CITY OF LINCOLN

Water and Wastewater Rate Study

FINAL REPORT / JUNE 21, 2023

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June 21, 2023

Ms. Angela Frost
Environnemental Services Manager
City of Lincoln
600 Sixth Street
Lincoln, CA 95648

Subject: Water and Wastewater Rate Study Report – FINAL

Dear Ms. Frost:

Raftelis is pleased to provide this Water and Wastewater Rate Study report for the City of Lincoln (City) to address current financial challenges the City is facing and to establish water and wastewater rates that are equitable and align with Proposition 218.

The major objectives of the study include the following:

- Develop a financial plan for the water and wastewater enterprises to ensure financial sufficiency, meet operation and maintenance costs, ensure sufficient funding for capital replacement and refurbishment (R&R) needs, and improve the financial health of the enterprises
- Develop sound and sufficient reserve fund targets and reserves
- Review the current rate structure for the water and wastewater enterprises
- Prepare a five-year schedule of rates for water and wastewater

The report summarizes the key findings and recommendations related to the development of the financial plans for the water and wastewater enterprises and the development of the updated water rates and wastewater rates.

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

Sincerely,

Theresa M. Jurotich

Theresa Jurotich, P.E. (KS, WA), PMP
Manager

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1. Executive Summary

1.1. Background

In 2022 the City of Lincoln (City) contracted with Raftelis Financial Consultants (Raftelis) to conduct a Water and Wastewater Rate Study including updated ten-year financial plans, cost-of-service analyses, and updated five-year schedules of water and wastewater rates. This report presents the financial plans, the cost-of-service analyses, and the resulting water and wastewater rates.

This Executive Summary describes the rate study process, methodology, and recommendations for the City's water and wastewater rates. The City's last water rate adjustment occurred in 2021 (when the capital portion of the rate was reduced). The City's last wastewater rate adjustment occurred in 2017 (when only the non-residential rate was adjusted). The City wishes to establish fair and equitable rates that:

- Meet the City's water and wastewater enterprise fiscal needs for operation and maintenance costs, capital replacement and refurbishment (R&R) costs to maintain the system, reserve goals, and to improve the financial health of each enterprise, and
- Prepare a five-year schedule of water and wastewater rates that align with Proposition 218.

The City's water enterprise serves the City of Lincoln in Placer County, California. The enterprise provides potable water service to a population of over 50,600 customers in the City through almost 21,700 connections. On an annual basis, the City delivers over 9,000 acre-feet (AF) of potable water. Total sales in Fiscal Year (FY) 2022 were 9,455 AF or 3,080,814 thousand gallons (kgal). Placer County Water Agency is the primary source of the City's water, providing roughly 98 percent of the City's potable water. The remaining potable water supply is obtained through groundwater pumping.

Nevada Irrigation District (NID) surface water is also supplied to some Placer County residential customers; primarily delivered indirectly through PCWA's treatment and distribution system. In 2004, the City entered a temporary raw water sales agreement (Temporary Agreement) between the City, PCWA, and NID for treatment and delivery of NID water to City customers within NID's service area. The Temporary Agreement entitles the City to receive NID raw water supply, which has been treated and delivered to the City via PCWA facilities. The City purchases any NID supply from PCWA.

The City's wastewater enterprise serves most of the City of Lincoln. As of December 2022, the City of Lincoln and Placer County formed a Joint Powers Authority, named Lincoln-Sewer Maintenance District 1 Wastewater Authority (LiSWA), to own and operate the regional wastewater treatment plant facilities. LiSWA established charges and other costs in connection with the regional facilities and charges its member agencies, the County and the City, on a proportionate basis on the number of respective wastewater treatment and reclamation units (WWTRU) within each jurisdiction. The City continues to provide wastewater collection services to approximately 21,100 connections.

1.2. Process

Raftelis developed a water financial plan for the City and reviewed and updated a wastewater financial plan initially developed by the City. The financial plans set forth the total revenue adjustments needed to meet capital investment, operational expenses, debt service, and rebuild reserves during the five-year rate-setting period. Raftelis worked with City staff to refine inputs and provide revenue adjustments scenarios for the City

Council's consideration. After developing the financial plans, Raftelis performed cost-of-service analyses to determine the water and wastewater rates based on the selected financial plan.

Raftelis also assisted the City in presenting the utility and rate setting process at an open house, two community meetings, and through a live webinar. These outreach events were conducted to inform customers about the levels of service the City provides, the need for revenue adjustments to continue providing these services, and legal rate setting in accordance with California Proposition 218. The City also created and maintained a rate study webpage to keep customers informed on the rate-setting process, including informational videos and key dates.

The current water rate consists of a monthly service charge, a monthly capital charge, and a uniform volumetric rate for all customers. The monthly service charge is designed to primarily collect costs that are relatively fixed, including such things as billing and customer service costs, meter reading and maintenance, as well as a portion of the City's purchased water fixed costs. The monthly capital charge recovers the cost of planned capital projects. The volumetric rate recovers the remaining costs. Raftelis is not proposing to modify the water rate structure.

The current wastewater rate structure consists of a per equivalent dwelling unit (EDU) cost applied to all customers and a volumetric rate for commercial customers. The proposed wastewater rate consists of a per equivalent dwelling unit (EDU) cost for residential customers and volumetric charges for non-residential customers and parks. Non-residential customers and parks will be subject to a minimum charge equal to the residential EDU charge. This change in structure is due to the City continuing to provide wastewater collection services and no longer providing wastewater treatment with the transfer of the ownership and operation of the wastewater reclamation treatment plant to LiSWA.

1.3. Proposed Water Financial Plan

Raftelis, with the assistance of City staff, conducted a status quo cash flow analysis to evaluate whether existing water rates can adequately fund the City's various water-related expenses over the ten-year study period. The analysis projected annual revenues, operation and maintenance expenses, debt service payments, and capital expenditures through FY 2033. Raftelis projects that with no rate increases over the study period, the City will fully deplete its reserves by the end of FY 2024. This projected outcome of depleted reserve funds within 12-13-months demonstrates a clear need for water revenue adjustments to maintain target reserve levels. Raftelis worked with City staff to develop the following proposed revenue adjustments over the five-year study period (see Table 1-1) plus a projection for informational purposes only for the last half of the 10-year financial plan. The proposed water revenue adjustments were selected to make sure the water operating fund has sufficient funds to cover annual expenses and to build reserves to target levels by the end of the rate-setting period, FY 2028. The operating reserve target is 25 percent of annual operating revenue, and the capital reserve target starts at $1 million in FY 2024, increasing by $1 million per year thereafter.

Table 1-1: Proposed Water Revenue Adjustments

Effective Date	Adjustment
Oct. 1, 2023	84.0%
July 1, 2024	3.0%
July 1, 2025	3.0%
July 1, 2026	3.0%
July 1, 2027	3.0%
July 1, 2028	*3.0%*
July 1, 2029	*3.0%*
July 1, 2030	*3.0%*
July 1, 2031	*3.0%*
July 1, 2032	*3.0%*

Key factors influencing the need for proposed revenue adjustments include:

- Water rates were reduced in 2017 and then reduced again in 2021. Meanwhile, the consumer price index (CPI) for the San Francisco area has increased 24 percent between 2017 and 2023.
- Need to make the water operating fund self-sufficient and meet operating reserves to help manage short-term cashflow and have funds for emergencies.
- Need to build up capital reserves to help fund future projects, such as water storage tank and well replacements, with cash instead of with debt.

Figure 1-1 shows the proposed ten-year financial plan. Status Quo revenue is shown by the black line. Projected revenue is shown by the green line. Annual expenditures are shown by the columns. The green bars above the X-axis show the net cash used to build up the reserves and the bars below the X-axis show the withdrawals from reserves to fund costs. Current rates are neither sufficient to cover annual operating and maintenance expenses nor capital-related expenditures. Therefore, revenue adjustments are required to generate sufficient revenue to cover annual operating and maintenance costs as well as cash-funded capital projects over the study period.

Figure 1-1: Proposed Water Financial Plan

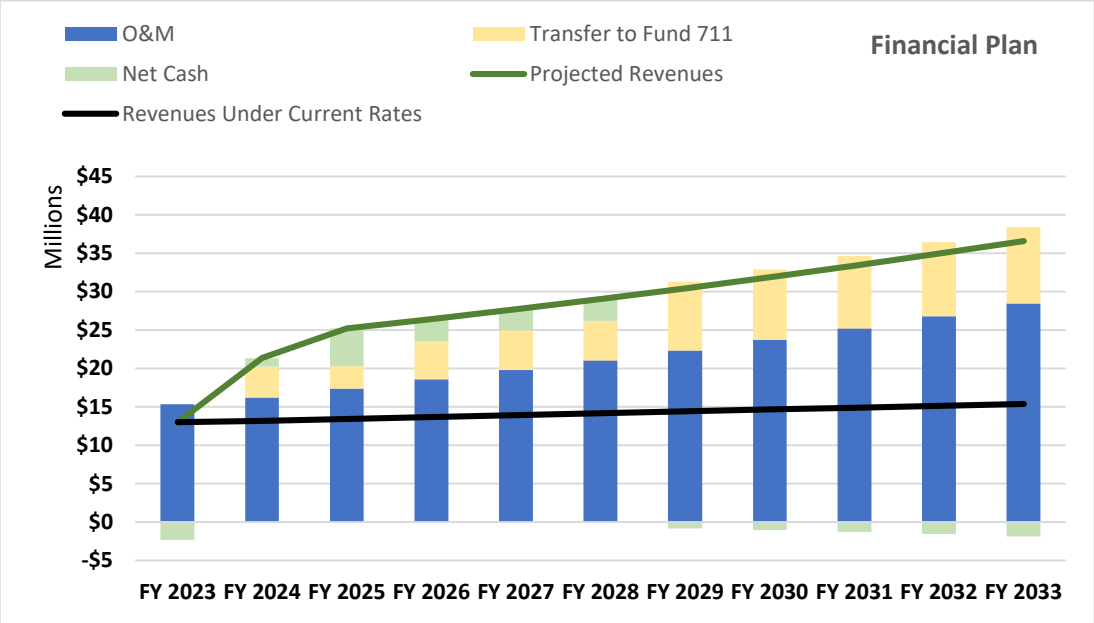


Figure 1-2 shows projected operating and capital ending balances over the study period relative to the City's total reserve targets under the proposed financial plan. Reserves are drawn down in FY 2024 to help cover annual costs. However, the overall balance is growing each year thereafter, meeting the target total reserve requirement by the end of FY 2028.

Figure 1-2: Proposed Water Financial Plan – Projected Ending Balances

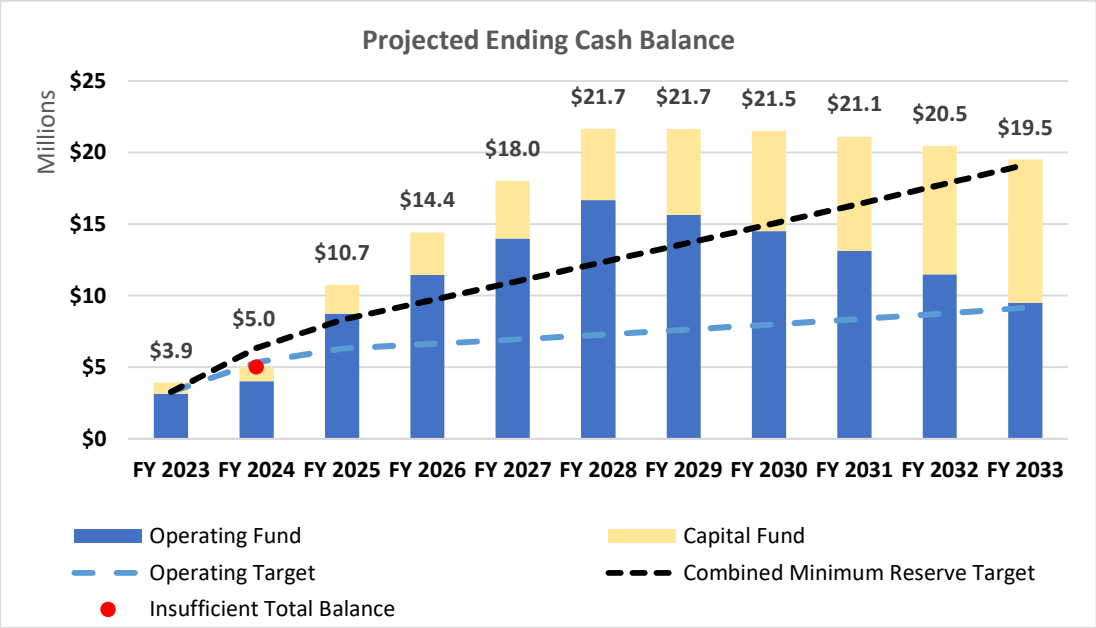
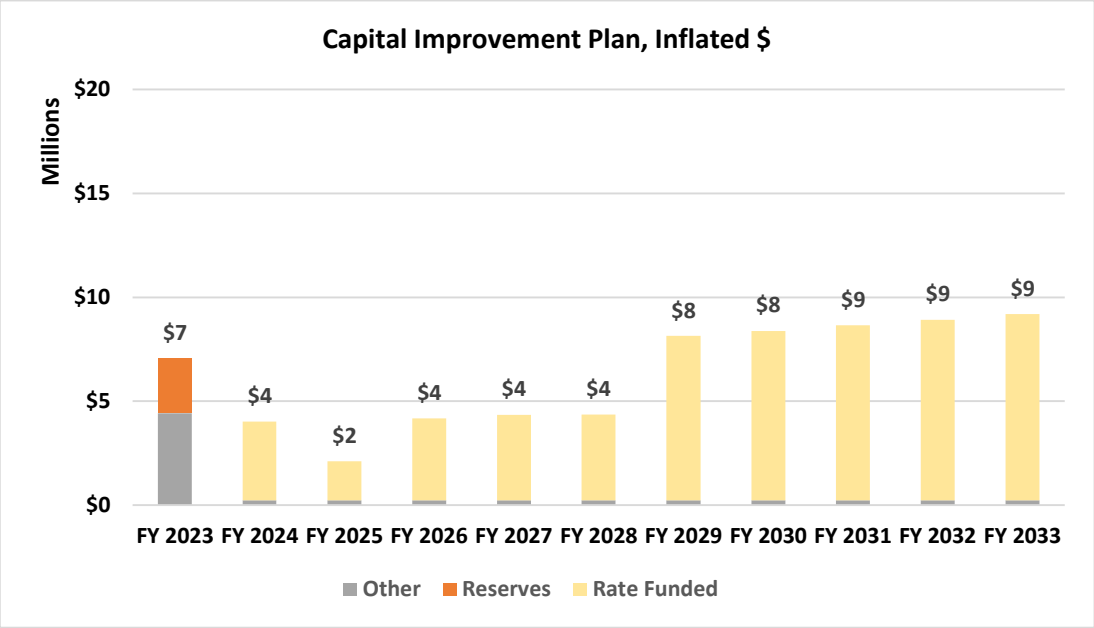


Figure 1-3 shows the proposed capital financing plan over the study period. The capital improvement plan anticipates providing up to 1 mile per year of water main replacement starting in FY 2026 and ramping up to providing 2 miles per year of water main replacement by FY 2029. The proposed financial plan assumes that all capital projects over the study period will be cash funded through rate revenue.

Figure 1-3: Water Capital Financing Plan



1.4. Proposed Water Rates

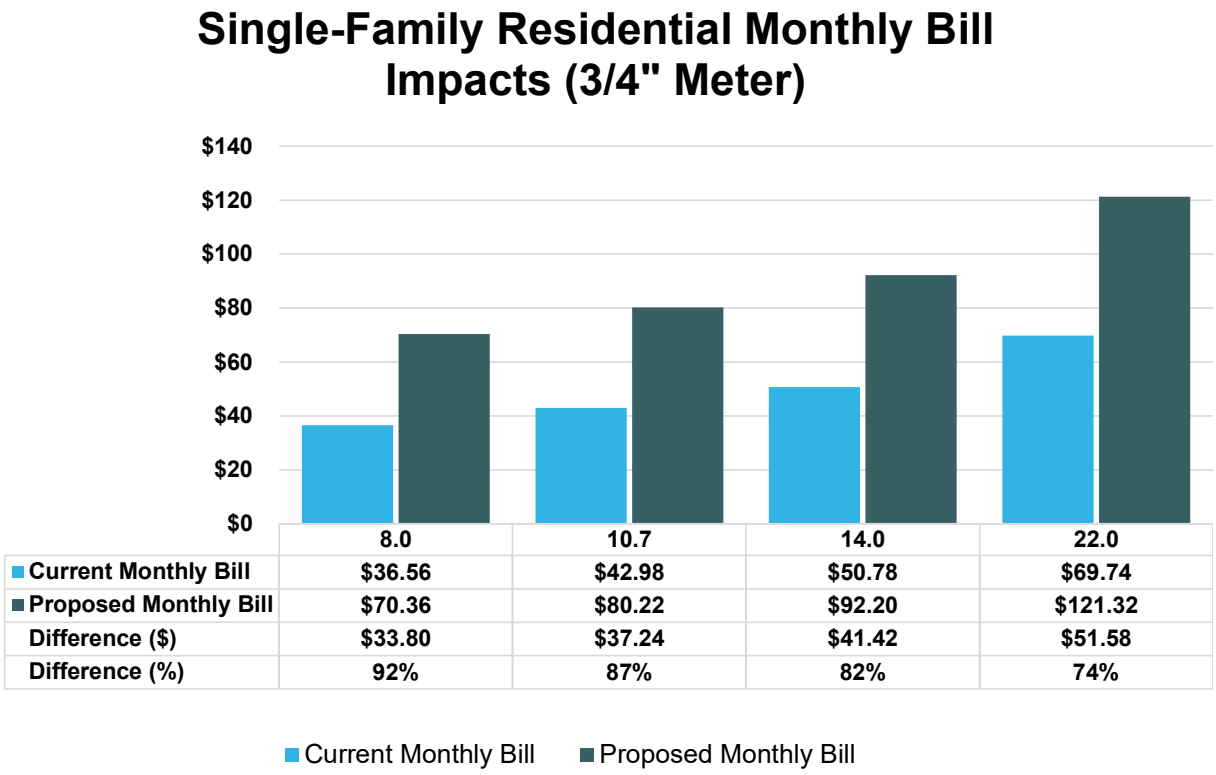
Table 1-2 shows the proposed five-year water rate schedule through FY 2028. Proposed FY 2024 rates are calculated based on the results of the cost-of-service analysis. Overall, FY 2024 rates are designed to collect 84 percent more rate revenue than current FY 2023 rates in accordance with the proposed FY 2024 revenue adjustment. Proposed rates beginning in FY 2025 are calculated by increasing the prior year's proposed rates by the proposed annual revenue adjustments.

Table 1-2: Proposed Five-Year Water Rate Schedule

Proposed Rates	Current	2024	2025	2026	2027	2028
Effective Date		Oct 2023	Jul 2024	Jul 2025	Jul 2026	Jul 2027
Monthly Fixed Charge						
Meter Size						
3/4-inch	$16.79	$26.99	$27.80	$28.64	$29.50	$30.39
1-inch	$27.92	$39.25	$40.43	$41.65	$42.90	$44.19
1 1/2-inch	$67.14	$82.14	$84.61	$87.15	$89.77	$92.47
2-inch	$106.36	$125.03	$128.79	$132.66	$136.64	$140.74
3-inch	$243.37	$275.15	$283.41	$291.92	$300.68	$309.71
4-inch	$419.59	$468.16	$482.21	$496.68	$511.59	$526.94
6-inch	$859.18	$988.97	$1,018.64	$1,049.20	$1,080.68	$1,113.11
8-inch	$1,566.53	$1,724.24	$1,775.97	$1,829.25	$1,884.13	$1,940.66
Monthly Water CIP Component						
Meter Size						
3/4-inch	$0.81	$14.25	$14.68	$15.13	$15.59	$16.06
1-inch	$1.34	$23.74	$24.46	$25.20	$25.96	$26.74
1 1/2-inch	$3.22	$56.97	$58.68	$60.45	$62.27	$64.14
2-inch	$5.09	$90.19	$92.90	$95.69	$98.57	$101.53
3-inch	$11.67	$206.49	$212.69	$219.08	$225.66	$232.43
4-inch	$20.13	$356.01	$366.70	$377.71	$389.05	$400.73
6-inch	$42.93	$759.47	$782.26	$805.73	$829.91	$854.81
8-inch	$75.13	$1,329.07	$1,368.95	$1,410.02	$1,452.33	$1,495.90
Usage, $/kgal						
Potable Water	$2.37	$3.64	$3.75	$3.87	$3.99	$4.11
Construction	$4.74	$4.74	$4.74	$4.74	$4.74	$4.74

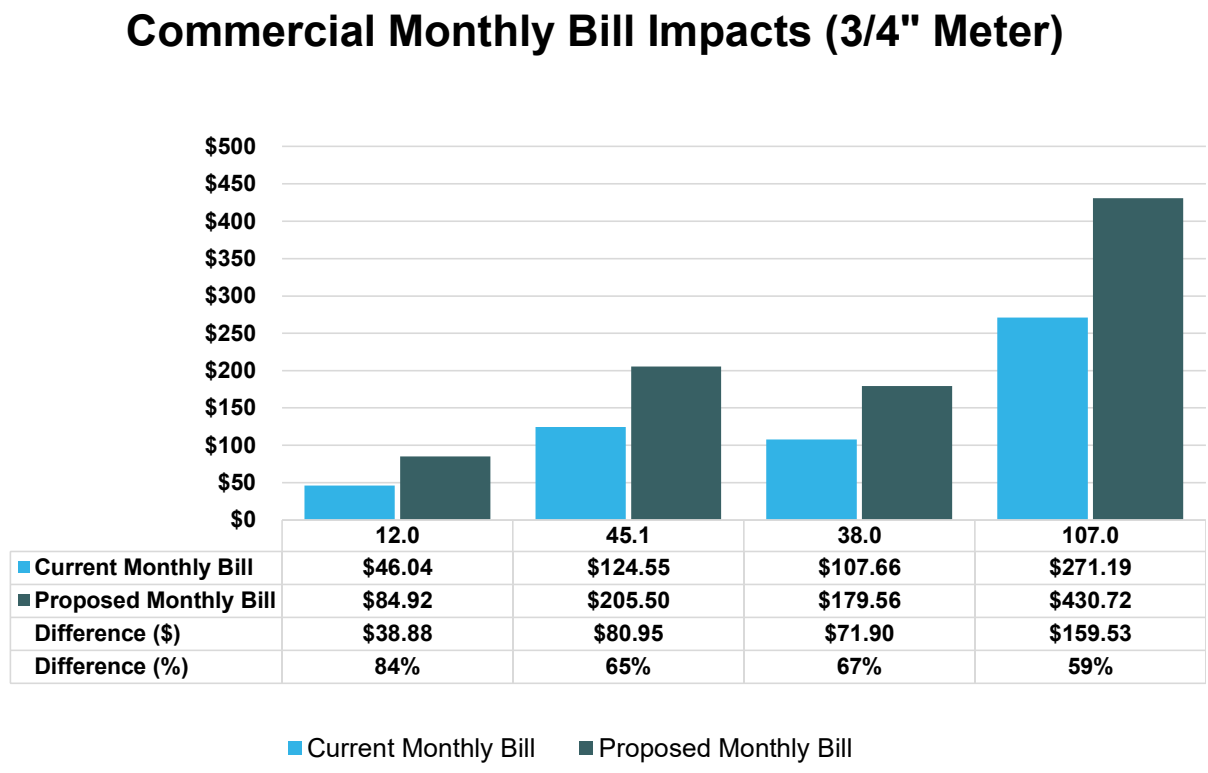
Figure 1-4 shows the bill comparison for a single-family customer on a 3/4” meter at a range of billed usage levels for FY 2024. The single-family class has an average usage of 10.7 kgal/month. Figure 1-5 shows the bill comparison for a commercial customer on a 3/4" meter at a range of billed usage for FY 2024. The commercial class has an average usage of 45.1 kgal/month.

Figure 1-4: Sample Single-Family Water Bill Comparison



	8.0	10.7	14.0	22.0
Current Monthly Bill	$36.56	$42.98	$50.78	$69.74
Proposed Monthly Bill	$70.36	$80.22	$92.20	$121.32
Difference ($)	$33.80	$37.24	$41.42	$51.58
Difference (%)	92%	87%	82%	74%

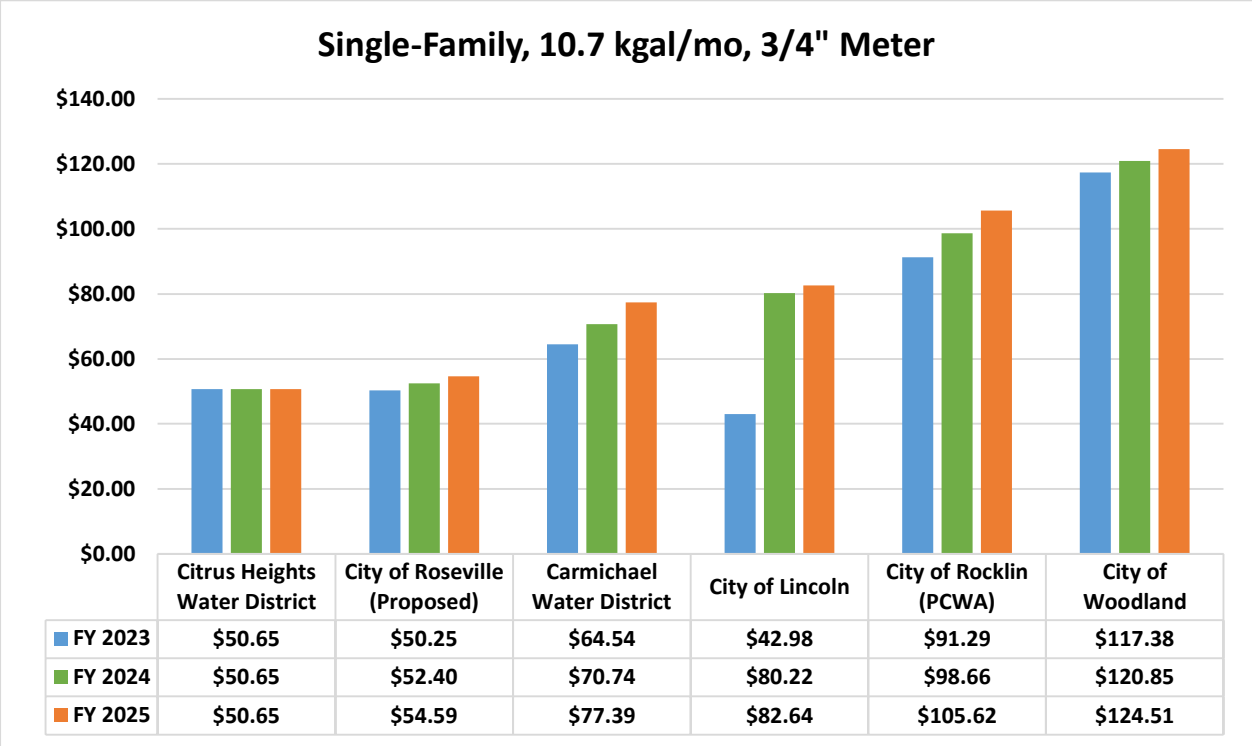
Figure 1-5: Sample Commercial Water Bill Comparison



	12.0	45.1	38.0	107.0
Current Monthly Bill	$46.04	$124.55	$107.66	$271.19
Proposed Monthly Bill	$84.92	$205.50	$179.56	$430.72
Difference ($)	$38.88	$80.95	$71.90	$159.53
Difference (%)	84%	65%	67%	59%

Figure 1-6 shows a comparison between the City and neighboring water providers for a single-family average bill of 10.7 kgal/mo. The comparison looks at current (FY 2023) rates and projected/approved FY 2024 and FY 2025 rates where available.

Figure 1-6: Single-Family Residential Water Bill Comparison with Neighboring Agencies



	Citrus Heights Water District	City of Roseville (Proposed)	Carmichael Water District	City of Lincoln	City of Rocklin (PCWA)	City of Woodland
FY 2023	$50.65	$50.25	$64.54	$42.98	$91.29	$117.38
FY 2024	$50.65	$52.40	$70.74	$80.22	$98.66	$120.85
FY 2025	$50.65	$54.59	$77.39	$82.64	$105.62	$124.51

1.5. Proposed Wastewater Financial Plan

Raftelis, with the assistance of City staff, conducted a status quo cash flow analysis to evaluate whether existing wastewater rates can adequately fund the City's collection-system expenses over the ten-year study period. The analysis projected annual revenues, operation and maintenance expenses, debt service payments, and capital expenditures through FY 2033. Raftelis projects that with no rate increases over the study period, the City will fully deplete its wastewater reserves in FY 2029. The projected depletion of reserve funding demonstrates a clear need for wastewater revenue adjustments during the study period to avoid significant increases in FY 2029. Raftelis worked with City staff to develop the following proposed wastewater revenue adjustments over the five-year study period (see Table 1-3) plus a projection for informational purposes only for the last half of the 10-year financial plan. The proposed revenue adjustments were selected to make sure the wastewater operating fund has sufficient funds to cover annual expenses, to build reserves to target levels by the end of the study period, FY 2033, and to show a plan of steady, regular adjustments to rates to keep pace with cost increases.

Table 1-3: Proposed Wastewater Revenue Adjustments

Effective Date	Adjustment
Oct. 1, 2023	4.0%
July 1, 2024	5.0%
July 1, 2025	5.0%
July 1, 2026	5.0%
July 1, 2027	5.0%
July 1, 2028	*5.0%*
July 1, 2029	*5.0%*
July 1, 2030	*5.0%*
July 1, 2031	*5.0%*
July 1, 2032	*5.0%*

Key factors influencing the need for proposed revenue adjustments include:

- Wastewater sewer charge per equivalent dwelling unit (EDU) has not changed since 2013. Flow charges have not changed since 2017. Meanwhile, CPI for the San Francisco area has increased 32 percent between 2013 and 2023.
- Maintain self-sufficiency of the wastewater operating fund and meet minimum operating reserves to provide a financial buffer for unexpected fluctuations in operational expenses and revenues.
- Need to build up reserves for the capital fund to help fund future projects, such as sewer lift station replacements and provide supplemental funding for the more costly pipeline replacements (e.g., larger (≥36-inch diameter) and deeper (>10-ft depth) sewer main pipelines), with cash instead of with debt.

Figure 1-7 shows the proposed wastewater financial plan. Status Quo revenue is shown by the black line. Projected revenue is shown by the green line. The increased revenue in FY 2023 is a payment from Placer County SMD-1. Annual expenditures are shown by the columns. The green bar represents net cash. If the green bar is below the x-axis, this indicates that reserves are being drawn upon to cover expenses. If the green bar is above the x-axis, it indicates that revenue is being added to reserves. Current rates are not sufficient to cover annual operating and maintenance expenses nor capital-related expenditures in FY 2023 and FY 2029 – FY 2033. To avoid significant adjustments in later years, steady revenue adjustments are required to generate sufficient revenue to cover annual operating and maintenance costs, fund capital projects over the study period, and maintain minimum reserve targets.

Figure 1-7: Proposed Wastewater Financial Plan

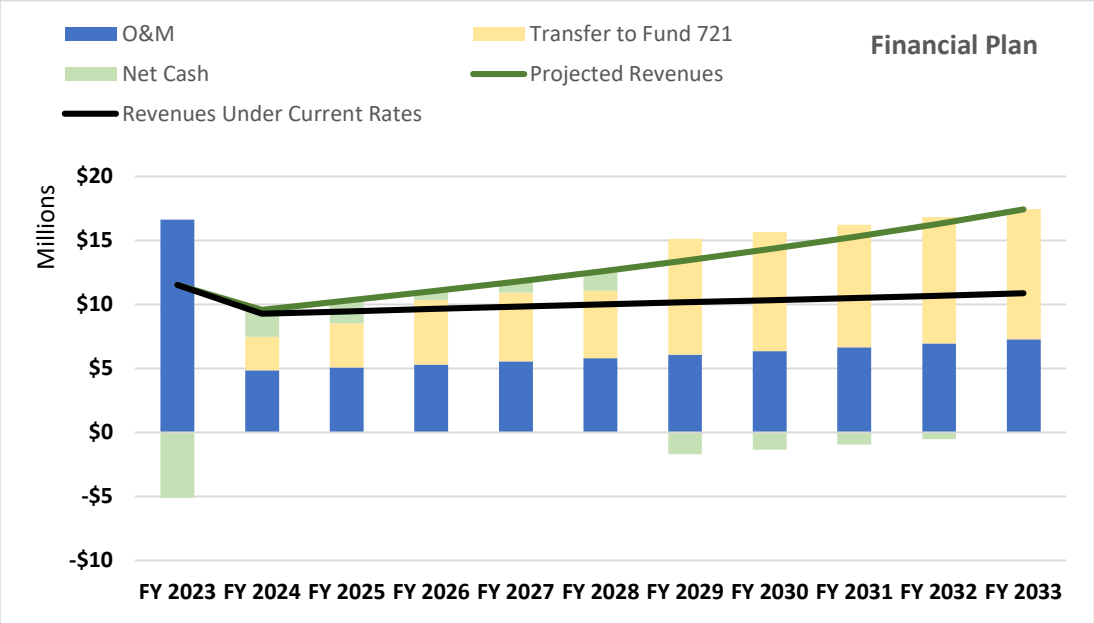


Figure 1-8 shows projected operating and capital wastewater ending balances over the study period relative to the City's total wastewater minimum reserve targets under the proposed financial plan. The overall balance grows in the first half of the plan, then decreasing for a few years as reserves are used to help meet costs, and then slowly increasing to maintain staying at or above the minimum reserve target.

Figure 1-8: Proposed Wastewater Financial Plan – Projected Ending Balances

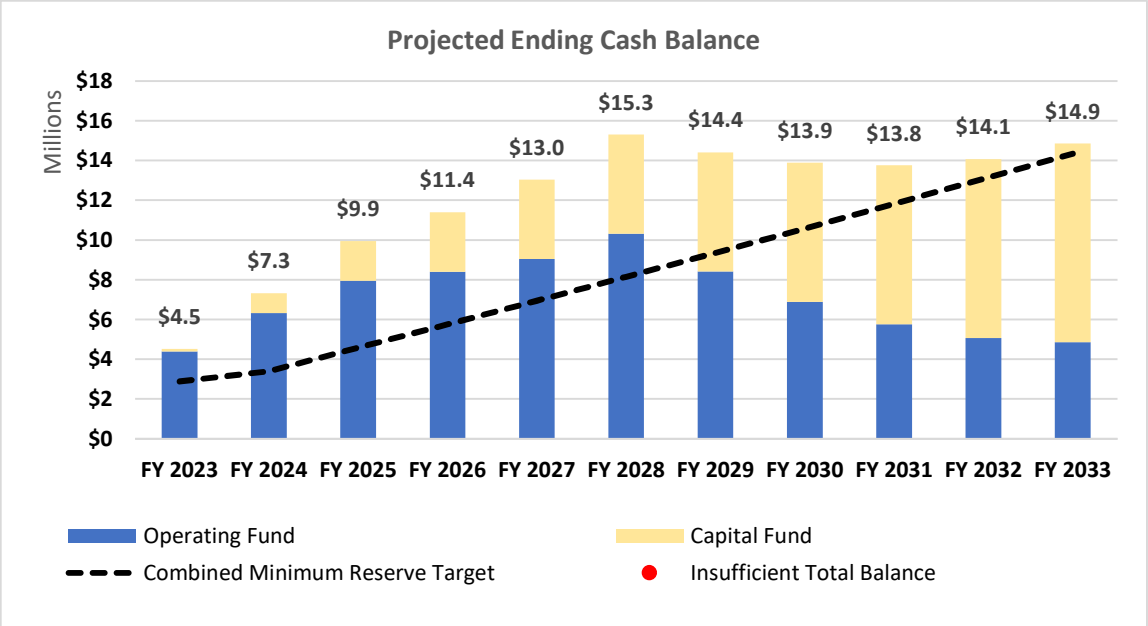
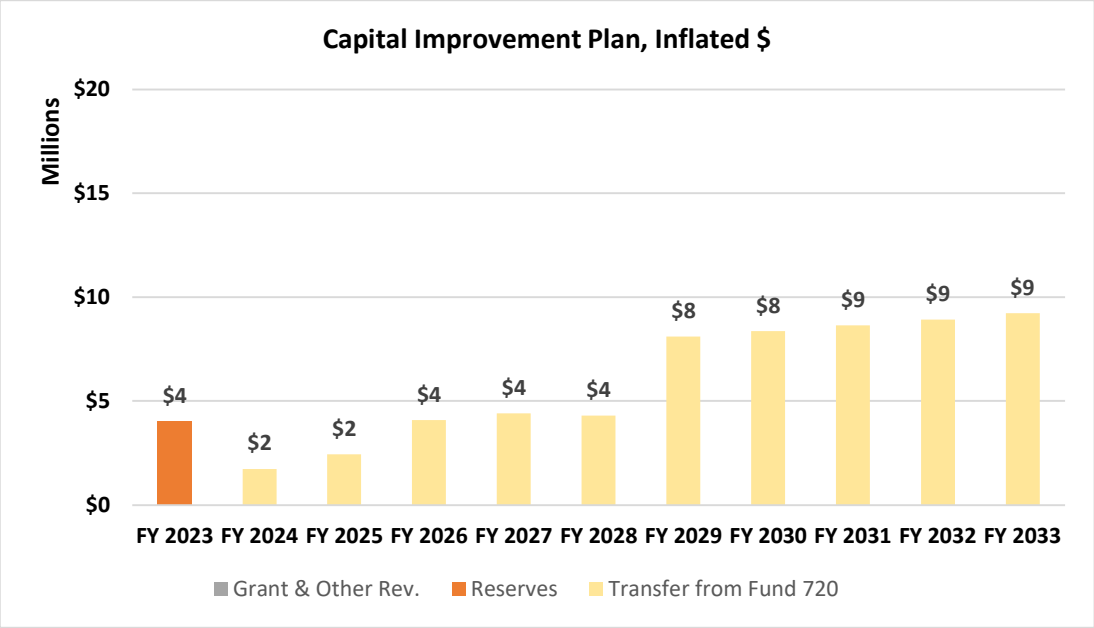


Figure 1-9 shows the proposed wastewater capital financing plan over the study period. Initial capital expenditures include increasing wastewater main replacement to 1 mile per year. The second half of the plan reflects an increase to 2 miles per year in wastewater main replacements. Historically, these replacements have been underfunded, and thus delayed. In FY 2023 the capital program is funded through reserves. For the

rate-setting period, the proposed wastewater financial plan assumes that all capital projects over the study period will be cash funded through rate revenue (via transfers from Fund 720 to Fund 721).

Figure 1-9: Wastewater Capital Financing Plan



1.6. Proposed Wastewater Rates

Table 1-4 shows the proposed five-year wastewater rate schedule through FY 2028. Proposed FY 2024 rates are calculated based on the results of the cost-of-service analysis. Overall, FY 2024 rates are designed to collect 4 percent more rate revenue than current FY 2023 rates in accordance with the proposed FY 2024 revenue adjustment. Proposed rates beginning in FY 2025 are calculated by increasing the prior year's proposed rates by the proposed annual revenue adjustments. The Lincoln SMD-1 Wastewater Authority's (LiSWA's) rates, which have been set through FY 2027, are shown in the table and will be passed through directly onto customers' bills.

Table 1-4: Proposed Five-Year Wastewater Rate Schedule

	Fiscal Year					
Proposed Rates	**Current**	**2024**	**2025**	**2026**	**2027**	**2028**
Effective Date		Oct 2023	Jul 2024	Jul 2025	Jul 2026	Jul 2027
Monthly Collection Fixed Charge, $/EDU						
Residential	$32.08	$31.59	$33.17	$34.83	$36.58	$38.41
Usage, $/kgal						
Non-Residential (1)	$4.92	$4.86	$5.11	$5.37	$5.64	$5.93
Parks (1), (2)		$0.90	$0.95	$1.00	$1.05	$1.11
Monthly LiSWA Treatment Fixed Charge, $/WWTRU						
All Customers	*$22.79*	*$34.56*	*$35.60*	*$36.67*	*$37.77*	*TBD*

(1) Subject to a minimum charge equal to the Residential charge.

(2) Parks are currently charged on an EDU basis. Starting in FY2024, they will be charged on billed water use.

2. Rate Setting Methodology

This study was conducted using industry-standard principles outlined by the American Water Works Association (AWWA) Manual M1 and Water Environment Federation (WEF) Manual of Practice No. 27. The process and approach Raftelis utilized in the study to determine water and wastewater rates is informed by the City's policy objectives, the current water and wastewater systems and rates, and the legal requirements in California (namely, Proposition 218). The resulting financial plans, cost of service analyses, and rate design process follows five key steps, outlined below, to determine proposed rates that fulfill the City's objectives, meet industry standards, and align with relevant regulations.

1. **Financial Plan - Projections:** The first step is to develop a multi-year financial plan that projects the City's revenues, expenses, capital project financing, annual debt service, and reserve funding. The financial plan is used to determine the revenue adjustment, which allows the City to recover adequate revenues to fund expenses and reserves.
2. **Financial Plan - Revenue Requirement Determination:** After completing the financial plan, the rate-making process begins by determining the revenue requirement for the test year, also known as the rate-setting year. The test year for this study is FY 2024. The revenue requirement should sufficiently fund the City's operating costs, annual debt service (including coverage requirements), capital expenditures, and reserve funding as projected based on the annual budget estimates.
3. **Cost-of Service-Analysis:** The annual cost of providing water/wastewater service, or the revenue requirement, is then distributed to customer classes commensurate with their use of and burden on the water/wastewater system. A cost-of-service analysis involves the following steps:
    a. Functionalize costs – the different components of the revenue requirement are categorized into functions such as supply, transmission/collection, storage, customer service, etc.
    b. Allocate to cost causation components – the functionalized costs are then allocated to cost causation components such as supply, base delivery, peaking, etc. for water and collection, customer service, etc. for wastewater.
    c. Develop unit costs – unit costs for each cost causation component are determined using units of service, such as total use, peaking units, equivalent meters, number of customers, etc., for each component.
    d. Distribute cost components – the cost components are allocated to each customer class using the unit costs in proportion to their units of service (demand and burden on the system).

    A water cost-of-service analysis also considers both the average water demand and peak demand. Peaking costs are incurred during periods of peak consumption, most often coinciding with summer water use. There are additional capacity-related costs associated with designing, constructing, operating, maintaining, and replacing facilities to meet peak demand. Peaking imposes additional costs on a water utility and are used to determine the cost burden on peaking-related facilities.

4. **Rate Design**: After allocating the revenue requirement to each customer class, the project team designs and calculates rates. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support and optimize the City's policy objectives. Rates also act as a public information tool in communicating these policy objectives to customers. This process also includes a rate impact analysis and sample customer bill impacts.

5. **Administrative Record Preparation and Rate Adoption:** The final step in a rate study is to develop the administrative record (report) in conjunction with the rate adoption process. This report serves as the administrative record for this study. The administrative record documents the study results and presents the methodologies, rationale, justifications, and calculations used to determine the proposed rates. A thorough and methodological administrative record serves two important functions: maintaining defensibility in a stringent legal environment and communicating the rationale for revenue adjustments and proposed rates to customers and key stakeholders.

Values shown in report tables and figures are rounded to the digit shown. Therefore, any manual reproduction of the calculations shown may not match the precise results displayed in the report.

3. Key Inputs and Assumptions

Raftelis developed water and wastewater rate models in Microsoft Excel to project financial and rate calculations over a ten-year study period through FY 2033. The City's fiscal year spans from July 1 through June 30. Projections in future years were generally made based on actual or budgeted FY 2022 or FY 2023 data using key assumptions outlined below. All assumptions were discussed with and reviewed by City staff to ensure that the City's unique characteristics were incorporated. Note that most table values shown throughout this report are rounded to the last digit shown and, therefore, may not calculate precisely to the values shown.

3.1. Current Water Rates

Table 3-1 shows the current adopted water rate schedule developed during the prior rate study. Customers are currently subject to three charges: 1) monthly Fixed Meter Charges, 2) monthly Water Capital Improvement Program (CIP) charges, and 3) Volume Charges per thousand gallons (kgal) of water delivered. Fixed Meter and Water CIP Charges vary based on meter size. Volumetric charges are a uniform rate for municipal and industrial customers (M&I) and a separate uniform rate for construction-related water use.

Table 3-1: Current Water Rate Structure

Monthly Fixed Charge		Monthly Water CIP Component	
Meter Size		Meter Size	
3/4-inch	$16.79	3/4-inch	$0.81
1-inch	$27.92	1-inch	$1.34
1 1/2-inch	$67.14	1 1/2-inch	$3.22
2-inch	$106.36	2-inch	$5.09
3-inch	$243.37	3-inch	$11.67
4-inch	$419.59	4-inch	$20.13
6-inch	$859.18	6-inch	$42.93
8-inch	$1,566.53	8-inch	$75.13
Usage, $/kgal			
M&I	$2.37		
Construction	$4.74		

3.2. Current Wastewater Rates

Table 3-2 shows the current adopted wastewater rate schedule. All customers are charged based on the customer's EDUs. Commercial customers are additionally charged based on metered water use.

Table 3-2: Current Wastewater Rates

	Current
Fixed Monthly Charge	
All customers, $/EDU	$32.08
Flow Charge - Commercial, $/kgal	
Average Strength	$4.92
High Strength	$8.07

3.3. Projected Service Connections

3.3.1. Water

Table 3-3 shows the actual number of potable water accounts by meter size for FY 2022 and the projected number of accounts through the study period. Based on discussions with City staff, the total number of residential accounts is projected to increase at 2 percent per year. Other customer types are presumed to stay relatively flat. The number of accounts is used to forecast the amount of fixed revenue the City will receive from the monthly meter and CIP charges as well as to forecast the annual water use.

Table 3-3: Projected Number of Water Meters

Meter Size	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
3/4-inch	20,138	20,537	20,946	21,361	21,784	22,215
1-inch	781	793	806	818	832	846
1 1/2-inch	175	176	178	179	180	181
2-inch	104	104	104	105	105	105
3-inch	29	29	29	29	29	29
4-inch	17	17	17	17	17	17
6-inch	3	3	3	3	3	3
8-inch	1	1	1	1	1	1
Total	21,248	21,661	22,084	22,513	22,951	23,397
Meter Size	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**
3/4-inch	22,656	23,105	23,563	24,031	24,507	24,993
1-inch	859	873	887	902	916	932
1 1/2-inch	182	183	184	185	186	187
2-inch	105	105	106	106	106	106
3-inch	29	29	29	29	29	29
4-inch	17	17	17	17	17	17
6-inch	3	3	3	3	3	3
8-inch	1	1	1	1	1	1
Total	23,852	24,316	24,790	25,273	25,766	26,269

3.3.2. Wastewater

Table 3-4 shows the current and projected wastewater EDUs. The total number of residential EDUs is projected to increase at 2 percent per year and non-residential EDUs are projected to remain flat, consistent with water assumptions. Note that not every water customer is also a wastewater customer. The City had about 21,100 wastewater customer accounts in FY 2022.

Table 3-4: Projected Wastewater EDUs

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Residential	22,387	22,835	23,292	23,758	24,233	24,718
Commercial	365	365	365	365	365	365
Dublin Park	23	23	23	23	23	23
Joiner Park	41	41	41	41	41	41
Markham	2	2	2	2	2	2
Wilson Park	22	22	22	22	22	22
Total EDUs	22,840	23,288	23,745	24,211	24,686	25,171
	FY 2029	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	
Residential	25,212	25,716	26,230	26,755	27,290	
Commercial	365	365	365	365	365	
Dublin Park	23	23	23	23	23	
Joiner Park	41	41	41	41	41	
Markham	2	2	2	2	2	
Wilson Park	22	22	22	22	22	
Total EDUs	25,665	26,169	26,683	27,208	27,743	

3.4. Water Use Assumptions

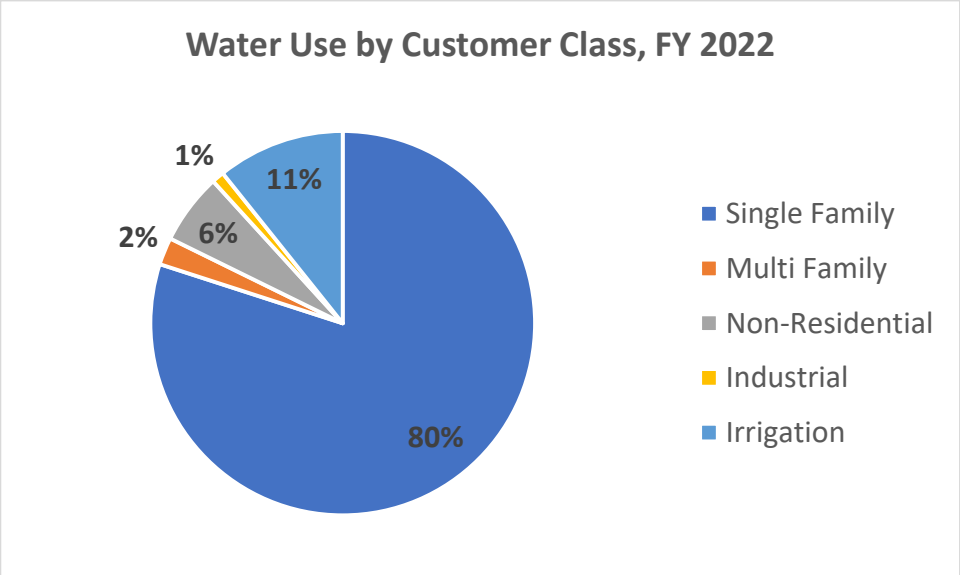
Water use presumes that customers within each customer class continue to use water similarly to historical FY 2020 through FY 2022 water use on an average per account basis. This average use per account for each customer class is applied to the number of accounts for each class to determine the water sales each year. Assumptions of account growth and resulting water sales are shown in Table 3-5. The "Year-to-Year Change" line shows that fiscal year's consumption in relation to the previous fiscal year. Since account growth is only applied to residential customers, overall water sales are projected to increase at slightly less than the residential account growth.

Table 3-5: Account Growth and Water Use Assumptions

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Account Growth						
Residential	2%	2%	2%	2%	2%	2%
Non-Residential	0%	0%	0%	0%	0%	0%
Water Sold (kgal)	3,206,948	3,261,761	3,316,638	3,372,670	3,429,741	3,487,967
Year-to-Year Change		1.7%	1.7%	1.7%	1.7%	1.7%
	FY 2029	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	
Account Growth						
Residential	2%	2%	2%	2%	2%	
Non-Residential	0%	0%	0%	0%	0%	
Water Sold (kgal)	3,547,350	3,608,005	3,669,832	3,732,822	3,797,195	
Year-to-Year Change	1.7%	1.7%	1.7%	1.7%	1.7%	

Figure 3-1 shows the percent of total use in FY 2022 for the M&I customer classes. Construction water use accounts for less than 1 percent of total water sales.

Figure 3-1: Water Use by Customer Class, FY 2022



3.5. Wastewater Flow Assumptions

Table 3-6 shows the projected wastewater flows. Wastewater flow is determined by multiplying the projected metered water use by the estimated return-to-sewer factors.

Table 3-6: Projected Wastewater Flows, kgal

	Return Factor	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Residential	50%	1,262,497	1,287,762	1,313,534	1,339,814	1,366,601
Commercial	80%	123,004	123,004	123,004	123,004	123,004
Dublin Park	15%	648	648	648	648	648
Joiner Park	15%	1,416	1,416	1,416	1,416	1,416
Markham	15%	75	75	75	75	75
Wilson Park	15%	646	646	646	646	646
Total Flow		1,388,286	1,413,551	1,439,323	1,465,602	1,492,390
	FY 2028	**FY 2029**	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**
Residential	1,393,952	1,421,811	1,450,234	1,479,220	1,508,827	1,538,998
Commercial	123,004	123,004	123,004	123,004	123,004	123,004
Dublin Park	648	648	648	648	648	648
Joiner Park	1,416	1,416	1,416	1,416	1,416	1,416
Markham	75	75	75	75	75	75
Wilson Park	646	646	646	646	646	646
Total Flow	1,519,741	1,547,600	1,576,022	1,605,009	1,634,616	1,664,787

3.6. Water and Wastewater Financial Plan Assumptions

Inflationary assumptions shown in Table 3-7 were used to project O&M expenses beyond FY 2023. To ensure that future costs are reasonably projected, Raftelis worked with the City to generate assumptions regarding inflationary factors including general and salary inflation and water cost inflation as shown in Table 3-7. The inflationary factors shown in Table 3-7 were then applied to the FY 2023 budgeted cost estimates to develop

the FY 2024 and subsequent year estimates. The inflation rates shown for water supply costs are based on published water rates from Placer County Water Agency through FY 2027. Thereafter, water supply costs are estimated to be the same as the FY 2027 increase. Factors for FY 2029-FY 2033 are the same as FY 2028.

Table 3-7: Inflationary Assumptions

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028+
General	5%	4%	3%	3%	3%
Salary	5%	5%	5%	5%	5%
Part Time Salaries	3%	3%	3%	3%	3%
PERS Unfunded	6%	5%	5%	5%	5%
Benefits	8%	8%	8%	8%	8%
SUI	1%	1%	1%	1%	1%
FICA	5%	5%	5%	5%	5%
Chemicals, Fuel, Oil, Supplies	4%	4%	4%	4%	4%
Utilities	4%	4%	4%	4%	4%
Construction	3%	3%	3%	3%	3%
Communications	5%	5%	5%	5%	5%
Insurance	5%	5%	5%	5%	5%
Water Supply Cost Increases	8%	7%	7%	6%	6%
Engineering	10%	10%	10%	10%	10%
UtilityCut	2%	2%	2%	2%	2%

Interest earnings on cash reserves are projected assuming a 1 percent annual interest rate. Miscellaneous revenue is forecast to increase at 0.5 percent per year. Construction-related water revenues are projected to remain flat due to the variability in the number of construction meters and water use year-to-year.

4. Water Financial Plan

This section describes the assumptions used in projecting water enterprise operating and capital expenses as well as reserve coverage requirements for the ten-year study period (FY 2024 – FY 2033) plus the current fiscal year. These assumptions determine the overall revenue adjustments and total amount of revenue required from rates. The revenue covers operating and maintenance (O&M) and capital expenses as well as reserve funding. Revenue adjustments represent the average rate increase for the City as a whole; rate changes for individual customers will depend on the cost-of-service analysis described in the following chapter.

Financial plan assumptions were provided by and discussed in detail with City staff. The assumptions shown in Table 3-7 were incorporated into the financial plan. To develop the financial plan, Raftelis projected annual expenses and revenues, modeled reserve balances, and added planned capital expenditures. The City is not anticipating debt financing any capital improvements in the ten-year financial plan. While the water operating fund pays its share of general fund debt for shared facilities, the water fund does not have to meet debt coverage ratios associated with this general fund debt. This section of the report provides a discussion of projected revenue, O&M expenses, the CIP, and reserve funding under existing rates and the revenue adjustments needed to achieve fiscal sustainability.

4.1. Current Rate Revenue

The City's revenues consist of rate revenues, interest earnings on cash reserves, and other miscellaneous revenues. The rate revenue projections shown below assume that current FY 2023 (Table 3-1) rates are effective throughout the study period and, therefore, represent estimated revenues in the absence of any rate increase. This status quo scenario provides a baseline from which Raftelis evaluates the need for revenue adjustments.

4.1.1. Calculated Water Rate Revenues

Raftelis projected water rate revenues from Fixed Meter charges, Monthly Water CIP charges and Volume charges for FY 2023 through FY 2033 based on current FY 2023 water rates, the projected number of water meters, and projected annual water use.

The City collects fixed monthly service and CIP component charges from its customers based on meter size. Table 4-1 shows projected Fixed Meter and Water CIP charge revenues under current rates over the study period. Fixed charge revenues are calculated by connection size in each year as follows based on current FY 2023 water rates (from Table 3-1) and the projected number of water meters (from Table 3-3)[1].

Annual Fixed Charge Revenue for ¾" meter = [FY 2023 fixed monthly rate ¾" meter + FY 2023 CIP component monthly rate for ¾" meter] × [Number of ¾" connections] × [12 Bills per year]

[1] The example is shown for a ¾" meter. The same formula is applied for each meter size.

Table 4-1: Projected Fixed Charge Revenues Under Current Rates

Meter Size	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
3/4-inch	$4,337,469	$4,423,696	$4,511,401	$4,600,796	$4,691,882	$4,784,871
1-inch	$278,607	$282,992	$287,381	$292,125	$296,872	$301,623
1 1/2-inch	$148,499	$150,103	$150,872	$151,665	$152,467	$153,286
2-inch	$139,357	$139,625	$139,905	$140,186	$140,480	$140,775
3-inch	$88,876	$88,999	$89,121	$89,244	$89,397	$89,519
4-inch	$89,703	$89,703	$89,703	$89,703	$89,703	$89,703
6-inch	$33,997	$34,222	$34,447	$34,673	$34,898	$35,235
8-inch	$19,700	$19,700	$19,700	$19,700	$19,700	$19,700
Total	$5,136,208	$5,229,040	$5,322,530	$5,418,091	$5,515,399	$5,614,712

Meter Size	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
3/4-inch	$4,879,761	$4,976,554	$5,075,250	$5,175,847	$5,278,555
1-inch	$306,377	$311,486	$316,598	$321,717	$327,188
1 1/2-inch	$154,122	$154,975	$155,845	$156,740	$157,643
2-inch	$141,082	$141,390	$141,698	$142,019	$142,339
3-inch	$89,672	$89,794	$89,948	$90,101	$90,254
4-inch	$89,703	$89,703	$89,703	$89,703	$89,703
6-inch	$35,461	$35,686	$36,023	$36,249	$36,474
8-inch	$19,700	$19,700	$19,700	$19,700	$19,700
Total	$5,715,878	$5,819,288	$5,924,764	$6,032,074	$6,141,856

Table 4-2 shows projected Volume charge revenues under current rates over the study period. Volume charge revenues are calculated by customer class in each year as follows based on current FY 2023 water rates and projected water use (Table 3-5).

Annual Volume Charge Revenue = [FY 2023 rate per kgal] × [Annual Water Use in kgal]

Table 4-2: Projected Volume Charge Revenue Under Current Rates

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Water Sales	3,206,948	3,261,761	3,316,638	3,372,670	3,429,741	3,487,967
Revenue	$7,600,466	$7,730,374	$7,860,431	$7,993,227	$8,128,485	$8,266,482

	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Water Sales	3,547,350	3,608,005	3,669,832	3,732,822	3,797,195
Revenue	$8,407,219	$8,550,972	$8,697,501	$8,846,788	$8,999,352

Note: Water sales in kgal

4.1.2. Other Revenues

Table 4-3 shows all other revenues. All FY 2023 other revenues are based on the City's FY 2023 budget. Additional revenues from FY 2024 through FY 2033 were projected by Raftelis. Construction revenue is forecast to remain constant. Bad debt expense are receivables that the City is not able to collect and is estimated at 0.5 percent of rate revenues. Interest revenue is estimated beginning in FY 2023 based on estimated beginning fund balances, revenues and expenses, and the assumed interest rate. All other revenues are forecast to inflate at 0.5 percent per year.

Table 4-3: Projected Other Water Enterprise Revenues

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
UB Account Processing Fee	$95,000	$95,475	$95,952	$96,432	$96,914	$97,399
Construction	$184,000	$184,000	$184,000	$184,000	$184,000	$184,000
Water Reconnection	$7,500	$7,538	$7,575	$7,613	$7,651	$7,689
Other Revenue	$5,000	$5,025	$5,050	$5,075	$5,101	$5,126
WPUSD Share City Hall Water	$2,000	$2,010	$2,020	$2,030	$2,040	$2,051
Bad Debt Expense	-$63,691	-$105,619	-$124,922	-$130,898	-$137,163	-$143,735
Interest	$45,604	$37,358	$65,460	$102,559	$128,914	$155,122
Total	$275,412	$225,786	$235,136	$266,812	$287,457	$307,652
	FY 2029	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	
UB Account Processing Fee	$97,886	$98,375	$98,867	$99,362	$99,858	
Construction	$184,000	$184,000	$184,000	$184,000	$184,000	
Water Reconnection	$7,728	$7,766	$7,805	$7,844	$7,884	
Other Revenue	$5,152	$5,178	$5,204	$5,230	$5,256	
WPUSD Share City Hall Water	$2,061	$2,071	$2,081	$2,092	$2,102	
Bad Debt Expense	-$150,627	-$157,861	-$165,449	-$173,402	-$181,754	
Interest	$163,323	$152,208	$139,594	$124,432	$106,377	
Total	$309,522	$291,738	$272,103	$249,556	$223,723	

4.2. Operations and Maintenance Expenses

The City's expenses include operations and maintenance expenses, capital expenses, and transfers to the general fund to pay a share of debt service payments for shared facilities. This section discusses the details of each of these expenses.

4.2.1. Total Operations and Maintenance Budget

4.2.1.1. Water Purchase Cost

The City obtains about 2.5 percent of its water from pumping groundwater. The remaining 97.5 percent of water needs are purchased from Placer County Water Agency (PCWA). Additionally, the City experiences about 8.4 percent in water losses, which is added to the projected water sales to determine the total amount of water supply needed. This is shown in the top half of Table 4-4, on the following page.

The City purchases both treated and untreated water from PCWA. For the treated water, the City pays PCWA a monthly fixed charge based on the units of capacity (UoC) it has purchased from PCWA and a variable charge based on the amount of water purchased. The City purchases untreated water for 6 months of the year. The City pays PCWA a monthly fixed charge and a variable charge per month per inch diameter. The City purchases both treated and untreated water from PCWA. The middle section of Table 4-4 shows the blended rates from PCWA as PCWA updates rates in January, halfway through the City's fiscal year. The bottom portion of the table shows the estimated costs for each PCWA charge component and a total annual water purchase cost.

Table 4-4: Summary of Projected Purchased Water Cost Expenses

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Total Water Sales, kgal	3,206,948	3,261,761	3,316,638	3,372,670	3,429,741	3,487,967	3,547,350	3,608,005	3,669,832	3,732,822	3,797,195
Total Water Demand, kgal	3,501,034	3,560,874	3,620,783	3,681,954	3,744,258	3,807,824	3,872,652	3,938,870	4,006,367	4,075,133	4,145,409
Total Water Demand, ccf	4,680,527	4,760,527	4,840,619	4,922,398	5,005,693	5,090,674	5,177,343	5,265,869	5,356,105	5,448,039	5,541,991
Supply Met by Sources											
Groundwater Supply	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Amout of GW Supplied, kgal	87,526	89,022	90,520	92,049	93,606	95,196	96,816	98,472	100,159	101,878	103,635
Imported Water (PCWA), kgal	3,413,509	3,471,853	3,530,264	3,589,905	3,650,652	3,712,629	3,775,836	3,840,398	3,906,207	3,973,255	4,041,774
Total Water Supply, kgal	3,501,034	3,560,874	3,620,783	3,681,954	3,744,258	3,807,824	3,872,652	3,938,870	4,006,367	4,075,133	4,145,409
Total Water Supply, ccf	4,680,527	4,760,527	4,840,619	4,922,398	5,005,693	5,090,674	5,177,343	5,265,869	5,356,105	5,448,039	5,541,991
Total Imported Water Supply, ccf	4,563,514	4,641,514	4,719,604	4,799,338	4,880,551	4,963,408	5,047,909	5,134,223	5,222,202	5,311,838	5,403,441
Number of Units of Capacity (UoC)	16,802	16,802	16,802	16,802	16,802	16,802	16,802	16,802	16,802	16,802	16,802
Treated Water (FY Blended Rates)											
Purchased Water Unit Costs											
PCWA - Monthly per UoC	$23.87	$29.02	$31.20	$33.38	$35.55	$37.69	$39.95	$42.35	$44.89	$47.58	$50.43
PCWA - Renewal & Replacement per UoC	$13.73	$11.91	$12.81	$13.71	$14.60	$15.48	$16.41	$17.39	$18.44	$19.54	$20.72
PCWA - Variable, $/ccf	$0.44	$0.48	$0.52	$0.56	$0.60	$0.64	$0.68	$0.72	$0.77	$0.81	$0.86
Untreated Water (FY Blended Rates)											
PCWA - Monthly , $/mo	$8.23	$11.01	$11.84	$12.67	$13.50	$14.31	$15.17	$16.08	$17.04	$18.06	$19.15
PCWA - Renewal & Replacement, $/mo	$6.60	$7.61	$8.18	$8.76	$9.34	$9.90	$10.49	$11.12	$11.79	$12.50	$13.25
PCWA - Variable, $/mo/inch diameter	$70.49	$75.94	$81.63	$87.35	$93.01	$98.59	$104.51	$110.78	$117.42	$124.47	$131.94
Purchased Treated Water Costs											
Fixed - Unit of Capacity, $	$4,811,672	$5,851,026	$6,289,550	$6,730,091	$7,167,607	$7,598,611	$8,054,528	$8,537,800	$9,050,068	$9,593,072	$10,168,656
Fixed - R&R, $	$2,767,241	$2,401,300	$2,581,750	$2,763,208	$2,943,659	$3,121,266	$3,308,542	$3,507,055	$3,717,478	$3,940,527	$4,176,958
Variable, $	$2,026,200	$2,246,493	$2,473,072	$2,706,827	$2,947,853	$3,192,613	$3,441,785	$3,710,673	$4,000,715	$4,313,547	$4,651,211
Purchased Untreated (Raw) Water Costs											
Fixed, $	$49	$66	$71	$76	$81	$86	$91	$96	$102	$108	$115
Fixed - R&R, $	$40	$46	$49	$53	$56	$59	$63	$67	$71	$75	$79
Variable, $	$846	$911	$980	$1,048	$1,116	$1,183	$1,254	$1,329	$1,409	$1,494	$1,583
Purchased Water Cost Summary											
Fixed	$7,579,002	$8,252,437	$8,871,420	$9,493,428	$10,111,403	$10,720,023	$11,363,224	$12,045,018	$12,767,719	$13,533,782	$14,345,809
Variable	$2,027,046	$2,247,404	$2,474,052	$2,707,875	$2,948,969	$3,193,796	$3,443,039	$3,712,003	$4,002,124	$4,315,041	$4,652,794
Total Purchased Water Costs	$9,606,048	$10,499,841	$11,345,472	$12,201,303	$13,060,372	$13,913,819	$14,806,263	$15,757,020	$16,769,843	$17,848,823	$18,998,603

4.2.1.2. Operating and Maintenance Expenses

The City provided Raftelis with its water enterprise budget for FY 2023 and projected admin cost for FY 2024. To project the City's O&M expenses in future years, Raftelis used the escalation percentages shown in Table 3-7 to project future expenses. A summary of the budgeted and projected O&M is shown in Table 4-5.

Table 4-5: Summary of Projected Water Operations and Maintenance Expenses

Line Item	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Water Purchases	$9,606,048	$10,499,841	$11,345,472	$12,201,303	$13,060,372	$13,913,819
Materials & Supplies	$139,592	$145,176	$150,983	$157,022	$163,303	$169,835
Salaries & Benefits	$2,953,120	$3,051,326	$3,209,359	$3,375,740	$3,550,923	$3,735,386
Admin Cost Allocation	$1,210,412	$900,000	$990,000	$1,089,000	$1,197,900	$1,317,690
Other O&M Expenses	$1,425,346	$1,642,089	$1,709,216	$1,773,189	$1,839,741	$1,908,981
Total	$15,334,518	$16,238,432	$17,405,030	$18,596,254	$19,812,238	$21,045,710

Line Item	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Water Purchases	$14,806,263	$15,757,020	$16,769,843	$17,848,823	$18,998,603
Materials & Supplies	$176,628	$183,694	$191,041	$198,683	$206,630
Salaries & Benefits	$3,929,636	$4,134,206	$4,349,662	$4,576,600	$4,815,652
Admin Cost Allocation	$1,449,459	$1,594,405	$1,753,845	$1,929,230	$2,122,153
Other O&M Expenses	$1,981,025	$2,055,993	$2,134,013	$2,215,214	$2,299,736
Total	$22,343,011	$23,725,318	$25,198,404	$26,768,550	$28,442,774

4.2.2. Capital Improvement Plan

Table 4-6 shows the City's plan for water capital improvements, which includes continuing to replace 1 mile of pipe per year through FY 2028 and then increase the rate to 2 miles of pipe per year. The City averages more than 25 leak repairs a year due to increasing pipelines within the system reaching the end of their serviceable useful life. Increasing investment levels for pipeline renewal and replacement should proportionately reduce the number of leaks per year and associated disruptions to service and streets. Pipeline replacement is prioritized by first replacing pipeline segments with the highest consequence of failure and probability of failure. The City must also plan for converting all its fleet vehicles with advanced clean fleet vehicles as they reach the end of their useful lives. The plan includes an estimate for replacing one vehicle per year.

Table 4-6: Projected Capital Improvement Projects

Project	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
484 - Water Distribution Rehab East Hoiit Area	$850,000	$0	$0	$0	$0	$0
485 - Water Distribution Rehab FY21/22 West	$4,810,000	$0	$0	$0	$0	$0
Water Master Plan Update	$90,000	$0	$0	$0	$0	$0
Hydaulic Water Model Assistance	$75,000	$0	$0	$0	$0	$0
Water Distribution Rehab FY23/24	$0	$3,100,000	$0	$0	$0	$0
Water Distribution Rehab FY24/25	$0	$0	$1,200,000	$0	$0	$0
Water Distribution Rehab FY25/26	$0	$0	$0	$3,000,000	$0	$0
Future Water Distribution Rehab	$0	$0	$0	$0	$3,000,000	$3,000,000
Lincoln Blvd Phase 3 UPRR Waterline Crossing Replacement	$500,000	$0	$0	$0	$0	$0
Electrification Strategy	$0	$75,000	$75,000	$0	$0	$0
Electrical Charging Station Design	$0	$0	$0	$50,000	$0	$0
Electrical Charging Station Construction	$0	$0	$0	$0	$100,000	$0
Vehicle Replacement	$0	$0	$0	$50,000	$50,000	$50,000
Total, Uninflated	$6,325,000	$3,175,000	$1,275,000	$3,100,000	$3,150,000	$3,050,000
Total, Inflated	$6,325,000	$3,280,518	$1,361,155	$3,419,462	$3,590,090	$3,591,645

Project	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Future Water Distribution Rehab	$6,000,000	$6,000,000	$6,000,000	$6,000,000	$6,000,000
Vehicle Replacement	$50,000	$50,000	$50,000	$50,000	$50,000
Total, Uninflated	$6,050,000	$6,050,000	$6,050,000	$6,050,000	$6,050,000
Total, Inflated	$7,361,183	$7,605,824	$7,858,597	$8,119,769	$8,389,622

4.2.3. Existing and Proposed Debt Service

The water fund currently pays a portion of general fund debt related to shared facilities. This expense is currently about $200,000 per year and is anticipated to decrease to about $120,000 per year towards the end of the study period. The City plans to use cash to fund capital projects over the study period. Therefore, no proposed debt service is modeled over the study period.

4.3. Reserve Targets

The City maintains a water operating reserve fund and a water capital reserve fund.

Operating Reserve – The Operating Reserve is used primarily to meet ongoing cash flow requirements. The City's minimum reserve target is set at 25 percent (three months) of water revenues.

Capital Reserve – The Capital Reserve is used to cover any unexpected and unplanned infrastructure repairs and replacements not included in the budget as well as to set aside money for future capital projects.

Therefore, the City has set a target of $1M for FY 2024 growing by $1M per year thereafter. When a future multi-million dollar capital project such as a well replacement or water storage tank is needed, the capital reserve fund can be drawn upon to help pay for that project. Then the reserves would build back over time. Reserves are established for future replacement of large system components including pressure reducing stations, Supervisory Control and Data Acquisition equipment, groundwater wells, water storage tanks, and other system infrastructure. Capital reserve funds are essential as significant portions of the distribution system have exceeded the end of their reliable service life. Until such time as the pipeline replacement program replaces the system pipe segments that have already exceeded their reliable service life, pipeline failures are increasingly probable, and in the event of a large-scale pipeline failure, it might be necessary to utilize capital reserve funding to make costly unplanned emergency large-scale pipeline and/or damaged infrastructure repairs. It is estimated that more than five miles of the distribution system pipelines have exceeded their reliable service life as of June 2023. The status quo model lacks sufficient capital reserves, which is a significant liability to the City given the increasing probability of system failures due to chronically deferred pipeline replacement.

4.4. Proposed Financial Plan and Revenue Adjustments

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and meet reserve targets. The Financial Plan modeling assumes the first revenue adjustment occurs on October 1, 2023. The proposed revenue adjustments would enable the City to meet operating costs and to execute the CIP shown in Table 4-6, but not meet reserve targets until the end of FY 2028. Table 4-7 shows the proposed revenue adjustments for the rate-setting period. Adjustments beyond the five-year rate setting period are shown for reference only.

Table 4-7: Proposed Revenue Adjustments

Effective Date	Adjustment
Oct. 1, 2023	84.0%
July 1, 2024	3.0%
July 1, 2025	3.0%
July 1, 2026	3.0%
July 1, 2027	3.0%
July 1, 2028	*3.0%*
July 1, 2029	*3.0%*
July 1, 2030	*3.0%*
July 1, 2031	*3.0%*
July 1, 2032	*3.0%*

Table 4-8, on the following page, shows the cash flow detail over the study period for the water operating fund assuming the revenue adjustments shown above.

Table 4-8: Water Operating Cashflow

Line No.	Line Item				Fiscal Year 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1	Revenue Under Existing Rates				$12,738,285	$12,959,413	$13,182,961	$13,411,318	$13,643,884	$13,881,194	$14,123,096	$14,370,260	$14,622,265	$14,878,862	$15,141,208
	Revenue Adjustments														
			Mo. Effctv.												
	FY		First Year	Adjustment											
2	2023		12	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	2024		9	84.0%		$8,164,430	$11,073,688	$11,265,507	$11,460,863	$11,660,203	$11,863,401	$12,071,018	$12,282,703	$12,498,244	$12,718,614
4	2025		12	3.0%			$727,699	$740,305	$753,142	$766,242	$779,595	$793,238	$807,149	$821,313	$835,795
5	2026		12	3.0%				$762,514	$775,737	$789,229	$802,983	$817,035	$831,364	$845,953	$860,868
6	2027		12	3.0%					$799,009	$812,906	$827,072	$841,547	$856,304	$871,331	$886,695
7	2028		12	3.0%						$837,293	$851,884	$866,793	$881,994	$897,471	$913,295
8	2029		12	3.0%							$877,441	$892,797	$908,453	$924,395	$940,694
9	2030		12	3.0%								$919,581	$935,707	$952,127	$968,915
10	2031		12	3.0%									$963,778	$980,691	$997,983
11	2032		12	3.0%										$1,010,112	$1,027,922
12	2033		12	3.0%											$1,058,760
13	Total Adjusted Revenue				$0	$8,164,430	$11,801,387	$12,768,326	$13,788,750	$14,865,874	$16,002,376	$17,202,009	$18,467,452	$19,801,637	$21,209,541
14	Total Rate-Based Revenue				$12,738,285	$21,123,844	$24,984,348	$26,179,644	$27,432,634	$28,747,068	$30,125,473	$31,572,269	$33,089,717	$34,680,499	$36,350,748
	Other Revenue														
15	Misc Net Revenues				$293,500	$294,048	$294,598	$295,151	$295,706	$296,265	$296,826	$297,390	$297,957	$298,527	$299,100
16	Bad Debt Expense				-$63,691	-$105,619	-$124,922	-$130,898	-$137,163	-$143,735	-$150,627	-$157,861	-$165,449	-$173,402	-$181,754
17	Interest Income				$45,604	$37,358	$65,460	$102,559	$128,914	$155,122	$163,323	$152,208	$139,594	$124,432	$106,377
18	Total Revenue				$13,013,697	$21,349,630	$25,219,484	$26,446,456	$27,720,092	$29,054,720	$30,434,994	$31,864,006	$33,361,820	$34,930,055	$36,574,471
	O&M Expenses														
19	Water Purchase				$9,606,048	$10,499,841	$11,345,472	$12,201,303	$13,060,372	$13,913,819	$14,806,263	$15,757,020	$16,769,843	$17,848,823	$18,998,603
20	All Other O&M				$5,728,470	$5,738,590	$6,059,558	$6,394,951	$6,751,866	$7,131,892	$7,536,748	$7,968,298	$8,428,561	$8,919,727	$9,444,171
21	Total O&M Expenses				$15,334,518	$16,238,432	$17,405,030	$18,596,254	$19,812,238	$21,045,710	$22,343,011	$23,725,318	$25,198,404	$26,768,550	$28,442,774
22	Net Revenues				-$2,320,821	$5,111,198	$7,814,454	$7,850,202	$7,907,854	$8,009,009	$8,091,984	$8,138,688	$8,163,416	$8,161,505	$8,131,697
	Debt Service														
23	Proposed				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24	Total Debt Service				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25	General Fund Debt - Allocated to Water				$229,189	$208,447	$208,080	$207,488	$208,052	$207,643	$188,973	$117,833	$118,769	$117,989	$118,363
26	Transfers to Fund 711 (Capital)				$0	$4,023,107	$2,884,534	$4,950,114	$5,128,233	$5,137,503	$8,914,988	$9,167,815	$9,429,018	$9,698,875	$9,977,673
27	**Annual Surplus/(Deficit)**				**-$2,550,010**	**$879,644**	**$4,721,840**	**$2,692,600**	**$2,571,569**	**$2,663,864**	**-$1,011,977**	**-$1,146,960**	**-$1,384,371**	**-$1,655,359**	**-$1,964,338**
28	Beginning Operating (710) Balance				$5,688,944	$3,138,934	$4,018,578	$8,740,418	$11,433,018	$14,004,587	$16,668,450	$15,656,473	$14,509,513	$13,125,143	$11,469,784
29	Ending Operating (710) Balance				$3,138,934	$4,018,578	$8,740,418	$11,433,018	$14,004,587	$16,668,450	$15,656,473	$14,509,513	$13,125,143	$11,469,784	$9,505,445
30	Target Operating Reserves				$3,253,424	$5,337,407	$6,304,871	$6,611,614	$6,930,023	$7,263,680	$7,608,749	$7,966,002	$8,340,455	$8,732,514	$9,143,618

Line 1 shows the projected rate-revenue under existing rates. Line 13 shows the forecast adjusted revenue from the proposed revenue adjustments. Line 18 shows total water fund revenue including non-operating revenues and interest. Line 21 shows total O&M expenses. Line 22 shows net revenues, or revenues less expenses, which is the result of subtracting Line 21 from Line 18. Line 23 shows that the City has no proposed debt service payments. Line 25 shows the portion of shared facility general fund debt projected to be paid from the water operating fund. Line 26 shows the transfers to the water capital fund (711) to pay for capital improvements and meet capital reserve levels. Line 27 shows the annual surplus or deficit, which is the Line 18 less Line 21 less Line 24 less Line 25 less Line 26. Line 28 shows the enterprise's operating balance at the start of the fiscal year. The ending operating fund balance in Line 29 is the beginning balance (Line 28) plus the annual surplus or deficit (Line 27). Line 30 shows the target operating reserve level.

Table 4-9 shows the cash flow for Fund 711, the water capital fund, which is used to fund the water enterprise's CIP and repair and replacement (R&R) of materials and equipment. The City plans to rebuild capital reserves by growing the reserve from $1M in FY 2024 by $1M each year thereafter. This will allow the City to either fully or partially cash fund future asset replacement and rehabilitation projects (e.g., wells and storage tanks) from the capital reserve that are anticipated after the study period. The Transfer in from Fund 710 line item matches Line 26 in Table 4-8. The plan presumes that sufficient transfers from Fund 710 are made each year to meet the annual CIP and reserve target.

Table 4-9: Capital Fund Cashflow

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Beginning Balance	$3,399,421	$771,466	$1,000,000	$2,000,000	$3,000,000	$4,000,000
Sources						
Transfer in from Fund 710	$0	$4,023,107	$2,884,534	$4,950,114	$5,128,233	$5,137,503
Charges for Services-711	$225,000	$225,000	$225,000	$225,000	$225,000	$225,000
Transfer in from Fund 225	$4,200,000	$0	$0	$0	$0	$0
Total Sources	**7,824,421**	**5,019,573**	**4,109,534**	**7,175,114**	**8,353,233**	**9,362,503**
Uses						
Capital Projects	$6,325,000	$3,280,518	$1,361,155	$3,419,462	$3,590,090	$3,591,645
R&R - 711	$505,955	$505,955	$505,955	$505,955	$505,955	$505,955
Professional Services	$222,000	$233,100	$242,424	$249,697	$257,188	$264,903
Total Uses	**$7,052,955**	**$4,019,573**	**$2,109,534**	**$4,175,114**	**$4,353,233**	**$4,362,503**
Ending Balance	$771,466	$1,000,000	$2,000,000	$3,000,000	$4,000,000	$5,000,000
Target Balance	$0	$1,000,000	$2,000,000	$3,000,000	$4,000,000	$5,000,000
	FY 2029	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	
Beginning Balance	$5,000,000	$6,000,000	$7,000,000	$8,000,000	$9,000,000	
Sources						
Transfer in from Fund 710	$8,914,988	$9,167,815	$9,429,018	$9,698,875	$9,977,673	
Charges for Services-711	$225,000	$225,000	$225,000	$225,000	$225,000	
Transfer in from Fund 225	$0	$0	$0	$0	$0	
Total Sources	**14,139,988**	**15,392,815**	**16,654,018**	**17,923,875**	**19,202,673**	
Uses						
Capital Projects	$7,361,183	$7,605,824	$7,858,597	$8,119,769	$8,389,622	
R&R - 711	$505,955	$505,955	$505,955	$505,955	$505,955	
Professional Services	$272,850	$281,036	$289,467	$298,151	$307,095	
Total Uses	**$8,139,988**	**$8,392,815**	**$8,654,018**	**$8,923,875**	**$9,202,673**	
Ending Balance	$6,000,000	$7,000,000	$8,000,000	$9,000,000	$10,000,000	
Target Balance	$6,000,000	$7,000,000	$8,000,000	$9,000,000	$10,000,000	

The next four figures show the FY 2023 through FY 2033 Financial Plan in graphical form. Figure 4-1 illustrates the Operating Financial Plan – it compares existing (black line) and proposed revenues (green line) with projected expenses (stacked columns). The green bars above the X-axis show the net cash used to build up the reserves and the bars below the X-axis show the withdrawals from reserves to fund costs. The expenses include O&M, purchased water, transfers to Fund 711 and reserve funding. Projected revenue from existing rates if continued unchanged would not meet future projected total expenses and illustrates the need for revenue adjustments necessary to maintain operations, accomplish the desired CIP, and to eventually meet reserve targets.

Figure 4-1: Proposed Operating Financial Plan

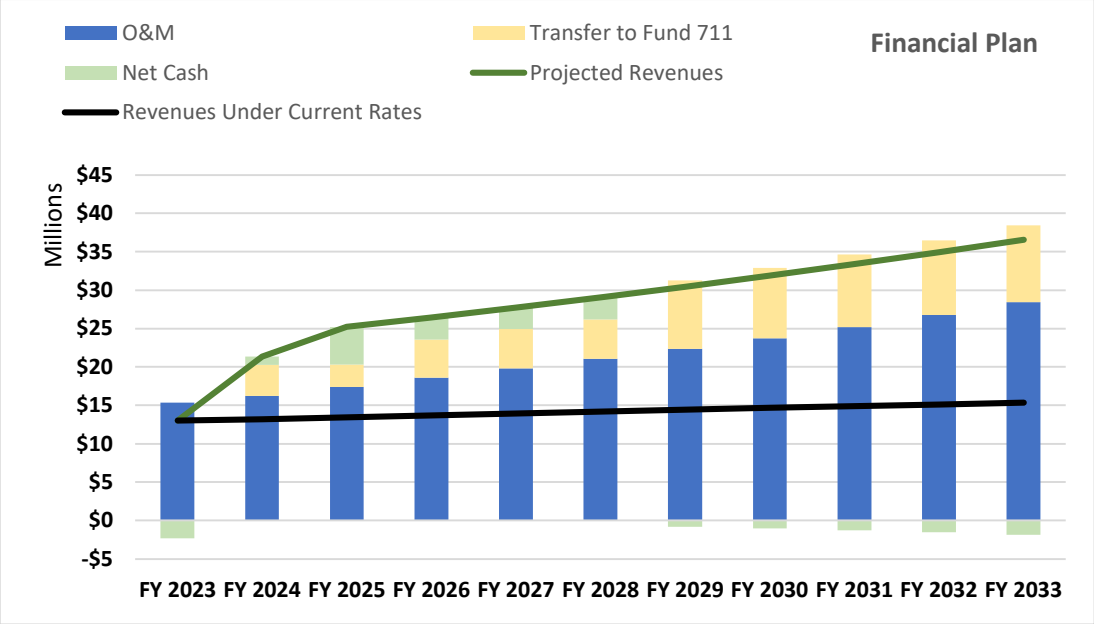


Figure 4-2 summarizes the projected CIP and its funding sources: reserves, transfers from the source water connection fund, charges for services, and rate funded (via transfers from Fund 710). Fund 711 is used to pay for all CIP. As shown, the City plans to pay for all its CIP via rate revenue and reserves; the City will not issue debt to pay for future CIP during the study period.

Figure 4-2: Projected Capital Plan and Funding Sources

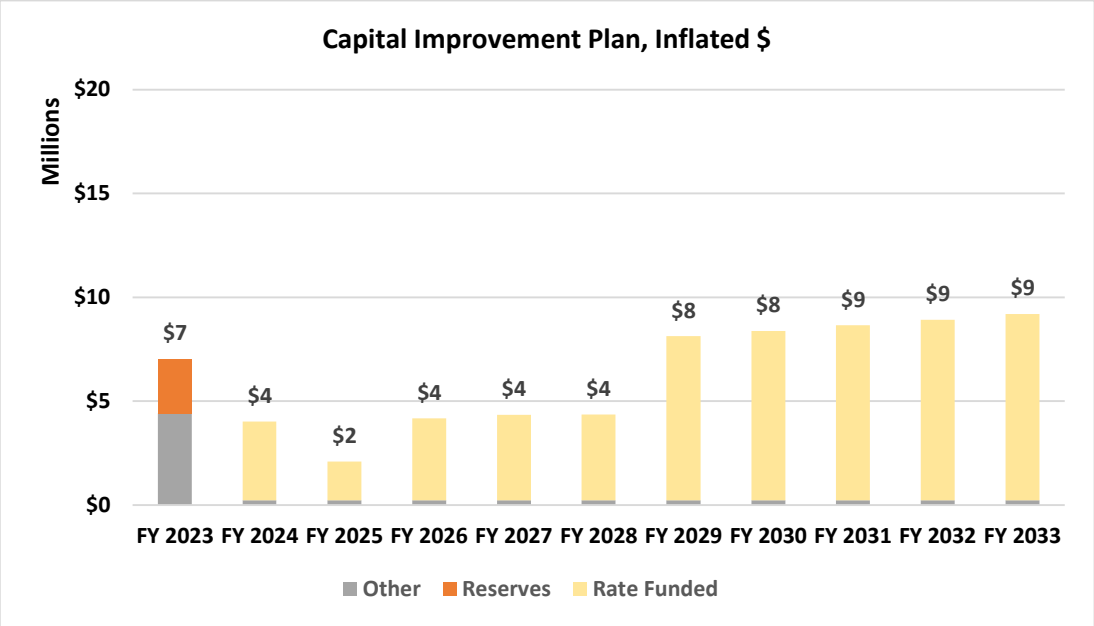


Figure 4-3 displays the projected total operating fund (Fund 710) yearly ending balance (blue bars). The blue line is the total fund target balance, which is set at 25 percent of water revenues based on proposed City policy. As shown, the operating fund is below the target through the study period until the end of FY 2028 assuming suggested rate adjustments are adopted and implemented. The remainder of the ten-year study period shows the projected revenue adjustments needed to maintain the operating fund at or above its minimum target.

Figure 4-3: Projected Operating Fund Ending Balance

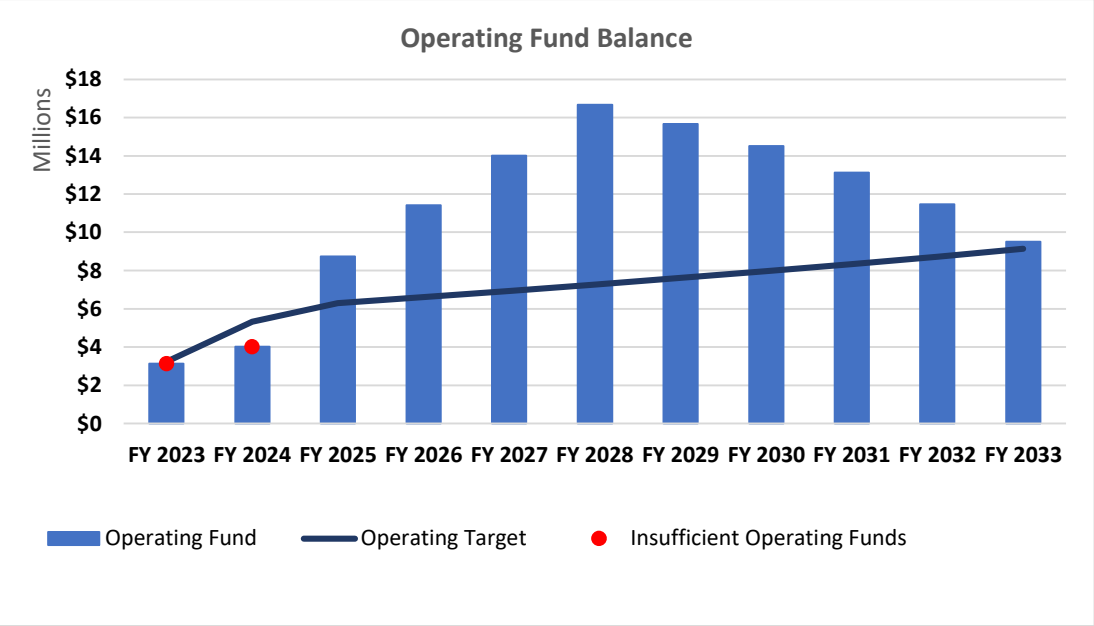
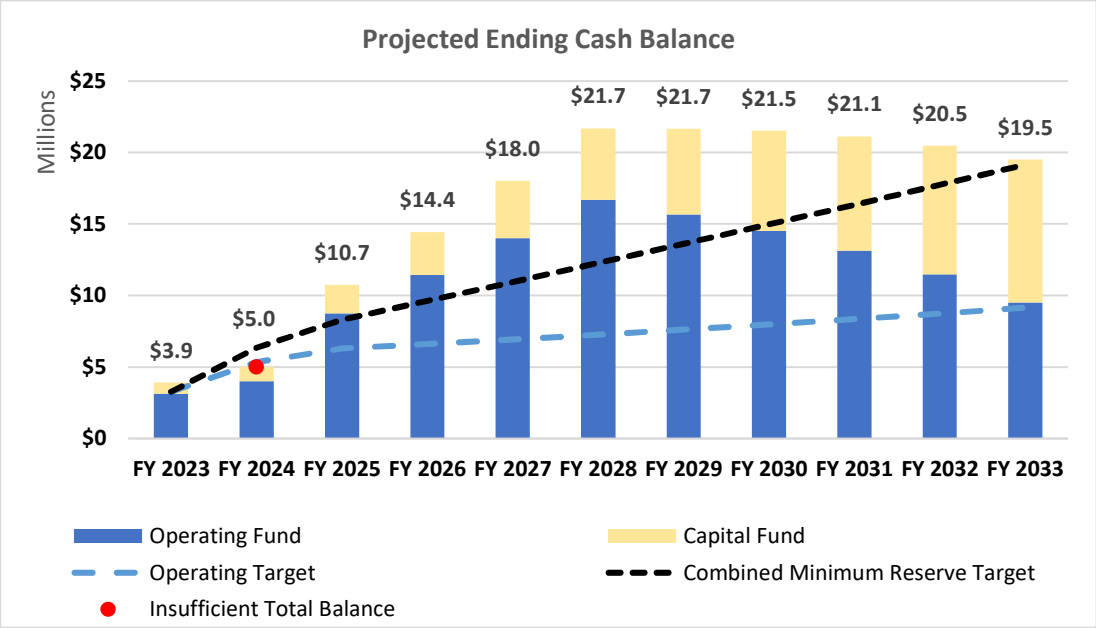


Figure 4-4 shows the projected combined operating and capital funds ending balance.

Figure 4-4: Projected Combined Ending Balance



5. Water Cost-of-Service Analysis

A cost-of-service analysis distributes a utility's revenue requirement (costs) to each customer class. This section explains the details of the cost-of-service analysis conducted for the City of Lincoln for providing water services to customers.

After determining a utility's revenue requirement, the next step in a cost-of-service analysis is to functionalize its O&M costs to the following functions:

- Supply – cost of purchasing water from PCWA and supplying groundwater
- Treatment – cost of treating water
- Transmission and Distribution (T&D) – cost associated with pipes, pumps, mains, etc.
- Storage – cost associated with storing treated water
- Meter service – costs associated with meter maintenance and replacement
- Billing and collection – costs associated with meter reading, billing, and customer service
- General and Administration (G&A) – general and administrative costs incurred by the City
- Fire protection – costs associated with public fire hydrants

The functionalization of costs allows us to better allocate the costs to the rate components: monthly service charge, monthly CIP component charge, and volumetric charge.

5.1. Revenue Requirement Determination

Table 5-1 shows the net revenue requirement from rates for FY 2024, the test year. The total revenue requirement shown in Line 4 is equal to operating expenses (Table 4-5) and capital expenses (Table 4-6). Other operating revenues, totaled in Line 7, comprise miscellaneous revenues and interest income (Table 4-3) and reduce the total revenue required from rates. The adjustment for cash (Line 8) is subtracted to account for the withdrawal from reserves to help cover revenue requirements. The mid-year increase (Line 9) reflects that the FY 2024 revenue adjustment occurs part way through the fiscal year.[2] The revenue required from rates is equal to the total revenue requirements less other operating revenues and adjustments.

[2] This rate adjustment is proposed to be adopted in October; thus, the revenue requirement calculation has to be adjusted to incorporate this timing. Not adjusting these rates would result in only 9/12 of the rate adjustment being implemented due to the three "missed" months.

Table 5-1: Revenue Requirement Determination, FY 2024

Line No.	Line Item	Operating	Capital-Related	Total
	Total Revenue Requirements			
1	O&M	$16,238,432		$16,238,432
2	Cash Funded Capital		$4,023,107	$4,023,107
3	General Fund Debt Allocation		$208,447	$208,447
4	Subtotal	$16,238,432	$4,231,554	$20,469,986
	Other Operating Revenue			
5	Misc. Revenues	-$188,428		-$188,428
6	Interest Income	-$37,358		-$37,358
7	Subtotal	-$225,786	$0	-$225,786
	Adjustments			
8	Change in Funds Available	$879,644		$879,644
9	Annualized Rate Adjustment	$2,721,477		$2,721,477
10	Subtotal	$3,601,121	$0	$3,601,121
11	**Costs to be Recovered from Rates**	**$19,613,766**	**$4,231,554**	**$23,845,320**

5.2. Functionalization of Net Revenue Requirement

Functionalizing expenses allows Raftelis to follow the principles of rate setting theory in which the end goal is to allocate the City's revenue requirements to cost causation components. Table 5-2 shows the resulting functionalization of the City's O&M expenses (Line 4, Table 5-1), O&M offsets (Lines 7 and 10, Table 5-1), and capital-related costs (Line 11, Table 5-1). Raftelis worked with City staff to functionalize the test year O&M line items to the functions listed at the beginning of Section 5 (see Appendix A). O&M offsets are allocated in the same proportion as the total O&M revenue requirements excluding supply costs. Capital-related revenue requirements are allocated to the capital charge. Note that the Supply function includes more than just the Water Purchases cost shown in Table 4-8, this represents the additional costs associated with obtaining water including some groundwater pumping costs.

Table 5-2: Functionalization of Net Revenue Requirements

Function	O&M	O&M Offsets	Capital-Related	Net Revenue Requirements
Supply	$10,765,802	$0	$0	$10,765,802
Treatment	$221,710	$136,743	$0	$358,453
T&D	$1,402,211	$864,837	$0	$2,267,047
Storage	$158,511	$97,764	$0	$256,274
Meter Service	$577,854	$356,401	$0	$934,255
Billing and Collection	$875,837	$540,187	$0	$1,416,025
G&A	$2,075,265	$1,279,954	$0	$3,355,219
Fire Protection	$161,242	$99,449	$0	$260,690
Capital Charge	$0	$0	$4,231,554	$4,231,554
Total	$16,238,432	$3,375,334	$4,231,554	$23,845,320

5.3. Allocation of Functionalized Net Revenue Requirements to Cost Components

After functionalizing the net revenue requirements, the next step is to allocate the functionalized net revenue requirements to the following cost components.

- Base–fixed costs associated with providing service under average demand conditions
- Peaking (Max Day and Peak Hour) – costs associated with meeting demand in excess of average use
- Customer Service– the costs associated with meter reading, billing, and customer service
- Equivalent Meters– costs associated with meter maintenance and replacement
- Supply– variable costs associated with providing water supplies for all customers
- Capital – capital-related costs

5.3.1. Peaking Factors

Peaking costs are computed for a maximum day and peak hour. The maximum day (max day) demand is the maximum amount of water used in a single day in a year. The peak hour demand is the maximum amount of water used in a single hour on the maximum day. Different facilities, such as distribution and treatment facilities (and the O&M costs associated with those facilities), are designed to meet peak hour and max day demands, respectively. Therefore, extra capacity[3] costs include the O&M and capital costs associated with meeting peak customer demand. This method is consistent with the AWWA Manual M1 and is widely used in the water industry to perform cost-of-service analyses.

Table 5-3 shows the system-wide peaking factors used to derive the cost component allocation bases for base and peaking costs. Base costs represent average daily demand during the year, which is normalized to a factor of 1.00 (Column B, Line 1). The max day and peak hour factors come from the City's 2017 Water Master Plan. The allocation bases (Columns C, D, and E) are calculated using the equations outlined below the table.

Table 5-3: Water System Peaking Factors

Line No.	Cost Component (A)	Demand Factor [(1)] (B)	Maximum Day Base (C)	Maximum Day (D)	Peak Hour (E)
1	Base	1.00	100%		
2	Maximum Day	2.00	50%	50%	
3	Peak Hour	3.99	25%	25%	50%
4	(1) From 2017 Water Master Plan				

The max day allocations are calculated as follows:

- Base Delivery: B1 / B2 x 100% = C2
- Max Day: 100% - C2 = D2

The peak hour allocations are calculated as follows:

- Base Delivery: B1 / B3 x 100% = C3
- Max Day: (B2 – B1) / B3 x 100% = D3
- Peak Hour: 100% - C3 – D3 = E3

[3] The terms extra capacity, peaking and capacity costs are used interchangeably.

5.3.2. Operating and Capital Allocation

Table 5-4 (shows the system functions, the rationale for allocating each function to the various cost components, and the percentage allocation to each component. Most functions have a one-to-one relationship with a cost component.

Table 5-4: Allocation of Functions to Cost Components

Functions	Allocation Basis	Total	Base	Max Day	Peak Hour	Customer Service	Meter	Supply Cost	Capital
Supply	Supply	100%						100%	
Treatment	Max Day	100%	50%	50%					
T&D	Peak Hour	100%	25%	25%	50%				
Meter Service	Meter	100%					100%		
Billing and Collection	Customer Service	100%				100%			
Storage	Peak Hour	100%	25%	25%	50%				
Fire Protection	Meter	100%					100%		
Capital Charge	Capital	100%							100%

Table 5-5 shows the detailed, net operating costs by cost component (Table 5-2) allocated to the cost components using the allocations shown in Table 5-4. General and administrative (G&A) costs are allocated like total O&M excluding supply. Adding the subtotal and G&A lines results in the Adjusted Total allocation of net operation and maintenance costs.

Table 5-5: Allocation of Net Operation & Maintenance to Cost Components

Functions	Net Rev. Req.	Base	Max Day	Peak Hour	Customer Service	Equivalent Meters	Supply Cost
Supply	$10,765,802	$0	$0	$0	$0	$0	$10,765,802
Treatment	$358,453	$179,227	$179,227	$0	$0	$0	$0
T&D	$2,267,047	$567,613	$567,613	$1,131,821	$0	$0	$0
Meter Service	$934,255	$0	$0	$0	$0	$934,255	$0
Billing and Collection	$1,416,025	$0	$0	$0	$1,416,025	$0	$0
Storage	$256,274	$64,165	$64,165	$127,945	$0	$0	$0
Fire Protection	$260,690	$0	$0	$0	$0	$260,690	$0
Subtotal	$16,258,547	$811,005	$811,005	$1,259,766	$1,416,025	$1,194,946	$10,765,802
G&A	$3,355,219	$495,399	$495,399	$769,522	$864,972	$729,927	$0
Adjusted Total	**$19,613,766**	**$1,306,403**	**$1,306,403**	**$2,029,288**	**$2,280,997**	**$1,924,873**	**$10,765,802**

Table 5-6 shows the allocation of capital-related revenue requirement (Table 5-2, Capital-Related column) to the capital cost component, which is passed on as a meter charge proportional to the capacity of the meter.

Table 5-6: Allocation of Capital-Related Expenses to Cost Components

Functions	Net Rev. Req.	Base	Max Day	Peak Hour	Bills	Equivalent Meters	Supply Cost	Capital
Capital Charge	$4,231,554	$0	$0	$0	$0	$0	$0	$4,231,554
Total	**$4,231,554**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$4,231,554**

5.4. Derivation of Units of Service

5.4.1. Equivalent Meters

Equivalent meters (EMs) are used to allocate meter-related costs. Larger meters can impose greater demands on the system and are more expensive to install, maintain, and replace than smaller meters. This study uses a hydraulic capacity (capacity) ratio to calculate equivalent meters. The capacity ratio is based on meter hydraulic capacity and is calculated to represent the potential demand on the water system compared to the base meter size. A ratio of hydraulic capacity is calculated by dividing the capacity of a meter at a given size by the base meter capacity using the maximum safe operating flow rates in gallons per minute (gpm). The base meter used in the study is the 3/4" meter, which is the most common meter size in the City's water system.

Table 5-7 shows the meter capacity and capacity ratio for each meter size. The capacity in gpm is based on the safe operating flow rates provided in the AWWA Manual M1. The capacity ratios (Column C) are calculated by dividing the capacity in gpm (Column B) for each meter size (Column A) by the capacity in gpm for the 3/4" meter (Column B, Line 1). Meter counts (Column D) at each size are multiplied by the capacity ratio (Column C) to arrive at the total number of equivalent meters, shown in Column E.

Table 5-7: Equivalent Meters

Line No.	Meter Size (A)	Capacity (gpm) (B)	AWWA Ratio (C)	No. of Meters (D)	Equivalent Meters (E)
1	3/4-inch	30	1.00	20,946	20,946
2	1-inch	50	1.67	806	1,343
3	1 1/2-inch	120	4.00	178	711
4	2-inch	190	6.33	104	661
5	3-inch	435	14.50	29	422
6	4-inch	750	25.00	17	425
7	6-inch	1,600	53.33	3	162
8	8-inch	2,800	93.33	1	93
9	Total			22,084	24,763

5.4.2. Unit Costs of Service

Raftelis calculated unit costs for each cost component by assessing the total water demand, meter count, or equivalent meters. Table 5-8 shows the units of service for the water system. The Max Day Capacity Factor (Column E) and the Peak Hour Capacity Factor are the demand factors shown in Table 5-3, Column B. Max Day Total Capacity (Column F) is the Annual Use (Column D) divided by 365 multiplied by the Max Day Capacity Factor (Column E). Max Day Extra Capacity (Column G) is the difference between the Max Day Total Capacity (Column F) and the Annual Use (Column D) divided by 365. Peak Hour Total Capacity (Column I) is the Annual Use (Column D) divided by 365 multiplied by the Peak Hour Capacity Factor (Column H). Peak Hour Extra Capacity (Column J) is the difference between the Peak Hour Total Capacity (Column I) and the Max Day Total Capacity (Column F).

Table 5-8: Units of Service

				Max Day Requirements			Peak Hour Requirements		
Acts (A)	Bills (B)	Equivalent Meters (C)	Annual Use (D)	Capacity Factor (E)	Total Capacity (F)	Extra Capacity (G)	Capacity Factor (H)	Total Capacity (I)	Extra Capacity (J)
No.	No.	No.	kgal	%	kgal/day	kgal/day	%	kgal/day	kgal/day
22,084	265,006	24,763	3,261,761	2.00	17,873	8,936	3.99	35,692	17,819

Table 5-9 shows the total adjusted cost of service and resulting unit costs of service. The total shown in Line 4 and again in Line 6 match the total from the net revenue requirements, Table 5-1. A portion of PCWA's fixed charge is allocated to the Monthly Service charge. The median residential use per account per month is 8 kgals and each purchased unit of capacity entitles the City to use 35 kgals per month. Therefore, 8/35^{ths}, or 22.9 percent of costs associated with the PCWA fixed charge are allocated to the equivalent meter charge to cover the cost of the capacity purchased from PCWA and provide additional revenue stability. Total PCWA Fixed Charge spending in FY 2024 is shown in Table 4-4 (22.9 percent of $8,252,483 is $1,886,282). Line 5 shows this amount being removed from the Supply component and added to the Equivalent Meters component. Part of the peaking costs are reallocated to meters as they are costs related to capacity of the water system and bring the percentage of rate-based revenue from fixed charges back to historic levels. The portion of the max day and peak hour costs allocated to the meter component are shown in Line 6. Line 7 shows the adjusted cost of service. Line 8 is the adjusted cost of service (Line 7) for each component divided by that component's units of service (Line 1).

Table 5-9: Total Adjusted Cost-of-Service and Units of Service

Line No.	Line Item	Total	Base	Max Day	Peak Hour	Bills	Equivalent Meters	Supply	Capital
	Units		kgal/yr	kgal/day	kgal/day	No./yr	Equiv. Mtrs	kgal/yr	Equiv. Mtrs
1	Units of Service		3,261,761	8,936	17,819	265,006	24,763	3,261,761	24,763
2	Net Operating, $	$19,613,766	$1,306,403	$1,306,403	$2,029,288	$2,280,997	$1,924,873	$10,765,802	$0
3	Capital-Related, $	$4,231,554	$0	$0	$0	$0	$0	$0	$4,231,554
4	Total	$23,845,320	$1,306,403	$1,306,403	$2,029,288	$2,280,997	$1,924,873	$10,765,802	$4,231,554
5	Reallocate Supply to Meter	$0	$0	$0	$0	$0	$1,886,271	-$1,886,271	$0
6	Reallocate Peaking to Meter	$0	$0	-$646,670	-$1,004,497	$0	$1,651,167	$0	$0
7	Adjusted Cost of Service	$23,845,320	$1,306,403	$659,734	$1,024,790	$2,280,997	$5,462,311	$8,879,530	$4,231,554
8	Unit Cost, $/unit		$0.40	$73.83	$57.51	$8.61	$220.58	$2.72	$170.88

Table 5-10 shows the assignment of cost components to the fixed charge, the variable charge, or the capital charge. The total fixed cost recovery is 50 percent of the total costs.

Table 5-10: Fixed, Variable, and Capital Rate Components

Component	Fixed	Variable	Capital
Base		$1,306,403	
Max Day		$659,734	
Peak Hour		$1,024,790	
Bills	$2,280,997		
Equivalent Meters	$5,462,311		
Supply		$8,879,530	
Capital			$4,231,554
Total	$7,743,308	$11,870,458	$4,231,554

6. Proposed Water Rates and Charges

The City's water service fees are comprised of three parts: (1) a monthly service charge, (2) a monthly capital charge, and (3) a volumetric charge. Both the monthly service charge and monthly capital charge are fixed charges based on the size of meter serving a property. The monthly service charge has been calculated to recover the City's fixed costs, such as the costs of billing and collection, customer service, meter reading, meter maintenance, as well as a portion of the fixed costs associated with PCWA water purchases as billed by PCWA to the City. The monthly capital charge has been calculated to recover all capital-related costs. The volumetric charge has been calculated to recover the balance of remaining costs.

6.1. Proposed Monthly Service Charge

From the calculations in Table 5-9, the proposed fixed monthly service charges are determined for each meter size. Table 6-1 shows the derivation of the monthly service charge. The Billing component (Column B) is equal to the unit rate in Line 8, Bills column of Table 5-9. As the cost of issuing a bill does not vary by meter size, it remains constant for all meter sizes. The Meter component (Column C) is the Equivalent Meters unit rate shown in Line 8, Table 5-9, divided by 12. For meters larger than 3/4", this unit rate is multiplied by the meter ratio (Table 5-7, Column C) to derive the meter capacity cost associated with those larger meter sizes. As discussed earlier, the Meter component of the charge (Column C) includes recovering a portion of the PCWA fixed costs and a portion of peaking costs. The total proposed monthly service charge (Column D) is the sum of Columns B and C. The current charge is shown in Column E for comparison.

Table 6-1: Monthly Service Charge Derivation

Line No.	Meter Size (A)	Billing $/bill (B)	Meter $/mtr/mo (C)	Total $/mo (D)	Current $/mo (E)
1	3/4-inch	$8.61	$18.38	**$26.99**	$16.79
2	1-inch	$8.61	$30.64	**$39.25**	$27.92
3	1 1/2-inch	$8.61	$73.53	**$82.14**	$67.14
4	2-inch	$8.61	$116.42	**$125.03**	$106.36
5	3-inch	$8.61	$266.54	**$275.15**	$243.37
6	4-inch	$8.61	$459.54	**$468.16**	$419.59
7	6-inch	$8.61	$980.36	**$988.97**	$859.18
8	8-inch	$8.61	$1,715.63	**$1,724.24**	$1,566.53

Table 6-2 shows the derivation of the CIP component monthly fixed charge. The Meter component (Column B) is the Capital unit rate shown in Line 8, Table 5-9 divided by 12. For meters larger than 3/4", this unit rate is multiplied by the meter ratio (Table 5-7, Column C) to derive the cost associated with those larger meter sizes. The current charge is shown for reference as is the City of Rocklin's renewal and replacement (R&R) charge.

Table 6-2: Monthly CIP Component Charge Derivation

Line No.	Meter Size (A)	Meter $/mtr/yr (B)	Total $/mo (C)	Current $/mo (D)	Rocklin R&R Charge 2024 $/mo (E)
1	3/4-inch	$170.88	**$14.25**	$0.81	$22.05
2	1-inch	$284.80	**$23.74**	$1.34	$33.06
3	1 1/2-inch	$683.52	**$56.97**	$3.22	$55.10
4	2-inch	$1,082.24	**$90.19**	$5.09	$110.18
5	3-inch	$2,477.77	**$206.49**	$11.67	$176.28
6	4-inch	$4,272.01	**$356.01**	$20.13	$385.61
7	6-inch	$9,113.62	**$759.47**	$42.93	$661.03
8	8-inch	$15,948.83	**$1,329.07**	$75.13	$1,487.31

6.2. Commodity Rates

Since the City uses a uniform rate, the commodity rate can be calculated by dividing the total variable costs (Table 5-10) by the estimated volume in the test year, as shown in Table 6-3.

Table 6-3: Commodity Rate Calculation

	Cost-of-Service $	Annual Usage kgal	Total $/kgal	Current $/kgal
All Usage	$11,870,458	3,261,761	**$3.64**	$2.37

6.3. Proposed Five-Year Water Rate Schedule

Table 6-4 shows the proposed five-year schedule of water rates. FY 2024 reflects the cost-of-service analysis. Rates for FY 2025 and beyond equal the prior year rates multiplied by the revenue adjustment. Rates are rounded up to the nearest penny to ensure revenue sufficiency.

Table 6-4: Proposed Five-Year Water Rate Schedule

Proposed Rates	Current	2024	2025	2026	2027	2028
Effective Date		Oct 2023	Jul 2024	Jul 2025	Jul 2026	Jul 2027
Monthly Fixed Charge						
Meter Size						
3/4-inch	$16.79	$26.99	$27.80	$28.64	$29.50	$30.39
1-inch	$27.92	$39.25	$40.43	$41.65	$42.90	$44.19
1 1/2-inch	$67.14	$82.14	$84.61	$87.15	$89.77	$92.47
2-inch	$106.36	$125.03	$128.79	$132.66	$136.64	$140.74
3-inch	$243.37	$275.15	$283.41	$291.92	$300.68	$309.71
4-inch	$419.59	$468.16	$482.21	$496.68	$511.59	$526.94
6-inch	$859.18	$988.97	$1,018.64	$1,049.20	$1,080.68	$1,113.11
8-inch	$1,566.53	$1,724.24	$1,775.97	$1,829.25	$1,884.13	$1,940.66
Monthly Water CIP Component						
Meter Size						
3/4-inch	$0.81	$14.25	$14.68	$15.13	$15.59	$16.06
1-inch	$1.34	$23.74	$24.46	$25.20	$25.96	$26.74
1 1/2-inch	$3.22	$56.97	$58.68	$60.45	$62.27	$64.14
2-inch	$5.09	$90.19	$92.90	$95.69	$98.57	$101.53
3-inch	$11.67	$206.49	$212.69	$219.08	$225.66	$232.43
4-inch	$20.13	$356.01	$366.70	$377.71	$389.05	$400.73
6-inch	$42.93	$759.47	$782.26	$805.73	$829.91	$854.81
8-inch	$75.13	$1,329.07	$1,368.95	$1,410.02	$1,452.33	$1,495.90
Usage, $/kgal						
Potable Water	$2.37	$3.64	$3.75	$3.87	$3.99	$4.11
Construction	$4.74	$4.74	$4.74	$4.74	$4.74	$4.74

7. Wastewater Financial Plan

This section describes the assumptions used in projecting wastewater enterprise operating and capital expenses as well as reserve coverage requirements for the ten-year study period (FY 2024 – FY 2033) plus the current fiscal year. These assumptions determine the overall revenue adjustments and total amount of revenue required from rates. The revenue covers operating and maintenance (O&M) and capital expenses as well as reserve funding. Revenue adjustments represent the average rate increase for the City as a whole; rate changes for individual customers will depend on the cost-of-service analysis described in the following chapter.

Financial plan assumptions were provided by and discussed in detail with City staff. The assumptions shown in Table 3-7 were incorporated into the financial plan. To develop the financial plan, Raftelis projected annual expenses and revenues, modeled reserve balances, and added planned capital expenditures. The City is not anticipating financing any wastewater collection system capital improvements in the ten-year study period. While the wastewater operating fund pays its share of general fund debt for shared facilities, the wastewater fund does not have to meet debt coverage ratios associated with this general fund debt. This section of the report provides a discussion of projected revenue, O&M expenses, the CIP, and reserve funding under existing rates and the revenue adjustments needed to maintain fiscal sustainability.

7.1. Current Rate Revenue

The City's revenues consist of rate revenues, interest earnings on cash reserves, and other miscellaneous revenues. The rate revenue projections shown below assume that current FY 2023 (Table 3-2) rates are effective throughout the study period and, therefore, represent estimated revenues in the absence of any rate adjustments. This status quo scenario provides a baseline from which Raftelis evaluates the need for revenue adjustments.

7.1.1. Calculated Wastewater Rate Revenues

Raftelis projected wastewater rate revenues from fixed monthly charges and volumetric charges for FY 2023 through FY 2033 based on current FY 2023 wastewater rates, the projected number of EDUs, and projected annual commercial metered water.

The City collects fixed monthly charges from its customers based on the number of EDUs. Table 7-1 shows projected fixed charge revenues under current rates over the study period. Fixed charge revenues are calculated by the number of EDUs in each year as follows based on current FY 2023 wastewater rates (from Table 3-2) and the projected number of EDUs (from Table 3-4).

Annual Fixed Charge Revenue = [FY 2023 fixed monthly rate per EDU] × [Number of EDUs] × [12 Bills per year]

Table 7-1: Projected Fixed Charge Revenues Under Current Wastewater Rates

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Residential	$7,971,742	$8,131,269	$8,294,002	$8,459,939	$8,629,081	$8,801,783
Commercial	$134,515	$134,515	$134,515	$134,515	$134,515	$134,515
Dublin Park	$9,005	$9,005	$9,005	$9,005	$9,005	$9,005
Joiner Park	$15,975	$15,975	$15,975	$15,975	$15,975	$15,975
Markham	$770	$770	$770	$770	$770	$770
Wilson Park	$8,296	$8,296	$8,296	$8,296	$8,296	$8,296
Total	$8,140,303	$8,299,830	$8,462,563	$8,628,500	$8,797,641	$8,970,344
		FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Residential		$8,977,691	$9,157,159	$9,340,188	$9,527,134	$9,717,642
Commercial		$134,515	$134,515	$134,515	$134,515	$134,515
Dublin Park		$9,005	$9,005	$9,005	$9,005	$9,005
Joiner Park		$15,975	$15,975	$15,975	$15,975	$15,975
Markham		$770	$770	$770	$770	$770
Wilson Park		$8,296	$8,296	$8,296	$8,296	$8,296
Total		$9,146,252	$9,325,720	$9,508,749	$9,695,695	$9,886,202

Table 7-2 shows projected Volume charge revenues under current rates over the study period. Volume charge revenues are calculated for the commercial customer class in each year as follows based on current FY 2023 wastewater rates (Table 3-2) and projected water use (Table 3-5).

Annual Volume Charge Revenue = [FY 2023 rate per kgal] × [Annual Water Use in kgal]

Table 7-2: Projected Volume Charge Revenue Under Current Wastewater Rates

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Commercial	$756,475	$756,475	$756,475	$756,475	$756,475	$756,475
		FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Commercial		$756,475	$756,475	$756,475	$756,475	$756,475

7.1.2. Other Revenues

Table 7-3 shows all other revenues. All FY 2023 other revenues are based on the City's FY 2023 budget. Additional revenues from FY 2024 through FY 2033 were projected by Raftelis or provided by City staff. Interest revenue is estimated beginning in FY 2023 based on estimated beginning fund balances, revenues and expenses, and the assumed interest rate. Rents & concessions are presumed to remain flat. Placer County SMD-1 Charge will go away after FY 2023. All other revenues are forecast to inflate at 0.5 percent per year.

Table 7-3: Projected Other Wastewater Enterprise Revenues

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
UB Account Processing Fee	$95,000	$95,475	$95,952	$96,432	$96,914	$97,399
Rents & concessions	$72,100	$72,100	$72,100	$72,100	$72,100	$72,100
Placer County SMD-1 Chg	$2,400,000	$0	$0	$0	$0	$0
Interest Income (Investment Revenue)	$59,247	$54,428	$72,167	$82,527	$87,951	$97,565
Other Revenue	$0	$5,000	$5,025	$5,050	$5,075	$5,101
WPUSD Share City Hall Water	$650	$653	$657	$660	$663	$666
Total	$2,626,997	$227,656	$245,901	$256,769	$262,704	$272,831
		FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
UB Account Processing Fee		$97,886	$98,375	$98,867	$99,362	$99,858
Rents & concessions		$72,100	$72,100	$72,100	$72,100	$72,100
Placer County SMD-1 Chg		$0	$0	$0	$0	$0
Interest Income (Investment Revenue)		$94,352	$76,924	$63,699	$54,590	$54,428
Other Revenue		$5,126	$5,152	$5,178	$5,204	$5,230
WPUSD Share City Hall Water		$670	$673	$676	$680	$683
Total		$270,134	$253,225	$240,521	$231,935	$232,299

7.2. Operations and Maintenance Expenses - Wastewater

The City's expenses include operations and maintenance expenses, capital expenses, and transfers to the general fund to pay a share of debt service payments for shared facilities. This section discusses the details of each of these expenses.

7.2.1. Total Operations and Maintenance Budget

7.2.1.1. Wastewater Treatment

In December 2022, the ownership, operation, and maintenance of the wastewater reclamation treatment plant switched to the JPA, LiSWA. Therefore, in FY 2023 the City had its own treatment-related costs as well as pass-through costs from the JPA. From FY 2024 onwards, the entirety of treatment costs will be a pass-through of costs from LiSWA. However, the City maintains responsibility for, and ownership of, the wastewater collection system. To facilitate modeling of the City's collection-related costs, the pass-through treatment-related costs are not modeled in the financial plan from FY 2024 onwards.

7.2.1.2. Operating and Maintenance Expenses

The City provided Raftelis with its wastewater enterprise budget for FY 2023. To project the City's O&M expenses in future years, Raftelis used the escalation percentages shown in Table 3-7 to project future expenses, except for those treatment expenses that the City no longer bears. A summary of the budgeted and projected O&M is shown in Table 7-4.

Table 7-4: Summary of Projected Wastewater Operations and Maintenance Expenses

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Wastewater Treatment	$12,149,859	$0	$0	$0	$0	$0
Materials & Supplies	$38,167	$35,752	$37,182	$38,669	$40,216	$41,825
Salaries & Benefits	$1,783,072	$1,821,942	$1,867,016	$1,915,178	$1,966,649	$2,021,667
Admin Cost Allocation	$929,423	$975,894	$1,014,930	$1,045,378	$1,076,739	$1,109,041
Other O&M Expenses	$1,728,626	$2,014,759	$2,163,138	$2,313,082	$2,470,317	$2,635,220
Total	$16,629,147	$4,848,347	$5,082,266	$5,312,307	$5,553,921	$5,807,753
	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	
Wastewater Treatment	$0	$0	$0	$0	$0	
Materials & Supplies	$43,498	$45,238	$47,047	$48,929	$50,886	
Salaries & Benefits	$2,080,487	$2,143,384	$2,210,651	$2,282,607	$2,359,591	
Admin Cost Allocation	$1,142,313	$1,176,582	$1,211,879	$1,248,236	$1,285,683	
Other O&M Expenses	$2,808,186	$2,989,632	$3,179,999	$3,379,750	$3,589,375	
Total	$6,074,484	$6,354,836	$6,649,577	$6,959,522	$7,285,535	

7.2.2. Capital Improvement Plan

Table 7-5 shows the City's plan for wastewater capital improvements, which includes ramping up to replace 1 mile of wastewater pipeline per year starting in FY 2026 through FY 2028 and then increasing the replacement rate to 2 miles of wastewater pipeline per year thereafter. Replacements have been minimal, and limited to isolated spot repairs, due to lack of funding. The City wants to improve the replacement rate to minimize disruptions to service due to wastewater blockages and emergency repairs. The City must also plan for converting all its fleet vehicles to advanced clean fleet vehicles as they reach the end of their useful lives. The plan includes an estimate for replacing one vehicle per year.

Table 7-5: Projected Wastewater Capital Improvement Projects

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Electrification Strategy	$0	$75,000	$75,000	$0	$0	$0
Electrical Charging Station Design/construction	$0	$0	$0	$50,000	$100,000	$0
FY 2023 WWTF projects	$4,000,000	$0	$0	$0	$0	$0
Future Wastewater LiftStation Rehab	$0	$600,000	$600,000	$600,000	$600,000	$600,000
Future Wastewater Pipeline Rehab	$0	$1,000,000	$1,600,000	$3,000,000	$3,000,000	$3,000,000
Wastewater Master Plan	$0	$0	$0	$0	$108,000	$0
Vehicle Replacement	$0	$0	$0	$50,000	$50,000	$50,000
Total, Uninflated	$4,000,000	$1,675,000	$2,275,000	$3,700,000	$3,858,000	$3,650,000
Total, Inflated	$4,000,000	$1,730,667	$2,428,728	$4,081,294	$4,397,006	$4,298,198
		FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Future Wastewater LiftStation Rehab		$600,000	$600,000	$600,000	$600,000	$600,000
Future Wastewater Pipeline Rehab		$6,000,000	$6,000,000	$6,000,000	$6,000,000	$6,000,000
Vehicle Replacement		$50,000	$50,000	$50,000	$50,000	$50,000
Total, Uninflated		$6,650,000	$6,650,000	$6,650,000	$6,650,000	$6,650,000
Total, Inflated		$8,091,217	$8,360,121	$8,637,961	$8,925,036	$9,221,651

7.2.3. Existing and Proposed Debt Service

The wastewater fund currently pays a portion of general fund debt related to shared facilities. This expense is about $175,000 in FY 2023 and is anticipated to decrease to about $95,000 per year towards the end of the

study period. The City plans to use cash to fund wastewater capital projects over the study period. Therefore, no proposed debt service is modeled over the study period.

7.3. Reserve Targets

The City maintains a wastewater operating reserve fund and a wastewater capital reserve fund.

Operating Reserve – The Operating Reserve is used primarily to meet ongoing cash flow requirements. The City's minimum reserve target is set at 25 percent (three months) of wastewater revenues.

Capital Reserve – The Capital Reserve is used to cover any unexpected and unplanned infrastructure repairs and replacements not included in the budget as well as to set aside money for future capital projects. Therefore, the City has set a target of $1M for FY 2024 growing by $1M per year thereafter. When a future capital project such as lift station replacement is needed, the capital reserve fund can be drawn upon to help pay for that project. Then the reserves would build back over time. Reserves are established for future replacement of large system components including Supervisory Control and Data Acquisition equipment, lift stations, and other system infrastructure. Capital reserve funds are essential as significant portions of the collection system have exceeded the end of reliable service life. Until such time as the pipeline replacement program replaces the system pipe segments that have already exceeded their reliable service life, pipeline failures are increasingly probable, and in the event of a large-scale pipeline failure, it might be necessary to utilize capital reserve funding to make costly unplanned emergency large-scale pipeline and/or damaged infrastructure repairs. It is estimated that more than 10 miles of the collection system pipelines have exceeded their reliable service life as of June 2023. The status quo model lacks sufficient capital reserves, which is a significant liability to the City given the increasing probability of system failures due to chronically deferred pipeline replacement.

7.4. Proposed Financial Plan and Revenue Adjustments

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and meet reserve targets. The Financial Plan modeling assumes the first revenue adjustment occurs on October 1, 2023. The proposed revenue adjustments would enable the City to meet operating costs, reserve targets, and to execute the CIP shown in Table 4-6. Table 7-6 shows the proposed wastewater revenue adjustments for the rate-setting period. Adjustments beyond the five-year rate setting period are shown for reference only.

Table 7-6: Proposed Revenue Adjustments

Effective Date	Adjustment
Oct. 1, 2023	4.0%
July 1, 2024	5.0%
July 1, 2025	5.0%
July 1, 2026	5.0%
July 1, 2027	5.0%
July 1, 2028	*5.0%*
July 1, 2029	*5.0%*
July 1, 2030	*5.0%*
July 1, 2031	*5.0%*
July 1, 2032	*5.0%*

Table 7-7, on the following page, shows the cash flow detail over the study period for the wastewater operating fund assuming the revenue adjustments shown above.

Table 7-7: Wastewater Operating Cashflow

Line No.	Line Item				Fiscal Year 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1	Revenue Under Existing Rates				$8,896,778	$9,056,305	$9,219,037	$9,384,974	$9,554,116	$9,726,819	$9,902,726	$10,082,194	$10,265,224	$10,452,170	$10,642,677
	Revenue Adjustments														
		Mo. Effctv.													
	FY	First Year	Adjustment												
2	2023	12	0.0%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	2024	9	4.0%			$271,689	$368,761	$375,399	$382,165	$389,073	$396,109	$403,288	$410,609	$418,087	$425,707
4	2025	12	5.0%				$479,390	$488,019	$496,814	$505,795	$514,942	$524,274	$533,792	$543,513	$553,419
5	2026	12	5.0%					$512,420	$521,655	$531,084	$540,689	$550,488	$560,481	$570,688	$581,090
6	2027	12	5.0%						$547,737	$557,639	$567,723	$578,012	$588,505	$599,223	$610,145
7	2028	12	5.0%							$585,520	$596,109	$606,913	$617,931	$629,184	$640,652
8	2029	12	5.0%								$625,915	$637,258	$648,827	$660,643	$672,684
9	2030	12	5.0%									$669,121	$681,268	$693,675	$706,319
10	2031	12	5.0%										$715,332	$728,359	$741,635
11	2032	12	5.0%											$764,777	$778,716
12	2033	12	5.0%												$817,652
13	Total Adjusted Revenue				$0	$271,689	$848,151	$1,375,837	$1,948,371	$2,569,111	$3,241,487	$3,969,355	$4,756,745	$5,608,150	$6,528,020
14	Total Rate-Based Revenue				$8,896,778	$9,327,994	$10,067,189	$10,760,811	$11,502,487	$12,295,929	$13,144,213	$14,051,549	$15,021,969	$16,060,320	$17,170,696
15	Other Revenue														
16	Misc Net Revenues				$167,750	$173,228	$173,734	$174,242	$174,753	$175,266	$175,782	$176,300	$176,821	$177,345	$177,871
17	Placer County SMD-1 Charges				$2,400,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
18	Interest Income				$59,247	$54,428	$72,167	$82,527	$87,951	$97,565	$94,352	$76,924	$63,699	$54,590	$50,104
19	Total Revenue				$11,523,774	$9,555,650	$10,313,089	$11,017,580	$11,765,191	$12,568,760	$13,414,348	$14,304,774	$15,262,489	$16,292,255	$17,398,672
	O&M Expenses														
20	Wastewater Treatment				$3,381,079	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
21	All Other O&M				$13,248,068	$4,848,346	$5,082,266	$5,312,307	$5,553,921	$5,807,753	$6,074,484	$6,354,836	$6,649,577	$6,959,522	$7,285,535
22	Total O&M Expenses				$16,629,147	$4,848,346	$5,082,266	$5,312,307	$5,553,921	$5,807,753	$6,074,484	$6,354,836	$6,649,577	$6,959,522	$7,285,535
23	Net Revenues				-$5,105,373	$4,707,304	$5,230,823	$5,705,273	$6,211,269	$6,761,006	$7,339,864	$7,949,938	$8,612,912	$9,332,733	$10,113,137
	Debt Service														
24	Proposed				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25	Total Debt Service				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
26	General Fund Debt - Allocated to Wastewater				$174,556	$167,693	$167,398	$166,921	$167,375	$167,046	$152,027	$94,795	$95,548	$94,920	$95,222
27	Transfer to Capital Fund 721				$0	$2,616,591	$3,438,348	$5,090,993	$5,406,786	$5,308,061	$9,101,167	$9,370,159	$9,648,091	$9,928,259	$10,224,971
28	**Annual Surplus/(Deficit)**				**-$5,279,929**	**$1,923,019**	**$1,625,076**	**$447,359**	**$637,108**	**$1,285,899**	**-$1,913,330**	**-$1,515,016**	**-$1,130,727**	**-$690,446**	**-$207,055**
29	Beginning Balance				$9,677,345	$4,397,416	$6,320,435	$7,945,511	$8,392,870	$9,029,978	$10,315,877	$8,402,547	$6,887,531	$5,756,804	$5,066,358
30	Ending Operating (720) Balance				$4,397,416	$6,320,435	$7,945,511	$8,392,870	$9,029,978	$10,315,877	$8,402,547	$6,887,531	$5,756,804	$5,066,358	$4,859,303
31	Target Operating Reserves				$2,880,944	$2,388,913	$2,578,272	$2,754,395	$2,941,298	$3,142,190	$3,353,587	$3,576,193	$3,815,622	$4,073,064	$4,349,668

Line 1 shows the projected wastewater rate-revenue under existing rates. Line 13 shows the forecast adjusted revenue from the proposed revenue adjustments. Line 19 shows total wastewater fund revenue including non-operating revenues and interest. Line 22 shows total O&M expenses. Line 23 shows net operating revenues, or revenues less expenses, which is the result of subtracting Line 22 from Line 19. Line 24 shows that the City has no proposed debt service payments. Line 26 shows the portion of shared facility general fund debt projected to be paid from the wastewater operating fund. Line 27 shows the transfers to the wastewater capital fund (721) to pay for capital improvements and meet capital reserve levels. Line 28 shows the annual surplus or deficit, which is the Line 23 less Line 25 less Line 26 less Line 27. Line 29 shows the enterprise's operating balance at the start of the fiscal year. The ending operating fund balance in Line 30 is the beginning balance (Line 29) plus the annual surplus or deficit (Line 28). Line 31 shows the target operating reserve level.

Table 7-8 shows the cash flow for Fund 721, the wastewater capital fund, which is used to fund the wastewater enterprise's CIP. The City plans to rebuild capital reserves by growing the reserve from $1M in FY 2024 by $1M each year thereafter. This will allow the City to either fully or partially cash fund future asset replacement and rehabilitation projects (e.g., lift stations) from the capital reserve. The Transfer In from Fund 720 line item matches Line 27 in Table 7-7. The plan presumes that sufficient transfers from Fund 720 are made each year to meet the annual CIP and reserve target.

Table 7-8: Capital Fund Cashflow

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Beginning Balance	$4,050,026	$123,596	$1,000,000	$2,000,000	$3,000,000	$4,000,000
Sources						
Transfer In from Fund 720	$0	$2,616,591	$3,438,348	$5,090,993	$5,406,786	$5,308,061
Miscellaneous Revenue	$82,970	$0	$0	$0	$0	$0
Total Sources	$4,132,996	$2,740,187	$4,438,348	$7,090,993	$8,406,786	$9,308,061
Uses						
Capital Projects	$4,000,000	$1,730,667	$2,428,728	$4,081,294	$4,397,006	$4,298,198
Insurance	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000
Professional Services	$2,400	$2,520	$2,621	$2,699	$2,780	$2,864
Total Uses	$4,009,400	$1,740,187	$2,438,348	$4,090,993	$4,406,786	$4,308,061
Ending Balance	$123,596	$1,000,000	$2,000,000	$3,000,000	$4,000,000	$5,000,000
Target Balance, Minimum	$0	$1,000,000	$2,000,000	$3,000,000	$4,000,000	$5,000,000
	FY 2029	**FY 2030**	**FY 2031**	**FY 2032**	**FY 2033**	
Beginning Balance	$5,000,000	$6,000,000	$7,000,000	$8,000,000	$9,000,000	
Sources						
Transfer In from Fund 720	$9,101,167	$9,370,159	$9,648,091	$9,928,259	$10,224,971	
Miscellaneous Revenue	$0	$0	$0	$0	$0	
Total Sources	$14,101,167	$15,370,159	$16,648,091	$17,928,259	$19,224,971	
Uses						
Capital Projects	$8,091,217	$8,360,121	$8,637,961	$8,925,036	$9,221,651	
Insurance	$7,000	$7,000	$7,000	$0	$0	
Professional Services	$2,950	$3,038	$3,129	$3,223	$3,320	
Total Uses	$8,101,167	$8,370,159	$8,648,091	$8,928,259	$9,224,971	
Ending Balance	$6,000,000	$7,000,000	$8,000,000	$9,000,000	$10,000,000	
Target Balance, Minimum	$6,000,000	$7,000,000	$8,000,000	$9,000,000	$10,000,000	

The next four figures display the FY 2023 through FY 2033 Financial Plan in graphical form. Figure 7-1 illustrates the Wastewater Operating Financial Plan – it compares existing (black line) and proposed revenues (green line) with projected expenses (stacked columns). The expenses include O&M, transfers to Fund 721, and reserve funding. The green bars above the X-axis show the net cash used to build up the reserves and the bars below the X-axis show the withdrawals from reserves to fund costs. Projected revenue from existing rates, if continued unchanged, would not meet future projected total expenses and illustrates the need for revenue adjustments necessary to maintain operations, accomplish the desired CIP, and to meet reserve targets.

Figure 7-1: Proposed Wastewater Operating Financial Plan

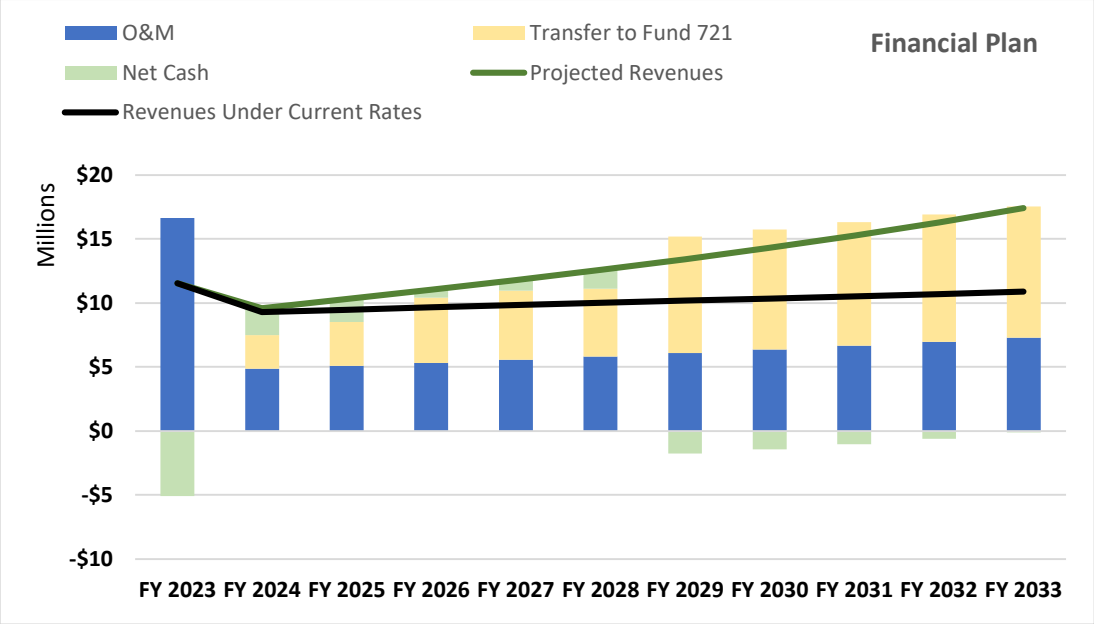


Figure 7-2 summarizes the projected wastewater CIP and its funding sources: reserves and transfers from the wastewater operating Fund 720. All CIP spending flows from Fund 721. As shown, the City does not plan to issue debt to pay for future CIP during the study period.

Figure 7-2: Projected Wastewater Capital Plan and Funding Sources

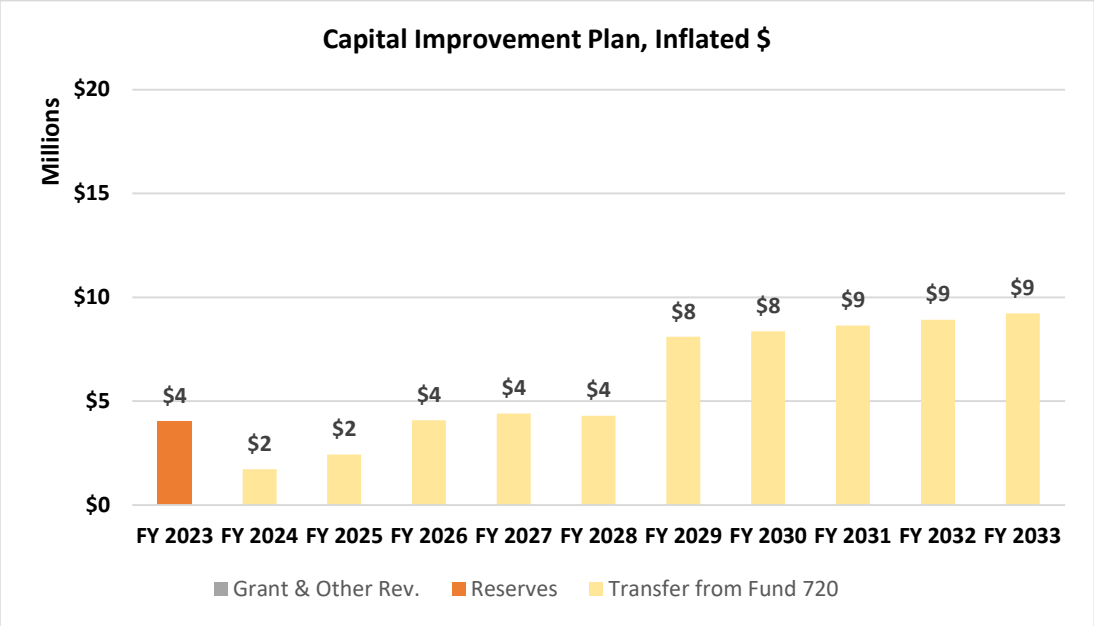


Figure 7-3 displays the projected total operating fund (Fund 720) yearly ending balance (blue bars). The blue line is the total fund target minimum balance, which is set at 25 percent of wastewater revenues based on proposed City policy. As shown, the operating fund is projected to be above target with the pass-through of treatment costs. While initially showing an increase in the balance, by the end of the study period, the reserves will be drawn upon to fund capital and maintain the operating fund at or above the minimum target reserve level.

Figure 7-3: Projected Wastewater Operating Fund Ending Balance

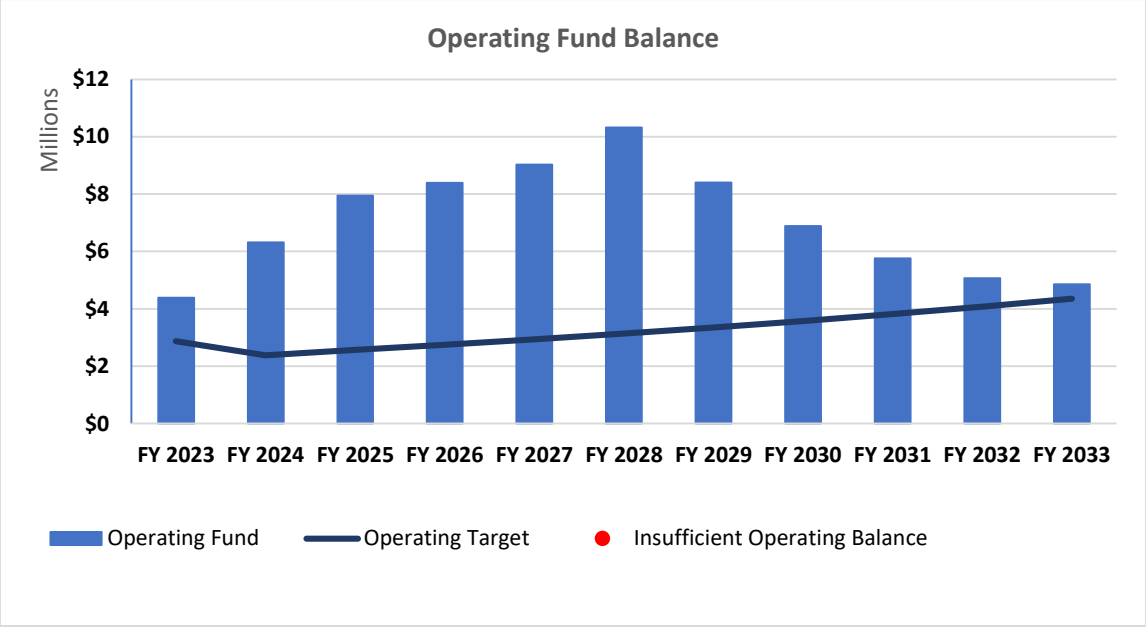
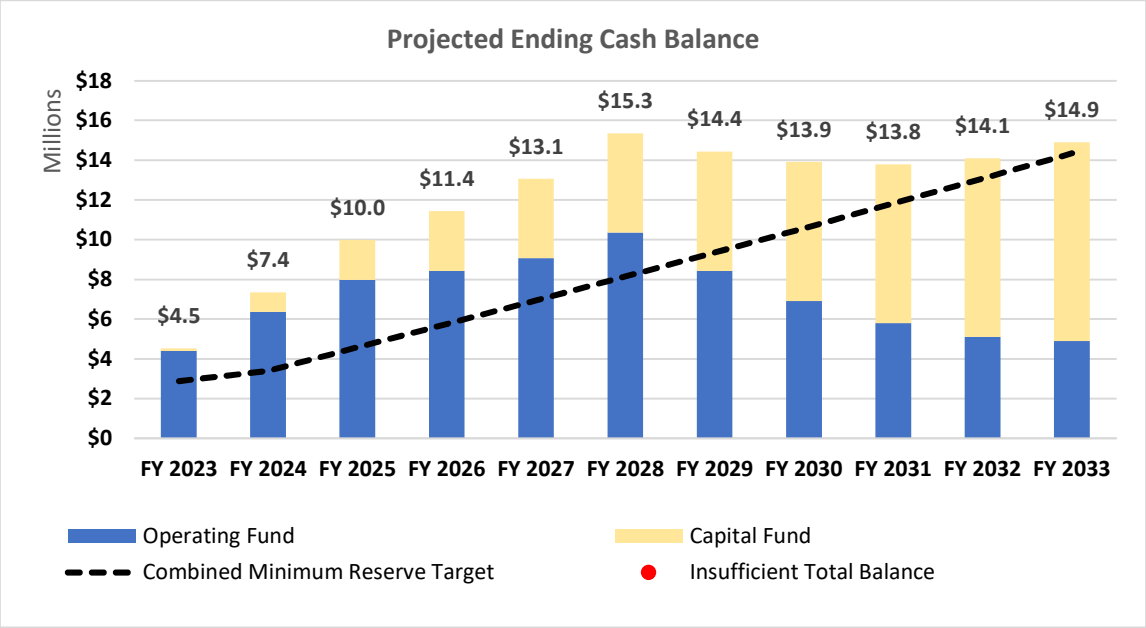


Figure 7-4 shows the projected combined operating and capital funds ending balance. The build-up of reserves in the early years helps keep revenue adjustments at a lower level in the out years while bringing the balance in line with the minimum target reserve.

Figure 7-4: Projected Combined Ending Balance



8. Wastewater Cost-of-Service Analysis

A cost-of-service analysis distributes a utility's revenue requirement (costs) to each customer class. This section explains the details of the cost-of-service analysis conducted for the City of Lincoln for its wastewater collection-system services to customers.

After determining a utility's revenue requirement, the next step in a cost-of-service analysis is to functionalize its O&M costs to the following functions:

- Collection – cost of collecting wastewater and transporting it to the wastewater treatment plant
- Lift & Pump Stations– cost of pumping wastewater
- Customer – costs associated with billing and customer service
- General and Administration (G&A) – general and administrative costs incurred by the City

The functionalization of costs allows us to better allocate the functionalized costs to the rate components. Treatment costs from LiSWA will be passed on to customers directly.

8.1. Revenue Requirement Determination

Table 8-1 shows the net revenue requirement from rates for FY 2024, the test year. The total revenue requirement shown in Line 6 is equal to operating expenses (Table 7-4) and capital expenses (Table 7-5). Other operating revenues, totaled in Line 9, comprise miscellaneous revenues and interest income (Table 7-3) and reduce the total revenue required from rates. The adjustment for cash (Line 10) is added to account for the addition to reserves. The mid-year increase (Line 11) reflects that the FY 2024 revenue adjustment occurs part way through the fiscal year.[4] The revenue required from rates is equal to the total revenue requirements less other operating revenues and adjustments.

[4] This rate adjustment is proposed to be adopted in October; thus, the revenue requirement calculation has to be adjusted to incorporate this timing. Note adjusting these rates would result in only 9/12 of the rate adjustment being implemented due to the three "missed" months.

Table 8-1: Revenue Requirement Determination

No.	Line Item	Operating	Capital-Related	Total
	Total Revenue Requirements			
1	O&M - Collection	$4,848,346		$4,848,346
2	O&M - Treatment	$0		$0
3	Total Debt Service		$0	$0
4	Cash Funded Capital		$1,740,187	$1,740,187
5	General Fund Debt Allocation		$167,693	$167,693
6	Subtotal	$4,848,346	$1,907,880	$6,756,227
	Other Operating Revenue			
7	Misc. Revenues	-$173,228		-$173,228
8	Interest Income	-$54,579		-$54,579
9	Subtotal	-$227,808	$0	-$227,808
	Adjustments			
10	Change in Funds Available	$1,953,359	$876,404	$2,829,763
11	Annualized Rate Adjustment	$60,375		$60,375
12	Subtotal	$2,013,734	$876,404	$2,890,138
13	**Costs to be Recovered from Rates**	**$6,634,273**	**$2,784,284**	**$9,418,557**

8.2. Functionalization of Net Revenue Requirement

Functionalizing expenses allows Raftelis to follow the principles of rate setting theory in which the end goal is to allocate the City's revenue requirements to cost causation components. Table 8-2 shows the resulting functionalization of the City's O&M expenses (Line 6,Table 8-1), O&M offsets (Lines 9 and 12,Table 8-1), and capital-related costs (Line 13,Table 8-1). Raftelis worked with City staff to functionalize the test year O&M line items to the functions listed at the beginning of Section 8 (see Appendix B). O&M offsets are allocated the same as the total O&M revenue requirements. Capital-related revenue requirements are allocated based on net collection-system investment (see Appendix C).

Table 8-2: Functionalization of Net Revenue Requirements

Line Item	Test Year 2024	Collection	Lift & Pump Stations	Customer	G&A
O&M	$4,848,346	$1,882,750	$866,543	$511,013	$1,588,040
O&M Offsets	$1,785,926	$693,526	$319,198	$188,236	$584,967
Capital-Related	$2,784,284	$2,709,530	$39,822	$0	$34,933
Net Revenue Requirements	$9,418,557	$5,285,805	$1,225,563	$699,249	$2,207,940

8.3. Allocation of Functionalized Net Revenue Requirements to Cost Components

After functionalizing the net revenue requirements, the next step is to allocate the functionalized net revenue requirements to the following cost components:

- Flow – variable costs associated with meeting the flow of wastewater through the collection system
- Customer Service– the costs associated with billing and customer service

8.3.1. Operating and Capital Allocation

Table 8-3 shows the system functions, the rationale for allocating each function to the various cost components, and the percentage allocation to each component.

Table 8-3: Allocation of Functions to Cost Components

Functions	Allocation Basis	Total	Flow	Customer
Collection	Flow	100%	100.0%	
Lift & Pump Stations	Flow	100%	100.0%	
Customer	Customer	100%		100.0%

Table 8-4 shows the detailed, net operating costs by cost component (Table 8-2) allocated to the cost components using the allocations shown in Table 8-3. General and administrative (G&A) costs are allocated as the subtotal of the other O&M costs.

Table 8-4: Allocation of Net Wastewater Operation & Maintenance to Cost Components

Functions	Allocation Basis	Net Rev. Req.	Flow	Customer
Collection	Flow	$2,576,275	$2,576,275	$0
Lift & Pump Stations	Flow	$1,185,741	$1,185,741	$0
Customer	Customer	$699,249	$0	$699,249
Subtotal		$4,461,265	$3,762,016	$699,249
G&A	As O&M	$2,173,008	$1,832,415	$340,592
Total		**$6,634,273**	**$5,594,432**	**$1,039,841**

Table 8-5 shows the allocation of capital-related revenue requirement (Table 8-2, Capital-Related column) to the components. G&A costs are allocated like the subtotal of the other capital-related costs.

Table 8-5: Allocation of Wastewater Capital-Related Expenses to Cost Components

Functions	Allocation Basis	Net Rev. Req.	Flow	Customer
Collection	Flow	$2,709,530	$2,709,530	$0
Lift & Pump Stations	Flow	$39,822	$39,822	$0
Customer	Customer	$0	$0	$0
Subtotal		$2,749,352	$2,749,352	$0
G&A	As Capital	$34,933	$34,933	$0
Total		**$2,784,284**	**$2,784,284**	**$0**

8.4. Derivation of Units of Service

8.4.1. Equivalent Dwelling Units

The City defines a single-family home as an equivalent dwelling unit (EDU). EDUs for non-residential customers are determined by the City. Since those EDUs were determined when the City provided both

wastewater treatment and collection, Raftelis recommends updating the EDU calculation for non-residential customers for the collection system.

Table 8-6 shows the proposed calculation of EDUs for non-residential customers based on the average residential flow per account. The wastewater (WW) Flow is estimated by multiplying the metered water use by a return-to-sewer factor. The return-to-sewer factor is based on average winter use compared to annual average use. This flow is converted to gallons per day (gpd) and divided by the EDUs to determine the gpd/EDU. The residential gpd/EDU represents the base flow for determining non-residential EDUs. For example, the Commercial EDUs are calculated by dividing by the Commercial wastewater flow (on a gpd basis) by the Residential gpd/EDU. Residential EDUs are still based on a dwelling unit and match the number shown in Table 3-4 for the test year.

Table 8-6: Equivalent Dwelling Units

Customer Class	Water Use, kgal	Return to Sewer	WW Flow, kgal	gpd/EDU	EDUs
Residential	2,575,524	50%	1,287,762	**155**	22,835
Commercial	153,755	80%	123,004		2,181
Parks	18,565	15%	2,785		49
Total	2,747,844		1,413,551		25,066

8.4.2. Unit Costs of Service

Raftelis calculated unit costs for each cost component by assessing the total accounts, total bills, total EDUs, annual metered water use, and estimated annual wastewater flows. Table 8-7 shows the units of service for the wastewater collection system.

Table 8-7: Units of Service

Customer Class	Acts	Bills	EDUs	Annual Water Use	Annual WW Flow
	No.	No.	No.	kgal	kgal
Residential	21,571	258,852	22,835	2,575,524	1,287,762
Commercial	360	4,320	2,181	153,755	123,004
Parks	4	48	49	18,565	2,785
Total	21,935	263,220	25,066	2,747,844	1,413,551

Table 8-8 shows the total unit costs of service. The Net Revenue Req. shown in the first line matches the total allocated to Flow and Customer from Table 8-4 and Table 8-5. The Units line repeats the wastewater flow and accounts from Table 8-7. Dividing the first line by these units results in the Unit Cost for the Flow and Customer components.

Table 8-8: Total Wastewater Unit Costs of Service

Customer Class	WW Flow	Customer
Net Revenue Req.	$8,378,716	$1,039,841
	WW, kgal	Acts/yr
Units	1,413,551	21,935
Unit Cost, $/unit	$5.93	$47.41

9. Wastewater Rates

9.1. Wastewater Test Year Rate Derivation

Raftelis has calculated updated wastewater rates for the test year using a proposed revised rate structure. The new structure charges residential customers on an EDU basis and non-residential customers on a billed water usage basis. Table 9-1 shows the derivation of the proposed wastewater rates. The unit rates from Table 8-8 were multiplied by the customer class units (Table 8-6) to determine the cost allocation to each customer class. The Residential $/EDU/mo charge is equal to the Total Residential cost of service divided by the Residential EDUs (Table 8-6). The Commercial and Parks volumetric rates are determined by dividing their respective total costs of service by their respective metered water use (Table 8-6). Non-residential customers will be subject to a minimum charge equal to the Residential EDU charge.

Table 9-1: Wastewater Rate Derivation

Customer Class	Flow	Customer	Total	$/EDU/mo	$/ Water kgal
Residential	$7,633,112	$1,022,586	$8,655,698	$31.59	
Commercial	$729,097	$17,066	$746,163		$4.85
Parks	$16,506	$190	$16,696		$0.90
Total	$8,378,716	$1,039,841	$9,418,557		

9.2. Proposed Five-Year Wastewater Rate Schedule

Table 9-2 shows the proposed five-year schedule of wastewater rates. Rates for FY 2024 reflect the cost-of-service analysis. Rates for FY 2025 and beyond equal the prior year rates multiplied by the revenue adjustment. Rates are rounded up to the nearest penny. Customers will see the City's collection-related charge plus the pass through of the LiSWA treatment charge on their bills, which is shown in the following table for reference. Unit rates are rounded up to the nearest penny for revenue sufficiency.

Table 9-2: Proposed Five-Year Wastewater Rate Schedule

	Fiscal Year					
Proposed Rates	Current	2024	2025	2026	2027	2028
Effective Date		Oct 2023	Jul 2024	Jul 2025	Jul 2026	Jul 2027
Monthly Collection Fixed Charge, $/EDU						
Residential	$32.08	$31.59	$33.17	$34.83	$36.58	$38.41
Usage, $/kgal						
Non-Residential (1)	$4.92	$4.86	$5.11	$5.37	$5.64	$5.93
Parks (1), (2)		$0.90	$0.95	$1.00	$1.05	$1.11
Monthly LiSWA Treatment Fixed Charge, $/WWTRU						
All Customers	*$22.79*	*$34.56*	*$35.60*	*$36.67*	*$37.77*	*TBD*

(1) Subject to a minimum charge equal to the Residential charge.

(2) Parks are currently charged on an EDU basis. Starting in FY2024, they will be charged on billed water use.

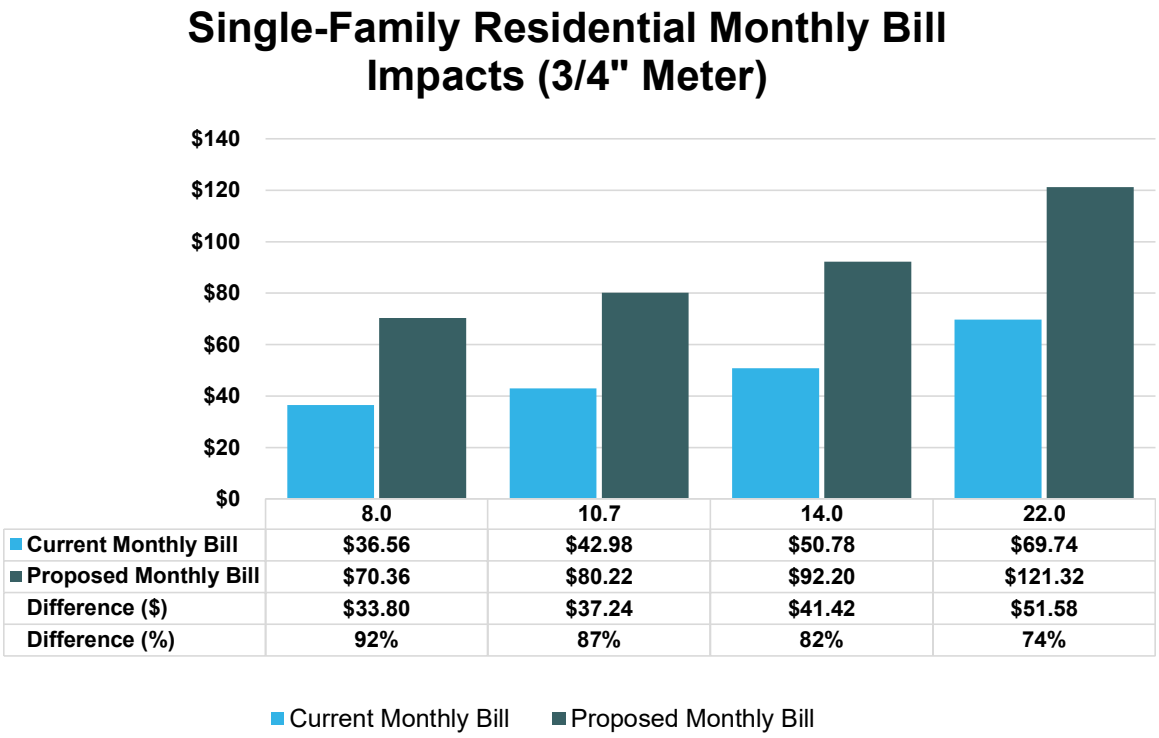
10. Customer Impact Analysis & Neighboring Agency Comparison

10.1. Typical Bill Comparison

10.1.1. Water

Figure 10-1 shows a comparison of a ¾" single-family bill at different usage levels for the proposed FY 2024 rates versus the current rates.

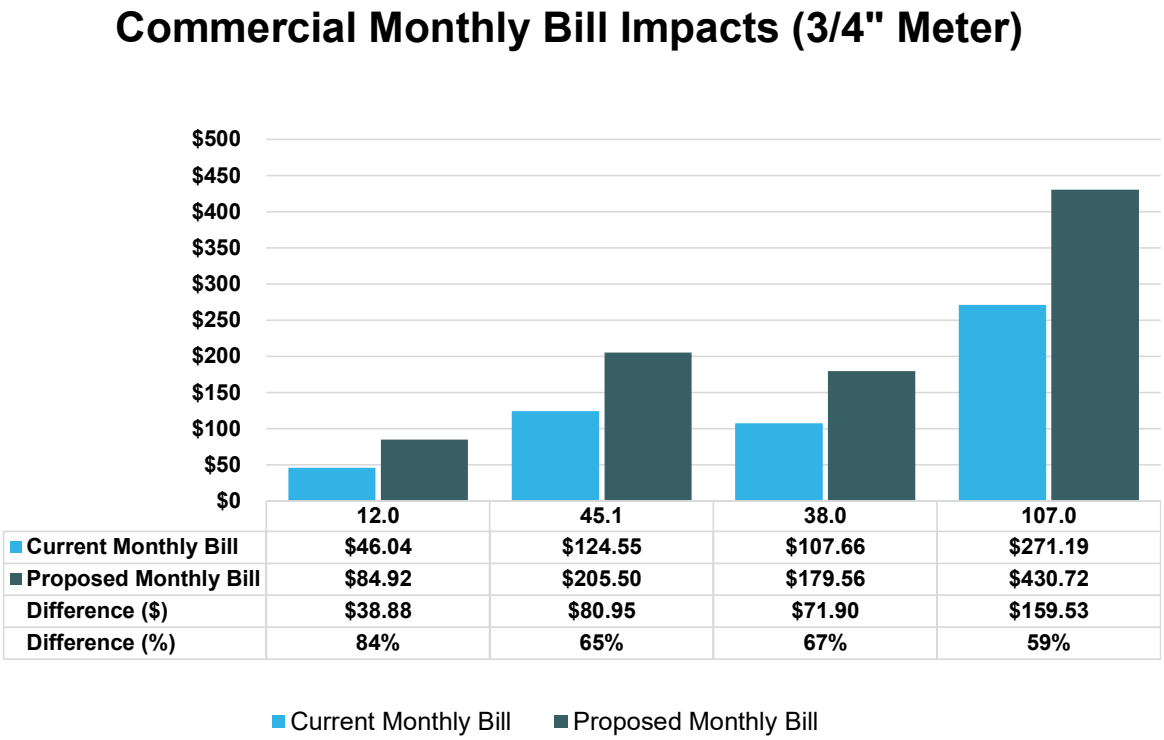
Figure 10-1: Single-Family Residential Monthly Bills, FY 2024



	8.0	10.7	14.0	22.0
Current Monthly Bill	$36.56	$42.98	$50.78	$69.74
Proposed Monthly Bill	$70.36	$80.22	$92.20	$121.32
Difference ($)	$33.80	$37.24	$41.42	$51.58
Difference (%)	92%	87%	82%	74%

Figure 10-2 shows a comparison of a ¾" commercial bill at different usage levels for the proposed FY 2024 rates versus the current rates.

Figure 10-2: Commercial Monthly Bills, FY 2024



10.1.2. Wastewater

Table 10-1 shows a bill comparison for FY 2024 for a single-family residential wastewater customer.

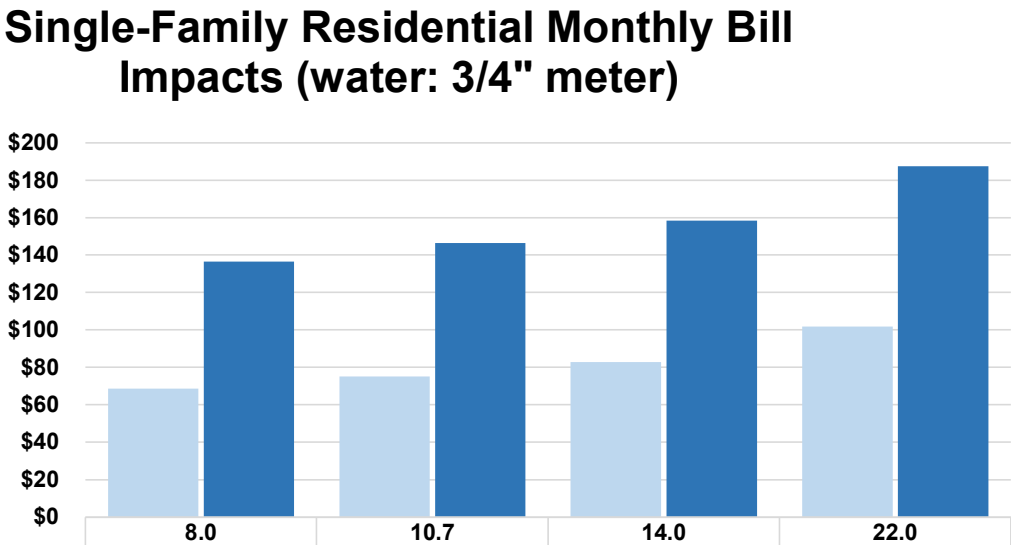
Table 10-1: Single-Family Residential Monthly Bills, FY 2024

Customer	Current	Proposed Oct. 1, 2023	Change, $
Monthly Charge - Collection	$32.08	$31.59	-$0.49
Monthly Charge - LiSWA Treatment		$34.56	
Total Bill	$32.08	$66.15	$34.07

10.1.3. Combined

Figure 10-3 shows the combined water and wastewater bill for a ¾" single-family residential customer at various water usage levels.

Figure 10-3: Combined Water and Wastewater Bill, FY 2024



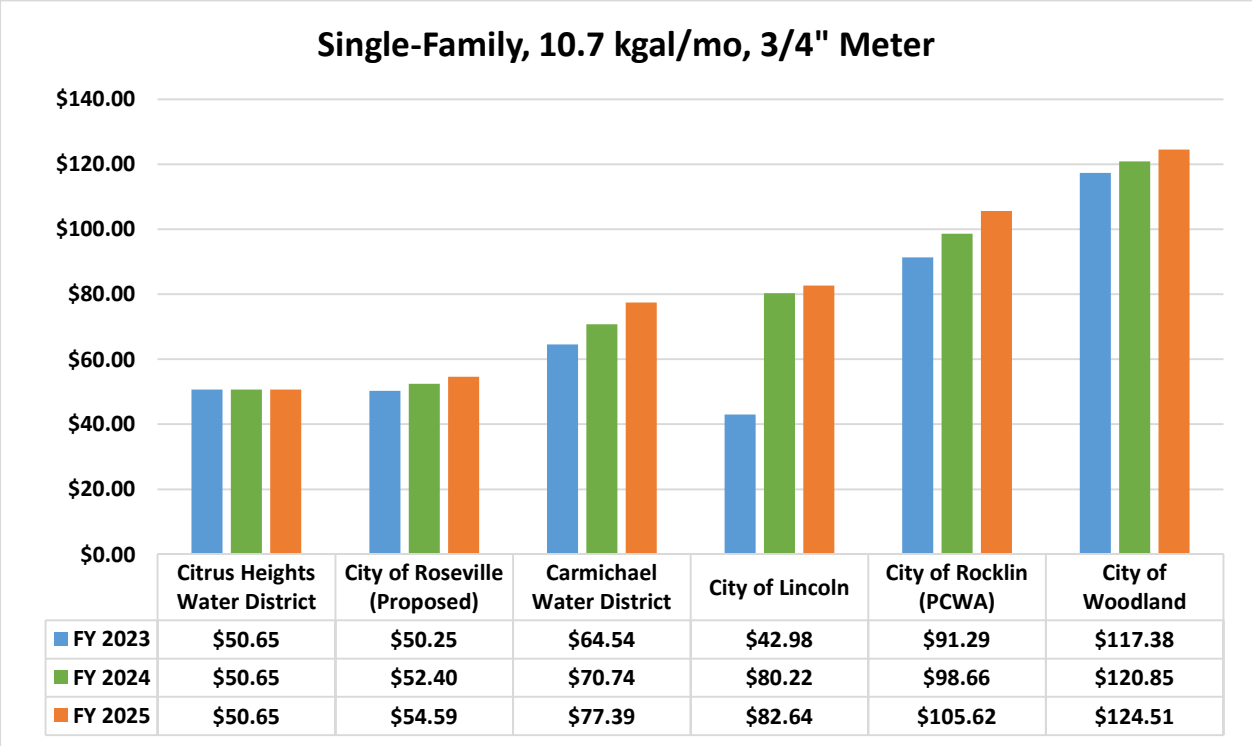
	8.0	10.7	14.0	22.0
Current Monthly Bill	$68.64	$75.06	$82.86	$101.82
Proposed Monthly Bill	$136.51	$146.37	$158.35	$187.47
Difference ($)	$67.87	$71.31	$75.49	$85.65
Difference (%)	99%	95%	91%	84%

10.2. Neighboring Comparison

10.2.1. Water

Figure 10-4 shows a comparison of a bill for an average single-family customer (10.7 kgal/mo) on a ¾" meter for FY 2023, FY 2024, and FY 2025. Note that Citrus Heights has not issued new rates.

Figure 10-4: Neighborhood Comparison - Water

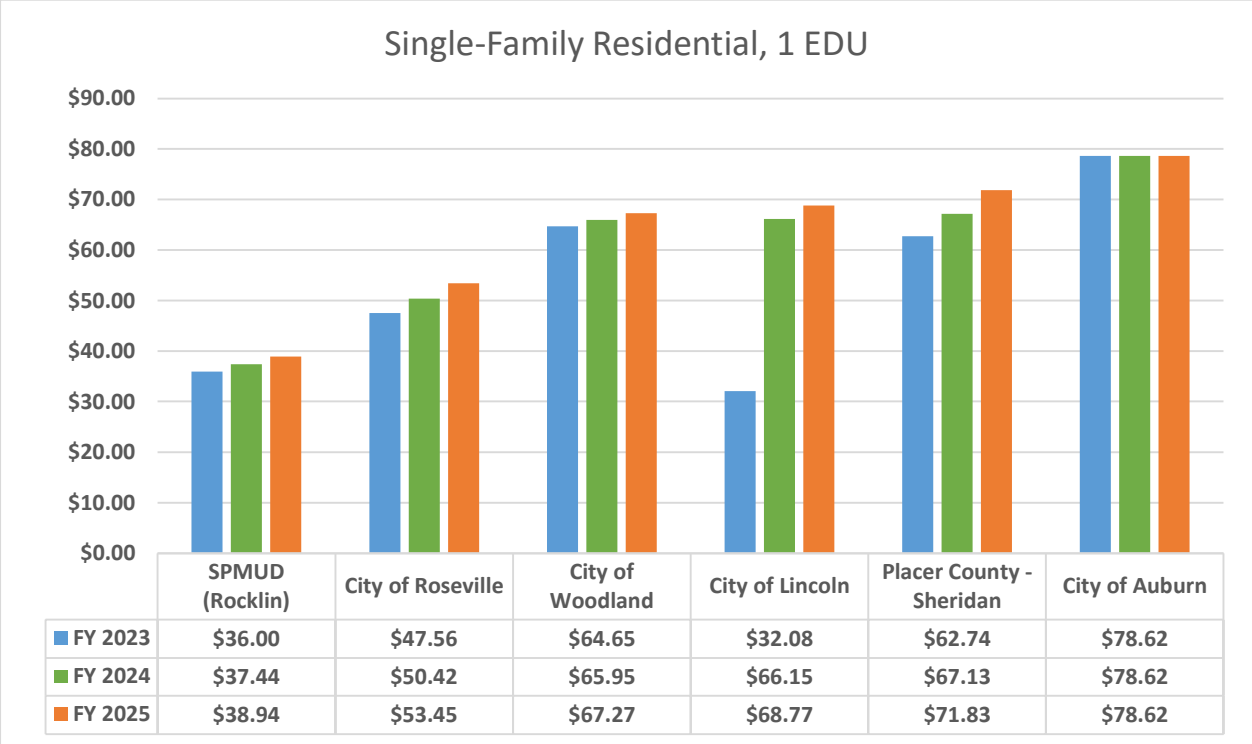


	Citrus Heights Water District	City of Roseville (Proposed)	Carmichael Water District	City of Lincoln	City of Rocklin (PCWA)	City of Woodland
FY 2023	$50.65	$50.25	$64.54	$42.98	$91.29	$117.38
FY 2024	$50.65	$52.40	$70.74	$80.22	$98.66	$120.85
FY 2025	$50.65	$54.59	$77.39	$82.64	$105.62	$124.51

10.2.2. Wastewater

Figure 10-5 shows a comparison of a bill for a single-family wastewater customer for FY 2023, FY 2024, and FY 2025.

Figure 10-5: Neighborhood Comparison – Wastewater

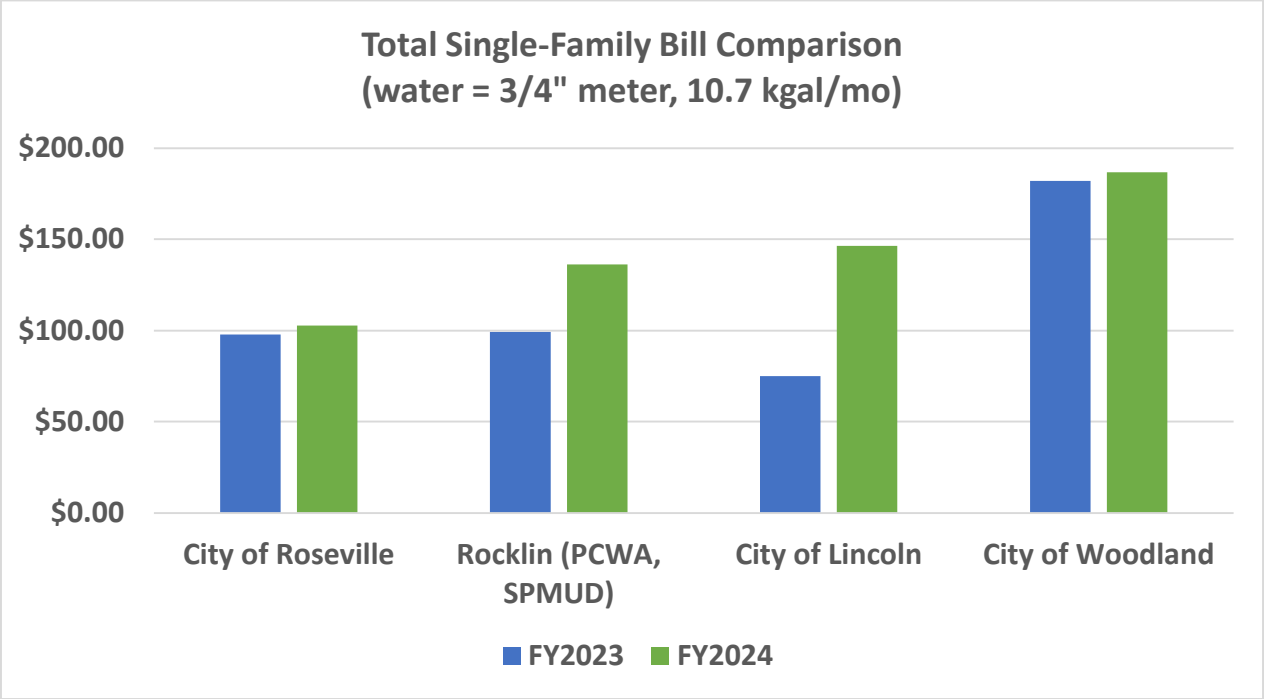


	SPMUD (Rocklin)	City of Roseville	City of Woodland	City of Lincoln	Placer County - Sheridan	City of Auburn
FY 2023	$36.00	$47.56	$64.65	$32.08	$62.74	$78.62
FY 2024	$37.44	$50.42	$65.95	$66.15	$67.13	$78.62
FY 2025	$38.94	$53.45	$67.27	$68.77	$71.83	$78.62

10.2.3. Combined

Figure 10-6 shows a comparison of combined water and wastewater bills for a single-family customer on a ¾" meter using 10.7 kgal/mo.

Figure 10-6: Combined Water & Wastewater Neighborhood Comparison



APPENDIX A:

Water O&M Allocation

O&M Test Year and Allocations

Line Item	Supply	Treatment	T&D	Storage	Meter Service	Billing and Collection	G&A	Fire Protection	Total
6850 - Water									
Salaries - FT	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
New Positions	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Salaries-On Call	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Salaries - PT	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Salaries - OT	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Retirement	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
PERS Unfunded	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Workers Comp	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
OPEB	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Med/Den/Life Ins	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
SUI	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
FICA	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Materials & Supplies	0.0%	44.4%	27.8%	27.8%	0.0%	0.0%	0.0%	0.0%	100.0%
Fuel & Oil	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Uniforms & Clothing	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Advertising	0.0%	0.0%	33.3%	0.0%	33.3%	33.4%	0.0%	0.0%	100.0%
Water Purchases	99.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	100.0%
Communications	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Utilities	40.0%	10.0%	20.0%	30.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Municipal Utilities	40.0%	10.0%	20.0%	30.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Professional Services	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Membership/Dues	40.0%	0.0%	40.0%	0.0%	10.0%	0.0%	10.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Regulatory Fees	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Equipment	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
City Attorney									
Salaries - FT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Retirement	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
OPEB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
SUI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
FICA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
2060-Information Technology									
Salaries FT	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Salaries - OT	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Retirement	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Workers Comp	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
OPEB	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Med/Den/Life Ins	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
SUI	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
FICA	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Professional Services	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
Renewals & Warranties	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Training	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
4060 Finance									
Retiree Medical Insurance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
4070 - Utility Billing									
Salaries - FT	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Retirement	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
PERS Unfunded	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
OPEB	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
SUI	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
FICA	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Credit Card Fees	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Materials & Supplies	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Communications	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
4210 - Commty Dev Administration									
Salaries - FT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Retirement	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
SUI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
FICA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%

6810 Public Works - Administration									
Salaries - FT	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
Retirement	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
PERS Unfunded	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
Workers Comp	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
OPEB	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
Med/Den/Life Ins	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
SUI	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
FICA	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
Communications	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Professional Services	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	60.0%	0.0%	100.0%
PW Work Order System	5.0%	5.0%	25.0%	2.5%	25.0%	25.0%	10.0%	2.5%	100.0%
6830 Engineering									
Salaries - FT	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Retirement	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PERS Unfunded	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
OPEB	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
SUI	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
FICA	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regulatory	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
6870-Streets									
Membership/Dues	40.0%	0.0%	40.0%	0.0%	10.0%	0.0%	10.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
6895 - Fleet Maintenance									
Salaries FT	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Salaries On Call	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Salaries OT	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Retirement	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
OPEB	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
SUI	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
FICA	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Materials & Supplies	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Fuel	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Uniforms & Clothing	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Communications	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Equipment Maintenance	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Membership/Dues	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Regulatory Fees	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Allocations, Transfers & Other Expenses									
Insurance NCCSIF Pool Expense	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Admin Cost Allocation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Utility Cut Impact to Streets Fee	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%

APPENDIX B:

Wastewater O&M Allocation

O&M Test Year and Allocations

Line Item	Collection	Lift & Pump Stations	Customer	G&A	Treatment	Total
6860-Wastewater						
Salaries - FT	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Salaries-On Call	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Salaries - OT	25.0%	70.0%	5.0%	0.0%	0.0%	100.0%
Retirement	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
PERS Unfunded	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Workers Comp	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
OPEB	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
SUI	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
FICA	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Materials/Supplies WW Lincoln	75.0%	25.0%	0.0%	0.0%	0.0%	100.0%
Fuel & Oil	70.0%	25.0%	5.0%	0.0%	0.0%	100.0%
Uniforms & Clothing	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Advertising	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Communications	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Equipment Maintenance	20.0%	80.0%	0.0%	0.0%	0.0%	100.0%
Utilities	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Municipal Utilities	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Lease Expense	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Professional Srvcs WW Lincoln	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Membership/Dues	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Regulatory Fees	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Disposal Fees	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Equipment	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
1040-City Attorney						
Salaries - FT	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Retirement	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
OPEB	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
SUI	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
FICA	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
2060-Information Technology						
Salaries - FT	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
Retirement	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
Workers Comp	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
OPEB	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
Med/Den/Life Ins	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
SUI	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
FICA	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
Professional Services	35.0%	30.0%	25.0%	10.0%	0.0%	100.0%
Renewals & Warranties	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Training	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
4010-Admin						
Taxes	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
4060-Finance						
Retiree Medical Insurance	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%

4070-Utility Billing						
Salaries - FT	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Retirement	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
PERS Unfunded	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
OPEB	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
SUI	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
FICA	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Credit Card Fees	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Materials & Supplies	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Communications	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Professional Services	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Training/Trave/Conf/Mtga	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
4210-Community Dev Admin						
Salaries - FT	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Retirement	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Workers Comp	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Med/Den/Life Ins	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
SUI	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
FICA	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
6810-Public Works Admin						
Salaries - FT	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
Retirement	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
PERS Unfunded	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
Workers Comp	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
OPEB	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
SUI	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
FICA	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
Communications	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
Professional Services	80.0%	0.0%	20.0%	0.0%	0.0%	100.0%
6830-Engineering						
Salaries - FT	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Retirement	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
PERS Unfunded	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Workers Comp	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
OPEB	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
SUI	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
FICA	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
Professional Services	50.0%	50.0%	0.0%	0.0%	0.0%	100.0%
6895-Fleet Maintenance						
Salaries FT	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Salaries On Call	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Salaries OT	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Retirement	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
PERS unfunded	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Workers Comp	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
OPEB	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Med/Den/Life Ins	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
SUI	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
FICA	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Materials & Supplies	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Fuel	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Uniforms & Clothing	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Communications	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Equipment Maintenance	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Professional Services	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Membership/Dues	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Training/Travel/Conf/Mtgs	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Regulatory Fees	90.0%	10.0%	0.0%	0.0%	0.0%	100.0%
Allocations, Transfers & Other Expenses						
Admin Cost Allocation	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Transfer out	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Utility Cut Impact to Streets Fee	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%

APPENDIX C:

Wastewater Net Capital Asset Investment

The following table shows the allocation of the City's wastewater assets. Asset values, on a replacement cost less depreciation basis, are used in the cost-of-service analysis to allocate the capital-related revenue requirement to the relative share of costs in each wastewater system component. The allocation shown in this table is applied to the capital-related costs shown in Line 13 of Table 8-1 to allocate capital-related costs to the functional components.

Plant Investment	Total	Collection	Lift & Pump Stations	G&A
RCLD	$179,551,975	$174,731,258	$2,568,000	$2,252,717
Allocation	100.0%	97.3%	1.4%	1.3%
Capital-Related Costs	$2,784,284	$2,709,530	$39,822	$34,933