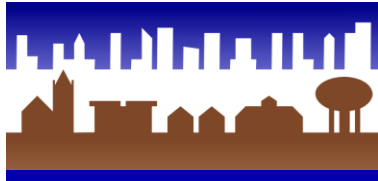




Town of Vienna
Water & Sewer Rate Study
Final Report
April 2018

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Municipal & Financial Services Group

April 3, 2018

Marion Serfass, CPA
Director of Finance / Treasurer
Town of Vienna
127 Center Street South
Vienna, VA 22180

RE: Water and Sewer Rate Study Results

Dear Ms. Serfass,

The Municipal & Financial Service Group is pleased to submit to the Town of Vienna this report summarizing the results of our recently completed water and sewer rate study. This document represents the results of our analysis of the forecasted costs of providing water and sewer service to the Town's customers and our recommendations for recovering these costs over the next five years. The study provides a number of recommendations that will enhance the financial health and stability of the Town's water and sewer operations while equitably charging its customers for the services provided.

It has been a distinct pleasure to work with the Town of Vienna. The assistance provided by management and staff was essential to the completion of this study. The dedication of everyone who assisted in the study process was vital to the success of the study and should be acknowledged and. Thank you for the opportunity to work with the Town on this important project.

Very truly yours,

Eric Callocchia
Senior Manager
Municipal & Financial Services Group

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EXECUTIVE SUMMARY

This document was prepared to present the work performed by the Municipal & Financial Services Group during the water and sewer rate study for the Town of Vienna. The study provides a financial plan for funding of the operating and capital costs of the Town's water and sewer systems over a five-year planning period (FY 2017 to FY 2021).

Objective and Scope

The objective and scope of services set forth between the Town of Vienna ("The Town") and the Municipal & Financial Services Group ("MFSG") consists of the following related tasks:

- Determine the cost of system services with the intent of establishing a usage rate and fee schedule
- Evaluating alternative rate structures
- Update or replace the existing rate model to allow adjustment for changes in general economic conditions
- Prepare a 5-year forward-looking financial plan for:
 - implementing capital improvements and associated debt service
 - accumulating capital reserves to fund scheduled replacements and upgrades of critical equipment and systems; and
 - funding anticipated water and sewer operations budgets

The water and sewer rate study has been completed based on these tasks, which are documented in this report.

Background

The Town of Vienna

Located in northern Virginia near Washington, D.C., Vienna is one of the more stable areas of the country. With its close proximity to the Dulles Airport corridor, the area's metropolitan transit systems and the Nation's capital, Vienna continues to enjoy a relatively stable economic base. Existing property values have been increasing over the previous year since 2012. There has been continued construction of upscale homes and residential renovations in many areas of the Town. The Town continues to attract new restaurants and commercial businesses in addition to new residential construction as the main business corridors experience redevelopment efforts. The Town covers 4.4 square miles adjacent to I-495 in Fairfax County, VA and is fully developed residentially. There is some opportunity for higher-density residential and commercial redevelopment, but it will not have a significant impact on the size of the system. The Town's 2010 Census population was approximately 15,700.

Water and Sewer Utilities

The Town of Vienna operates water distribution and sewer collection systems infrastructure but does not treat water or wastewater. The Town purchases its water solely from Fairfax Water under a long-term agreement. Approximately 50% of the Town's wastewater is treated by DC Water and Sewer Authority (WASA) and 50% by Fairfax County, VA, both of which operate under long term agreements. DC WASA builds its capital cost recovery into the rate charged to the Town (per MGD). Fairfax County bills both

operating and capital costs semi-annually. The Town's infrastructure consists of 131 miles of water lines and 95 miles of sewer lines.

The Water and Sewer fund has about 20 employees. The water and sewer systems serve about 9,500 customers, 6,000 in town and 3,500 out of Town customers served by Fairfax sewer and Town of Vienna water. Approximately 80% of the Town's customers are residential. The infrastructure has been supplemented by capital donated from developers and from funds supplied by General Obligation Bonds, which are reimbursed by the Water and Sewer fund to the extent of the fund's participation in those bonds.

Guiding Principles

The following principles were used to guide the rate study and were developed with the assistance of Town staff and the Town staff:

- The water and sewer systems must each be financially self-supporting. It is assumed that the cost of operating and maintaining the systems must be supported by the water and sewer fees and charges collected from customers with no support from one fund to the other. If at any time, water (or sewer) resources must be used to support the sewer (or water) system, repayment shall be made in an appropriate amount of time.
- The Town should maintain reserves to provide for contingencies and unplanned expenses and to ensure that funds are generated to allow for appropriate future system replacement.
- Water and sewer rates and charges shall be kept as low as possible *over time*. It is possible to keep rates low for a period of time by not investing sufficiently in the maintenance of the water and sewer systems, but eventually the systems will deteriorate and require substantial investments leading to the need for significant and immediate rate increases. The assumption that the Town will continually reinvest in the water and sewer systems to replace assets as they reach the end of their useful lives is built into the analysis and allows for timely and predictable rate increases.

Assumptions

The following high-level assumptions were used to guide the rate study and were developed with the assistance of Town staff:

- Operating and maintenance expenses: 3.0% escalation rate per year for all expenses, except:
 - Water Wholesale (Fairfax Water): 1.0% per year
 - Sewer Treatment (DC Water): 4.0% per year
 - Sewer Treatment (Fairfax Sewer): 3.0% per year
- Customer and water usage/sewage generation changes: 0.0% growth per year
- Miscellaneous revenues: 0.0% growth per year
- Projected debt: interest rate of 3.5%, maturity of 15 years and contingency and issuance expense of 1.5%
- Minimum cash balance: 90 days of operating expenses

Depending on availability, actual Fiscal Year (FY) 2017 and budgeted FY 2018 data was used as the base upon which forecasted figures were developed. All years within this report refer to the Town's fiscal year

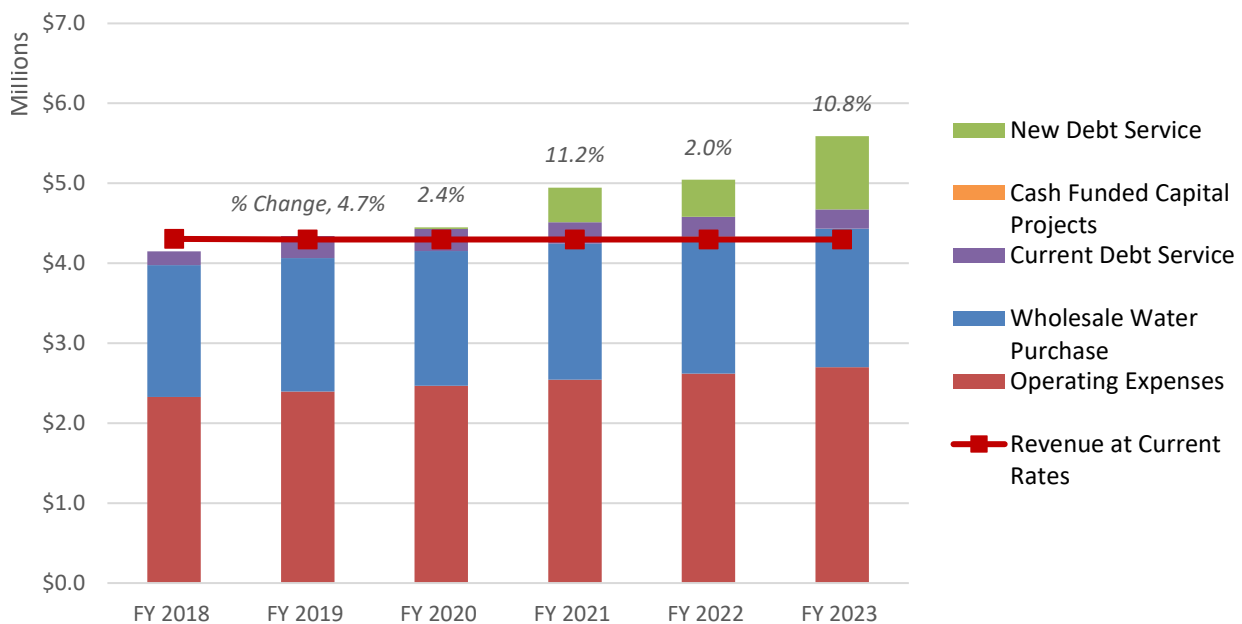
(July 1 to June 30). While the study identifies needed water and sewer rates on a year-by-year basis for a 10-year planning period (FY 2019 – FY 2028), the charts and tables within this report provide data for the first five years in which rates and charges have been calculated.

Findings

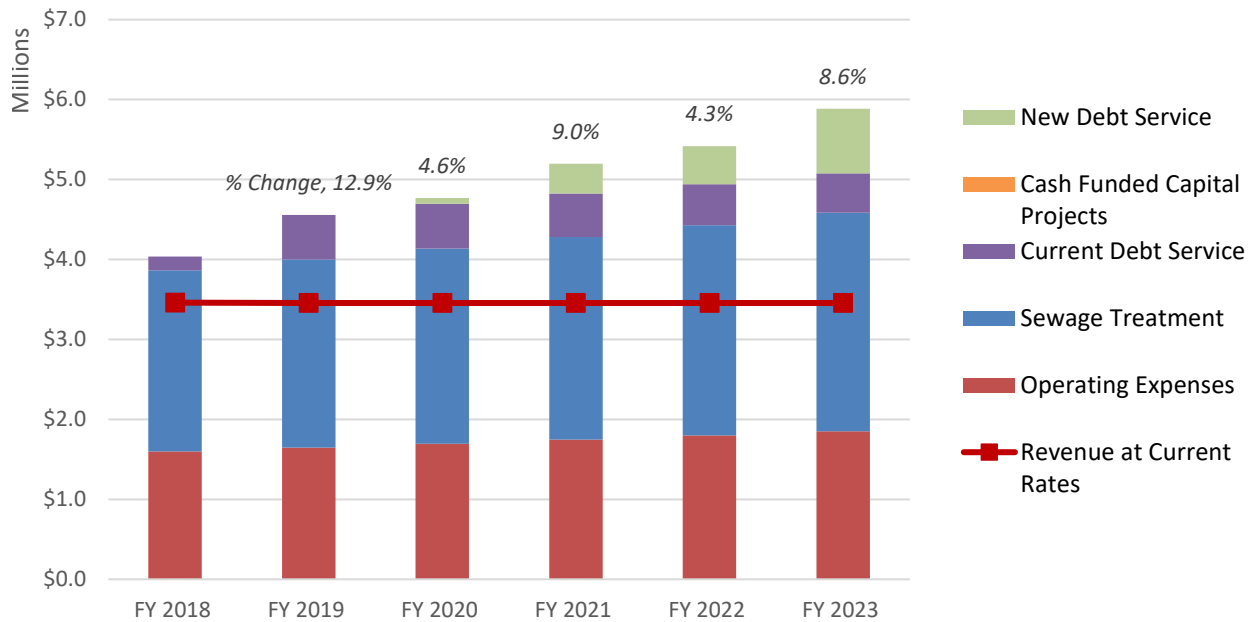
The following findings were developed during the course of the study:

- Revenue collected at current rates are insufficient to cover the water and sewer revenue requirements for FY 2019 through FY 2023. As shown in the exhibits below, current water and sewer rates, if left in place, would not generate sufficient revenue to fund the revenue requirements.

Water Revenue Requirements and Revenue at Current Rates



Sewer Revenue Requirements and Revenue at Current Rates

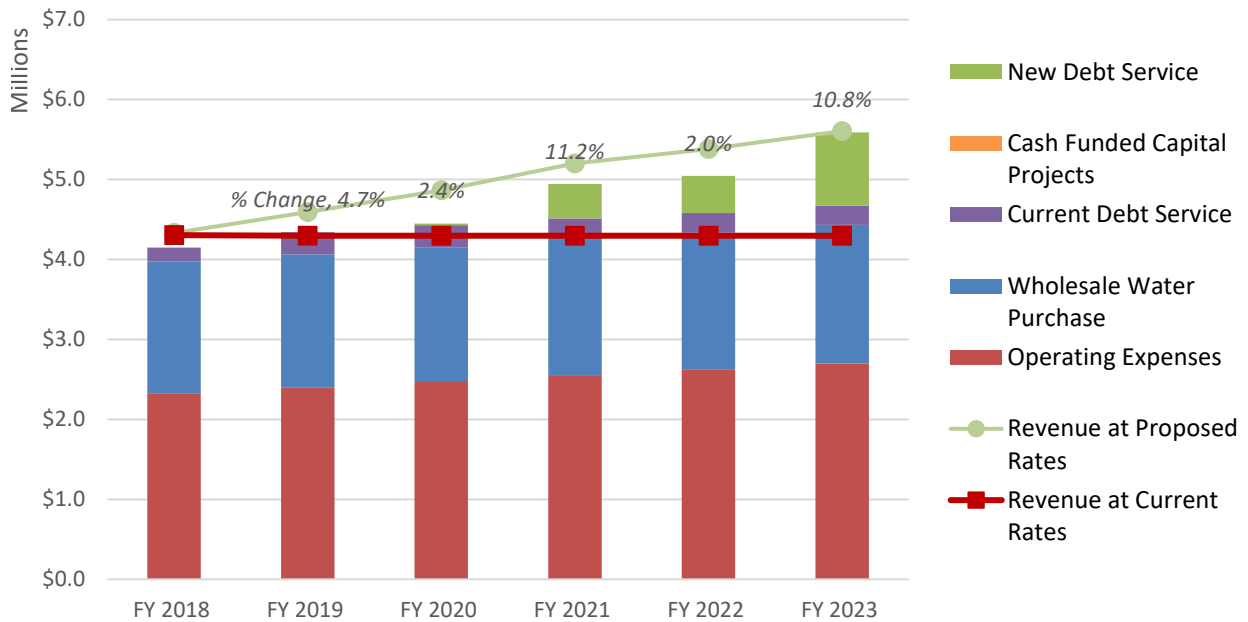


Conclusions

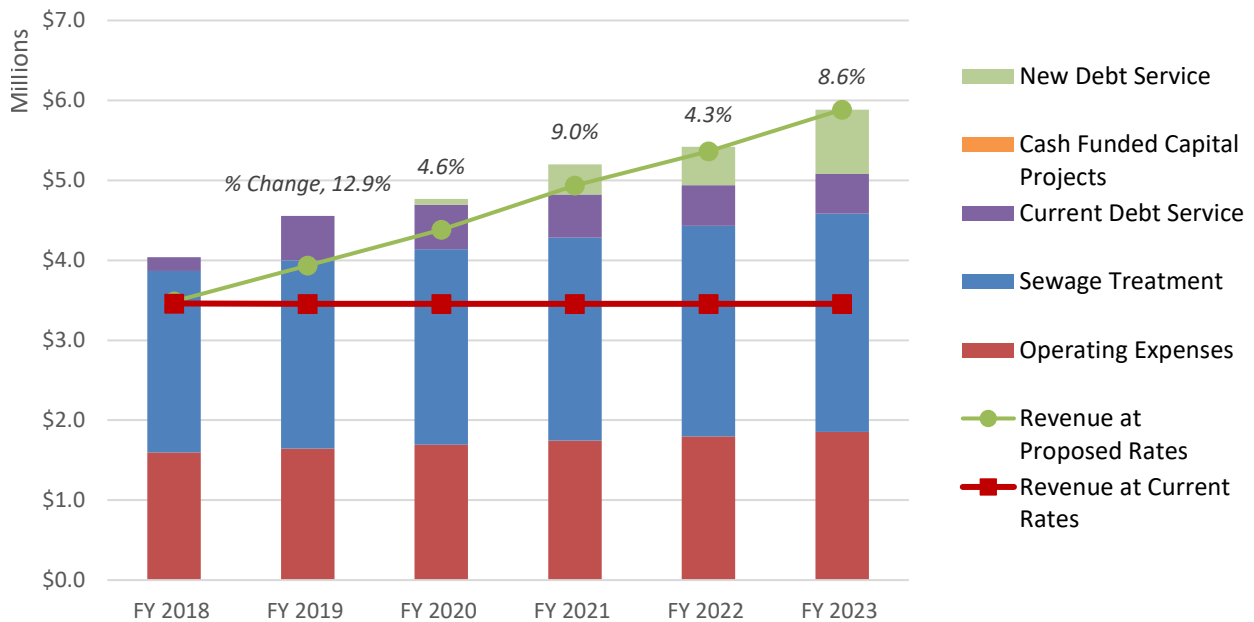
Based on our findings, the following conclusions were drawn:

- The Town needs to increase water and sewer rates over the first five years of the planning period to keep revenues in line with expenses, to fund the required operating and capital costs identified and to meet the minimum cash balance requirement.
- The Town should implement required rate increases through a multi-year financial plan. This will allow the Town to smooth rate increases over the planning period (as shown by the revenue at proposed rates in the exhibit below) and mitigate customer rate shock while meeting its cash requirements.

Water Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates



Sewer Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates



Recommendations

Based on our conclusions, the following recommendations were made:

- Adopt the following recommended quarterly water and sewer rates for the next five years.

Recommended Quarterly Service Charges

	Current FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Quarterly Service Charge (per equivalent)						
Residential	\$15.00	\$17.75	\$23.00	\$30.55	\$31.55	\$34.75
Commercial						
5/8"	\$15.75	\$25.50	\$33.05	\$43.90	\$45.35	\$49.95
1"	\$39.38	\$63.75	\$82.63	\$109.75	\$113.38	\$124.88
1 ½	\$78.75	\$127.50	\$165.25	\$219.50	\$226.75	\$249.75
2	\$126.00	\$204.00	\$264.40	\$351.20	\$362.80	\$399.60
3	\$252.00	\$408.00	\$528.80	\$702.40	\$725.60	\$799.20
4	\$393.75	\$637.50	\$826.25	\$1,097.50	\$1,133.75	\$1,248.75

Recommended Quarterly Water Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	9,001 – 18,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 18,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45
Commercial							
Tier 1	0 – 120,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	120,001 – 360,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 360,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45

Recommended Quarterly Sewer Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	9,001 – 18,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 18,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25
Commercial							
Tier 1	0 – 120,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	120,001 – 360,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 360,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25

- Review rates and charges on an annual basis and revise as needed. Consider a full cost of service study for all rates and charges every five years. While it is recommended to adopt rates and charges for five years, so they do not have to be revisited and voted on every year by the Council, it is financially prudent to review expenses and revenues annually to ensure actual values are relatively in line with those projected.

1. BASIS FOR THE STUDY

1.1 Objective and Scope

The objective and scope of services set forth between the Town of Vienna (“The Town”) and the Municipal & Financial Services Group (“MFSG”) consists of the following related tasks:

- Determine the cost of system services with the intent of establishing a usage rate and fee schedule
- Evaluating alternative rate structures
- Update or replace the existing rate model to allow adjustment for changes in general economic conditions
- Prepare a 5-year forward-looking financial plan for:
 - implementing capital improvements and associated debt service
 - accumulating capital reserves to fund scheduled replacements and upgrades of critical equipment and systems; and
 - funding anticipated water and sewer operations budgets

The water and sewer rate study has been completed based on these tasks, which are documented in this report.

1.2 Background

The Town of Vienna

Located in northern Virginia near Washington, D.C., Vienna is one of the more stable areas of the country. With its close proximity to the Dulles Airport corridor, the area’s metropolitan transit systems and the Nation’s capital, Vienna continues to enjoy a relatively stable economic base. Existing property values have been increasing over the previous year since 2012. There has been continued construction of upscale homes and residential renovations in many areas of the Town. The Town continues to attract new restaurants and commercial businesses in addition to new residential construction as the main business corridors experience redevelopment efforts. The Town covers 4.4 square miles adjacent to I-495 in Fairfax County, VA and is fully developed residentially. There is some opportunity for higher-density residential and commercial redevelopment, but it will not have a significant impact on the size of the system. The Town’s 2010 Census population was approximately 15,700.

Water and Sewer Utilities

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The Water and Sewer fund has about 20 employees. The water and sewer systems serve about 9,500 customers, 6,000 in town and 3,500 out of Town customers served by Fairfax sewer and Town of Vienna water. Approximately 80% of the Town’s customers are residential. The infrastructure has been

supplemented by capital donated from developers and from funds supplied by General Obligation Bonds, which are reimbursed by the Water and Sewer fund to the extent of the fund's participation in those bonds.

1.3 Guiding Principles

The following principles were used to guide the rate study and were developed with the assistance of Town staff and the Town staff:

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- The Town should maintain reserves to provide for contingencies and unplanned expenses and to ensure that funds are generated to allow for appropriate future system replacement.
- Water and sewer rates and charges shall be kept as low as possible *over time*. It is possible to keep rates low for a period of time by not investing sufficiently in the maintenance of the water and sewer systems, but eventually the systems will deteriorate and require substantial investments leading to the need for significant and immediate rate increases. The assumption that the Town will continually reinvest in the water and sewer systems to replace assets as they reach the end of their useful lives is built into the analysis and allows for timely and predictable rate increases.

1.4 Assumptions

The following high-level assumptions were used to guide the rate study and were developed with the assistance of Town staff:

- Operating and maintenance expenses: 3.0% escalation rate per year for all expenses, except:
 - Water Wholesale (Fairfax Water): 1.0% per year
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 - Sewer Treatment (Fairfax Sewer): 3.0% per year
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- Miscellaneous revenues: 0.0% growth per year
- Projected debt: interest rate of 3.5%, maturity of 15 years and contingency and issuance expense of 1.5%
- Minimum cash balance: 90 days of operating expenses

Depending on availability, actual Fiscal Year (FY) 2017 and budgeted FY 2018 data was used as the base upon which forecasted figures were developed. All years within this report refer to the Town's fiscal year (July 1 to June 30). While the study identifies needed water and sewer rates on a year-by-year basis for a 10-year planning period (FY 2019 – FY 2028), the charts and tables within this report provide data for the first five years in which rates and charges have been calculated.

2. REVENUE REQUIREMENTS

This section of the report outlines the historical and future costs of operating and maintaining the Town's systems, which constitute the water and sewer systems' revenue requirements (i.e., the amount of revenue required to be collected from customers). Our approach includes a detailed review of each of the costs incurred by the Town. The cost analysis is broken into two main categories of costs: (1) operating costs and (2) capital costs (including debt and cash funding). This section describes each of the categories of costs incurred by the Town as it provides water and sewer service. The costs are based on official documents and data provided by the Town.

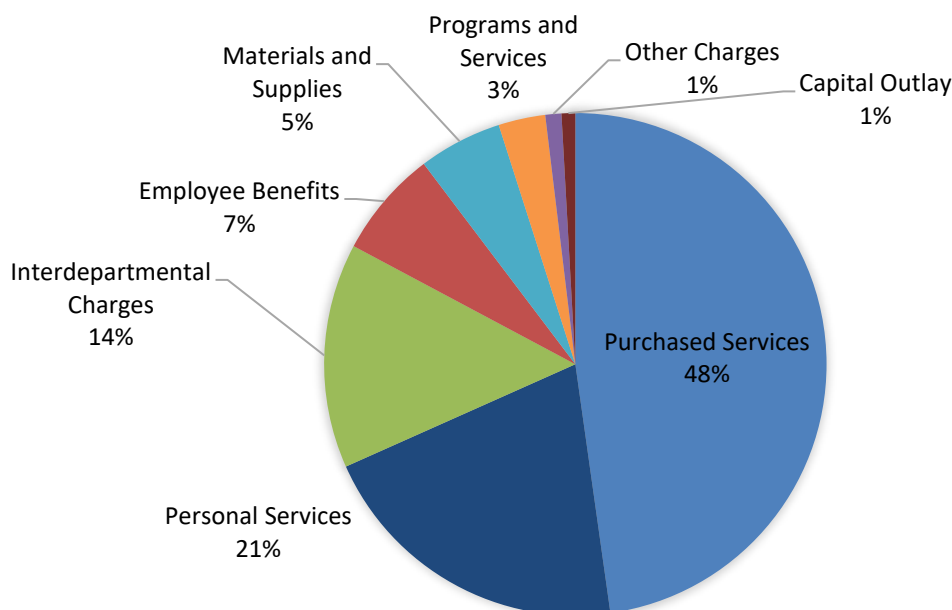
2.1 Operating Costs

The day-to-day operating and maintenance (O&M) expenses of the water system are grouped into the following categories:

- Purchased Services (Fairfax Water)
- Personal Services
- Interdepartmental Charges
- Employee Benefits
- Materials and Supplies
- Programs and Services
- Other Charges
- Capital Outlay

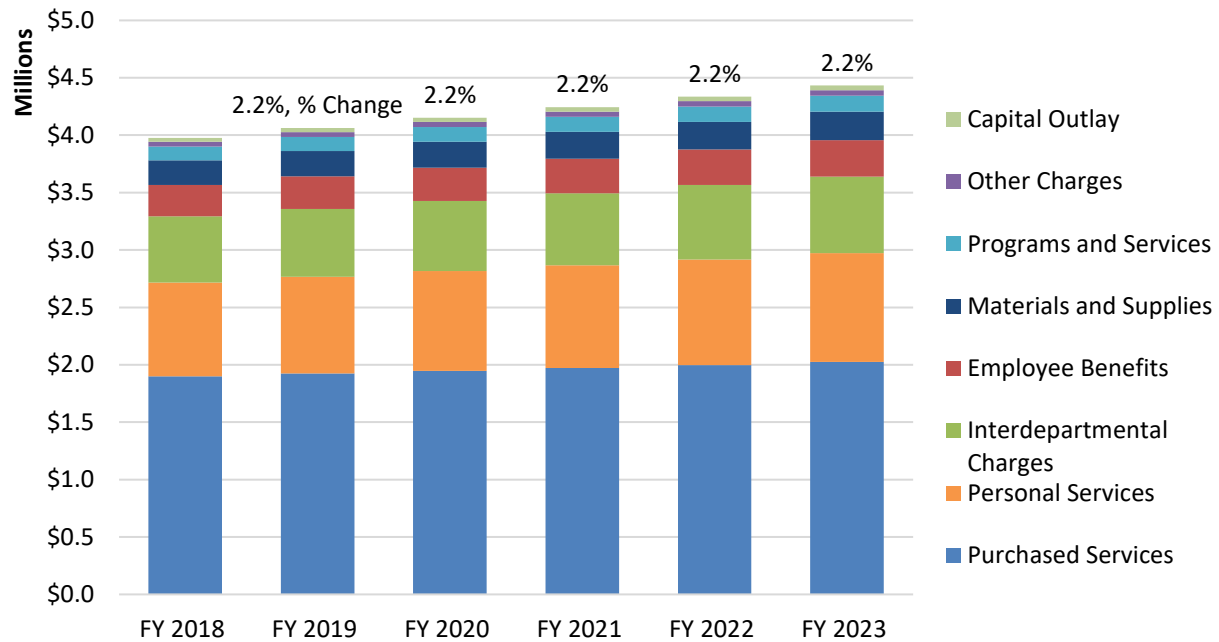
Budgeted FY 2018 expenses total approximately \$3.98 million. Exhibit 2.1.1 provides a breakdown by category (with percent of total budget) for FY 2018.

Exhibit 2.1.1 FY 2018 Water Operating Expenses



Budgeted FY 2018 expenses total approximately \$3.98 million. To project operating expenses, FY 2018 water budget line items were escalated using a 3.0% escalation rate, with the exclusion purchased services which were escalated using rates provided by Town staff. Exhibit 2.1.2 shows water budgeted O&M expenses for the base year (FY 2018) and projected O&M expenses for the remaining five years (FY 2019 to FY 2023) of the planning period (with percent change from the previous year).

Exhibit 2.1.2 Projected Water Operating Expenses

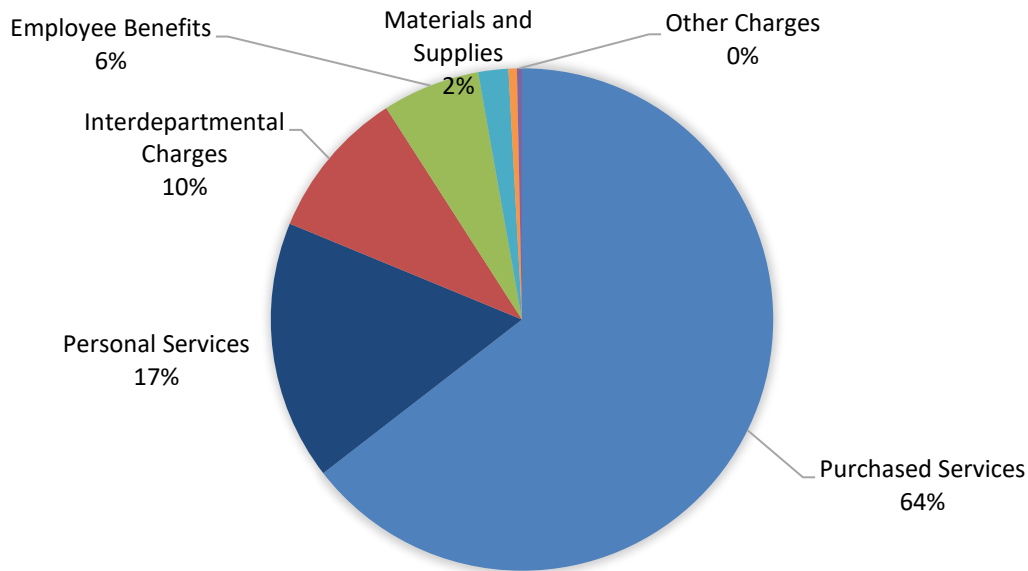


The day-to-day operating and maintenance expenses of the sewer system are grouped into the following categories:

- Purchased Services (DC Water and Fairfax Sewer)
- Personal Services
- Interdepartmental Charges
- Employee Benefits
- Materials and Supplies
- Capital Outlay
- Other Charges

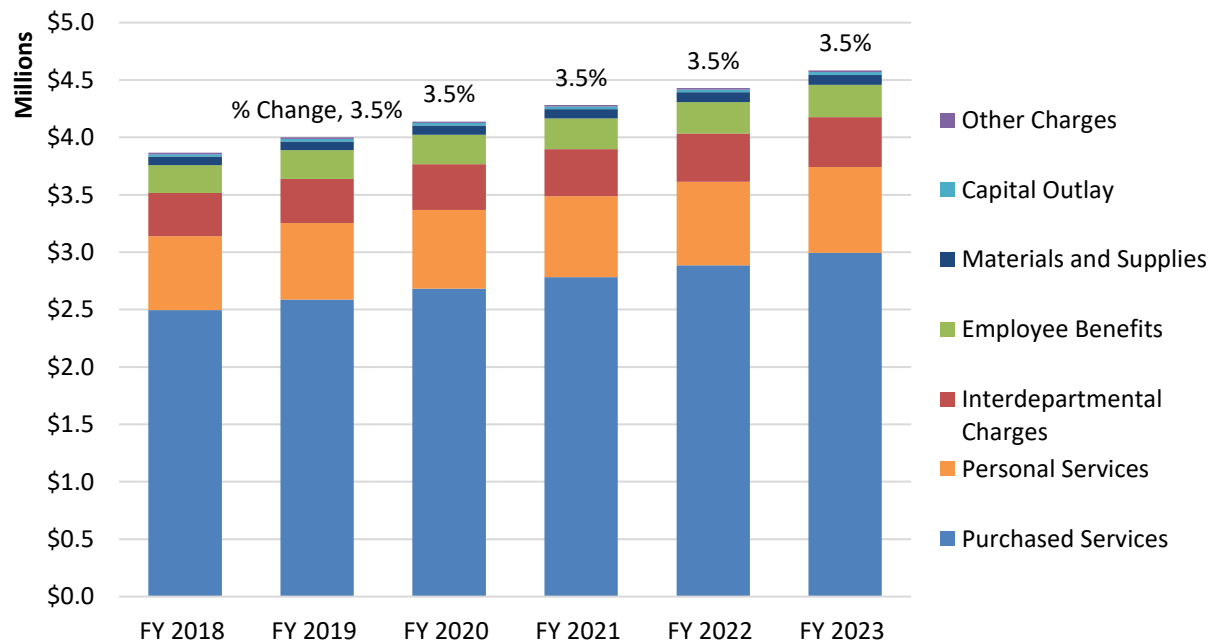
Budgeted FY 2018 expenses total approximately \$3.87 million. Exhibit 2.1.3 provides a breakdown by category (with percent of total budget) for FY 2018.

Exhibit 2.1.3 FY 2018 Sewer Operating Expenses



Budgeted FY 2018 expenses total approximately \$3.87 million. To project operating expenses, FY 2018 water budget line items were escalated using a 3.0% escalation rate, with the exclusion purchased services which were escalated using rates provided by Town staff. Exhibit 2.1.2 shows sewer budgeted O&M expenses for the base year (FY 2018) and projected O&M expenses for the remaining five years (FY 2019 to FY 2023) of the planning period (with percent change from the previous year).

Exhibit 2.1.4 Projected Sewer Operating Expenses



2.2 Capital Costs

The annualized capital costs related to providing water and sewer service are generally comprised of existing debt service and any anticipated capital projects, which may be funded via the issuance of debt

(typically bonds, loans or similar financial instruments) or funded from cash (either reserves on hand or cash derived from operations).

2.2.1 Existing Debt Service

The Town issues bonds to fund capital projects to mitigate the financial burden on customers and the Town's available fund balance by spreading the costs of long lived assets over several years. The Town is currently paying principal and interest payments on a several bonds.

Error! Reference source not found. and Exhibit 2.2.2 provides a breakdown of the Town's existing principal and interest payments (with percent change from the previous year) for the base year and the first five years of the planning period (FY 2019 to FY 2023).

Exhibit 2.2.1 Existing Water Debt Service

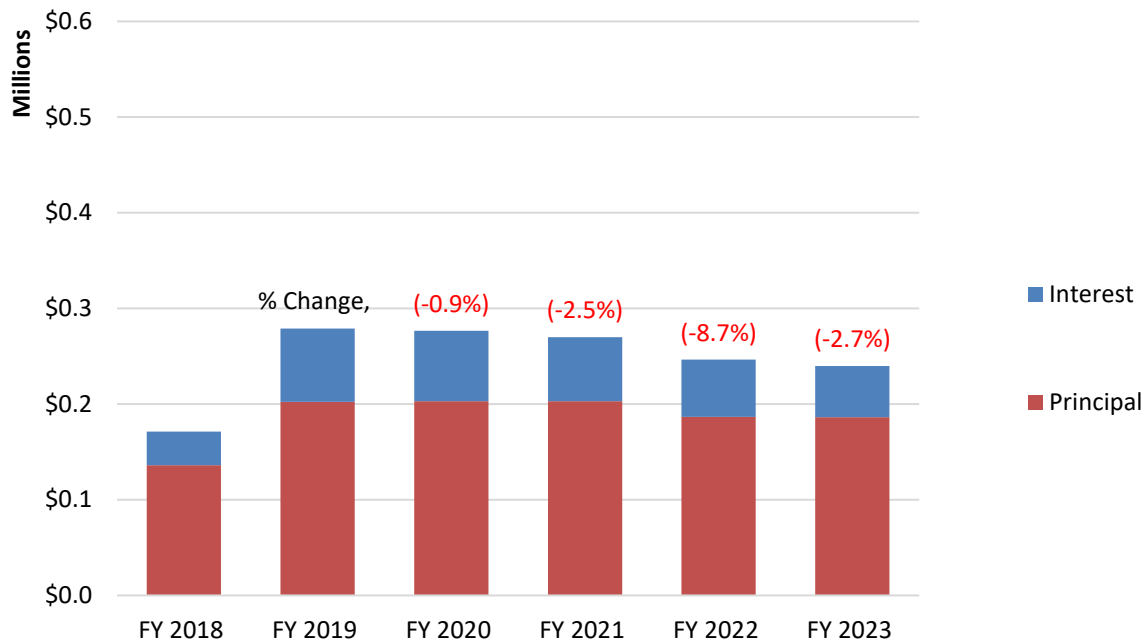
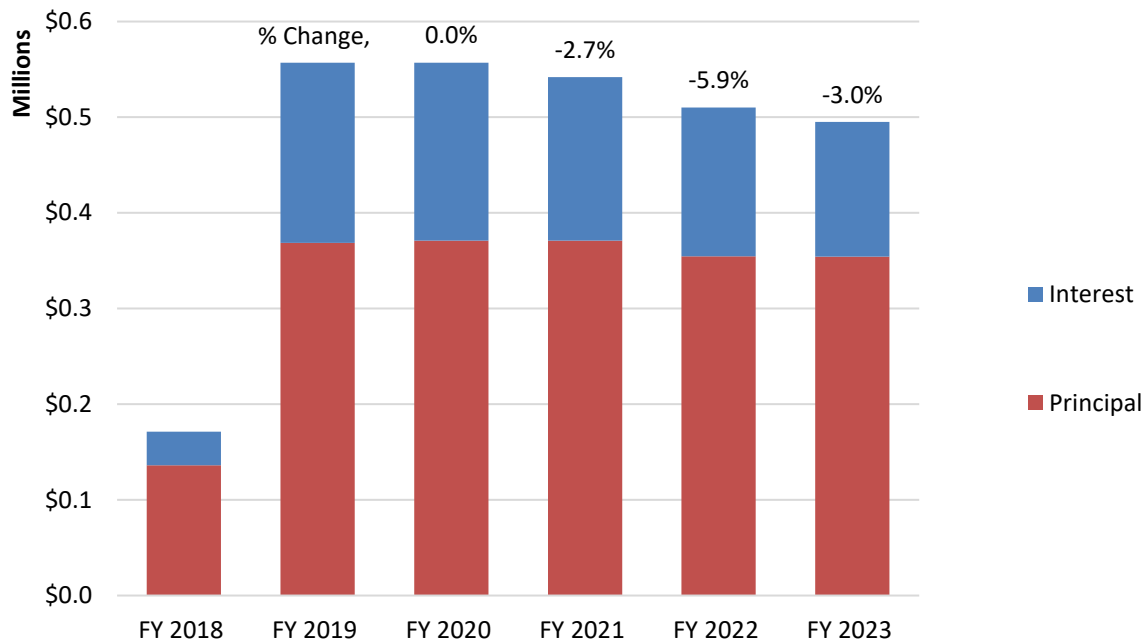


Exhibit 2.2.2 Existing Sewer Debt Service



2.2.2 Planned Capital Improvement Projects

Through discussions with Town staff, we have decided to push for an aggressive replacement of the water and sewer assets which have reached or will be reaching their useful life soon. The Town's capital improvement program (CIP) totaling an estimated \$16.02 million over the six-year period from FY 2018 to FY 2023. Exhibit 2.2.3 provides a breakdown of CIP spending for the first five years of the planning period for the water and sewer systems, respectively.

Exhibit 2.2.3 Planned Water and Sewer CIP Projects by Project Type

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Fairfax Sewer Payment	\$2,500,000	-	\$2,500,000	-	\$3,000,000	-	\$3,000,000	-	\$3,000,000
Water Line Rehab	\$4,500,000	-	\$4,681,800	-	\$4,870,945	-	\$5,067,731	-	\$5,272,467
Sewer Line Rehab	\$900,000	-	\$936,360	-	\$974,189	-	\$1,013,546	-	\$1,054,493
Sub-total	\$7,900,000	\$ -	\$8,118,160	\$ -	\$8,845,134	\$ -	\$9,081,277	\$ -	\$9,326,961
Vehicles	\$74,660	\$496,987	\$147,524	-	\$64,837	-	\$75,589	\$219,906	\$119,385
Total Planned CIP	\$7,974,660	\$496,987	\$8,265,684	\$ -	\$8,909,971	\$ -	\$9,156,866	\$219,906	\$9,446,346
CIP \$ Dedicated to Town Line Rehabilitation	\$5,400,000	\$ -	\$5,618,160	\$ -	\$5,845,134	\$ -	\$6,081,277	\$ -	\$6,326,961

2.2.3 Projected Debt Service

The Town will be debt funding all of its capital projects with bond issuances. The assumed interest rates on the bonds start at 3.5% from FY 2018-2020, rising to 4.0% from FY 2021-2023, and 4.5% from FY 2024-2027. All bonds are assumed to have a maturity of 15 years.

Exhibit 2.2.4 New Water Debt

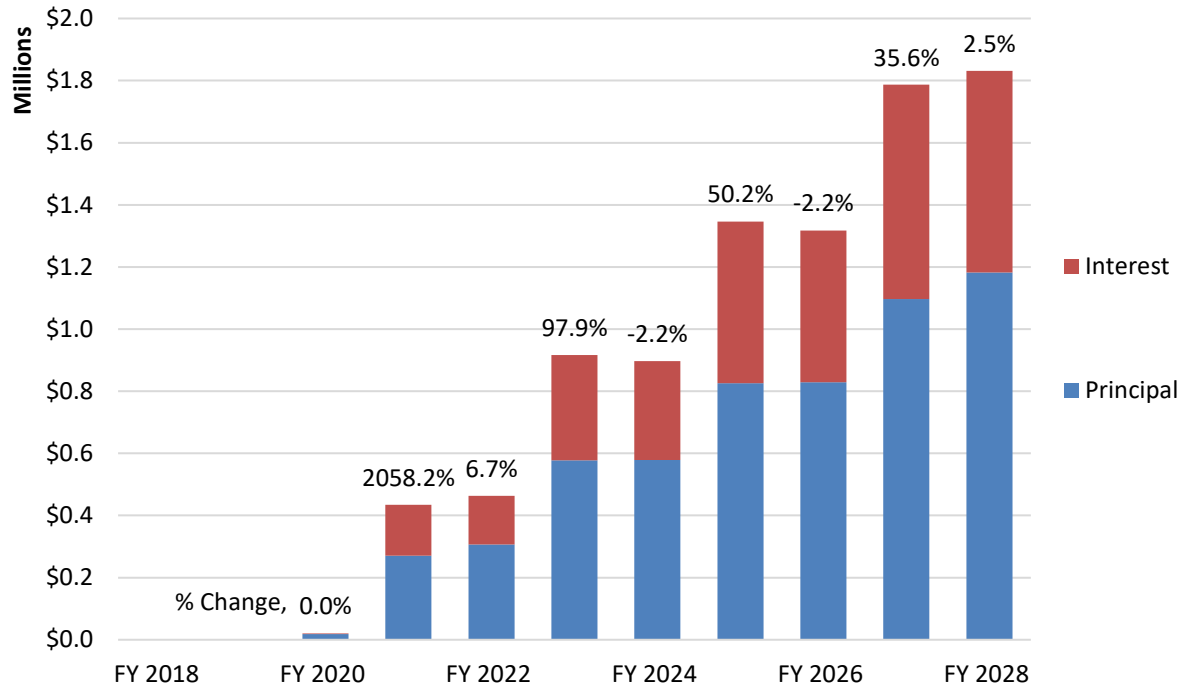
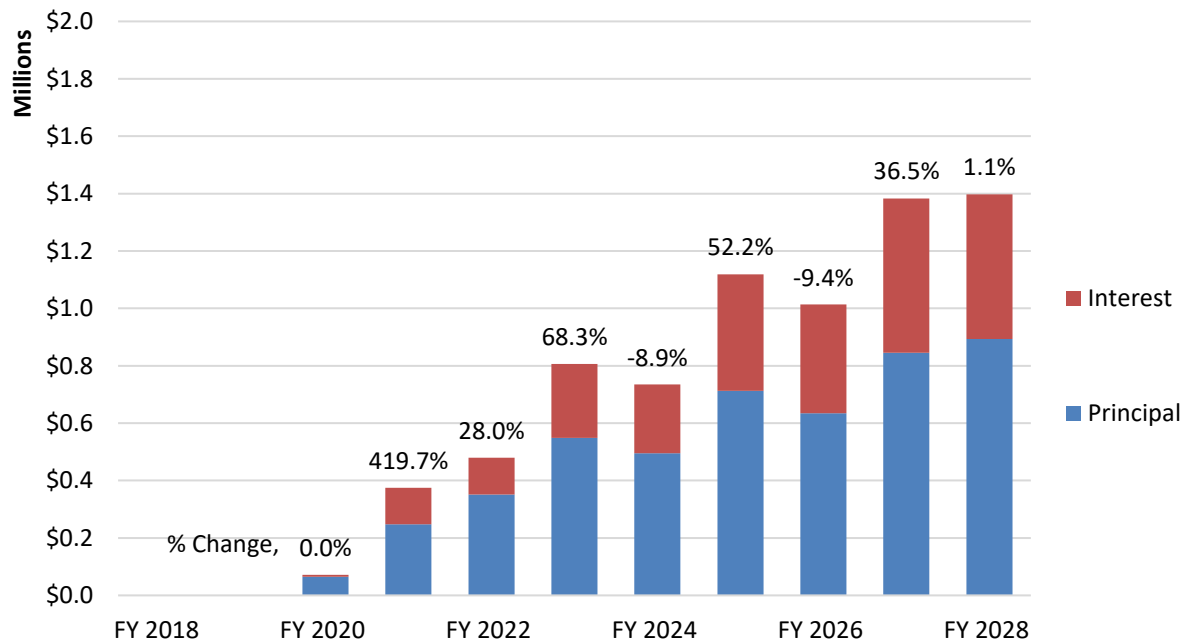


Exhibit 2.2.5 New Sewer Debt



2.3 Revenue Requirements

The total annual cost of operating the Town’s water and sewer systems (the gross revenue requirements) includes operating and maintenance expenses and current and future capital costs. The sum of these costs, less any miscellaneous revenues (availability charges, interest, sale of water meters, and other “non-rate” revenues), is the amount that needs to be recovered from user rates (referred to as the net revenue requirement).

Exhibit 2.3.1 and Exhibit 2.3.2 show the revenue requirements (with percent change from the previous year) for the base year and the first five years of the planning period for water and sewer, respectively.

Exhibit 2.3.1 Water Revenue Requirements

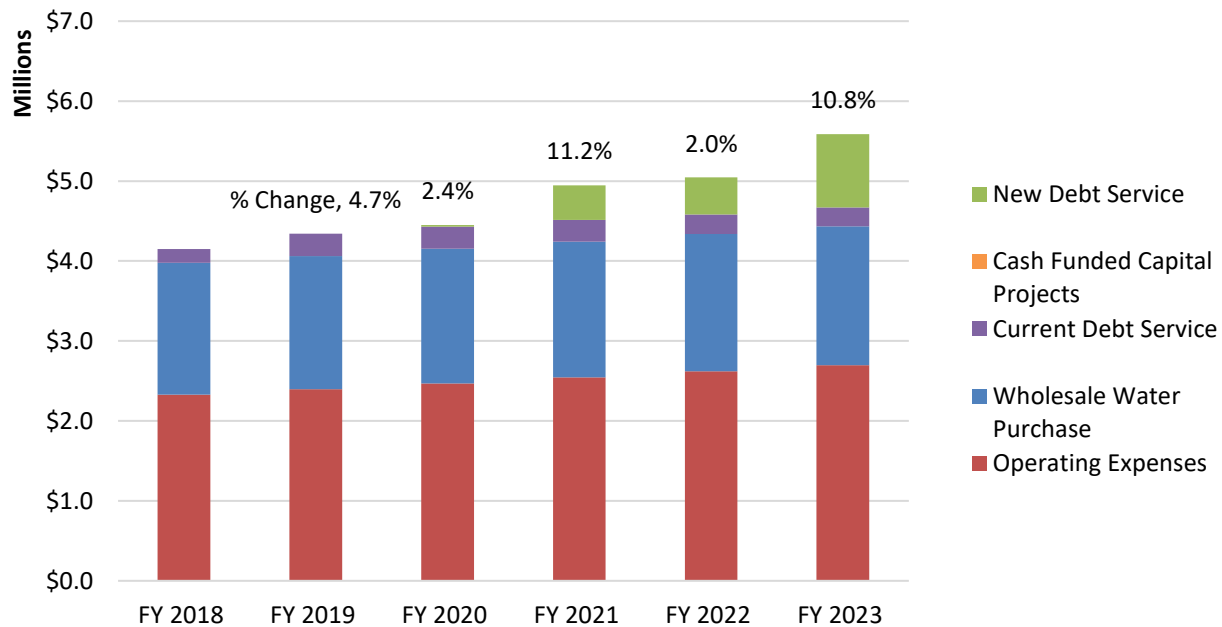
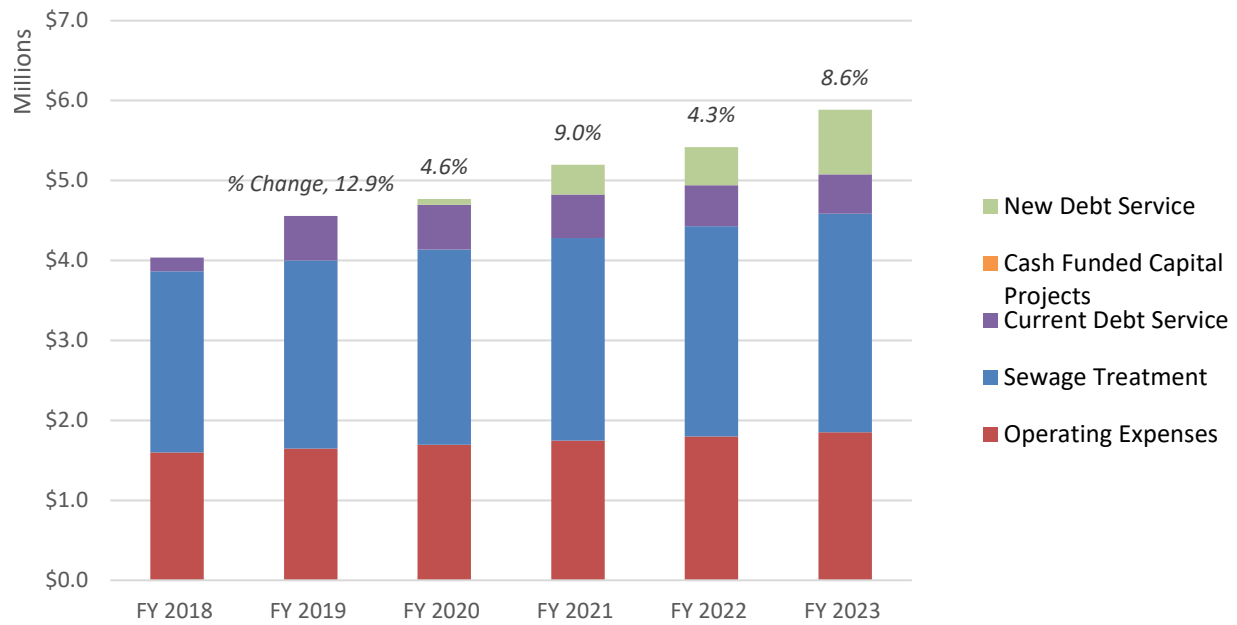


Exhibit 2.3.2 Sewer Revenue Requirements



3. CUSTOMERS AND USAGE

This section provides a summary of water and sewer customer accounts and water usage/sewage generation.

3.1 Customer Account Summary

The Town currently provides water service to around 9,300 customers and sewer service to just over 6,000 customers. Exhibit 3.1.1 provides a breakdown of current (FY 2017) monthly water and sewer customers by meter size.

Exhibit 3.1.1 FY 2017 Customers by Class and Meter Size

Meter Size (inches)	Water		Sewer	
	Residential	Non-Residential	Residential	Non-Residential
5/8	7,255	248	4,431	233
1	1,522	130	1,138	128
1 1/2	3	70	2	56
2	1	76	1	69
3	1	30	1	15
4	-	5	-	4
Total	8,782	559	5,573	505

To project growth, customers were held conservatively with zero growth.

3.2 Usage Summary

Residential customers are currently charged water rates based on their metered water usage (billed monthly in 1,000-gallon units) as they move through four usage tiers, whereas non-residential customers are billed for all usage with no tier breakdown. All sewer rates are billed at a flat unit rate. Exhibit 3.2.1 provides a breakdown of current (FY 2017) annual billed water usage/sewage generation (in gallons) by usage tier.

Exhibit 3.2.1 FY 2017 Water Usage/Sewage Generation by Class and Tier

Tier	Gallons	Water	Sewer
Residential			
1 st Tier	0 – 16,000	411,348,000	255,516,000
2 nd Tier	16,001 – 32,000	82,374,111	48,063,971
3 rd Tier	Over 32,000	32,085,000	16,774,000
Total		525,807,111	320,353,971
Commercial			
1 st Tier	0 – 90,000	77,414,000	67,776,000
2 nd Tier	90,001 – 180,000	29,231,756	22,433,823
3 rd Tier	Over 180,000	75,366,000	53,762,000
Total		182,011,756	143,971,823

Like customer accounts, current water and sewer usage has been constant over the planning period.

4. FINANCIAL PLAN AND PROPOSED RATES

4.1 Total Revenue Projections at Current Rates

In Section 2, the projected costs (revenue requirements) of the system were presented and, in Section 3, projected customers and water usage/sewage generation were presented. In this section, we use those projections to determine an appropriate financial plan and set water and sewer rates for the next five years.

The adequacy of revenues from current rates was evaluated in order to determine if existing rates are sufficient to recover the revenue requirements. Exhibit 4.1.1 and Exhibit 4.1.2 compare the revenue requirements (with percent change from the previous year) with total revenue projections at current rates for the base year and the first five years of the planning period for water and sewer, respectively.

Exhibit 4.1.1 Water Revenue Requirements and Revenue at Current Rates

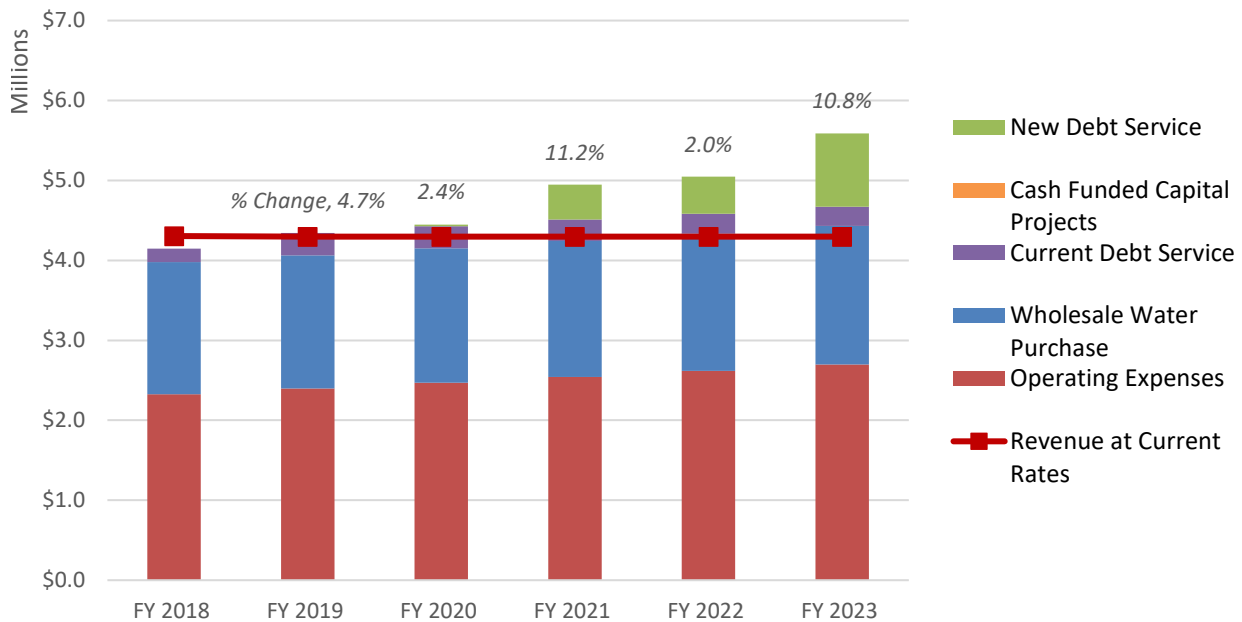


Exhibit 4.1.2 Sewer Revenue Requirements and Revenue at Current Rates

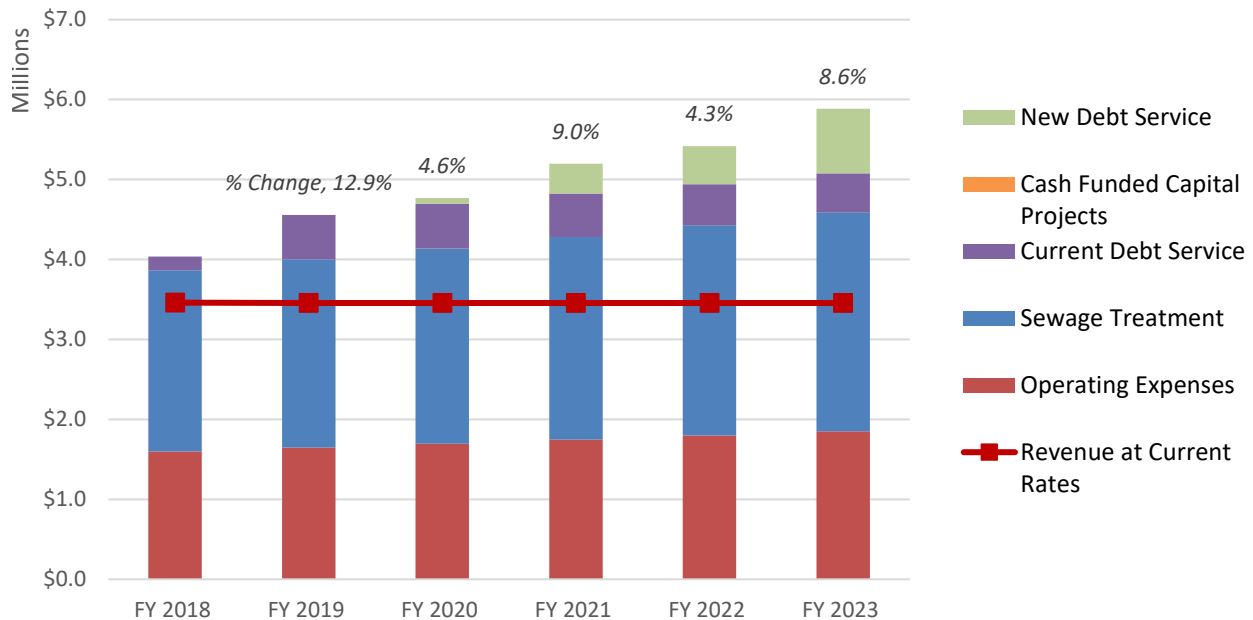


Exhibit 4.1.1 and Exhibit 4.1.2 demonstrates that revenue collected at current rates is insufficient to cover the revenue requirements for FY 2018 through FY 2023. Current water and sewer rates, do not and would continue not to generate sufficient revenue to fund the revenue requirements over the planning period.

4.2 Cash Balances at Current Rates

The previous exhibits show that current rates are insufficient to cover the revenue requirements for FY 2018 through FY 2023. However, it is possible to be able to meet these revenue requirements by pulling down on current cash reserves. Currently, FY 2018 cash reserves are shown to be \$243,374 for water and \$2,460,363 for sewer. Exhibit 4.2.1 and Exhibit 4.2.2 show the end of year cash balances for water and sewer respectively if cash was used to cover any revenue requirements shortfalls which were not met by rates.

Exhibit 4.2.1 Water Cash Balances at Current Rates

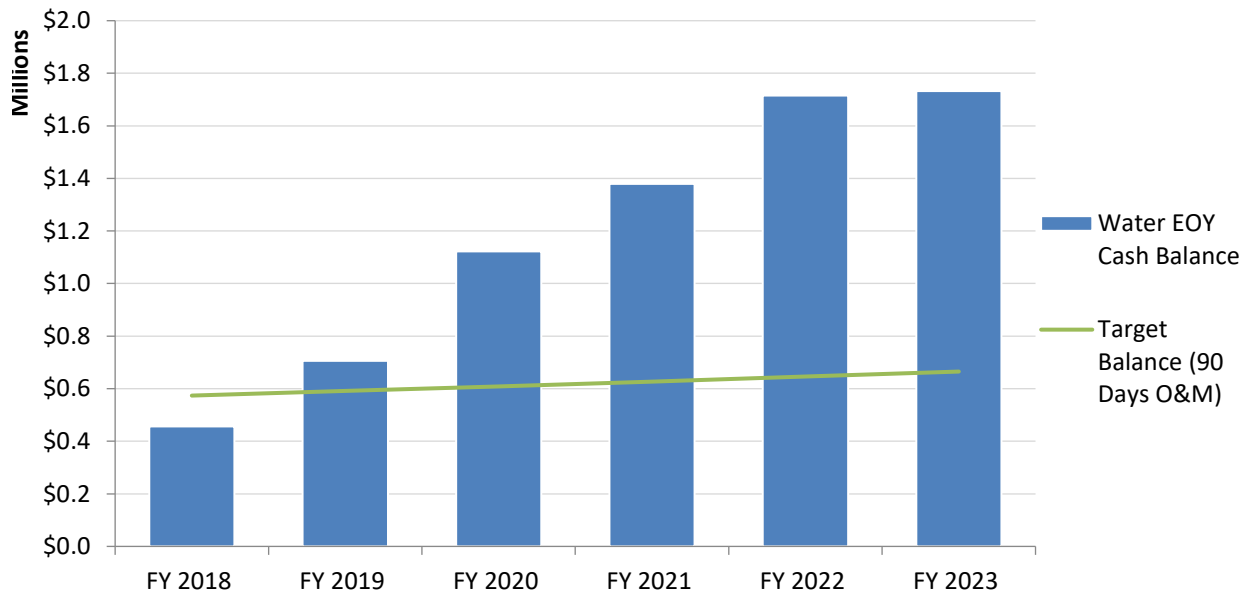


Exhibit 4.2.2 Sewer Cash Balances at Current Rates

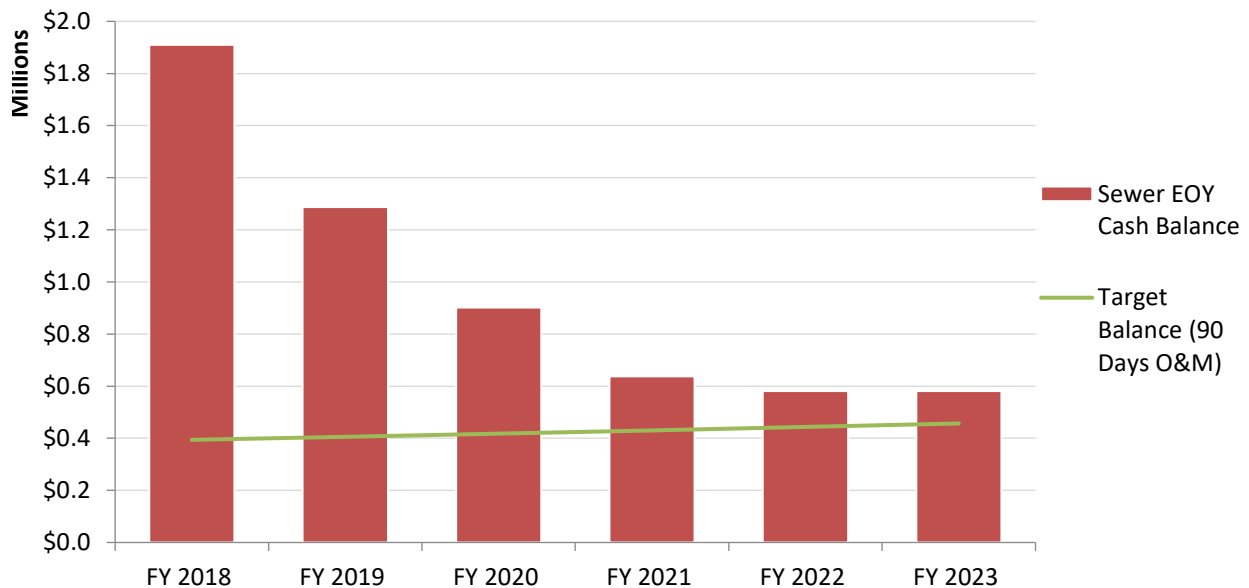


Exhibit 4.2.1 and Exhibit 4.2.2 clearly demonstrate the need for the Town to increase water and sewer revenues in order to fund the projected expenses of operating and maintaining the water and sewer systems.

4.3 Total Revenue Projections at Proposed Rates

In order to maintain the financial health of the Town's water and sewer operations over the first five years of the planning period, revenue needs to be increased. In addition to covering the revenue requirements, revenue must also be sufficient to satisfy the minimum cash balance of 90 days operating expenses

outlined in Section 1.4. Current water and sewer rates, if left in place, are projected to generate insufficient revenue to fund the revenue requirements for FY 2018 through FY 2023 as well as meet the minimum cash balance requirement of 90 days operating expenses.

To address these shortfalls, we propose the use of the current cash balance as well as adjusting rates on a multi-year basis. Use of cash and a multi-year approach will help mitigate rate increases over the planning period as well as result in smaller rate increases being implemented in the first years of the planning period, helping to alleviate some of the financial burden for the Town's customers. Additionally, this approach will allow for proper planning and adjustment by customers and the Town.

Exhibit 4.3.1 and Exhibit 4.3.2 compare the revenue requirements (with percent change from the previous year) with total revenue projections at current rates as well as total revenue projections at proposed rates for the base year and the first five years of the planning period for water and sewer, respectively.

Exhibit 4.3.1 Water Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates

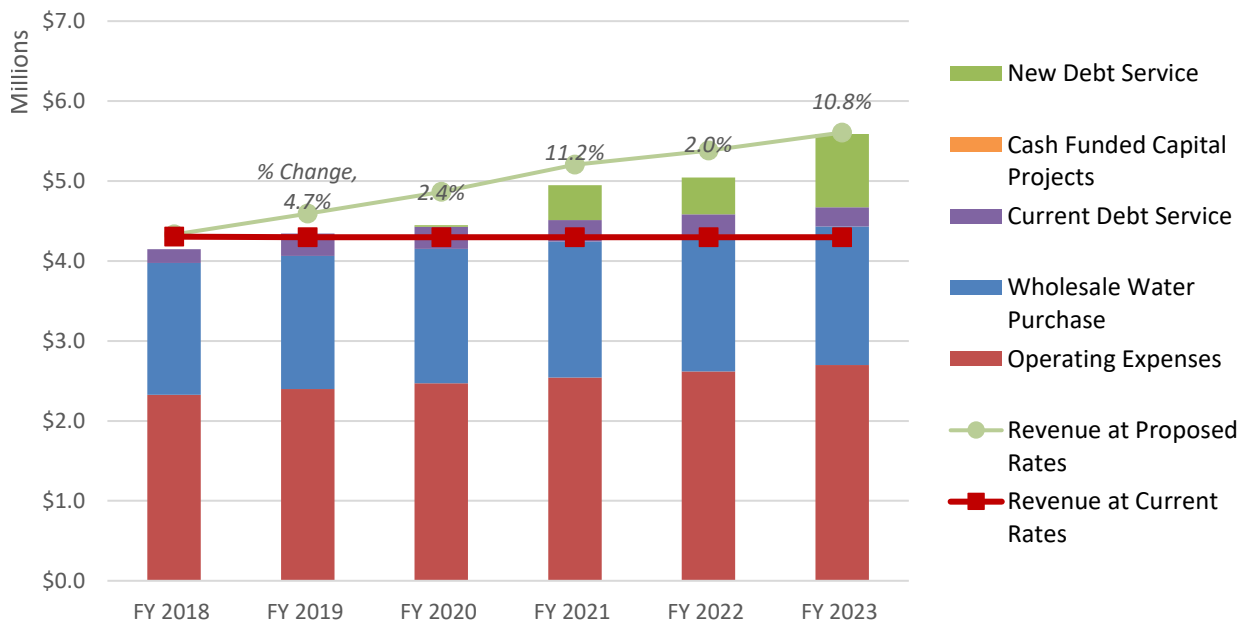
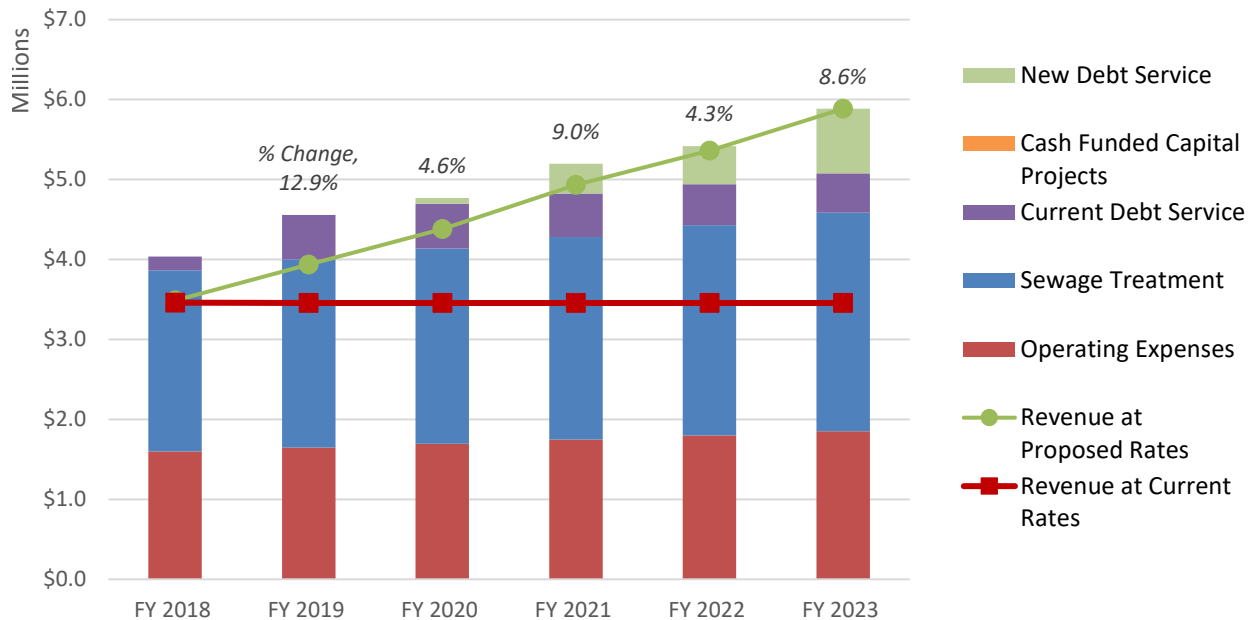


Exhibit 4.3.2 Sewer Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates



The line in Exhibit 4.3.1 and Exhibit 4.3.2 representing the revenue at proposed rates demonstrates the amount of revenue needed to cover the revenue requirements as well as meet the minimum cash balance requirement of 90 days operating expenses by the end of FY 2023 for each the water and sewer funds.

4.4 Long Term Cash Balances at Proposed Rates

In Section 4.2 we showed that current rates if left in place would draw down on the Town's cash balances and would result in major shortfalls. In Exhibit 4.4.1 and Exhibit 4.4.2 below, the charts show the effect on the Town's water and sewer cash balances respectively if the Town adopts the recommended rate structure from FY 2019 to FY 2023, and 4.5% increases across the board for fiscal years 2024 through 2028.

Exhibit 4.4.1 Long-Term Water Cash Balances at Proposed Rates

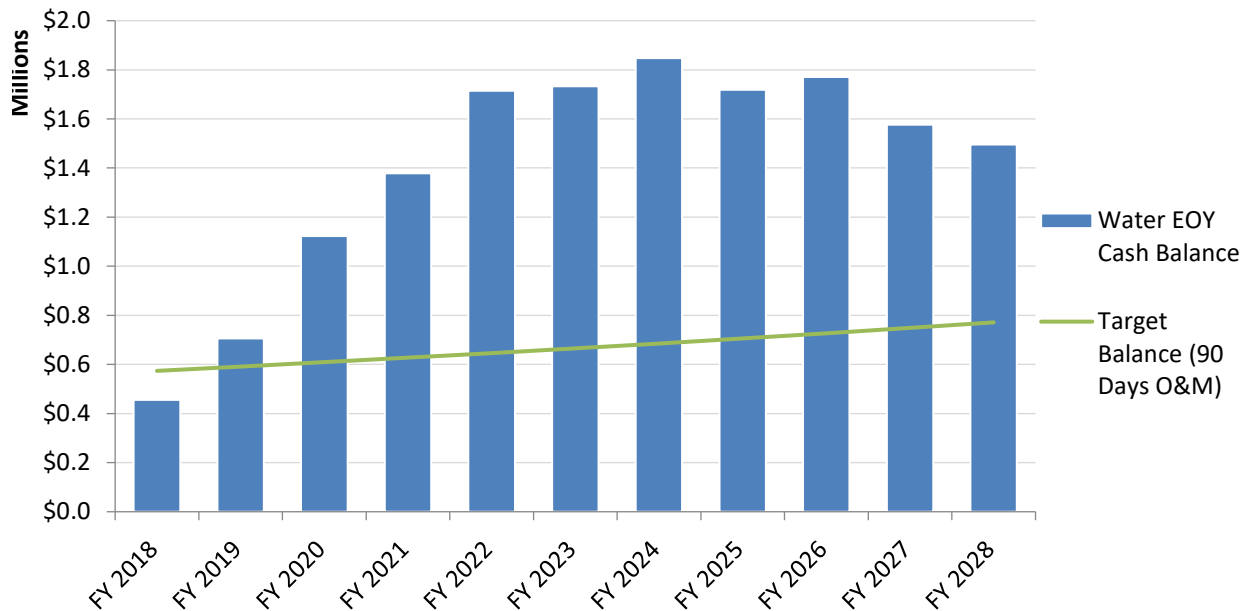
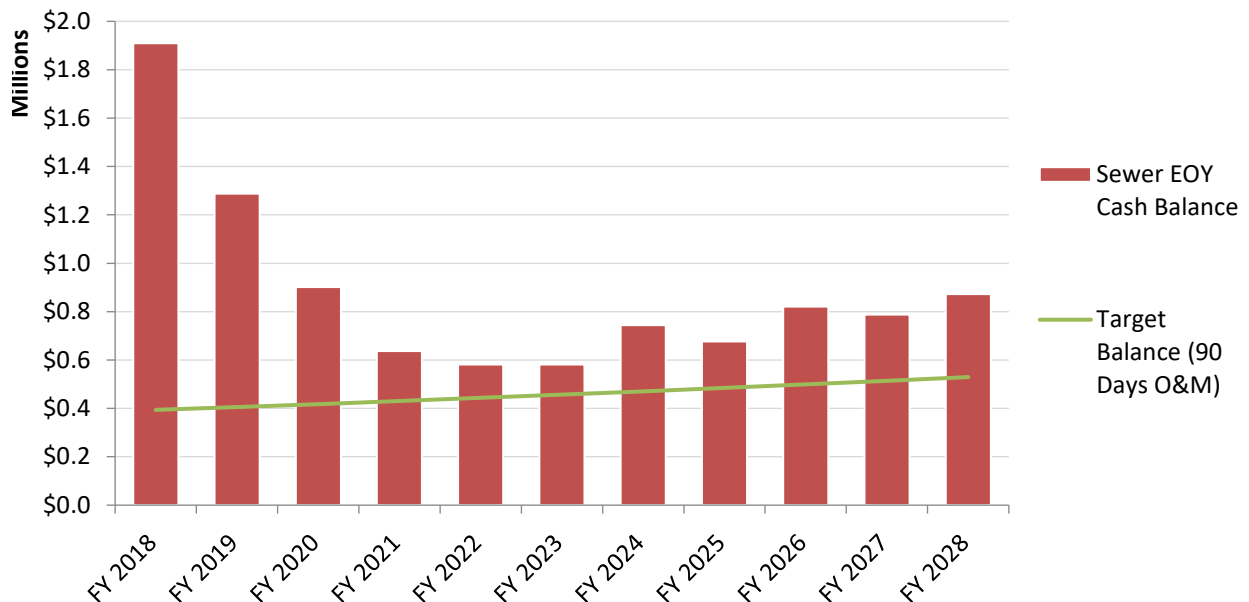


Exhibit 4.4.2 Long Term Sewer Cash Balances at Proposed Rates



The above exhibits demonstrate that with the proposed rates, the Town's water and sewer systems will be able to meet the target balance of 90 days O&M expenses through the 10 years from FY 2019 – FY 2028, as well as fully funding the current and future operating and debt expenses each year.

4.5 Current Rate Design

The Town's current water and sewer rate designs consist of a quarterly service charge per bill and three inclining usage tier rates charged per 1,000 gallons. Exhibit 4.5.1 shows the current water and sewer rates.

Exhibit 4.5.1 Current Water and Sewer Rates

		Service Charge	Water	Sewer
Quarterly Service Charge (per bill)				
Residential		\$15.00		
Commercial				
5/8		\$15.75		
1		\$17.85		
1 1/2		\$24.49		
2		\$32.00		
3		\$78.99		
4		\$130.00		
Usage Rates (per 1,000 gallons)				
Residential				
Tier 1	0 – 16,000		\$4.98	\$6.09
Tier 2	16,001 – 32,000		\$5.42	\$6.59
Tier 3	Over 32,000		\$6.27	\$7.64
Commercial				
Tier 1	0 – 90,000		\$4.98	\$6.09
Tier 2	90,001 – 180,000		\$5.42	\$6.59
Tier 3	Over 180,000		\$6.27	\$7.64

4.6 Pricing Goals and Objectives

To recommend an alternative rate design, it is necessary to determine the principal pricing goals and objectives of the design. Based on our experience, there are several common goals and objectives related to the pricing of water and sewer service. The most common considerations are shown in Exhibit 4.6.1.

Exhibit 4.6.1 Rate Design Pricing Objectives and Modification Considerations

Objective	Rate Design Modification Considerations
Cost of Service Recovery - Ensure that the cost of providing the service is recovered	<ul style="list-style-type: none"> Setting rates and fees to fully recover cost of providing service Setting rates to ensure financial metrics are met
Minimizing Customer Impact - Limit bill increases	<ul style="list-style-type: none"> Limiting the one-time changes to the rate design Phasing in increases
Equity - Costs are allocated to customers based on cost causation	<ul style="list-style-type: none"> Adjusting rates to match cost of service
Revenue Stability - Limit changes in annual revenues from rates and fees	<ul style="list-style-type: none"> Increase the fixed portion of revenues Limit revenues that are dependent on increasing customer consumption
Rate Stability - Limit the annual changes in rates and resulting customer bills	<ul style="list-style-type: none"> Limit or phase in changes to rate design Conservatively set rates
Ease of Understanding - Rate design is understandable and not overly complex	<ul style="list-style-type: none"> Limit changes to rate design Use of effective nomenclature for rates and fees

Objective	Rate Design Modification Considerations
Economic Development - Foster and maintain economic development	<ul style="list-style-type: none">Minimize bill impacts to commercial and industrial customers
Water Conservation – Incentivize users to conserve water, especially when under drought conditions	<ul style="list-style-type: none">Higher cost tiers as a customer uses more water
Ease of Implementation - Minimize administrative burden of implementing rate design	<ul style="list-style-type: none">Limit changes to rate design

Each of the pricing goals and objectives were viewed in light of the Town’s overall strategies. While all of the objectives mentioned above are important, there were several objectives that were identified as being priorities for the study:

- **Cost of Service Recovery** – The rate design must provide the revenues needed to operate the system, provide for capital needs and meet the financial targets for long-term financial health and stability.
- **Minimizing One-Time Impacts** – The one-time impact to Town customers should be minimized, as a long-term plan for the financial stability of the water and sewer system is needed.
- **Ease of Understanding and Ease of Implementation** – The rate design should be easily understood by all customers as well as easy to implement and administer for administration and staff.

4.7 Projected Rates

In addition to projecting rates under the current design (see Section 4.5), an alternative rate design was developed for each water and sewer to meet pricing goals and objectives of the Town. Both the current and alternative rate designs collect the same amount of revenue (i.e., revenue neutral) as discussed in Section 4.3 so that rates can be compared on an apples-to-apples basis. The following two rate designs were developed (changes from the current design to the alternative design are highlighted in green):

- **Current Rate Design**
 - Quarterly water and sewer service charges per bill
 - Three inclining usage tier rates for water and sewer:
 - Residential
 - 0 – 16,000 gallons
 - 16,001 – 32,000 gallons
 - Over 32,000 gallons
 - Commercial
 - 0 – 90,000 gallons
 - 90,001 – 180,000 gallons
 - Over 180,000 gallons

- Alternative Rate Design
 - Quarterly water and sewer service charges per bill based on AWWA standards
 - Three inclining usage tier rates for water and sewer:
 - Residential
 - 0 – 9,000 gallons
 - 9,001 – 18,000 gallons
 - Over 18,000 gallons
 - Commercial
 - 0 – 120,000 gallons
 - 120,001 – 360,000 gallons
 - Over 360,000 gallons

Each rate design is described in further detail below.

4.7.1 Current Rate Design

As mentioned in Section 4.5, the Town’s current water and sewer rate designs consist of a quarterly service charge per bill and three inclining usage tier rates charged per 1,000 gallons. The projected water rates are shown in Exhibit 4.7.2, and the projected sewer rates are shown in Exhibit 4.7.3 for the first five years of the planning period.

Exhibit 4.7.1 Projected Service Charges – Current Design

	Current FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Quarterly Service Charge (per equivalent)						
Residential	\$15.00	\$21.75	\$28.20	\$37.45	\$38.70	\$42.60
Commercial						
5/8"	\$15.75	\$22.80	\$29.60	\$39.30	\$40.60	\$44.70
1"	\$39.38	\$57.00	\$74.00	\$98.25	\$101.50	\$111.75
1 ½	\$78.75	\$114.00	\$148.00	\$196.50	\$203.00	\$223.50
2	\$126.00	\$182.40	\$236.80	\$314.40	\$324.80	\$357.60
3	\$252.00	\$364.80	\$473.60	\$628.80	\$649.60	\$715.20
4	\$393.75	\$570.00	\$740.00	\$982.50	\$1,015.00	\$1,117.50

Exhibit 4.7.2 Projected Water Rates – Current Design

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 16,000	\$4.98	\$5.15	\$5.33	\$5.52	\$5.71	\$5.91
Tier 2	16,001 – 32,000	\$5.42	\$5.60	\$5.80	\$6.00	\$6.20	\$6.45
Tier 3	Over 32,000	\$6.27	\$6.50	\$6.70	\$6.95	\$7.20	\$7.45
Commercial							
Tier 1	0 – 90,000	\$4.98	\$5.15	\$5.33	\$5.52	\$5.71	\$5.91
Tier 2	90,001 – 180,000	\$5.42	\$5.60	\$5.80	\$6.00	\$6.20	\$6.45
Tier 3	Over 180,000	\$6.27	\$6.50	\$6.70	\$6.95	\$7.20	\$7.45

Exhibit 4.7.3 Projected Sewer Rates – Current Design

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 16,000	\$6.09	\$6.70	\$7.35	\$8.10	\$8.90	\$9.80
Tier 2	16,001 – 32,000	\$6.59	\$7.25	\$7.95	\$8.75	\$9.65	\$10.60
Tier 3	Over 32,000	\$7.64	\$8.40	\$9.20	\$10.15	\$11.15	\$12.30
Commercial							
Tier 1	0 – 90,000	\$6.09	\$6.70	\$7.35	\$8.10	\$8.90	\$9.80
Tier 2	90,001 – 180,000	\$6.59	\$7.25	\$7.95	\$8.75	\$9.65	\$10.60
Tier 3	Over 180,000	\$7.64	\$8.40	\$9.20	\$10.15	\$11.15	\$12.30

4.7.2 Alternative Rate Design

The alternative rate design maintains the design of the current rate design but calculates the water and sewer service charges so slightly changes the cumulative quarterly usage included within each tier so that a conservation pricing signal is better communicated to customers (which is typically the goal of an inclining block design). The water usage tiers for the alternative are as follows:

- Residential
 - Tier 1 – 0 to 9,000 gallons
 - Tier 2 – 9,001 to 18,000 gallons
 - Tier 3 – Over 18,000 gallons
- Commercial
 - Tier 1 – 0 to 120,000 gallons
 - Tier 2 – 120,001 to 360,000 gallons
 - Tier 3 – Over 360,000 gallons

Tier 1 includes the lowest 50% of cumulative quarterly usage. Tier 2 includes the next 25-30% of cumulative usage. This allows typical customers (most residential and small to mid-size non-residential customers) plenty of leeway to stay in the first two tiers as they capture 75% of all usage. Tier 3 includes the highest 25% of usage (representing large residential and commercial customers).

Below, Exhibit 4.7.4 and Exhibit 4.7.5 demonstrate the allocated usage patterns for residential and commercial accounts respectively. The red, dotted lines represent the current tiers used by the Town's rate design. The green lines show the tiers at the recommended rate design. The curved blue line represents the allocated amount of water that is used within each tier.

Exhibit 4.7.4 Allocated Residential Usage Patterns

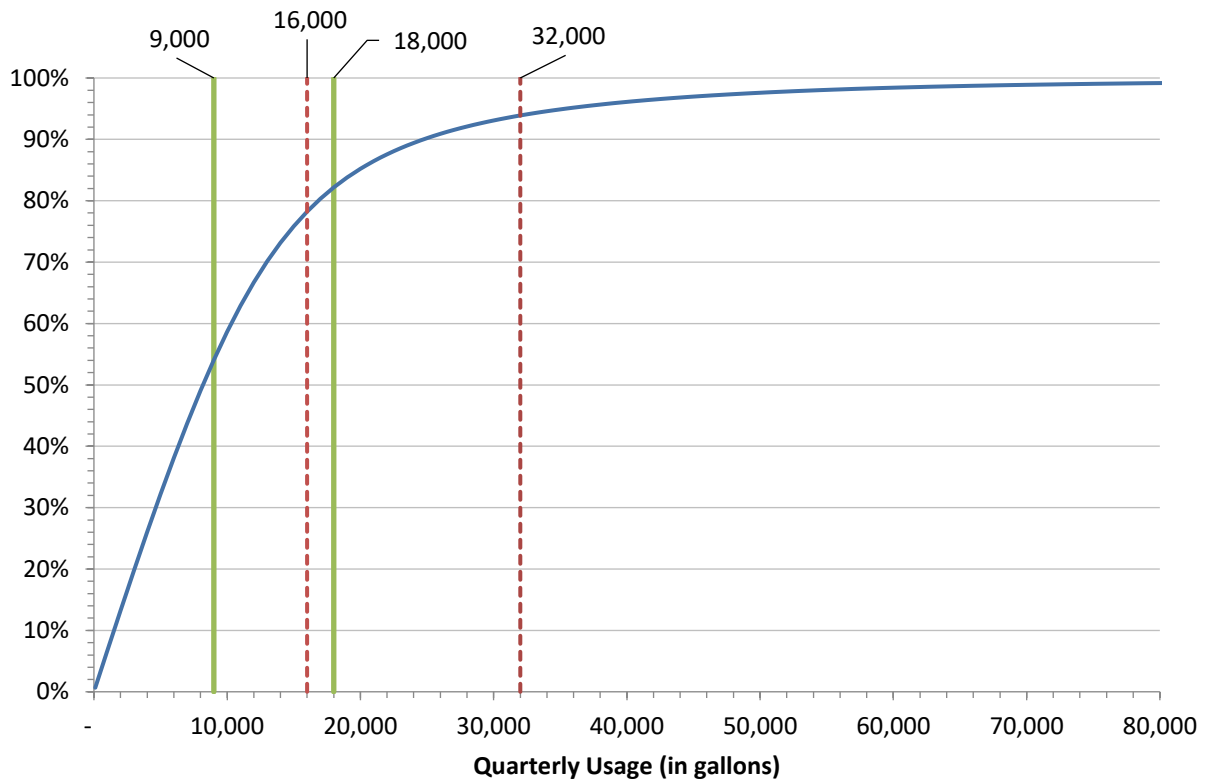


Exhibit 4.7.5 Allocated Commercial Usage Patterns

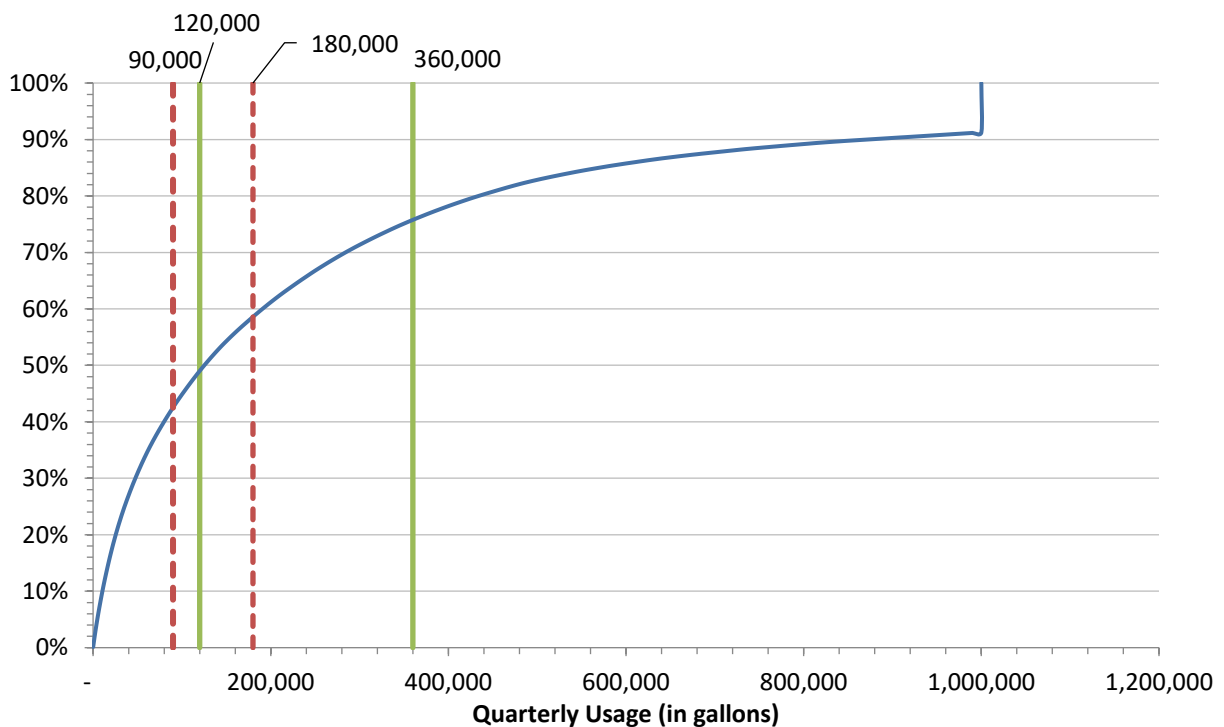


Exhibit 4.7.6 Projected Sewer Rates – Current Design

The projected service charges, water rates and sewer rates are shown in Exhibit 4.7.8, Exhibit 4.7.9 and Exhibit 4.7.9, respectively, for the first five years of the planning period.

Exhibit 4.7.7 Projected Quarterly Service Charges – Alternative Design

	Current FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Quarterly Service Charge (per equivalent)						
Residential	\$15.00	\$17.75	\$23.00	\$30.55	\$31.55	\$34.75
Commercial						
5/8"	\$15.75	\$25.50	\$33.05	\$43.90	\$45.35	\$49.95
1"	\$39.38	\$63.75	\$82.63	\$109.75	\$113.38	\$124.88
1 ½	\$78.75	\$127.50	\$165.25	\$219.50	\$226.75	\$249.75
2	\$126.00	\$204.00	\$264.40	\$351.20	\$362.80	\$399.60
3	\$252.00	\$408.00	\$528.80	\$702.40	\$725.60	\$799.20
4	\$393.75	\$637.50	\$826.25	\$1,097.50	\$1,133.75	\$1,248.75

Exhibit 4.7.8 Projected Quarterly Water Rates – Alternative Design

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	9,001 – 18,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 18,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45
Commercial							
Tier 1	0 – 120,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	120,001 – 360,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 360,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45

Exhibit 4.7.9 Projected Quarterly Sewer Rates – Alternative Design

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	9,001 – 18,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 18,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25
Commercial							
Tier 1	0 – 120,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	120,001 – 360,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 360,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25

4.8 Recommended Water and Sewer Rates

Based on discussion with Town staff about their rate setting goals and objectives and the information provided in Section 4.7, MFSG recommends that the Town adopt the alternative rate design for water and sewer for several reasons:

- The usage tiers more evenly allocate usage and mitigate the bill impact on smaller customers
- The usage tiers better communicate to customers the conservation pricing signal

Exhibit 4.8.2, Exhibit 4.8.3 and Exhibit 4.8.3 show the recommended rates for the first five years of the planning period for water and sewer, respectively.

Exhibit 4.8.1 Recommended Quarterly Service Charges

	Current FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Quarterly Service Charge (per equivalent)						
Residential	\$15.00	\$17.75	\$23.00	\$30.55	\$31.55	\$34.75
Commercial						
5/8"	\$15.75	\$25.50	\$33.05	\$43.90	\$45.35	\$49.95
1"	\$39.38	\$63.75	\$82.63	\$109.75	\$113.38	\$124.88
1 ½"	\$78.75	\$127.50	\$165.25	\$219.50	\$226.75	\$249.75
2"	\$126.00	\$204.00	\$264.40	\$351.20	\$362.80	\$399.60
3"	\$252.00	\$408.00	\$528.80	\$702.40	\$725.60	\$799.20
4"	\$393.75	\$637.50	\$826.25	\$1,097.50	\$1,133.75	\$1,248.75

Exhibit 4.8.2 Recommended Quarterly Water Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	9,001 – 18,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 18,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45
Commercial							
Tier 1	0 – 120,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	120,001 – 360,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 360,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45

Exhibit 4.8.3 Recommended Quarterly Sewer Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	9,001 – 18,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 18,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25
Commercial							
Tier 1	0 – 120,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	120,001 – 360,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 360,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25

5. CUSTOMER BILL IMPACTS

5.1 Sample Bills

Exhibit 5.1.1 provides a comparison of combined water and sewer sample quarterly bills with current and alternative/recommended rates for the typical customer of each meter size. The exhibit compares bills calculated with current rates (current bills), with projected rates under the current rate design and with projected rates under the alternative/recommended rate design. The exhibit also shows the number of customers by meter size.

Exhibit 5.1.1 Quarterly Sample Bills (Median Usage by Meter Size)

Meter Size (inches)	Number of Customers	Median Quarterly Usage (gallons)	Current Rates FY 2018	Current Rate Design FY 2019	Alternative Rate Design FY 2019
5/8"	4,664	12,000	\$151.36	\$167.96	\$169.44
1"	1,266	16,000	\$200.51	\$221.37	\$219.38
1 ½	58	33,000	\$395.34	\$432.43	\$419.13
2	70	128,000	\$1,487.68	\$1,604.34	\$1,540.69
3	16	235,000	\$2,926.46	\$3,231.65	\$2,906.53
4	4	921,000	\$12,526.68	\$14,392.47	\$13,176.47

Exhibit 5.1.2 provides a comparison of combined water and sewer sample quarterly bills with current and recommended rates for various 5/8-inch meter size customers. The exhibit compares bills calculated with current rates (current bills), with projected rates under the current rate design and with projected rates under the alternative/recommended rate design. The exhibit also shows the number of customers between percentiles. For example, for the small user, the number of customers shown is those who use above 5,000 gallons up to 8,000 gallons per quarter (for this reason, the number of customers who use more than 23,000 gallons is not shown).

Exhibit 5.1.2 Quarterly Sample Bills (5/8 Inch Meter Size)

Meter Size (inches)	Number of Customers	Median Quarterly Usage (gallons)	Current Rates FY 2018	Current Rate Design FY 2019	Alternative Rate Design FY 2019
Minimal User (10th)	674	5,000	\$70.35	\$81.00	\$76.50
Small User (25th)	1,495	8,000	\$103.56	\$116.55	\$111.75
Median (50th)	1,404	12,000	\$147.84	\$163.95	\$161.75
Large User (75th)	824	17,000	\$204.13	\$224.20	\$225.50
Excessive User (90th)	221	23,000	\$276.19	\$301.30	\$312.00

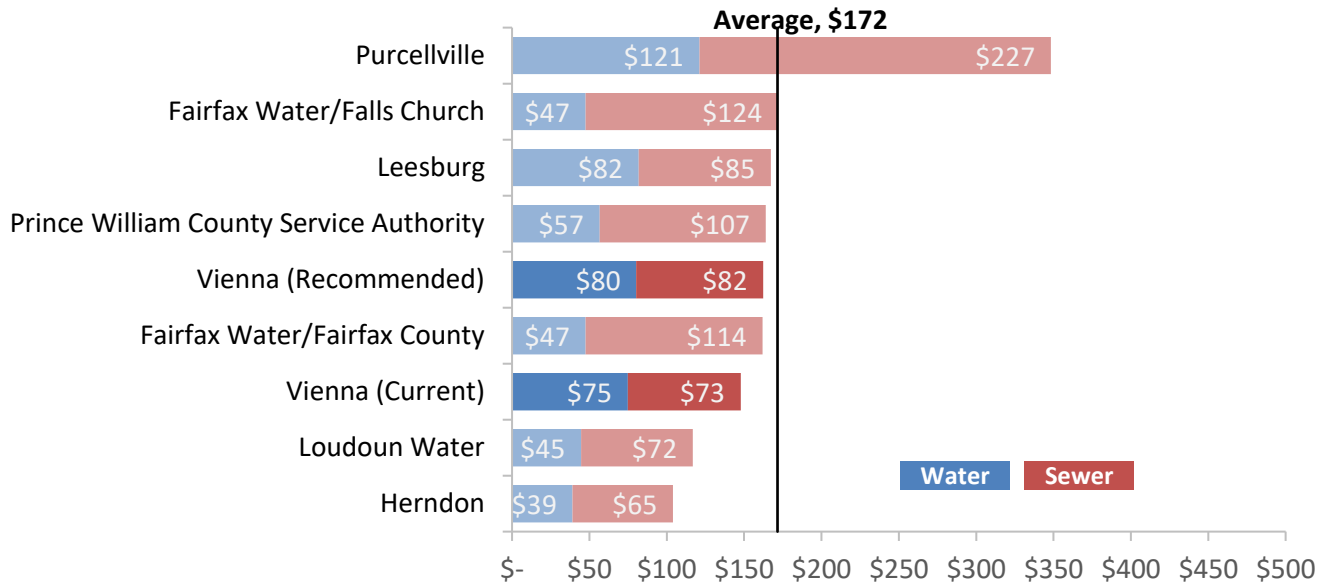
5.2 Quarterly Bill Comparison

It can be useful for the Town to compare sample bills of various utilities to a bill calculated using the Town's current and recommended rates. A comparison has been made between the Town and seven other communities in Virginia (which were selected after discussion with the Town).

Exhibit 5.2.1 provides a comparison of a total water and sewer quarterly bill for a customer with a 5/8-inch meter and consumption of 12,000 gallons (Vienna average). It is important to note that the sample bills for the other municipalities are calculated using current rates (FY 2018) and do not reflect potential increases in rates in FY 2019 as this information is not available at this time. As a result, the comparisons

show proposed FY 2019 sample bills for the Town compared with FY 2018 bills for the comparison municipalities.

Exhibit 5.2.1 Example Quarterly Water & Sewer Bill – Median Customer (5/8" Meter; 12,000 gallons)



6. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The following findings, conclusions and recommendations were developed during the course of the study.

6.1 Findings

The following findings were developed during the course of the study:

- Revenues collected at current rates are insufficient to cover the water and sewer revenue requirements for FY 2019 through FY 2023. As shown in the exhibits below, current water and sewer rates, if left in place, would not generate sufficient revenue to fund the revenue requirements.

Exhibit 6.1.1 Water Revenue Requirements and Revenue at Current Rates

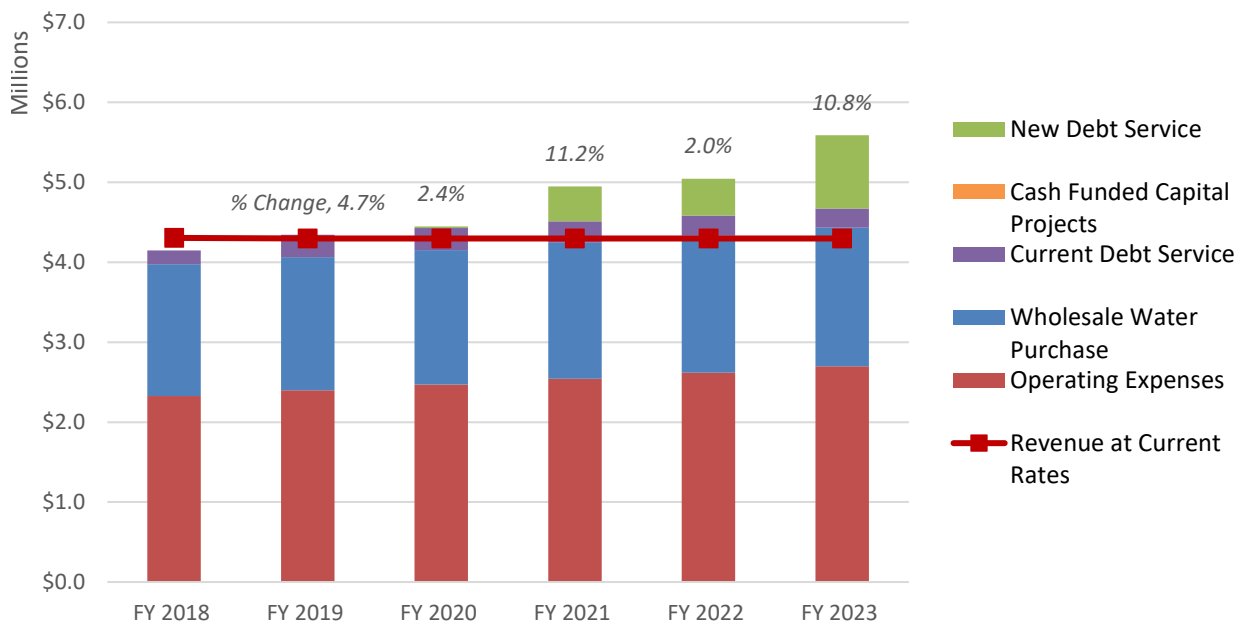


Exhibit 6.1.2 Sewer Revenue Requirements and Revenue at Current Rates

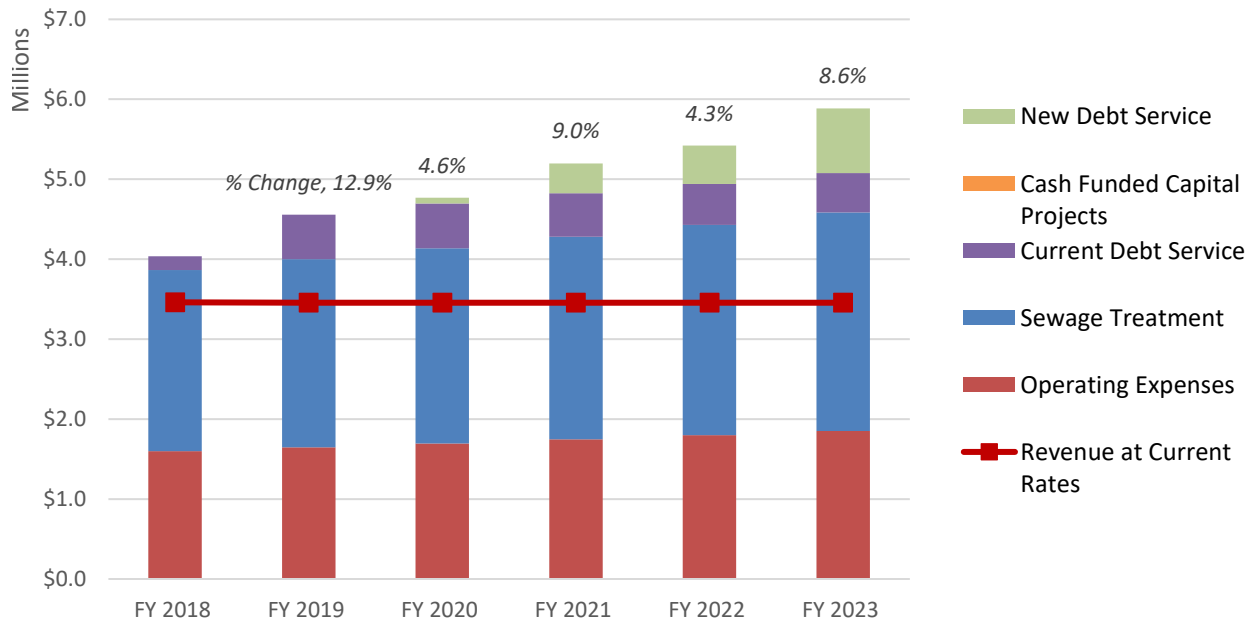


Exhibit 6.1.3 Water Cash Balances at Current Rates

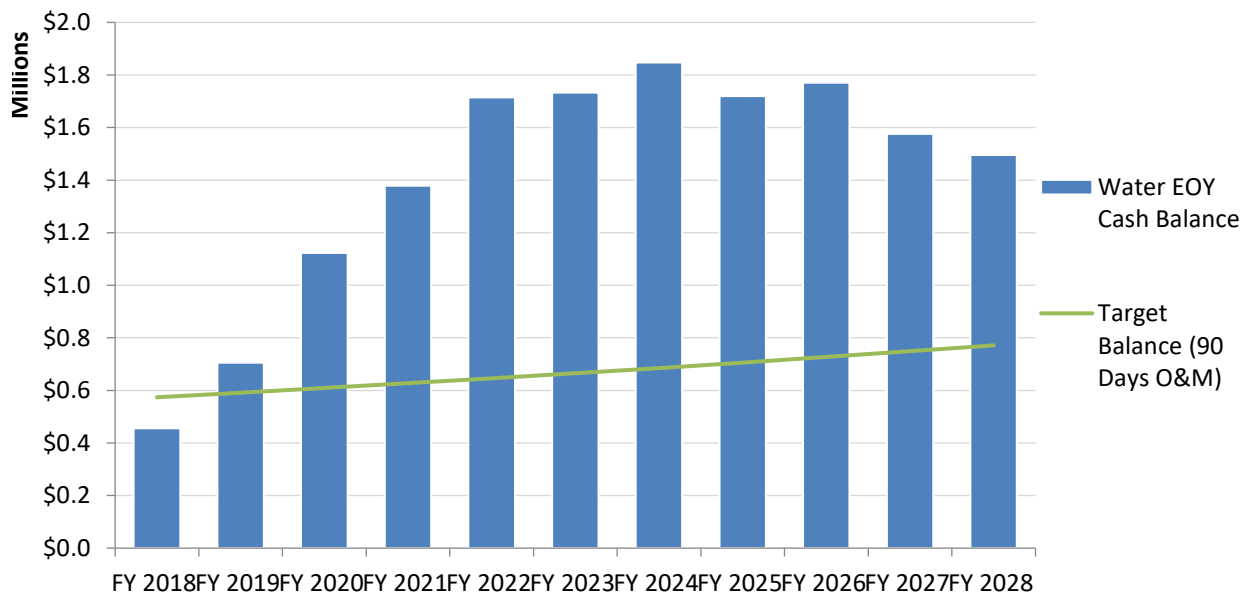


Exhibit 6.1.4 Sewer Cash Balances at Current Rates



6.2 Conclusions

Based on our findings, the following conclusions were drawn:

- The Town needs to increase water and sewer rates over the first five years of the planning period to keep revenues in line with expenses, to fund the required operating and capital costs identified and to meet the minimum cash balance requirement.
- The Town should implement required rate increases through a multi-year financial plan. This will allow the Town to smooth rate increases over the planning period (as shown by the revenue at proposed rates in the exhibit below) and mitigate customer rate shock while meeting its cash requirements.

Exhibit 6.2.1 Water Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates

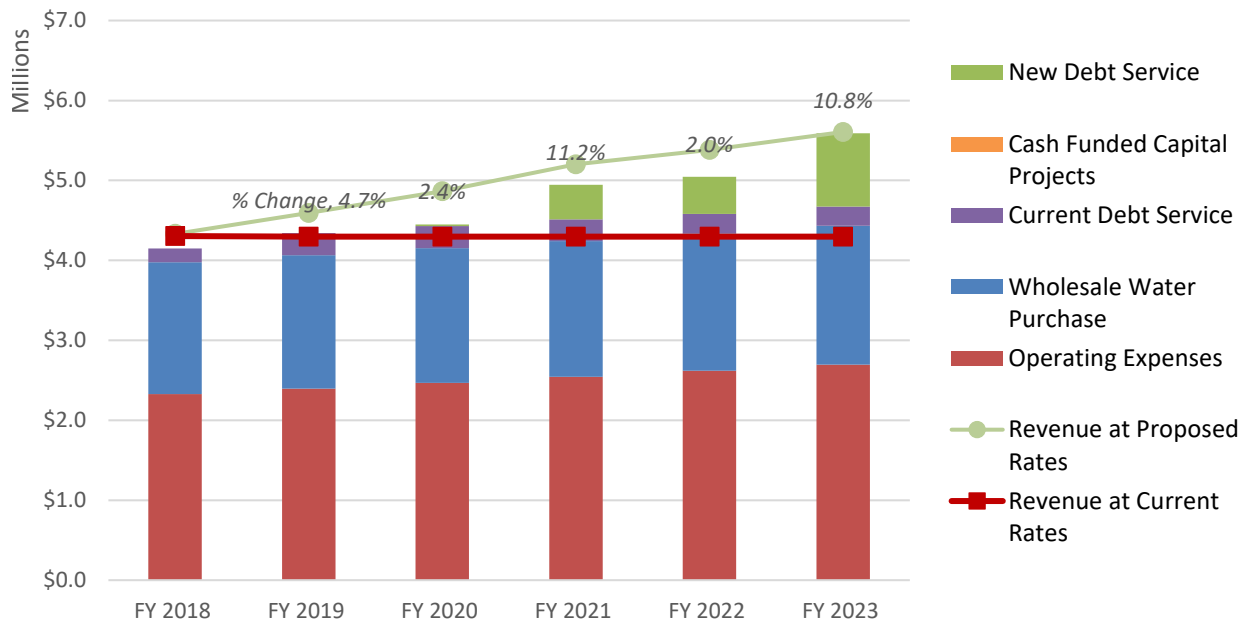


Exhibit 6.2.2 Sewer Revenue Requirements, Revenue at Current Rates and Revenue at Proposed Rates

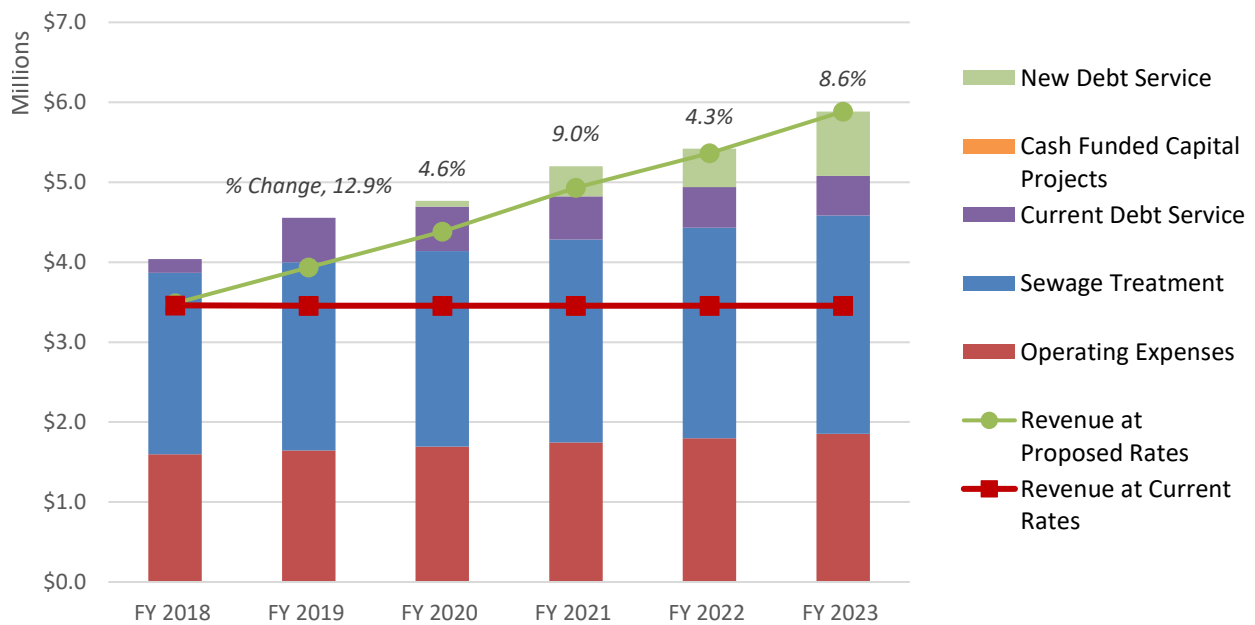


Exhibit 6.2.3 Water Cash Balances at Proposed Rates

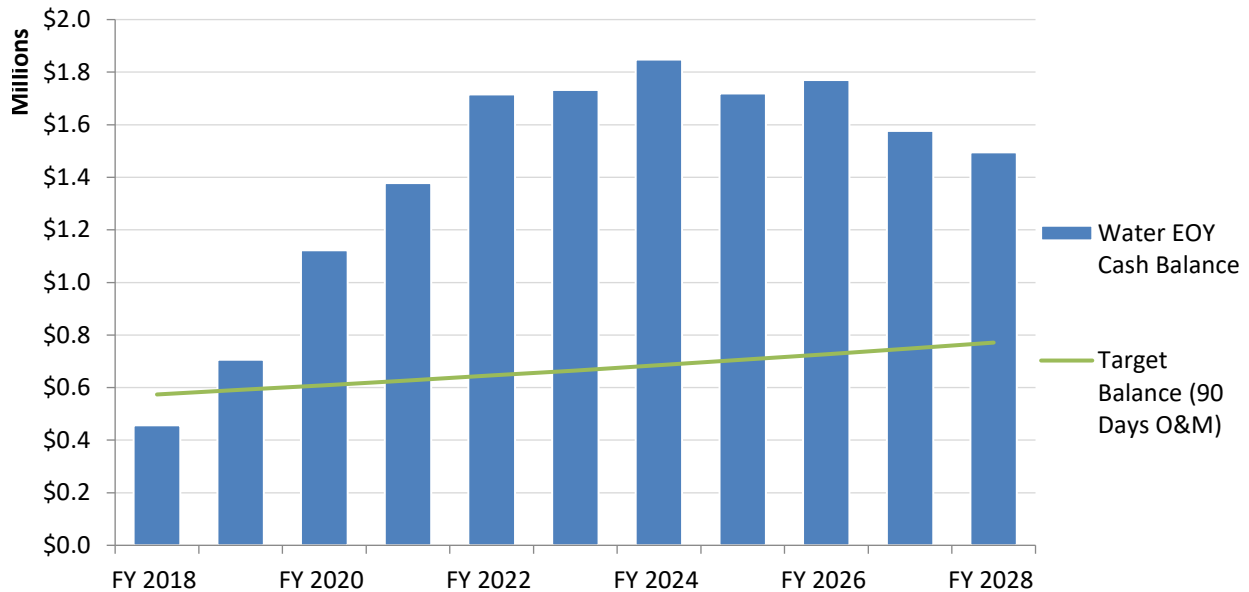
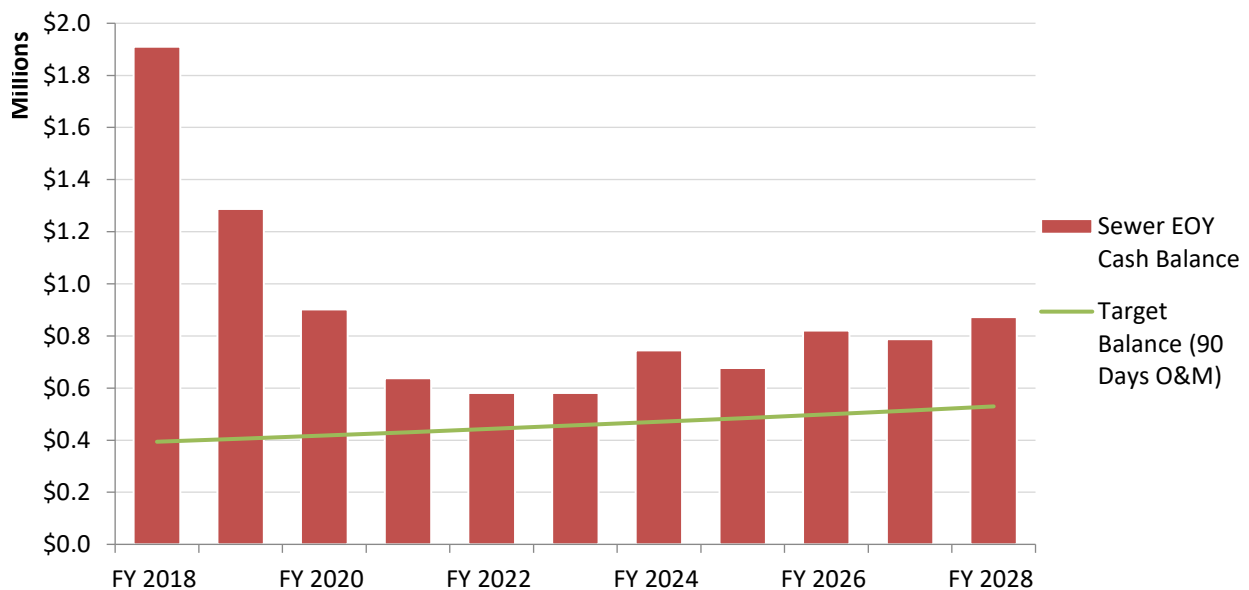


Exhibit 6.2.4 Sewer Cash Balances at Proposed Rates



6.3 Recommendations

Based on our conclusions, the following recommendations were made:

- Adopt the following recommended quarterly water and sewer rates for the next five years.

Exhibit 6.3.1 Recommended Quarterly Service Charges

	Current FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Quarterly Service Charge (per equivalent)						
Residential	\$15.00	\$17.75	\$23.00	\$30.55	\$31.55	\$34.75
Commercial						
5/8"	\$15.75	\$25.50	\$33.05	\$43.90	\$45.35	\$49.95
1"	\$39.38	\$63.75	\$82.63	\$109.75	\$113.38	\$124.88
1 ½	\$78.75	\$127.50	\$165.25	\$219.50	\$226.75	\$249.75
2	\$126.00	\$204.00	\$264.40	\$351.20	\$362.80	\$399.60
3	\$252.00	\$408.00	\$528.80	\$702.40	\$725.60	\$799.20
4	\$393.75	\$637.50	\$826.25	\$1,097.50	\$1,133.75	\$1,248.75

Exhibit 6.3.2 Recommended Quarterly Water Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	9,001 – 18,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 18,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45
Commercial							
Tier 1	0 – 120,000	\$4.98	\$5.10	\$5.30	\$5.50	\$5.70	\$5.90
Tier 2	120,001 – 360,000	\$5.42	\$5.55	\$5.75	\$6.00	\$6.20	\$6.40
Tier 3	Over 360,000	\$6.27	\$6.40	\$6.65	\$6.90	\$7.20	\$7.45

Exhibit 6.3.3 Recommended Quarterly Sewer Rates

	Tiers	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Usage Rates (per 1,000 gallons)							
Residential							
Tier 1	0 – 9,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	9,001 – 18,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 18,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25
Commercial							
Tier 1	0 – 120,000	\$6.09	\$6.65	\$7.30	\$8.05	\$8.85	\$9.75
Tier 2	120,001 – 360,000	\$6.59	\$7.20	\$7.90	\$8.70	\$9.60	\$10.55
Tier 3	Over 360,000	\$7.64	\$8.35	\$9.15	\$10.10	\$11.10	\$12.25

- Review rates and charges on an annual basis and revise as needed. Consider a full cost of service study for all rates and charges every five years. While it is recommended to adopt rates and charges for five years, so they do not have to be revisited and voted on every year by the Council, it is financially prudent to review expenses and revenues annually to ensure actual values are relatively in line with those projected.



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