CITY OF
REDLANDS

Water, Wastewater, and Non-Potable Water Financial Plan and Rate Study

Final Report / February 2021

RAFTELIS

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February 26, 2021

Mr. Ross Wittman
Senior Project Manager
City of Redlands
Municipal Utilities and Engineering
35 Cajon Street
Redlands, CA 92373

Subject: Water, Wastewater, and Non-Potable Water Financial Plan and Rate Study

Dear Mr. Wittman,

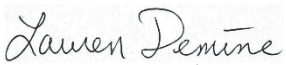
Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this report to the City of Redlands (City) for the Water, Wastewater, and Non-Potable Water Financial Plan and Rate Study (Study). This report presents the analyses, rationales, and methodologies utilized in the study to determine utility rates that meet the requirements of California Constitution Article XIII D, Section 6 (commonly referred to as Proposition 218). The study was developed with feedback and input from the Utility Advisory Committee (UAC).

The study involved a comprehensive review of the City's current water, wastewater, and non-potable water cost requirements to determine rates that meet the City's objectives. The main objectives that informed the study include:

- Adequately recovering all costs to ensure the financial sufficiency of the City's utilities.
- Determining feasible capital financing plans for all three utilities.
- Developing long-term financial plans for all three utilities.
- Calculating cost of service-based rates for the wastewater utility.
- Minimizing customer impacts from changes to the rate structures.

We are confident that the proposed rates developed during this study are fair and equitable for the City's customers and are compliant with Proposition 218. We appreciate the input provided by the UAC which helped guide the final recommendations of the financial plan and wastewater rates. It was a pleasure working with you and your team, and we wish to express our gratitude for the support you and other City staff provided to us during the study. If you have any questions, please do not hesitate to call me at 626-827-8931.

Sincerely,
Raftelis Financial Consultants, Inc.



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1 Executive Summary

Study Background

In 2020, the City of Redlands (City) contracted Raftelis to conduct a Water, Wastewater, and Non-Potable Water Rate Study, which included developing long-term financial plans and cost of service rates.

This report presents the three financial plans and resulting rates for the water, wastewater, and non-potable water utilities for a five-year period. However, rates are reviewed and adopted by the City and the Utility Advisory Committee (UAC) every two years to ensure fairness and equity for its customers and the financial stability of the three enterprises.

This Executive Summary outlines the proposed financial plans and resulting rates and contains a description of the rate study process, methodology, and recommendations for the City's rates. The main objectives that informed the Study include:

- Adequately recovering all costs to ensure the financial sufficiency of the City's utilities.
- Determining feasible capital financing plans for all three utilities.
- Developing long-term financial plans for all three utilities.
- Calculating cost of service-based rates for the wastewater utility.
- Minimizing customer impacts from changes to the rate structures.

Current Rates

The City's current water rates were adopted on July 1, 2018 and include a bi-monthly service charge based on meter size for water service, fire protection water service, fire hydrant service, and water usage rates per hundred cubic feet (ccf) of water by customer class. **Table 1-1** shows the current bi-monthly service charges and **Table 1-2** shows the water usage rates by customer class.

Table 1-1: Current Bi-Monthly Water Service Charges ($/meter size)

	A	B	C	D
Line	Meter Size	Water Service Charge	Fire Protection Water Service Charge	Fire Hydrant Service Charge
1	5/8"	$32.10		
2	3/4"	$43.17		
3	1"	$64.67		
4	1 1/2"	$116.79		
5	2"	$172.83	$10.19	$73.60
6	3"	$299.23	$18.10	$73.60
7	4"	$462.10	$31.75	$73.60
8	6"	$853.02	$80.73	$73.60
9	8"	$1,256.97	$165.22	$73.60
10	10"	$2,977.00	$292.32	$73.60
11	12"	$3,915.20	$468.46	$73.60

Table 1-2: Current Water Usage Rates ($/ccf of water)

	A	B	C
Line	Customer Class	Bi-monthly Tiers (ccf)	Water Usage Rate
1	**Building Water Usage**		
2	Tier 1	First 16	$1.46
3	Tier 2	17-27	$1.78
4	Tier 3	Over 27	$2.69
5			
6	**Non-Building Water Usage**		
7	Tier 1	First 27	$1.78
8	Tier 2	Over 27	$2.69
9			
10	**Fire Protection Water Usage**		
11	All Usage	Uniform	$2.69

The current wastewater rates include a bi-monthly residential service charge by type of dwelling unit, as defined by Chapter 18.08 in the City of Redlands Municipal Code, non-residential wastewater usage rates per ccf of water usage, and a bi-monthly schools service charge per 100 students of average daily attendance (ADA). **Table 1-3** shows the current bi-monthly residential service charges, **Table 1-4** shows the non-residential wastewater usage rates for all non-residential customer classes, and **Table 1-5** shows the bi-monthly schools service charge by school type.

Table 1-3: Current Bi-Monthly Residential Wastewater Service Charges ($/dwelling unit)

	A	B
Line	Residential Customer Class	Wastewater Service Charge
1	Single Family	$50.05
2	Multiple Family	$37.59

Table 1-4: Current Non-Residential Wastewater Usage Rates ($/ccf of water)

	A	B
Line	Non-Residential Customer Class	Wastewater Usage Rate
1	Low Strength I	$2.05
2	Low Strength II	$2.16
3	Low Strength III	$2.64
4	Medium Strength I	$3.17
5	Medium Strength II	$3.64
6	Medium Strength III	$4.11
7	High Strength I	$4.60
8	High Strength II	$5.00
9	Large Volume User	$2.76
10	Minimum Charge ($)	$37.59
11	Septage Charge ($/gal)	$0.11
12	Minimum Septage Charge ($)	$12.60

Table 1-5: Current Bi-Monthly Schools Wastewater Service Charges ($/100 students)

	A	B
Line	Schools Customer Class	Wastewater Service Charge
1	Elementary	$119.36
2	Secondary & High	$198.94

The current non-potable water rates include a bi-monthly service charge by meter size and a usage rate per ccf of water usage. **Table 1-6** shows the current bi-monthly non-potable water service charges, and **Table 1-7** shows the non-potable water usage rates by customer class.

Table 1-6: Current Bi-Monthly Non-Potable Water Service Charges ($/meter size)

	A	B
Line	Meter Size	Non-Potable Water Service Charge
1	3/4"	$13.81
2	1"	$20.65
3	1 1/2"	$37.29
4	2"	$55.16
5	3"	$95.50
6	4"	$147.45
7	6"	$272.16
8	8"	$401.04

Table 1-7: Current Non-Potable Water Usage Rates ($/ccf of water)

	A	B
Line	Non-Potable Customer Class	Non-Potable Water Usage Rate
1	Non-Potable Water	$0.99
2	Conversion Customer	$0.64

Process and Approach

The City's rate-setting process involves the participation of and feedback from the UAC, which is appointed by the City Council to provide input and guidance on the Study. During the Study, the UAC met with City staff and Raftelis in a series of public meetings to discuss and understand the challenges the City's three utilities face and to provide guidance to finalize the rate recommendations, which are detailed in this report.

During these meetings, Raftelis presented the various assumptions, inputs, and scenario analyses that were utilized to determine the water, wastewater, and non-potable water financial plans. City staff discussed the upcoming capital project requirements, which are some of the main drivers for the revenue adjustments in the final recommendations presented in this report. Raftelis designed and presented the financial planning and rate models to analyze various scenarios, such as those related to debt issuances, revenue adjustments, and capital funding.

The proposed financial plans detailed in this report followed industry standard practices for long-term financial planning and utilize commonly accepted assumptions in the absence of specified assumptions from the City, such as general inflation based on the Consumer Price Index (CPI). Raftelis worked closely with City staff to determine the most accurate methodology to project future revenues and expenses to reinforce sound fiscal management practices.

The UAC opted for no revenue adjustments for water and non-potable water. The current rates will remain unchanged for the next two fiscal years. The cost of service analysis utilized to develop the wastewater rates followed the guidelines for allocating costs outlined in the Water Environment Federation (WEF) *Manual of Practice No. 27, Financing and Charges for Wastewater (2018)*. The cost of service analysis and rate design process consists of eight major steps, as outlined below:

1. Determine the revenue requirement, equal to the revenue to be recovered from rates.
2. Conduct a treatment plant mass balance analysis to estimate the flows and strength characteristics of each customer class.
3. Functionalize operations and maintenance (O&M) expenses and capital assets into functional categories such as treatment, laboratory, collection, engineering, etc.
4. Allocate each functional category into cost components such as wastewater flow and strength, which includes biochemical oxygen demand (BOD) and total suspended solids (TSS).
5. Develop customer class characteristics and units of service by cost component.
6. Calculate the unit cost component rates by dividing the total cost in each component by the total units of service for that component. For example, wastewater service units include flow which is measured in ccf and BOD and TSS which are measured in pounds (lbs) per year.
7. Calculate the cost for each customer class by multiplying the unit cost by the units of service for each customer class.
8. Design rates to meet the City's objectives.

The financial plans for the three utilities include the five-year Study period from fiscal year (FY) 2022[1] to FY 2026. The proposed rates were developed for implementation on July 1, 2021 (beginning of FY 2022) and in July of every year thereafter until 2025.

Legal Framework

California Constitution Article XIII D, Section 6, commonly referred to as Proposition 218, was enacted in 1996 to ensure that rates and fees are reasonable and proportionate to the cost of providing service. The principal requirements for the fairness of the fees, as they relate to public wastewater service are as follows:

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

Proposition 218 requires that rates cannot be "arbitrary and capricious," meaning that the rate-setting methodology must be sound and there must be a nexus between the costs and the rates charged. Raftelis follows industry

[1] FY 2022 is the period from July 1, 2021 to June 30, 2022.

standard rate setting methodologies to perform the cost of service analysis for the wastewater utility based on WEF's Manual No. 27.

Results and Recommendations

Raftelis worked closely with City staff and the UAC to define the final results and recommendations of the water, wastewater, and non-potable water rate Study. The recommendations presented in this report will ensure the financial sufficiency and stability of the City's three utilities to fund all necessary operating costs, capital costs, and to maintain sufficient cash balances. To minimize customer impacts due to changes in rate structure, which is a key objective that informed the Study approach, Raftelis recommends that the City maintain the same rate structure for the water, wastewater, and non-potable water systems.

Water Utility

- The water O&M expenses are expected to increase, on average, by 2 percent each year of the Study based on the City's FY 2021 budget and inflationary assumptions.
- The City plans to spend approximately $66.3 million in replacement capital projects from FY 2022 to FY 2026.
- The City may consider a debt issuance to fund a total of $20 million in capital expenditures in FY 2024. However, this decision will not be taken into consideration by the UAC until the next rate setting period.
- Raftelis recommends no revenue adjustments for FY 2022 and FY 2023 and 4.0 percent revenue adjustments per year to current water rates in FY 2024 through FY 2026 to fund its capital project spending and to maintain a sufficient cash balance. Since the City is only implementing revenue adjustments for two years, the current water rates will stay unchanged for the next two years. The water financial plan will then be reviewed again in the next rate cycle after the water master plan is completed.

Wastewater Utility

- The wastewater O&M expenses are expected to increase, on average, by 2 percent each year of the Study based on the City's FY 2021 budget and inflationary assumptions.
- The City plans to spend $62.5 million in replacement capital projects from FY 2022 to FY 2026, the majority of which is to refurbish and modify the City's current wastewater treatment plant.
- The City plans to issue debt in FY 2022, FY 2024, and FY 2026, totaling $52 million in total debt proceeds to fund most of the wastewater treatment plant project costs.
- Raftelis recommends 15 percent revenue adjustments per year in FY 2022 through FY 2024 and 5 percent revenue adjustments per year in FY 2025 and FY 2026 to fund capital projects and debt service and to meet debt coverage requirements. Since the City is only implementing revenue adjustments for two years, the recommended revenue adjustments of 15 percent will be applied in FY 2022 and FY 2023. The wastewater financial plan will then be reviewed again in the next rate cycle after the wastewater master plan is completed.

Non-Potable Water Utility

- The non-potable O&M expenses are expected to increase, on average, by 3 percent each year of the Study based on the City's FY 2021 budget and inflationary assumptions.
- The City plans to spend $4.4 million in replacement capital projects for the non-potable water utility from FY 2022 to FY 2026.
- Raftelis recommends no revenue adjustments for FY 2022 through FY 2026 as the utility has sufficient cash balance to fund capital project costs and operating expenses. The current non-potable rates will remain in effect for the next two years.

Proposed Rates

Table 1-8 and **Table 1-9** show the proposed bi-monthly water service charges and water usage rates for the City's water utility, respectively, based on the above recommendations. The UAC recommends no revenue adjustments for FY 2022 and FY 2023. The proposed revenue adjustments and, therefore, rates in FY 2024 through FY 2026 will be reviewed by the future UAC in the next rate setting period. The proposed water rates were determined by increasing the current water rates by the recommended revenue adjustments.

Table 1-8: Proposed Bi-Monthly Water Service Charges ($/meter size)

	A	B	C	D	E	F
Line	Bi-Monthly Water Service Charges	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Water Service**					
2	5/8"	$32.10	$32.10	$33.39	$34.73	$36.12
3	3/4"	$43.17	$43.17	$44.90	$46.70	$48.57
4	1"	$64.67	$64.67	$67.26	$69.96	$72.76
5	1 1/2"	$116.79	$116.79	$121.47	$126.33	$131.39
6	2"	$172.83	$172.83	$179.75	$186.94	$194.42
7	3"	$299.23	$299.23	$311.20	$323.65	$336.60
8	4"	$462.10	$462.10	$480.59	$499.82	$519.82
9	6"	$853.02	$853.02	$887.15	$922.64	$959.55
10	8"	$1,256.97	$1,256.97	$1,307.25	$1,359.54	$1,413.93
11	10"	$2,977.00	$2,977.00	$3,096.08	$3,219.93	$3,348.73
12	12"	$3,915.20	$3,915.20	$4,071.81	$4,234.69	$4,404.08
13						
14	**Fire Protection Service**					
15	2"	$10.19	$10.19	$10.60	$11.03	$11.48
16	3"	$18.10	$18.10	$18.83	$19.59	$20.38
17	4"	$31.75	$31.75	$33.02	$34.35	$35.73
18	6"	$80.73	$80.73	$83.96	$87.32	$90.82
19	8"	$165.22	$165.22	$171.83	$178.71	$185.86
20	10"	$292.32	$292.32	$304.02	$316.19	$328.84
21	12"	$468.46	$468.46	$487.20	$506.69	$526.96
22						
23	**Fire Hydrant Service**					
24	All Meters	$73.60	$73.60	$76.55	$79.62	$82.81

Table 1-9: Proposed Water Usage Rates ($/ccf of water)

Line	A Water Usage Rates	B Bi-Monthly Tiers	C July 2021	D July 2022	E July 2023	F July 2024	G July 2025
1	**Building Water Usage**						
2	Tier 1	First 16	$1.46	$1.46	$1.52	$1.59	$1.66
3	Tier 2	17-27	$1.78	$1.78	$1.86	$1.94	$2.02
4	Tier 3	Over 27	$2.69	$2.69	$2.80	$2.92	$3.04
5							
6	**Non-Building Water Usage**						
7	Tier 1	First 27	$1.78	$1.78	$1.86	$1.94	$2.02
8	Tier 2	Over 27	$2.69	$2.69	$2.80	$2.92	$3.04
9							
10	**Fire Protection Water Usage**						
11	All Units		$2.69	$2.69	$2.80	$2.92	$3.04

Table 1-10 and **Table 1-11** show the proposed bi-monthly residential and schools wastewater service charges and non-residential water usage rates for the wastewater utility, respectively. The UAC recommends 15% revenue adjustments each for FY 2022 and FY 2023. The proposed revenue adjustments and, therefore, rates in FY 2024 through FY 2026 will be reviewed by the future UAC in the next rate setting period. The proposed wastewater rates are based on the cost of service analysis developed as part of the Study, detailed in **Section 5**.

Table 1-10: Proposed Bi-Monthly Residential and Schools Wastewater Service Charges

Line	A Bi-Monthly Wastewater Service Charges	B July 2021	C July 2022	D July 2023	E July 2024	F July 2025
1	**Residential ($/dwelling unit)**					
2	Single Family	$57.81	$66.49	$76.47	$80.30	$84.32
3	Multiple Family	$44.52	$51.20	$58.88	$61.83	$64.93
4						
5	**Schools ($/100 students)**					
6	Elementary	$124.43	$143.10	$164.57	$172.80	$181.44
7	Secondary & High	$199.09	$228.96	$263.31	$276.48	$290.31

Table 1-11: Proposed Non-Residential Wastewater Usage Rates ($/ccf of water)

Line	A Wastewater Usage Rates	B July 2021	C July 2022	D July 2023	E July 2024	F July 2025
1	**Non-Residential Usage ($/ccf)**					
2	Low Strength I	$2.24	$2.58	$2.97	$3.12	$3.28
3	Low Strength II	$2.66	$3.06	$3.52	$3.70	$3.89
4	Low Strength III	$3.07	$3.54	$4.08	$4.29	$4.51
5	Medium Strength I	$3.49	$4.02	$4.63	$4.87	$5.12
6	Medium Strength II	$3.91	$4.50	$5.18	$5.44	$5.72
7	Medium Strength III	$4.32	$4.97	$5.72	$6.01	$6.32
8	High Strength I	$4.74	$5.46	$6.28	$6.60	$6.93
9	High Strength II	$5.15	$5.93	$6.82	$7.17	$7.53
10	Large Volume User	$3.07	$3.54	$4.08	$4.29	$4.51
11	Minimum Charge ($)	$44.52	$51.20	$58.88	$61.83	$64.93
12						
13	**Septage Charge ($/gal)**	$0.10	$0.12	$0.14	$0.15	$0.16
14	Minimum Septage Charge ($)	$15.00	$17.25	$19.84	$20.84	$21.89

Table 1-12 and **Table 1-13** show the bi-monthly non-potable water service charges and non-potable water usage rates, respectively. The UAC recommends no revenue adjustments for FY 2022 and FY 2023 for the non-potable rates. The proposed revenue adjustments and, therefore, rates in FY 2024 through FY 2026 will be reviewed by the future UAC in the next rate setting period.

Table 1-12: Proposed Bi-Monthly Non-Potable Water Service Charges ($/meter size)

Line	A Bi-Monthly Non-Potable Water Service Charges	B July 2021	C July 2022	D July 2023	E July 2024	F July 2025
1	**Non-Potable Water Service**					
2	3/4"	$13.81	$13.81	$13.81	$13.81	$13.81
3	1"	$20.65	$20.65	$20.65	$20.65	$20.65
4	1 1/2"	$37.29	$37.29	$37.29	$37.29	$37.29
5	2"	$55.16	$55.16	$55.16	$55.16	$55.16
6	3"	$95.50	$95.50	$95.50	$95.50	$95.50
7	4"	$147.45	$147.45	$147.45	$147.45	$147.45
8	6"	$272.16	$272.16	$272.16	$272.16	$272.16
9	8"	$401.04	$401.04	$401.04	$401.04	$401.04

Table 1-13: Proposed Non-Potable Water Usage Rates ($/ccf of water)

Line	A Non-Potable Water Usage Rates	B July 2021	C July 2022	D July 2023	E July 2024	F July 2025
1	**Non-Potable Water Usage**					
2	Non-Potable Water	$0.99	$0.99	$0.99	$0.99	$0.99
3	Conversion Customer	$0.64	$0.64	$0.64	$0.64	$0.64

Combined Customer Impacts

Table 1-14 outlines the proposed customer bi-monthly bill impacts for a Single Family customer with a 3/4" meter using 40 ccf of water each billing period. The customer impacts show the water, wastewater, non-potable water, and combined bill impacts. A typical Single Family customer will have water and wastewater service, and the total

impact for this typical customer does not exceed $8 per bi-monthly billing period in the first year (Column B, Line 11). The rates shown for FY 2022 and FY 2023 are recommended by the UAC. The proposed rates in FY 2024 through FY 2026 will be reviewed by the future UAC in the next rate setting period.

Table 1-14: Proposed Single Family Customer Bi-Monthly Bill Impacts (3/4" meter, 40 ccf)

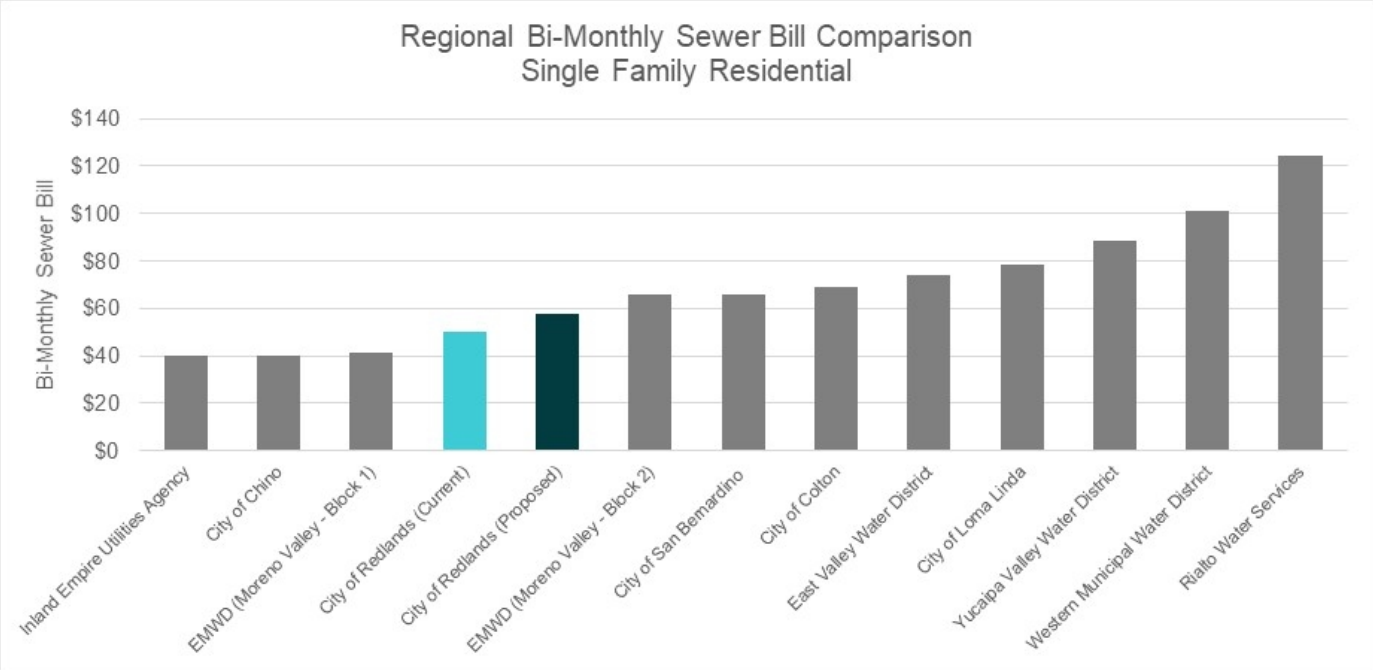
	A	B	C	D	E	F
Line	Bi-Monthly Impacts	Proposed July 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
1	Current Water (W) Bill	$121.08	$121.08	$121.08	$121.08	$121.08
2	Proposed Water (W) Bill	$121.08	$121.08	$126.08	$131.44	$136.87
3	*Difference ($)*	*$0.00*	*$0.00*	*$5.00*	*$10.36*	*$15.79*
4						
5	Current Wastewater (WW) Bill	$50.05	$50.05	$50.05	$50.05	$50.05
6	Proposed Wastewater (WW) Bill	$57.81	$66.49	$76.47	$80.30	$84.32
7	*Difference ($)*	*$7.76*	*$16.44*	*$26.42*	*$30.25*	*$34.27*
8						
9	**Current Combined Water & Wastewater Bill**	**$171.13**	**$171.13**	**$171.13**	**$171.13**	**$171.13**
10	**Proposed Combined Water Wastewater Bill**	**$178.89**	**$187.57**	**$202.55**	**$211.74**	**$221.19**
11	***Difference ($)***	***$7.76***	***$16.44***	***$31.42***	***$40.61***	***$50.06***
12						
13	Current Non-Potable Water (NPW) Bill	$53.41	$53.41	$53.41	$53.41	$53.41
14	Proposed Non-Potable Water (NPW) Bill	$53.41	$53.41	$53.41	$53.41	$53.41
15	*Difference ($)*	*$0.00*	*$0.00*	*$0.00*	*$0.00*	*$0.00*
16						
17	Current Combined W, WW, & NPW Bill	$224.54	$224.54	$224.54	$224.54	$224.54
18	Proposed Combined W, WW, & NPW Bill	$232.30	$240.98	$255.96	$265.15	$274.60
19	*Difference ($)*	*$7.76*	*$16.44*	*$31.42*	*$40.61*	*$50.06*

Regional Rate Survey

City staff assisted with a wastewater rate survey to compare the proposed rates with various regional agencies.

Figure 1-1 shows the bi-monthly sewer bill comparison for a Single Family Dwelling Unit customer. The graph shows the City's proposed wastewater charge to be implemented in July of 2021.

Figure 1-1: Regional Single Family Customer Bi-Monthly Sewer Bill Comparison



2 Key Assumptions

The key assumptions outlined in this section of the report represent the global assumptions utilized in the Study to project the number of customer accounts, revenues, and expenses for future years. City staff provided data on customer accounts, usage, and revenues and expenses for FY 2020 and FY 2021. The remaining years of the Study, from FY 2022 to FY 2026, were projected based on this information and the key assumptions shown in this section.

Customer Account Growth

Table 2-1 shows the customer account growth projections for each customer class based on the 2015 San Bernardino Valley Regional Urban Water Management Plan (UWMP). The City's General Plan indicates a slightly higher rate of growth of 0.8%. However, the more conservative value from the 2015 UWMP was used in the Study as a prudent fiscal practice to ensure that adequate revenues are collected to fund the City's utilities in the event that the anticipated growth does not occur.

Table 2-1: Customer Account Growth Projections

	A	B	C	D	E	F	G
Line	Customer Account Growth	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	Single Family	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2	Multiple Family	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
3	Commercial	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
4	Municipal	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
5	Non-Building	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%
6	Fire Service	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
7	School	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
8	Non-Potable	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%

Revenue Inflation Factors

Table 2-2 shows the revenue inflation factors utilized to project future revenues and calculate investment income. Projections assume no increase in miscellaneous, non-rate revenues throughout the Study period. The reserve interest rate is used to calculate the investment income based on projected fund balances and is based on conservative estimates in a low-interest financial environment.

Table 2-2: Revenue Inflation Factors

	A	B	C	D	E	F	G
Line	Revenue Inflation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	Non-Rate Revenues	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	Reserve Interest Rate	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

Expense Inflation Factors

Table 2-3 shows the expense inflation factors, which are used to project future operating and capital project expenses for the Study period. These factors were determined with input from City staff and reference industry standard escalations and commonly used price indices. The general inflation factor is based on the long-term

change in the CPI. Water supply, utilities, power, and chemicals costs are based on industry averages. The capital inflation factor is based on the Engineering News Record Construction Cost Index (CCI).

Table 2-3: Expense Inflation Factors

	A	B	C	D	E	F	G
Line	Expense Inflation Factors	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	General	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
2	Salary/Benefits	4.0%	0.5%	0.5%	4.0%	4.0%	4.0%
3	Water Supply	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
4	Utilities/Power	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
5	Chemicals	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
6	Supplies/Materials	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
7	Capital	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%

3 Water – Financial Plan

This section of the report details the water enterprise's long-term financial plan, based on the projected revenues, expenses, debt service, and capital project costs. Raftelis modeled the financial plan without revenue adjustments (status quo) and with proposed revenue adjustments to ensure the financial sustainability and solvency of the water utility. The results of the water financial plan are the proposed rates for five years based on the proposed revenue adjustments.

Projected Revenues

City staff provided the actual FY 2020 revenues and budgeted FY 2021 revenues for the water utility, which were used to project revenues for the remainder of the Study period. **Table 3-1** shows the projected water revenues for each of the water funds.

The water rate revenues (Lines 5-7, 10-11) are calculated for future years based on the weighted customer account growth assumptions for each customer class (**Table 2-1**). The City expects modest increases in water rate revenues for all years of the Study. The investment income (Lines 13, 20, and 28) are calculated using the reserve interest rate (**Table 2-2**, Line 2). The remaining revenues are inflated using the non-rate revenue inflation factor (**Table 2-2**, Line 1).

Table 3-1: Projected Water Revenues

	A	B	C	D	E	F	G
Line	Projected Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Water Service (501)**						
2	Plan Check	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
3	Cost Recover/Reimb Expenditure	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
4	Non-Potable Water Usage Adj.	$0	$0	$0	$0	$0	$0
5	Water Usage	$24,363,020	$24,496,775	$24,631,263	$24,766,491	$24,902,460	$25,035,839
6	Irrigation Water Usage	$2,834,444	$2,850,116	$2,865,876	$2,881,722	$2,897,656	$2,913,014
7	Fire Hydrant Water Usage	$179,406	$180,391	$181,381	$182,376	$183,377	$184,363
8	Water Meter Install	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000
9	Frontage Charge	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
10	"B" Contract Water Usage	$38,225	$38,436	$38,648	$38,862	$39,077	$39,284
11	Fire Protection Water Usage	$500,701	$503,449	$506,211	$508,989	$511,781	$514,535
12	Conservation Violation Penalty	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
13	Investment Income	$453,854	$372,064	$289,526	$225,623	$204,799	$206,847
14	Rental Income	$170,000	$170,000	$170,000	$170,000	$170,000	$170,000
15	Miscellaneous Receipts	$110,000	$110,000	$110,000	$110,000	$110,000	$110,000
16	Fire Flow Testing	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
17	**Total - Water Service (501)**	**$28,762,150**	**$28,833,730**	**$28,905,406**	**$28,996,562**	**$29,131,650**	**$29,286,381**
18							
19	**Source Acquisition (508)**						
20	Investment Income	$0	$0	$1,250	$2,963	$4,692	$6,439
21	Water Source Acq Residential	$130,000	$130,000	$130,000	$130,000	$130,000	$130,000
22	Water Source Acq Non-Resident	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
23	**Total - Source Acquisition (508)**	**$170,000**	**$170,000**	**$171,250**	**$172,963**	**$174,692**	**$176,439**
24							
25	**Water CIP (509)**						
26	Dev. Impact Fee Rev Non-Res	$240,000	$240,000	$240,000	$240,000	$240,000	$240,000
27	Dev. Impact Fee Rev Residential	$600,000	$600,000	$600,000	$600,000	$600,000	$600,000
28	Investment Income	$4,200	$12,642	$21,168	$29,780	$38,478	$47,263
29	**Total - Water CIP (509)**	**$844,200**	**$852,642**	**$861,168**	**$869,780**	**$878,478**	**$887,263**
30							
31	**Total - Revenues**	**$29,776,350**	**$29,856,372**	**$29,937,824**	**$30,039,305**	**$30,184,820**	**$30,350,083**

Projected O&M Expenses

City staff provided the actual FY 2020 O&M expenses and budgeted FY 2021 O&M expenses for the water utility based on expense function. **Table 3-2** shows the projected O&M expenses for the Study period, inflated for FY 2022 and beyond using the expense inflation factors (**Table 2-3**).

Table 3-2: Projected Water O&M Expenses

	A	B	C	D	E	F	G
Line	Projected O&M Expenses	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Water Service (501 & 506)**						
2	Salaries and Benefits	$7,660,348	$7,319,351	$7,355,948	$7,392,728	$7,688,437	$7,995,974
3	Services - Power	$1,920,000	$2,027,061	$2,140,091	$2,259,424	$2,385,411	$2,518,423
4	Services	$10,016,787	$10,118,682	$10,422,242	$10,734,909	$11,056,957	$11,388,665
5	Supplies - Purchased Water	$200,000	$211,152	$222,926	$235,357	$248,480	$262,336
6	Supplies - Treatment	$375,000	$395,910	$417,986	$441,294	$465,901	$491,879
7	Supplies	$2,763,000	$2,482,620	$2,557,099	$2,633,812	$2,712,826	$2,794,211
8	Debt Service	$0	$0	$0	$0	$0	$0
9	**Total - Water Service (501 & 506)**	**$22,935,135**	**$22,554,776**	**$23,116,292**	**$23,697,523**	**$24,558,011**	**$25,451,488**
10							
11	**Source Acquisition (508)**						
12	Purchase Water Shares	$300,000	$0	$0	$0	$0	$0
13	**Total - Water Project (508)**	**$300,000**	**$0**	**$0**	**$0**	**$0**	**$0**
14							
15	**Total - O&M Expenses**	**$23,235,135**	**$22,554,776**	**$23,116,292**	**$23,697,523**	**$24,558,011**	**$25,451,488**

Debt Service

The City currently has two existing debt issues for the water utility. **Table 3-3** shows the annual principal and interest payments for the existing debts.

Table 3-3: Existing Water Debt Service

	A	B	C	D	E	F	G
Line	Existing Debt Service	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Safe Drinking Water (Tate)**						
2	Principal	$331,798	$339,607	$347,600	$355,782	$364,156	$926,522
3	Interest	$51,921	$44,111	$36,118	$27,937	$19,563	$32,773
4	**Total - Safe Drinking Water (Tate)**	**$383,719**	**$383,719**	**$383,719**	**$383,719**	**$383,719**	**$959,295**
5							
6	**Hinkley SRF Loan**						
7	Principal	$464,018	$475,699	$487,674	$499,951	$512,536	$525,439
8	Interest	$189,098	$177,417	$165,442	$153,165	$146,912	$134,169
9	**Total - Hinkley SRF Loan**	**$653,116**	**$653,116**	**$653,116**	**$653,116**	**$659,448**	**$659,607**
10							
11	**Total - Existing Debt Service**	**$1,036,835**	**$1,036,835**	**$1,036,835**	**$1,036,834**	**$1,043,167**	**$1,618,902**

To fund the capital program, Raftelis recommends that the City consider a new debt issuance in FY 2024. The terms for this debt issuance are assumed to be a 30-year bond at 3.5 percent interest and a 1.5 percent issuance cost. The proposed bond proceeds will be used to fund $20 million in water capital costs. The proposed annual debt service for this bond issuance is shown in **Table 3-4.**

Table 3-4: Proposed Water Debt Service

	A	B	C	D	E	F	G
Line	Proposed Debt Service	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	Proposed Bond Issuance	$0	$0	$0	$20,304,569	$0	$0
2	Bond Proceeds	$0	$0	$0	$20,000,000	$0	$0
3							
4	Annual Debt Service				$1,103,986	$1,103,986	$1,103,986
7	**Total - Proposed Debt Service**	**$0**	**$0**	**$0**	**$1,103,986**	**$1,103,986**	**$1,103,986**

Capital Projects

City staff provided the capital improvement plan (CIP) for the water utility for the Study period. **Table 3-5** shows the CIP costs for the Study period, escalated by the capital expense inflation factor (**Table 2-3**, Line 7) to determine CIP costs in future years' dollars. The CIP provided consists of replacement projects and does not currently include any expansion project. Replacement projects are funded through a combination of water rate revenues, cash reserves, and bond proceeds, and expansion projects are funded entirely through Development Impact Fee (DIF) revenues and do not directly affect rates.

Table 3-5: Inflated Water Capital Projects

	A	B	C	D	E	F	G
Line	Capital Projects (Inflated)	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Replacement**						
2	Airport #1 Well Rehabilitation	$0	$123,600	$0	$0	$0	$0
3	Church Street Well Rehabilitation	$0	$82,400	$0	$0	$0	$0
4	East Lugonia #3 Well Rehabilitation	$0	$82,400	$0	$0	$0	$0
5	East Lugonia #6 Well Rehabilitation	$0	$82,400	$0	$0	$0	$0
6	North Orange #1 Well Rehabilitation	$0	$123,600	$0	$0	$0	$0
7	Tate WTP Transmission Line Replacement	$0	$103,000	$0	$0	$0	$0
8	Water Infrastructure Seismic Assessment	$0	$1,545,000	$0	$0	$0	$0
9	Hinckley WTP Sludge Press	$0	$309,000	$0	$0	$0	$0
10	Hinckley WTP Transmission Line Replacement	$0	$103,000	$0	$0	$0	$0
11	Tank Mixer Installations	$0	$103,000	$0	$0	$0	$0
12	Tate WTP Programmable Logic Controller (PLC) Replacement	$0	$412,000	$0	$0	$0	$0
13	Annual Citywide Waterline Replacements	$0	$4,635,000	$4,774,050	$4,917,272	$5,064,790	$5,216,733
14	Sunset Reservoir Rehabilitation	$0	$1,236,000	$0	$0	$6,753,053	$0
15	Water System SCADA Integration - Phase 2	$0	$4,017,000	$0	$0	$0	$0
16	Wellhead Perchlorate Treatment Evaluation -	$0	$154,500	$0	$0	$0	$0
17	Annual Citywide Potable Water Meter Replacements - Phase 1	$0	$1,869,450	$0	$0	$0	$0
18	Agate #2 Well Liner Rehabilitation	$0	$180,250	$0	$0	$0	$0
19	Booster #2131 Replacement	$0	$51,500	$0	$0	$0	$0
20	Booster #2132 Replacement	$0	$51,500	$0	$0	$0	$0
21	1750 Blend Manifold Replacement	$0	$0	$106,090	$0	$0	$0
22	Hinckley WTP Transmission Line Replacement - Phase 1	$0	$0	$2,121,800	$0	$0	$0
23	Hinckley WTP Paving	$0	$0	$159,135	$0	$0	$0
24	Madeira Well Rehabilitation	$0	$0	$127,308	$0	$0	$0
25	Mentone 2 Well Rehabilitation	$0	$0	$127,308	$0	$0	$0
26	Redlands BLVD/New Jersey PRV Station Replacement	$0	$0	$106,090	$273,182	$0	$0
27	Tate WTP Clarifier Recoating & Cover Installation	$0	$0	$1,379,170	$0	$0	$0
28	Texas Grove Reservoir Mixer	$0	$0	$79,568	$0	$0	$0
29	Annual Citywide Potable Water Meter Replacements - Phase 2	$0	$0	$1,925,534	$0	$0	$0
30	Well #38 Rehabilitation	$0	$0	$127,308	$0	$0	$0
31	Well #39 Rehabilitation	$0	$0	$127,308	$0	$0	$0
32	Wellhead Perchlorate Treatment Evaluation - Well #10/Well #13/Agate #1/Agate #2/Crafton	$0	$0	$159,135	$0	$0	$0
33	Airport #2 Well Rehabilitation	$0	$0	$0	$131,127	$0	$0
34	East Lugonia #3 Well Replacement	$0	$0	$0	$109,273	$2,813,772	$0
35	HAWC Booster Pump Rehabilitation	$0	$0	$0	$546,364	$0	$0
36	Highline Waterline Replacement - Final Phase	$0	$0	$0	$109,273	$0	$3,477,822

	A	B	C	D	E	F	G
Line	Capital Projects (Inflated)	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
37	Hinckley WTP Transmission Line Replacement - Phase 2	$0	$0	$0	$2,185,454	$0	$0
38	Mill Creek #2A Well Rehabilitation	$0	$0	$0	$87,418	$0	$0
39	Rees Well Rehabilitation	$0	$0	$0	$131,127	$0	$0
40	S.B. Muni Well Rehabilitation	$0	$0	$0	$65,564	$0	$0
41	Annual Citywide Potable Water Meter Replacements - Phase 3	$0	$0	$0	$1,983,300	$0	$0
42	Entrained Air Treatment System Assessment	$0	$0	$0	$0	$562,754	$0
43	Maguet #2 Well Rehabilitation	$0	$0	$0	$0	$56,275	$0
44	Mill Creek #2 Well Rehabilitation	$0	$0	$0	$0	$90,041	$0
45	Tate WTP Influent Static Mixer	$0	$0	$0	$0	$168,826	$0
46	Well #10 Rehabilitation	$0	$0	$0	$0	$135,061	$0
47	Well #13 Rehabilitation	$0	$0	$0	$0	$135,061	$0
48	Annual Citywide Potable Water Meter Replacements - Phase 4	$0	$0	$0	$0	$2,042,798	$0
49	Booster Stations & MCC Upgrade	$0	$0	$0	$0	$0	$579,637
50	Annual Citywide Potable Water Meter Replacements - Phase 5	$0	$0	$0	$0	$0	$2,104,082
51	FY 2021 Budgeted CIP	$6,180,000	$0	$0	$0	$0	$0
52	Carryover Projects from FY2019-20	$5,027,440	$0	$0	$0	$0	$0
53							
54	**Total – Replacement Water Projects**	**$11,207,440**	**$15,264,600**	**$11,319,803**	**$10,539,352**	**$17,822,432**	**$11,378,275**

Table 3-6 shows the proposed capital financing plan for the water utility. The City plans to fully fund its water CIP for all years of the Study. (Line 2). The inflated project costs (Line 5) are the total replacement project costs. (**Table 3-5**, Line 54). The bond proceeds are from the proposed debt issuances (**Table 3-4**, Line 2). The replacement CIP (Line 5) will be funded first through any available bond proceeds; the remaining CIP will be funded through rates.

Table 3-6: Proposed Water Capital Financing Plan

	A	B	C	D	E	F	G
Line	Capital Financing Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**CIP to Spend**						
2	Replacement	100%	100%	100%	100%	100%	100%
3							
4	**Inflated Project Costs**						
5	Replacement	$11,207,440	$15,264,600	$11,319,803	$10,539,352	$17,822,432	$11,378,275
6							
	Bond Proceeds	$0	$0	$0	$20,000,000	$0	$0
	Balance	$0	$0	$0	$20,000,000	$9,460,648	$0
7	**Capital Financing**						
8	Rate Funded	$11,207,440	$15,264,600	$11,319,803	$0	$8,361,784	$11,378,275
9	Bond Funded	$0	$0	$0	$10,539,352	$9,460,648	$0
10	Loan Funded	$0	$0	$0	$0	$0	$0
11	**Total - Capital Financing**	**$11,207,440**	**$15,264,600**	**$11,319,803**	**$10,539,352**	**$17,822,432**	**$11,378,275**

Current Financial Plan – Status Quo

Table 3-7 shows the projected water financial plan without revenue adjustments (also referred to as status quo). Rate revenues and other revenues are derived from projected revenues (**Table 3-1**). O&M expenses are derived from projected O&M expenses (**Table 3-2**); existing debt service is from the annual debt service payments for outstanding debt (**Table 3-3**); rate funded capital projects (Line 22) are from the capital financing plan (**Table 3-6**, Line 11).

The net cash flow (Line 25) is calculated by subtracting O&M expenses (Line 17) and debt and capital costs (Line 23) from the total revenues (Line 6). Net operating revenue (Line 27) is equal to total revenues (Line 6) less O&M expenses (Line 17). Debt coverage (Line 29) is calculated by dividing the net operating revenue (Line 26) by the total debt service (Lines 20-21) and is well over the required debt coverage (Line 29).

Net cash flow is negative for all years of the Study except for FY 2021, which means that the water utility does not have enough revenues from rates to fund its operating expenses, debt, and capital costs. If there are no revenue adjustments for the water utility, the fund cash balance (Line 32) will be depleted by FY 2025.

Table 3-7: Projected Water Financial Plan (Status Quo)

	A	B	C	D	E	F	G
Line	Water Financial Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Revenues**						
2	Rate Revenues	$27,877,571	$28,030,730	$28,184,731	$28,339,577	$28,495,274	$28,647,750
3	Revenue Adjustments	$0	$0	$0	$0	$0	$0
4	Investment Income	$458,054	$384,706	$311,945	$258,365	$247,969	$260,548
5	Other Revenues	$1,440,725	$1,440,936	$1,441,148	$1,441,362	$1,441,577	$1,441,784
6	**Total - Revenues**	**$29,776,350**	**$29,856,372**	**$29,937,824**	**$30,039,305**	**$30,184,820**	**$30,350,083**
7							
8	**O&M Expenses**						
9	Salaries and Benefits	$7,660,348	$7,319,351	$7,355,948	$7,392,728	$7,688,437	$7,995,974
10	Services - Power	$1,920,000	$2,027,061	$2,140,091	$2,259,424	$2,385,411	$2,518,423
11	Services	$10,016,787	$10,118,682	$10,422,242	$10,734,909	$11,056,957	$11,388,665
12	Supplies - Purchased Water	$200,000	$211,152	$222,926	$235,357	$248,480	$262,336
13	Supplies - Treatment	$375,000	$395,910	$417,986	$441,294	$465,901	$491,879
14	Supplies	$2,763,000	$2,482,620	$2,557,099	$2,633,812	$2,712,826	$2,794,211
15	Fixed Assets	$300,000	$0	$0	$0	$0	$0
16	Debt Service	$0	$0	$0	$0	$0	$0
17	**Total - O&M Expenses**	**$23,235,135**	**$22,554,776**	**$23,116,292**	**$23,697,523**	**$24,558,011**	**$25,451,488**
18							
19	**Debt and Capital**						
20	Existing Debt Service	$1,036,835	$1,036,835	$1,036,835	$1,036,834	$1,043,167	$1,618,902
21	Proposed Debt Service	$0	$0	$0	$0	$0	$0
22	Rate Funded Capital Projects	$11,207,440	$15,264,600	$11,319,803	$10,539,352	$17,822,432	$11,378,275
23	**Total - Debt and Capital**	**$12,244,275**	**$16,301,435**	**$12,356,638**	**$11,576,186**	**$18,865,599**	**$12,997,177**
24							
25	**Net Cash Flow**	**($5,703,060)**	**($8,999,838)**	**($5,535,106)**	**($5,234,404)**	**($13,238,789)**	**($8,098,583)**
26	Net Operating Revenue	$6,541,215	$7,301,596	$6,821,532	$6,341,782	$5,626,809	$4,898,594
27							
28	**Calculated Debt Coverage**	**6.31**	**7.04**	**6.58**	**6.12**	**5.39**	**3.03**
29	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25
30							
31	Beginning Cash Balance	$29,140,169	$23,240,301	$14,041,688	$8,305,819	$2,868,643	($10,574,944)
32	Ending Cash Balance	$23,240,301	$14,041,688	$8,305,819	$2,868,643	($10,574,944)	($18,880,374)

Figure 3-1 shows the proposed water capital financing plan in graphical format, based on the capital projects shown in **Table 3-5** and with no debt issuances. The dark teal bars represent the rate funded replacement CIP costs.

Figure 3-1: Proposed Water Capital Financing Plan (Status Quo)

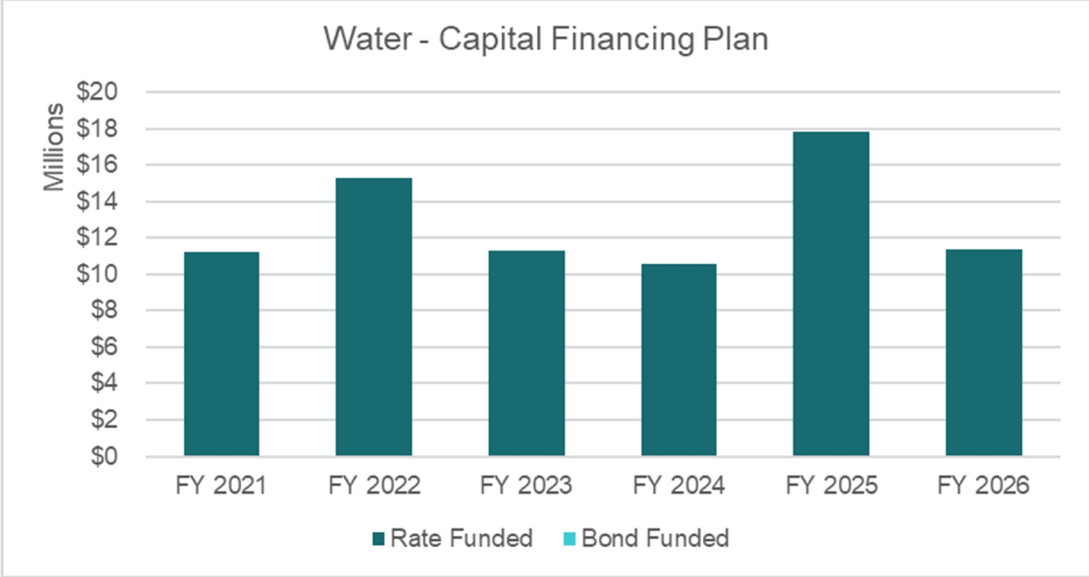


Figure 3-2 shows the projected water financial plan under the status quo scenario in graphical format. The stacked bars represent the O&M expenses (light grey), supply, treatment, and power (dark teal), debt service (yellow), and capital projects (dark grey). . The green bars show the changes to cash balances: if the green bars are below the stacked bars, then the City will be drawing from cash reserves, and vice versa. Since the turquoise line, which represents current revenues, is below the stacked bars, this means that the City's current water revenues are not sufficient to fund its costs.

Figure 3-2: Projected Water Financial Plan (Status Quo)

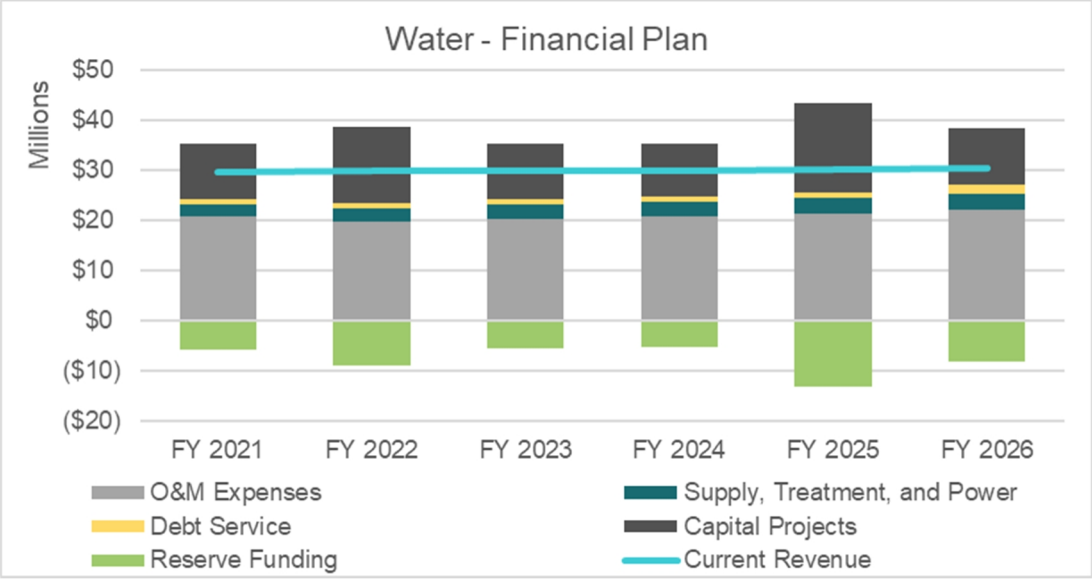
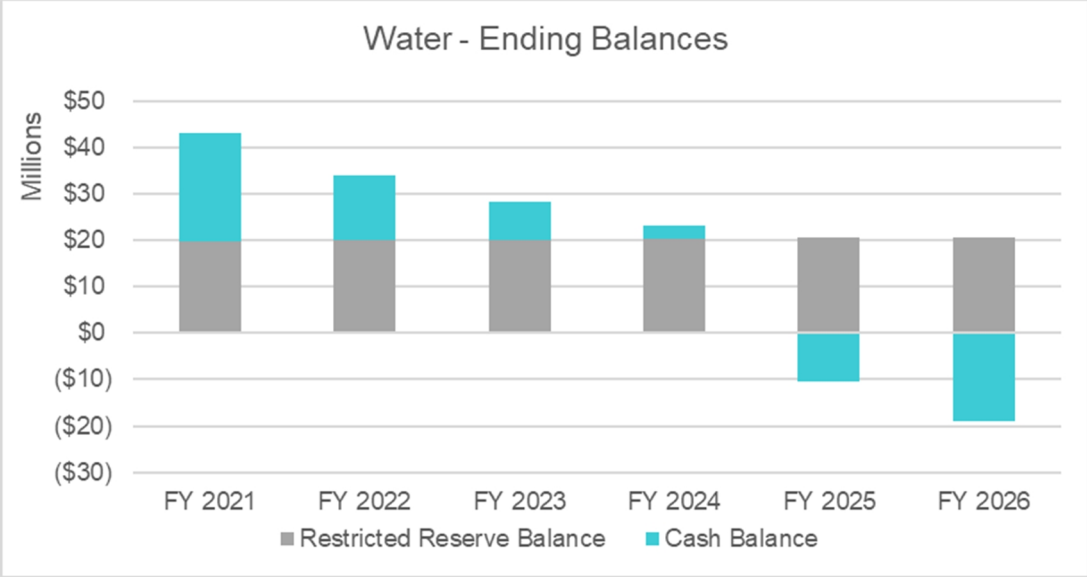


Figure 3-3 shows the projected water fund cash balance under the status quo scenario in graphical format. Without revenue adjustments, the cash balances (shown as turquoise bars) will be significantly drawn down over the Study period and will be depleted by FY 2025.

Figure 3-3: Projected Water Fund Balances (Status Quo)



Proposed Financial Plan

The projected financial plan under the status quo scenario in **Table 3-7** shows that the City's current water rate revenues are not sufficient to sustain financial sufficiency for the water utility beginning in FY 2025. **Table 3-8** shows the proposed revenue adjustments for the Study period, effective in July of each fiscal year, that will allow the City to fund all necessary operating and capital costs. The UAC decided not to implement any revenue adjustments in the first two years.

Table 3-8: Proposed Water Revenue Adjustments

	A	B	C
Line	Fiscal Year	Revenue Adjustment	Month Effective
1	FY 2022	0.0%	July
2	FY 2023	0.0%	July
3	FY 2024	4.0%	July
4	FY 2025	4.0%	July
5	FY 2026	4.0%	July

Table 3-9 shows the projected water financial plan with the proposed revenue adjustments from **Table 3-8**. The net cash flow (Line 26) is negative for four years of the Study, which means that the City will be funding its capital costs in those years through cash reserves to minimize rate impacts. The ending cash balance (Line 33) is positive throughout the Study period.

Table 3-9: Projected Water Financial Plan (Proposed Revenue Adjustments)

	A	B	C	D	E	F	G
Line	Water Financial Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Revenues**						
2	Rate Revenues	$27,877,571	$28,030,730	$28,184,731	$28,339,577	$28,495,274	$28,647,750
3	Revenue Adjustments	$0	$0	$0	$1,133,583	$2,325,214	$3,577,073
4	Investment Income	$458,054	$384,706	$311,945	$258,513	$372,455	$285,422
5	Other Revenues	$1,440,725	$1,440,936	$1,441,148	$1,441,362	$1,441,577	$1,441,784
6	**Total - Revenues**	**$29,776,350**	**$29,856,372**	**$29,937,824**	**$31,173,036**	**$32,634,521**	**$33,952,029**
7							
8	**O&M Expenses**						
9	Salaries and Benefits	$7,660,348	$7,319,351	$7,355,948	$7,392,728	$7,688,437	$7,995,974
10	Services - Power	$1,920,000	$2,027,061	$2,140,091	$2,259,424	$2,385,411	$2,518,423
11	Services	$10,016,787	$10,118,682	$10,422,242	$10,734,909	$11,056,957	$11,388,665
12	Supplies - Purchased Water	$200,000	$211,152	$222,926	$235,357	$248,480	$262,336
13	Supplies - Treatment	$375,000	$395,910	$417,986	$441,294	$465,901	$491,879
14	Supplies	$2,763,000	$2,482,620	$2,557,099	$2,633,812	$2,712,826	$2,794,211
15	Fixed Assets	$300,000	$0	$0	$0	$0	$0
16	Debt Service	$0	$0	$0	$0	$0	$0
17	**Total - O&M Expenses**	**$23,235,135**	**$22,554,776**	**$23,116,292**	**$23,697,523**	**$24,558,011**	**$25,451,488**
18							
19	**Debt and Capital**						
20	Existing Debt Service	$1,036,835	$1,036,835	$1,036,835	$1,036,834	$1,043,167	$1,618,902
21	Proposed Debt Service	$0	$0	$0	$1,103,986	$1,103,986	$1,103,986
22	Rate Funded Capital Projects	$11,207,440	$15,264,600	$11,319,803	$0	$8,361,784	$11,378,275
23	DIF Funded Capital Projects	$0	$0	$0	$0	$0	$0
24	**Total - Debt and Capital**	**$12,244,275**	**$16,301,435**	**$12,356,638**	**$2,140,821**	**$10,508,937**	**$14,101,164**
25							
26	**Net Cash Flow**	**($5,703,060)**	**($8,999,838)**	**($5,535,106)**	**$5,334,692**	**($2,432,427)**	**($5,600,624)**
27	Net Operating Revenue	$6,541,215	$7,301,596	$6,821,532	$7,475,513	$8,076,510	$8,500,540
28							
29	**Calculated Debt Coverage**	**6.31**	**7.04**	**6.58**	**3.49**	**3.76**	**3.12**
30	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25
31							
32	Beginning Cash Balance	$29,140,169	$23,240,301	$14,041,688	$8,305,819	$22,898,388	$10,800,514
33	Ending Cash Balance	$23,240,301	$14,041,688	$8,305,819	$22,898,388	$10,800,514	$4,993,044

Figure 3-4 shows the proposed water capital financing plan in graphical format, based on the capital financial plan shown in **Table 3-6**. The dark teal bars represent the portion of replacement CIP funded by rates and the turquoise bars represent the portion of replacement CIP funded by bond proceeds.

Figure 3-4: Proposed Water Capital Financing Plan

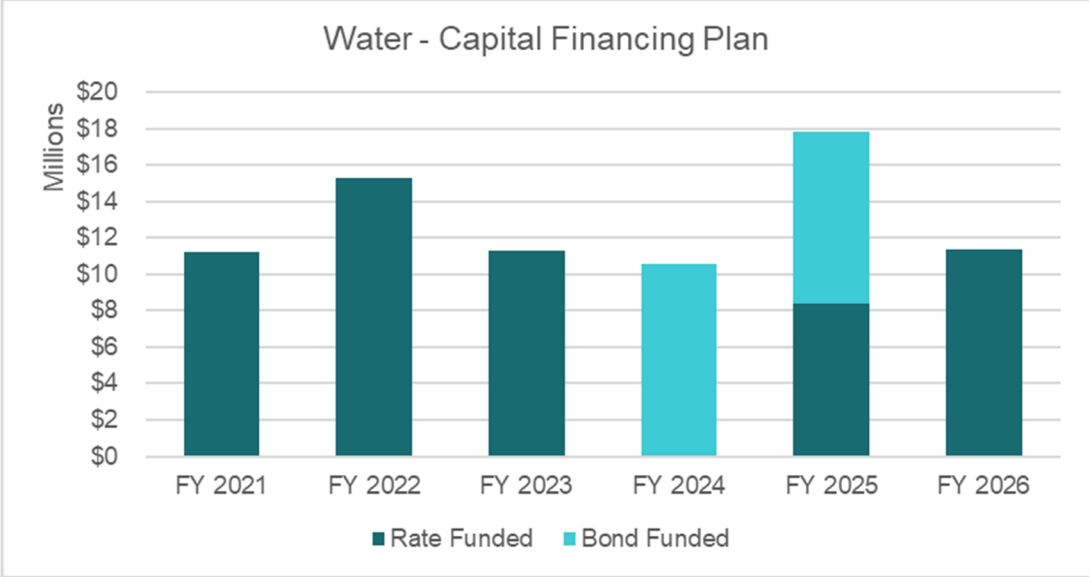


Figure 3-5 shows the proposed financial plan in graphical format with the revenue adjustments in **Table 3-8**. The proposed revenues, shown as the dark teal line, allow the City to fund its operating and capital costs for the Study period.

Figure 3-5: Projected Water Financial Plan (Proposed Revenue Adjustments)

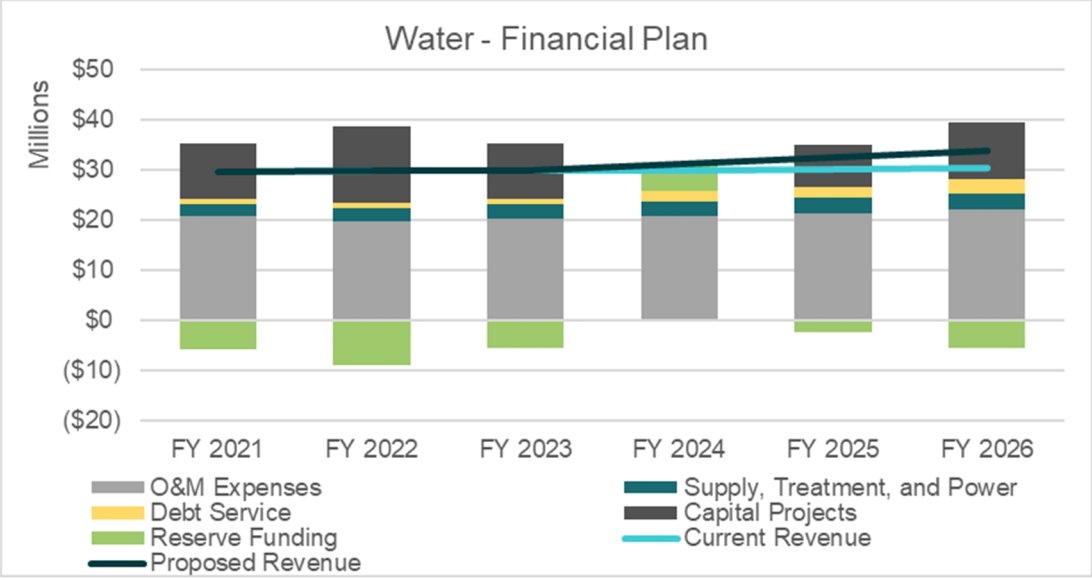
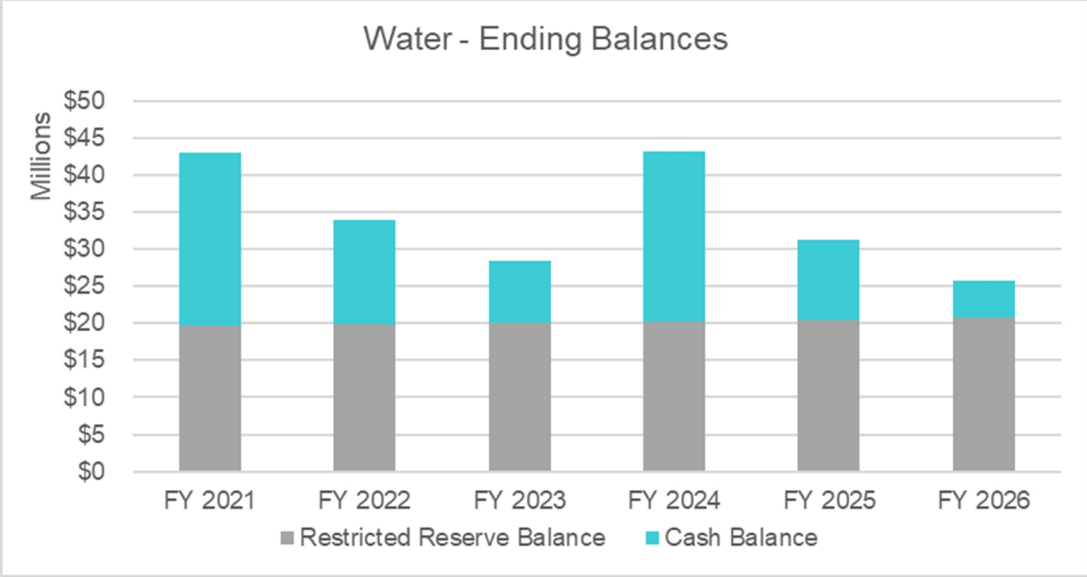


Figure 3-6 shows the projected water fund balances with the proposed revenue adjustments in **Table 3-8**. The City's restricted reserves are comprised of operating, capital, rate stabilization and treatment plant reserves and are represented by the grey bars. These restricted reserves are not used to fund operating expenses and capital projects. The blue bars represent the unrestricted cash balance available to finance operating expenses and capital projects. The unrestricted cash balance in FY 2024 increases due to the proposed debt proceeds but will be drawn down to fund the City's capital projects in FY 2025 and FY 2026.

Figure 3-6: Projected Water Fund Balances (Proposed Revenue Adjustments)



Proposed Rates

Since there are no revenue adjustments in the first two years, the current water rates remain unchanged for FY 2022 and FY 2023. The proposed water rates for the subsequent three years are calculated by multiplying the current water rates (**Table 1-1**, **Table 1-2**) by the proposed revenue adjustments each year (**Table 3-8**). **Table 3-10** shows the proposed bi-monthly water service charges by meter size, and **Table 3-11** shows the proposed water usage rates for all customer classes.

Table 3-10: Proposed Bi-Monthly Water Service Charges ($/meter size)

	A	B	C	D	E	F
Line	Bi-Monthly Water Service Charges	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Water Service**					
2	5/8"	$32.10	$32.10	$33.39	$34.73	$36.12
3	3/4"	$43.17	$43.17	$44.90	$46.70	$48.57
4	1"	$64.67	$64.67	$67.26	$69.96	$72.76
5	1 1/2"	$116.79	$116.79	$121.47	$126.33	$131.39
6	2"	$172.83	$172.83	$179.75	$186.94	$194.42
7	3"	$299.23	$299.23	$311.20	$323.65	$336.60
8	4"	$462.10	$462.10	$480.59	$499.82	$519.82
9	6"	$853.02	$853.02	$887.15	$922.64	$959.55
10	8"	$1,256.97	$1,256.97	$1,307.25	$1,359.54	$1,413.93
11	10"	$2,977.00	$2,977.00	$3,096.08	$3,219.93	$3,348.73
12	12"	$3,915.20	$3,915.20	$4,071.81	$4,234.69	$4,404.08
13						
14	**Fire Protection Service**					
15	2"	$10.19	$10.19	$10.60	$11.03	$11.48
16	3"	$18.10	$18.10	$18.83	$19.59	$20.38
17	4"	$31.75	$31.75	$33.02	$34.35	$35.73
18	6"	$80.73	$80.73	$83.96	$87.32	$90.82
19	8"	$165.22	$165.22	$171.83	$178.71	$185.86
20	10"	$292.32	$292.32	$304.02	$316.19	$328.84
21	12"	$468.46	$468.46	$487.20	$506.69	$526.96
22						
23	**Fire Hydrant Service**					
24	All Meters	$73.60	$73.60	$76.55	$79.62	$82.81

Table 3-11: Proposed Water Usage Rates ($/ccf of water)

	A	B	C	D	E	F	G
Line	Water Usage Rates	Bi-Monthly Tiers	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Building Water Usage**						
2	Tier 1	16	$1.46	$1.46	$1.52	$1.59	$1.66
3	Tier 2	27	$1.78	$1.78	$1.86	$1.94	$2.02
4	Tier 3	Over 27	$2.69	$2.69	$2.80	$2.92	$3.04
5							
6	**Non-Building Water Usage**						
7	Tier 1	27	$1.78	$1.78	$1.86	$1.94	$2.02
8	Tier 2	Over 27	$2.69	$2.69	$2.80	$2.92	$3.04
9							
14	**Fire Protection Water Usage**						
15	All Units		$2.69	$2.69	$2.80	$2.92	$3.04

4 Wastewater – Financial Plan

This section of the report details the wastewater enterprise's long-term financial plan, based on the projected revenues, expenses, debt service, and capital project costs. Raftelis modeled the financial plan without revenue adjustments (status quo) and with proposed revenue adjustments to ensure the financial sustainability and solvency of the wastewater utility. The result of the wastewater financial plan is the total revenue requirement utilized as the basis for the cost of service analysis and resulting rates in the next section of the report.

Customer Accounts and Usage

Table 4-1 shows the projected wastewater customer accounts and water usage for the Study period. City staff provided wastewater customer accounts and usage data for FY 2020, which are then projected based on the customer account growth rates from **Table 2-1**. Typical types of users that fall within the non-residential classes include:

- Low Strength I – Car Wash
- Low Strength II – Office Building
- Low Strength III – Hotel (rooms only, no restaurant)
- Medium Strength I – Laundromat (linen & general)
- Medium Strength II – Mini-Mall
- Medium Strength III – Hotel (with restaurant)
- High Strength I – Laundry (industrial)
- High Strength II - Bakery

Table 4-1: Projected Wastewater Customer Accounts and Usage

	A	B	C	D	E	F	G	H
Line	Wastewater Customer Data	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Residential (dwelling units)**							
2	Single Family	16,300	16,389	16,479	16,570	16,661	16,752	16,842
3	Multiple Family	9,800	9,854	9,908	9,962	10,017	10,072	10,126
4	**Total - Residential**	**26,100**	**26,243**	**26,387**	**26,532**	**26,678**	**26,824**	**26,967**
5								
6	**Non-Residential (ccf)**							
7	Low Strength I	40,234	40,455	40,677	40,900	41,124	41,350	41,572
8	Low Strength II	377,121	379,190	381,271	383,363	385,466	387,582	389,667
9	Low Strength III	81,964	82,414	82,866	83,321	83,778	84,238	84,691
10	Medium Strength I	23,906	24,037	24,169	24,302	24,435	24,569	24,701
11	Medium Strength II	34,758	34,949	35,140	35,333	35,527	35,722	35,914
12	Medium Strength III	17,967	18,066	18,165	18,264	18,365	18,465	18,565
13	High Strength I	9,374	9,425	9,477	9,529	9,581	9,634	9,686
14	High Strength II	124,572	125,256	125,943	126,634	127,329	128,027	128,716
15	Large Volume User	30,385	30,552	30,719	30,888	31,057	31,228	31,396
16	**Total - Non-Residential**	**740,281**	**744,343**	**748,427**	**752,534**	**756,663**	**760,815**	**764,908**
17								
18	**Schools (students)**							
19	Elementary	4,634	4,659	4,685	4,711	4,737	4,763	4,788
20	Secondary & High	15,099	15,182	15,265	15,349	15,433	15,518	15,601
21	**Total - Schools**	**19,733**	**19,841**	**19,950**	**20,060**	**20,170**	**20,280**	**20,389**

Current Rates

The City's current wastewater rates include bi-monthly wastewater service charges for residential customers by type of dwelling unit, a non-residential wastewater usage rate based on ccf of water usage per customer class, and for schools by 100 students. **Table 4-2** shows the current wastewater rates effective July 1, 2018.

Table 4-2: Current Bi-Monthly Wastewater Service Charges and Usage Rates

	A	B
Line	Current Wastewater Rates	Effective July 1, 2018
1	**Bi-Monthly Residential Rate ($/dwelling unit)**	
2	Single Family	$50.05
3	Multiple Family	$37.59
4		
5	**Non-Residential Rate ($/ccf)**	
6	Low Strength I	$2.05
7	Low Strength II	$2.16
8	Low Strength III	$2.64
9	Medium Strength I	$3.17
10	Medium Strength II	$3.64
11	Medium Strength III	$4.11
12	High Strength I	$4.60
13	High Strength II	$5.00
14	Large Volume User	$2.76
15	Minimum Charge ($)	$37.59
16		
17	**Bi-Monthly Schools Rate ($/100 students)**	
18	Elementary	$119.36
19	Secondary & High	$198.94

Calculated Rate Revenues at Current Rates

Table 4-3 shows the calculated wastewater rate revenues by customer class. To calculate rate revenues, the current wastewater rates (**Table 4-2**) are multiplied by the customer accounts and usage data (**Table 4-1**) for all years of the Study.

Residential rate revenues (Lines 2-3) = Residential wastewater service charge x Residential dwelling units x 6 billing periods

Non-residential rate revenues (Lines 7-15) = Non-residential wastewater usage rate x Non-residential water usage in ccf

Schools rate revenues (Lines 19-20) = Schools wastewater service charge x (Number of students / 100 students) x 6 billing periods

Table 4-3: Calculated Wastewater Rate Revenues at Current Rates

	A	B	C	D	E	F	G
Line	Calculated Rate Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Residential (dwelling units)**						
2	Single Family	$4,921,755	$4,948,768	$4,975,929	$5,003,239	$5,030,699	$5,057,573
3	Multiple Family	$2,222,418	$2,234,610	$2,246,870	$2,259,196	$2,271,591	$2,283,720
4	**Total - Residential**	**$7,144,173**	**$7,183,379**	**$7,222,799**	**$7,262,436**	**$7,302,290**	**$7,341,293**
5							
6	**Non-Residential (ccf)**						
7	Low Strength I	$82,932	$83,387	$83,845	$84,305	$84,768	$85,224
8	Low Strength II	$819,051	$823,545	$828,064	$832,608	$837,176	$841,680
9	Low Strength III	$217,572	$218,766	$219,966	$221,173	$222,387	$223,583
10	Medium Strength I	$76,198	$76,616	$77,036	$77,459	$77,884	$78,303
11	Medium Strength II	$127,213	$127,911	$128,613	$129,319	$130,028	$130,728
12	Medium Strength III	$74,250	$74,657	$75,067	$75,479	$75,893	$76,301
13	High Strength I	$43,357	$43,595	$43,834	$44,075	$44,316	$44,555
14	High Strength II	$626,278	$629,714	$633,169	$636,644	$640,137	$643,580
15	Large Volume User	$84,323	$84,785	$85,251	$85,718	$86,189	$86,652
16	**Total - Non-Residential**	**$2,151,174**	**$2,162,977**	**$2,174,845**	**$2,186,779**	**$2,198,778**	**$2,210,606**
17							
18	**Schools (students)**						
19	Elementary	$33,369	$33,552	$33,736	$33,921	$34,107	$34,291
20	Secondary & High	$181,217	$182,211	$183,211	$184,216	$185,227	$186,223
21	**Total - Schools**	**$214,586**	**$215,763**	**$216,947**	**$218,137**	**$219,334**	**$220,514**
22							
23	**Total - Non-Residential &Schools**	**$2,365,759**	**$2,378,740**	**$2,391,792**	**$2,404,916**	**$2,418,112**	**$2,431,121**

Projected Revenues at Current Rates

Table 4-4 shows the projected wastewater revenues for the Study period. City staff provided actual revenues for FY 2020 and budgeted revenues for FY 2021. The wastewater rate revenues (Lines 3-4) from FY 2022 and beyond are from the rate revenue calculations (**Table 4-3**, Lines 4 and 23). Investment income (Lines 8 and 15) are calculated using the reserve interest rate (**Table 2-2**, Line 2). All other revenues are inflated for future years based on the non-rate revenue inflation factor (**Table 2-2**, Line 1).

Table 4-4: Projected Wastewater Revenues at Current Rates

	A	B	C	D	E	F	G
Line	Projected Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Wastewater Service (521)**						
2	Cost Recover/Reimb Expenditure	$6,374	$6,374	$6,374	$6,374	$6,374	$6,374
3	Sewer Residential	$7,144,173	$7,183,379	$7,222,799	$7,262,436	$7,302,290	$7,341,293
4	Sewer Non-Residential	$2,365,759	$2,378,740	$2,391,792	$2,404,916	$2,418,112	$2,431,121
5	Septage Charge	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000
6	Recycled Water Usage	$330,000	$330,000	$330,000	$330,000	$330,000	$330,000
7	Frontage Charge	$80,000	$80,000	$80,000	$80,000	$80,000	$80,000
8	Investment Income	$297,313	$171,063	$150,407	$151,911	$153,430	$154,965
9	Miscellaneous Receipts	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
10	**Total - Wastewater Service (521)**	**$10,338,619**	**$10,264,556**	**$10,296,373**	**$10,350,637**	**$10,405,206**	**$10,458,752**
11							
12	**Wastewater CIP (529)**						
13	Dev. Impact Fee Rev Non-Res	$120,000	$120,000	$120,000	$120,000	$120,000	$120,000
14	Dev. Impact Fee Rev Residential	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000
15	Investment Income	$950	$2,860	$4,788	$6,736	$8,703	$10,690
16	**Total - Wastewater CIP (529)**	**$190,950**	**$192,860**	**$194,788**	**$196,736**	**$198,703**	**$200,690**
17							
18	**Total - Revenues**	**$10,529,569**	**$10,457,416**	**$10,491,161**	**$10,547,373**	**$10,603,910**	**$10,659,442**

Projected O&M Expenses

Table 4-5 shows the projected wastewater O&M expenses for the Study period. City staff provided the actual O&M expenses for FY 2020 and budgeted O&M expenses for FY 2021, which are escalated for future years of the Study based on the expense inflation factors (**Table 2-3**).

Table 4-5: Projected Wastewater O&M Expenses

	A	B	C	D	E	F	G
Line	Projected O&M Expenses	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Wastewater Service**						
2	Salaries and Benefits	$4,157,302	$4,323,594	$4,345,212	$4,366,938	$4,541,616	$4,723,280
3	Services - Power	$860,000	$907,954	$958,582	$1,012,034	$1,068,465	$1,128,044
4	Services	$4,256,241	$3,682,658	$3,793,137	$3,906,932	$4,024,140	$4,144,864
5	Supplies - Treatment	$686,200	$724,463	$764,860	$807,509	$852,536	$900,074
6	Supplies	$1,598,950	$1,592,494	$1,640,269	$1,689,477	$1,740,161	$1,792,366
7	**Total - O&M Expenses**	**$11,558,693**	**$11,231,163**	**$11,502,060**	**$11,782,889**	**$12,226,918**	**$12,688,628**

Debt Service

The City currently has one existing debt issue for the wastewater utility. **Table 4-6** shows the annual principal and interest payments for the existing debt. This debt will be paid off in FY 2025.

Table 4-6: Existing Wastewater Debt Service

	A	B	C	D	E	F	G
Line	Existing Debt Service	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**CA Recycled Water Project**						
2	Principal	$322,641	$330,707	$338,975	$347,449	$356,136	$0
3	Interest	$42,398	$34,332	$26,064	$17,590	$8,903	$0
4	**Total - CA Recycled Water Project**	**$365,039**	**$365,039**	**$365,039**	**$365,039**	**$365,039**	**$0**
5							
6	**Total - Existing Debt Service**	**$365,039**	**$365,039**	**$365,039**	**$365,039**	**$365,039**	**$0**

To fund the wastewater capital program, the City plans on issuing additional debt in FY 2022, FY 2024, and FY 2026. The terms for these revenue bonds are a 30-year term at 3.0, 3.5, and 4.5 percent interest, respectively, and a 1.5 percent issuance cost. The proposed bond proceeds will be used to fund most of the wastewater treatment plant capital costs. The proposed annual debt service for these bond issues is shown in **Table 4-7**.

Table 4-7: Proposed Wastewater Debt Service

	A	B	C	D	E	F	G
Line	Proposed Debt Service	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	Proposed Bond Issuance	$0	$20,304,569	$0	$25,380,711	$0	$7,106,599
2	Bond Proceeds	$0	$20,000,000	$0	$25,000,000	$0	$7,000,000
3							
4	**Annual Debt Service**						
5	Bond Issuance #1		$0	$1,035,924	$1,035,924	$1,035,924	$1,035,924
6	Bond Issuance #2				$1,379,983	$1,379,983	$1,379,983
							$436,285
7	**Total - Proposed Debt Service**	**$0**	**$0**	**$1,035,924**	**$2,415,907**	**$2,415,907**	**$2,852,192**

Capital Projects

City staff provided the CIP for the wastewater utility for the Study period. **Table 4-8** shows the CIP costs for the Study period, escalated by the capital expense inflation factor (**Table 2-3**, Line 7) to determine CIP costs in future years' dollars. The CIP provided consists of replacement projects totaling $79 million for the six years from FY 2021 through FY 2026 and does not currently include any expansion projects. Replacement projects are funded

through a combination of wastewater rate revenues, cash reserves, and bond proceeds, and expansion projects are funded entirely through DIF revenues and do not directly affect rates.

Table 4-8: Inflated Wastewater Capital Projects

	A	B	C	D	E	F	G
Line	Capital Projects (Inflated)	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Replacement**						
2	Annual Citywide Sanitary Sewer Collection Pipeline Replacements	$0	$1,030,000	$3,182,700	$3,278,181	$3,376,526	$3,477,822
3	WWTP Rehabilitation - Phase 2	$0	$4,532,000	$0	$0	$0	$0
4	Alabama Septage Pond Remediation	$0	$247,200	$0	$0	$0	$0
5	WWTP Drying bed leachate remediation	$0	$257,500	$0	$0	$0	$0
6	WWTP Rehabilitation - Phase 2A	$0	$0	$11,988,170	$0	$0	$0
7	WWTP Rehabilitation - Phase 2B	$0	$0	$0	$10,053,088	$0	$0
8	WWTP Rehabilitation - Phase 2C	$0	$0	$0	$0	$15,419,471	$0
9	WWTP Rehabilitation - Phase 2D	$0	$0	$0	$0	$0	$5,680,443
10	FY 2021 Budgeted CIP	$7,070,600	$0	$0	$0	$0	$0
11	Carryover Projects from FY2019-20	$9,469,499	$0	$0	$0	$0	$0
23	**Total – Replacement Wastewater Projects**	**$16,540,099**	**$6,066,700**	**$15,170,870**	**$13,331,269**	**$18,795,997**	**$9,158,265**

Table 4-9 shows the proposed wastewater capital financing plan based on the CIP (**Table 4-8**). The City plans to fully fund its wastewater CIP for all years of the Study (Line 2). The bond proceeds are from the proposed debt issues (**Table 4-7**, Line 2).The replacement CIP (Line 5) will be funded first through any available bond proceeds; the remaining CIP will be funded through rates.

Table 4-9: Proposed Wastewater Capital Financing Plan

	A	B	C	D	E	F	G
Line	Capital Financing Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**CIP to Spend**						
2	Replacement	100%	100%	100%	100%	100%	100%
3							
4	**Inflated Project Costs**						
5	Replacement	$16,540,099	$6,066,700	$15,170,870	$13,331,269	$18,795,997	$9,158,265
6							
7	Bond Proceeds	$0	$20,000,000	$0	$25,000,000	$0	$7,000,000
8	Balance	$0	$20,000,000	$13,933,300	$25,000,000	$11,668,731	$7,000,000
9							
10	**Capital Financing**						
11	Rate Funded	$16,540,099	$0	$1,237,570	$0	$7,127,267	$2,158,265
12	Bond Funded	$0	$6,066,700	$13,933,300	$13,331,269	$11,668,731	$7,000,000
13	Loan Funded	$0	$0	$0	$0	$0	$0
14	**Total - Capital Financing**	**$16,540,099**	**$6,066,700**	**$15,170,870**	**$13,331,269**	**$18,795,997**	**$9,158,265**

Current Financial Plan – Status Quo

Table 4-10 shows the projected wastewater financial plan under the status quo scenario. Revenues (Lines 2-6) are equal to projected revenues (**Table 4-4**). The O&M expenses (Lines 10-17) are equal to projected O&M expenses for the Study period (**Table 4-5**). Existing debt service (Line 21) is equal to the principal and interest payments for the City's outstanding wastewater debt (**Table 4-6**). Rate funded CIP (Line 23) is derived from the capital financing plan (**Table 4-9**).

The net cash flow (Line 27) is negative for all years of the Study under the status quo scenario, signifying that the City's current wastewater rate revenues are not sufficient to fund the operating expenses, debt and capital costs associated with the proposed CIP. In addition, the calculated debt coverage (Line 30) is well below the required coverage (Line 30), which will put the City's wastewater utility into technical default.

Table 4-10: Projected Wastewater Financial Plan (Status Quo)

	A	B	C	D	E	F	G
Line	Wastewater Financial Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Revenues**						
2	Rate Revenues	$9,549,933	$9,602,119	$9,654,591	$9,707,352	$9,760,402	$9,812,413
3	Revenue Adjustments	$0	$0	$0	$0	$0	$0
4	Investment Income	$298,263	$173,923	$155,195	$158,647	$162,134	$165,655
5	Recycled Water Usage	$330,000	$330,000	$330,000	$330,000	$330,000	$330,000
6	Other Revenues	$351,374	$351,374	$351,374	$351,374	$351,374	$351,374
7	**Total - Revenues**	**$10,529,569**	**$10,457,416**	**$10,491,161**	**$10,547,373**	**$10,603,910**	**$10,659,442**
8							
9	**O&M Expenses**						
10	Salaries and Benefits	$4,157,302	$4,323,594	$4,345,212	$4,366,938	$4,541,616	$4,723,280
11	Services - Power	$860,000	$907,954	$958,582	$1,012,034	$1,068,465	$1,128,044
12	Services	$4,256,241	$3,682,658	$3,793,137	$3,906,932	$4,024,140	$4,144,864
13	Supplies - Purchased Water	$0	$0	$0	$0	$0	$0
14	Supplies - Treatment	$686,200	$724,463	$764,860	$807,509	$852,536	$900,074
15	Supplies	$1,598,950	$1,592,494	$1,640,269	$1,689,477	$1,740,161	$1,792,366
16	Fixed Assets	$0	$0	$0	$0	$0	$0
17	Debt Service	$0	$0	$0	$0	$0	$0
18	**Total - O&M Expenses**	**$11,558,693**	**$11,231,163**	**$11,502,060**	**$11,782,889**	**$12,226,918**	**$12,688,628**
19							
20	**Debt and Capital**						
21	Existing Debt Service	$365,039	$365,039	$365,039	$365,039	$365,039	$0
22	Proposed Debt Service	$0	$0	$0	$0	$0	$0
23	Rate Funded Capital Projects	$16,540,099	$6,066,700	$15,170,870	$13,331,269	$18,795,997	$9,158,265
24	DIF Funded Capital Projects	$0	$0	$0	$0	$0	$0
25	**Total - Debt and Capital**	**$16,905,138**	**$6,431,739**	**$15,535,909**	**$13,696,308**	**$19,161,036**	**$9,158,265**
26							
27	**Net Cash Flow**	**($17,934,262)**	**($7,205,486)**	**($16,546,809)**	**($14,931,824)**	**($20,784,044)**	**($11,187,451)**
28	Net Operating Revenue	($1,029,124)	($773,747)	($1,010,900)	($1,235,516)	($1,623,008)	($2,029,185)
29							
30	**Calculated Debt Coverage**	**(2.82)**	**(2.12)**	**(2.77)**	**(3.38)**	**(4.45)**	
31	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25
32							
33	Beginning Balances	$24,198,196	$6,190,212	($1,089,733)	($17,711,746)	($32,719,525)	($53,580,284)
34	Ending Balances	$6,190,212	($1,089,733)	($17,711,746)	($32,719,525)	($53,580,284)	($64,845,217)

Figure 4-1 shows the proposed wastewater capital financing plan in graphical format, based on the capital projects shown in **Table 4-8**. The dark teal bars represent the portion of replacement CIP funded by rates.

Figure 4-1: Proposed Wastewater Capital Financing Plan

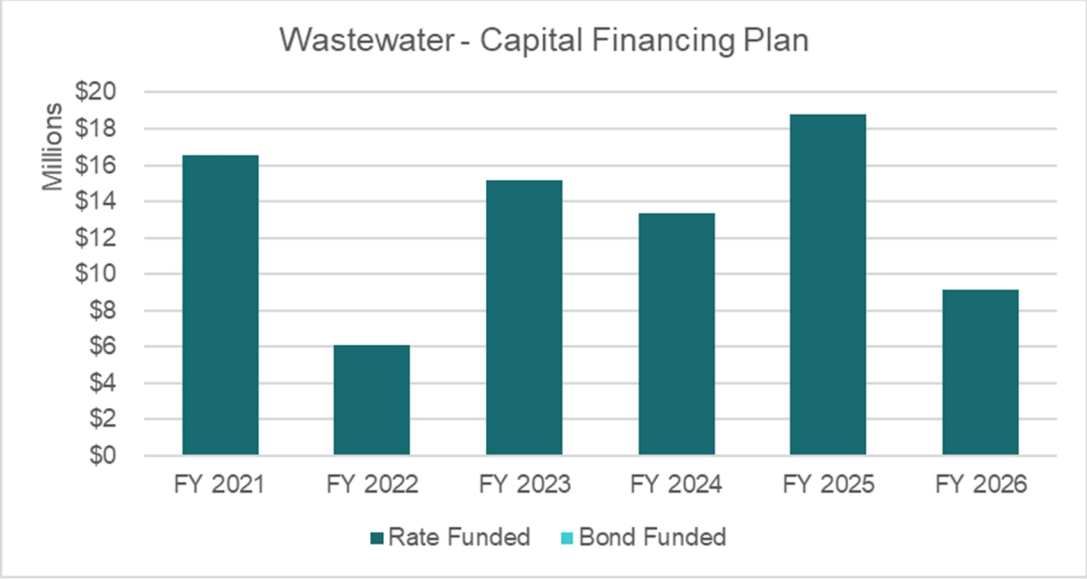


Figure 4-2 shows the projected wastewater financial plan without revenue adjustments in graphical format. The turquoise line, representing current wastewater revenues, is well below the stacked bars representing the O&M (light grey), treatment and power (teal), debt service (yellow), and capital (dark grey) expenses. The green bars, which are below the stacked bars, show that the City will be drawing down its wastewater cash balances significantly without revenue adjustments.

Figure 4-2: Projected Wastewater Financial Plan (Status Quo)

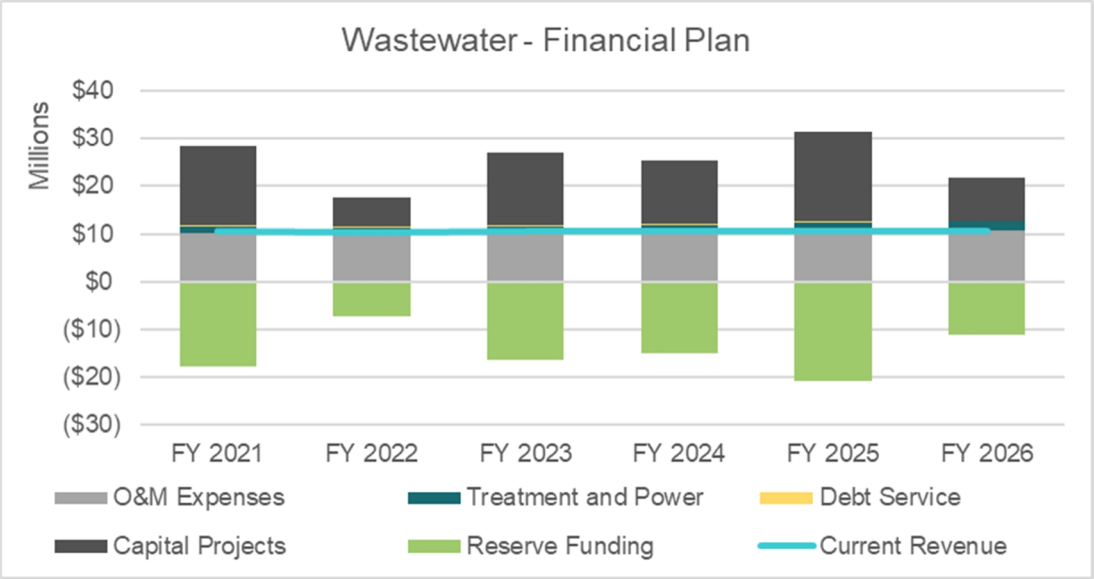
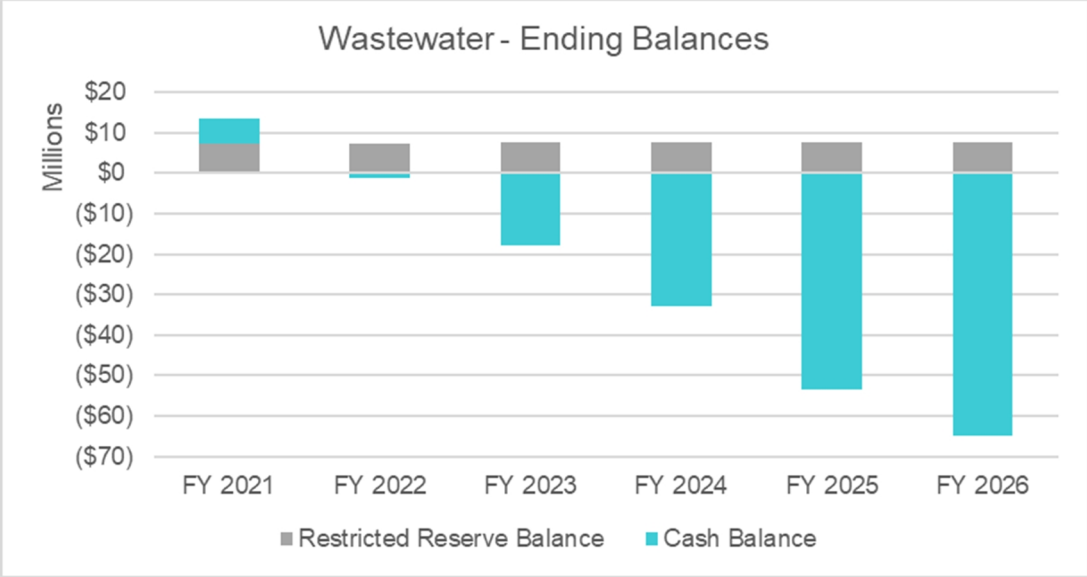


Figure 4-3 shows the projected wastewater fund cash balance without revenue adjustments in graphical format. In FY 2022, the wastewater unrestricted cash balance (shown as turquoise bars) will be negative and become further depleted at the end of the Study period. The grey bars represent the restricted reserves including operating, capital, equipment replacement and treatment plant reserves.

Figure 4-3: Projected Wastewater Fund Balances (Status Quo)



Proposed Financial Plan

Table 4-11 shows the proposed revenue adjustments necessary to maintain the financial sufficiency of the City's wastewater utility. The revenue adjustments will be effective starting July 2021 and in July every year thereafter.

Table 4-11: Proposed Wastewater Revenue Adjustments

	A	B	C
Line	Fiscal Year	Revenue Adjustment	Month Effective
1	FY 2022	15.0%	July
2	FY 2023	15.0%	July
3	FY 2024	15.0%	July
4	FY 2025	5.0%	July
5	FY 2026	5.0%	July

Table 4-12 shows the projected wastewater financial plan with the proposed revenue adjustments (**Table 4-11**). The net cash flow (Line 27) is negative in some years of the Study period but will reduce the wastewater cash balances significantly less than under the status quo scenario. With the proposed revenue adjustments and debt issuance, the wastewater utility will meet its debt coverage ratio requirements (Line 30) and have positive ending balances (Line 34).

Table 4-12: Projected Wastewater Financial Plan (Proposed Revenue Adjustments)

	A	B	C	D	E	F	G
Line	Wastewater Financial Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Revenues**						
2	Rate Revenues	$9,549,933	$9,602,119	$9,654,591	$9,707,352	$9,760,402	$9,812,413
3	Revenue Adjustments	$0	$1,440,318	$3,113,606	$5,056,317	$5,826,167	$6,640,695
4	Investment Income	$298,263	$181,125	$280,863	$158,647	$251,468	$165,655
5	Recycled Water Usage	$330,000	$330,000	$330,000	$330,000	$330,000	$330,000
6	Other Revenues	$351,374	$351,374	$351,374	$351,374	$351,374	$351,374
7	**Total - Revenues**	**$10,529,569**	**$11,904,935**	**$13,730,435**	**$15,603,690**	**$16,519,411**	**$17,300,137**
8							
9	**O&M Expenses**						
10	Salaries and Benefits	$4,157,302	$4,323,594	$4,345,212	$4,366,938	$4,541,616	$4,723,280
11	Services - Power	$860,000	$907,954	$958,582	$1,012,034	$1,068,465	$1,128,044
12	Services	$4,256,241	$3,682,658	$3,793,137	$3,906,932	$4,024,140	$4,144,864
13	Supplies - Purchased Water	$0	$0	$0	$0	$0	$0
14	Supplies - Treatment	$686,200	$724,463	$764,860	$807,509	$852,536	$900,074
15	Supplies	$1,598,950	$1,592,494	$1,640,269	$1,689,477	$1,740,161	$1,792,366
16	Fixed Assets	$0	$0	$0	$0	$0	$0
17	Debt Service	$0	$0	$0	$0	$0	$0
18	**Total - O&M Expenses**	**$11,558,693**	**$11,231,163**	**$11,502,060**	**$11,782,889**	**$12,226,918**	**$12,688,628**
19							
20	**Debt and Capital**						
21	Existing Debt Service	$365,039	$365,039	$365,039	$365,039	$365,039	$0
22	Proposed Debt Service	$0	$0	$1,035,924	$2,415,907	$2,415,907	$2,852,192
23	Rate Funded Capital Projects	$16,540,099	$0	$1,237,570	$0	$7,127,267	$2,158,265
24	DIF Funded Capital Projects	$0	$0	$0	$0	$0	$0
25	**Total - Debt and Capital**	**$16,905,138**	**$365,039**	**$2,638,533**	**$2,780,946**	**$9,908,213**	**$5,010,457**
26							
27	**Net Cash Flow**	**($17,934,262)**	**$308,733**	**($410,159)**	**$1,039,855**	**($5,615,719)**	**($398,948)**
28	Net Operating Revenue	($1,029,124)	$673,772	$2,228,374	$3,820,801	$4,292,494	$4,611,510
29							
30	**Calculated Debt Coverage**	**(2.82)**	**1.85**	**1.59**	**1.37**	**1.54**	**1.62**
31	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25
32							
33	Beginning Balances	$24,198,196	$6,190,212	$20,357,786	$5,939,124	$18,571,754	$1,210,589
34	Ending Balances	$6,190,212	$20,357,786	$5,939,124	$18,571,754	$1,210,589	$734,159

Figure 4-4 shows the proposed wastewater capital financing plan in graphical format, based on the capital financial plan shown in **Table 4-9**. The dark teal bars represent the portion of replacement CIP funded by rates and the turquoise bars represent the portion of replacement CIP funded by bond proceeds. Most of the capital projects are funded from bond proceeds.

Figure 4-4: Proposed Wastewater Capital Financing Plan

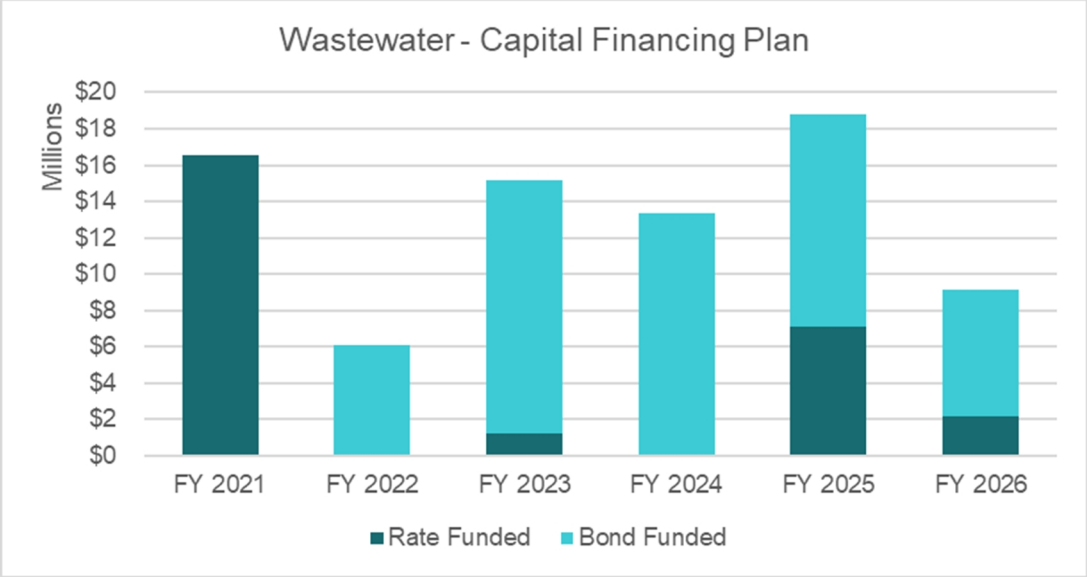


Figure 4-5 shows the projected wastewater financial plan with the proposed revenue adjustments. Although the net cash flow is still negative in some years of the Study, shown by the green bars under the stacked grey, yellow, and teal bars, the additional revenue will allow the wastewater utility to meet its debt coverage requirements and fund its operating and capital costs for the Study period.

Figure 4-5: Projected Wastewater Financial Plan (Proposed Revenue Adjustments)

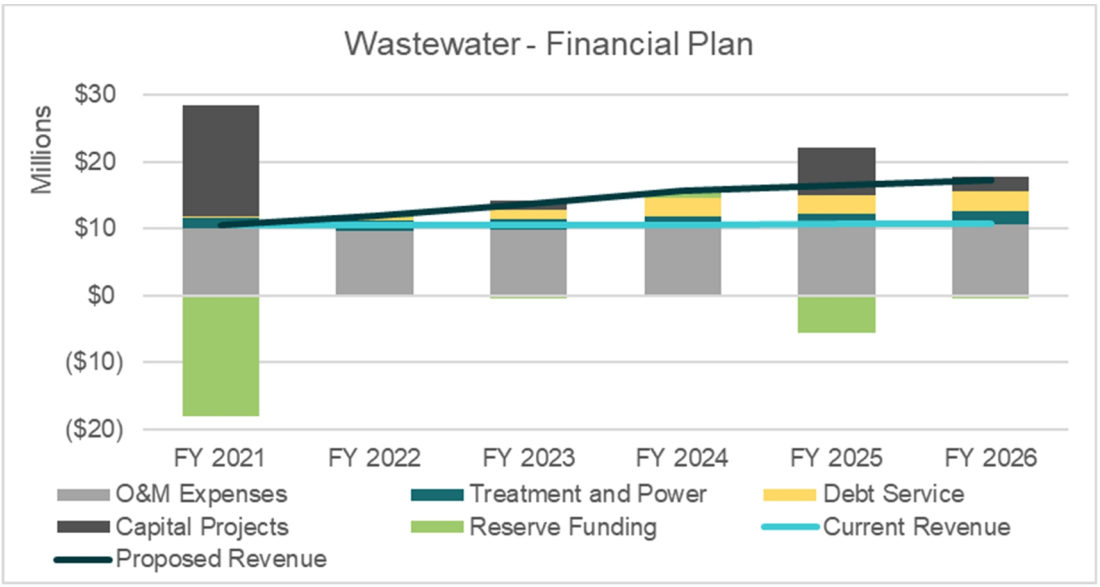
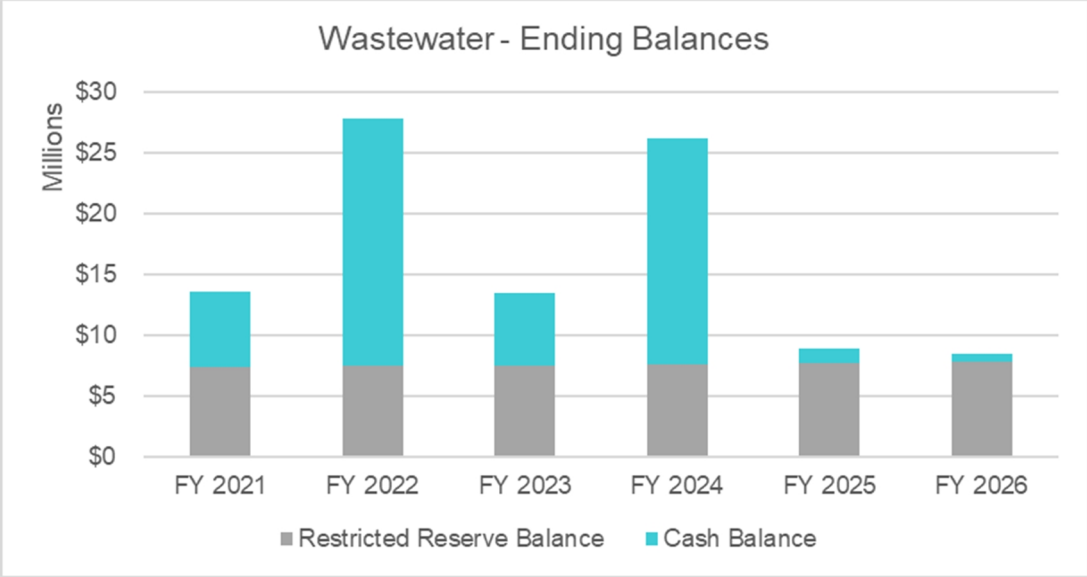


Figure 4-6 shows the projected wastewater fund balances with the proposed revenue adjustments. The cash balances are positive for all years of the Study, with the two spikes in ending balances in FY 2022 and FY 2024, coinciding with the proposed bond issuances. These balances are drawn down to fund the City's capital projects in FY 2023, FY 2025, and FY 2026.

Figure 4-6: Projected Wastewater Fund Balances (Proposed Revenue Adjustments)



5 Wastewater – Cost of Service Analysis and Rates

This section of the report details the cost of service analysis and rate calculation process to determine the proposed wastewater rates. The goal of this process is to determine the cost of providing wastewater service to each of the City's wastewater customer classes and to ensure equity and fairness among the various classes.

Process and Approach

The cost of service analysis utilized to develop the wastewater rates followed the guidelines for allocating costs outlined in the WEF Manual No. 27. The cost of service analysis and rate design process consists of eight major steps, as outlined below:

1. Determine the revenue requirement, equal to the revenue to be recovered from rates.
2. Conduct a treatment plant mass balance analysis to estimate the flows and strength characteristics of each customer class.
3. Functionalize O&M expenses and capital assets into functional categories such as treatment, laboratory, collection, engineering, etc.
4. Allocate each functional category into cost components such as wastewater flow and strength, which includes BOD and TSS.
5. Develop customer class characteristics and units of service by cost component.
6. Calculate the cost component unit rates by dividing the total cost in each cost component by the total units of service for that component. For example, wastewater flow is measured in ccf and BOD and TSS are measured in lbs per year.
7. Calculate the cost for each customer class by multiplying the unit cost by the units of service for each customer class.
8. Design rates to meet City's objectives.

Revenue Requirement

The first step of the cost of service analysis is to determine the revenue requirement for the test year, or rate-making year. The test year of this Study is FY 2022. **Table 5-1** shows the revenue requirement calculation for the wastewater utility.

The revenue requirements (Lines 2-3) are equal to the O&M expenses and debt and capital costs for FY 2022 (**Table 4-12**, Column C, Lines 18 and 25). The revenues from other sources (Lines 7-10), also known as non-rate revenues or revenue offsets, are equal to all non-rate revenues (**Table 4-12**, Column C, Lines 4-6). The adjustment for cash from/(to) reserves (Line 14) is equal to the negative value of net cash flow (**Table 4-12**, Column C, Line 27).

The revenue to be recovered from rates (Line 18) is divided between operating (Column B) and capital (Column C) based on the function of each line item. For example, debt and capital costs (Line 3) are allocated to capital, while O&M expenses (Line 2) are allocated to operating. Note that the total revenue requirement (Column D, Line 18) is equal to rate revenues increased by a full year of the revenue adjustment for FY 2020.

Table 5-1: Wastewater Revenue Requirement Calculation

	A	B	C	D
Line	Revenue Requirement (FY 2022)	Operating	Capital	Total
1	**Revenue Requirements**			
2	O&M Expenses	$11,231,163	$0	$11,231,163
3	Debt and Capital	$0	$365,039	$365,039
4	**Total - Revenue Requirements**	**$11,231,163**	**$365,039**	**$11,596,202**
5				
6	**Revenue from Other Sources**			
7	Investment Income	$0	$181,125	$181,125
8	Recycled Water Usage	$330,000	$0	$330,000
9	Other Revenues	$161,374	$0	$161,374
10	DIF Revenues	$0	$190,000	$190,000
11	**Total - Revenue from Other Sources**	**$491,374**	**$371,125**	**$862,499**
12				
13	**Less Adjustments**			
14	Cash from/(to) Reserves	$0	($308,733)	($308,733)
15	Midyear Increase	$0	$0	$0
16	**Subtotal - Adjustments**	**$0**	**($308,733)**	**($308,733)**
17				
18	**Revenue to be Recovered from Rates**	**$10,739,789**	**$302,647**	**$11,042,437**

Plant Mass Balance

The second step of the cost of service analysis is to conduct a plant mass balance analysis. The plant mass balance analysis is used to estimate and validate the wastewater loadings (flow and strength) generated by each customer class. While wastewater discharged into sewers for most users is not metered when it enters the wastewater system, the total amount of flow and strength entering the treatment plant is a known quantity. The quantity entering into the wastewater system is called total plant influent.

From the total plant influent, a portion is subtracted for inflows and infiltration (I&I). Non-residential customer flows can be estimated based on their water usage and using industry-accepted return factors. From there, residential customer loadings can be calculated by subtracting I&I and estimated non-residential loadings from total plant influent to determine the reasonableness of residential loadings.

Table 5-2 shows the wastewater flow estimates for elementary and secondary schools. The estimated wastewater flow per student (Line 1) in gallons per capita per day (gpcd) is based on industry standards, with some conservation factored in for secondary schools. This is multiplied by the projected number of students for FY 2020 (**Table 4-1**, Column D, Lines 19-20). The annual flow in gallons (Line 3) is converted to ccf (Line 4) to determine the total wastewater flow in ccf for elementary and secondary schools.

Table 5-2: Schools Wastewater Flow Estimate

	A	B	C
Line	Schools	Elementary	Secondary
1	Per Student Flow (gpcd)	5	8
2	Students	4,634	15,099
3	Annual Flow (gal)	8,457,050	44,089,080
4	Annual Flow (ccf)	11,306	58,943

Table 5-3 shows the plant balance analysis for all customer classes. There is no change to the customer classes which are grouped by the strength of their wastewater flow. The left-most columns (Columns B to D) represent the same values as the right-most columns (Columns F to H) in converted values. Flow is measured in million gallons per day (MGD) and converted to ccf per year. BOD and TSS are measured in milligrams per liter (mg/L) and converted to lbs per year.

City staff provided total plant influent (Line 1) and estimated approximately 5.0 percent of total influent to be from I&I (Line 2). Customers are grouped based on their strength and estimated strength - BOD and TSS in mg/L (Columns C and D, Lines 2-17) - are based on industry standards. The non-residential return factors (Column E) are estimated for the City's characteristics. The wastewater flows for non-residential customers (Column F, Lines 6-14) are calculated by multiplying the non-residential water usage (**Table 4-1**, Column D, Lines 7-15) by the return factors. The estimated wastewater flows for schools (Column F, Lines 16-17) were calculated in **Table 5-2**. Septage loadings (Line 20) represent a small portion of total plant loadings; flow is derived from data provided by City staff, and strength is based on industry standards.

The net residential loadings (Line 22) are determined by subtracting non-residential loadings (Lines 5-17), septage (Line 20), and I&I (Line 2) from total plant influent (Line 1).

Table 5-3: Wastewater Plant Balance Calculation

	A	B	C	D	E	F	G	H
Line	Plant Balance	Flow (MGD)	BOD (mg/L)	TSS (mg/L)	Return Factor	Flow (ccf)	BOD (lbs/yr)	TSS (lbs/yr)
1	Total Plant Influent	5.86	309	312		2,859,492	5,515,643	5,569,193
2	Less: I&I	0.29	50	50		142,975	44,625	44,625
3	**Net Plant Influent**	**5.57**	**323**	**326**		**2,716,517**	**5,471,018**	**5,524,568**
4								
5	**Non-Residential**							
6	Low Strength I	0.07	50	50	84%	33,797	10,549	10,549
7	Low Strength II	0.65	150	150	84%	316,782	296,620	296,620
8	Low Strength III	0.14	250	250	84%	68,850	107,446	107,446
9	Medium Strength I	0.04	350	350	84%	20,081	43,874	43,874
10	Medium Strength II	0.06	450	450	84%	29,197	82,015	82,015
11	Medium Strength III	0.03	550	550	84%	15,092	51,816	51,816
12	High Strength I	0.02	650	650	84%	7,874	31,950	31,950
13	High Strength II	0.21	750	750	84%	104,640	489,903	489,903
14	Large Volume User	0.05	250	250	84%	25,523	39,832	39,832
15								
16	Elementary School	0.02	130	130	100%	11,306	9,175	9,175
17	Secondary & High School	0.12	130	130	100%	58,943	47,832	47,832
18	**Subtotal Non-Residential**	**1.42**	**280**	**280**		**692,085**	**1,211,011**	**1,211,011**
19								
20	Septage	0.001	5,400	12,000		423	14,256	31,679
21								
22	**Net Residential**	**4.15**	**336**	**339**		**2,024,010**	**4,245,751**	**4,281,878**

The plant mass balance analysis in **Table 5-3** results in total estimated residential loadings. **Table 5-4** shows the number of total single family and multiple family dwelling units. To allocate the total flow and strength between single and multiple family customers, the dwelling units (**Table 4-1**, Column D, Lines 2-3) are multiplied by the dwelling unit (DU) ratio (Column C) to determine the adjusted units (Column D). The dwelling unit ratio represents the amount of wastewater flow compared to the average flow from a single family customer. The ratio for multiple family dwelling units is lower than that of single family because multiple family units tend to have a smaller household size based on housing density data. The proportion of adjusted units (Column E), or equivalent dwelling units (EDU), is used to allocate the estimated residential loadings between single and multiple family.

Table 5-4: Residential Proportion of Wastewater Flow

	A	B	C	D	E
Line	Residential Customer Classes	Dwelling Units	DU Ratio	EDUs	Proportion of Total EDUs
1	Single Family	16,300	1.00	16,300	68.4%
2	Multiple Family	9,800	0.77	7,546	31.6%
3	**Total - Residential**	**26,100**		**23,846**	**100.0%**

Table 5-5 shows the estimated residential wastewater loadings, allocated using the EDU ratios (**Table 5-4**, Column E). The total residential flow (Line 3) is equal to that calculated in the plant mass balance analysis (**Table 5-3**, Columns F to H, Line 22). To validate the results of the plant mass balance analysis, the total estimated residential flow is divided by the total population estimate, equal to 72,029 people, to determine that each resident in the City uses 58 gpcd. This is a reasonable estimate based on industry standard wastewater flow estimates.

Table 5-5: Estimated Residential Wastewater Loadings

	A	B	C	D
Line	Residential Customer Classes	Flow (ccf)	BOD (lbs/yr)	TSS (lbs/yr)
1	Single Family	1,383,517	2,902,195	2,926,889
2	Multiple Family	640,492	1,343,556	1,354,988
3	**Total - Residential**	**2,024,010**	**4,245,751**	**4,281,878**

The estimated flow from a single family dwelling unit is 174 gpd. The wastewater strength is higher because of lower wastewater flow due to conservation. This is now common for residential flow and strength. The estimated flow is calculated as follows:

1,383,517 ccf per year / 16,300 units x 748 ccf per gallon / 365 days per year = 174 gpd

Operating and Capital Cost Allocation

The next step in the cost of service analysis is to determine the operating and capital cost allocations by cost component. The cost components in this Study include flow, BOD, TSS, and general.

Table 5-6 shows the wastewater operating cost allocation. The flow cost component represents costs associated with wastewater flow, such as collection. The BOD and TSS cost components represent costs associated with wastewater strength, such as treatment and laboratory analyses. General costs, such as administration or engineering costs, do not have a specific function.

For the purpose of allocating operating costs, City staff provided the O&M expense budget estimates by function (Column F, Lines 13-21). This is representative of the distribution of operating costs shown in **Table 4-5**. Functions include administration, engineering, treatment and operations, treatment plant maintenance, quality control, industrial waste monitoring, collection, and laboratory. The operating costs are allocated into each cost component based on the percentage allocation (Lines 2-10) for each component. The final O&M expense allocation (Line 23) is determined by taking the weighted proportion of total operating costs by cost component based on the percentage allocations.

Table 5-6: Wastewater Operating Cost Allocation

	A	B	C	D	E	F
Line	O&M Expense Allocation	Flow	BOD	TSS	General	Total
1	**Percentage Allocation**					
2	Administration				100%	100%
3	Engineering				100%	100%
4	Treatment and Operations	50%	25%	25%		100%
5	Treatment Plant Maintenance	50%	25%	25%		100%
6	Quality Control		50%	50%		100%
7	Industrial Waste Monitoring	100%				100%
8	Collection System - General	100%				100%
9	WW Joint Laboratory - Water		50%	50%		100%
10	WW Joint Laboratory - Solid Waste		50%	50%		100%
11						
12	**Dollar Allocation**					
13	Administration	$0	$0	$0	$2,694,924	$2,694,924
14	Engineering	$0	$0	$0	$587,821	$587,821
15	Treatment and Operations	$1,899,950	$949,975	$949,975	$0	$3,799,899
16	Treatment Plant Maintenance	$484,088	$242,044	$242,044	$0	$968,176
17	Quality Control	$0	$289,049	$289,049	$0	$578,099
18	Industrial Waste Monitoring	$745,268	$0	$0	$0	$745,268
19	Collection System - General	$1,593,600	$0	$0	$0	$1,593,600
20	WW Joint Laboratory - Water	$0	$128,192	$128,192	$0	$256,384
21	WW Joint Laboratory - Solid Waste	$0	$3,496	$3,496	$0	$6,992
22	**Total - O&M Expenses**	**$4,722,906**	**$1,612,756**	**$1,612,756**	**$3,282,745**	**$11,231,163**
23	*O&M Expense Allocation*	*42.1%*	*14.4%*	*14.4%*	*29.2%*	*100.0%*

Table 5-7 shows the wastewater capital cost allocation. To minimize fluctuations in the capital cost allocation as capital projects change from year to year, capital costs are allocated on the basis of capital assets. For the purpose of allocating capital costs, City staff provided the wastewater capital assets listed by function (Column F, Lines 10-15). This is representative of the distribution of capital costs shown in **Table 4-8**. Functions include land, wastewater facilities, construction in progress, machinery and equipment, collection system, and vehicles. The capital asset costs are allocated into each cost component based on the percentage allocation (Lines 2-7) for each component. The final capital expense allocation (Line 17) is determined by taking the weighted proportion of total capital asset costs by cost component.

Table 5-7: Wastewater Capital Allocation

	A	B	C	D	E	F
Line	Capital Expense Allocation	Flow	BOD	TSS	General	Total
1	**Percentage Allocation**					
2	Land (For WWTP and Perc Ponds)	50%	25%	25%		100%
3	Wastewater Facilities/Plant	50%	25%	25%		100%
4	Construction in Progress	100%				100%
5	Machinery and Equipment	50%	25%	25%		100%
6	Collection System	100%				100%
7	Vehicles	100%				100%
8						
9	**Dollar Allocation**					
10	Land (For WWTP and Perc Ponds)	$2,219,416	$1,109,708	$1,109,708	$0	$4,438,832
11	Wastewater Facilities/Plant	$5,307,140	$2,653,570	$2,653,570	$0	$10,614,280
12	Construction in Progress	$0	$0	$0	$0	$0
13	Machinery and Equipment	$82,840	$41,420	$41,420	$0	$165,680
14	Collection System	$18,220,858	$0	$0	$0	$18,220,858
15	Vehicles	$186,819	$0	$0	$0	$186,819
16	**Total - Capital Assets**	**$26,017,073**	**$3,804,698**	**$3,804,698**	**$0**	**$33,626,469**
17	*Capital Expense Allocation*	*77%*	*11%*	*11%*	*0%*	*100%*

Unit Cost Components

Table 5-8 shows the wastewater service units by cost component, which are from the plant mass balance analysis (**Table 5-3**).

Table 5-8: Wastewater Service Units by Cost Components

	A	B	C	D
Line	Customer Class	Flow (ccf)	BOD (lbs/yr)	TSS (lbs/yr)
1	**Residential**			
2	Single Family Dwelling Unit	1,383,517	2,902,195	2,926,889
3	Multi-Family Dwelling Unit	640,492	1,343,556	1,354,988
4	**Total - Residential**	**2,024,010**	**4,245,751**	**4,281,878**
5				
6	**Non-Residential**			
7	Low Strength I	33,797	10,549	10,549
8	Low Strength II	316,782	296,620	296,620
9	Low Strength III	68,850	107,446	107,446
10	Medium Strength I	20,081	43,874	43,874
11	Medium Strength II	29,197	82,015	82,015
12	Medium Strength III	15,092	51,816	51,816
13	High Strength I	7,874	31,950	31,950
14	High Strength II	104,640	489,903	489,903
15	Large Volume User	25,523	39,832	39,832
16	**Total - Non-Residential**	**621,836**	**1,154,004**	**1,154,004**
17				
18	**Schools**			
19	Elementary School	11,306	9,175	9,175
20	Secondary & High School	58,943	47,832	47,832
21	**Total - Schools**	**70,249**	**57,007**	**57,007**
22				
23	**Septage**	**423**	**14,256**	**31,679**
24				
25	**Total**	**2,716,517**	**5,471,018**	**5,524,568**

Table 5-9 shows the calculation of unit costs by cost component. The operating revenue requirement (**Table 5-1**, Column B, Line 18) is allocated based on the O&M expense allocation (**Table 5-6**, Line 23) for each cost component. Similarly, the capital revenue requirement (**Table 5-1**, Column C, Line 18) is allocated based on the capital asset allocation (**Table 5-7**, Line 17). Then, the general costs (Column E, Line 3) are reallocated to the flow, BOD, and TSS cost components proportionately to the remaining cost of service. The adjusted cost of service for each cost component (Line 5) is divided by the units of service (Line 7) derived from **Table 5-8**, resulting in the unit cost per cost component.

Table 5-9: Wastewater Cost of Service and Unit Costs

	A	B	C	D	E	F
Line	Cost of Service Allocation	Flow	BOD	TSS	General	Total
1	Operating Revenue Requirement	$4,516,275	$1,542,197	$1,542,197	$3,139,121	$10,739,789
2	Capital Revenue Requirement	$234,161	$34,243	$34,243	$0	$302,647
3	**Total Cost of Service**	**$4,750,435**	**$1,576,440**	**$1,576,440**	**$3,139,121**	**$11,042,437**
4	Allocation of General Costs	$1,886,828	$626,147	$626,147	($3,139,121)	$0
5	**Adjusted Cost of Service**	**$6,637,263**	**$2,202,587**	**$2,202,587**	**$0**	**$11,042,437**
6						
7	Units of Service	2,716,517	5,471,018	5,524,568		
8		ccf	lbs/yr	lbs/yr		
9						
10	Unit Cost[2]	$2.44	$0.40	$0.40		
11		ccf	lbs/yr	lbs/yr		

Revenue Requirement Allocation

The final step in the cost of service analysis to allocate the revenue requirement to each customer class based on their share of burden in the wastewater system. **Table 5-10** shows the revenue requirement allocated to each customer class based on the cost components, which is calculated by multiplying the unit costs of each cost component (**Table 5-9**, Line 10) by the units of service for each customer class (**Table 5-8**). Note that the total cost of service (Column E, Line 25) is equal to the total revenue required from rates (**Table 5-1**, Column D, Line 18). The calculations in the table may not be equal to the precise number shown due to rounding within the tables.

[2] Unit costs are shown rounded to the nearest penny.

Table 5-10: Allocation of Wastewater Revenue Requirement to Customer Classes

	A	B	C	D	E
Line	Customer Class	Flow	BOD	TSS	Total
1	**Residential**				
2	Single Family Dwelling Unit	$3,380,346	$1,168,400	$1,166,920	$5,715,666
3	Multi-Family Dwelling Unit	$1,564,914	$540,905	$540,219	$2,646,038
4	**Total - Residential**	**$4,945,260**	**$1,709,305**	**$1,707,139**	**$8,361,704**
5					
6	**Non-Residential**				
7	Low Strength I	$82,575	$4,247	$4,206	$91,027
8	Low Strength II	$773,992	$119,417	$118,259	$1,011,668
9	Low Strength III	$168,221	$43,257	$42,838	$254,315
10	Medium Strength I	$49,064	$17,663	$17,492	$84,219
11	Medium Strength II	$71,336	$33,019	$32,699	$137,054
12	Medium Strength III	$36,875	$20,861	$20,659	$78,394
13	High Strength I	$19,239	$12,863	$12,738	$44,840
14	High Strength II	$255,668	$197,231	$195,319	$648,218
15	Large Volume User	$62,361	$16,036	$15,880	$94,278
16	**Total - Non-Residential**	**$1,519,331**	**$464,592**	**$460,089**	**$2,444,012**
17					
18	**Schools**				
19	Elementary School	$27,624	$3,694	$3,658	$34,976
20	Secondary & High School	$144,014	$19,257	$19,070	$182,342
21	**Total - Schools**	**$171,639**	**$22,951**	**$22,728**	**$217,318**
22					
23	**Septage**	**$1,033**	**$5,739**	**$12,630**	**$19,403**
24					
25	**Total**	**$6,637,263**	**$2,202,587**	**$2,202,587**	**$11,042,437**

Rate Calculation

Table 5-11 shows the rate calculation for the City's proposed wastewater rates for the FY 2022 test year.

Bi-monthly residential service charge = Residential cost of service / dwelling units / 6 billing periods

Non-residential wastewater usage rate = Non-residential cost of service / ccf of water usage

Bi-monthly schools service charge = Schools cost of service / students x 100 students / 6 billing periods

The City's wastewater utility incurs additional costs (Line 22) to serve septage customers above and beyond the allocated cost of service. These additional costs are equal to the total burdened labor cost for administrative work related to collecting septage. Note that the revenues from septage charges were estimated in the projected wastewater revenues (**Table 4-4**, Line 5). The additional costs are calculated as follows:

$30 per hour x 1.5 hours x 2 for overhead costs / 2,000 gallons per load x 363,636 gallons of septage per year

Table 5-11: Wastewater Bi-Monthly Rate Calculation

	A	B	C	D
Line	Customer Class	Cost of Service	FY 2020 Units	Proposed Bi-Monthly Rate
1	**Residential**		*dwelling units*	*per dwelling unit*
2	Single Family Dwelling Unit	$5,715,666	16,479	$57.81
3	Multi-Family Dwelling Unit	$2,646,038	9,908	$44.52
4				
5	**Non-Residential**		*ccf of water*	*per ccf*
6	Low Strength I	$91,027	40,677	$2.24
7	Low Strength II	$1,011,668	381,271	$2.66
8	Low Strength III	$254,315	82,866	$3.07
9	Medium Strength I	$84,219	24,169	$3.49
10	Medium Strength II	$137,054	35,140	$3.91
11	Medium Strength III	$78,394	18,165	$4.32
12	High Strength I	$44,840	9,477	$4.74
13	High Strength II	$648,218	125,943	$5.15
14	Large Volume User	$94,278	30,719	$3.07
15				
16	**Schools**		*students*	*per 100 students*
17	Elementary School	$34,976	4,685	$124.43
18	Secondary & High School	$182,342	15,265	$199.09
19				
20	**Septage**		*gallons*	*per gallon*
21	Cost of Service	$19,403	363,636	$0.06
22	Additional Costs	$16,364	363,636	$0.05
23	Total Septage	$35,766	363,636	$0.10

Additionally, the City's wastewater utility calculates a minimum charge to serve septage customers based on the minimum cost of staff time necessary to receive a septage load. These costs are equal to the minimum burdened labor cost for staff work related to collecting septage. The minimum charge is calculated as follows:

$30 per hour x 0.25 hours x 2 for overhead costs = $15

Table 5-12 shows the bi-monthly rate comparison between the proposed rates calculated in **Table 5-11** and the City's current wastewater rates.

Table 5-12: Wastewater Bi-Monthly Rate Comparison

	A	B	C	D
Line	Customer Class	Proposed Bi-Monthly Rate	Current Bi-Monthly Rate	Difference ($)
1	**Residential**	*per dwelling unit*		
2	Single Family Dwelling Unit	$57.81	$50.05	$7.76
3	Multi-Family Dwelling Unit	$44.52	$37.59	$6.93
4				
5	**Non-Residential**	*per ccf*		
6	Low Strength I	$2.24	$2.05	$0.19
7	Low Strength II	$2.66	$2.16	$0.50
8	Low Strength III	$3.07	$2.64	$0.43
9	Medium Strength I	$3.49	$3.17	$0.32
10	Medium Strength II	$3.91	$3.64	$0.27
11	Medium Strength III	$4.32	$4.11	$0.21
12	High Strength I	$4.74	$4.60	$0.14
13	High Strength II	$5.15	$5.00	$0.15
14	Large Volume User	$3.07	$2.76	$0.31
15				
16	**Schools**	*per 100 students*		
17	Elementary School	$124.43	$119.36	$5.07
18	Secondary & High School	$199.09	$198.94	$0.15
19				
20	**Septage**	*per gallon*		
21	Septage Charge	$0.10	$0.11	($0.01)
		per load		
22	**Minimum Septage Charge ($)**	$15.00	$12.60	$2.40

Proposed Rates

Table 5-13 and **Table 5-14** show the proposed bi-monthly wastewater service charges and the non-residential wastewater rates, respectively. The proposed wastewater rates for July 2021 are from **Table 5-11**. The proposed wastewater rates in the following years are increased across the board by the revenue adjustments in **Table 4-11**.

Table 5-13: Proposed Bi-Monthly Wastewater Service Charges

	A	B	C	D	E	F
Line	Bi-Monthly Wastewater Service Charges	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Residential ($/dwelling unit)**					
2	Single Family	$57.81	$66.49	$76.47	$80.30	$84.32
3	Multiple Family	$44.52	$51.20	$58.88	$61.83	$64.93
4						
5	**Schools ($/100 students)**					
6	Elementary	$124.43	$143.10	$164.57	$172.80	$181.44
7	Secondary & High	$199.09	$228.96	$263.31	$276.48	$290.31

Table 5-14: Proposed Non-Residential Wastewater Rates

	A	B	C	D	E	F
Line	Wastewater Usage Rates	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Non-Residential Usage ($/ccf of water)**					
2	Low Strength I	$2.24	$2.58	$2.97	$3.12	$3.28
3	Low Strength II	$2.66	$3.06	$3.52	$3.70	$3.89
4	Low Strength III	$3.07	$3.54	$4.08	$4.29	$4.51
5	Medium Strength I	$3.49	$4.02	$4.63	$4.87	$5.12
6	Medium Strength II	$3.91	$4.50	$5.18	$5.44	$5.72
7	Medium Strength III	$4.32	$4.97	$5.72	$6.01	$6.32
8	High Strength I	$4.74	$5.46	$6.28	$6.60	$6.93
9	High Strength II	$5.15	$5.93	$6.82	$7.17	$7.53
10	Large Volume User	$3.07	$3.54	$4.08	$4.29	$4.51
11	Minimum Charge ($)	$44.52	$51.20	$58.88	$61.83	$64.93
12						
13	**Septage Charge ($/gal)**	$0.10	$0.12	$0.14	$0.15	$0.16
14	Minimum Septage Charge ($)	$15.00	$17.25	$19.84	$20.84	$21.89

6 Non-Potable Water – Financial Plan

This section of the report details the non-potable enterprise's long-term financial plan, based on the projected revenues, expenses, debt service, and capital project costs. Raftelis modeled the financial plan without revenue adjustments (status quo) and with proposed revenue adjustments to ensure the financial sustainability and solvency of the non-potable water utility.

Projected Revenues

City staff provided the actual FY 2020 revenues and budgeted FY 2021 revenues for the non-potable water utility, which were used to project revenues for the remainder of the Study period. **Table 6-1** shows the projected water revenues for each of the non-potable water funds.

The non-potable water rate revenues (Line 2) are inflated for future years based on the weighted customer account growth assumptions for each customer class (**Table 2-1**). The City expects modest increases in non-potable water rate revenues for all years of the Study. The investment incomes (Lines 3 and 8) are calculated using the reserve interest rate (**Table 2-2**, Line 2). The remaining revenues are inflated using the non-rate revenue inflation factor (**Table 2-2**, Line 1).

Table 6-1: Projected Non-Potable Water Revenues

	A	B	C	D	E	F	G
Line	Projected Revenues	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Non-Potable Water Service (531)**						
2	Non-Potable Water Usage	$432,803	$435,134	$437,477	$439,833	$442,202	$444,521
3	Non-Potable Water Service Charge	$46,960	$47,213	$47,467	$47,723	$47,980	$48,231
4	Investment Income	$41,909	$37,929	$31,695	$18,212	$9,798	$10,466
5	Frontage Charge	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
6	**Total - Non-Potable Water Service (541)**	**$541,672**	**$540,276**	**$536,640**	**$525,768**	**$519,980**	**$523,218**
7							
8	**Non-Potable CIP (549)**						
9	Capital Improv Charge Non-Res	$30,000	$30,000	$30,000	$30,000	$30,000	$30,000
10	Investment Income	$375	$681	$990	$1,302	$1,617	$1,936
11	**Total - Non-Potable CIP (549)**	**$30,375**	**$30,681**	**$30,990**	**$31,302**	**$31,617**	**$31,936**
12							
13	**Total - Revenues**	**$572,046**	**$570,957**	**$567,630**	**$557,070**	**$551,597**	**$555,154**

Projected O&M Expenses

City staff provided the non-potable water O&M actual expenses for FY 2020 and budgeted O&M expenses for FY 2021. **Table 6-2** shows the projected O&M expenses for the Study period, inflated for FY 2022 and beyond using the expense inflation factors (**Table 2-3**).

Table 6-2: Projected Non-Potable Water O&M Expenses

Line	A Projected O&M Expenses	B FY 2021	C FY 2022	D FY 2023	E FY 2024	F FY 2025	G FY 2026
1	**Non-Potable Water Service (541)**						
2	Salaries and Benefits	$100,845	$104,879	$105,403	$105,930	$110,167	$114,574
3	Services - Power	$18,267	$19,286	$20,361	$21,496	$22,695	$23,960
4	Services	$79,031	$81,402	$83,844	$86,359	$88,950	$91,619
5	**Total - Non-Potable Water Service (541)**	**$198,143**	**$205,566**	**$209,608**	**$213,786**	**$221,812**	**$230,153**
6							
7	**Total - O&M Expenses**	**$198,143**	**$205,566**	**$209,608**	**$213,786**	**$221,812**	**$230,153**

Debt Service

The City does not have any existing debt for the non-potable water utility and does not plan to incur new debt to fund capital projects for the Study period.

Capital Projects

Table 6-3 shows the inflated non-potable water capital project costs, based on CIP provided from City staff inflated by the capital expense inflation factor (**Table 2-3**, Line 7). The City plans to fund all CIP for the non-potable water system through rates.

Table 6-3: Inflated Non-Potable Water Capital Projects

Line	A Capital Projects (Inflated)	B FY 2021	C FY 2022	D FY 2023	E FY 2024	F FY 2025	G FY 2026
1	**Replacement**						
2	Recycled Water Reservoirs	$0	$185,400	$0	$0	$0	$0
3	Non-Potable Water Meter Replacements	$0	$95,790	$0	$0	$0	$0
4	Non-Potable Water Well #31A Rehab	$0	$257,500	$0	$0	$0	$0
5	Non-Potable Water Well #32 Rehab	$0	$103,000	$0	$0	$0	$0
6	Crafton Hills & Property-One Reservoir	$0	$0	$106,090	$928,818	$0	$0
7	Recycle Water Reservoir	$0	$0	$848,720	$0	$0	$0
8	New York Well Rehabilitation	$0	$0	$106,090	$0	$0	$0
9	Well #11 Rehabilitation	$0	$0	$106,090	$0	$0	$0
10	Well #36 Rehabilitation	$0	$0	$106,090	$0	$0	$0
11	Mill Creek #4 Rehabilitation	$0	$0	$0	$109,273	$0	$0
12	Redlands Heights Well Rehabilitation	$0	$0	$0	$109,273	$0	$0
13	WWTP Recycle Water Reservoir	$0	$0	$0	$874,182	$0	$0
14	Texas Street Reservoir	$0	$0	$0	$54,636	$0	$0
15	California Street Well Rehabilitation	$0	$0	$0	$0	$112,551	$0
16	Hog Canyon Well Rehabilitation	$0	$0	$0	$0	$112,551	$0
17	Chicken Hill Well Rehabilitation	$0	$0	$0	$0	$0	$115,927
18	Well #30A Rehabilitation	$0	$0	$0	$0	$0	$115,927
19	FY 2021 Budgeted CIP	$0	$0	$0	$0	$0	$0
20	Carryover Projects from FY2019-20	$836,372	$0	$0	$0	$0	$0
21	**Total – Replacement Non-Potable Projects**	**$836,372**	**$641,690**	**$1,273,080**	**$2,076,181**	**$225,102**	**$231,855**

Current Financial Plan – Status Quo

Table 6-4 shows the projected non-potable water financial plan under the status quo scenario. Revenues (Line 6) are derived from **Table 6-1**. O&M expenses (Line 12) are from **Table 6-2**. Rate funded capital projects (Line 15) are from **Table 6-3**. The net cash flow (Line 18) is negative for FY 2021 through FY 2024, indicating that the City's non-potable water revenues are not sufficient to fund operating and capital project costs and the cash balance will gradually be drawn down over the Study period. However, due to a decrease in capital spending in FY 2025 and FY 2026, the utility will have a positive cash balance at the end of the Study period.

Table 6-4: Projected Non-Potable Water Financial Plan (Status Quo)

	A	B	C	D	E	F	G
Line	Non-Potable Water Financial Plan	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
1	**Revenues**						
2	Rate Revenues	$432,803	$435,134	$437,477	$439,833	$442,202	$444,521
3	Revenue Adjustments	$0	$0	$0	$0	$0	$0
4	Investment Income	$42,283	$38,610	$32,685	$19,514	$11,415	$12,402
5	Other Revenues	$96,960	$97,213	$97,467	$97,723	$97,980	$98,231
6	**Total - Revenues**	**$572,046**	**$570,957**	**$567,630**	**$557,070**	**$551,597**	**$555,154**
7							
8	**O&M Expenses**						
9	Salaries and Benefits	$100,845	$104,879	$105,403	$105,930	$110,167	$114,574
10	Services - Power	$18,267	$19,286	$20,361	$21,496	$22,695	$23,960
11	Services	$79,031	$81,402	$83,844	$86,359	$88,950	$91,619
12	**Total - O&M Expenses**	**$198,143**	**$205,566**	**$209,608**	**$213,786**	**$221,812**	**$230,153**
13							
14	**Debt and Capital**						
15	Rate Funded Capital Projects	$836,372	$641,690	$1,273,080	$2,076,181	$225,102	$231,855
16	**Total - Debt and Capital**	**$836,372**	**$641,690**	**$1,273,080**	**$2,076,181**	**$225,102**	**$231,855**
17							
18	**Net Cash Flow**	($462,469)	($276,299)	($915,058)	($1,732,897)	$104,683	$93,146
19	Net Operating Revenue	$373,903	$365,391	$358,022	$343,284	$329,785	$325,001
20							
21	Beginning Cash Balance	$4,435,765	$3,973,072	$3,696,545	$2,781,257	$1,048,128	$1,152,577
22	Ending Cash Balance	$3,973,072	$3,696,545	$2,781,257	$1,048,128	$1,152,577	$1,245,487

Figure 6-1 shows the proposed non-potable water capital financing plan in graphical format, based on the capital projects shown in **Table 6-3** and with no debt issues. The dark teal bars represent the rate funded replacement CIP costs.

Figure 6-1: Proposed Water Capital Financing Plan (Status Quo)

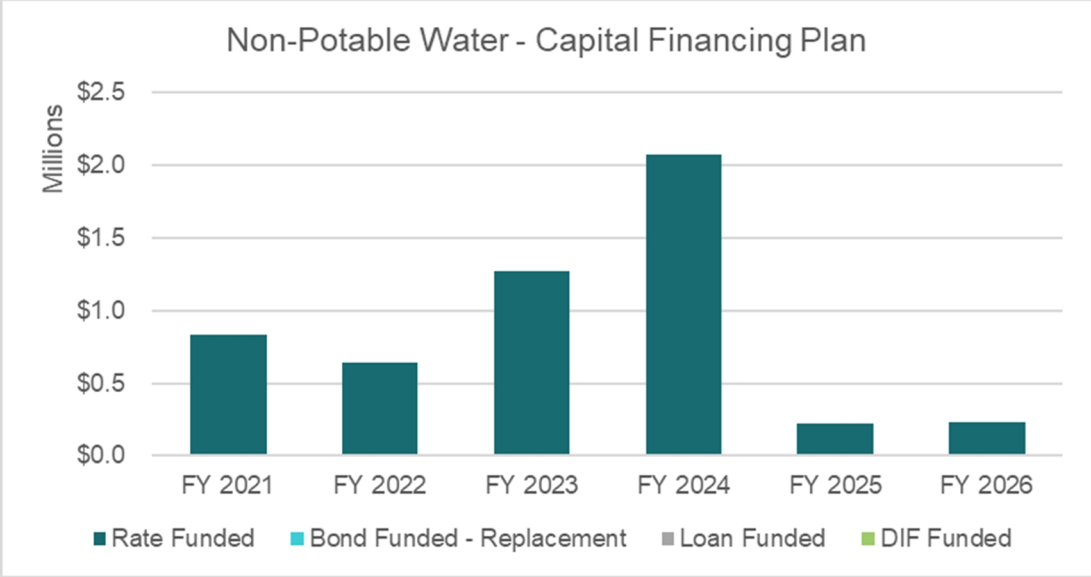


Figure 6-2 shows the projected non-potable water financial plan under the status quo scenario. The green bars, which represent net cash flow, are below the stacked grey bars from FY 2021 to FY 2024, which represents the drawdown of the cash balance in these years of the Study.

Figure 6-2: Projected Non-Potable Water Financial Plan (Status Quo)

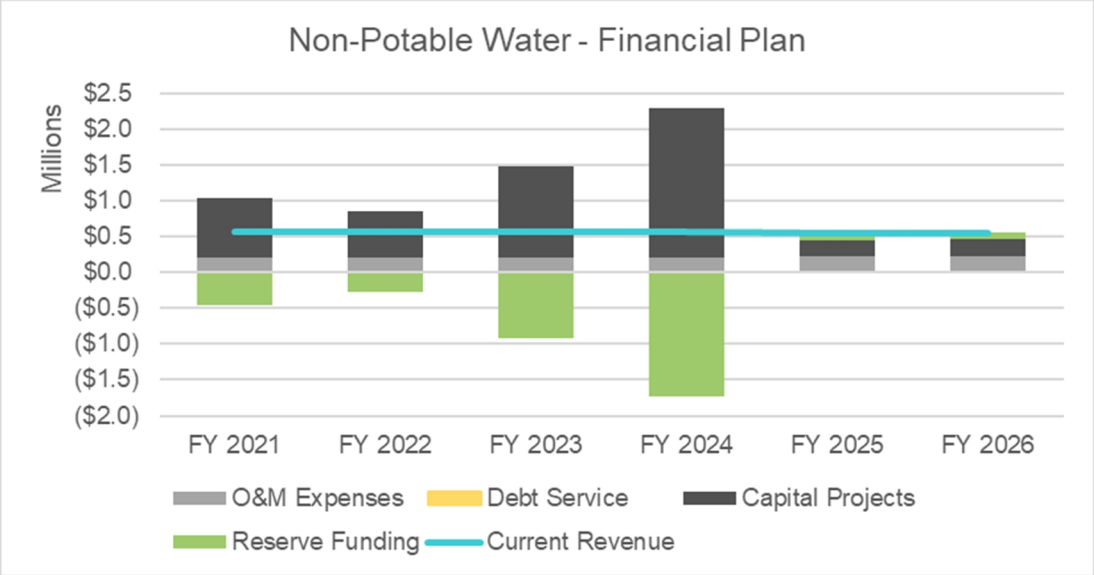
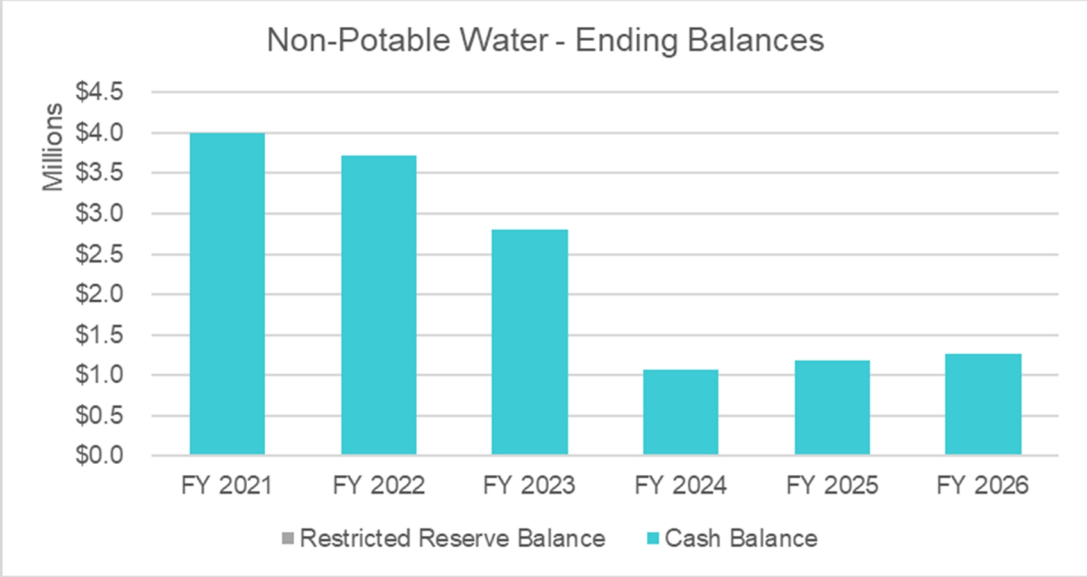


Figure 6-3 shows the projected non-potable water fund cash balance under the status quo scenario. The turquoise bars, which represent the ending cash balance for the non-potable water system, decline rapidly due to anticipated capital costs.

Figure 6-3: Projected Non-Potable Water Fund Balances (Status Quo)



Proposed Financial Plan

Table 6-5 shows the proposed non-potable water revenue adjustments over the Study period. Currently, Raftelis does not recommend any revenue adjustments.

Table 6-5: Proposed Non-Potable Water Revenue Adjustments

	A	B	C
Line	Fiscal Year	Revenue Adjustment	Month Effective
1	FY 2022	0.0%	July
2	FY 2023	0.0%	July
3	FY 2024	0.0%	July
4	FY 2025	0.0%	July
5	FY 2026	0.0%	July

Proposed Rates

Since there are no revenue adjustments proposed for the non-potable system, the current non-potable water rates will remain in effect as shown in **Table 6-6**and **Table 6-7**.

Table 6-6: Proposed Bi-Monthly Non-Potable Water Service Charges ($/meter size)

	A	B	C	D	E	F
Line	Bi-Monthly Non-Potable Water Service Charges	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Non-Potable Water Service**					
2	3/4"	$13.81	$13.81	$13.81	$13.81	$13.81
3	1"	$20.65	$20.65	$20.65	$20.65	$20.65
4	1 1/2"	$37.29	$37.29	$37.29	$37.29	$37.29
5	2"	$55.16	$55.16	$55.16	$55.16	$55.16
6	3"	$95.50	$95.50	$95.50	$95.50	$95.50
7	4"	$147.45	$147.45	$147.45	$147.45	$147.45
8	6"	$272.16	$272.16	$272.16	$272.16	$272.16
9	8"	$401.04	$401.04	$401.04	$401.04	$401.04

Table 6-7: Proposed Non-Potable Water Usage Rates ($/ccf of water)

	A	B	C	D	E	F
Line	Non-Potable Water Usage Rates	July 2021	July 2022	July 2023	July 2024	July 2025
1	**Non-Potable Water Usage**					
2	Non-Potable Water	$0.99	$0.99	$0.99	$0.99	$0.99
3	Conversion Customer	$0.64	$0.64	$0.64	$0.64	$0.64