

# CITY OF **Smithville**

## **Water and Sewer Rate Study**

Final Report / August 8, 2022

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# Executive Summary

The City of Smithville engaged Raftelis Financial Consultants, Inc. (Raftelis) to develop water and sewer financial plans and develop rates for the five-year study period. The general objective of the financial planning process is to determine the level of rate revenue required to provide for the financial sustainability of the utilities into the future ensure that the water and sewer utilities are financially independent. The City requires strong rate increases in order to maintain adequate reserve balances and fund a large capital program.

## STUDY PROCESS

Raftelis worked closely with City staff to conduct the rate study. The study primarily focused on the development of new rates. The general objective of the financial planning process is to arrive at the level of rate revenue required to provide for the financial sustainability of the utilities into the future. This report also includes a recommendation for revised Impact Fees.

## Findings and Recommendations – Water and Sewer Rates

### FINANCIAL PLAN

**Current rates are not adequate to fund the provision of safe and reliable water and sewer service in the future.**

Accordingly, Raftelis proposes a schedule of rate increases to begin in FY 2023. These will continue through at least FY 2027 to adequately fund required capital improvements and develop a healthy reserve fund balance.

**Raftelis recommends approximately 12% annual rate adjustments through 2027.** This will ensure that the City will have the ability to maintain safe and reliable drinking water and sewage disposal systems while fairly recovering costs. **Figure 1** presents the proposed financial plan. **Figure 2** tracks the end of year fund balance against a target of 25% of expenses (operation and maintenance expense and debt service). This target is expected to be met each year of the study period.

**The City's Impact Fees for newly connected customers should be updated.** The City's current fees scale linearly with the size of the customers water meter, while industry practices suggest that fees should in proportion to the maximum water flow rates the meter can provide. Making this change, along with an adjustment of the base fee for a ¾" meter, will more fairly recover costs from the customers who have the largest impact on the system.

Figure 1: Proposed Financial Plan

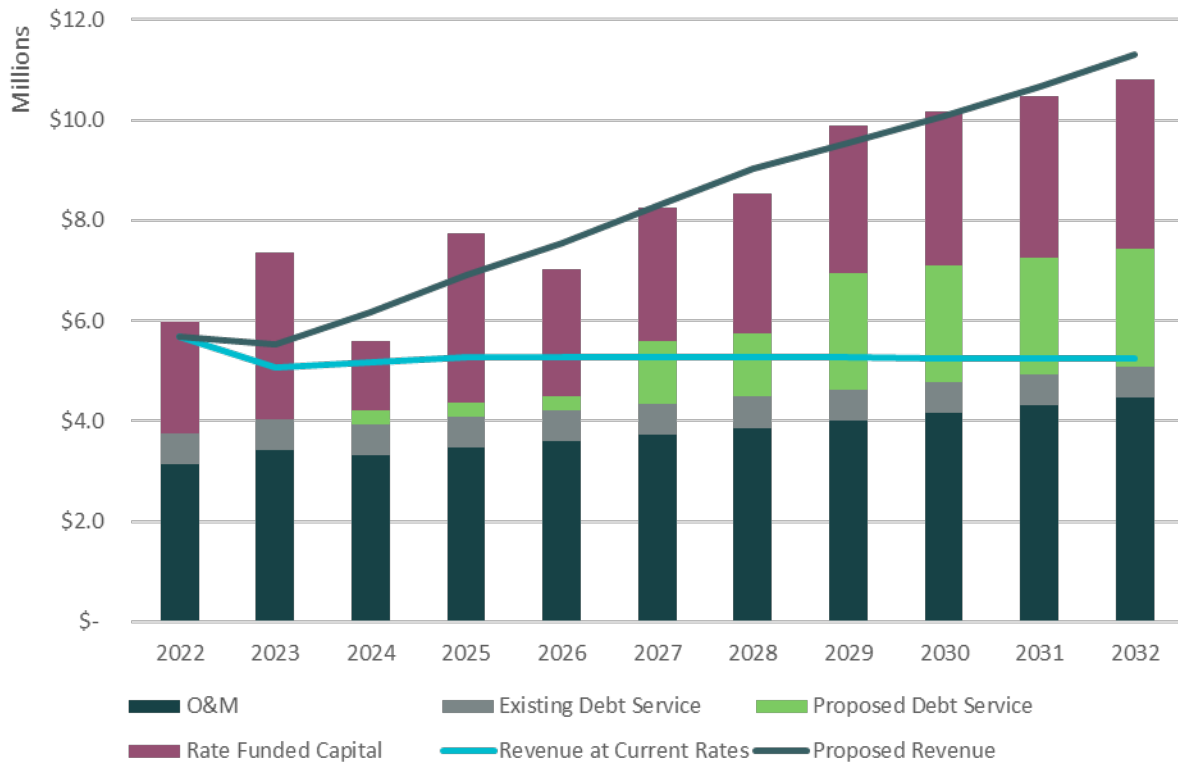


Figure 2: Combined Utility Operating Reserve

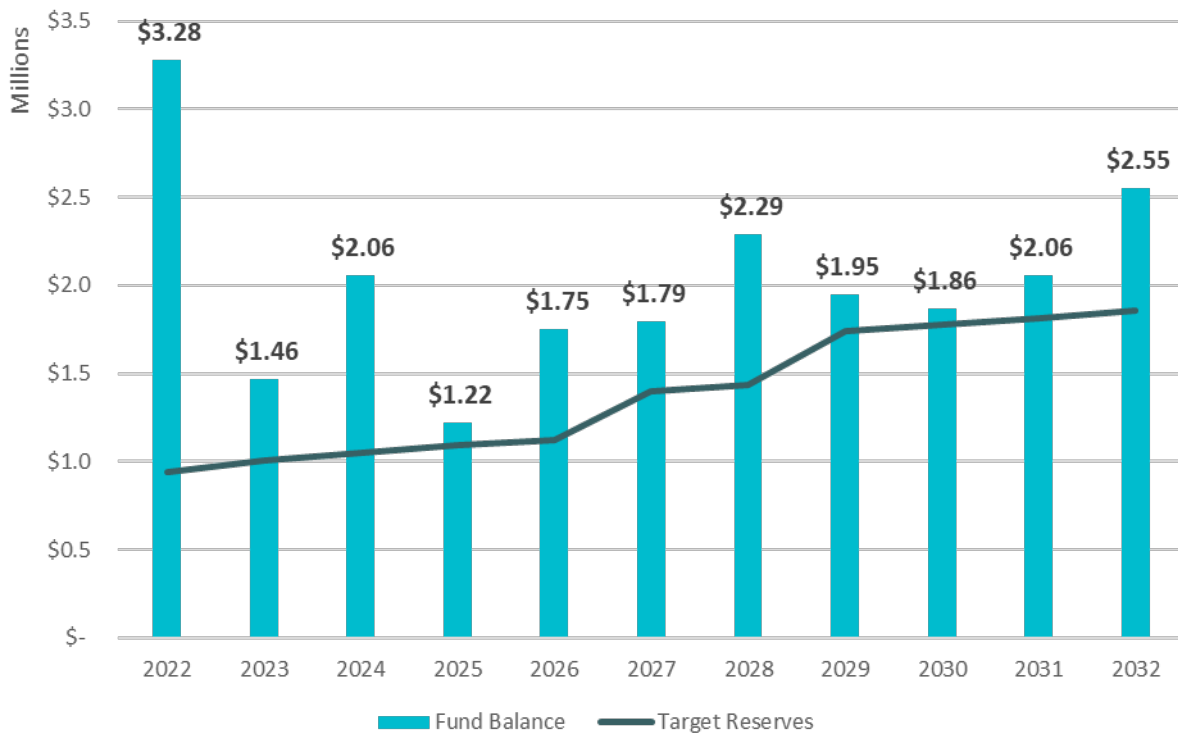
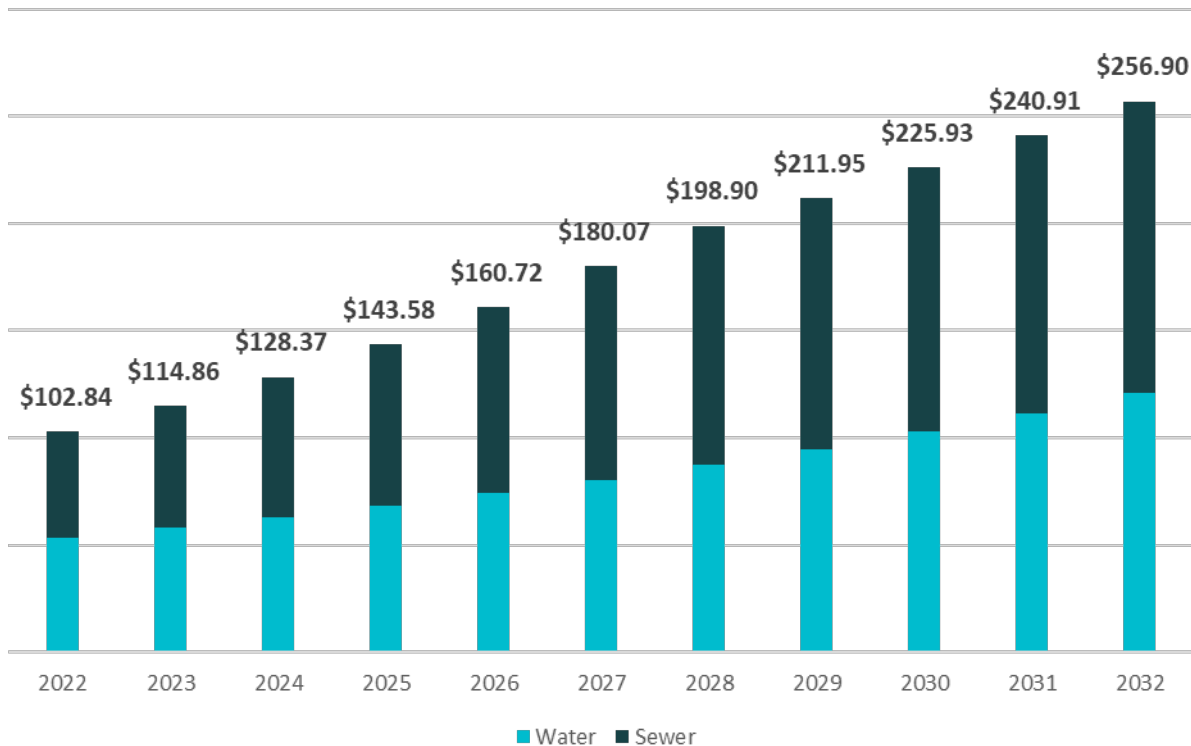


Figure 3: Monthly Bill of 5,000 Gallons



## Introduction

The City of Smithville engaged Raftelis Financial Consultants, Inc. (Raftelis) to develop water and sewer financial plans and develop a five-year rate schedule to meet the City's financial needs.

### FINANCIAL PLAN

The general objective of the financial planning process is to arrive at the level of rate revenue required to provide for the financial sustainability of the utilities into the future. For this study, the financial plan was developed for a five-year forecast period<sup>1</sup>. The forecast period uses the City's fiscal year, which runs from November 1 to October 31. Each year shown in the forecast refers to the year ending October 31. Separate financial plans for the water and sewer utilities were developed to analyze the needs of each utility independently.

### Financial Planning Methodology

The primary objective of financial planning involves comparing forecasted utility revenues under existing rates to forecasted expenditures and determining what annual adjustments to revenues are necessary to ensure the financial viability of the water and sewer utilities. This involves three steps:

First, a forecast of revenue under existing rates forms the baseline against which any revenue adjustments will be made. Second, a forecast of operating and capital expenses establishes the costs which will need to be recovered from utility rates. The final step involves a detailed cash flow forecast and an evaluation of what rate revenue

<sup>1</sup> This report focuses on the five-year study period. However, forecasts through 2032 are included in the appendix.

adjustments are needed for ongoing financial sustainability. Evaluating financial sustainability involves several key principles.

The utility should maintain the ability to deal with unanticipated declines in revenue or emergency expenditures without reducing service quality or dramatically increasing rates. While typical liquidity measures include operating expenses only, we recommend evaluating liquidity with debt service included as this remains an obligation of the utility, regardless of any unforeseen events. Based on discussion with City Staff this financial plan targets 25% of operating expenses and debt service. This can be used for working capital (timing differences in revenues and expenditures), temporary revenue shortfalls, or emergency capital repairs.

When possible, rates should also be set to maintain a program of gradual, modest increases to avoid large increases to deal with future expenses. For example, the City must ensure the ability to make debt service payments on significant levels of debt service on proposed debt expected to begin in FY 2029. A longer series of more modest rate increases is more equitable for customers than postponing adjustments and requiring painfully large rate increases in the future.

# Financial Plan

## Forecast of Revenue at Existing Rates

**Figure 4** indicates the forecast of water revenue at existing rates. To establish a baseline of demand, Raftelis reviewed historical account and water usage data. The forecast is based on data from 2019 to 2021, as well as a partial year of data from 2022.

### Demand Growth

The forecast includes a forecast of new customer accounts in each year of the study period based on expected development. The study includes 100 new accounts in 2023, 125 in 2024 and 2025, and 25 each year thereafter.

The forecast also includes assumptions regarding elasticity of demand, or how much water sales will decrease in response to the cost of water increasing. Raftelis assumed a decrease in annual consumption per account of approximately 2.9% of water use and 1.2% of sewer use resulting from the proposed rate increases.

**Figure 4: Revenue at Current Rates**

Revenue at Current Rates	FY 2022 Forecast	FY 2023 Forecast	FY 2024 Forecast	FY 2025 Forecast	FY 2026 Forecast	FY 2027 Forecast
<b>Water Revenue</b>						
Fixed Charge	607,855	621,979	639,634	657,289	660,820	664,351
Retail Volume	2,051,450	2,076,723	2,111,683	2,145,776	2,138,404	2,131,005
Wholesale Volume	211,157	211,157	211,157	211,157	211,157	211,157
<b>Total</b>	<b>\$ 2,870,462</b>	<b>\$ 2,909,859</b>	<b>\$ 2,962,474</b>	<b>\$ 3,014,222</b>	<b>\$ 3,010,381</b>	<b>\$ 3,006,513</b>
<b>Sewer Revenue</b>						
Fixed Charge	\$ 787,618	\$ 806,842	\$ 830,872	\$ 854,902	\$ 859,708	\$ 864,514
Volume Charge	1,163,430	1,179,549	1,202,298	1,224,473	1,219,000	1,213,513
<b>Total</b>	<b>\$ 1,951,048</b>	<b>\$ 1,986,392</b>	<b>\$ 2,033,170</b>	<b>\$ 2,079,375</b>	<b>\$ 2,078,708</b>	<b>\$ 2,078,028</b>

## Forecast of Expenses

### OPERATING EXPENSES

Operating expenses are those which the utility incurs on a consistent day-to-day basis and which generally do not involve the construction of a capital asset. Raftelis and City staff reviewed the FY 2023 budget and compared it to historical actual spending and found it to be a reasonable basis for the O&M forecast. For future years, Raftelis applied the inflation rates shown in **Figure 6** to the relevant budget line item to develop a long term forecast of O&M. **Figure 5** shows the forecast of operating expenses.

**Figure 5: Forecast of O&M**

Operations and Maintenance Summary	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	Budget	Budget	Forecast	Forecast	Forecast	Forecast
<b>Operating Expenses</b>						
Water	\$ 1,565,946	\$ 1,797,311	\$ 1,630,531	\$ 1,709,393	\$ 1,766,438	\$ 1,825,896
Sewer	1,578,122	1,617,156	1,687,635	1,772,788	1,838,128	1,906,633
<b>Total</b>	<b>\$ 3,144,068</b>	<b>\$ 3,414,467</b>	<b>\$ 3,318,166</b>	<b>\$ 3,482,181</b>	<b>\$ 3,604,566</b>	<b>\$ 3,732,529</b>

**Figure 6: O&M Inflation Rates**

Escalation Factors	FY 2024	FY 2025	FY 2026	FY 2027
	Forecast	Forecast	Forecast	Forecast
<b>Category</b>				
Salaries and Wages	5.0%	5.0%	3.0%	3.0%
Benefits	8.0%	8.0%	8.0%	8.0%
Electricity	5.0%	5.0%	5.0%	5.0%
General	5.0%	5.0%	3.0%	3.0%
Fuel	8.0%	8.0%	5.0%	5.0%
Contracted Services	5.0%	5.0%	3.0%	3.0%
Wastewater Treatment	7.5%	7.5%	7.5%	7.5%

### CAPITAL EXPENSES

Capital expenses are incurred to make improvements to water or sewer system assets. Major projects include improvements and expansion at the water treatment plant, an expansion at the wastewater treatment plant, and significant gravity line improvements. The capital plan also includes miscellaneous distribution or collection system projects throughout the study period. A detailed plan of these project types is not available beyond 2024; Raftelis forecasted additional future water and sewer projects at a total of \$2 million (in current year dollars) beginning in 2025 and extending through 2032. **Figure 7** indicates the capital improvement program (CIP), as provided by City staff. Financing for these projects will be discussed in detail below.



**Figure 7: Capital Improvement Program**

Capital Projects	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
<b>CIP Inflation Rate</b>		7.0%	7.0%	5.0%	5.0%	5.0%	5.0%
<b>Cumulative Inflation</b>	100.0%	107.0%	114.5%	120.2%	126.2%	132.5%	139.2%
<b>Water Projects</b>							
Tower Interconnect at Amory/169 (Construction)		\$ 50,000					
Quincy Water Line - Hawthorne/Quincy to Pine (Engineering)		150,000					
Quincy Water Line - Hawthorne/Quincy to Pine (Construction)		500,000					
4th Street and 4th Terrace (Construction)		500,000					
Winner and Woods - Waterline Replacement (Engineering)		150,000					
Winner and Woods - Waterline Replacement (Construction)		500,000					
Water Plant Improvements (E and C)		1,000,000					
Interconnect Mains at 144th/169 Highway (Construction)			55,000				
Maple Lane (12" Waterline) (Engineering)			125,000				
Highway 92 & Commercial Waterline (Engineering)			125,000				
Maple Lane (12" Waterline) (Construction)				500,000			
Highway 92 & Commercial Waterline (Construction)				300,000			
Primary and Secondary Sedimentation Basins					1,293,158		5,113,853
Increase WTP Filter Capacity					987,503		3,950,011
4th and 4th Engineering	30,000						
Raw Water Pump Station Engineering	100,000						
4rd Street and 4th Terrace Water	150,000						
Raw Water Pump Station	805,495						
Additional Future Water Projects				1,500,000	1,500,000	1,500,000	1,500,000
<b>Subtotal Current Year Capital Projects</b>	\$ 1,085,495	\$ 2,850,000	\$ 305,000	\$ 2,300,000	\$ 3,780,661	\$ 1,500,000	\$ 10,563,864
<b>Subtotal Future Year Capital Projects</b>	\$ 1,085,495	\$ 3,049,500	\$ 349,195	\$ 2,764,934	\$ 4,772,148	\$ 1,988,047	\$ 14,701,023
<b>Sewer Projects</b>							
144th Street Lift Station (Construction)		\$ 1,700,000					
West Bypass 144th Lift Station (Construction)		2,200,000					
Wastewater Plant - Bar Screen (Engineering)		250,000					
Wastewater Plant - Bar Screen (Construction)			900,000				
Owens Branch Gravity Line Phase #1, Line #1 (Construction)			2,200,000				
Wastewater Treatment Plant Expansion (Engineering)			545,849				
Owens Branch Gravity Line Phase #1, Line #2 (Engineering)				600,000			
Owens Branch Gravity Line Phase #1, Line #2 (Construction)					2,500,000		
Wastewater Treatment Plant Expansion (Construction)					5,694,517		
Floating Aerator	450,000						
West Bypass Engineering	350,000						
4th and 4th Engineering	30,000						
4th Street and 4th Terrace Sewer	150,000						
Woods Court Lift Station	40,000						
Highland Drive Sewer Improvements	100,000						
Additional Future Sewer Projects				500,000	500,000	500,000	500,000
<b>Subtotal Current Year Capital Projects</b>	\$ 1,120,000	\$ 4,150,000	\$ 3,645,849	\$ 1,100,000	\$ 8,694,517	\$ 500,000	\$ 500,000
<b>Subtotal Future Year Capital Projects</b>	\$ 1,120,000	\$ 4,440,500	\$ 4,174,132	\$ 1,322,360	\$ 10,974,674	\$ 662,682	\$ 695,817
<b>Total Current Year Capital Projects</b>	\$ 2,205,495	\$ 7,000,000	\$ 3,950,849	\$ 3,400,000	\$ 12,475,178	\$ 2,000,000	\$ 11,063,864
<b>Total Future Year Capital Projects</b>	\$ 2,205,495	\$ 7,490,000	\$ 4,523,327	\$ 4,087,293	\$ 15,746,822	\$ 2,650,730	\$ 15,396,839

## CAPITAL FINANCING

The capital financing plan includes debt financing, which assumes borrowing funds to finance major projects, and ongoing rate funded capital, which should be a regular annual cash expense to cover ongoing upgrades and repairs. The plan in **Figure 8** was developed to fully fund the CIP shown above after adjusting projects costs for expected inflation. The plan includes debt each year from 2023-2026; the uses for this debt are shown in **Figure 9**.

**Figure 8: Capital Financing Plan**

Water Capital Financing Plan	FY 2022 Forecast	FY 2023 Forecast	FY 2024 Forecast	FY 2025 Forecast	FY 2026 Forecast	FY 2027 Forecast	FY 2028 Forecast
<b>Sources of Funds</b>							
Beginning Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,613,573	\$ 12,613,573
Rate Funded Capital	1,085,495	3,049,500	349,195	2,764,934	1,893,378	1,988,047	2,087,450
Proposed Debt	-	-	-	-	15,492,343	-	-
<b>Subtotal</b>	\$ 1,085,495	\$ 3,049,500	\$ 349,195	\$ 2,764,934	\$ 17,385,721	\$ 14,601,621	\$ 14,701,023
<b>CIP Projects</b>	\$ 1,085,495	\$ 3,049,500	\$ 349,195	\$ 2,764,934	\$ 4,772,148	\$ 1,988,047	\$ 14,701,023
<b>Ending Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ 12,613,573	\$ 12,613,573	\$ -

Sewer Capital Financing Plan	FY 2022 Forecast	FY 2023 Forecast	FY 2024 Forecast	FY 2025 Forecast	FY 2026 Forecast	FY 2027 Forecast	FY 2028 Forecast
<b>Sources of Funds</b>							
Beginning Balance	\$ -	\$ -	\$ -	\$ 7,187,917	\$ 10,343,548	\$ -	\$ -
Rate Funded Capital	1,120,000	267,500	1,030,410	601,073	631,126	662,682	695,817
Proposed Debt	-	4,173,000	10,331,640	3,876,918	-	-	-
<b>Subtotal</b>	\$ 1,120,000	\$ 4,440,500	\$ 11,362,050	\$ 11,665,908	\$ 10,974,674	\$ 662,682	\$ 695,817
<b>CIP Projects</b>	\$ 1,120,000	\$ 4,440,500	\$ 4,174,132	\$ 1,322,360	\$ 10,974,674	\$ 662,682	\$ 695,817
<b>Ending Balance</b>	\$ -	\$ -	\$ 7,187,917	\$ 10,343,548	\$ -	\$ -	\$ -

**Figure 9: Proposed Debt Issues**

Debt Issue Summary	Project Amount	Year	Projects
<b>Water Debt</b>			
Issue 1	\$ 15,492,343	2026	Primary and Secondary Sedimentation Basins & Increase WTP Filter Capacity
<b>Sewer Debt</b>			
Issue 1	\$ 4,173,000	2023	144th Street Lift Station (Construction) & West Bypass 144th Lift Station (Construction)
Issue 2	7,812,860	2024	Wastewater Treatment Plant Expansion (Engineering) & Wastewater Treatment Plant Expansion (Construction)
Issue 3	2,518,780	2024	Owens Branch Gravity Line Phase #1, Line #1 (Construction)
Issue 4	3,876,918	2025	Owens Branch Gravity Line Phase #1, Line #2 (Engineering) & Owens Branch Gravity Line Phase #1, Line #2 (Construction)

## Cash Flow Forecast

The final step in the financial planning process involves compiling a cash flow forecast which identifies the revenue adjustments necessary to ensure financial sustainability. Expenses include operating and maintenance expenses related to administrative overhead, operating the distribution system, debt service, and ongoing rate funded capital. As indicated by **Figure 10**, revenues are not sufficient to meet current expenses. The rate revenue adjustments

indicated below will ensure revenues continue to cover expenses and maintain reserve balances. The total proposed rate increases of approximately 12% per year are comprised of 8.5% increases to water rates and 15% increases to sewer rates.

**Figure 10: Cash Flow Forecast**

Combined Utility Cash Flow	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	Budget	Forecast	Forecast	Forecast	Forecast	Forecast
<b>Proposed Rate Increase</b>		11.7%	11.8%	11.8%	11.9%	12.0%
<b>Revenue</b>						
Current Rate Revenue	\$ 4,687,000	\$ 4,821,782	\$ 4,845,631	\$ 4,867,039	\$ 4,790,958	\$ 4,716,673
Additional Rate Revenue	-	538,071	1,150,064	1,845,678	2,582,968	3,394,935
Misc. Revenues	994,834	176,172	185,818	191,738	183,367	188,657
<b>Total</b>	<b>\$ 5,681,834</b>	<b>\$ 5,536,025</b>	<b>\$ 6,181,513</b>	<b>\$ 6,904,455</b>	<b>\$ 7,557,292</b>	<b>\$ 8,300,264</b>
<b>Expenses</b>						
O&M	\$ 3,144,068	\$ 3,414,467	\$ 3,318,166	\$ 3,482,181	\$ 3,604,566	\$ 3,732,529
Existing Debt	619,350	622,600	614,850	616,600	622,350	620,050
Proposed Debt	-	-	276,844	276,844	276,844	1,253,338
Rate Funded Capital	2,205,495	3,317,000	1,379,605	3,366,006	2,524,505	2,650,730
<b>Total</b>	<b>\$ 5,968,913</b>	<b>\$ 7,354,067</b>	<b>\$ 5,589,465</b>	<b>\$ 7,741,631</b>	<b>\$ 7,028,264</b>	<b>\$ 8,256,646</b>
<b>Financial Performance</b>						
Contribution to Reserves	\$ (287,078)	\$ (1,818,042)	\$ 592,048	\$ (837,175)	\$ 529,028	\$ 43,618
Operating Reserve						
Beginning Balance	\$ 3,569,659	\$ 3,282,581	\$ 1,464,539	\$ 2,056,587	\$ 1,219,411	\$ 1,748,439
Contribution to Reserves	(287,078)	(1,818,042)	592,048	(837,175)	529,028	43,618
Ending Balance	\$ 3,282,581	\$ 1,464,539	\$ 2,056,587	\$ 1,219,411	\$ 1,748,439	\$ 1,792,057
Target Balance	940,854	1,009,267	1,052,465	1,093,906	1,125,940	1,401,479
Debt Service Coverage Ratios						
Debt Service	\$ 619,350	\$ 622,600	\$ 891,694	\$ 893,444	\$ 899,194	\$ 1,873,388
Net Revenue Available	2,537,767	2,121,558	2,863,346	3,422,275	3,952,727	4,567,735
DSCR	4.09	3.40	3.21	3.83	4.39	2.43

# Rates and Customer Impacts

The City currently has a fixed monthly charge based on meter size as well as a volumetric charge per 1,000 gallons of water used. Raftelis proposes increasing water rates by 8.5% per year and sewer rates by 15% per year from 2023 to 2027.

**Figure 11: Proposed Rates**

Water Rates	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast

## Service Charge

1" or Smaller	\$ 11.77	\$ 12.78	\$ 13.87	\$ 15.05	\$ 16.33	\$ 17.72
2"	55.62	60.35	65.48	71.05	77.09	83.65
3"	109.15	118.43	128.50	139.43	151.29	164.15
4"	170.29	184.77	200.48	217.53	236.03	256.10
6"	339.92	368.82	400.17	434.19	471.10	511.15

## Volume Rate (1,000 Gal.)

Retail	\$ 8.33	\$ 9.04	\$ 9.81	\$ 10.65	\$ 11.56	\$ 12.55
Wholesale	4.98	5.41	5.87	6.37	6.92	7.51

Sewer Rates	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast

## Service Charge

1" or Smaller	\$ 16.02	\$ 18.43	\$ 21.20	\$ 24.38	\$ 28.04	\$ 32.25
2"	77.46	89.08	102.45	117.82	135.50	155.83
3"	164.52	189.20	217.58	250.22	287.76	330.93
4"	238.13	273.85	314.93	362.17	416.50	478.98
6"	474.42	545.59	627.43	721.55	829.79	954.26

<b>Volume Rate (1,000 Gal.)</b>	\$ 6.68	\$ 7.69	\$ 8.85	\$ 10.18	\$ 11.71	\$ 13.47
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## BILL IMPACTS

**Figure 12** shows an example of a monthly water, sewer, and combined bill at various levels of water use. Overall, the combined water and sewer increase is approximately 12% per year through 2027. Utility bills will be 75% higher in 2027 than they are under current 2022 rates.

**Figure 13** shows a comparison of Smithville's current and proposed water and sewer bills to a sample of current rates in the surrounding region. Overall, Smithville's combined utility bills are currently near the median for the area. It is important to remember that different systems have different needs and are not necessarily directly comparable.

Figure 12: Bill Impacts

Sample Water Bills	FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027	
	Actual		Forecast		Forecast		Forecast		Forecast		Forecast	

Meter Size	Volume												
1" or Smaller	3	\$	36.76	\$	39.90	\$	43.30	\$	47.00	\$	51.01	\$	55.37
1" or Smaller	5		53.42		57.98		62.92		68.30		74.13		80.47
1" or Smaller	10		95.07		103.18		111.97		121.55		131.93		143.22
2"	20		222.22		241.15		261.68		284.05		308.29		334.65
2"	50		472.12		512.35		555.98		603.55		655.09		711.15
4"	100		1,003.29		1,088.77		1,181.48		1,282.53		1,392.03		1,511.10
4"	1,000		8,500.29		9,224.77		10,010.48		10,867.53		11,796.03		12,806.10

Sample Sewer Bills	FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027	
	Actual		Forecast		Forecast		Forecast		Forecast		Forecast	

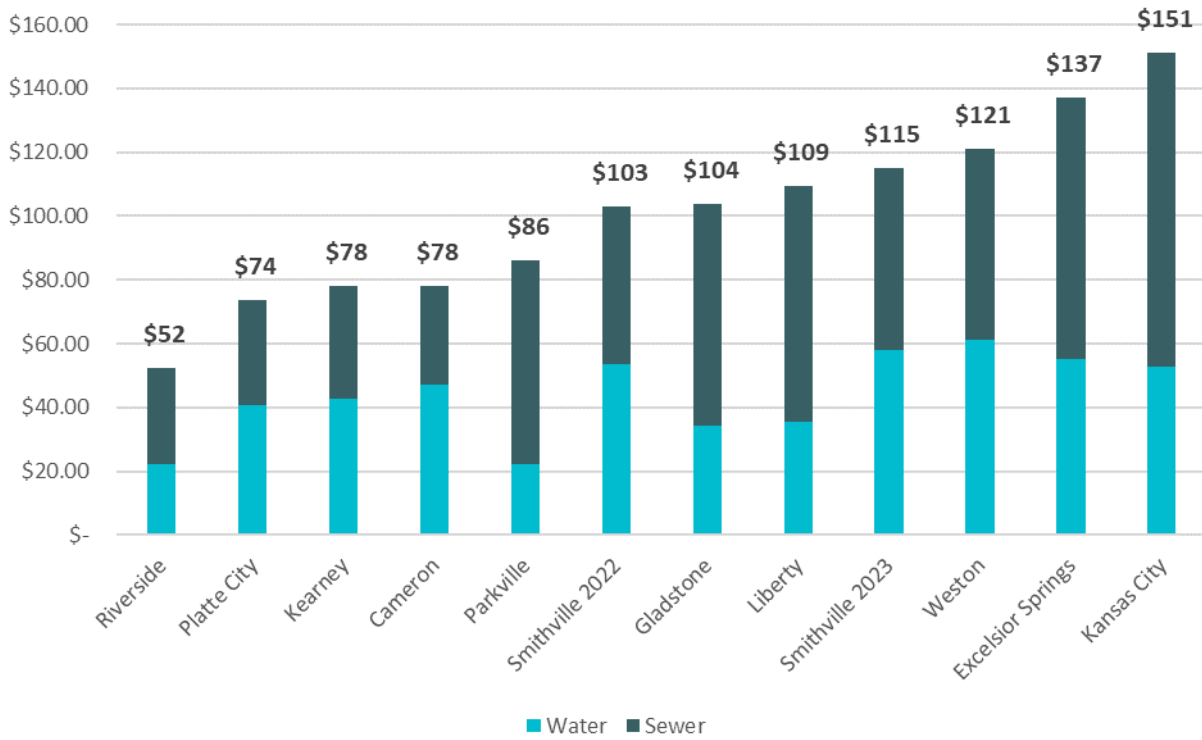
Meter Size	Volume												
1" or Smaller	3	\$	36.06	\$	41.50	\$	47.75	\$	54.92	\$	63.17	\$	72.66
1" or Smaller	5		49.42		56.88		65.45		75.28		86.59		99.60
1" or Smaller	10		82.82		95.33		109.70		126.18		145.14		166.95
2"	20		211.06		242.88		279.45		321.42		369.70		425.23
2"	50		411.46		473.58		544.95		626.82		721.00		829.33
4"	100		906.13		1,042.85		1,199.93		1,380.17		1,587.50		1,825.98
4"	1,000		6,918.13		7,963.85		9,164.93		10,542.17		12,126.50		13,948.98

Combined Bills	FY 2022		FY 2023		FY 2024		FY 2025		FY 2026		FY 2027	
	Actual		Forecast		Forecast		Forecast		Forecast		Forecast	

Meter Size	Volume												
1" or Smaller	3	\$	72.82	\$	81.40	\$	91.05	\$	101.92	\$	114.18	\$	128.03
1" or Smaller	5		102.84		114.86		128.37		143.58		160.72		180.07
1" or Smaller	10		177.89		198.51		221.67		247.73		277.07		310.17
2"	20		433.28		484.03		541.13		605.47		677.99		759.88
2"	50		883.58		985.93		1,100.93		1,230.37		1,376.09		1,540.48
4"	100		1,909.42		2,131.62		2,381.41		2,662.70		2,979.53		3,337.08
4"	1,000		15,418.42		17,188.62		19,175.41		21,409.70		23,922.53		26,755.08

Combined Annual Increase			11.69%		11.76%		11.85%		11.94%		12.04%
Cumulative Combined Increase			11.69%		24.82%		39.61%		56.28%		75.10%

**Figure 13: Water and Sewer Bill Comparison – 5,000 Gallon Monthly Bill**



# Impact Fees

## Introduction

Impact fees are intended to allow new customers to “buy in” to an existing water or sewer system. Existing users, through service charges, tax contributions, and other up-front charges, have developed a valuable public capital facility that has sufficient capacity to accommodate new development or redevelopment to a more intensive use. These charges ensure that new customers are on an equal equity footing with existing customers. The charges are intended to cover backbone assets, such as treatment assets or transmission and collection mains.

Raftelis has identified a key aspect of the City’s current impact fee policy that should be modified. The current fees increase according to the size of the meter linearly; the fee for a two-inch meter is twice the fee for a one-inch meter. Raftelis recommends adjusting this scale in proportion to the flow capacity of the meter according to the AWWA. In this case, a two-inch fee would be approximately 3.2 times a one-inch fee.

## PROPOSED FEES

Raftelis used a hybrid approach that combines incremental and buy in calculations to develop the proposed impact fees. The incremental approach calculates the unit cost of providing an additional unit of capacity to the system. Since a major part of the capital program includes an expansion of the water treatment plant, Raftelis used this method to estimate the cost of a unit of water treatment capacity. The expected cost of the plant expansion is divided by the additional capacity it will provide for a unit cost of \$6.20 per gallon per day.

The system buy in approach provides an estimate of the cost of providing a unit of capacity based on the net equity of other existing assets, such as water supply and distribution. It calculates a connection fee based on the proportional cost of each users, both existing and future, share of the existing system capacity. The primary component of system value is the assets the utility uses to provide service. The value of these assets is escalated to replacement cost to better represent the current value of the system new customers are buying into. System value also includes a portion of fund balances as of the end of FY 2022. The system value is divided by an estimate of the system capacity for a unit cost of \$1.50 per gallon per day.

These costs are used to calculate a capital fee based on meter size, since potential capacity (peaking) demand is proportional to the potential flow through each meter size as established by the AWWA hydraulic capacity ratios. Water use data from existing customers is used to estimate maximum daily water demand for a customer with 1” meter at an assumed maximum day peaking factor of 2.5 times the average daily water use. The estimated max day demand of 402 gallons is multiplied by the total unit cost of \$7.69 to derive a total impact fee of \$3,092. This fee is multiplied by the meter equivalent capacity ratios shown in **Figure 15** and rounded to the nearest \$10 increment, as shown in **Figure 16**. Raftelis also reviewed the City’s sewer impact fees and determined that the current fees are reasonable and can be maintained for a 1” meter; the only proposed change is to apply the same meter size based upon scaling to this charge.

**Figure 14: Impact Fee Calculation**

Water Impact Fees		FY 2022
<b>Water Treatment</b>		
Future Plant Expansion Cost		\$ 15,492,343
Add. Capacity (mgd)		2.5
Unit Cost (gpd)		\$ 6.20
<b>Other Water Assets (RCNLD)</b>		
Supply	\$	775,783
Pumping		201,914
Storage		2,457,833
Distribution		3,459,950
Vehicles		28,096
Subtotal	\$	6,923,576
Water Utility Fund Balance (20%)	\$	555,103
System Equity	\$	7,478,678
Capacity		5.0
Unit Cost (gpd)	\$	1.50
<b>Total Unit Cost (gpd)</b>	<b>\$</b>	<b>7.69</b>
<b>Demand per Account (Gallons)</b>		
Retail Water Consumption		246,272,533
Equivalent Accounts		4,195
Avg Day Use per Eq. Account		160.82
Peaking Factor		2.5
Max Day Demand		402.06
<b>Charge per 1" Meter</b>	<b>\$</b>	<b>3,092.91</b>

**Figure 15: AWWA Equivalent Meter Ratios**

Meter Size	Capacity (gpm)	Ratio to 1"
1"	50	1.0
2"	160	3.2
3"	350	7.0
4"	630	12.6
6"	1400	28.0



**Figure 16: Impact Fee Schedule**

Impact Fee Schedule	Current			Proposed		
	Water	Sewer	Total	Water	Sewer	Total
<b>Meter Size</b>						
1"	\$ 2,400	\$ 2,800	\$ 5,200	\$ 3,100	\$ 2,800	\$ 5,900
2"	4,800	5,600	10,400	9,900	8,960	18,860
3"	7,200	8,400	15,600	21,660	19,600	41,260
4"	9,600	11,200	20,800	38,980	35,280	74,260
6"	14,400	16,800	31,200	86,610	78,400	165,010

**Figure 17: Impact Fee Comparison**



# Appendix

Water Utility Cash Flow	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
	Budget	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
<b>Proposed Rate Increase</b>		8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
<b>Revenue</b>											
Under Current Rates	\$ 2,737,000	\$ 2,909,859	\$ 2,962,474	\$ 3,014,222	\$ 3,010,381	\$ 3,006,513	\$ 3,002,618	\$ 2,998,699	\$ 2,994,755	\$ 2,990,788	\$ 2,986,799
Additional Rate Revenue	-	181,498	381,422	600,991	826,811	1,066,730	1,334,265	1,650,541	1,989,586	2,353,091	2,743,133
Subtotal: Rate Revenue	\$ 2,737,000	\$ 3,091,357	\$ 3,343,896	\$ 3,615,212	\$ 3,837,193	\$ 4,073,243	\$ 4,336,884	\$ 4,649,240	\$ 4,984,341	\$ 5,343,879	\$ 5,729,932
Misc. Revenues	\$ 905,125	\$ 91,672	\$ 100,290	\$ 114,934	\$ 107,493	\$ 110,341	\$ 114,038	\$ 118,793	\$ 114,211	\$ 111,163	\$ 109,824
<b>Total</b>	\$ 3,642,125	\$ 3,183,029	\$ 3,444,186	\$ 3,730,147	\$ 3,944,685	\$ 4,183,584	\$ 4,450,922	\$ 4,768,033	\$ 5,098,551	\$ 5,455,041	\$ 5,839,757
<b>Expenses</b>											
Operations and Maintenance	\$ 1,565,946	\$ 1,797,311	\$ 1,630,531	\$ 1,709,393	\$ 1,766,438	\$ 1,825,896	\$ 1,887,890	\$ 1,952,552	\$ 2,020,021	\$ 2,090,447	\$ 2,163,986
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-
Proposed Debt Service	-	-	-	-	-	-	-	1,081,932	1,081,932	1,081,932	1,081,932
Rate Funded Capital	1,085,495	3,049,500	349,195	2,764,934	1,893,378	1,988,047	2,087,450	2,191,822	2,301,413	2,416,484	2,537,308
<b>Total</b>	\$ 2,651,441	\$ 4,846,811	\$ 1,979,726	\$ 4,474,326	\$ 3,659,817	\$ 3,813,943	\$ 3,975,340	\$ 5,226,306	\$ 5,403,366	\$ 5,588,863	\$ 5,783,227
<b>Financial Performance</b>											
Contribution to Reserves	\$ 990,684	\$ (1,663,782)	\$ 1,464,460	\$ (744,179)	\$ 284,868	\$ 369,641	\$ 475,582	\$ (458,273)	\$ (304,815)	\$ (133,821)	\$ 56,530
Operating Reserve											
Beginning Balance	1,784,830	\$ 2,775,513	\$ 1,111,731	\$ 2,576,191	\$ 1,832,012	\$ 2,116,881	\$ 2,486,522	\$ 2,962,104	\$ 2,503,831	\$ 2,199,016	\$ 2,065,195
Contribution to Reserves	990,684	(1,663,782)	1,464,460	(744,179)	284,868	369,641	475,582	(458,273)	(304,815)	(133,821)	56,530
Ending Balance	\$ 2,775,513	\$ 1,111,731	\$ 2,576,191	\$ 1,832,012	\$ 2,116,881	\$ 2,486,522	\$ 2,962,104	\$ 2,503,831	\$ 2,199,016	\$ 2,065,195	\$ 2,121,725
Target Balance	391,487	449,328	407,633	427,348	441,610	456,474	471,972	758,621	775,488	793,095	811,480
Debt Service Coverage Ratios											
Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,081,932	\$ 1,081,932	\$ 1,081,932	\$ 1,081,932
Net Revenue Available	2,076,179	1,385,718	1,813,654	2,020,754	2,178,247	2,357,688	2,563,032	2,815,482	3,078,530	3,364,595	3,675,770
DSCR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.60	2.84	3.10	3.39

Sewer Utility Cash Flow	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
	Budget	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
<b>Proposed Rate Increase</b>		15.0%	15.0%	15.0%	15.0%	15.0%	12.0%	5.0%	5.0%	5.0%	5.0%
<b>Revenue</b>											
Under Current Rates	\$ 1,950,000	\$ 1,986,392	\$ 2,033,170	\$ 2,079,375	\$ 2,078,708	\$ 2,078,028	\$ 2,077,335	\$ 2,076,631	\$ 2,075,916	\$ 2,075,192	\$ 2,074,458
Additional Rate Revenue	-	282,104	618,629	1,018,129	1,458,025	1,960,337	2,417,980	2,625,270	2,842,157	3,069,095	3,306,642
Subtotal: Rate Revenue	\$ 1,950,000	\$ 2,268,496	\$ 2,651,799	\$ 3,097,505	\$ 3,536,733	\$ 4,038,364	\$ 4,495,315	\$ 4,701,901	\$ 4,918,073	\$ 5,144,287	\$ 5,381,100
Misc. Revenues	\$ 89,710	\$ 84,500	\$ 85,528	\$ 76,804	\$ 75,874	\$ 78,316	\$ 75,055	\$ 75,258	\$ 76,457	\$ 78,657	\$ 81,919
<b>Total</b>	\$ 2,039,710	\$ 2,352,996	\$ 2,737,327	\$ 3,174,309	\$ 3,612,607	\$ 4,116,680	\$ 4,570,371	\$ 4,777,159	\$ 4,994,531	\$ 5,222,944	\$ 5,463,019
<b>Expenses</b>											
Operations and Maintenance	\$ 1,578,122	\$ 1,617,156	\$ 1,687,635	\$ 1,772,788	\$ 1,838,128	\$ 1,906,633	\$ 1,978,489	\$ 2,053,894	\$ 2,133,058	\$ 2,216,207	\$ 2,303,581
Existing Debt Service	619,350	622,600	614,850	616,600	622,350	620,050	622,450	619,400	621,050	621,675	621,238
Proposed Debt Service	-	-	276,844	276,844	276,844	1,253,338	1,253,338	1,253,338	1,253,338	1,253,338	1,253,338
Rate Funded Capital	1,120,000	267,500	1,030,410	601,073	631,126	662,682	695,817	730,607	767,138	805,495	845,769
<b>Total</b>	\$ 3,317,472	\$ 2,507,256	\$ 3,609,739	\$ 3,267,305	\$ 3,368,448	\$ 4,442,703	\$ 4,550,093	\$ 4,657,239	\$ 4,774,584	\$ 4,896,715	\$ 5,023,926
<b>Financial Performance</b>											
Contribution to Reserves	\$ (1,277,762)	\$ (154,260)	\$ (872,412)	\$ (92,996)	\$ 244,159	\$ (326,023)	\$ 20,277	\$ 119,920	\$ 219,947	\$ 326,229	\$ 439,093
Operating Reserve											
Beginning Balance	1,784,830	\$ 507,068	\$ 352,807	\$ (519,605)	\$ (612,601)	\$ (368,441)	\$ (694,465)	\$ (674,188)	\$ (554,268)	\$ (334,321)	\$ (8,092)
Contribution to Reserves	(1,277,762)	(154,260)	(872,412)	(92,996)	244,159	(326,023)	20,277	119,920	219,947	326,229	439,093
Ending Balance	\$ 507,068	\$ 352,807	\$ (519,605)	\$ (612,601)	\$ (368,441)	\$ (694,465)	\$ (674,188)	\$ (554,268)	\$ (334,321)	\$ (8,092)	\$ 431,002
Target Balance	549,368	559,939	644,832	666,558	684,330	945,005	963,569	981,658	1,001,862	1,022,805	1,044,539
Debt Service Coverage Ratios											
Debt Service	\$ 619,350	\$ 622,600	\$ 891,694	\$ 893,444	\$ 899,194	\$ 1,873,388	\$ 1,875,788	\$ 1,872,738	\$ 1,874,388	\$ 1,875,013	\$ 1,874,575
Net Revenue Available	461,588	735,840	1,049,692	1,401,521	1,774,480	2,210,047	2,591,881	2,723,265	2,861,472	3,006,737	3,159,438
DSCR	0.74	1.18	1.17	1.56	1.97	1.17	1.38	1.45	1.52	1.60	1.68

Combined Utility Cash Flow	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
	Budget	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
<b>Proposed Rate Increase</b>		11.7%	11.8%	11.8%	11.9%	12.0%	10.5%	6.6%	6.6%	6.6%	6.6%
<b>Revenue</b>											
Current Rate Revenue	\$ 4,687,000	\$ 4,821,782	\$ 4,845,631	\$ 4,867,039	\$ 4,790,958	\$ 4,716,673	\$ 4,653,777	\$ 4,614,298	\$ 4,575,394	\$ 4,537,069	\$ 4,499,465
Additional Rate Revenue	-	538,071	1,150,064	1,845,678	2,582,968	3,394,935	4,178,422	4,736,843	5,327,020	5,951,097	6,611,568
Misc. Revenues	994,834	176,172	185,818	191,738	183,367	188,657	189,093	194,052	190,668	189,819	191,743
<b>Total</b>	<b>\$ 5,681,834</b>	<b>\$ 5,536,025</b>	<b>\$ 6,181,513</b>	<b>\$ 6,904,455</b>	<b>\$ 7,557,292</b>	<b>\$ 8,300,264</b>	<b>\$ 9,021,292</b>	<b>\$ 9,545,192</b>	<b>\$ 10,093,082</b>	<b>\$ 10,677,985</b>	<b>\$ 11,302,776</b>
<b>Expenses</b>											
O&M	\$ 3,144,068	\$ 3,414,467	\$ 3,318,166	\$ 3,482,181	\$ 3,604,566	\$ 3,732,529	\$ 3,866,379	\$ 4,006,446	\$ 4,153,079	\$ 4,306,654	\$ 4,467,568
Existing Debt	619,350	622,600	614,850	616,600	622,350	620,050	622,450	619,400	621,050	621,675	621,238
Proposed Debt	-	-	276,844	276,844	276,844	1,253,338	1,253,338	2,335,270	2,335,270	2,335,270	2,335,270
Rate Funded Capital	2,205,495	3,317,000	1,379,605	3,366,006	2,524,505	2,650,730	2,783,266	2,922,430	3,068,551	3,221,979	3,383,077
<b>Total</b>	<b>\$ 5,968,913</b>	<b>\$ 7,354,067</b>	<b>\$ 5,589,465</b>	<b>\$ 7,741,631</b>	<b>\$ 7,028,264</b>	<b>\$ 8,256,646</b>	<b>\$ 8,525,433</b>	<b>\$ 9,883,545</b>	<b>\$ 10,177,950</b>	<b>\$ 10,485,577</b>	<b>\$ 10,807,153</b>
<b>Financial Performance</b>											
Contribution to Reserves	\$ (287,078)	\$ (1,818,042)	\$ 592,048	\$ (837,175)	\$ 529,028	\$ 43,618	\$ 495,859	\$ (338,353)	\$ (84,868)	\$ 192,408	\$ 495,624
Operating Reserve											
Beginning Balance	\$ 3,569,659	\$ 3,282,581	\$ 1,464,539	\$ 2,056,587	\$ 1,219,411	\$ 1,748,439	\$ 1,792,057	\$ 2,287,916	\$ 1,949,563	\$ 1,864,695	\$ 2,057,103
Contribution to Reserves	(287,078)	(1,818,042)	592,048	(837,175)	529,028	43,618	495,859	(338,353)	(84,868)	192,408	495,624
Ending Balance	\$ 3,282,581	\$ 1,464,539	\$ 2,056,587	\$ 1,219,411	\$ 1,748,439	\$ 1,792,057	\$ 2,287,916	\$ 1,949,563	\$ 1,864,695	\$ 2,057,103	\$ 2,552,727
Target Balance	940,854	1,009,267	1,052,465	1,093,906	1,125,940	1,401,479	1,435,542	1,740,279	1,777,350	1,815,900	1,856,019
Debt Service Coverage Ratios											
Debt Service	\$ 619,350	\$ 622,600	\$ 891,694	\$ 893,444	\$ 899,194	\$ 1,873,388	\$ 1,875,788	\$ 2,954,670	\$ 2,956,320	\$ 2,956,945	\$ 2,956,507
Net Revenue Available	2,537,767	2,121,558	2,863,346	3,422,275	3,952,727	4,567,735	5,154,913	5,538,746	5,940,003	6,371,331	6,835,208
DSCR	4.09	3.40	3.21	3.83	4.39	2.43	2.74	1.87	2.00	2.15	2.31

Water Rates	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast

#### Service Charge

1" or Smaller	\$ 11.77	\$ 12.78	\$ 13.87	\$ 15.05	\$ 16.33	\$ 17.72	\$ 19.23	\$ 20.87	\$ 22.65	\$ 24.58	\$ 26.67
2"	55.62	60.35	65.48	71.05	77.09	83.65	90.77	98.49	106.87	115.96	125.82
3"	109.15	118.43	128.50	139.43	151.29	164.15	178.11	193.25	209.68	227.51	246.85
4"	170.29	184.77	200.48	217.53	236.03	256.10	277.87	301.49	327.12	354.93	385.10
6"	339.92	368.82	400.17	434.19	471.10	511.15	554.60	601.75	652.90	708.40	768.62

#### Volume Rate (1,000 Gal.)

Retail	\$ 8.33	\$ 9.04	\$ 9.81	\$ 10.65	\$ 11.56	\$ 12.55	\$ 13.62	\$ 14.78	\$ 16.04	\$ 17.41	\$ 18.89
Wholesale	4.98	5.41	5.87	6.37	6.92	7.51	8.15	8.85	9.61	10.43	11.32

Sewer Rates	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast

#### Service Charge

1" or Smaller	\$ 16.02	\$ 18.43	\$ 21.20	\$ 24.38	\$ 28.04	\$ 32.25	\$ 36.12	\$ 37.93	\$ 39.83	\$ 41.83	\$ 43.93
2"	77.46	89.08	102.45	117.82	135.50	155.83	174.53	183.26	192.43	202.06	212.17
3"	164.52	189.20	217.58	250.22	287.76	330.93	370.65	389.19	408.65	429.09	450.55
4"	238.13	273.85	314.93	362.17	416.50	478.98	536.46	563.29	591.46	621.04	652.10
6"	474.42	545.59	627.43	721.55	829.79	954.26	1,068.78	1,122.22	1,178.34	1,237.26	1,299.13

#### Volume Rate (1,000 Gal.)

\$ 6.68	\$ 7.69	\$ 8.85	\$ 10.18	\$ 11.71	\$ 13.47	\$ 15.09	\$ 15.85	\$ 16.65	\$ 17.49	\$ 18.37
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