2.88	3.20	3.54	3.67	3.80
38	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25

Table 2-17 shows the projected water fund balances with the proposed adjustments. The District's water ending balances (Line 17) are below minimum reserve target levels (Line 18) for the first four years of the study but will meet minimum targets in the last two years. The minimum reserve target is the sum of Lines 22, 23, 24, 26 and the maximum reserve target is the sum of Lines 22, 23, 24, 27.

Table 2-17: Potable Water Fund Balances, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Potable Water Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$3,019,709	\$4,275,782	\$5,076,740	\$6,108,621	\$7,239,515	\$8,436,538
2							
3	Sources of Funds						
4	Rate Revenues	\$8,248,867	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114	\$8,377,114
5	Revenue Adjustments	\$0	\$502,627	\$1,035,411	\$1,600,163	\$1,999,254	\$2,414,309
6	Other Revenues	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480	\$269,480
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0
8	Interest Earnings	\$14,928	\$46,530	\$55,649	\$66,409	\$77,990	\$90,808
9	Total - Sources of Funds	\$8,533,275	\$9,195,751	\$9,737,654	\$10,313,165	\$10,723,838	\$11,151,710
10							
11	Uses of Funds						
12	O&M Expenses	\$6,460,768	\$6,847,196	\$7,128,930	\$7,422,931	\$7,729,759	\$8,049,999
13	Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
14	Capital Projects	\$0	\$731,162	\$760,408	\$942,906	\$980,622	\$905,968
15	Total - Uses of Funds	\$7,277,203	\$8,394,793	\$8,705,772	\$9,182,272	\$9,526,816	\$9,772,402
16							
17	Ending Balance	\$4,275,782	\$5,076,740	\$6,108,621	\$7,239,515	\$8,436,538	\$9,815,847
18	Minimum Reserve Target	\$6,859,425	\$7,391,551	\$7,629,920	\$7,820,770	\$7,942,308	\$8,069,277
19	Maximum Reserve Target	\$8,989,012	\$9,678,856	\$10,050,421	\$10,382,459	\$10,603,770	\$10,834,502
20							
21	Reserve Target						
22	Operating	\$3,230,384	\$3,423,598	\$3,564,465	\$3,711,465	\$3,864,879	\$4,024,999
23	Capital	\$683,020	\$864,213	\$828,519	\$731,180	\$599,532	\$462,617
24	Debt Service	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435	\$816,435
25	Rate Stabilization						
26	Minimum	\$2,129,587	\$2,287,305	\$2,420,501	\$2,561,689	\$2,661,462	\$2,765,226
27	Maximum	\$4,259,174	\$4,574,610	\$4,841,003	\$5,123,378	\$5,322,924	\$5,530,451

Figure 2-4 shows the water financial plan with proposed adjustments in a graphical format. The dotted and solid lines represent the current and proposed revenues, respectively. The stacked bars represent operating, debt, and capital expenses. The green bar shows the annual reserve funding to build water balances over time.

Figure 2-4: Potable Water Financial Plan, Proposed Adjustments

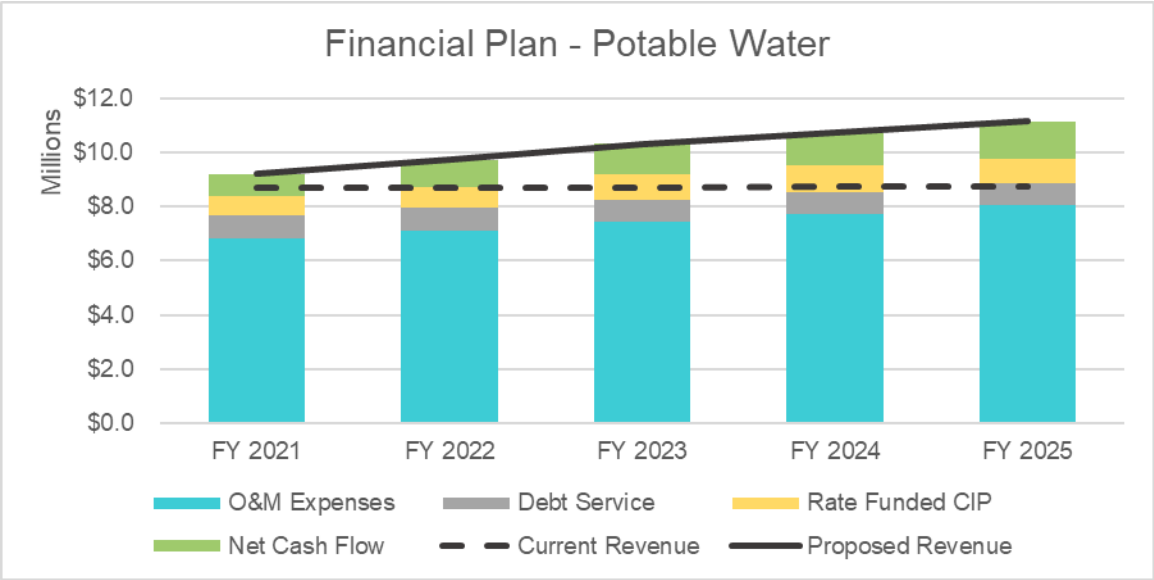


Figure 2-5 shows the water debt coverage under the proposed scenario in a graphical format. Debt coverage is above the required ratio of 1.25 for all years of the study.

Figure 2-5: Potable Water Debt Coverage, Proposed Adjustments

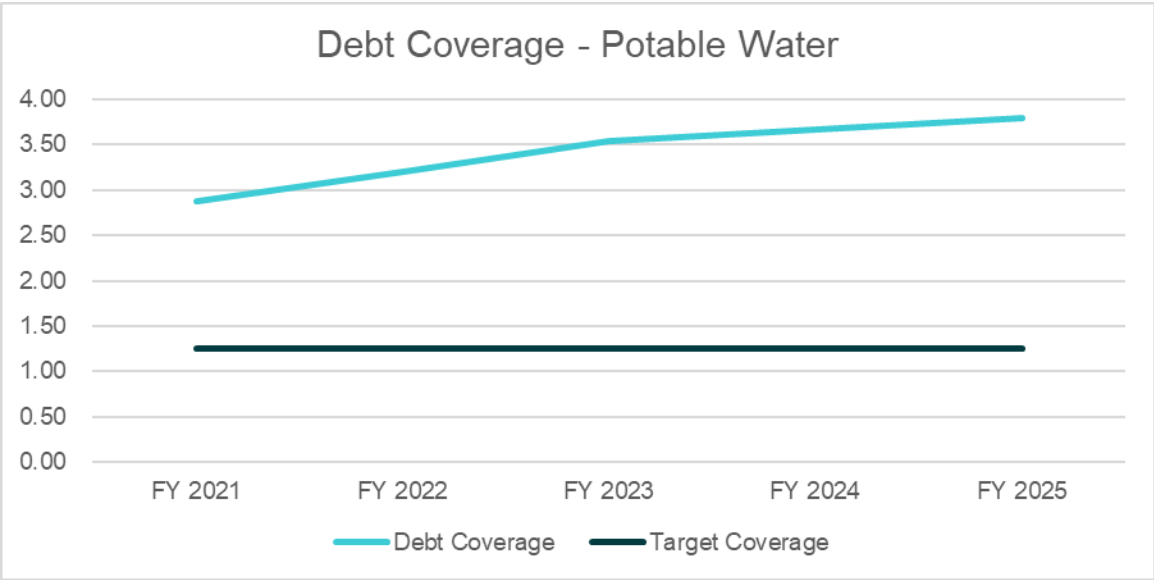
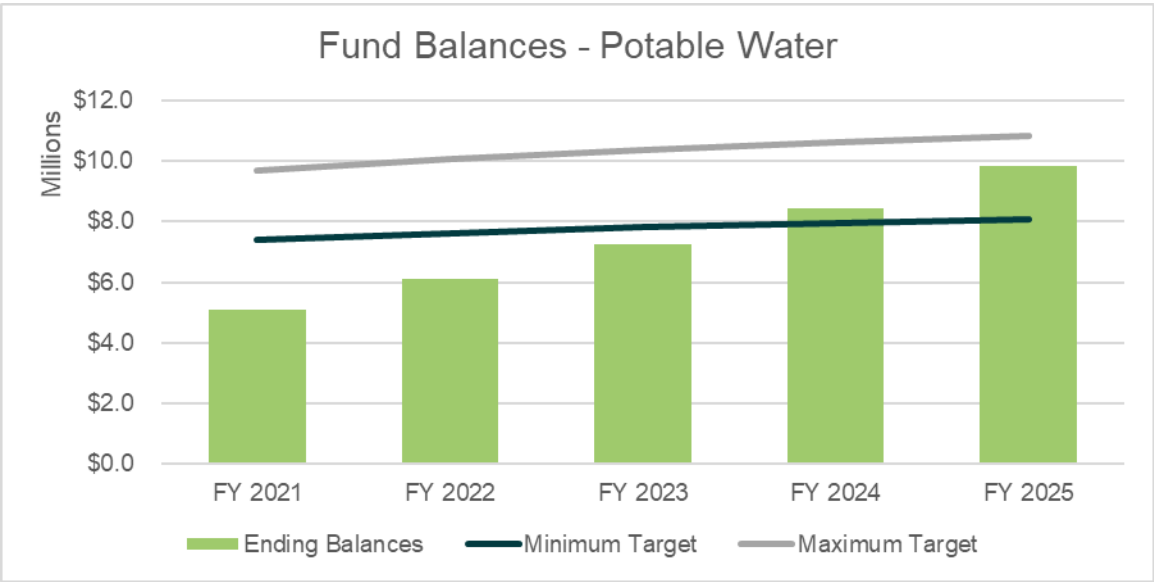


Figure 2-6 shows the water fund balances with the proposed adjustments. The green bars, which represent the water reserves, are above minimum reserve targets beginning in FY 2024.

Figure 2-6: Potable Water Fund Balances, Proposed Adjustments



3. Water Cost of Service Analysis and Rate Design

This section of the report details the cost of service analysis and rate design process for the proposed water rates. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report. All rates shown in this section are rounded up to the nearest cent.

Proposed Adjustments

Table 3-1 shows the proposed revenue adjustments from the water financial plan.

Table 3-1: Proposed Revenue Adjustments

A	B	C
Line	Proposed Revenue Adjustments	Potable Water
1	FY 2021	6.0%
2	FY 2022	6.0%
3	FY 2023	6.0%
4	FY 2024	4.0%
5	FY 2025	4.0%

Process and Approach

The first step in the cost of service analysis process is to determine the revenue requirement, which is based on the results of the financial plan and the proposed revenue adjustments. The framework and methodology utilized to develop the cost of service analysis and apportion the revenue requirement to each customer class and tier is informed by the processes outlined in the M1 Manual.

Cost of service analyses are tailored specifically to meet the unique needs of each utility. However, there are four distinct steps in every analysis to recover costs from customer classes in an accurate, equitable, and defensible manner:

1. Cost functionalization – O&M expenses and capital expenditures are categorized by their function in the system. Functions include supply, transmission, distribution, meters, customer service, billing, etc.
2. Cost causation component allocation – the functionalized costs are then allocated to cost causation components based on their burden on the system. The cost causation components include supply, peaking, delivery, meter, customer, etc. The revenue requirement is allocated accordingly to the cost causation components and results in the total revenue requirement for each cost causation component.
3. Unit cost development – the revenue requirement for each cost causation component is divided by the appropriate units of service such as total usage, peaking units, equivalent meters, number of customers, etc. for all customers and dividing the cost causation component costs by the respective service units to determine the unit cost for each cost causation component.
4. Revenue requirement distribution – the unit costs are utilized to distribute the revenue requirement for each cost causation component to customers and tiers based on their service units.

Cost Causation Components

The cost components used in this study are:

- » Base (Delivery) – represents costs of delivering and supplying water to customers under average daily demand conditions
- » Peaking (Max Day and Max Hour) – represents the costs of delivering water to customer at peak capacity and peak times of use
- » Meters – represents costs of servicing, installing, and replacing meters and capacity in the system
- » Billing – represents the costs of customer service staff, billing, and collections
- » Fire Protection – represents costs of providing fire protection service
- » Conservation – represents the costs of the District’s water conservation program
- » General – represents all other costs that have a general or administrative function

Revenue Requirement

Table 3-2 shows the District’s revenue requirement for the rate-setting year, which for this study is FY 2021. The gross revenue requirements, also known as costs, are equal to the O&M expenses, debt service, and rate-funded capital project costs shown in the financial plan (**Table 2-16**). Revenue offsets, also known as non-rate revenues, are subtracted from the gross revenue requirement. Finally, an adjustment for cash balance, which is equal to the net cash flow for FY 2021, is also included to determine the net revenue requirement.

Table 3-2: Revenue Requirement Derivation

A	B	C	D	E
Line	Revenue Requirement	Operating	Capital	Total
1	Gross Revenue Requirement			
2	O&M Expenses	\$3,152,073	\$0	\$3,152,073
3	Purchased Water	\$3,695,123	\$0	\$3,695,123
4	Debt Service	\$0	\$816,435	\$816,435
5	Rate Funded Capital Projects	\$0	\$731,162	\$731,162
6	Total - Gross Revenue Requirement	\$6,847,196	\$1,547,596	\$8,394,793
7				
8	Revenue Offsets			
9	Revenue-Other	(\$269,480)	\$0	(\$269,480)
10	Interest and Investment Earnings	(\$46,530)	\$0	(\$46,530)
11	Total Revenue Offsets	(\$316,010)	\$0	(\$316,010)
12				
13	Adjustments			
14	To Cash Balance	\$800,958	\$0	\$800,958
15	Total Adjustments	\$800,958	\$0	\$800,958
16				
17	Net Revenue Requirement	\$7,332,144	\$1,547,596	\$8,879,741

Peaking Factors

Table 3-3 shows the system-wide peaking factors used to derive the cost component allocation bases for Base (Delivery), Max Day, and Max Hour costs. Base represents average daily demand during the year, which has been normalized to a factor of 1.00 (Column C, Line 1). District staff provided Max Day and Max Hour peaking factors. The Max Day peaking factor (Column C, Line 2) shows that the system-wide Max Day demand is 2.00 times greater than the average daily demand. The Max Hour peaking factor (Column C, Line 3) signifies that the system-wide Max Hour demand is 3.25 times greater than average demand. The allocation bases (Columns D to F) are calculated using the equations outlined in this section. Columns are represented in these equations as letters and rows are represented as numbers. For example, Column D, Line 2 is shown as D2.

The Max Day allocations are calculated as follows:

- » Base Delivery: $C1 / C2 \times 100\% = D2$
- » Max Day: $(C2 - C1) / C2 \times 100\% = E2$

The Max Hour allocations are calculated as follows:

- » Base Delivery: $C1 / C3 \times 100\% = D3$
- » Max Day: $(C2 - C1) / C3 \times 100\% = E3$
- » Max Hour: $(C3 - C2) / C3 \times 100\% = F3$

The average between Max Day and Max Hour (Line 4) is equal to the average of the allocation bases for Max Day (Columns D to F, Line 2) and Max Hour (Columns D to F, Line 3).

Table 3-3: System-Wide Peaking Factors

A	B	C	D	E	F	G
Line	Peaking Factors	Factor	Base	Max Day	Max Hour	Total
1	Base	1.00	100%			100%
2	Max Day	2.00	50%	50%		100%
3	Max Hour	3.25	31%	31%	38%	100%
4	Average Max Day/Hour		40%	40%	19%	100%

Table 3-4 shows the tiered peaking factors for all customer classes. The tiered peaking factors are based on the maximum monthly usage divided by average monthly usage for all tiers. The maximum month peaking factor is used as a proxy for the tiered Max Day peaking factors. Tiered Max Hour peaking factors are derived by multiplying the Max Day peaking factor by the proportion of the system-wide Max Hour and Max Day peaking factors.

Table 3-4: Tiered Peaking Factors

A	B	C	D
Line	Customer Class	Max Day	Max Hour
1	All Classes		
2	Tier 1	1.05	1.71
3	Tier 2	1.47	2.39
4	Tier 3	2.18	3.54

Table 3-5 shows the calculation of additional capacity required to meet Max Day and Max Hour demands of each tier. Annual use (**Table 2-3**) is converted to average daily use, assuming 365 days in a year. Max Day total capacity is calculated by multiplying the Max Day capacity factor by average daily use. Max Day extra capacity is equal to Max Day total capacity less average daily use. Max Hour total capacity is calculated by multiplying the Max Hour capacity factor by average daily use. Max Hour extra capacity is equal to Max Hour total capacity less Max Day total capacity.

Table 3-5: Water Usage and Capacity

A	B	C	D	E	F	G	H	I	J	K
Line	Customer Class	Monthly Tiers (hcf)	Annual Use (hcf)	Average Daily Use (hcf/day)	Max Day Capacity Factor	Max Day Total Capacity (hcf/day)	Max Day Extra Capacity (hcf/day)	Max Hour Capacity Factor	Max Hour Total Capacity (hcf/day)	Max Hour Extra Capacity (hcf/day)
1	All Classes									
2	Tier 1	7	327,493	897	1.05	942	45	1.71	1,531	589
3	Tier 2	28	376,343	1,031	1.47	1,516	485	2.39	2,463	947
4	Tier 3	28+	149,418	409	2.18	892	483	3.54	1,450	558
5	Total		853,254	2,338		3,350	1,013		5,444	2,094

Equivalent Meters

Equivalent meter units (EMUs) are used to allocate meter-related costs appropriately and equitably. Larger meters have the capacity to impose larger demands on the system and are more expensive to install, maintain, and replace than smaller meters. Equivalent meter units are based on meter hydraulic capacity and are calculated to represent the potential demand on the water system compared to a base meter size. A ratio of hydraulic capacity is calculated by dividing larger meter capacities by the base meter capacity. The base meter in this study is the 3/4 inch meter, which is also the most common meter size.

Table 3-6 shows the equivalent meters for FY 2021. The capacity in gallons per minute (gpm) is based on the hydraulic capacity for each meter size provided in the M1 Manual. The capacity ratios are calculated by dividing the capacity in gpm for each meter size by the capacity in gpm for the 3/4 inch meter. Equivalent meters are calculated by multiplying the capacity ratio by the number of total meters (**Table 2-2**) for each meter size.

Table 3-6: Equivalent Meters

A	B	C	D	E	F
Line	Meter Size	Capacity (gpm)	Capacity Ratio	Total Meters	Equivalent Meters
1	3/4"	30	1.00	4,877	4,877
2	1"	50	1.67	63	105
3	1 1/2"	100	3.33	22	73
4	2"	160	5.33	198	1,056
5	3"	350	11.67	6	70
6	4"	630	21.00	3	63
7	6"	1,400	46.67	0	0
8	Total			5,169	6,244

Operating and Capital Allocations

Table 3-7 shows the allocation of each functionalized cost to the cost causation components based on the requirements of each function. For example, transmission and treatment facilities are designed to withstand Max Day capacity whereas distribution systems are designed for peak capacity (Max Hour with fire). Storage (reservoirs) are designed for Max Day with fire. The functional allocations reflect the design and maintenance requirements of each system.

The allocations are as follows:

- » Supply – costs for purchased water costs, entirely to Base
- » Reservoir – costs associated with reservoir maintenance, allocated to Max Day with Fire
- » Pumping – costs associated with pumps, allocated to average Max Day/Hour (**Table 3-3**)
- » Transmission – costs associated with transmission system maintenance, allocated to Max Day (**Table 3-3**)
- » Treatment – costs associated with treatment facility maintenance, allocated to Max Day (**Table 3-3**)
- » Distribution – costs associated with distribution system maintenance, allocated to Max Hour with Fire
- » Meters – costs associated with installing and maintaining meters, entirely to Meters
- » Hydrants – costs associated with public fire hydrants, entire to Fire Protection
- » Customer – costs associated with customer service and meter reading, allocated to Meters and Billing
- » Conservation – costs associated with the conservation program, entirely to Conservation
- » General – general and administrative costs, entirely to General
- » Revenue Offset – revenue offsets/non-rate revenues, entirely to Revenue Offsets

Table 3-8 and **Table 3-9** show the O&M expenses (**Table 3-2**) and capital assets (provided by District staff) allocated to each cost component based on the functional cost allocation. The resulting Operating and Capital allocation percentages are used to allocate the operating and capital revenue requirements to each cost component.

Table 3-7: Functional Cost Allocation

A	B	C	D	E	F	G	H	I	J	K
Line	Functional Allocation	Base	Max Day	Max Hour	Meters	Billing	Fire Protection	Conser- vation	General	Revenue Offset
1	Supply	100%								
2	Reservoir	43%	43%				15%			
3	Pumping	40%	40%	19%						
4	Transmission	50%	50%							
5	Treatment	50%	50%							
6	Distribution	26%	26%	33%			15%			
7	Meters				100%					
8	Hydrants						100%			
9	Customer				40%	60%				
10	Conservation							100%		
11	General								100%	
12	Revenue Offset									100%

Table 3-8: Operating Expense Allocation

A	B	C	D	E	F	G	H	I	J	K	L	M
Line	O&M Expense Allocation	Function	Base	Max Day	Max Hour	Meters	Billing	Fire Protection	Conser- vation	General	Revenue Offset	Total
1	Percent Allocation											
2	Supply	Supply	100%									100%
3	Pumping	Pumping	40%	40%	19%							100%
4	Distribution	Distribution	26%	26%	33%			15%				100%
5	Meters	Meters				100%						100%
6	Billing and Customer Service	Customer				40%	60%					100%
7	Conservation	Conservation							100%			100%
8	Administration	General								100%		100%
9	Dollar Allocation											
10	Supply	Supply	\$3,695,123									\$3,695,123
11	Pumping	T&D	\$48,764	\$48,764	\$23,221							\$120,750
12	Distribution	Distribution	\$431,556	\$431,556	\$539,445			\$247,510				\$1,650,066
13	Meters	Meters				\$90,120						\$90,120
14	Billing and Customer Service	Customer				\$197,796	\$296,693					\$494,489
15	Conservation	Conservation							\$39,506			\$39,506
16	Administration	General								\$757,143		\$757,143
17	Total - O&M Expenses		\$4,175,443	\$480,320	\$562,666	\$287,915	\$296,693	\$247,510	\$39,506	\$757,143	\$0	\$6,847,196
18	Operating Allocation		61%	7%	8%	4%	4%	4%	1%	11%	0%	100%

Table 3-9: Capital Asset Allocation

A	B	C	D	E	F	G	H	I	J	K	L	M
Line	Capital Asset Allocation	Function	Base	Max Day	Max Hour	Meters	Billing	Fire Protection	Conser- vation	General	Revenue Offset	Total
1	Percent Allocation											
2	Treatment	Treatment	50%	50%								100%
3	Reservoir	Reservoir	43%	43%				15%				100%
4	Distribution	Distribution	26%	26%	33%			15%				100%
5	Transmission	Transmission	50%	50%								100%
6	Meters	Meters				100%						100%
7	General	General								100%		100%
8	Wells	Supply	100%									100%
9	Fire	Hydrants						100%				100%
10	Land	General								100%		100%
11	Dollar Allocation											
12	Treatment	Treatment	\$0	\$0								\$0
13	Reservoir	Reservoir	\$1,096,222	\$1,096,222				\$386,902				\$2,579,345
14	Distribution	Distribution	\$4,178,181	\$4,178,181	\$5,222,727			\$2,396,310				\$15,975,399
15	Transmission	Transmission	\$24,962	\$24,962								\$49,924
16	Meters	Meters				\$2,213,026						\$2,213,026
17	General	General								\$153,423		\$153,423
18	Wells	Supply	\$0									\$0
19	Fire	Hydrants						\$532,488				\$532,488
20	Land	General								\$2,642		\$2,642
21	Total - Capital Assets		\$5,299,365	\$5,299,365	\$5,222,727	\$2,213,026	\$0	\$3,315,699	\$0	\$156,065	\$0	\$21,506,246
22	Capital Allocation		25%	25%	24%	10%	0%	15%	0%	1%	0%	100%

Adjusted Cost of Service

Table 3-10 shows the cost of service allocation to each cost component. Operating expenses and reserve funding (Lines 1-2) are allocated using the operating cost allocation percentage (**Table 3-8**, Line 18). Capital expenses (Line 3) are allocated using the capital asset allocation percentage (**Table 3-9**, Line 22). General costs are reallocated (Line 6) to each cost component based on the proportion of costs within each component in the initial cost of service allocation (Line 5) to derive the adjusted cost allocation, excluding revenue offsets. Revenue offsets are specific non-rate revenues and are not a function of general costs. Please note that the total cost of service is equal to the total revenue required from rates (**Table 3-2**).

Table 3-11 shows the adjustments to the cost of service allocation for each cost component. The cost components are separated into two different rate components: those associated with fixed charges (monthly service charge) and variable charges (quantity rates). A portion of Max Day and Max Hour costs are reallocated to Meters. Capacity in the water system required to meet peak demand is, to some extent, a function of the meter capacities. Each meter size can demand up to its total capacity (**Table 3-6**, Column C) at any given time, thus requiring the District's water system to be sized accordingly. Therefore, a portion of peaking costs are reallocated to Meters to represent capacity-related costs. Fire protection costs represent the costs of the public fire protection system (public hydrants) and are allocated entirely to Meters. Public fire service is a benefit shared by all customers and connections to the water system.

Table 3-10: Cost of Service Allocation

A	B	C	D	E	F	G	H	I	J	K	L
Line	Cost of Service Allocation	Base	Max Day	Max Hour	Meters	Billing	Fire Protection	Conser- vation	General	Revenue Offset	Total
1	Operating Expenses	\$4,175,443	\$480,320	\$562,666	\$287,915	\$296,693	\$247,510	\$39,506	\$757,143	\$0	\$6,847,196
2	Operating Reserve Funding	\$488,427	\$56,186	\$65,818	\$33,679	\$34,706	\$28,953	\$4,621	\$88,568	\$0	\$800,958
3	Capital Expenses	\$381,344	\$381,344	\$375,829	\$159,250	\$0	\$238,599	\$0	\$11,230	\$0	\$1,547,596
4	Revenue Offsets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$316,010)	(\$316,010)
5	Total - Cost of Service	\$5,045,214	\$917,850	\$1,004,313	\$480,845	\$331,399	\$515,061	\$44,127	\$856,941	(\$316,010)	\$8,879,741
6	Allocation of General Costs	\$518,473	\$94,323	\$103,209	\$49,414	\$34,056	\$52,930	\$4,535	(\$856,941)	\$0	\$0
7	Total - Adjusted Cost of Service	\$5,563,688	\$1,012,173	\$1,107,522	\$530,259	\$365,456	\$567,992	\$48,662	\$0	(\$316,010)	\$8,879,741

Table 3-11: Cost of Service Adjustments

A	B	C	D	E	F	G	H	I	J	K	L
Line	Cost Components	Fixed/ Variable Rate	Base	Max Day	Max Hour	Meters	Billing	Fire Protection	Conser- vation	Revenue Offset	Total
1	Percent Allocation										
2	Base	Variable	100%								100%
3	Max Day	Variable		55%		45%					100%
4	Max Hour	Variable			60%	40%					100%
5	Meters	Fixed				100%					100%
6	Billing	Fixed					100%				100%
7	Fire Protection	Fixed				100%					100%
8	Conservation	Variable							100%		100%
9	Revenue Offsets	Variable								100%	100%
10	Dollar Allocation										
11	Base	Variable	\$5,563,688								\$5,563,688
12	Max Day	Variable		\$556,695		\$455,478					\$1,012,173
13	Max Hour	Variable			\$664,513	\$443,009					\$1,107,522
14	Meters	Fixed				\$530,259					\$530,259
15	Billing	Fixed					\$365,456				\$365,456
16	Fire Protection	Fixed				\$567,992					\$567,992
17	Conservation	Variable							\$48,662		\$48,662
18	Revenue Offsets	Variable								(\$316,010)	(\$316,010)
19	Total - Cost Components		\$5,563,688	\$556,695	\$664,513	\$1,996,738	\$365,456	\$0	\$48,662	(\$316,010)	\$8,879,741

Unit Cost Derivation

Table 3-12 shows the unit cost derivation for each of the cost components. The adjusted cost of service (Table 3-11) is divided by the units of service for each component to derive the unit cost. Base and Conservation costs are divided between annual use for all classes and tiers (**Table 3-5**, Column D). Max Day costs are divided by Max Day extra capacity (**Table 3-5**, Column H). Max Hour costs are divided by Max Hour extra capacity (**Table 3-5**, Column K). Meter costs are divided by EMUs (**Table 3-6**, Column F). Billing costs are divided by annual bills (**Table 3-6**, Column E x 12 months).

Table 3-12: Unit Cost Derivation

A	B	C	D	E	F	G	H	I	J
Line	Cost Components	Base	Max Day	Max Hour	Meters	Billing	Conser- vation	Revenue Offset	Total
1	Cost of Service	\$5,563,688	\$556,695	\$664,513	\$1,996,738	\$365,456	\$48,662	(\$316,010)	\$8,879,741
2									
3	Units of Service	853,254	1,013	2,094	6,244	62,028	853,254		
4		hcf	hcf/day	hcf/day	EMU	bills/yr	hcf		
5									
6	Unit Cost	\$6.52	\$549.81	\$317.36	\$319.77	\$5.89	\$0.06		
7		hcf	hcf/day	hcf/day	EMU	bill	hcf		

Revenue Requirement Distribution

Table 3-13 shows the revenue requirement distribution. The revenue requirement, or cost of service, is allocated between fixed rates, variable rates, and revenue offsets. Fixed rate revenue requirements are used to calculate the monthly service charges. Variable rate revenue requirements are used to calculate the quantity rate. Revenue offsets are allocated to rate components separately. Please note that the total revenue requirement is equal to the net revenue requirement (**Table 3-2**).

Table 3-13: Revenue Requirement Distribution

A	B	C	D	E	F	G	H	I	J
Line	Cost of Service Allocation	Base	Max Day	Max Hour	Meters	Billing	Conser- vation	Revenue Offset	Total
1	Fixed Rates								
2	Meters				\$1,996,738				\$1,996,738
3	Billing					\$365,456			\$365,456
4									
5	Variable Rates								
6	Tier 1	\$2,135,435	\$24,666	\$186,866			\$18,677		\$2,365,645
7	Tier 2	\$2,453,966	\$266,443	\$300,636			\$21,463		\$3,042,508
8	Tier 3	\$974,287	\$265,587	\$177,010			\$8,521		\$1,425,405
9									
10	Revenue Offsets							(\$316,010)	(\$316,010)
11									
12	Total – Revenue Requirement	\$5,563,688	\$556,695	\$664,513	\$1,996,738	\$365,456	\$48,662	(\$316,010)	\$8,879,741

Revenue Offset Allocation

Revenue offsets are non-rate revenues that are not derived specifically from any one class of customers. The District can use these revenues at its discretion to offset certain rates to reduce customer impacts. **Table 3-14** shows the revenue offset allocation to each rate component. A portion of offsets are allocated between fixed and variable rates. The revenue offsets for the fixed rate component is allocated entirely to the 3/4 inch meter to maintain affordability for residential users. The revenue offsets for the variable rate component are allocated to each tier, with the largest number of offsets going to Tier 1 and the least amount of offsets going to Tier 3 to maintain affordability for essential indoor water use. The revenue offsets (Column D) are divided by the units of service for each rate component to derive the unit cost.

Table 3-14: Revenue Offset Allocation

A	B	C	D	E	F	G
Line	Revenue Offset Allocation	Allocation	Revenue Offsets	Units of Service	Units	Unit Cost
1	Fixed Rates	17%	(\$53,722)	58,524	bills per year, 3/4"	(\$0.92)
2						
3	Variable Rates					
4	Tier 1	36%	(\$112,784)	327,493	hcf in Tier 1	(\$0.35)
5	Tier 2	34%	(\$107,538)	376,343	hcf in Tier 2	(\$0.29)
6	Tier 3	13%	(\$41,966)	149,418	hcf in Tier 3	(\$0.29)
7						
8	Total - Revenue Offsets	100%	(\$316,010)			

Monthly Service Charge Calculation

Table 3-15 shows the monthly service charge calculation, which consists of the Meters, Billing, and Revenue Offset components. The Meters cost component is derived based on EMUs. The Meters unit cost (**Table 3-13**) is multiplied by the capacity ratio for each meter size to appropriately reflect the share of cost by meter size. Billing cost does not vary with meter size and therefore the Billing unit cost (**Table 3-13**) is applied uniformly across all meter sizes. The Revenue Offset component (**Table 3-14**) is allocated to the 3/4 inch meter size only. These components are added together to arrive at the total cost of service (COS) charge for FY 2021.

Table 3-15: Monthly Service Charge Calculation

A	B	C	D	E	F	G	H	I	J
Line	Meter Size	Capacity Ratio	Number of Meters	Meters	Billing	Revenue Offset	COS Charge	Current Charge	Difference (\$)
1	3/4"	1.00	4,877	\$26.65	\$5.89	(\$0.92)	\$31.62	\$29.74	\$1.88
2	1"	1.67	63	\$44.41	\$5.89	\$0.00	\$50.31	\$46.94	\$3.37
3	1 1/2"	3.33	22	\$88.82	\$5.89	\$0.00	\$94.72	\$89.99	\$4.73
4	2"	5.33	198	\$142.12	\$5.89	\$0.00	\$148.02	\$141.64	\$6.38
5	3"	11.67	6	\$310.89	\$5.89	\$0.00	\$316.78	\$305.20	\$11.58
6	4"	21.00	3	\$559.59	\$5.89	\$0.00	\$565.49	\$546.23	\$19.26
7	6"	46.67	0	\$1,243.54	\$5.89	\$0.00	\$1,249.44	\$1,209.09	\$40.35

Quantity Rate Calculation

Table 3-16 shows the unit cost calculation for the Base cost component. Base costs (**Table 3-13**, Column C) are divided by the annual use for each tier to derive the Base unit cost.

Table 3-16: Base Unit Cost Calculation

A	B	C	D	E
Line	Customer Class	Base	Annual Use (hcf)	Unit Cost
1	All Classes			
2	Tier 1	\$2,135,435	327,493	\$6.53
3	Tier 2	\$2,453,966	376,343	\$6.53
4	Tier 3	\$974,287	149,418	\$6.53

Table 3-17 shows the unit cost calculation for the Max Day cost component. Max Day costs (**Table 3-13**, Column D) are divided by the annual use for each tier to derive the Max Day unit cost.

Table 3-17: Max Day Unit Cost Calculation

A	B	C	D	E
Line	Customer Class	Max Day	Annual Use (hcf)	Unit Cost
1	All Classes			
2	Tier 1	\$24,666	327,493	\$0.08
3	Tier 2	\$266,443	376,343	\$0.71
4	Tier 3	\$265,587	149,418	\$1.78

Table 3-18 shows the unit cost calculation for the Max Hour cost component. Max Hour costs (**Table 3-13**, Column E) are divided by the annual use for each tier to derive the Max Hour unit cost.

Table 3-18: Max Hour Unit Cost Calculation

A	B	C	D	E
Line	Customer Class	Max Hour	Annual Use (hcf)	Unit Cost
1	All Classes			
2	Tier 1	\$186,866	327,493	\$0.58
3	Tier 2	\$300,636	376,343	\$0.80
4	Tier 3	\$177,010	149,418	\$1.19

Table 3-19 shows the unit cost calculation for the Conservation cost component. Conservation costs (**Table 3-13**, Column H) are entirely allocated to Tier 3, which represents use at the highest levels, thus creating the need for a conservation program. Conservation costs are divided by Tier 3 use to derive the Conservation unit cost.

Table 3-19: Conservation Unit Cost Calculation

A	B	C	D	E
Line	Customer Class	Conser- vation	Annual Use (hcf)	Unit Cost
1	All Classes			
2	Tier 1	\$0	327,493	\$0.00
3	Tier 2	\$0	376,343	\$0.00
4	Tier 3	\$48,662	149,418	\$0.33

Table 3-20 shows the quantity rate calculation. The Base (**Table 3-16**), Max Day (**Table 3-17**), Max Hour (**Table 3-18**), Conservation (**Table 3-19**), and Revenue Offset (**Table 3-14**) components are combined to derive the COS charge for FY 2021.

Table 3-20: Quantity Rate Calculation

A	B	C	D	E	F	G	H	I	J
Line	Customer Class	Base	Max Day	Max Hour	Conser- vation	Revenue Offset	COS Charge	Current Charge	Difference (\$)
1	All Classes								
2	Tier 1	\$6.53	\$0.08	\$0.58	\$0.00	(\$0.35)	\$6.84	\$6.45	\$0.39
3	Tier 2	\$6.53	\$0.71	\$0.80	\$0.00	(\$0.29)	\$7.75	\$7.31	\$0.44
4	Tier 3	\$6.53	\$1.78	\$1.19	\$0.33	(\$0.29)	\$9.54	\$8.94	\$0.60

Rates for Implementation

The District's Board of Directors has opted to adopt the water rates shown in **Table 3-21** for FY 2021 to reduce impacts to its water customers. The Board has discretion to adopt rates that are equal to or less than the COS charges calculated in this study. The implemented rates will result in slightly lower rate revenues, which will be offset by the water fund balances. With these rates, the District will still be able to fund all operating and capital costs, meet debt service requirements, and maintain an adequate level of reserves based on its robust financial policy.

Table 3-21: Water Rates for Implementation

A	B	C
Line	Potable Water Rates	FY 2021
1	Monthly Service Charge	
2	3/4 inch	\$31.53
3	1 inch	\$49.76
4	1-1/2 inch	\$94.72
5	2 inch	\$148.02
6	3 inch	\$316.78
7	4 inch	\$565.49
8	6 inch	\$1,249.44
9		
10	Quantity Rates (\$/hcf)	
11	Tier 1 (7 hcf)	\$6.84
12	Tier 2 (28 hcf)	\$7.75
13	Tier 3 (28+ hcf)	\$9.48

Customer Impacts

Table 3-22 shows the monthly bill impacts (based on rates for implementation in **Table 3-21**) for a water customer with a 3/4 inch meter at various levels of usage. The average water customer with a 3/4 inch meter using 14 hcf of water per month will see an increase of \$7.60 per month.

Table 3-22: Water Customer Bill Impacts, 3/4 inch

A	B	C	D	E
Line	Water Bill Impacts	Current Bill	Proposed Bill	Monthly Impact
1	5 hcf	\$61.99	\$65.73	\$3.74
2	7 hcf	\$74.89	\$79.41	\$4.52
3	14 hcf (average)	\$126.06	\$133.66	\$7.60
4	25 hcf	\$206.47	\$218.91	\$12.44
5	50 hcf	\$425.08	\$450.72	\$25.64

Proposed Rates

Table 3-23 shows the proposed water rates for the study period. The rates are proposed to be implemented on July 1, 2020 and in July of every year thereafter. The first year of rates shown is from **Table 3-21**. All subsequent years' rates (from FY 2022 and beyond) are calculated by increasing the previous years' rates by the proposed revenue adjustments in **Table 3-1**.

Table 3-23: Proposed Water Rates

A	B	C	D	E	F	G
Line	Potable Water Rates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	3/4 inch	\$31.53	\$33.43	\$35.44	\$36.86	\$38.34
3	1 inch	\$49.76	\$52.75	\$55.92	\$58.16	\$60.49
4	1-1/2 inch	\$94.72	\$100.41	\$106.44	\$110.70	\$115.13
5	2 inch	\$148.02	\$156.91	\$166.33	\$172.99	\$179.91
6	3 inch	\$316.78	\$335.79	\$355.94	\$370.18	\$384.99
7	4 inch	\$565.49	\$599.42	\$635.39	\$660.81	\$687.25
8	6 inch	\$1,249.44	\$1,324.41	\$1,403.88	\$1,460.04	\$1,518.45
9						
10	Quantity Rates (\$/hcf)					
11	Tier 1 (7 hcf)	\$6.84	\$7.26	\$7.70	\$8.01	\$8.34
12	Tier 2 (28 hcf)	\$7.75	\$8.22	\$8.72	\$9.07	\$9.44
13	Tier 3 (28+ hcf)	\$9.48	\$10.05	\$10.66	\$11.09	\$11.54

4. Recycled Water Financial Plan

This section of the report discusses the financial plan for the recycled water utility, which includes the O&M expenses, CIP, reserve funding, projected revenue under existing rates, and revenue adjustments needed to ensure the utility's fiscal sustainability and solvency. The budget year, which for this study is FY 2020, is the year from which revenues and expenses are projected for the study period. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report.

Current Rates

The District's current recycled water rates, shown in **Table 4-1**, include a monthly service charge based on meter size for retail customers and a uniform quantity rate for retail and wholesale customers.

Table 4-1: Current Recycled Water Rates

A	B	C
Line	Recycled Water Rates	FY 2020
1	Monthly Service Charge	
2	2 inch	\$153.66
3	3 inch	\$288.09
4	4 inch	\$480.16
5	6 inch	\$960.24
6		
7	Retail Quantity Rates (\$/hcf)	
8	All Usage	\$5.23
9		
10	Wholesale Quantity Rates (\$/AF)	
11	All Usage	\$1,138.40

Customer Data

Table 4-2 and **Table 4-3** show the projected recycled water accounts and usage for each customer class during the study period. District staff provided recycled water accounts and usage data for FY 2019. Growth is not expected for all years of the study, which is reflected in the projections for FY 2020 and beyond.

Table 4-2: Projected Recycled Water Accounts

A	B	C	D	E	F	G	H	I
Line	Recycled Water Accounts	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Recycled Water Retail							
2	2 inch	98	98	98	98	98	98	98
3	3 inch	2	2	2	2	2	2	2
4	4 inch	4	4	4	4	4	4	4
5	6 inch	1	1	1	1	1	1	1
6	Total - Recycled Water Retail	105	105	105	105	105	105	105

Table 4-3: Projected Recycled Water Usage (hcf)

A	B	C	D	E	F	G	H	I
Line	Recycled Water Usage	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Recycled Water Retail							
2	All Usage	355,027	355,027	355,027	355,027	355,027	355,027	355,027
3	Total - Recycled Water Retail	355,027	355,027	355,027	355,027	355,027	355,027	355,027
4								
5	Recycled Water Wholesale							
6	All Usage	184,937	184,937	184,937	184,937	184,937	184,937	184,937
7	Total - Recycled Water Wholesale	184,937	184,937	184,937	184,937	184,937	184,937	184,937
8								
9	Total - Recycled Water Usage	539,964	539,964	539,964	539,964	539,964	539,964	539,964

Revenues

Table 4-4 shows the calculated recycled water revenues for FY 2021 and beyond at current rates. The current rates in Table 4-1 are multiplied by the meter counts in Table 4-2 and 12 months in a year (for the monthly meter charge) and the water usage in Table 4-3 (for the quantity rates) to determine the calculated recycled water rate revenues. Wholesale recycled water usage is converted from hcf to AF⁴ for the revenue calculation.

Table 4-4: Calculated Recycled Water Rate Revenues at Current Rates

A	B	C	D	E	F	G
Line	Recycled Water Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	Recycled Water Retail	\$222,189	\$222,189	\$222,189	\$222,189	\$222,189
3	Total - Monthly Service Charge	\$222,189	\$222,189	\$222,189	\$222,189	\$222,189
4						
5	Quantity Rates					
6	Recycled Water Retail	\$1,856,789	\$1,856,789	\$1,856,789	\$1,856,789	\$1,856,789
7	Recycled Water Wholesale	\$483,316	\$483,316	\$483,316	\$483,316	\$483,316
8	Total - Quantity Rates	\$2,340,105	\$2,340,105	\$2,340,105	\$2,340,105	\$2,340,105
9						
10	Total - Recycled Water Revenues	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294

To project non-rate revenues, such as miscellaneous revenues and interest earnings, Raftelis uses the revenue escalation factors in Table 4-5. Miscellaneous revenues are not inflated for future years, and the reserve interest rate is used to calculate the interest earnings based on the water or recycled water fund balances.

Table 4-5: Revenue Escalation Factors

A	B	C	D	E	F	G
Line	Revenue Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Miscellaneous Revenue	0.0%	0.0%	0.0%	0.0%	0.0%
2	Reserve Interest Rate	1.0%	1.0%	1.0%	1.0%	1.0%

⁴ For the purposes of this study, one AF is approximately 435.6 hcf.

Table 4-6 shows the projected water revenues for the study period. Retail sales (Line 1), wholesale sales (Line 2) and service charge (Line 3) revenues for FY 2021 and beyond are based on the revenue calculation (**Table 4-4**, Lines 3, 6, and 7). Interest earnings (Line 4) is calculated based on the reserve interest rate (Table 4-5, Line 2) and the recycled water fund balance.

Table 4-6: Projected Recycled Water Revenues at Current Rates

A	B	C	D	E	F	G	H
Line	Recycled Water Revenues	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Sales - Retail	\$1,796,435	\$1,856,789	\$1,856,789	\$1,856,789	\$1,856,789	\$1,856,789
2	Sales - Wholesale	\$483,316	\$483,316	\$483,316	\$483,316	\$483,316	\$483,316
3	Service Charges	\$209,281	\$222,189	\$222,189	\$222,189	\$222,189	\$222,189
4	Interest Earnings	\$0	\$37,324	\$39,879	\$42,385	\$44,828	\$47,188
5	Total - Recycled Water Revenues	\$2,489,032	\$2,599,617	\$2,602,172	\$2,604,679	\$2,607,121	\$2,609,482

O&M Expenses

Table 4-7 shows the expense escalation factors used to inflate O&M expenses for future years. These factors were based on input from District staff.

Table 4-7: Expense Escalation Factors

A	B	C	D	E	F	G
Line	Expense Escalation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	General	3.0%	3.0%	3.0%	3.0%	3.0%
2	Salaries	3.0%	3.0%	3.0%	3.0%	3.0%
3	Benefits	3.0%	3.0%	3.0%	3.0%	3.0%
4	Water Supply	5.0%	5.0%	5.0%	5.0%	5.0%
5	Utilities	5.0%	5.0%	5.0%	5.0%	5.0%
6	Capital	4.0%	4.0%	4.0%	4.0%	4.0%

Table 4-8 shows the recycled water production based on demand. Recycled water demand (Line 8) is increased by the water loss percentage (Line 1) to determine the amount of recycled water produced (Line 9). Recycled water demand is equal to that projected in FY 2021 and beyond (**Table 4-3**), converted from hcf to AF. District staff provided the percentage of recycled water purchased for Lake Sherwood and Oak Park (Lines 3-5). The amount of recycled water produced is multiplied by that percentage to determine the amount of recycled water purchased (Lines 11-14).

Table 4-8: Recycled Water Production

A	B	C	D	E	F	G
Line	Recycled Water Production	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Water Loss Percentage	5%	5%	5%	5%	5%
2						
3	Supply Source Proportion					
4	Lake Sherwood	26%	26%	26%	26%	26%
5	Oak Park	74%	74%	74%	74%	74%
6						
7	Water Production (AF)					
8	Demanded	1,240	1,240	1,240	1,240	1,240
9	Produced	1,305	1,305	1,305	1,305	1,305
10						
11	Water Purchased (AF)					
12	Lake Sherwood	340	340	340	340	340
13	Oak Park	965	965	965	965	965
14	Total - Water Purchased (AF)	1,305	1,305	1,305	1,305	1,305

Table 4-9 shows the recycled water supply cost calculation for FY 2021 and beyond. The variable costs (Lines 1-3) were provided by District staff and inflated by the water supply escalation factor in future years (Table 4-7, Line 4). The amount of water purchased (**Table 4-8**, Lines 12-13) is multiplied by the variable costs to determine the recycled water supply cost (Lines 5-8).

Table 4-9: Recycled Water Supply Cost

A	B	C	D	E	F	G
Line	Recycled Water Supply Cost	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Water Supply Variable Costs (\$/AF)					
2	Lake Sherwood	\$523.47	\$549.64	\$577.12	\$605.98	\$636.28
3	Oak Park	\$523.47	\$549.64	\$577.12	\$605.98	\$636.28
4						
5	Recycled Water Supply Costs					
6	Lake Sherwood	\$177,913	\$186,809	\$196,149	\$205,957	\$216,255
7	Oak Park	\$505,121	\$530,377	\$556,896	\$584,741	\$613,978
8	Total - Recycled Water Supply Costs	\$683,034	\$717,186	\$753,045	\$790,697	\$830,232

Table 4-10 shows the projected recycled water O&M expenses. District staff provided the budget for FY 2020; the budgeted values are inflated for future years using the expense escalation factors (Table 4-7). Note that the water purchase cost (Line 23) is equal to the calculated water supply cost (**Table 4-9**, Line 8) for FY 2021 and beyond.

Table 4-10: Projected Recycled Water Expenses

A	B	C	D	E	F	G	H
Line	Recycled Water Expenses	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Administration						
2	Overhead cost allocation	\$210,445	\$216,758	\$223,261	\$229,959	\$236,858	\$243,963
3	Membership and dues	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159
4	Insurance	\$24,287	\$25,016	\$25,767	\$26,540	\$27,336	\$28,156
5	Permits	\$0	\$0	\$0	\$0	\$0	\$0
6	Contract services - VRSD	\$1,889	\$1,946	\$2,005	\$2,065	\$2,127	\$2,190
7	Subtotal - Administration	\$237,622	\$244,751	\$252,093	\$259,656	\$267,446	\$275,469
8							
9	Billing and CS						
10	Professional Services	\$15,210	\$15,666	\$16,136	\$16,620	\$17,119	\$17,633
11	Contract services - VRSD	\$86,203	\$88,790	\$91,453	\$94,197	\$97,023	\$99,933
12	Subtotal - Billing and CS	\$101,413	\$104,456	\$107,589	\$110,817	\$114,142	\$117,566
13							
14	Distribution						
15	Contract services - VRSD	\$157,717	\$162,449	\$167,322	\$172,342	\$177,512	\$182,837
16	Subtotal - Distribution	\$157,717	\$162,449	\$167,322	\$172,342	\$177,512	\$182,837
17							
18	Pumping						
19	Utilities	\$55,000	\$57,750	\$60,638	\$63,669	\$66,853	\$70,195
20	Subtotal - Pumping	\$55,000	\$57,750	\$60,638	\$63,669	\$66,853	\$70,195
21							
22	Supply						
23	Water Purchase	\$714,625	\$683,034	\$717,186	\$753,045	\$790,697	\$830,232
24	Subtotal - Supply	\$714,625	\$683,034	\$717,186	\$753,045	\$790,697	\$830,232
25							
26	Total - Recycled Water Expenses	\$1,266,377	\$1,252,439	\$1,304,828	\$1,359,529	\$1,416,649	\$1,476,300

Debt Service

Table 4-11 shows the existing recycled water debt service, provided by District staff. The District does not expect to incur additional debt for the recycled water enterprise during this study period.

Table 4-11: Existing Recycled Water Debt Service

A	B	C	D	E	F	G	H
Line	Recycled Water Existing Debt	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	2017 Lease Purchase Agreement - Tax Exempt	\$805,346	\$805,346	\$805,346	\$805,346	\$805,346	\$805,346
2	2017 Lease Purchase Agreement - Taxable	\$172,052	\$172,052	\$172,052	\$172,052	\$172,052	\$172,052
3	Total - Recycled Water Existing Debt	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398

Capital Projects

Table 4-12 shows the recycled water CIP for all years of the study. District staff provided capital costs for the study period; these costs are inflated for future years using the capital expense escalation factor (Table 4-7, Line 6). Since the District does not plan to incur additional debt during this study period, all capital costs will be funded by rates.

Table 4-12: Recycled Water Capital Projects

A	B	C	D	E	F	G	H
Line	Recycled Water Capital Projects	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Regency Hills Pump Station	\$0	\$0	\$0	\$0	\$0	\$0
2	Pipeline Rehabilitation	\$0	\$108,160	\$112,486	\$116,986	\$121,665	\$126,532
3	Reservoir Rehabilitation	\$0	\$54,080	\$56,243	\$58,493	\$60,833	\$63,266
4	Total - Recycled Water Capital Projects	\$0	\$162,240	\$168,730	\$175,479	\$182,498	\$189,798

Reserve Policy

The District's existing reserve policy is robust and ensures financial resilience in the face of unexpected events, such as natural disasters, asset failures, or reduced revenues. The reserve policy for recycled water includes the following components:

- » Operating reserve – 50 percent of annual O&M expenses
- » Capital reserve – 5-year average rate-funded CIP costs
- » Debt service – 1 year of annual debt service
- » Rate stabilization reserve – 3 (minimum) to 6 (maximum) months of operating revenues

Reserves allow the District to have better ratings and lower interest rates if it issues debt.

Status Quo Financial Plan

Table 4-13 shows the recycled water financial plan under the status quo or “do nothing” scenario. This scenario shows no additional revenue adjustments. Net cash flow (Line 33) is equal to revenue (Line 17) less O&M expenses (Line 25) and debt and capital costs (Line 31). Net revenue (Line 34) is equal to revenues less O&M expenses. Net revenue, which is positive for all years of the study, shows that the District’s existing recycled water rate revenues are sufficient to fund all O&M expenses. Net cash flow is also positive for the five years of the study. However, the debt coverage ratio (Line 36) falls below the required level in FY 2024.

Rate and miscellaneous revenues (Lines 12-17) are from **Table 4-6**. Note that the interest earnings in the status quo scenario are lower, due to lower fund balances. O&M expenses (Lines 19-25) are from **Table 4-10**. Debt service (Lines 28-29) are from **Table 4-11**. Capital project costs (Line 30) are from **Table 4-12**.

Table 4-13: Recycled Water Financial Plan, Status Quo

A	B	C	D	E	F	G	H
Line	Recycled Water Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 0.0%		\$0	\$0	\$0	\$0	\$0
6	FY 2022 - 0.0%			\$0	\$0	\$0	\$0
7	FY 2023 - 0.0%				\$0	\$0	\$0
8	FY 2024 - 0.0%					\$0	\$0
9	FY 2025 - 0.0%						\$0
10	Total - Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
11							
12	Revenues						
13	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
14	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
15	Other Revenues	\$0	\$0	\$0	\$0	\$0	\$0
16	Interest Earnings	\$0	\$37,068	\$38,846	\$40,041	\$40,619	\$40,548
17	Total - Revenues	\$2,489,032	\$2,599,361	\$2,601,140	\$2,602,334	\$2,602,913	\$2,602,842
18							
19	O&M Expenses						
20	Administration	\$237,622	\$244,751	\$252,093	\$259,656	\$267,446	\$275,469
21	Billing and Customer Service	\$101,413	\$104,456	\$107,589	\$110,817	\$114,142	\$117,566
22	Distribution	\$157,717	\$162,449	\$167,322	\$172,342	\$177,512	\$182,837
23	Pumping	\$55,000	\$57,750	\$60,638	\$63,669	\$66,853	\$70,195
24	Supply	\$714,625	\$683,034	\$717,186	\$753,045	\$790,697	\$830,232
25	Total - O&M Expenses	\$1,266,377	\$1,252,439	\$1,304,828	\$1,359,529	\$1,416,649	\$1,476,300
26							
27	Debt and Capital						
28	Existing Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
29	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
30	Rate Funded Capital Projects	\$0	\$162,240	\$168,730	\$175,479	\$182,498	\$189,798
31	Total - Debt and Capital	\$977,398	\$1,139,638	\$1,146,127	\$1,152,876	\$1,159,896	\$1,167,196
32							
33	Net Cash Flow	\$245,257	\$207,285	\$150,185	\$89,929	\$26,368	(\$40,653)
34	Net Revenue	\$1,222,654	\$1,346,922	\$1,296,312	\$1,242,805	\$1,186,264	\$1,126,542
35							
36	Calculated Debt Coverage	1.25	1.38	1.33	1.27	1.21	1.15
37	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25

Table 4-14 shows the projected recycled water fund balances under the status quo scenario. The recycled water ending balance (Line 17) is above reserve target levels (Line 18-19) for all years of the study. The minimum reserve target is the sum of Lines 22, 23, 24, 26 and the maximum reserve target is the sum of Lines 22, 23, 24, 27.

Table 4-14: Recycled Water Fund Balances, Status Quo

A	B	C	D	E	F	G	H
Line	Recycled Water Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$3,376,391	\$3,621,648	\$3,828,932	\$3,979,117	\$4,069,046	\$4,095,414
2							
3	Sources of Funds						
4	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
5	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
6	Other Revenues	\$0	\$0	\$0	\$0	\$0	\$0
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0
8	Interest Earnings	\$0	\$37,068	\$38,846	\$40,041	\$40,619	\$40,548
9	Total - Sources of Funds	\$2,489,032	\$2,599,361	\$2,601,140	\$2,602,334	\$2,602,913	\$2,602,842
10							
11	Uses of Funds						
12	O&M Expenses	\$1,266,377	\$1,252,439	\$1,304,828	\$1,359,529	\$1,416,649	\$1,476,300
13	Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
14	Capital Projects	\$0	\$162,240	\$168,730	\$175,479	\$182,498	\$189,798
15	Total - Uses of Funds	\$2,243,775	\$2,392,077	\$2,450,955	\$2,512,405	\$2,576,545	\$2,643,495
16							
17	Ending Balance	\$3,621,648	\$3,828,932	\$3,979,117	\$4,069,046	\$4,095,414	\$4,054,760
18	Minimum Reserve Target	\$2,370,634	\$2,419,939	\$2,453,164	\$2,487,826	\$2,523,989	\$2,561,722
19	Maximum Reserve Target	\$2,992,891	\$3,060,513	\$3,093,737	\$3,128,399	\$3,164,563	\$3,202,296
20							
21	Reserve Target						
22	Operating	\$633,189	\$626,219	\$652,414	\$679,765	\$708,325	\$738,150
23	Capital	\$137,789	\$175,749	\$182,779	\$190,090	\$197,694	\$205,601
24	Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
25	Rate Stabilization						
26	Minimum	\$622,258	\$640,573	\$640,573	\$640,573	\$640,573	\$640,573
27	Maximum	\$1,244,516	\$1,281,147	\$1,281,147	\$1,281,147	\$1,281,147	\$1,281,147

Figure 4-1 shows the recycled water financial plan under the status quo scenario in a graphical format. Current revenues are represented as the dotted line; O&M expenses, debt service, and capital expenses are represented as the turquoise, grey, and yellow stacked bars, respectively. The District will add to and draw down its reserves during the study period. The change in reserves is shown as the green bars.

Figure 4-1: Recycled Water Financial Plan, Status Quo

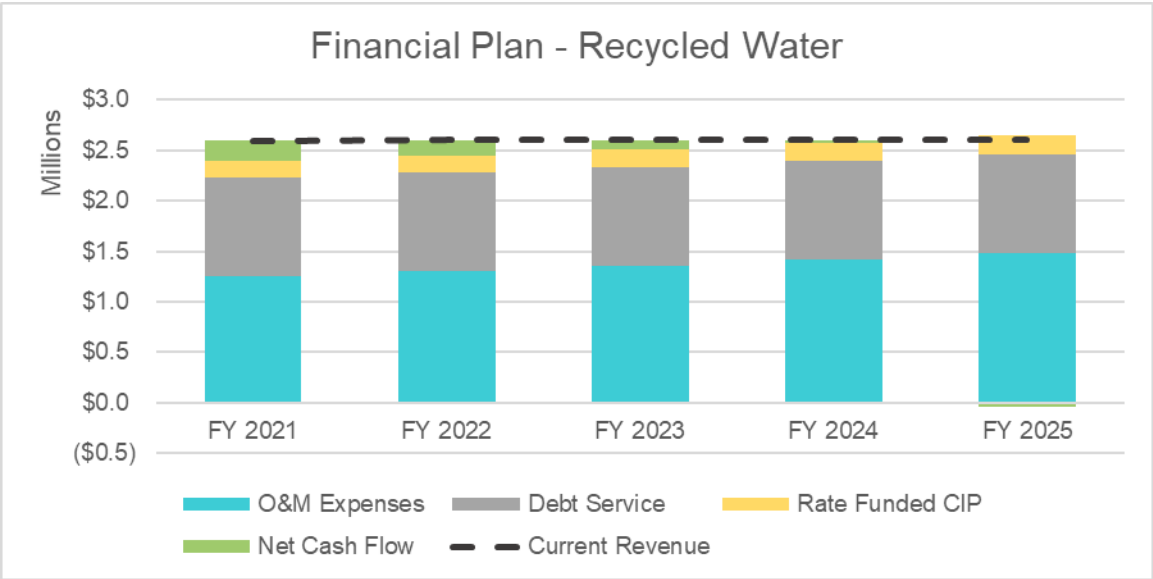


Figure 4-2 shows the recycled water debt coverage under the status quo scenario in a graphical format. The debt coverage ratio falls below the required 1.25 ratio in FY 2024 without additional revenue adjustments.

Figure 4-2: Recycled Water Debt Coverage, Status Quo

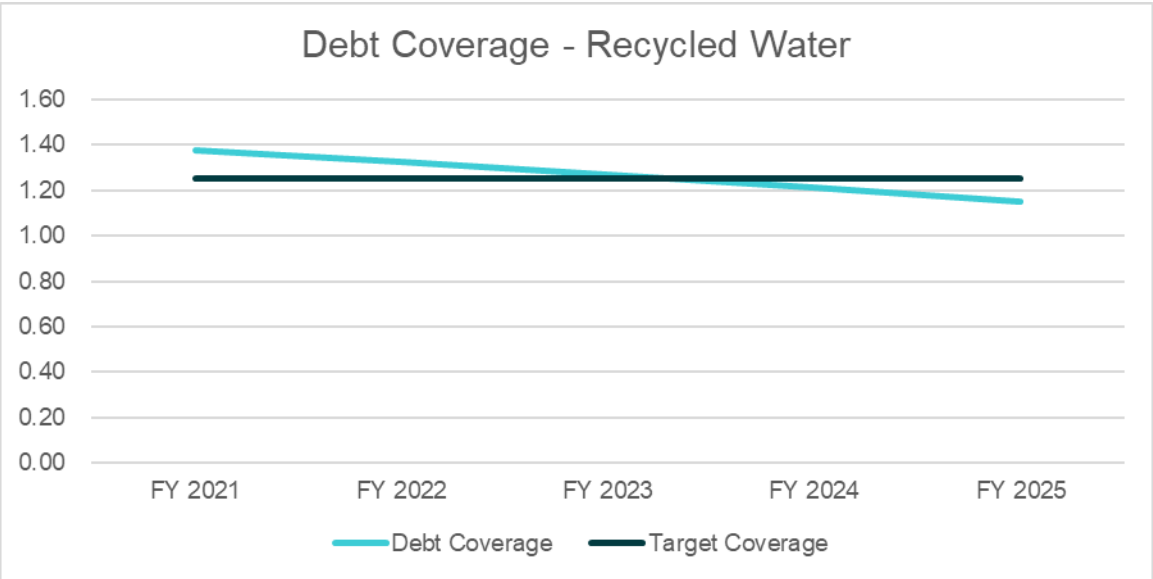
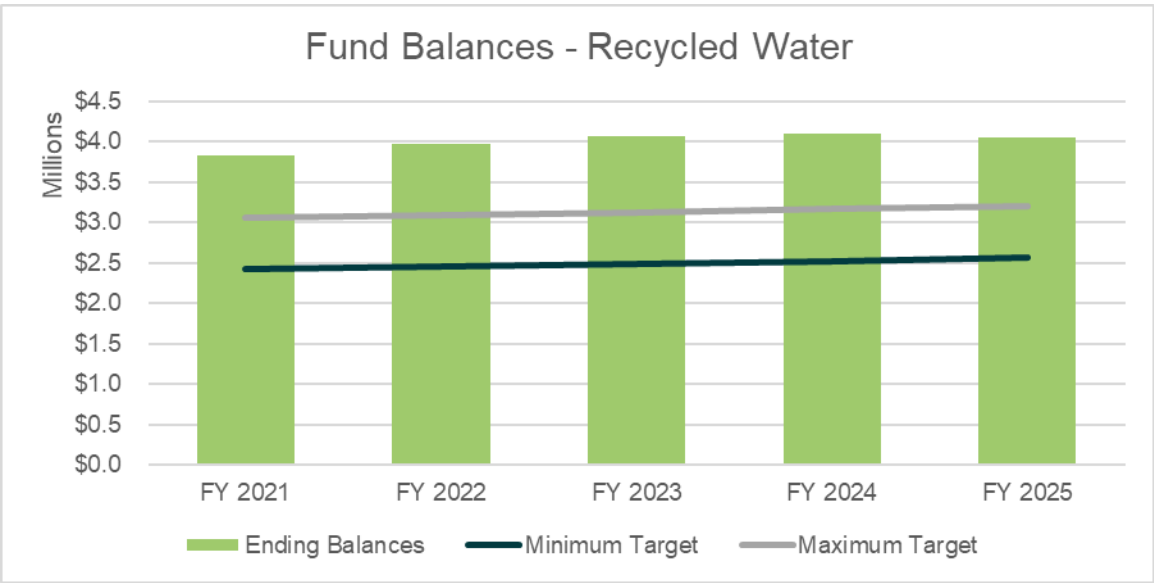


Figure 4-3 shows the recycled water fund balances under the status quo scenario in a graphical format. The fund balances are represented as the green bars; the minimum and maximum reserve targets are represented as the navy and grey lines, respectively. The District’s recycled water funds exceed all reserve targets for all years of the study.

Figure 4-3: Recycled Water Fund Balances, Status Quo



Proposed Financial Plan

Table 4-15 shows the proposed adjustments to the financial plan.

Table 4-15: Proposed Revenue Adjustments

A	B	C
Line	Proposed Revenue Adjustments	Recycled Water
1	FY 2021	2.0%
2	FY 2022	2.0%
3	FY 2023	2.0%
4	FY 2024	2.0%
5	FY 2025	2.0%

Table 4-16 shows the recycled water financial plan with the proposed adjustments. Net cash flow (Line 33) and net revenue (Line 34) are positive for all years of the study, which means that the District's recycled water revenues are sufficient to fund all operating and capital costs. Calculated debt coverage (Line 36) is also above the debt coverage requirement for all years of the study.

Table 4-16: Recycled Water Financial Plan, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Recycled Water Financial Plan	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
2							
3	Revenue Adjustments						
4	FY 2020 - 0.0%	\$0	\$0	\$0	\$0	\$0	\$0
5	FY 2021 - 2.0%		\$51,246	\$51,246	\$51,246	\$51,246	\$51,246
6	FY 2022 - 2.0%			\$52,271	\$52,271	\$52,271	\$52,271
7	FY 2023 - 2.0%				\$53,316	\$53,316	\$53,316
8	FY 2024 - 2.0%					\$54,383	\$54,383
9	FY 2025 - 2.0%						\$55,470
10	Total - Revenue Adjustments	\$0	\$51,246	\$103,517	\$156,833	\$211,215	\$266,686
11							
12	Revenues						
13	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
14	Revenue Adjustments	\$0	\$51,246	\$103,517	\$156,833	\$211,215	\$266,686
15	Other Revenues	\$0	\$0	\$0	\$0	\$0	\$0
16	Interest Earnings	\$0	\$37,324	\$39,879	\$42,385	\$44,828	\$47,188
17	Total - Revenues	\$2,489,032	\$2,650,863	\$2,705,689	\$2,761,512	\$2,818,337	\$2,876,167
18							
19	O&M Expenses						
20	Administration	\$237,622	\$244,751	\$252,093	\$259,656	\$267,446	\$275,469
21	Billing and Customer Service	\$101,413	\$104,456	\$107,589	\$110,817	\$114,142	\$117,566
22	Distribution	\$157,717	\$162,449	\$167,322	\$172,342	\$177,512	\$182,837
23	Pumping	\$55,000	\$57,750	\$60,638	\$63,669	\$66,853	\$70,195
24	Supply	\$714,625	\$683,034	\$717,186	\$753,045	\$790,697	\$830,232
25	Total - O&M Expenses	\$1,266,377	\$1,252,439	\$1,304,828	\$1,359,529	\$1,416,649	\$1,476,300
26							
27	Debt and Capital						
28	Existing Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
29	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
30	Rate Funded Capital Projects	\$0	\$162,240	\$168,730	\$175,479	\$182,498	\$189,798
31	Total - Debt and Capital	\$977,398	\$1,139,638	\$1,146,127	\$1,152,876	\$1,159,896	\$1,167,196
32							
33	Net Cash Flow	\$245,257	\$258,787	\$254,734	\$249,106	\$241,792	\$232,672
34	Net Revenue	\$1,222,654	\$1,398,424	\$1,400,861	\$1,401,983	\$1,401,687	\$1,399,868
35							
36	Calculated Debt Coverage	1.25	1.43	1.43	1.43	1.43	1.43
37	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25

Table 4-17 shows the projected recycled water fund balances under the proposed scenario. The recycled water ending balance (Line 17) is above reserve target levels (Line 18-19) for all years of the study. The minimum reserve target is the sum of Lines 22, 23, 24, 26 and the maximum reserve target is the sum of Lines 22, 23, 24, 27.

Table 4-17: Recycled Water Fund Balances, Proposed Adjustments

A	B	C	D	E	F	G	H
Line	Recycled Water Fund Balances	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Beginning Balance	\$3,376,391	\$3,621,648	\$3,880,434	\$4,135,168	\$4,384,275	\$4,626,066
2							
3	Sources of Funds						
4	Rate Revenues	\$2,489,032	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294	\$2,562,294
5	Revenue Adjustments	\$0	\$51,246	\$103,517	\$156,833	\$211,215	\$266,686
6	Other Revenues	\$0	\$0	\$0	\$0	\$0	\$0
7	Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0
8	Interest Earnings	\$0	\$37,324	\$39,879	\$42,385	\$44,828	\$47,188
9	Total - Sources of Funds	\$2,489,032	\$2,650,863	\$2,705,689	\$2,761,512	\$2,818,337	\$2,876,167
10							
11	Uses of Funds						
12	O&M Expenses	\$1,266,377	\$1,252,439	\$1,304,828	\$1,359,529	\$1,416,649	\$1,476,300
13	Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
14	Capital Projects	\$0	\$162,240	\$168,730	\$175,479	\$182,498	\$189,798
15	Total - Uses of Funds	\$2,243,775	\$2,392,077	\$2,450,955	\$2,512,405	\$2,576,545	\$2,643,495
16							
17	Ending Balance	\$3,621,648	\$3,880,434	\$4,135,168	\$4,384,275	\$4,626,066	\$4,858,739
18	Minimum Reserve Target	\$2,370,634	\$2,432,751	\$2,479,043	\$2,527,034	\$2,576,793	\$2,628,394
19	Maximum Reserve Target	\$2,992,891	\$3,086,136	\$3,145,495	\$3,206,815	\$3,270,170	\$3,335,638
20							
21	Reserve Target						
22	Operating	\$633,189	\$626,219	\$652,414	\$679,765	\$708,325	\$738,150
23	Capital	\$137,789	\$175,749	\$182,779	\$190,090	\$197,694	\$205,601
24	Debt Service	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398	\$977,398
25	Rate Stabilization						
26	Minimum	\$622,258	\$653,385	\$666,453	\$679,782	\$693,377	\$707,245
27	Maximum	\$1,244,516	\$1,306,770	\$1,332,905	\$1,359,563	\$1,386,755	\$1,414,490

Figure 4-4 shows the recycled water financial plan with proposed adjustments in a graphical format. The dotted and solid lines represent the current and proposed revenues, respectively. The stacked bars represent operating, debt, and capital expenses. The green bar shows the additional reserve funding for the study period.

Figure 4-4: Recycled Water Financial Plan, Proposed Adjustments

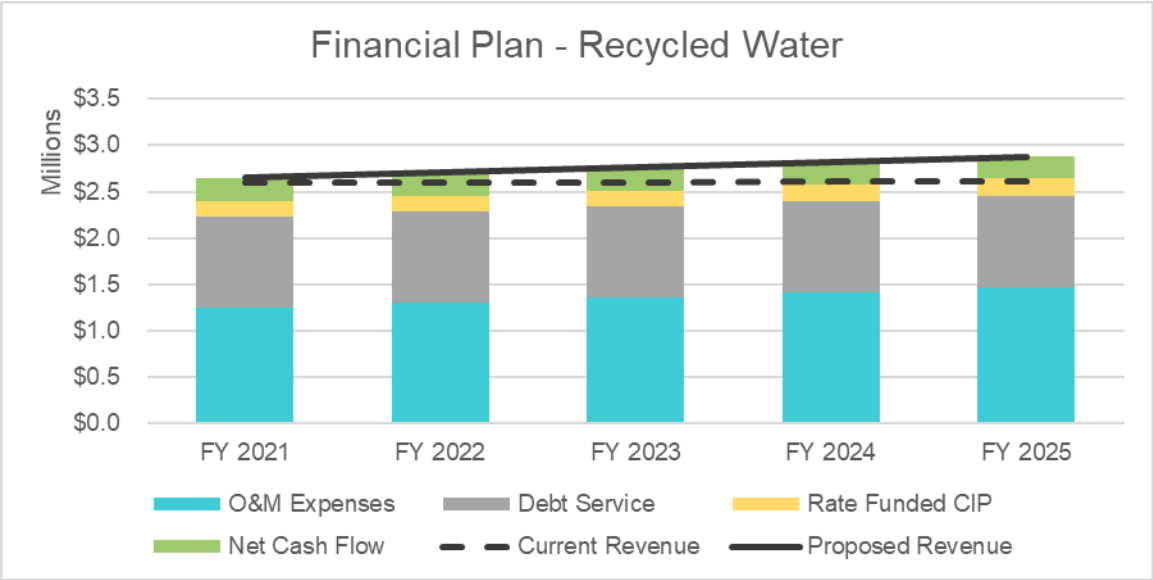


Figure 4-5 shows the recycled water debt coverage under the proposed scenario in a graphical format. Debt coverage is above the required ratio of 1.25 for all years of the study.

Figure 4-5: Recycled Water Debt Coverage, Proposed Adjustments

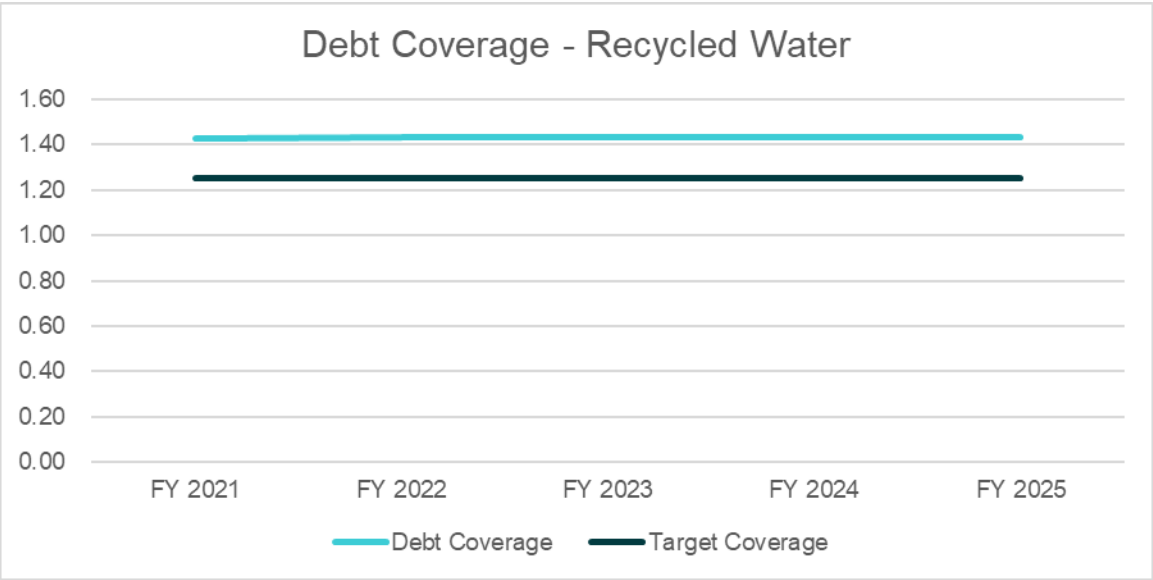
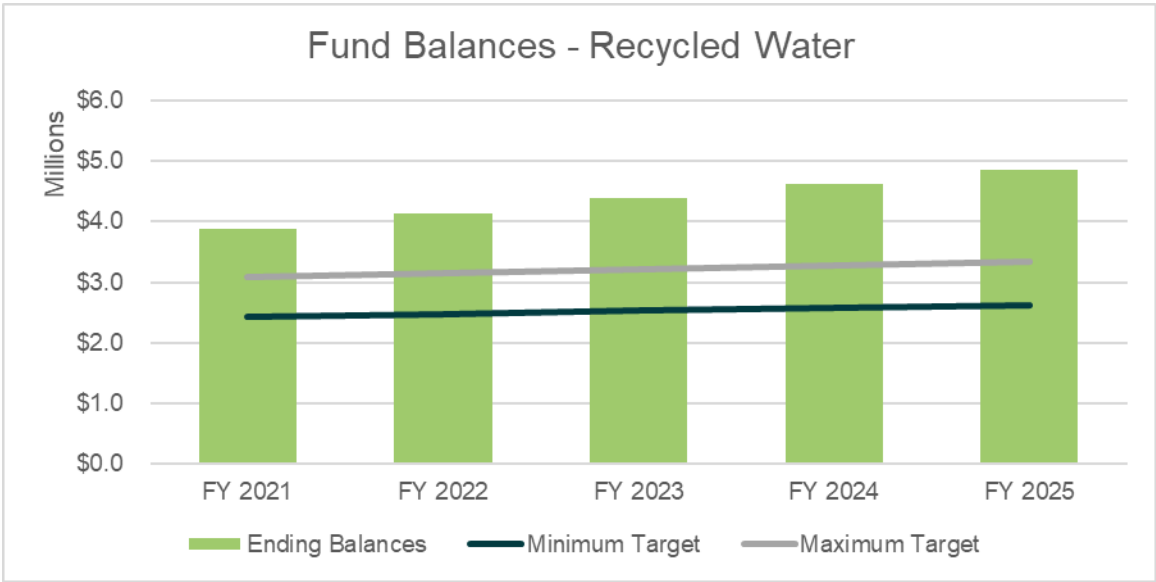


Figure 4-6 shows the recycled water fund balances under the proposed scenario in a graphical format. The District’s recycled water funds exceed all reserve targets for all years of the study.

Figure 4-6: Recycled Water Fund Balances, Proposed Adjustments



5. Recycled Water Cost of Service Analysis and Rate Design

This section of the report details the cost of service analysis and rate design process for the proposed recycled water rates. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this report. All rates shown in this section are rounded up to the nearest cent.

Proposed Adjustments

Table 5-1 shows the proposed revenue adjustments from the recycled water financial plans. These revenue adjustment percentages are used to derive the proposed rates for this study.

Table 5-1: Proposed Revenue Adjustments

A	B	C
Line	Proposed Revenue Adjustments	Recycled Water
1	FY 2021	2.0%
2	FY 2022	2.0%
3	FY 2023	2.0%
4	FY 2024	2.0%
5	FY 2025	2.0%

Cost of Service Analysis

The proposed revenue adjustment for the recycled water utility applies to the total amount of recycled water revenues as opposed to the individual components of the rate structure. The District's recycled water rate structure includes a monthly service charge and uniform quantity rate for retail customers and a uniform quantity rate for wholesale customers.

Table 5-2 shows the recycled water revenue requirement for retail and wholesale customers. The recycled water wholesale quantity rate is based on 80 percent of the CMWD Tier 1 rate, which is inflated each year by the water supply expense escalation factor (**Table 4-7**, Line 4). The estimated wholesale quantity rate (Line 1) is multiplied by the projected wholesale water usage in AF (Line 2) to determine the estimated revenues from wholesale customers.

The total recycled water revenue requirement (Line 5) is equal to the rate revenues including revenue adjustments for FY 2021 (**Table 4-16**, Lines 13-14). The retail revenue requirement (Line 7) is equal to the total revenue requirement less estimated wholesale revenues. The current meter and retail revenues (Lines 9-10) is equal to the projected retail revenues (**Table 4-4**, Column C, Lines 2 and 6) for FY 2021.

The percentage difference between the retail revenue requirement and the current retail revenues is equal to the retail percent increase in FY 2021 (Line 13).

Table 5-2: Recycled Water Retail Revenue Requirement

A	B	C
Line	Recycled Water Retail Revenue Requirement	FY 2021
1	Estimated Wholesale Quantity Rate (\$/AF)	\$1,236.48
2	Projected Wholesale Usage (AF)	425
3	Estimated Wholesale Revenues	\$524,956
4		
5	Total Revenue Requirement (2%)	\$2,613,540
6	Estimated Wholesale Revenues	\$524,956
7	Retail Revenue Requirement	\$2,088,583
8		
9	Current Meter Revenues	\$222,189
10	Current Retail Revenues	\$1,856,789
11	Total Current Retail Revenues	\$2,078,978
12		
13	Retail Percent Increase	0.5%

Rate Calculation

Table 5-3 shows the proposed recycled water rates based on the recycled water retail percent increase (**Table 5-2**, Line 13). The monthly service charge (Lines 5-9) and the retail quantity rate (Line 12) is increased by the retail revenue adjustment (Line 2). Wholesale recycled water rates are calculated each year based on CMWD rates.

Table 5-3: Recycled Water Rate Calculation

A	B	C	D	E	F	G	H
Line	Recycled Water Rates	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Total Revenue Adjustments		2.0%	2.0%	2.0%	2.0%	2.0%
2	Proposed Revenue Adjustments - Retail		0.5%	2.0%	2.0%	2.0%	2.0%
3	Estimated Calleguas Rate Increase - Wholesale		5.0%		<i>Based on Calleguas Rates</i>		
4							
5	Monthly Service Charge						
6	2 inch	\$153.66	\$154.37	\$157.46	\$160.61	\$163.83	\$167.11
7	3 inch	\$288.09	\$289.43	\$295.22	\$301.13	\$307.16	\$313.31
8	4 inch	\$480.16	\$482.38	\$492.03	\$501.88	\$511.92	\$522.16
9	6 inch	\$960.24	\$964.68	\$983.98	\$1,003.66	\$1,023.74	\$1,044.22
10							
11	Retail Quantity Rates (\$/hcf)						
12	All Usage	\$5.23	\$5.26	\$5.37	\$5.48	\$5.59	\$5.71
13							
14	Wholesale Quantity Rates (\$/AF)						
15	All Usage	\$1,138.40			<i>Based on Calleguas Rates</i>		

Customer Impacts

Table 5-4 shows the monthly bill impacts for a recycled water customer with a 2 inch meter at various levels of usage. The average recycled water retail customer, with a 2 inch meter using 210 hcf of recycled water, will see an increase of approximately \$7 per month.

Table 5-4: Recycled Water Customer Bill Impacts, 2 inch

A	B	C	D	E
Line	Recycled Water Bill Impacts	Current Bill	Proposed Bill	Monthly Impact
1	50 hcf	\$415.16	\$417.37	\$2.21
2	100 hcf	\$676.66	\$680.37	\$3.71
3	210 hcf (average)	\$1,251.96	\$1,258.97	\$7.01
4	500 hcf	\$2,768.66	\$2,784.37	\$15.71
5	1000 hcf	\$5,383.66	\$5,414.37	\$30.71

Proposed Rates

Table 5-5 shows the proposed recycled water rates for the study period. The first year of rates are proposed to be implemented on July 1, 2020 and in July of every year thereafter.

Table 5-5: Proposed Recycled Water Rates

A	B	C	D	E	F	G
Line	Recycled Water Rates	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
1	Monthly Service Charge					
2	2 inch	\$154.37	\$157.46	\$160.61	\$163.83	\$167.11
3	3 inch	\$289.43	\$295.22	\$301.13	\$307.16	\$313.31
4	4 inch	\$482.38	\$492.03	\$501.88	\$511.92	\$522.16
5	6 inch	\$964.68	\$983.98	\$1,003.66	\$1,023.74	\$1,044.22
6						
7	Retail Quantity Rates (\$/hcf)					
8	All Usage	\$5.26	\$5.37	\$5.48	\$5.59	\$5.71
9						
10	Wholesale Quantity Rates (\$/AF)					
11	All Usage	<i>Based on Calleguas Municipal Water District rates</i>				

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