West Sound Utility District

WATER AND SEWER RATE STUDY

FINAL REPORT

October 2022

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OCTOBER 2022 ADDENDUM TO FINAL REPORT

Background

Following the completion of the draft report of the rate study, the District notified FCS GROUP that it has experienced significant cost increases in the water utility due to inflation and higher than expected construction bids. Based on conversations with District staff, it is recommended that a higher rate increase is implemented for the water utility in 2023.

Rate Structure

To calculate the additional revenues needed to cover the higher costs, the 2023 inflation assumption was adjusted from 2.50 percent to 8.75 percent based on the June 2021 to June 2022 CPI-U West index. The result was an additional $95,000 to the 2023 cost forecast. As a percentage of current rate revenues, this represents 2.55 percent of rates, increasing the 2023 rate adjustment from 6.80% to 9.35%. Exhibit 1 provides the amended rate schedule that applies the additional 2.55 percent to all customer classes in 2023. The amended rate schedule also accounts for the cost-of-service results outlined in Section III of the report.

Exhibit 1: Amended Water Rate Schedule

	Current 2022	COS 2023	COS 2024	COS 2025	COS 2026	COS 2027
System-Wide Rate Increase		9.35%	6.80%	6.80%	5.00%	5.00%
Base Rate						
5/8", 3/4"	$19.26	$21.10	$22.58	$24.16	$25.85	$27.66
1"	$35.90	$39.33	$42.08	$45.03	$48.18	$51.55
1.5"	$64.11	$70.23	$75.15	$80.41	$86.04	$92.06
2"	$98.74	$108.17	$115.74	$123.84	$132.51	$141.79
3"	$194.88	$213.49	$228.43	$244.42	$261.53	$279.84
4"	$301.29	$330.06	$353.16	$377.88	$404.33	$432.63
6"	$588.49	$644.69	$689.82	$738.11	$789.78	$845.06
Volume Charge: per ccf of water usage						
Single-Family (BiMonthly)						
Block 1	$2.31	$2.51	$2.66	$2.74	$2.82	$2.90
Block 2	$2.67	$2.90	$3.07	$3.16	$3.25	$3.35
Block 3	$3.10	$3.37	$3.57	$3.68	$3.79	$3.90
Multi-Family (Monthly)						
Block 1	$3.26	$3.34	$3.34	$3.34	$3.34	$3.34
Block 2	$3.77	$3.87	$3.87	$3.87	$3.87	$3.87
Block 3	$4.36	$4.47	$4.47	$4.47	$4.47	$4.47
Commercial (Monthly)						
Block 1	$2.54	$2.88	$3.20	$3.55	$3.73	$3.92
Block 2	$2.95	$3.35	$3.72	$4.13	$4.34	$4.56
Block 3	$3.41	$3.87	$4.30	$4.77	$5.01	$5.26
Agricultural/Irrigation (Monthly)						
Block 1	$3.26	$3.88	$4.52	$5.27	$6.14	$7.15
Block 2	$3.77	$4.49	$5.23	$6.09	$7.09	$8.26
Block 3	$4.36	$5.19	$6.05	$7.05	$8.21	$9.56

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October 26, 2022

Randy Screws, General Manager
West Sound Utility District
2924 SE Lund Ave
Port Orchard, WA 98366

Subject: Water and Sewer Rate Study

Dear Randy:

FCS GROUP is pleased to submit this final report of the Water and Sewer Rate Study. The report summarizes the methodology, findings, and recommendations for each of the core elements of the study.

The table below outlines the forecasted annual rate revenue adjustments for the water and sewer utilities from 2023 to 2027. Full rate schedules can be found for the water utility in **Exhibit 3.9** and for the sewer utility in **Exhibit 4.9**. Annual rate adjustments are assumed to be implemented January 1st each year.

Utility	2023	2024	2025	2026	2027
Water	6.8%	6.8%	6.8%	5.0%	5.0%
Sewer	3.5%	4.0%	4.0%	4.0%	4.0%

It has been a pleasure working with you and other District staff on this effort. Please let me know if you have any questions or need additional information on this report. I can be reached at (425) 615 – 6056.

Sincerely,

Angie Sanchez Virnoche
Project Principal

Matt Hobson
Project Manager

Chase Bozett
Senior Analyst

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Section I. EXECUTIVE SUMMARY

I.A. INTRODUCTION

In 2020, West Sound Utility District ("District") contracted with FCS GROUP to conduct a Water and Sewer Rate Study. The study reviewed each utility's financial needs over the 2022 through 2027 planning period. The overall objective of the study was to establish a financial plan for each utility (revenue requirements analysis) that will inform future financial decisions and their impacts, promote long-term sustainability, maintain equitable rates by customer class (cost-of-service analysis), and achieve the District's revenue policy objectives (rate design).

The methods used to establish user rates are based on principles that are generally accepted and widely followed throughout the industry. These principles are designed to produce rates that equitably recover costs from each customer or class of customers based upon the unique demands each class places upon the respective utility. This is accomplished by setting the appropriate level of revenue to be collected from rate payers and establishing a rate structure to equitably collect those revenues.

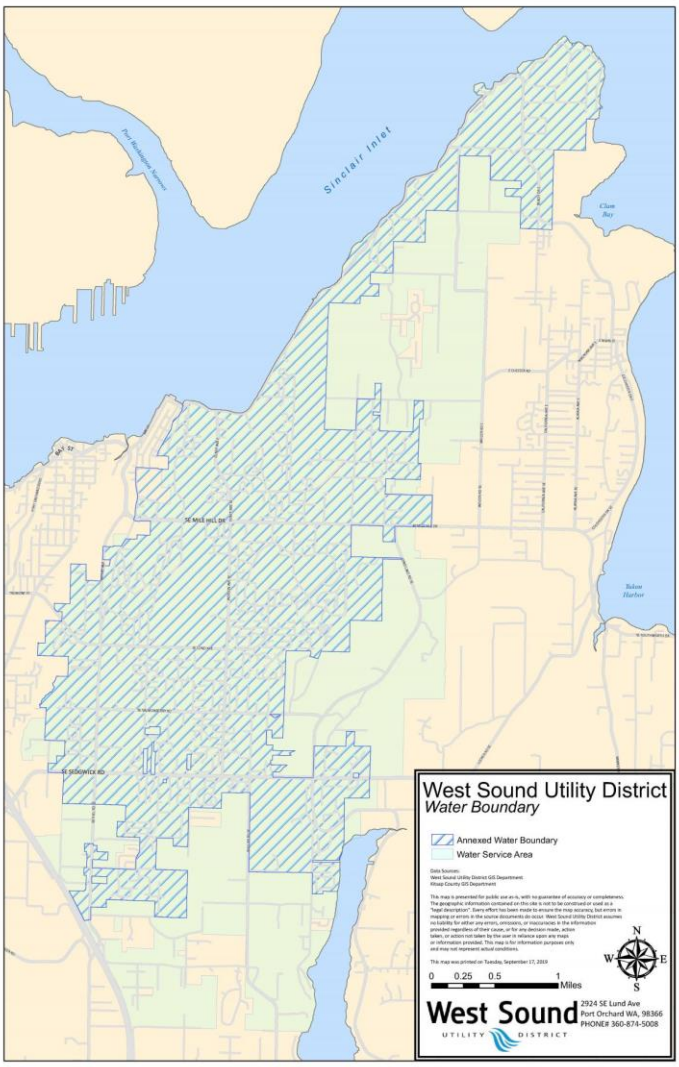
The key analyses completed as part of the rate study include:

- **Revenue Requirement.** This analysis identifies the total revenue requirement to fully fund each utility on a standalone basis, considering operating and maintenance expenditures, capital funding needs, debt requirements and fiscal policy objectives.
- **Cost-of-Service.** This analysis equitably distributes costs to customer classes based on their proportional demand and use of the water and sewer systems.
- **Rate Design.** This analysis includes the development of rate structures that generate sufficient revenue to meet each system's revenue requirement forecast and that address the District's pricing objectives.

I.B. WATER UTILITY

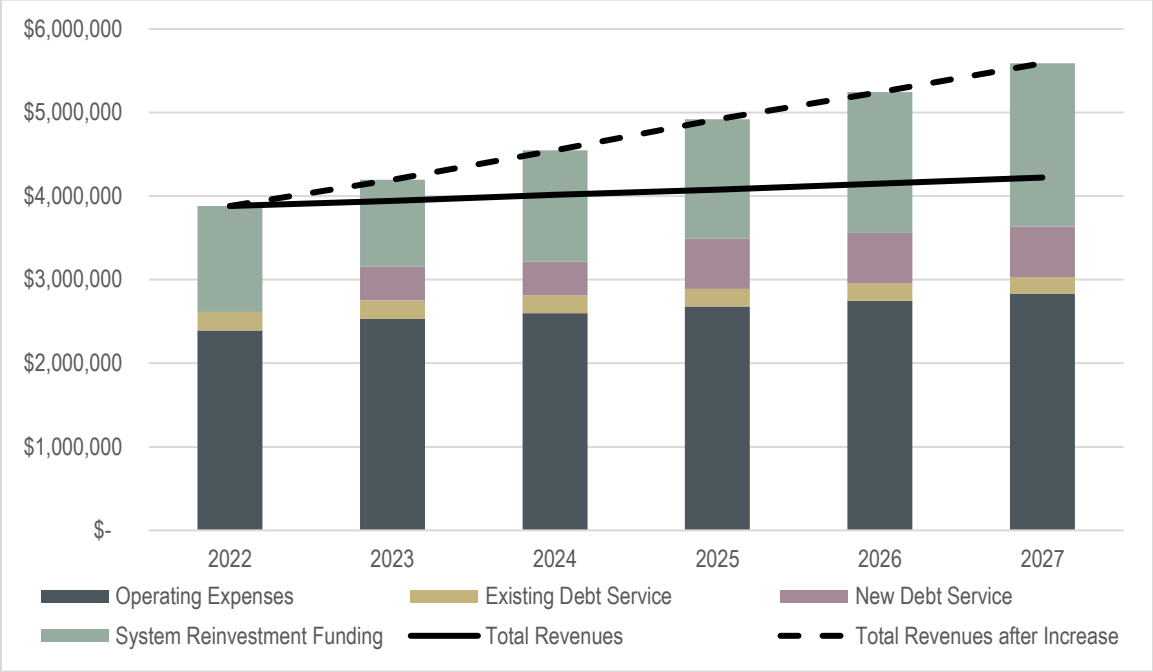
The District owns and operates its water system, which is responsible for providing adequate and uninterrupted water supply for clean, safe, potable water for commercial consumption and fire protection. The water system provides service to approximately 7,100 connections in the service area outlined in **Exhibit 1.1**.

Exhibit 1.1: Water Service Area



A revenue requirement analysis forms the basis for a long-range operating and capital financial plan and multi-year rate management strategy. The analysis is developed by completing an operating forecast that identifies future annual operating costs and a capital funding plan that defines a strategy for funding the capital improvement needs of the District. The operating forecast was developed for the 2022 through 2027 planning period. During the study, a 2022 rate increase was adopted by the Board. This report will focus on the remainder of the forecast from 2023 to 2027. **Exhibit 1.2** provides a summary of the water system revenue requirement findings.

Exhibit 1.2: Water Utility Revenue Requirement Summary



Summary of water utility revenue requirement:

- With the adoption of the Board approved 2022 rate increases, current rate levels are sufficient to meet existing annual financial obligations.
- During the 2023 - 2027 rate setting period, existing revenues are sufficient to cover O&M expenses and both existing and new forecasted debt service.
- Of the approximately $20.55 million in identified capital needs, 36.5 percent ($7.5 million) of the forecasted capital plan is financed by debt proceeds.
- To meet projected financial obligations for the water utility and fund capital projects, rate increases are proposed at 6.8 percent annually in 2023 – 2025 followed by 5.0 percent annually in 2026 and 2027.
- Debt service coverage on bonded debt remains above 3.5X in all years of the forecast while debt service coverage on all debt remains above 3.3X during the forecast.

The cost of service for the water utility determines equitable cost recovery in proportion to the demands each customer class places on the system based on functions of service and known or assumed cost causation. The functions of service reviewed for the water utility include:

- **Customer Costs**: associated with establishing, maintaining, and serving water customers.
- **Meters & Services Costs**: associated with the installation, maintenance, and repair of meters and services.
- **Base Costs:** related to the average level of service provided to meet demand on a year-round basis and are essentially correlated with year-round water consumption.
- **Peak Costs:** related to peak demand service typically associated with the ability of the system to provide capacity to customers with higher-than-average volume, which usually occurs during the summer months.

- **Fire Protection Costs:** associated with the ability of the system to provide adequate capacity and water flow corresponding to minimum fire safety standards required to serve its customer base.
- **Pumping:** associated with costs to provide operations and maintenance to District-owned pumps to supply water service to customers.

Exhibit 1.3 provides a summary of the water utility's revenue distribution based on the cost-of-service analysis (COSA) conducted as part of this study.

Exhibit 1.3: Comparison of Water Current Revenue Distribution to Cost of Service Distribution

Class	Existing 2023 Revenue	COSA 2023 Revenue	Difference $	Difference %
Residential	$ 2,468,685	$ 2,713,010	$ 244,325	9.90%
Multi-Family	730,881	472,476	(258,405)	-35.36%
Commercial	360,250	438,808	78,559	21.81%
Private Fire Service	-	91,659	91,659	
Agricultural	159,925	256,730	96,805	60.53%
Total	**3,719,740**	**3,972,682**	**252,942**	**6.80%**

Because costs fluctuate each year, the needed increase by class can also fluctuate and interclass rate changes are not suggested unless the class's revenue difference is outside the plus-or-minus 5.0 percent threshold. The COSA results indicate that revenues for the residential class are within the cost of service. Currently, multi-family rate revenue exceeds the cost to provide service and, as a result, subsidizes the cost of other customer classes. At this time, the District does not charge customers with public hydrants or private fire lines for service. FCS Group provided a technical memorandum to the District documenting the cost of these services and fee recovery options.

To address the recommended shifts between classes based on the cost-of-service results, updated rates were forecasted through 2027. For consistency between classes, the fixed charges increased at the same rate for all classes while the variable charges were set individually to phase-in the revenue collected from customer classes towards the cost-of-service targets. **Exhibit 1.4** shows the currently adopted 2022 rates as well as forecasted rates through the rest of the study period to increase cost equity between the customer classes.

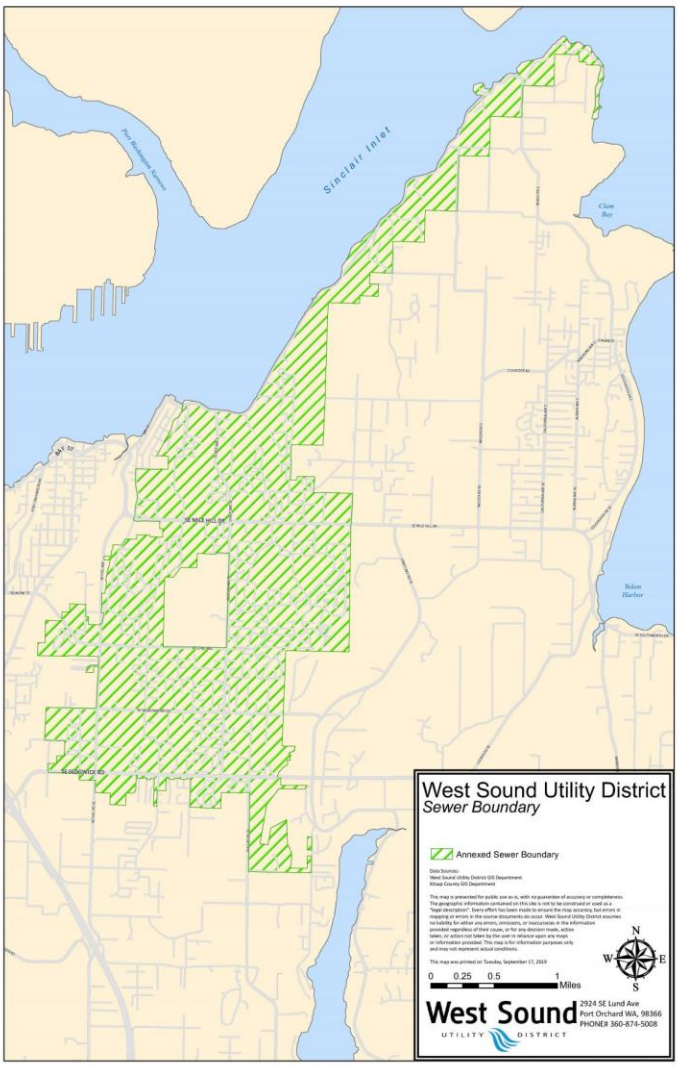
Exhibit 1.4: Existing and Proposed Monthly Water Rates (2022 – 2027)

	Current 2022	COS 2023	COS 2024	COS 2025	COS 2026	COS 2027
System-Wide Rate Increase		6.8%	6.8%	6.8%	5.0%	5.0%
Base Rate						
5/8", 3/4"	$19.26	$20.61	$22.05	$23.59	$25.24	$27.01
1"	$35.90	$38.41	$41.10	$43.98	$47.06	$50.35
1.5"	$64.11	$68.60	$73.40	$78.54	$84.04	$89.92
2"	$98.74	$105.65	$113.05	$120.96	$129.43	$138.49
3"	$194.88	$208.52	$223.12	$238.74	$255.45	$273.33
4"	$301.29	$322.38	$344.95	$369.10	$394.94	$422.59
6"	$588.49	$629.68	$673.76	$720.92	$771.38	$825.38
Volume Charge: per ccf of water usage						
Single-Family (BiMonthly)						
Block 1	$2.31	$2.45	$2.60	$2.68	$2.76	$2.84
Block 2	$2.67	$2.83	$3.00	$3.09	$3.18	$3.28
Block 3	$3.10	$3.29	$3.49	$3.59	$3.70	$3.81
Multi-Family (Monthly)						
Block 1	$3.26	$3.26	$3.26	$3.26	$3.26	$3.26
Block 2	$3.77	$3.77	$3.77	$3.77	$3.77	$3.77
Block 3	$4.36	$4.36	$4.36	$4.36	$4.36	$4.36
Commercial (Monthly)						
Block 1	$2.54	$2.82	$3.13	$3.47	$3.64	$3.82
Block 2	$2.95	$3.27	$3.63	$4.03	$4.23	$4.44
Block 3	$3.41	$3.79	$4.21	$4.67	$4.90	$5.15
Agricultural/Irrigation (Monthly)						
Block 1	$3.26	$3.80	$4.43	$5.16	$6.01	$7.00
Block 2	$3.77	$4.39	$5.11	$5.95	$6.93	$8.07
Block 3	$4.36	$5.08	$5.92	$6.90	$8.04	$9.37

I.C. SEWER UTILITY

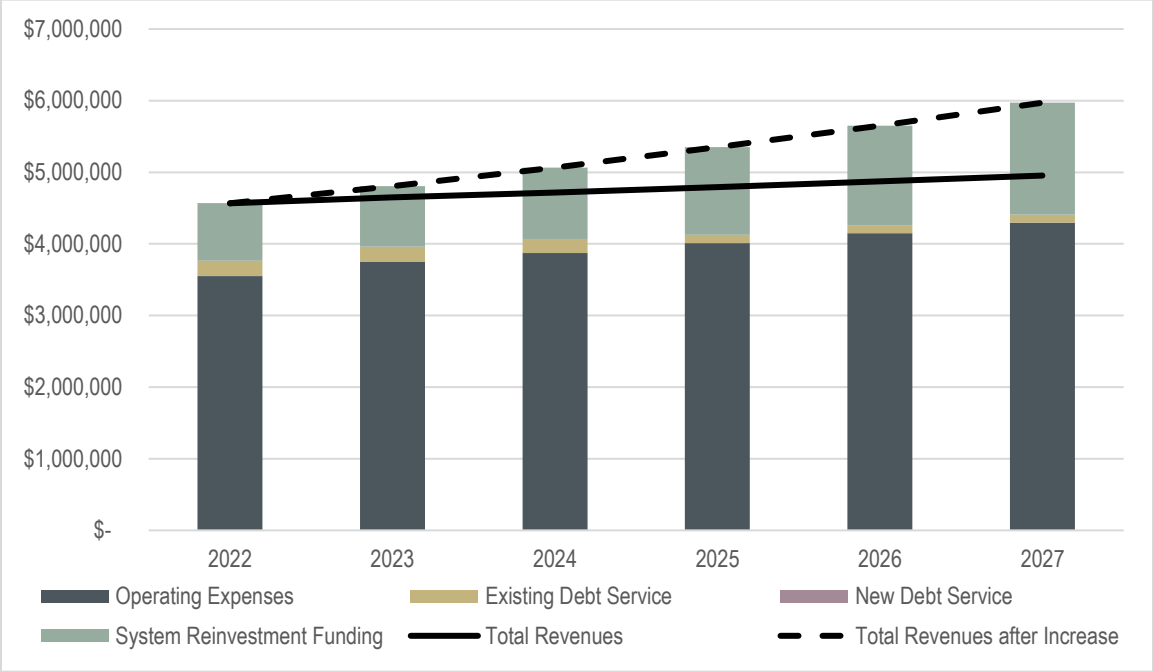
The District owns a sewer collection system that provides uninterrupted sanitary sewer conveyance and mitigates overflows into streams, lakes, and private properties. As a separate entity, the District jointly owns the South Kitsap Water Reclamation Facility (SKWRF), a wastewater treatment plant that provides treatment for both the District and the City of Port Orchard. This analysis will only evaluate the District's collection system and proportional share of SKWRF treatment costs. The sewer service area provides services to approximately 4,000 connections in the area outlined in **Exhibit 1.5**.

Exhibit 1.5: Sewer Service Area



Similar to the water utility, a revenue requirement was completed for the sewer utility and forms the basis for the long-range financial plan and multi-year financial management strategy. The operating forecast was developed for the 2023 through 2027 time period. **Exhibit 1.6** provides a summary of the sewer system revenue requirement findings.

Exhibit 1.6: Sewer Utility Revenue Requirement Summary



Summary of sewer revenue requirement:

- With the adoption of the Board approved 2022 rate increases, current rate levels are sufficient to meet existing annual financial obligations.
- During the 2023 - 2027 rate setting period, existing revenues are sufficient to cover O&M expenses and existing debt service.
- The capital improvement plan over this time totals $10.2 million and would be funded through rates. No new debt is forecasted for the sewer system.
- To meet projected financial obligations for the sewer utility and fund capital projects, rate increases are proposed at 3.5 percent in 2023 followed by annually 4.0 percent through 2027.
- Debt service coverage on bonded debt remains extremely strong ranging from 34.7X to 52.4X during the forecast. Debt service coverage on all debt also remains strong ranging from 6.6X to 18.5X during the period.

The cost-of-service for the sewer utility determines equitable cost recovery in proportion to the demands each customer class places on the system based on functions of service and known or assumed cost causation. Because the wastewater treatment plant is treated as a separate entity, the collection system only has two functions. The functions of service reviewed for the sewer utility include:

- **Customer Costs**: associated with providing service to customers.
- **Sewer Flow Costs**: related to actual and estimated sewer volume processed within the system in a year.

Exhibit 1.7 provides a summary of the sewer utility's revenue distribution based on the cost-of-service analysis (COSA) conducted as part of this study.

Exhibit 1.7: Comparison of Sewer Current Revenue Distribution to Cost of Service Distribution

Classs	Existing 2023 Revenue	COSA 2023 Revenue	Difference $	Difference %
Residential	$ 2,533,178	$ 2,695,959	$ 162,782	6.4%
Multi-Family Residential	1,209,635	1,253,426	43,791	3.6%
Non-Residential	758,797	709,781	(49,016)	-6.5%
Total	**$ 4,501,609**	**$ 4,659,166**	**$ 157,556**	**3.5%**

It should be noted, given the need for assumptions to complete a cost-of-service analysis, the variance for class-specific results is typically considered to be plus-or-minus 5.0 percent, relative to the system average. A cost-of-service study is a snapshot in time and because costs fluctuate each year, the needed increase by class can also fluctuate and interclass rate changes are not suggested unless the class's revenue difference is consistently outside of the 5.0 percent threshold.

The cost-of-service results indicate that for the most part, each customer class is within the 5.0 percent threshold. Currently, revenues from the non-residential class are slightly subsidizing the residential class. To address the relatively minor shifts between classes based on the cost-of-service results, updated rates were forecasted through 2027. **Exhibit 1.9** shows the existing 2022 and proposed 2023 – 2027 rate schedule.

Exhibit 1.8: Existing and Proposed Monthly Sewer Rate Schedule (2022 – 2027)

	Current 2022	COS 2023	COS 2024	COS 2025	COS 2026	COS 2027
Fixed Charge by Class						
Residential (BiMonthly)	$64.92	$67.68	$70.89	$74.26	$77.79	$81.49
Multifamily up to Tri-Plex (BiMonthly)	$64.92	$67.52	$70.56	$73.74	$77.06	$80.72
Non-Residential (Monthly)	$49.81	$49.81	$50.31	$50.81	$51.32	$51.32
Public Parks - Veterans Memorial Park (Monthly)	$64.92	$64.92	$65.57	$66.23	$66.89	$66.89
Public Parks - South Kitsap Community Park (Monthly)	$133.43	$133.43	$134.76	$136.11	$137.47	$137.47
Golf Course - Village Greens (Monthly)	$133.43	$133.43	$134.76	$136.11	$137.47	$137.47
Volume Charge: per ccf of water usage (Non-Residential Only)	$8.23	$8.23	$8.31	$8.39	$8.47	$8.47

I.D. SUMMARY

The rate studies completed for the water and sewer utilities indicate a need for future rate increases to address forecasted increases in operating costs, to fund upcoming capital expenses and to satisfy all financial obligations of the utilities.

We recommend that the District revisit the results of the rate study annually and view the study findings as a living document by continuously comparing study outcomes to actual revenues and expenses. Any significant or unexpected changes may require adjustments to the rate strategy proposed.

Section II. Rate Setting Principles and Methodology

II.A. Overview

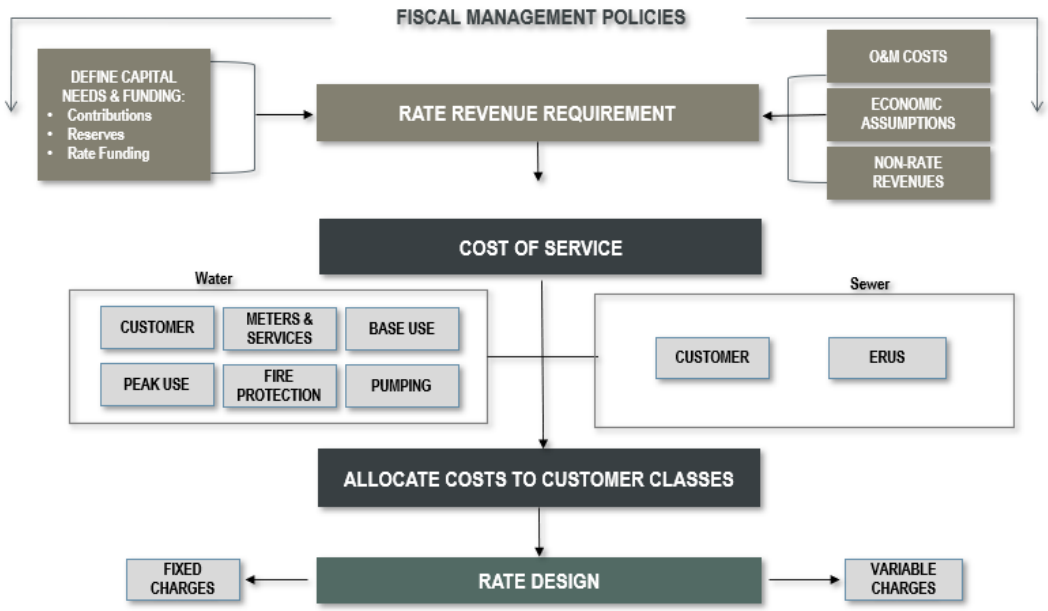
The methods used to establish user rates are based on principles that are generally accepted and widely followed throughout the industry. These principles are designed to produce rates that equitably recover costs from each class of customer by setting the appropriate level of revenue to be collected from ratepayers and establishing a rate structure to collect those revenues.

The three key analyses completed as part of the rate study process are listed below:

- **Revenue Requirement:** This analysis identifies the total revenue requirement to fully fund each utility on a standalone basis, considering operating and maintenance expenditures, capital funding needs, debt requirements and fiscal policy objectives.
- **Cost of Service:** This analysis equitably distributes costs to customer classes based on their proportional demand and use of the system.
- **Rate Design:** This analysis includes the development of rate structures that generate sufficient revenue to meet each system's revenue requirement forecast and to address the District's pricing objectives.

Exhibit 2.1 illustrates the entire rate study process.

Exhibit 2.1 Overview of the Rate Study Process



II.B. FISCAL POLICIES

The basic framework for evaluating utility revenue needs consists of a set of fiscal policies. These policies, which can address a variety of topics including cash management, capital funding strategy, financial performance, and rate equity, are intended to promote long-term financial viability for the District's utilities. Topics addressed in the fiscal policy resolution include reserves, system reinvestment funding, debt management, revenue sufficiency, and rate equity.

II.B.1. Utility Reserves

Reserves are a key component of any utility financial strategy as they provide the flexibility to manage variations in costs and revenues that could otherwise have an adverse impact on ratepayers. The financial plans included the following reserve categories:

- **Operating Reserve:** Operating reserves are designed to provide a liquidity cushion to ensure that adequate cash will be maintained to deal with significant variations in cash balance such as seasonal fluctuations in billings and receipts, unanticipated cash expenses, or lower than expected revenue collections. Industry practice is to maintain a minimum balance in the operating reserve equal to between 60 to 120 days of operations and maintenance (O&M) expenses for a water utility; 30 to 90 days for a sewer utility depending on the utility's rate structure. These, of course, are guidelines and actual levels should be established based upon a jurisdiction's unique needs and tolerance for risk. It is assumed that any operating funds above the minimum reserve target are available for capital purposes and will be transferred to the capital reserve. Based on the District's current policy, the minimum targets of 90 days for water and 55 days for sewer were maintained.
- **Capital Reserve:** A capital contingency reserve is an amount of cash set aside in case of an emergency should a piece of equipment or a portion of the utility's infrastructure fail unexpectedly. The reserve also could be used for other unanticipated capital needs including capital project cost overruns. Industry practices for this reserve range from maintaining a balance equal to one to two percent of fixed assets, an amount equal to a five-year rolling average of Capital Improvement Program (CIP) costs, or an amount determined sufficient to fund equipment failure (other than catastrophic failure). The final target level should balance industry practices with the risk level of the District. Based on the District's current policy, the minimum target was set based on the replacement costs of the largest non-transmission asset for water and largest non-collection asset for sewer.

  Reserves should fluctuate above and below targets, and such experience does not reflect on the quality of budgeting or management. In fact, if a reserve remains static for extended periods of time without use, this may indicate that it is not set appropriately, or is unnecessary. Utility reserves are intended to absorb fluctuation in revenues or expenditures without abrupt rate impacts. As reserve levels vary, a policy structure can define the mechanisms for regulating those levels and returning them to intended targets.
- **Debt Reserve:** Bond covenants often establish reserve requirements as a means of protecting against the risk of nonpayment and are typically specified as a part of these covenants. A common reserve requirement is one year's debt service payment and a debt service coverage ratio of 1.25 to 2.00 times. The balance held in reserve for a particular debt instrument may be used to make the final payment on that debt instrument. The District must continue to fully fund such reserves as required by bond covenant or loan agreement. Since the debt reserve provides a static reserve against inability to pay, it is unnecessary to maintain operating reserves against debt

repayment. For the purpose of this study, the recommended policy for the utilities is to maintain a debt service coverage ratio of at least 1.75X per individual utility and at least 2.00X on a combined utility basis.

II.B.2. System Reinvestment Funding

System reinvestment funding promotes long-term system integrity. There are many metrics that a utility can choose when establishing a policy including but not limited to: a set dollar amount, equal to a percentage of deprecation expense, and a percentage of replacement cost.

For this study, the benchmark chosen is the annual replacement cost depreciation for each utility (estimated at $1.6 million and $1.4 million annually for the water and sewer utilities respectively). Due to the financial impact to rates by implementing this policy, the policy is phased in over the study period and each utility reaches the full replacement cost level of system reinvestment funding by 2026.

II.B.3. Debt Management

Debt issuance is a valuable tool for the District to use to finance certain costs as it allows the District to spread a relatively large cost over multiple years. Debt repayment structures can be quite flexible (e.g., deferred principal repayment), allowing the District to "shape" its cost structure and facilitate a stable progression of moderate rate adjustments.

When developing its capital funding strategy, the District must weigh the pros and cons of issuing debt to pay for a project. On one hand, debt issuance comes with interest and issuance costs that increase the overall cost borne by the utilities; on the other hand, it may mitigate rate impacts and enhance "generational equity," given that the District would generally issue debt to fund infrastructure that is oversized to serve future growth. Too much debt issuance may limit the District's ability to manage its rates, as the debt service payments and related requirements (such as revenue bond coverage) are "rigid" costs that generally cannot be deferred or scaled back; it may also impact the District's credit rating and ability to secure low-cost debt. Conversely, excessive aversion to issuing debt can create problems, as it shifts the burden of funding capital investment to existing customers and may require maintaining higher reserve levels to manage cash flow needs related to capital investment. It is prudent to consider policies related to debt management as part of a broader utility financial policy structure.

II.C. REVENUE REQUIREMENT

A revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy for each system. It also enables the District to set utility rate structures which fully recover the total cost of operating each system: capital improvement and replacement, operations, maintenance, general administration, fiscal policy attainment, cash reserve management, and debt repayment. Linking rate levels to a financial plan such as this helps to enable not only sound financial performance for the District's utility funds, but also establishes a clear and reasonable relationship between the costs imposed on utility customers and the costs incurred to provide the service.

A revenue requirement analysis establishes the total annual financial obligations of the utility by bringing together the following core elements:

- **Fiscal Policy Analysis:** Identifies formal and informal fiscal policies of the District to ensure that current policies are maintained, including reserve levels, rate funded capital and debt service coverage.
- **Capital Funding Plan:** Defines a strategy for funding the District's capital improvement program, including an analysis of available resources from rate revenues, debt financing, and any special resources that may be readily available (e.g., grants, outside contributions, etc.).
- **Operating Forecast:** Identifies future annual non-capital costs associated with the operation, maintenance, and administration of the system.
- **Sufficiency Testing:** Evaluates the sufficiency of revenues in meeting all financial obligations, including any coverage requirements associated with long-term debt.
- **Strategy Development:** Designs a forward-looking strategy for adjusting rates to fully fund all financial obligations on a periodic or annual basis over the projection period.

II.D. COST OF SERVICE

The purpose of a cost-of-service analysis is to provide a rational basis for distributing the full costs of each utility service to each class of customers in proportion to the demands they place on the system. Detailed cost allocations, along with appropriate customer class designations, help to sharpen the degree of equity that can be achieved in the resulting rate structure design. The key analytical steps of the cost-of-service analysis are as follows:

- **Functional Cost Allocation:** Apportions the annual revenue requirement to the major functions of the system:
  - » Water: customer (general customer costs), meters & services (reading and servicing meters), base (average use), peak (highest use), fire protection (fire specific costs), and pumping (pumping specific costs).
  - » Sewer: customer (general customer costs) and flow (ERUs of flow through the collection system).
- **Customer Class Designation:** Identifies the customer classes that will be evaluated as part of the study. Existing as well as new or revised customer classes or class definitions may be considered. It is appropriate to group customers that exhibit similar usage characteristics and service requirements.
- **Cost Allocation:** Allocates the costs from the functional cost allocation to different customer classes based on their unique demands for each service as defined by system planning documents, industry standards, and recorded user history (from billing data). The results identify shifts in cost recovery by customer class from that experienced under the existing rate structure.

II.E. RATE DESIGN

The principal consideration of rate design is for the rate structure to generate sufficient revenues for the system which are reasonably commensurate with the cost of providing service. The pricing structure is largely dictated by the objectives of the system. Most rate designs consist of fixed and variable charges. Fixed charges typically attempt to cover costs of the system that do not vary while variable charges will fluctuate with a change in user demand.

Other considerations include understandability by the rate payer, administrative ease, revenue stability, interclass and intraclass customer cost equity, conservation, and affordability.

Section III. WATER UTILITY

III.A. INTRODUCTION

The District owns and operates its water system, which is responsible for providing adequate and uninterrupted water supply for clean, safe, potable water for commercial consumption and fire protection. The water system provides service to 7,100 connections within the service area.

III.B. REVENUE REQUIREMENT

A revenue requirement analysis forms the basis for a long-range financial plan and multi-year rate management strategy. The analysis is developed by completing an operating forecast that identifies future annual operating costs and a capital funding plan that defines a strategy for funding the capital improvement needs of the District.

III.B.1. Operating Forecast

The purpose of the operating forecast is to determine whether the existing rates and charges are sufficient to recover the costs the District incurs to operate and maintain the water system. The 2022 budget largely formed the baseline for this forecast. The operating forecast was developed for the 2023 through 2027 time period. The following list highlights some of the key assumptions used in the development of the water utility operating forecast.

III.B.1.a Operating Revenue

- **Rate Revenue:** was based on a projection of 2022 rate revenue including the approved 6.8 percent rate increase.
- **Non-Rate Revenue:** consists of permit fees, new meter fees, late fees, interest income, hydrant rental charges, South Kitsap Water Reclamation Facilities (SKWRF) support, and other miscellaneous fees. Non-rate revenues are projected at approximately $200,000 annually.
- **Customer Growth:** is forecasted at 1.75 percent annually based on Port Orchard's population allocation in the Puget Sound Regional Council Vision for 2040.
- **Interest Earnings**: was projected at 1.0 percent per year for all years of the forecast period.

III.B.1.b O&M Expenses

- **General Cost Inflation:** was set at 2.5 percent based on feedback from District staff and in alignment with internal forecasting practices.
- **Construction Cost Inflation (CCI):** was set at 4.0 percent annually based on feedback from the District.
- **Labor Cost Inflation:** was set at 2.5 percent consistent with general cost inflation based on feedback from the District.
- **Benefit Cost Inflation:** was set at 3.25 percent based on feedback from the District.
- **Electricity Inflation:** was assumed to be 0.35 percent based on staff input.

- **Additional O&M Expenses:** approximately $81,000 was added to the forecast in 2023 to represent 0.5 FTE added for one on-site engineer.

III.B.1.c Debt Service

- **Existing Debt Service:** ranges from a high of $225,000 in 2022, dropping to $205,000 annually by 2027 as the District pays off a loan. The District has one outstanding revenue bond and three Public Works Trust Fund (PWTF) loans:
  - Revenue Bond: payments of $165,000 annually that will be paid off in 2028.
  - Unbonded Loans: payments ranging from $60,000 in 2022 to $50,000 in 2024 as one of the loans is paid off by the utility.
- **New Debt Service:** A total of $7.5 million, through two debt issuances, are forecasted in the study period. The first debt issuance is assumed to be $5.0 million in 2023, followed by an issuance of $2.5 million in 2025. These issuances are all conservatively assumed to be revenue bonds, with an interest rate of 4.0 percent, issuance cost of 1.0 percent and a term of 20 years. New debt service payments are forecasted to be $400,000 annually in 2023, increasing to $600,000 annually with the second issuance in 2025.

III.B.1.d Rate-funded Capital

- Rate-funded capital is a way to ensure system integrity through reinvestment in the system. The annual revenue target is equal to the estimated replacement cost depreciation of system assets. Due to the financial impact to rates by implementing this level of rate-funded capital, the target is phased in over the study period and the utility reaches the full replacement cost level of system reinvestment funding by 2026 ($1.7 million).

III.B.2. Capital Funding Plan

The water utility is anticipating $20.6 million in capital costs through the forecast period (adjusted for inflation). Major projects include: Sedgwick Main Relocation Project ($2.2 million), Main on Jackson from Salmonberry to Sedgewick ($1.2 million), and Main on Bethel from Lund to Salmonberry ($1.3 million).

Funding for the capital plan comes from a number of different sources:

- **Cash balances (including interest) and system reinvestment funding:** Cash balances and system reinvestment funding include the beginning capital fund balance, any cash flow from the operating fund above what is needed to meet the operating fund reserve target and available cash after meeting the minimum capital reserve target. Cash balances and system reinvestment funding are forecast to fund $10.5 million of the capital plan through 2027, about 50.9 percent of total capital expenditures in the rate setting forecast period.
- **General Facilities Charge (GFC) revenue:** GFC revenues are forecast at the existing fee levels and are based on the District's area specific permit forecast resulting in 150 to 160 new connections annually. Connection fee revenue is anticipated to contribute $2.6 million over the rate setting period and fund approximately 12.6 percent of the capital plan.
- **Revenue bond proceeds:** Two revenue bond issuances are forecasted, $5 million in 2023 and $2.5 million in 2025. The proceeds of each revenue bond are spread over a two year period to cover funding gaps. Revenue bond proceeds are forecasted to fund 36.5 percent of the capital plan.

Exhibit 3.1 provides a summary of the funding sources for the capital expenditures. A detailed capital plan can be found in the excel model provided to the District.

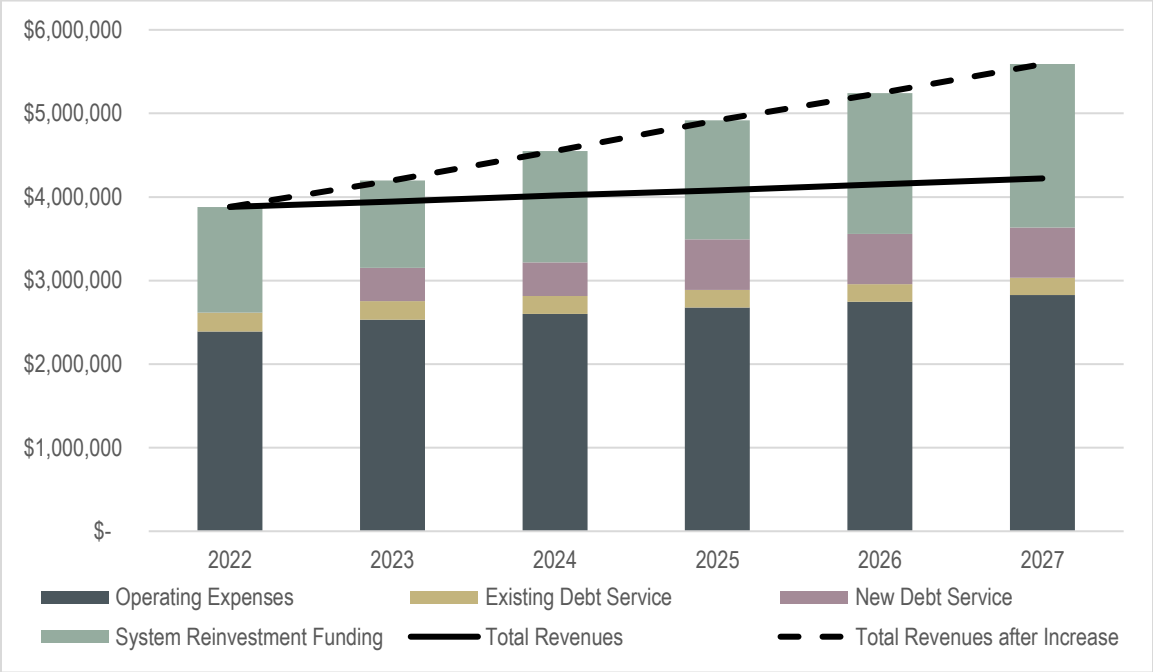
Exhibit 3.1 Water Capital Funding Summary

Funding Summary	2022	2023	2024	2025	2026	2027	Total
Total Capital Costs	**$ 4,366,455**	**$ 4,181,855**	**$ 3,706,655**	**$ 2,886,781**	**$ 1,624,615**	**$ 3,784,089**	**$ 20,550,451**
Funding Sources							
Cash Balances and System Reinvestment Funding	$ 3,946,455	$ 2,035,868	$ -	$ 1,141,617	$ -	$ 3,342,665	$ 10,466,605
General Facilities Charge Revenue	420,000	424,200	428,442	432,726	437,054	441,424	2,583,846
Revenue Bond Proceeds	-	1,721,787	3,278,213	1,312,438	1,187,562	-	7,500,000
Total Capital Funding	**$ 4,366,455**	**$ 4,181,855**	**$ 3,706,655**	**$ 2,886,781**	**$ 1,624,615**	**$ 3,784,089**	**$ 20,550,451**

III.B.3. Summary of Revenue Requirement

The operating forecast components of O&M expenses, debt service and rate-funded capital come together to form the multi-year revenue requirement. The revenue requirement compares the overall revenue available to the water system to the expenses to evaluate the sufficiency of rates on an annual basis. **Exhibit 3.2** provides a summary of the water system revenue requirement findings.

Exhibit 3.2 Water Utility Revenue Requirement Summary



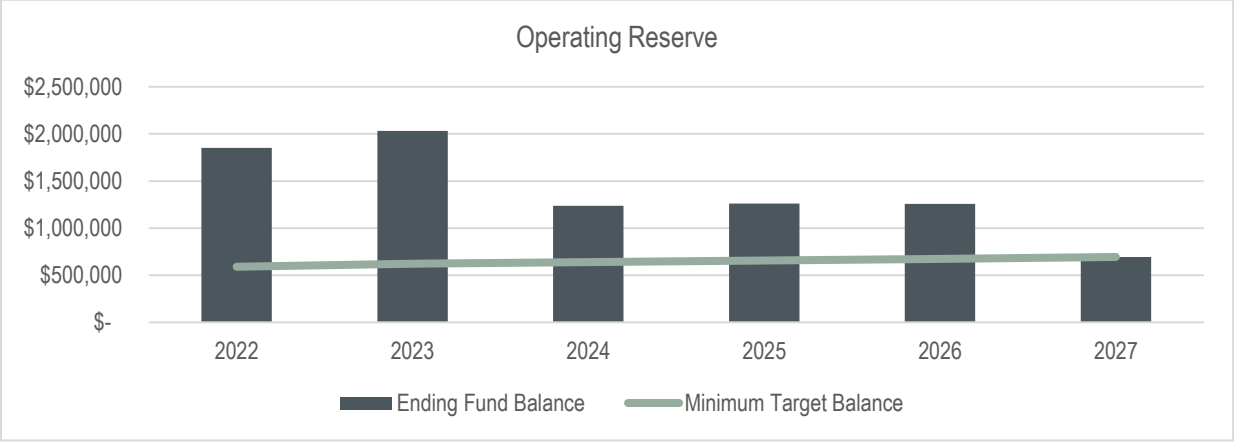
Summary of water utility revenue requirement:

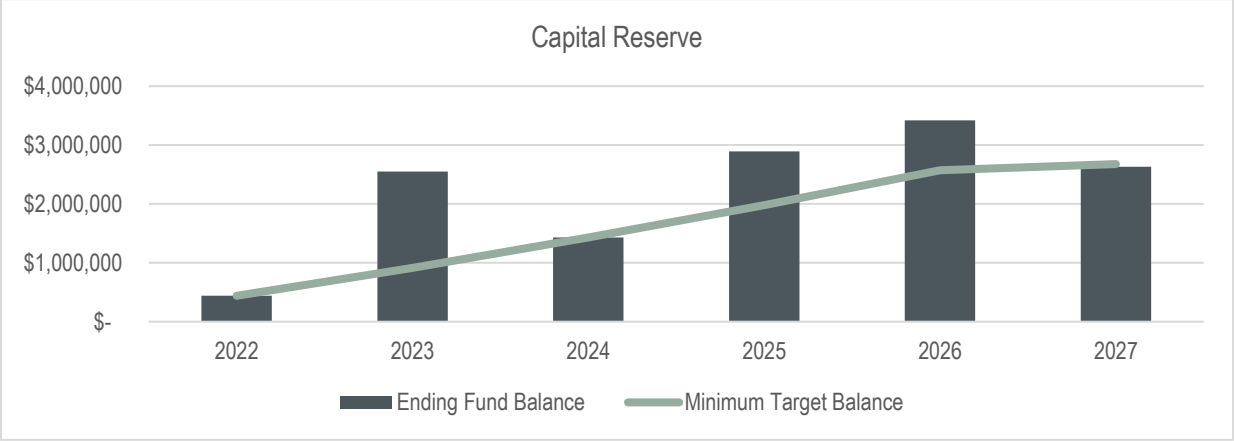
- In 2022, with the inclusion of the approved 6.8% rate increase, current rate levels are sufficient to meet existing annual financial obligations.
- During the 2023 - 2027 rate setting period, existing revenues are sufficient to cover O&M expenses and both existing and new forecasted debt service. However, system reinvestment annual funding targets are not fully supported by existing revenue.
- To meet projected financial obligations for the water utility and fund capital projects, rate increases are proposed at 6.8 percent annually in 2023 – 2025 followed by 5.0 percent annually in 2026 and 2027.
- Debt service coverage on bonded debt remains above 3.5X in all years of the forecast while debt service coverage on all debt remains above 3.3X during the forecast.

Reserves

Exhibit 3.3 shows a summary of the projected operating and capital reserves through 2027 based on the rate forecast presented above. The bars represent projected ending fund balances for each year and the horizontal lines represent the minimum targets for operating and capital reserves. The rate strategy described above is projected to maintain operating reserves at or above the minimum target level of 90 days of operating and maintenance expenses ($0.6 million to $0.7 million over the forecast period). This strategy is also projected to maintain capital reserves at or above the minimum target level. The annual capital reserve target increases from 2023 to 2026 as the District phases into the target funding level equal to the replacement cost of the largest non-transmission asset.

Exhibit 3.3 Operating and Capital Target Balances





III.C. COST OF SERVICE

A cost-of-service analysis determines the equitable recovery of costs from customers according to the unique demands each customer class places on the system. There are three fundamental steps to allocating the annual revenue requirement to customer classes and developing the final rates – 1) allocate utility assets and total utility costs by function, 2) develop customer-specific allocation factors and 3) allocate costs to customer classes. The methodology used conforms to industry practices as identified by the American Water Works Association (AWWA) Principles of Water Rates, Fees and Charges, M1 Manual.

III.C.1. Allocation of Utility Assets by Function

The District's water utility assets in service were reviewed to identify their uses as they relate to providing water service. This allocation assigns value and costs to functional categories based on documented system requirements, including engineering criteria, (e.g. average demand, peak demand, etc.) and industry standard practice based on the relationship of each class of asset and their function in the system. Assets are allocated to the functions of service according to known or assumed cost "causation". The functions of service to which the District's assets were allocated are discussed below.

- **Customer costs**: associated with establishing, maintaining, and serving water customers and tend to include administrative, billing, and customer service costs. These costs are generally uniform by customer regardless of their meter size or demand placed on the water system.
- **Meters & Services costs**: associated with the installation, maintenance, and repairs of meters and services. These costs are typically allocated based on number of connections and meter size.
- **Base costs**: related to average service provided on demand and are essentially correlated with year-round water consumption.
- **Peak costs**: related to peak demand service typically associated with the ability of the system to provide capacity to customers with higher-than-average volume, which usually occurs during the summer months.
- **Fire Protection costs**: associated with the ability of the system to provide adequate capacity and water flow corresponding to minimum fire safety standards required to serve customers. These costs are mostly incremental costs related to providing storage, distribution capacity, and hydrants for fire protection.
- **Pumping costs**: associated with costs to pump water to all customers within the District's service area.

Exhibit 3.4 Water Utility Functional Plant (Assets) in Service

Plant in Service	Total Replacement Cost	FUNCTIONS OF WATER SERVICE						AS ALL OTHERS	TOTAL
		CUSTOMER	METERS & SERVICES	BASE	PEAK	FIRE PROTECTION	PUMPING		
Supply & Treatment	$ 7,465,861	0.00%	0.00%	48.28%	51.72%	0.00%	0.00%	0.00%	100.00%
Pumping	5,436,316	0.00%	0.00%	48.28%	51.72%	0.00%	0.00%	0.00%	100.00%
Storage	9,382,226	0.00%	0.00%	38.75%	41.52%	19.73%	0.00%	0.00%	100.00%
Transmission & Distribution	15,976,404	0.00%	0.00%	34.31%	36.76%	28.93%	0.00%	0.00%	100.00%
Meters & Services	781,557	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Hydrants	734,609	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%
General Plant	6,662,473	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
Total Utility Plant	$ 46,439,445	$ -	$ 781,557	$ 15,346,951	$ 16,441,365	$ 7,207,099	$ -	$ 6,662,473	$ 46,439,445
Water Service Functions		0.00%	1.96%	38.58%	41.33%	18.12%	0.00%		100.00%
Allocation of "As All Others"		$ -	$ 130,907	$ 2,570,549	$ 2,753,858	$ 1,207,158	$ -	$ (6,662,473)	$ -
TOTAL	**$ 46,439,445**	**$ -**	**$ 912,464**	**$ 17,917,500**	**$ 19,195,223**	**$ 8,414,258**	**$ -**	**$ -**	**$ 46,439,445**
Allocation Percentages		**0.00%**	**1.96%**	**38.58%**	**41.33%**	**18.12%**	**0.00%**	**0.00%**	**100.00%**

The allocation basis (shown in **Exhibit 3.4**) used for the major functions of service are as follows:

- **Supply and Treatment assets**: are allocated based on the peak demand ratio of maximum day to average day (2.07 from the 2012 Water System Plan). Assets were allocated 48.28 percent to base and 51.72 percent to peak.
- **Pumping assets**: are also allocated based on the peak demand ratio of maximum day to average day (2.07 from the 2012 Water System Plan). Assets were allocated 48.28 percent to base and 51.72 percent to peak.

- **Storage assets:** are allocated based on a storage analysis that categorized storage into operating, equalizing, emergency/standby, fire suppression and demand management storage. The storage analysis was based on Table 3-15 of the 2012 Water System Plan and was used to determine the use of storage facilities to meet average, peak, fire requirements or a combination. Assets were allocated to 38.75 percent to base, 41.52 percent to peak, and 19.73 percent to fire.
- **Transmission and Distribution assets:** are allocated based on a pipe analysis of the transmission and distribution network. In the analysis, the water mains between the size of 8 and 12 inches are assumed to have been upsized 2 inches from the minimum requirement for fire protection. The proportion of additional flow available is allocated to fire protection while the remaining amount is allocated based on the peak demand ratio between base and peak. For all pipe inventory not between 8 and 12 inches, those assets are assumed to be allocated between base and peak based on the peak demand ratio. The results of the analysis show 34.31 percent to base, 36.76 percent to peak, and 28.93 percent to fire.
- **Meters & Service assets:** are allocated 100 percent to the meters and service function.
- **Hydrant assets:** are allocated 100 percent to fire.
- **General assets:** are allocated as all other plant assets and allocated in proportion to the assets defined above.

The result of the functional asset allocation is 0 percent to customer, 2 percent allocated to meters & services, 39 percent to base, 41 percent to peak, and 18 percent to fire. The resulting asset allocation is referred to as the "plant in service" allocation and is used to allocate annual costs if the cost supports the total utility system.

III.C.2. Allocation of Utility Costs by Function

Following the functionalization of the utility's assets, the revenue requirement for 2023 is then allocated to these same functions of service based on cost allocation factors derived from the plant-in-service, system planning data, and other known costs. The functionalization of the revenue requirement is described in the bullets below:

- **Administrative Costs:** allocated to as all other costs.
- **Office Operating Supplies:** allocated to as all other costs.
- **Small Tools, Supplies, and Equipment:** allocated as plant in service.
- **Water Conservation and Communication Services:** allocated all to customer.
- **Main Replacement Materials:** allocated based on transmission and distribution assets.
- **Pump Replacement Materials:** allocated based on pump assets.
- **Treatment Chemicals:** allocated based on peak demand ratio.
- **SCADA:** allocated based on supply and treatment allocation.
- **Permit Fees:** allocated all to customer.
- **Meters, Reads, and Setters:** allocated all to meters and services.
- **Added On-Site Engineer:** allocated based on plant-in-service.
- **Existing and New Debt Service:** allocated as plant-in-service.
- **System Reinvestment Funding:** allocated as plant-in-service.

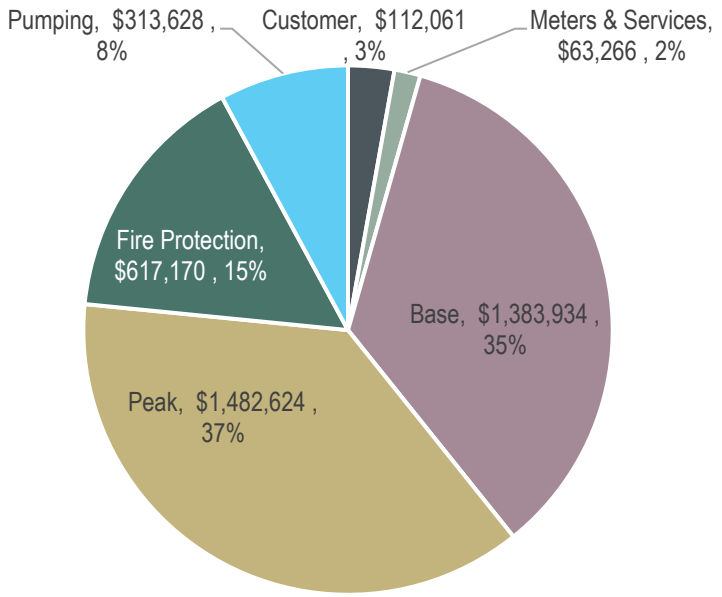
The allocation of the revenue requirement to the functions of service is summarized in **Exhibit 3.5**.

Exhibit 3.5 2023 Water Utility Functional Cost Allocation

Function	Total Revenue Requirement	%
Customer	$ 112,061	2.8%
Meters & Services	63,266	1.6%
Base	1,383,934	34.8%
Peak	1,482,624	37.3%
Fire Protection	617,170	15.5%
Pumping	313,628	7.9%
Total	**$ 3,972,682**	**100%**

The cost allocation indicates that the largest portion of costs, 37 percent, relate to meeting peak water demands, followed by 35 percent related to meeting base (average) water demands, 15 percent to fire protection, 8 percent to pumping, 3 percent to customer, and 2 percent to meters and services. **Exhibit 3.6** provides a summary of the functional cost allocation results.

Exhibit 3.6 Water Utility Functional Cost Allocation Summary (2023 Forecast)



III.C.3. Customer Class Distinctions

The District's current customer classes include a residential class, a multi-residential class, a commercial class, and an agricultural class. The cost-of-service analysis was completed for each of these classes. At the time of this report, the District is considering implementing a new private fire service class. Any findings related to this potential new customer class will be documented in a separate technical memorandum.

III.C.4. Allocation Factors

Once the customer classes were defined, functional cost pools (shown in **Exhibit 3.6**) were then allocated to these customer classes based on the unique demands each class places on the system. In order to complete this task, the analysis consisted of first developing allocation factors that identified customer characteristics including number of accounts, consumption levels, peak demand patterns,

and fire flow requirements. The allocation factors are intended to equitably allocate total functional cost pools to those benefitting from the service. For this study, the water fund costs were allocated to customer classes based on:

- **Customer costs:** allocated on the basis of the number of customer accounts.
- **Meters & Services costs:** allocated on the basis of the number of meter service equivalents.
- **Base costs:** allocated on the basis of total annual water use.
- **Peak costs:** allocated on the basis of the ratio between each class's peak month use to their average total use, multiplied by their total use.
- **Fire Protection costs:** allocated on the basis of the number of accounts and their associated fire flow gallons per minute and duration requirements based on Kitsap County fire flow requirements.
- **Pumping costs:** allocated on the basis of total number of Equivalent Residential Units (ERUs).

Exhibit 3.7 summarizes the allocation factors used and allocations for the customer classes evaluated in the cost-of-service analysis.

Exhibit 3.7 Water Utility Customer Allocation Factors

Customer Class	Customer	Meters & Services	Base	Peak	Fire Protection	Pumping	Total
Allocation Basis	Accounts	Meter Service Equivalents	Total Use	Peak Use	Kitsap County Fire Flow Requirements	Equivalent Residential Units	
Residential	88.2%	80.0%	67.8%	64.7%	76.0%	63.1%	**68.3%**
Multi-Family	3.5%	7.2%	12.8%	11.6%	3.0%	30.9%	**11.9%**
Commercial	7.1%	10.3%	13.6%	12.3%	6.1%	5.1%	**11.0%**
Agricultural	1.2%	2.4%	5.9%	11.4%	0.0%	0.9%	**6.5%**
Private Fire Service	0.0%	0.0%	0.0%	0.0%	14.9%	0.0%	**2.3%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

The cost of service by class was calculated by multiplying the functional cost pools by the allocation factor distribution percentages. Ultimately, this element of the analysis defines the total annual revenue that should be generated from each customer class, in order to achieve cost-based recovery from rates.

III.C.5. Water Utility Cost of Service Results

Exhibit 3.8 provides a comparison of current rate revenue distribution between customer classes and the results of the cost-of-service analysis.

Exhibit 3.8 Comparison of Water Current Revenue Distribution to Cost of Service Distribution

Class	Forecasted 2023 Revenue	%	2023 Cost of Service Allocation	%	$ Difference	%
Residential	$ 2,468,685	66.4%	$ 2,713,010	68.3%	$ 244,325	9.9%
Multi-Family	$ 730,881	19.6%	$ 472,476	11.9%	$ (258,405)	-35.4%
Commercial	$ 360,250	9.7%	$ 438,808	11.0%	$ 78,559	21.8%
Agricultural	$ 159,925	4.3%	$ 256,730	6.5%	$ 96,805	60.5%
Private Fire Service	$ -	0.0%	$ 91,659	2.3%	$ 91,659	
Total	**$ 3,719,740**	**100.0%**	**$ 3,972,682**	**100.0%**	**$ 252,942**	**6.8%**

Because costs fluctuate each year, the needed increase by class can also fluctuate and interclass rate changes are not suggested unless the class's revenue difference is outside the plus-or-minus 5.0 percent threshold. The COSA results indicate that the Residential class is within this threshold while the Multi-Family class is currently subsidizing the Commercial and Agricultural classes.

III.D. RATE DESIGN

The principal objective of the rate design stage is to implement water rate structures that collect the appropriate level of revenue. Establishing rates is a blend of "art" and "science" and especially so when it comes to the rate levels and structures. Several variables must be balanced to arrive at optimal rates and include revenue stability and efficiency of use.

III.D.1. Existing Water Rates

The existing water rate structure is composed of a fixed charge and a variable charge. Some key aspects of the current rate design are the following:

- **Fixed Charge:** A fixed monthly charge is applied to all customer classes on a uniform basis depending on the customer's meter size. Bills are distributed to Single-Family customers on a bi-monthly basis while all other classes are billed on a monthly basis.
- **Variable Charge:** All customer classes are billed based on three tiers of water usage measured as the number of 100 cubic feet (ccf) used. Single-Family customers are billed using the same tier thresholds (regardless of an up-sized meter) based on the customer's bi-monthly usage. All other customer classes are billed on separate thresholds depending on their meter size and monthly usage.
  - » As better detailed customer data becomes available, we recommend that the District evaluate the varying tier sizes for non-Single-Family customers and consider refining and/or establishing a uniform usage charge for each customer class.

District Resolution 1019-22 Exhibit A describes the fixed charges and tiered usage charge thresholds.

III.D.2. Proposed Water Rates

To address the recommended shifts between classes based on the cost-of-service results, updated rates were forecasted through 2027. For consistency between classes, the fixed charges increased at the same rate for all classes while the variable charges were set individually to phase-in class-specific revenues towards the cost-of-service targets. **Exhibit 3.9** shows the adopted 2022 rates as well as forecasted rates through the rest of the study period to increase cost equity between the customer classes.

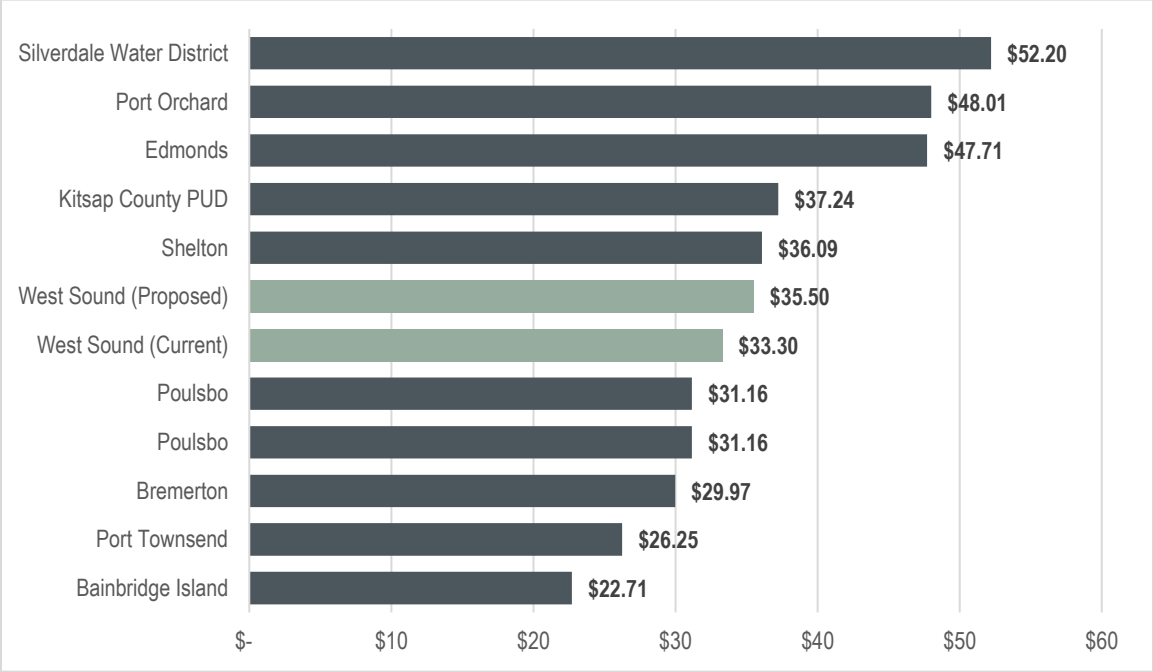
Exhibit 3.9 Proposed Water Rate Schedule

	Current 2022	COS 2023	COS 2024	COS 2025	COS 2026	COS 2027
System-Wide Rate Increase		6.8%	6.8%	6.8%	5.0%	5.0%
Base Rate						
5/8", 3/4"	$19.26	$20.61	$22.05	$23.59	$25.24	$27.01
1"	$35.90	$38.41	$41.10	$43.98	$47.06	$50.35
1.5"	$64.11	$68.60	$73.40	$78.54	$84.04	$89.92
2"	$98.74	$105.65	$113.05	$120.96	$129.43	$138.49
3"	$194.88	$208.52	$223.12	$238.74	$255.45	$273.33
4"	$301.29	$322.38	$344.95	$369.10	$394.94	$422.59
6"	$588.49	$629.68	$673.76	$720.92	$771.38	$825.38
Volume Charge: per ccf of water usage						
Single-Family (BiMonthly)						
Block 1	$2.31	$2.45	$2.60	$2.68	$2.76	$2.84
Block 2	$2.67	$2.83	$3.00	$3.09	$3.18	$3.28
Block 3	$3.10	$3.29	$3.49	$3.59	$3.70	$3.81
Multi-Family (Monthly)						
Block 1	$3.26	$3.26	$3.26	$3.26	$3.26	$3.26
Block 2	$3.77	$3.77	$3.77	$3.77	$3.77	$3.77
Block 3	$4.36	$4.36	$4.36	$4.36	$4.36	$4.36
Commercial (Monthly)						
Block 1	$2.54	$2.82	$3.13	$3.47	$3.64	$3.82
Block 2	$2.95	$3.27	$3.63	$4.03	$4.23	$4.44
Block 3	$3.41	$3.79	$4.21	$4.67	$4.90	$5.15
Agricultural/Irrigation (Monthly)						
Block 1	$3.26	$3.80	$4.43	$5.16	$6.01	$7.00
Block 2	$3.77	$4.39	$5.11	$5.95	$6.93	$8.07
Block 3	$4.36	$5.08	$5.92	$6.90	$8.04	$9.37

III.D.3. Rate Survey

Exhibit 3.10 compares the District's monthly (although billed on a bi-monthly basis) rate with the 2022 rates of other jurisdictions. Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics, each of which can have a significant impact on rates. Bill calculations assume 6 ccf of monthly water usage.

Exhibit 3.10 Residential Monthly Water Rate Survey (6 ccf monthly, ¾" Meters)



III.E. SUMMARY

The analysis described above concludes the rate study for the water utility. Annual rate increases of 6.8 percent are recommended from 2023 to 2025 followed by 5.0 percent in 2026 and 2027 to prepare the District to fund the planned capital projects and associated debt service for two revenue bonds.

We recommend that the District revisit the study findings during each budget cycle to check that the assumptions used are still appropriate and no significant changes have occurred that would alter the results of the study. The District should use the study findings as a living document, continuously comparing the study outcomes to actual revenues and expenses. Any significant or unexpected changes will require adjustments to the rate strategy proposed.

Section IV. SEWER UTILITY

IV.A. INTRODUCTION

The District owns a wastewater collection system that provides uninterrupted sanitary sewer conveyance and mitigates overflows into streams, lakes, and private properties. As a separate entity, the District jointly owns the South Kitsap Water Reclamation Facility (SKWRF), a wastewater treatment plant that provides to treatment for both the District and the City of Port Orchard.

IV.B. REVENUE REQUIREMENT

Similar to the water utility, a revenue requirement was completed for the sewer utility and forms the basis for the long-range financial plan and multi-year financial management strategy.

IV.B.1. Operating Forecast

The purpose of the operating forecast is to determine whether the existing rates and charges are sufficient to recover the costs the District incurs to operate and maintain the District collection system and share of treatment expenses at the SKWRF. The 2022 budget formed the baseline for this forecast and used to project revenue requirements through the 2023 to 2027 time period. The following list highlights some of the key assumptions used in the development of the sewer utility operating forecast.

IV.B.1.a Operating Revenue

- **Rate Revenue:** was based on an estimate of 2022 rate revenue, increased 5.2 percent to account for the approved rate adjustment in 2022.
- **Non-Rate Revenue:** consists of permit fees, service fees, penalties, SKWRD admin support, interest, and other miscellaneous fees.
- **Customer Growth:** is forecasted at 1.75 percent annually based on Port Orchard's population allocation in the Puget Sound Regional Council Vision for 2040.
- **Interest Earnings**: was projected at 1.0 percent per year for all years of the forecast period.

IV.B.1.b O&M Expenses

- **General Cost Inflation:** was set at 2.5 percent based on feedback from District staff and in alignment with internal forecasting practices.
- **Construction Cost Inflation (CCI):** was set at 4.0 percent annually based on feedback from the District.
- **Labor Cost Inflation:** was set at 2.5 percent consistent with general cost inflation based on feedback from the District.
- **Benefit Cost Inflation:** was set at 3.25 percent based on feedback from the District.
- **Electricity Inflation:** was assumed to be 0.35 percent based on staff input.

- **Additional O&M Expenses:** were included starting in 2023 for approximately $81,000 to represent 0.5 FTE added for one on-site engineer.

IV.B.1.c Debt Service

- **Existing Debt Service:** ranges from a high of $215,000 in 2022, dropping to $195,000 in 2024 and then to $115,000 in 2025 as the District pays off three loans. The District has one outstanding revenue bond and four unbonded loans:
  - » Revenue Bond: payments of $40,000 annually that will be paid off in 2028.
  - » Unbonded Loans: payments ranging from $175,000 in 2022 to $75,000 as loans are paid off by the utility.
- **New Debt Service:** no new debt service is projected during the forecast period to fund the capital program.

IV.B.1.d Rate-funded Capital

- Rate-funded capital is a way to ensure system integrity through reinvestment in the system. The annual revenue target is equal to the estimated replacement cost depreciation of system assets. Due to the financial impact to rates by implementing this level of rate-funded capital, the target is phased in over the study period and the utility reaches the full replacement cost level of system reinvestment funding by 2026 ($1.5 million).

IV.B.2. Capital Funding Plan

The sewer utility capital plan includes approximately $10.2 million in escalated capital costs from 2022 to 2027. Notable projects include Replace Aging Mains ($4.2 million), Olney Sewer Replacement ($1.3 million), and Eliminate Beach Drive Lift Station ($800,000).

Funding for the capital plan identified comes from two different sources:

- **Cash balances (including interest) and system reinvestment funding:** Cash balances and system reinvestment funding include the beginning capital fund balance, any cash flow from the operating fund above what is needed to meet the operating fund reserve target and available cash after meeting the minimum capital reserve target. Cash balances and system reinvestment funding are forecast to fund $8.0 million of the capital plan through 2027, about 78.5 percent of total capital expenditures in the rate setting forecast period.
- **General Facilities Charge (GFC) revenue:** GFC revenues are forecast at the existing fee levels and are based on the District's area specific permit forecast resulting in approximately 90 new connections annually. Connection fee revenue is anticipated to contribute $2.2 million over the rate setting period and fund approximately 21.5 percent of the capital plan.

Exhibit 4.1 provides a summary of the funding sources for the capital program. A detailed capital plan can be found in financial models provided to the District.

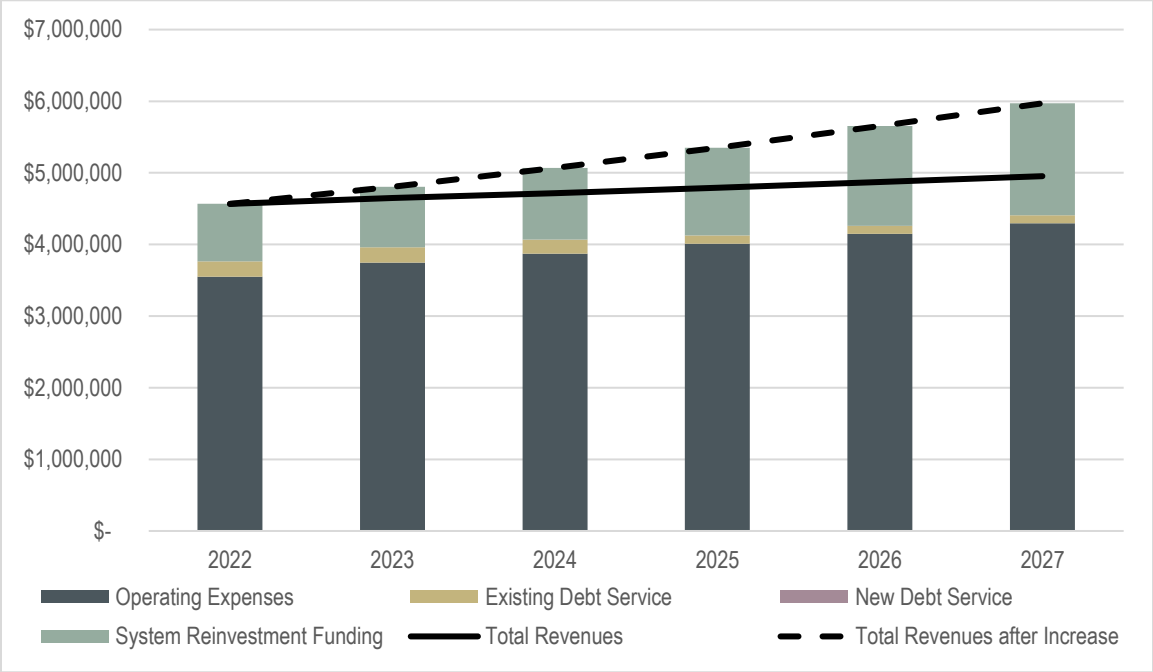
Exhibit 4.1 Sewer Capital Funding Summary

Funding Summary	2022	2023	2024	2025	2026	2027	Total
Total Capital Costs	**$ 2,868,125**	**$2,234,177**	**$ 1,240,455**	**$1,140,879**	**$1,441,168**	**$1,233,975**	**$10,158,780**
Funding Sources							
Cash Balances and System Reinvestment Funding	$ 2,487,325	$1,880,677	$ 883,420	$ 780,274	$1,076,957	$ 866,121	$ 7,974,774
General Facilities Charge Revenue	380,800	353,500	357,035	360,605	364,211	367,854	2,184,005
Total Capital Funding	**$ 2,868,125**	**$2,234,177**	**$ 1,240,455**	**$1,140,879**	**$1,441,168**	**$1,233,975**	**$10,158,780**

IV.B.3. Summary of Revenue Requirement

The operating forecast components of O&M expenses, debt service and rate-funded capital come together to form the multi-year revenue requirement. The revenue requirement compares the overall sewer system revenue against forecasted expenses to evaluate the sufficiency of rates on an annual basis. **Exhibit 4.2** provides a summary of the sewer system revenue requirement findings.

Exhibit 4.2 Sewer Utility Revenue Requirement Summary



Summary of sewer revenue requirement:

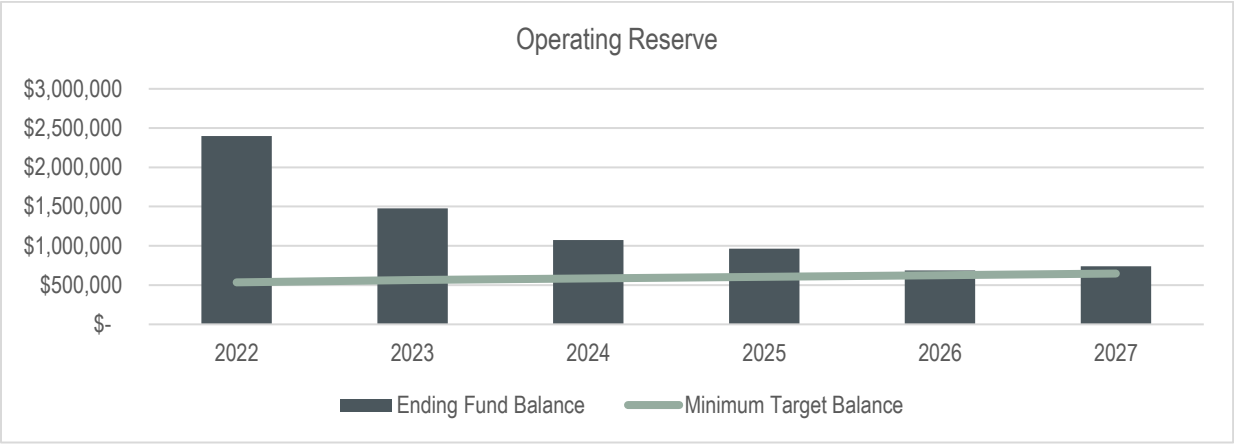
- In 2022, with the inclusion of the 5.2 percent approved rate increase, current rate levels are sufficient to meet existing annual financial obligations.
- During the 2023 – 2027 rate setting period, existing revenues are sufficient to cover O&M expenses and existing debt service. However, system reinvestment funding targets are not fully met with existing rate revenue.
- To meet the projected financial obligations of the sewer utility, the funding plan includes a 3.5 percent increase in 2023 followed by 4.0 percent annual increases each year thereafter.
- Debt service coverage on bonded debt remains above 34.7X in all years of the forecast while debt service coverage on all debt remains above 6.6X during the forecast.

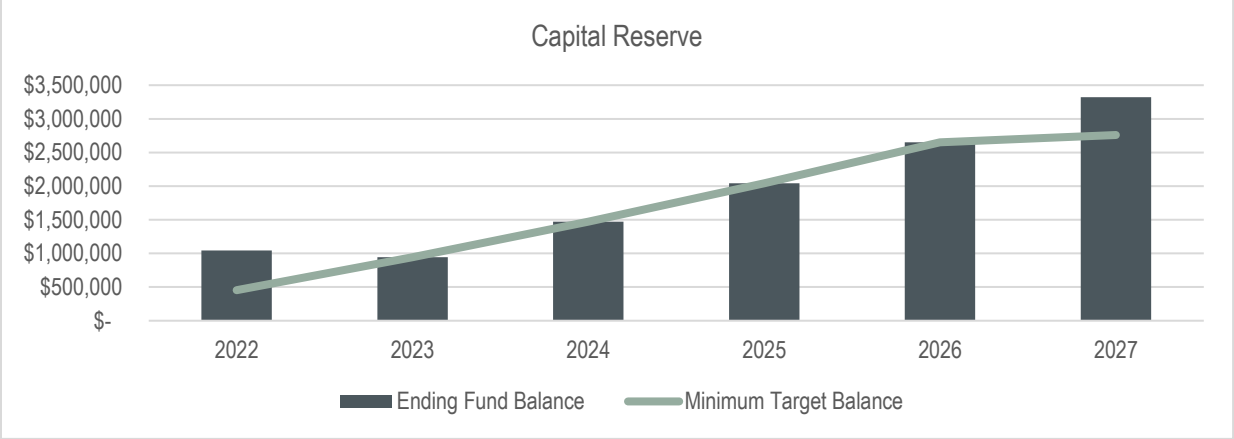
IV.B.4. Reserves

Exhibit 4.3 shows a summary of the projected operating and capital reserves through 2027 based on the rate forecast presented above. The bars represent projected ending fund balances for each year and the horizontal lines represent the minimum targets for operating and capital reserves. The rate strategy described above is projected to maintain operating reserves at or above the minimum target level of 55 days of operating and maintenance expenses ($0.6 million over the forecast period). This strategy is also projected to maintain capital reserves at or above the minimum

target level. The annual capital reserve target increases from 2023 to 2026 as the District phases into the target funding level of the replacement cost of the largest non-collection asset.

Exhibit 4.3 Operating and Capital Target Balances





IV.C. SEWER COST OF SERVICE ANALYSIS

Similar to the water utility, the cost-of-service allocation process for the sewer utility involves three steps - 1) allocate total utility assets and costs by function, 2) develop customer-specific allocation factors and 3) allocate costs to customer classes.

IV.C.1. Allocation of Utility Assets by Function

The District's sewer utility assets in service were reviewed to identify how they relate to providing sewer service. This allocation assigns value and costs to functional categories based on documented system requirements and industry practice based on the relationship of each class of asset and their function in the system. Assets are allocated to the functions of service according to known or assumed cost "causation". The functions of service to which the District's assets were allocated are discussed below.

- **Customer costs:** associated with providing service to customers regardless of sewer contribution, such as billing and office support.
- **Equivalent Residential Unit (ERU):** related to actual and estimated sewer volume processed within the system in a year normalized to a unit based on typical residential flow.

» Generally, sewer cost-of-service analyses includes a "strength" function which is used to allocate utility asset costs related to the strength of sewage processed, in terms of biochemical oxygen demand (BOD) and total suspended solids (TSS). In this particular case, the District incurs operating and capital costs at the treatment plant on an equivalent residential unit basis, so there is not a clear and identifiable cost basis for strength-related treatment costs. As a result, all treatment costs are functionalized as equivalent residential units.

Exhibit 4.4 Sewer Utility Functional Plant (Assets) in Service

Plant in Service	Total Replacement Costs	FUNCTIONS OF SEWER SERVICE		AS ALL OTHERS	TOTAL
		CUSTOMER	ERU		
Treatment	$ -	0.00%	100.00%	0.00%	100.00%
Collection	27,941,238	0.00%	100.00%	0.00%	100.00%
Pumping	9,965,756	0.00%	100.00%	0.00%	100.00%
General Plant	5,827,262	0.00%	0.00%	100.00%	100.00%
Total Utility Plant	$ 43,734,256	$ -	$ 37,906,994	$ 5,827,262	$ 43,734,256
Sewer Service Functions		0.00%	100.00%		100.00%
Allocation of "As All Others"		$ -	$ 5,827,262	$ (5,827,262)	$ -
TOTAL	**$ 43,734,256**	**$ -**	**$ 43,734,256**	**$ -**	**$ 43,734,256**
Allocation Percentages		**0.00%**	**100.00%**	**0.00%**	**100.00%**

IV.C.2. Allocation of Utility Costs by Function

Following the functionalization of the utility's assets, the revenue requirement for 2023 was then allocated to these same functions of service based on cost allocation factors derived from the plant-in-service, system planning data, and other known costs. The following summarizes the key cost allocation assumptions:

- **Administrative costs:** were allocated to as all other.
- **Postage/Printing/Bank Fees/Advertising:** were allocated 100 percent to customer.
- **Rentals/Insurance/Membership Dues:** were allocated all to ERU.
- **Operations Salaries and Benefits:** were allocated to plant in service which is 100 percent allocated to ERU.
- **Collection Materials:** were allocated all to collection which is 100 percent allocated to ERU.
- **Pump Materials:** were allocated all to pumping which is 100 percent allocated to ERU.
- **SKWRF Operations and CIP costs:** were allocated all to treatment which is 100 percent allocated to ERU as costs are based on the proportion of flow delivered to the treatment facility.
- **Added On-Site Engineer:** allocated based on plant in service.
- **Existing Debt Service:** allocated as plant-in-service.
- **System Reinvestment Funding:** allocated as plant-in-service.

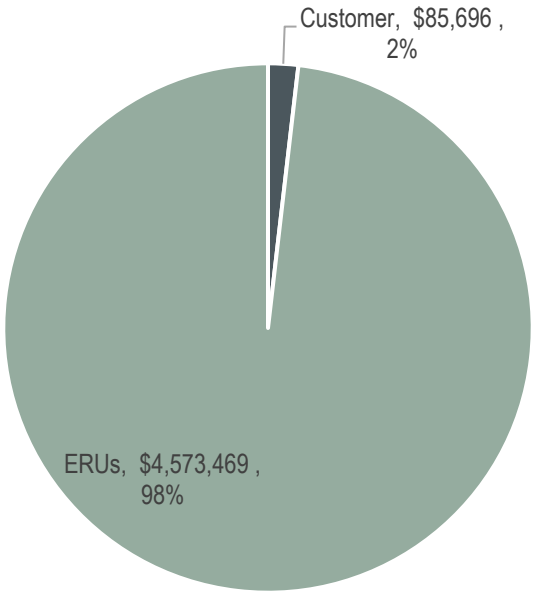
Utility cost allocation results in costs being allocated to the functional cost pools identified in **Exhibit 4.5**.

Exhibit 4.5 Sewer Utility Functional Cost Allocation (2023 Forecast)

Function	Total Revenue Requirement	%
Customer	$ 85,696	1.8%
ERUs	4,573,469	98.2%
Total	**$ 4,659,166**	**100.0%**

The cost allocation indicates that the majority of costs, 98 percent, relate to meeting flow requirements, while the other 2 percent are allocated to customer. The results of the allocation are summarized graphically in **Exhibit 4.6**.

Exhibit 4.6 Sewer Utility Functional Cost Allocation Summary (2023 Forecast)



IV.C.3. Customer Class Distinctions

The District's current customer classes include a residential class, a multi-residential class, and a non-residential class.

IV.C.4. Allocation Factors

Once the customer classes were defined, functional cost pools (shown in **Exhibit 3.6**) were then allocated to these customer classes based on the demand each class places on the system. In order to complete this task, the analysis consisted of first developing allocation factors that identified customer characteristics including number of accounts and equivalent residential units. Allocation factors are intended to equitably allocate total functional cost pools to those benefitting from the service. For this study, the sewer utility revenue requirement was allocated based on the following:

- **Customer costs:** on the basis of the number of customer accounts.
- **ERUs:** on the basis of flow produced per customer class normalized to an equivalent residential unit.

Exhibit 3.7 summarizes the allocation factors used and allocations for the customer classes evaluated in the cost-of-service analysis.

Exhibit 4.7 Sewer Utility Customer Allocation Factors

Customer Class	Customer	ERUs	Total
Allocation Basis	Accounts	ERUs	
Residential	91.1%	57.2%	**57.9%**
Multi-Family Residential	3.9%	27.3%	**26.9%**
Non-Residential	5.0%	15.4%	**15.2%**
Total	**100.0%**	**100.0%**	**100.0%**

IV.C.5. Sewer Cost of Service Analysis Results

Exhibit 4.8 provides a comparison of current rate revenue distribution between customer classes and the distribution of revenues resulting from the cost-of-service analysis.

Exhibit 4.8 Comparison of Sewer Current Revenue Distribution to Cost of Service Distribution

Classs	Existing 2023 Revenue	%	COSA 2023 Revenue	%	Difference $	Difference %
Residential	$ 2,533,178	56.3%	$ 2,695,959	57.9%	$ 162,782	6.4%
Multi-Family Residential	1,209,635	26.9%	1,253,426	26.9%	43,791	3.6%
Non-Residential	758,797	16.9%	709,781	15.2%	(49,016)	-6.5%
Total	**$ 4,501,609**	**100.0%**	**$ 4,659,166**	**100.0%**	**$ 157,556**	**3.5%**

Because costs fluctuate each year, the needed increase by class can also fluctuate and interclass rate changes are not suggested unless the class's revenue difference is outside the plus-or-minus 5.0 percent threshold. The COSA results indicate that revenues for the residential and multi-family residential classes are operating within this threshold while revenues generated from the non-residential class are slightly above the cost to provide service.

IV.D. RATE DESIGN

The principal objective of the rate design stage is to implement rate structures that collect the appropriate level of revenue as outlined by the revenue requirement. Establishing rates is a blend of "art" and "science" and especially so when it comes to the rate levels and structures. Several variables must be balanced to arrive at optimal rates. The main objective in this rate design was to address intraclass equity.

IV.D.1. Existing Sewer Rates

The existing sewer structure is composed of a monthly fixed charge (although Residential and duplexes are billed on bi-monthly basis) for all classes and a volume charge per 100 cubic feet for Non-Residential customers only. In addition to the three customer classes defined in the cost of service, there are also specific rates for the Veterans Memorial Park, South Kitsap Community Park, and the Village Greens golf course. Rate adjustments for these three individual customers are based on the proposed adjustments to the Non-Residential class.

Exhibit 4.9 provides a summary of the existing sewer utility rates.

Exhibit 4.9 Existing Monthly Sewer Rates

Current Rate Schedule	2022
Monthly Fixed Charge by Class (Bill Frequency)	
Residential (BiMonthly)	$64.92
Multifamily (Monthly)	$64.92
Non-Residential (Monthly)	$49.81
Public Parks - Veterans Memorial Park (Monthly)	$64.92
Public Parks - South Kitsap Community Park (Monthly)	$133.43
Golf Course - Village Greens (Monthly)	$133.43
Volume Charge: per ccf of water usage (Non-Residential Only)	$8.23

IV.D.2. Proposed Sewer Rates

The financial plan indicates the need for 3.5 percent increase in 2023 followed by 4.00 percent annual rate increases through the rest of the forecast. To closer align the revenues brought in by each customer class with the indicated cost of service, each customer class increases are proposed to increase as:

- **Single-Family Residential:** 4.25% in 2023, 4.75% each year thereafter.
- **Multi-Family Residential:** 4.00% in 2023, 4.50% from 2024 to 2026, and 4.75% in 2027.
- **Non-Residential:** Hold rates in 2023 followed by 1.00% annual adjustments from 2024 to 2026. It is recommended that the District re-evaluate cost-of-service results before additional adjustments.

Exhibit 4.10 provides a schedule of existing and proposed fixed and volumetric rates for each year from 2022 through 2027.

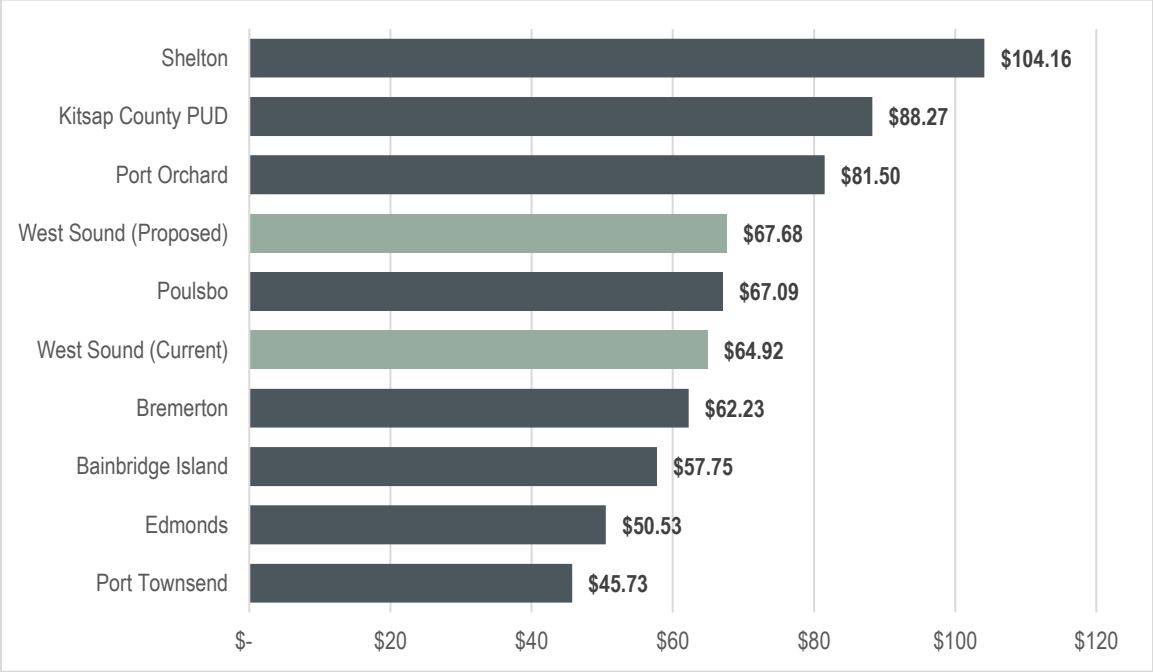
Exhibit 4.10 Proposed Sewer Rate Design Options

	Current 2022	COS 2023	COS 2024	COS 2025	COS 2026	COS 2027
Fixed Charge by Class						
Residential (BiMonthly)	$64.92	$67.68	$70.89	$74.26	$77.79	$81.49
Multifamily (Monthly)	$64.92	$67.52	$70.56	$73.74	$77.06	$80.72
Non-Residential (Monthly)	$49.81	$49.81	$50.31	$50.81	$51.32	$51.32
Public Parks - Veterans Memorial Park (Monthly)	$64.92	$64.92	$65.57	$66.23	$66.89	$66.89
Public Parks - South Kitsap Community Park (Monthly)	$133.43	$133.43	$134.76	$136.11	$137.47	$137.47
Golf Course - Village Greens (Monthly)	$133.43	$133.43	$134.76	$136.11	$137.47	$137.47
Volume Charge: per ccf of water usage (Non-Residential Only)	$8.23	$8.23	$8.31	$8.39	$8.47	$8.47

IV.D.3. Rate Survey

Exhibit 4.11 compares the District's monthly rate with the 2022 rates of other jurisdictions. Note that each jurisdiction has a unique set of geographic traits, customers, and system characteristics, each of which can have a significant impact on rates. Bill calculations assume 5 ccf of monthly sewer flow contribution for those jurisdictions that apply a volume rate to their Residential customers.

Exhibit 4.11 Residential Monthly Sewer Rate Survey (5 ccf of Usage)



IV.E. SUMMARY

The analysis described above concludes the rate study for the sewer utility. The financial plan includes an annual rate adjustment of 3.5 percent increase in 2023 followed by 4.0 percent annual rate increases through the rest of the forecast to ensure the District can continue to fully fund its operations and fund anticipated capital projects over the rate setting period.

We recommend that the District revisit the rate study with each budget cycle to review if revenue and expense projections are reasonable when compared to actual experience. Any significant or unexpected changes will require adjustments to the rate strategy proposed.