WSSC Water

Cost of Service and Rate Study

FY2025 Rate Setting

December 2023

Today's Agenda

1. Introductions
2. Purpose
3. Methodology
4. Cost-of-Service Results
5. Questions & Discussion

WSSC Water

Purpose of Study

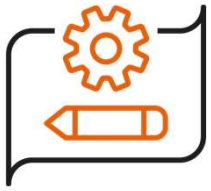
Purpose of Study

Purpose of Cost of Service: In support of fiscal year 2025 rate setting, ensure the costs of providing quality water and wastewater services and infrastructure are fully recovered equitably from customers.

Project Kick-Off

Calculate Revenue Requirements

Cost of Service



Support Rate Design

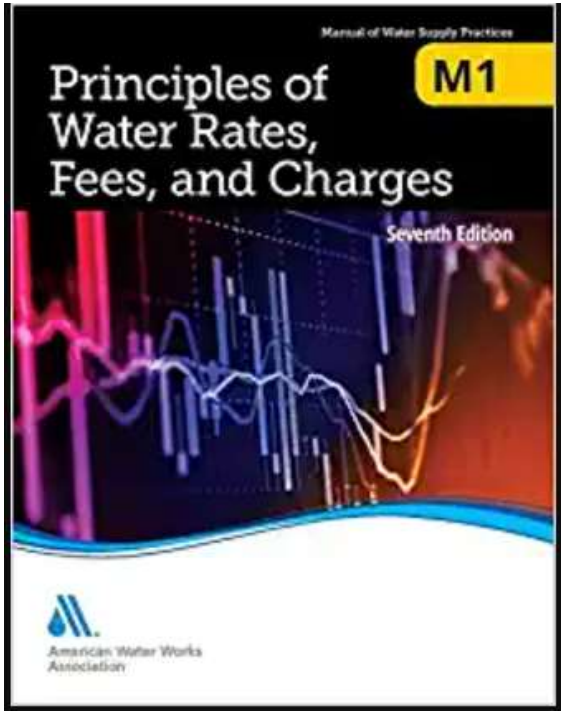
Presentation of Findings

WSSC Water

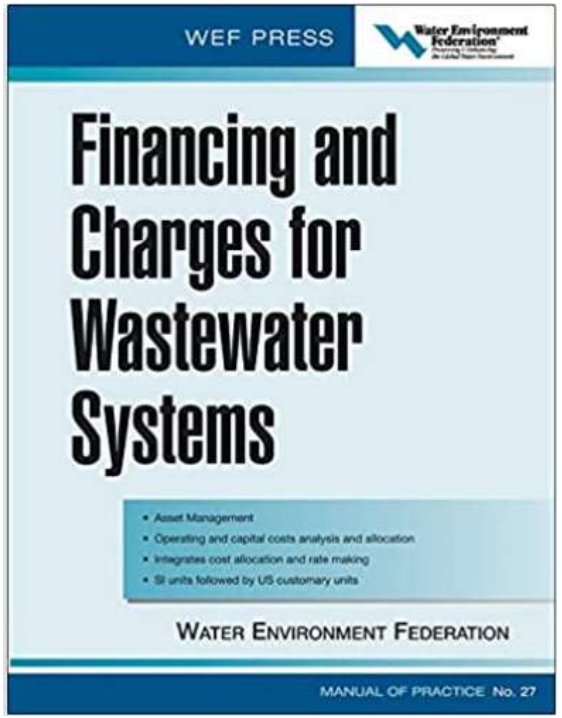
Methodology

Methodology – Industry Standards

American Water Works Association: Principles of Water Rates, Fees, and Charges, Manual M1 (Seventh Edition)



Water Environment Federation: Financing and Charges for Wastewater Systems, Manual of Practice No. 27



Cost of Service and Rate-Setting Process Overview

Step 1 — Calculate Revenue Requirements

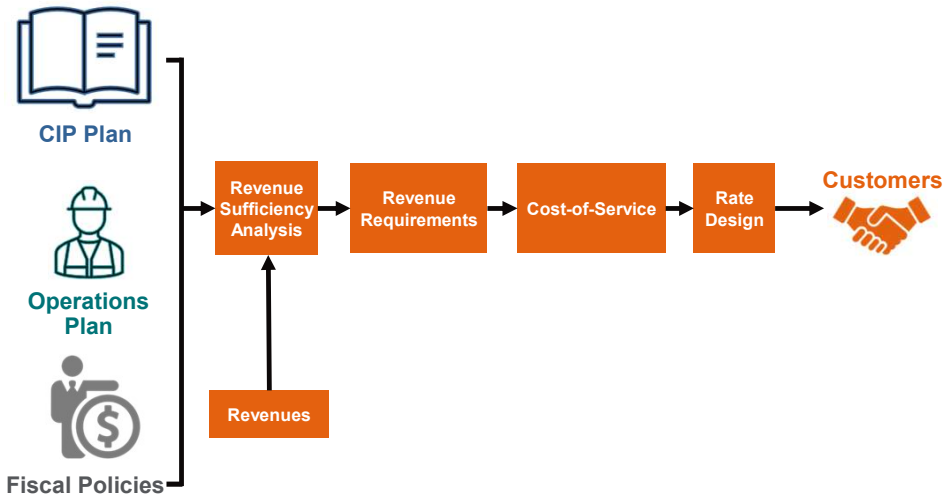
The Financial Planning Step. How much revenue do I need to generate from rates?

Step 2 — Evaluate Cost of Service

What does it cost to serve my customers?

Step 3 — Design Rates, Fees, Charges

What impact do costs have on rates?



STEP 1

Calculate Revenue Requirements

- The level of revenue required from user rates and charges to properly operate and maintain utility infrastructure
- Revenue requirements from rates:

Total Costs (Revenue Requirements)
− Non-rate revenue and adjustments
Revenue Requirements from Rates

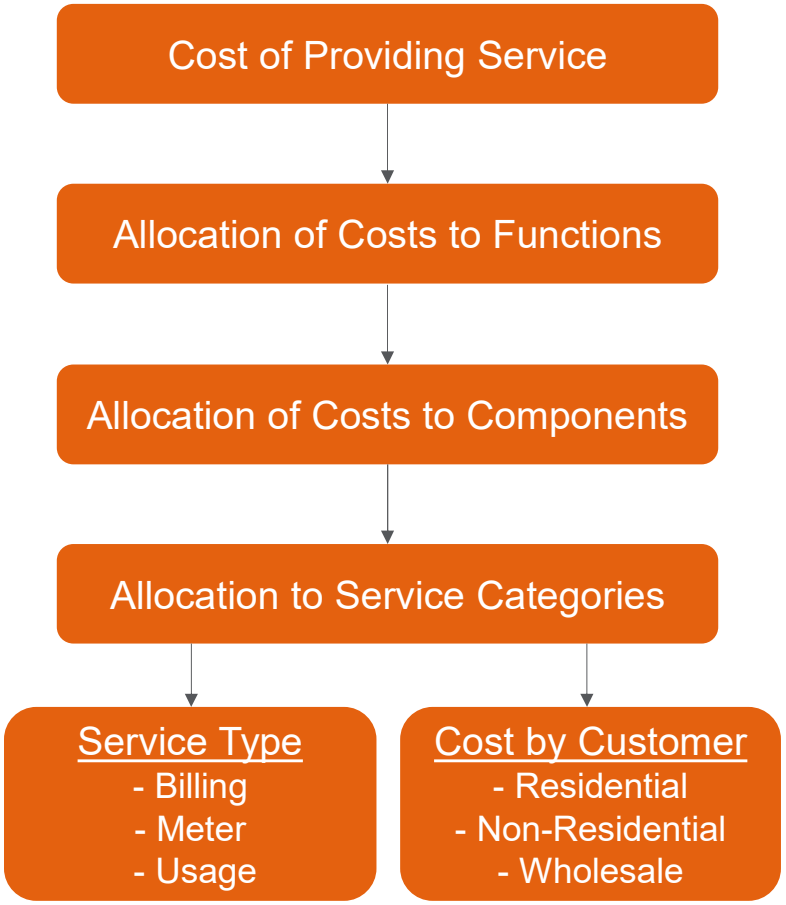
Description	FY 2025 Total Rate Revenue Requirements
O&M	
Operation & Maintenance Expenses	$616,180,779
Less: Miscellaneous Revenue	(52,604,404)
Less: Interest Income	(8,860,000)
Net O&M from Rates	$554,716,375
Capital	
Capital Expenses	$424,283,739
Less: Transfers[1]	(7,772,000)
Net Capital from Rates	$416,511,739
Total Rate Revenue Requirements	$971,228,114

1 Transfers from Cost Sharing Reimbursement, Reconstruction Debt Service Offset, SDC Debt Service Offset, Premium Transfer, Underwriter's Discount Transfer, and Miscellaneous Offset.

STEP 2

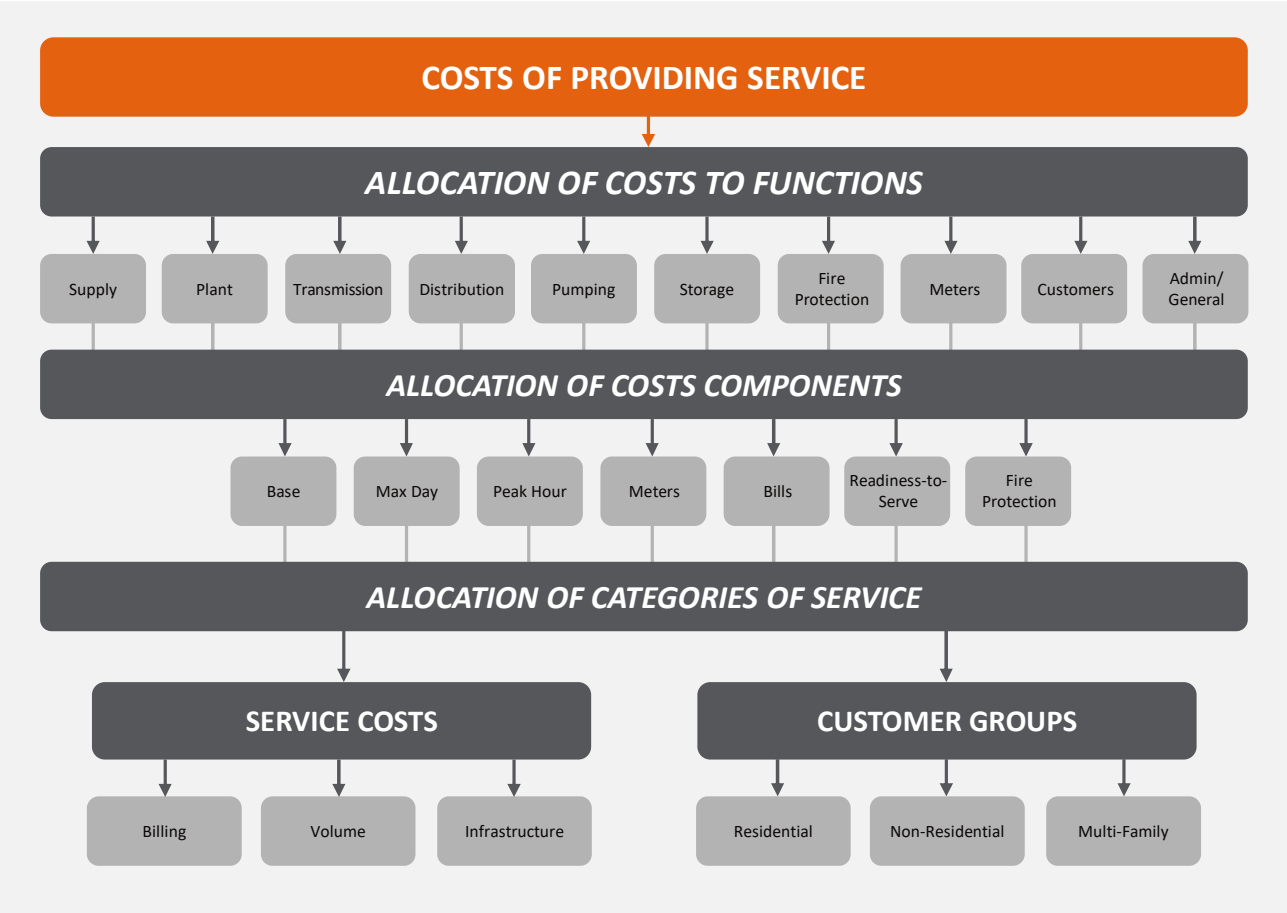
Cost-of-Service

- The Cost of Service (COS) portion of the study allocates WSSC Water's cost of service to functions, cost components, and groups of customers
- The COS analysis allocates costs based on:
  - Demand characteristics for water
  - Waste strengths for sewer
- Cost-of-Service also identifies the costs to be recovered from specific fees including fixed charges and volumetric charges.
- The last COS study was completed in April 2017



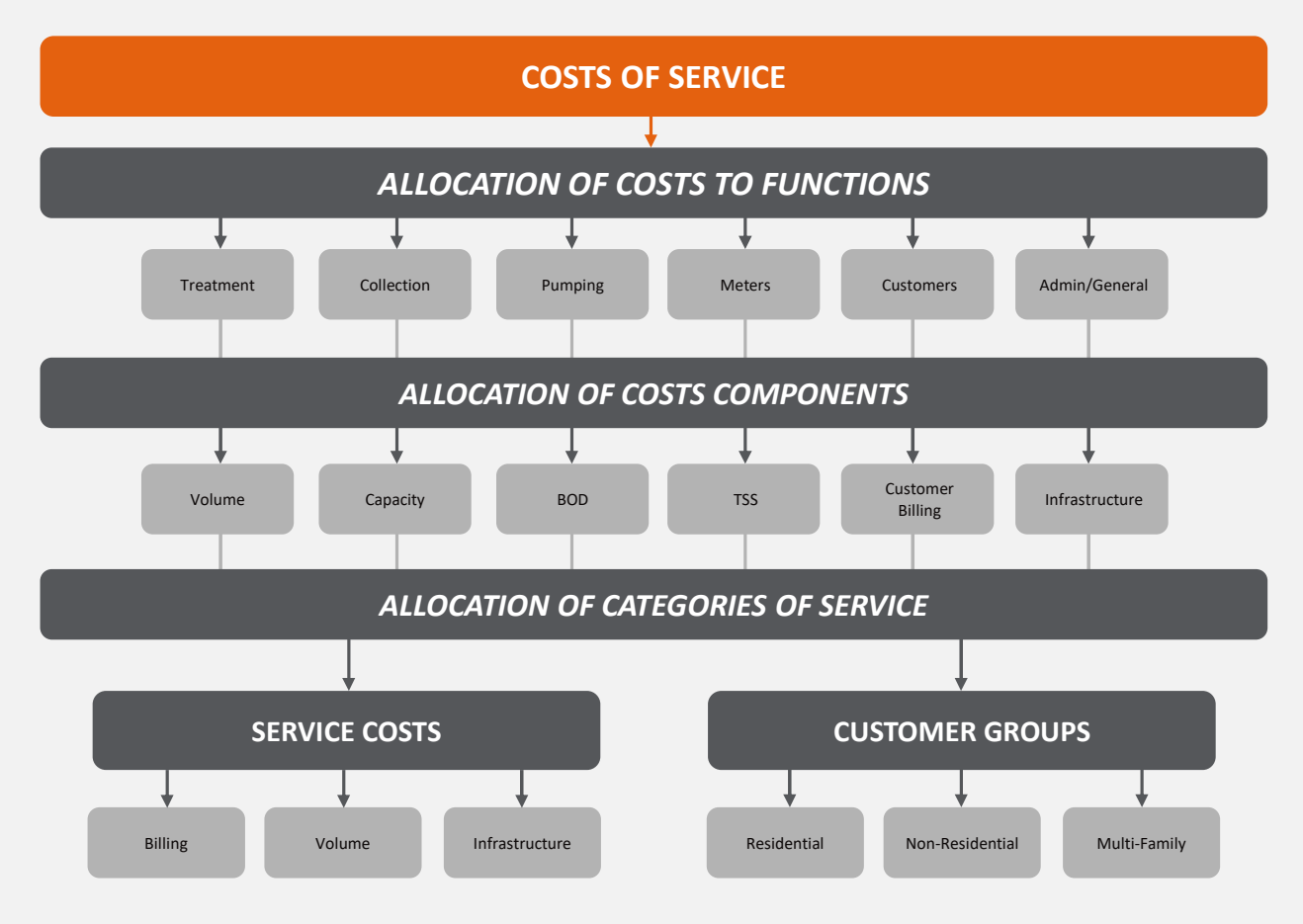
STEP 2

Cost-of-Service Water Allocation Process



STEP
2

Cost-of-Service
Sewer Allocation Process



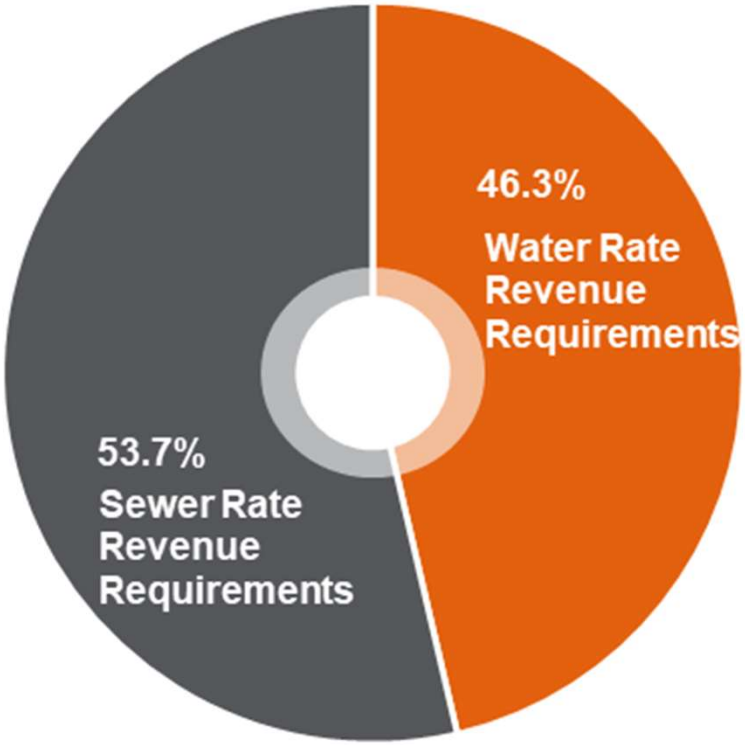
WSSC Water

Cost-of-Service Results

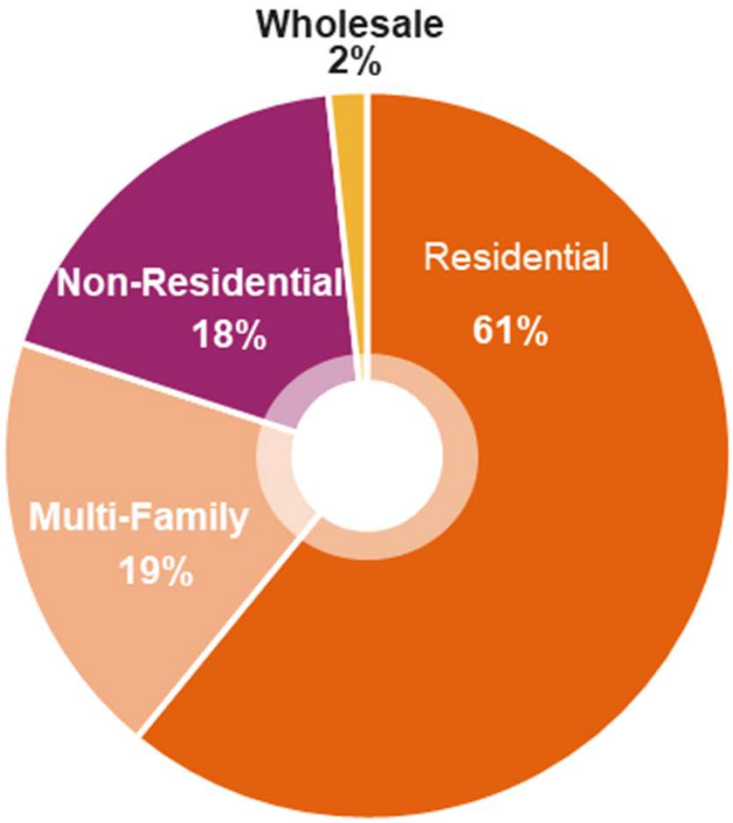
FY2025 test year

Cost-of-Service Results

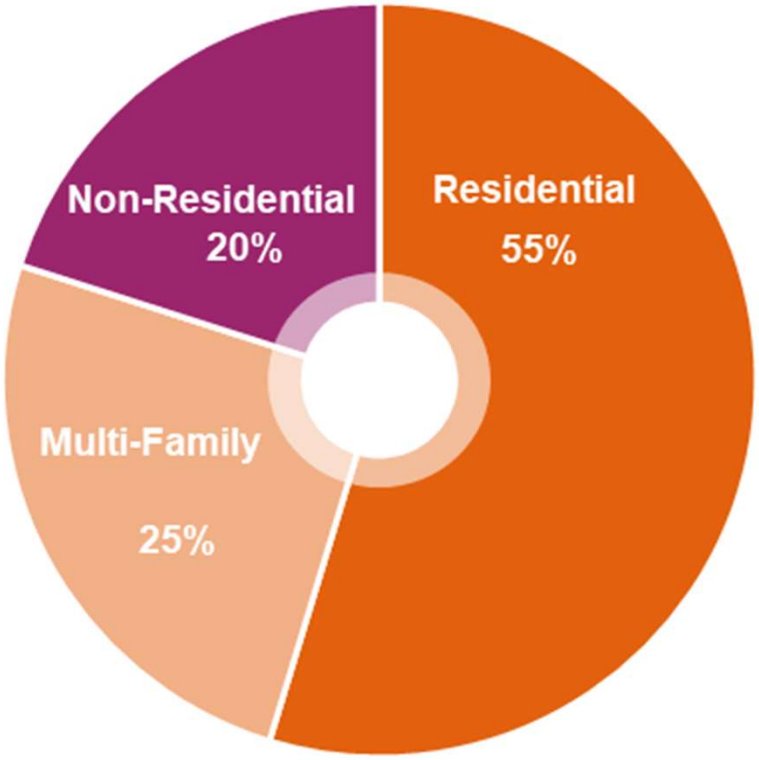
FY 2025 Total Rate Revenue Requirements: $971,228,114



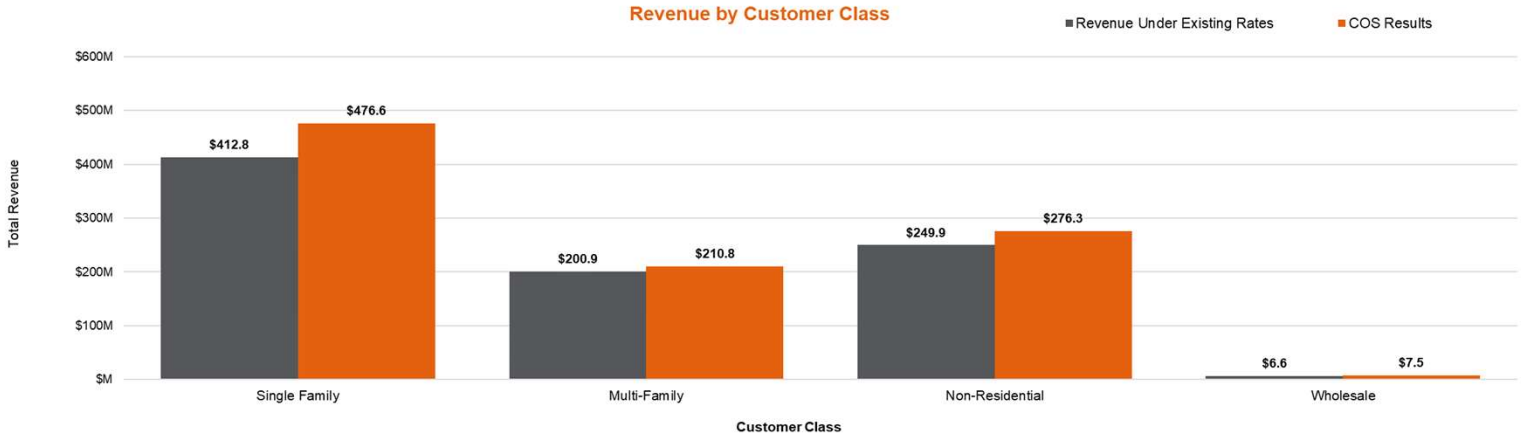
Water Cost-of-Service Results

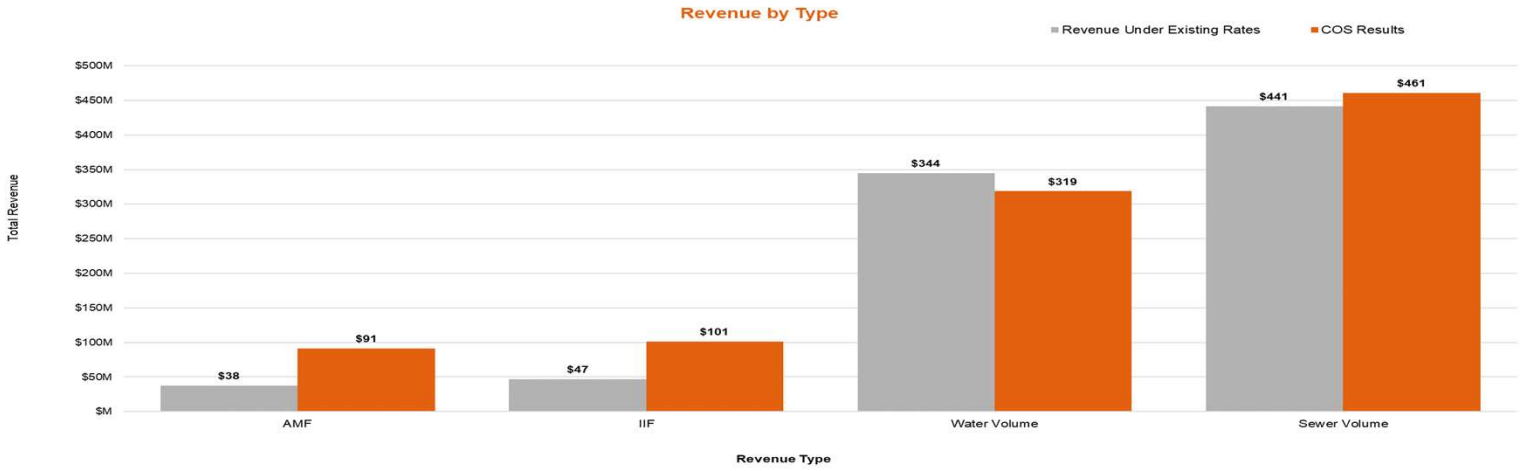


Sewer Cost-of-Service Results

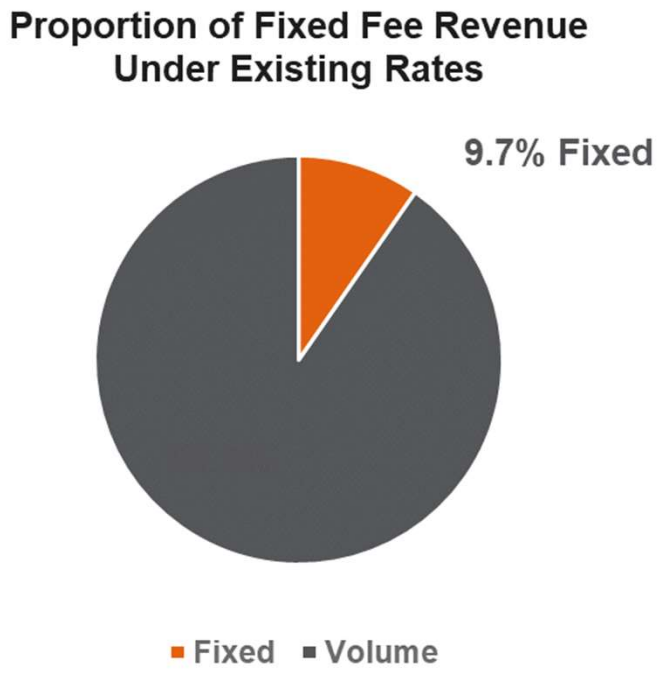


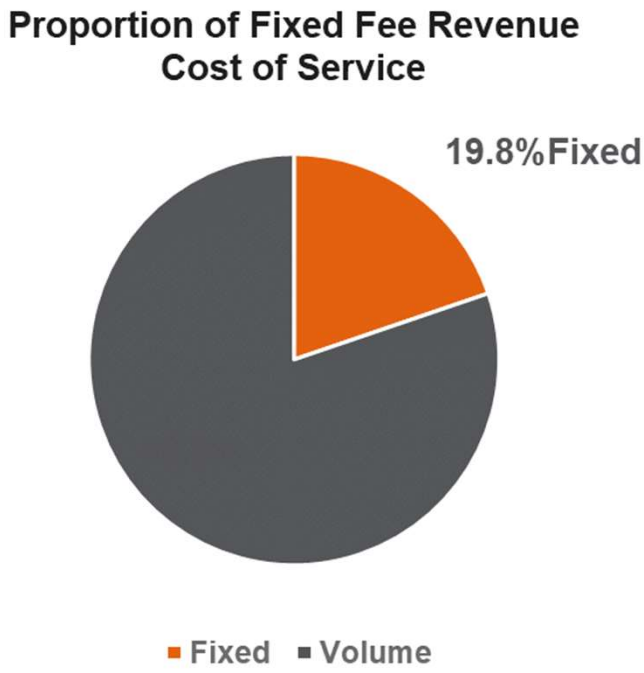
Cost-of-Service Results





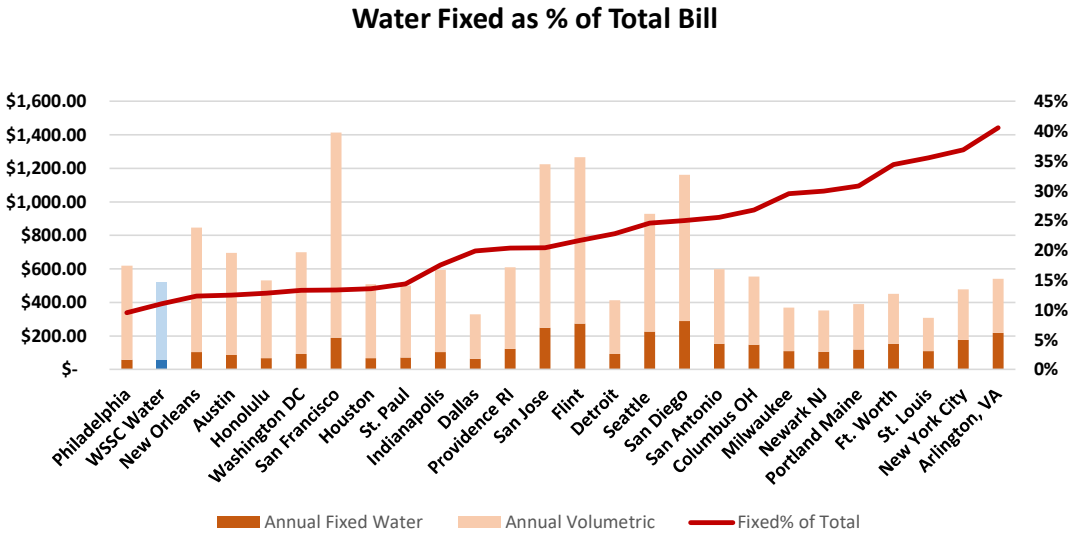
Cost-of-Service Results

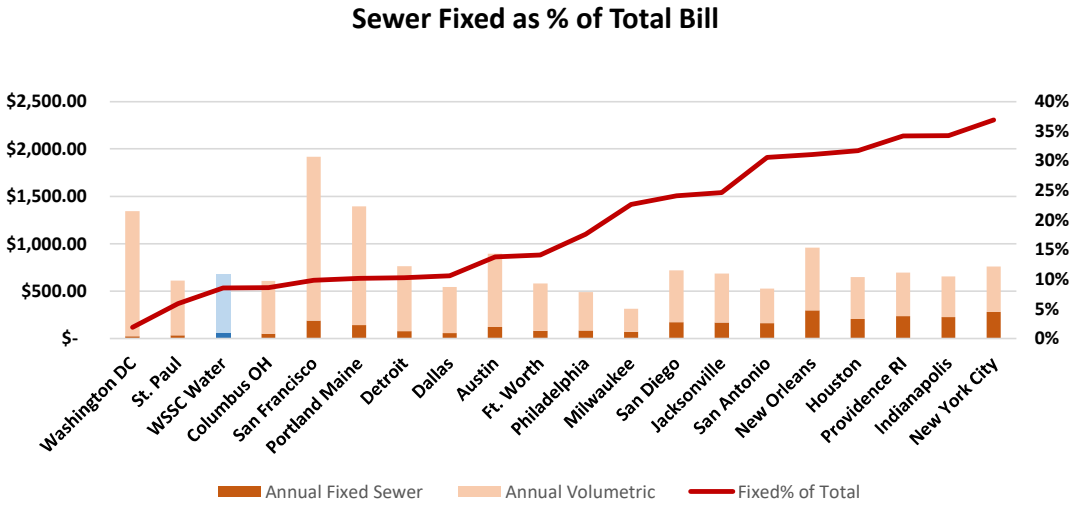




Industry Bill Comparison
Fixed vs Volumetric

Average industry fixed fees make up approximately 20% to 23% of typical bills





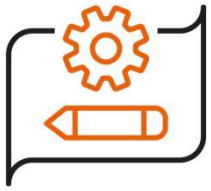
Cost of Service Results

Cost of Service: Results from the Cost-of-Service analysis, along with policy input, will be used to support rate setting efforts.

Project Kick-Off

Calculate Revenue Requirements

Cost of Service



Support Rate Design

Presentation of Findings

Questions and Discussion

WSSC Water

Cost of Service and Rate Study for Fiscal Year 2025

FINAL REPORT

December 7, 2023

Cost of Service and Rate Study for Fiscal Year 2025

FINAL REPORT

December 7, 2023

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Executive Summary

Arcadis U.S., Inc. (Arcadis) prepared the following report for The Washington Suburban Sanitary Commission (WSSC Water) to summarize the Fiscal Year (FY) 2025 Cost of Service (COS) analysis. WSSC Water's rates and charges are designed to recover the costs associated with operating and maintaining the water and sewer infrastructure, as well as meeting regulatory requirements and ensuring reliable service.

WSSC Water provides water and sewer service to over 1.9 million residents, operates several water treatment plants, and is responsible for treating and disposing of wastewater generated by its customers. The results of this COS analysis will be used to support the design of water and sewer rates for WSSC Water customers.

Methodology

Rate Study Process

The rate study process includes three steps: 1) Calculate Revenue Requirements, the amount of funds that must be recovered through user rates, 2) Cost-of-service Evaluation, allocating revenue requirements to customer groups and rate components (fixed and volumetric charges), and 3) Rate Design, the development of the specific charges to be collected from customers. This study's focus is the evaluation of cost of service. For this study, Arcadis followed the industry accepted methodology in accordance with the American Water Works Association (AWWA) *Principles of Water Rates, Fees, and Charges: Manual of Practice M1* and *Financing and Charges for Wastewater Systems: Manual of Practice 27*, which is published by the Water Environment Federation (WEF).

Determine Revenue Requirements

The rate study process begins with the determination of test year (FY2025) revenue requirements. WSSC Water provided Arcadis with the FY2025 revenue requirements, as documented by WSSC Water's capital and operating budgets, approved fund splits that allocated budgetary amounts to specific funds, departments, and divisions within the utility, its planned Capital Improvements Program (CIP), amortization schedules included in FY 2023 Bond and Note Information Book, and its long-term plan, detailing a rate revenue increase requirement of 11.6% in FY2025.

Arcadis prepared a revenue requirements review, which includes a review of revenues, expenses, and resulting financial metrics for the test year, FY2025. The revenue requirements review is a determination of the annual revenue from rates which, combined with other sources of funds, will provide sufficient funds to meet the fiscal requirements of the system. WSSC Water provided Arcadis with its projected Capital Improvement Program (CIP) needs in an Adopted CIP Details document dated August 2, 2023, along with its long-term plan dated October 2, 2023. Arcadis used the long-term plan as the basis for FY2025 revenue requirements. The overall goal of the revenue requirements review is to determine the test year revenue from rates necessary to meet the operating and capital revenue requirements of the system. The FY2025 test year rate revenue requirements for the system are $971,228,114.

Cost of Service Evaluation

The FY2025 cost-of-service (COS) analysis conducted for this engagement is based on industry accepted guidance that rates should have a relationship to cost causative factors specific to the water and sewer utility. This evaluation serves to provide an understanding of the overall cost to serve the customers of the utility. Cost-

of-service based revenue requirements were calculated for the water and sewer systems and compared to revenues generated using existing rates. This comparison was used to identify how revenue from each customer class compared to the proportionate share of the system's revenue requirements. It is important to note that WSSC Water, pursuant to State law, is required to adopt uniform rates for all customers; as such, some variation between customer class revenue and customer class proportionate shares of revenue requirements, based on COS, will occur. The COS analysis also provided an allocation of revenue requirements to fixed rates, including Account Maintenance Fee and Infrastructure Investment Fee, as well as volumetric rates for both water and sewer.

Rate Design

The rate design process builds on the completed revenue sufficiency and cost of service analyses and considers many factors and goals of WSSC Water with the focus of ensuring that water and sewer rates are designed to recover sufficient utility revenues from customers in an equitable manner. The impact of costs on rates is evaluated in the rate development process which influences the design of rates, fees, and charges and generally incorporates the evaluation of alternative rate structure options.

The cost-of-service results will be used in the rate design analysis for FY2025. The development of any rate structure incorporates the balancing of various objectives and priorities including cost-of-service. Based on the cost-of-service results presented herein, Arcadis provided considerations for the FY2025 rate setting process.

Water Cost-of-Service

The water COS evaluation was completed in accordance with water industry practice, as outlined in the AWWA Manual M-1, using the base-extra capacity methodology. The water COS evaluation was completed using an approach that incorporates the base-extra capacity methodology plus the reserved capacity for wholesale customers based on the water capacity limits defined in the wholesale agreements. This methodology assigns the revenue requirements into base costs (i.e., costs associated with average daily water demands), capacity costs (i.e., costs associated with providing capacity to meet peak demands), and other cost driver categories. These costs are then further allocated to customer classes and rate components based on their respective service requirements. In order to allocate costs to customer classes, both the operating and capital-related portions of the FY2025 rate revenue requirement were categorized into seven different cost categories. These categories are shown below.

1. Base Costs – Include costs associated with handling average daily water demands (ADD) (i.e., costs associated with providing water service under average demand conditions).
2. Maximum Day Extra Capacity Costs – Include costs associated with providing system capacity to meet maximum day water demands (MDD) in excess of average daily demands.
3. Maximum Hour Extra Capacity Costs – Include costs associated with providing system capacity to meet maximum hour water demands (MHD) in excess of average day and maximum day demands.
4. Equivalent Meter Costs – Include costs associated with services where the costs vary by the size of the meter or service line. Examples of such costs include the cost to maintain, service, and replace water meters and associated water service lines.
5. Billing Costs – Include costs that vary in proportion to the number or type of customers served and bills issued. Include costs associated with preparing and issuing customer bills and collecting and processing payments as they are received.

6. Infrastructure and Investment Fee Costs – Includes cost associated with pipeline reconstruction projects.
7. Fire Protection Costs – Include costs related to providing public fire protection to WSSC Water customers. Such costs include maintaining and servicing fire hydrants in a manner sufficient to provide fire suppression capabilities throughout the service area.

The water cost-of-service methodology including allocations of costs by functions, components and categories of service is illustrated in the following figure.

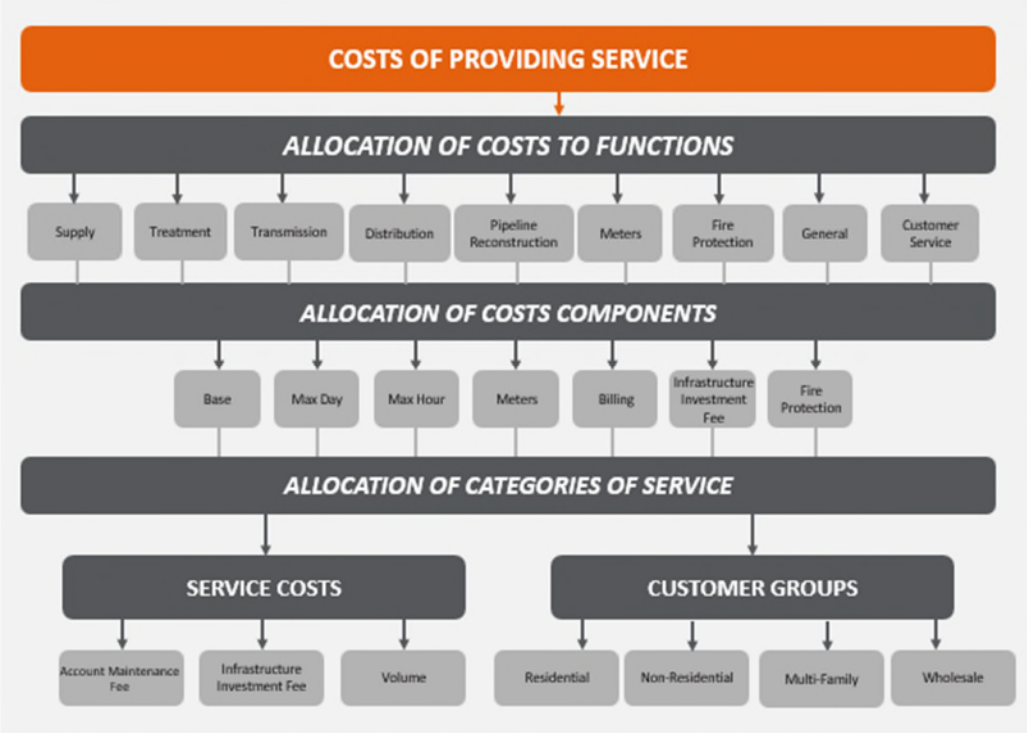

Figure 1 Cost of Service Water Allocation Process

Sewer Cost-of-Service

The sewer COS evaluation was completed in accordance with industry practice, as detailed in the WEF Financing and Charges for Wastewater Systems, Manual of Practice 27. The evaluation involved allocating the sewer rate revenue requirements to cost component categories and allocating costs from these categories to customer classes and rate components. In order to allocate costs to customer classes, both the operating and capital-related portions of the FY2025 rate revenue requirement were categorized into five different cost categories. These categories are shown below.

1. Volume-Based Costs – Include costs that vary based on the volume of wastewater collected and treated (e.g., chemical and electricity costs).
2. Capacity-Based Costs – Include costs associated with providing excess capacity to meet peak demands.

3. Strength-Based Costs – Include costs associated with treatment of biological oxygen demand (BOD) and total suspended solids (TSS).
4. Customer Costs – Include costs that vary in proportion to the number or type of customers served.
5. Infrastructure and Investment Fee Costs – Includes cost associated with pipeline capital reconstruction projects.

The sewer cost-of-service methodology including allocations of costs by functions, components and categories of service is illustrated in the following figure.

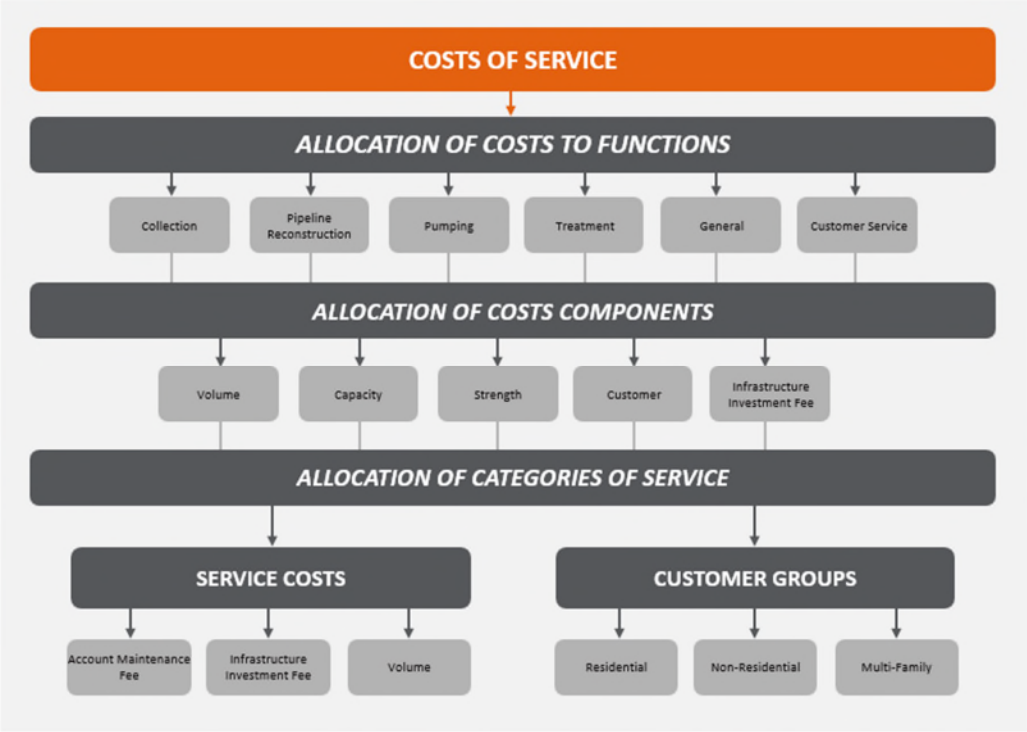

Figure 2 Cost of Service Sewer Allocation Process

Considerations

The rate design process will build on the cost-of-service analyses and as well as factors and objectives of WSSC Water with the focus of ensuring that water and sewer rates are designed to recover sufficient utility revenues from customers in an equitable manner. Based on the cost-of-service analysis, considerations for rate design have been identified.

The following figures illustrate the cost-of-service results and revenue under existing rates for each customer class and rate type. Revenue using existing rates is compared to revenue from the cost-of-service analysis.

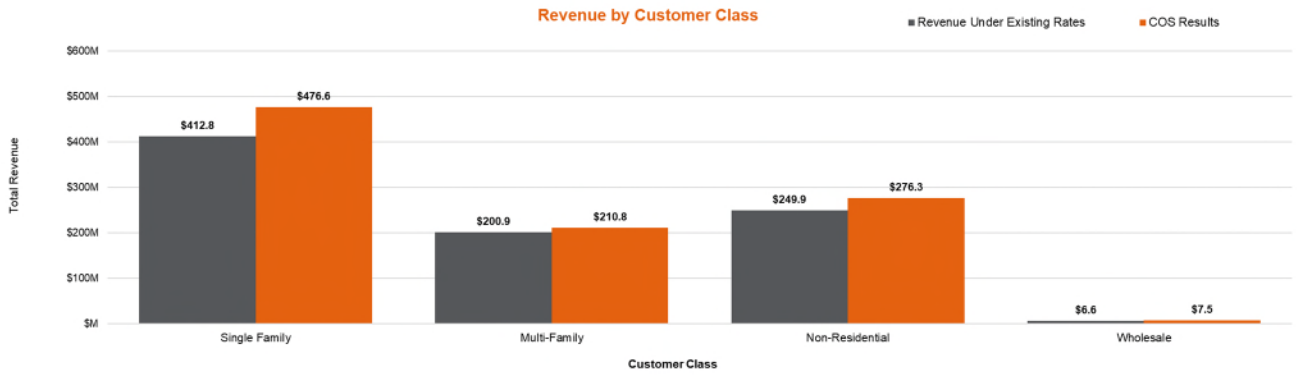

Figure 3 Cost of Service Results – Revenue by Customer Class

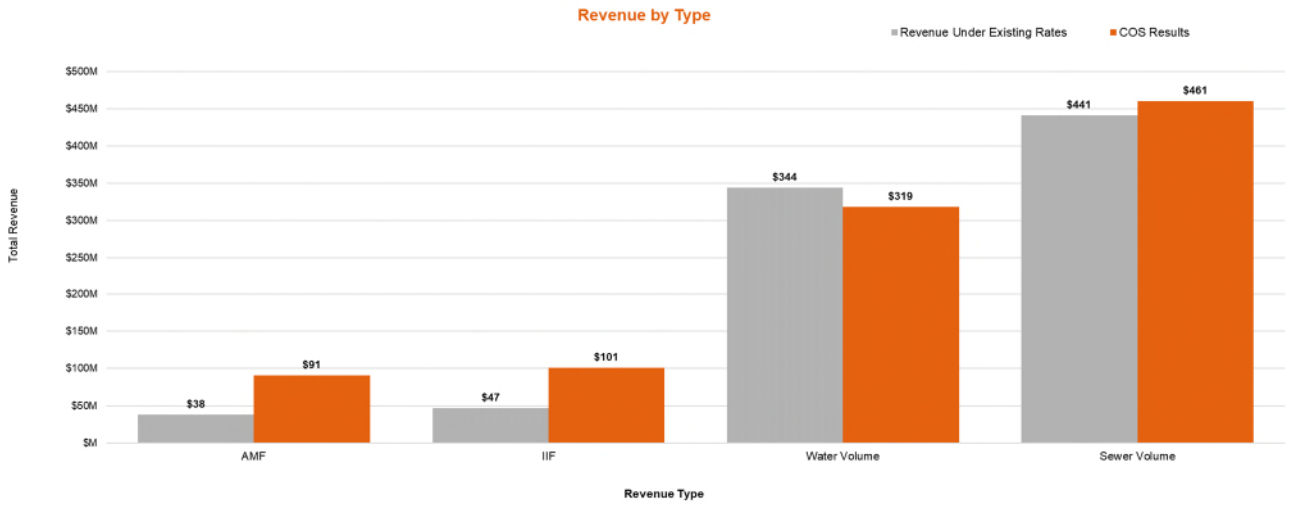

Figure 4 Cost of Service Results – Revenue by Type

The cost-of-service results indicate that a larger portion of revenue should be generated from fixed fees: 19.8% versus 9.7% currently. Recovering a greater proportion of costs of service from fixed fees will promote revenue stability and increase the size of benefit provided to CAP customers, since CAP customers do not pay the fixed rate portion of the rate structure. It is also important to note that industry average revenue from fixed fees (20% - 23%) is higher than WSSC Water's current levels (9.7%). Future rates should consider increases in the fixed AMF and IIF fees.

Adjusting rates yields different impacts to different customers based primarily on usage levels. Increasing fixed fees will increase the quarterly bill percentage at a greater proportion for customers at lower usage levels, although the dollar amount of the increase may be lower than other customers. WSSC Water could consider a phased approach to increasing fixed fees. The phased approach could achieve fixed fee increase over the course of several increases over several years.

1 Introduction

1.1 Background

WSSC Water provides water and sewer service to over 1.9 million residents in Montgomery and Prince George's Counties, Maryland (the Counties). The service area covers approximately 1,000 square miles, including urban, suburban, and rural areas serving residential, commercial, and industrial retail customers plus wholesale water service to bulk customers. WSSC Water sources its drinking water primarily from the Potomac River and Patuxent River. The water goes through an extensive treatment process prior to being distributed to customers. WSSC Water operates several water treatment plants to ensure water quality meets regulatory standards. In addition, WSSC Water is responsible for treating and disposing of wastewater generated by its customers. The wastewater is collected through an extensive network of sewer mains and transported to one of multiple advanced treatment water resource recovery facilities to remove pollutants and ensure compliance with environmental regulations. WSSC Water maintains a vast network of water and sewer pipelines, pumping stations, reservoirs, and other infrastructure to deliver water and collect wastewater efficiently which requires continuous investment and maintenance to ensure reliable service and to address the needs of customers.

WSSC Water last completed a COS study in 2017 followed by adoption of the rate structure effective July 1, 2019. The adopted rate structure included fixed rates, the Account Maintenance Fee and Infrastructure Investment Fee, as well as four-tiered volumetric rates for both water and sewer. Table 1-1 presents the current FY2024 rates. The purpose of this study was not to revisit the existing rate structure, but to conduct a COS analysis for use in updating rates within the current rate structure. WSSC Water's rates and charges are designed to recover the costs associated with operating and maintaining the water and sewer infrastructure, as well as meeting regulatory requirements and ensuring reliable service.

Table 1-1: FY2024 Rates (Current Rates)

	FY2024
Meter Size	**Account Maintenance Fee (Quarterly)**
5/8"	$18.23
3/4"	$18.23
1"	$18.23
1 1/2"	$18.23
2"	$30.77
3"	$75.21
4"	$161.82
6"	$175.49
8"	$227.91
10"	$280.33
Meter Size	**Infrastructure Investment Fee (Quarterly)**
5/8"	$12.54
3/4"	$13.67
1"	$15.95
1 1/2"	$102.56
2"	$210.82
3"	$666.64
4"	$926.46
6"	$1,441.54
8"	$3,242.03
10"	$5,042.51
Average Daily Consumption (gallons per day)	**Water Volumetric Charge (per TGAL)**
0 - 80.9999	$6.53
81 - 165.9999	$7.38
166 - 275.9999	$8.50
> 276	$9.96
Average Daily Consumption (gallons per day)	**Sewer Volumetric Charge (per TGAL)**
0 - 80.9999	$8.67
81 - 165.9999	$9.63
166 - 275.9999	$12.09
> 276	$15.97

1.2 Methodology and Objectives

Arcadis followed industry accepted standards described in *Principles of Water Rates, Fees, and Charges: Manual of Practice M1* by the American Water Works Association (AWWA) and *Financing and Charges for Wastewater Systems, Manual of Practice No. 27* by the Water Environment Federation (WEF). The methodology begins with the calculation of test year (FY2025) revenue requirements. These were calculated using the cash-needs approach, which estimates the revenues required to pay operation and maintenance expenses, debt service, and rate-funded capital expenditures (commonly called "paygo"). This determination is based on historical financial information and budgetary inputs provided by the utility, including financial statements, operating and capital budgets, the planned Capital Improvements Program (CIP), debt service projections, and the long-term financial plan. Arcadis did not conduct a separate analysis or develop different assumptions regarding revenue or revenue requirements over the study period.

In the second part of the study, Cost of Service, revenue requirements are allocated to water and sewer system functions, cost components, and groups of customers whose demand characteristics place requirements on the utility to incur costs to serve them. The water COS allocation was completed using the base-extra capacity methodology outlined in AWWA *Manual M-1*. This methodology allocates the revenue requirements to base costs (i.e., costs associated with average daily water demands), capacity costs (i.e., costs associated with providing capacity to meet peak demands), and other cost categories. These costs are then further allocated to customer classes and rate components based on their respective service requirements. The sewer COS allocation was completed in accordance with WEF *Manual of Practice 27*, which allocates revenue requirements to volumetric costs (i.e., costs that vary with wastewater volume), strength costs (i.e., costs associated with treatment of biological oxygen demand and total suspended solids), and other cost categories. These costs are then further allocated to customer classes and rate components based on their service requirements.

2 Water and Sewer Financial Plan

2.1 Overview

The purpose of this section is to present the FY2025 revenue requirements review, which includes revenues, expenses, and resulting debt service coverage ratios for the test year, FY2025. The WSSC Water fiscal year runs from July 1st to June 30th. WSSC Water provided Arcadis with its projected Capital Improvement Program (CIP) needs in an Adopted CIP Details document dated August 2, 2023, forecasted percent completion for the CIP, and its long-term plan dated October 2, 2023. Arcadis used these budgetary inputs as its basis for FY2025 revenue requirements.

2.2 General Methodology

The revenue requirements review is a calculation of the annual revenue from rates which, combined with other sources of funds, will provide sufficient funds to meet the fiscal requirements of the system. The revenue requirements review does not include a determination of the actual rates and charges of the system but provides a forecast of the total system rate revenue needs as well as increases in rate revenue, if any, that are projected for the test year, FY2025.

The process employed in the revenue requirements review results in the identification of revenue requirements of the system, such as operating expenses, capital expenses, debt service expense (including a provision for debt service coverage), transfers out, and the maintenance of reserves at appropriate levels. These revenue requirements are then compared to the total sources of funds during each year of the forecast period to determine the adequacy of projected revenues to meet requirements. To the extent that the existing revenue stream is not forecasted to be sufficient to meet the annual revenue requirements of the system, a rate revenue increase is calculated to provide revenue sufficient to meet those needs. The overall goal of the revenue requirements review is to determine the revenue necessary for the test year to meet the operating and capital revenue requirements of the water and sewer systems, including funding of the CIP. In addition, WSSC Water has established financial targets for prudent financial management, including maintaining its AAA bond rating, that are expected to require multiple years, beyond the test year, to achieve:

1. Target debt service coverage of 1.5x
2. Target debt service of less than 40% of total expenditures
3. Maintain working capital reserve levels of 250 days of operating expenses
4. Maintain a minimum ending operating fund balance of 20% of annual operating revenue

2.3 Data Used in the Analysis

This section of the report provides a summary of data used in the analysis as well as general assumptions made as part of the forecast. The analysis uses data sources from WSSC Water planning documents such as the WSSC Water long-term plan, Annual Financial Reports, FY2023 and FY2024 Approved Fund Splits, and the CIP and Adopted CIP Extract. CIP funding sources were obtained from the long-term plan.

2.3.1 Data Items

Key data items reviewed, discussed with WSSC Water, and incorporated into the Revenue Sufficiency include the following:

- Financial objectives of the system as provided by WSSC Water.
- Ending balances (working capital) from the FY2022 Annual Financial Report have been used as the balances available at the beginning of FY2023, with adjustments to tie to the long-term plan.
- Operating Expenses from the Approved Fund Splits (water/sewer) file dated May 30, 2023, adjusted proportionally to align with total operating expenses included in WSSC Water's long-term plan dated October 2, 2023.
- FY2025-FY2030 revised Capital Improvement Plan and adopted CIP details file dated August 2, 2023.
- Bond & Note Information document dated June 30, 2023.
- Long-term plan dated October 2, 2023

A discussion of the use of each of the above data items is presented below.

2.3.2 Source of Funds

WSSC Water provided the long-term plan as a source of information for the revenue requirements review. From this plan, line-item revenue detail is obtained and serves as the basis for operating revenues of the system. In addition, WSSC Water provided Annual Financial Reports as well as the Adopted CIP. Arcadis obtained funding sources for the SDC Fund, Grants & Contributions Fund, General Bond Debt Service Funds, and from the long-term plan. A summary projection of the Sources of Funds for FY2025 through FY2030 is presented below in Table 2-1.

Table 2-1: Source of Funds

Line No:		2025	2026	2027	2028	2029	2030
	Projected Water and Sewer Rate Revenue Increases	**11.6%**	**12.5%**	**6.0%**	**5.5%**	**4.2%**	**4.2%**
	% of Year Rate Increase Effective	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	Operating Fund						
1	Water and Sewer Charge Revenue	$ 786,306,774	$ 877,211,119	$ 986,445,457	$ 1,045,474,027	$ 1,102,975,098	$ 1,149,309,706
2	Account Maintenance Fee Revenue	37,712,290	42,072,179	47,311,200	50,142,286	52,900,112	55,122,379
3	Rockville Sewer Use Revenue	3,300,000	3,300,000	3,300,000	3,300,000	3,300,000	3,300,000
4	Plumbing Inspection Fee Revenue	21,356,000	21,996,680	22,656,580	23,336,278	24,036,366	24,757,457
5	Infrastructure Investment Fee Revenue	46,561,836	51,944,816	58,413,222	61,908,650	65,313,625	68,057,369
6	Revenue from Rate Increases	100,647,214	120,941,764	65,355,084	63,663,873	51,300,619	53,886,240
8	Miscellaneous Revenue	20,935,104	20,127,433	19,827,268	19,543,453	19,377,092	19,191,764
9	Cost Sharing Reimbursement	7,013,300	12,860,300	12,860,300	7,157,500	7,003,800	7,003,800
10	Transfer In - SDC Fund	5,772,000	5,772,000	5,747,850	5,747,850	5,747,850	5,747,850
11	Transfer In - Underwriters Discount	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
12	Interest Income - Operating Fund	8,860,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
13	**Total Revenue - Water and Sewer Operating Fund**	**$ 1,040,464,518**	**$ 1,166,226,291**	**$ 1,231,916,961**	**$ 1,290,273,916**	**$ 1,341,954,563**	**$ 1,396,376,566**
	System Development Charge Fund						
14	System Development Charge Revenue	$ 55,698,000	$ 42,044,000	$ 34,470,850	$ 39,145,850	$ 34,353,850	$ 17,218,850
15	**Total Source of Funds - System Development Charge Fund**	**$ 55,698,000**	**$ 42,044,000**	**$ 34,470,850**	**$ 39,145,850**	**$ 34,353,850**	**$ 17,218,850**
	Grants & Contribution Fund						
16	Federal and State Grants	$ 30,720,000	$ 26,769,000	$ 23,788,000	$ 23,788,000	$ 22,000,000	$ 22,000,000
17	Other Contributions / Local Government	$ 47,851,000	$ 81,818,000	$ 76,641,000	$ 51,894,000	$ 28,197,000	$ 6,106,000
18	**Total Sources of Funds - Grants & Contribution Fund**	**$ 78,571,000**	**$ 108,587,000**	**$ 100,429,000**	**$ 75,682,000**	**$ 50,197,000**	**$ 28,106,000**
	General Construction Bond Debt Service Fund						
19	Front Foot Benefit and House Connection assessments	$ 4,682,480	$ 4,120,582	$ 3,626,113	$ 3,190,979	$ 2,808,062	$ 2,471,094
20	Miscellaneous	$ 192,850	$ 195,743	$ 198,679	$ 201,659	$ 204,684	$ 207,754
21	General Construction Bonds	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000	$ 600,000
22	**Total Sources of Funds - General Bond Debt Service Fund**	**$ 5,475,330**	**$ 4,916,325**	**$ 4,424,791**	**$ 3,992,638**	**$ 3,612,745**	**$ 3,278,848**
23	**Total Projected Sources of Funds - Water and Sewer**	**$ 1,180,208,848**	**$ 1,321,773,616**	**$ 1,371,241,602**	**$ 1,409,094,404**	**$ 1,430,118,158**	**$ 1,444,980,265**

Source: WSSC Water Ten Year Long Term Plan

2.3.3 Use of Funds

WSSC Water's FY2024 Approved Fund Splits were used as the basis for allocating operating expenses to specific funds, departments, and divisions within the utility. For FY2025 and future years, amounts in the Approved Fund Splits were increased proportionally to align with the total amounts in the long-term plan.

Uses of funds also include projected capital funded with existing reserves and cash as well as debt service. Existing debt service includes principal and interest payments from the Water Supply Bonds, MD Water Quality Bonds, and Sewage Disposal Bonds as well as Water and Sewer General Notes. Amortization schedules for this debt were taken from the WSSC Water Bond and Note Information book dated June 30, 2023. The long-term plan, provided by WSSC Water, provides capital project funding sources and other details used to identify the use of proceeds from the various WSSC Water Funds to fund capital expenses. A summary of the FY2025 through FY2030 expense budget, as projected from FY2024, is presented below in Table 2-2.

Table 2-2: Uses of Funds

Line No:		2025	2026	2027	2028	2029	2030
	Operating Fund						
1	Operating Expenses	$ 616,180,779	$ 658,370,475	$ 679,357,986	$ 701,674,221	$ 724,629,928	$ 750,108,538
2	Capital Projects Funded with Cash	61,143,733	126,524,205	151,163,240	168,433,502	180,136,451	193,087,710
3	Debt Service - Bonds & Notes	363,140,006	381,331,611	401,395,735	420,166,193	437,188,183	453,180,319
4	**Total Uses of Funds - Operating Fund - Water and Sewer**	**$ 1,040,464,518**	**$ 1,166,226,291**	**$ 1,231,916,961**	**$ 1,290,273,916**	**$ 1,341,954,563**	**$ 1,396,376,566**
	System Development Charge Fund						
5	Transfer to Operating Fund	5,772,000	5,772,000	5,747,850	5,747,850	5,747,850	5,747,850
6	Capital Projects Funded with System Development Charge Funds	49,926,000	36,272,000	28,723,000	33,398,000	28,606,000	11,471,000
7	**Total Uses of Funds - System Development Charge Fund**	**$ 55,698,000**	**$ 42,044,000**	**$ 34,470,850**	**$ 39,145,850**	**$ 34,353,850**	**$ 17,218,850**
	Grants & Contribution Fund						
8	Capital Projects Funded with Grants & Contribution Funds	78,571,000	108,587,000	100,429,000	75,682,000	50,197,000	28,106,000
9	**Total Uses of Funds - Grants & Contribution Fund**	**$ 78,571,000**	**$ 108,587,000**	**$ 100,429,000**	**$ 75,682,000**	**$ 50,197,000**	**$ 28,106,000**
	General Construction Bond Debt Service Fund						
10	Operating Expenses	2,111,991	2,128,133	2,144,428	2,160,877	2,177,483	2,194,247
11	Capital Projects Funded with General Construction Bond Debt Service Funds	600,000	600,000	600,000	600,000	600,000	600,000
12	Debt Service	4,573,800	4,399,780	4,240,864	4,096,053	3,964,420	3,845,103
13	**Total Uses of Funds - General Bond Debt Service Fund**	**$ 7,285,791**	**$ 7,127,913**	**$ 6,985,291**	**$ 6,856,930**	**$ 6,741,903**	**$ 6,639,351**
14	**Total Projected Uses of Funds - Water and Sewer**	**$ 1,182,019,309**	**$ 1,323,985,204**	**$ 1,373,802,102**	**$ 1,411,958,696**	**$ 1,433,247,316**	**$ 1,448,340,767**

Source: WSSC Water Ten Year Long Term Plan

2.3.4 Capital Improvement Plan

WSSC Water provided Arcadis a forecast of the total CIP. In addition, the CIP data includes the portion of the CIP that is planned to be executed and the annual net funding (cash expenditure) program for FY2025 through FY2030, obtained from the long-term plan. The projected CIP execution rate for FY2025 is 75.1% of the total CIP. Arcadis used the funding source eligibility from the long-term plan to assign funding sources to the annual net programmed CIP expenditures for FY2025.

Certain projects in the CIP are planned to be funded with operating cash ("paygo") and other available funds from the System Development Charge Fund, Grants & Contributions Fund, and General Construction Bond Debt Service Fund. A summary table of the CIP for FY2025 through FY2030 is presented below in Table 2-3.

Table 2-3: CIP and Projected Funding

Line No:		2025	2026	2027	2028	2029	2030
1	**Total Capital Projects - Water and Sewer**	$ 813,370,000	$ 857,655,000	$ 777,943,000	$ 804,194,000	$ 785,056,000	$ 744,972,000
2	**% of Projects Funded**	75.1%	80.1%	80.1%	80.1%	80.1%	80.1%
3	**Net Capital Projects - Water and Sewer**	**$ 610,627,500**	**$ 686,724,000**	**$ 622,954,400**	**$ 643,955,200**	**$ 628,644,800**	**$ 596,577,600**
	Funding Source:						
4	Operating Fund	$ 61,143,733	$ 126,524,205	$ 151,163,240	$ 168,433,502	$ 180,136,451	$ 193,087,710
5	System Development Charge Fund	49,926,000	36,272,000	28,723,000	33,398,000	28,606,000	11,471,000
6	Grants & Contributions Fund	78,571,000	108,587,000	100,429,000	75,682,000	50,197,000	28,106,000
7	General Construction Bond Debt Service Fund	600,000	600,000	600,000	600,000	600,000	600,000
8	Bond Proceeds	420,386,767	414,740,795	342,039,160	365,841,698	369,105,349	363,312,890
9	**Total Capital Projects Funded**	**$ 610,627,500**	**$ 686,724,000**	**$ 622,954,400**	**$ 643,955,200**	**$ 628,644,800**	**$ 596,577,600**
10	**Variance**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

2.4 Results of the Water and Sewer Revenue Requirements Review

After a thorough review of the above-mentioned data elements and review with WSSC Water, Arcadis aligned the revenue requirements review with WSSC Water's long-term plan, which provides for WSSC Water's projection of prudent and necessary costs of operating the system as well as customer service costs, while minimizing revenue/rate increases on WSSC Water customers. The resulting financial plan is presented and described in the following sections, and reflects the information noted above.

2.4.1 Summary Pro Forma and Revenue Increases Required

The revenue requirements and financial goals of WSSC Water for FY2025 necessitate additional revenue. Table 2-4 below presents a summary of the system (water and sewer) pro forma financial results for FY2025 through FY2030, including necessary revenue increases to meet water and sewer revenue requirements (including funding of the CIP).

Table 2-4: Summary Pro Forma

Line No:		2025	2026	2027	2028	2029	2030
	Operating Fund						
1	**Beginning Operating Fund Balance**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**
	Water and Sewer Rate Revenue Increases	**11.6%**	**12.5%**	**6.0%**	**5.5%**	**4.2%**	**4.2%**
	% of Year Rate Increase Effective	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
2	Total Rate Revenue	$ 971,228,114	$ 1,092,169,878	$ 1,157,524,962	$ 1,221,188,835	$ 1,272,489,455	$ 1,326,375,695
3	Other Operating Revenue	52,604,404	58,284,413	58,644,148	53,337,230	53,717,258	54,253,021
4	Transfers In	7,772,000	7,772,000	7,747,850	7,747,850	7,747,850	7,747,850
5	Interest Income - Operating Fund	8,860,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
6	**Total Revenue**	**$ 1,040,464,518**	**$ 1,166,226,291**	**$ 1,231,916,961**	**$ 1,290,273,916**	**$ 1,341,954,563**	**$ 1,396,376,566**
7	Operating Expense	$ 616,180,779	$ 658,370,475	$ 679,357,986	$ 701,674,221	$ 724,629,928	$ 750,108,538
8	Capital Projects Funded with Cash	61,143,733	126,524,205	151,163,240	168,433,502	180,136,451	193,087,710
9	Debt Service - Bonds & Notes	$ 363,140,006	$ 381,331,611	$ 401,395,735	$ 420,166,193	$ 437,188,183	$ 453,180,319
10	**Use of Funds**	**$ 1,040,464,518**	**$ 1,166,226,291**	**$ 1,231,916,961**	**$ 1,290,273,916**	**$ 1,341,954,563**	**$ 1,396,376,566**
11	**Ending Fund Balance - Operating Fund**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**	**$ 315,100,539**
	System Development Charge Fund						
12	Beginning Balance	$ -	$ -	$ -	$ -	$ -	$ -
13	Sources of Funds	55,698,000	42,044,000	34,470,850	39,145,850	34,353,850	17,218,850
14	Uses of Funds	55,698,000	42,044,000	34,470,850	39,145,850	34,353,850	17,218,850
15	**Ending Balance**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	Grants & Distribution Fund						
16	Beginning Balance	$ -	$ -	$ -	$ -	$ -	$ -
17	Sources of Funds	78,571,000	108,587,000	100,429,000	75,682,000	50,197,000	28,106,000
18	Uses of Funds	78,571,000	108,587,000	100,429,000	75,682,000	50,197,000	28,106,000
19	**Ending Balance**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	General Construction Bond Debt Service Fund						
20	Beginning Balance	$ 3,821,000	$ 2,010,539	$ (201,048)	$ (2,761,548)	$ (5,625,841)	$ (8,754,998)
21	Sources of Funds	5,475,330	4,916,325	4,424,791	3,992,638	3,612,745	3,278,848
22	Uses of Funds	7,285,791	7,127,913	6,985,291	6,856,930	6,741,903	6,639,351
23	**Ending Balance**	**$ 2,010,539**	**$ (201,048)**	**$ (2,761,548)**	**$ (5,625,841)**	**$ (8,754,998)**	**$ (12,115,501)**
	Summary of Key Metrics: **Target**						
	Operating Fund Balance Target: 20%						
24	Ending Balance	$ 315,100,539	$ 315,100,539	$ 315,100,539	$ 315,100,539	$ 315,100,539	$ 315,100,539
25	Operating Revenue	1,032,692,518	1,158,454,291	1,224,169,111	1,282,526,066	1,334,206,713	1,388,628,716
26	**Operating Fund Balance as % of Operating Revenue**	**31%**	**27%**	**26%**	**25%**	**24%**	**23%**
	Debt Service Target (% of Total Expenditures): 40%						
27	Total Expenditures	$ 1,040,464,518	$ 1,166,226,291	$ 1,231,916,961	$ 1,290,273,916	$ 1,341,954,563	$ 1,396,376,566
28	Debt Service - Bonds & Notes	363,140,006	381,331,611	401,395,735	420,166,193	437,188,183	453,180,319
29	**Debt Service % of Total Expenditures**	**35%**	**33%**	**33%**	**33%**	**33%**	**32%**
	Debt Service Coverage Requirement: 1.5						
30	Operating Revenues	$ 1,022,907,848	$ 1,148,970,616	$ 1,214,193,902	$ 1,272,118,704	$ 1,323,419,458	$ 1,377,507,564
31	Operating Expense	(618,292,770)	(660,498,608)	(681,502,413)	(703,835,098)	(726,807,412)	(752,302,785)
32	Capital Contribution	61,217,000	61,217,000	61,217,000	61,217,000	61,217,000	61,217,000
33	Adjustment for Misc. Cash Revenues/Expenses	15,700,000	15,700,000	15,700,000	15,700,000	15,700,000	15,700,000
34	Interest Income	8,860,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
35	Funds Available for Debt Service	$ 490,392,078	$ 573,389,008	$ 617,608,489	$ 653,200,606	$ 681,529,047	$ 710,121,780
36	Annual Bond Debt Service	$ 366,620,302	380,182,628	400,445,452	419,015,452	434,244,660	448,919,550
37	**Debt Service Coverage (Ln 35 / Ln 36)**	**1.3**	**1.5**	**1.5**	**1.6**	**1.6**	**1.6**
	Days Cash On Hand: 250						
38	Unrestricted Cash and Investments Starting Balance	$ 346,643,973	$ 409,272,016	$ 475,954,191	$ 541,953,987	$ 607,705,639	$ 674,853,575
39	Funds Available for Debt Service	490,392,078	573,389,008	617,608,489	653,200,606	681,529,047	710,121,780
40	Annual Bond Debt Service	(366,620,302)	(380,182,628)	(400,445,452)	(419,015,452)	(434,244,660)	(448,919,550)
41	Cash Capital	(61,143,733)	(126,524,205)	(151,163,240)	(168,433,502)	(180,136,451)	(193,087,710)
42	Unrestricted Cash and Investments Ending Balance	$ 409,272,016	$ 475,954,191	$ 541,953,987	$ 607,705,639	$ 674,853,575	$ 742,968,095
43	Operating Expense	$ 618,292,770	$ 660,498,608	$ 681,502,413	$ 703,835,098	$ 726,807,412	$ 752,302,785
44	**Days Cash On Hand (Ln 42 / (Ln 43 / 365))**	**242**	**263**	**290**	**315**	**339**	**360**

Source: WSSC Water Ten Year Long Term Plan

Table 2-5 provides a summary of the FY2025 rate revenue requirements. The rate revenue requirements are based on the recovery of the operating and maintenance expenditures, debt service payments, and system

funded capital expenditures (paygo), less miscellaneous revenues, interest income, and transfers, as established in the pro forma summary in Table 2-4. The FY2025 total rate revenue requirements are $971,228,114.

Table 2-5: Rate Revenue Requirements

Description	FY 2025 Total Rate Revenue Requirements
O&M	
Operation & Maintenance Expenses	$616,180,779
Less: Miscellaneous Revenue	(52,604,404)
Less: Interest Income	(8,860,000)
Net O&M from Rates	$554,716,375
Capital	
Capital Expenses	$424,283,739
Less: Transfers[1]	(7,772,000)
Net Capital from Rates	$416,511,739
Total Rate Revenue Requirements	$971,228,114

[1] Transfers from Cost Sharing Reimbursement, Reconstruction Debt Service Offset, SDC Debt Service Offset, Premium Transfer, Underwriter's Discount Transfer, and Miscellaneous Offset.

3 Cost of Service Analysis

The FY2025 Cost of Service (COS) analysis conducted for this engagement is based on industry accepted guidance that rates should have a relationship to cost causative factors specific to the water and sewer utility. Cost of Service based revenue requirements were calculated for the water and sewer systems and compared to revenues generated using existing rates. This comparison was used to identify how revenue from each customer class compared to the proportionate share of the system's revenue requirements. It is important to note that WSSC Water, pursuant to State legislation, is required to maintain uniform rates for all customers. Because WSSC Water does not have the authority to establish different rates according to customer class, some variation between customer class revenue and customer class proportionate shares of revenue requirements, based on COS, will occur. In addition, the COS analysis provided an allocation of revenue requirements to fixed rates, including the Account Maintenance Fee and Infrastructure Investment Fee, as well as volumetric rates for both water and sewer.

3.1 Water System Cost of Service

The water COS evaluation was completed to estimate the cost associated with different rate components as well as the cost of serving different customer classes of the water system, including the cost of serving wholesale customers. The evaluation was completed in accordance with water industry practice, as outlined in the AWWA Manual M-1: Principles of Water Rates, Fees, and Charges. Specifically, the water COS evaluation was completed using an approach that incorporates the base-extra capacity methodology plus the reserved capacity for wholesale customers based on the water capacity limits defined in the wholesale agreements. This methodology assigns the revenue requirements from Section 2 into base costs (i.e., costs associated with average daily water demands), capacity costs (i.e., costs associated with providing capacity to meet peak demands), and other cost driver categories. These costs are then further allocated to rate components and customer classes based on their respective service requirements.

3.1.1 Rate Revenue Requirements

The water system rate revenue requirements for FY2025 were prepared using the cash-needs approach with information from the Revenue Sufficiency. Under the cash-needs approach, rate revenue requirements were based on the recovery of operating and maintenance expenditures, debt service payments, and capital expenditures that are funded with rate revenues or "paygo". The FY2025 operating and maintenance (O&M) costs were allocated to the water system using the allocations percentages established in the FY 2024 Joint Council Fund Splits document dated May 30, 2023. Existing capital costs, including existing debt service, were allocated using the WSSC Water fixed asset registry. Forecasted capital costs, including new debt and "paygo", were allocated using to the WSSC Water capital improvement plan (CIP). Any capital projects identified as shared between water and sewer were allocated based on a 50/50 split. The FY2025 rate revenue requirements for the water system are summarized in Table 3-1. The following sections provide the basis for allocating the water system rate revenue requirements to cost categories and to the customer classes.

Table 3-1 Water Rate Revenue Requirements

Description	FY 2025 Total Rate Revenue Requirements	FY 2025 Water Rate Revenue Requirements	FY 2025 Sewer Rate Revenue Requirements
O&M			
Operation & Maintenance Expenses	$616,180,779	$289,175,397	$327,005,382
Less: Miscellaneous Revenue	(52,604,404)	(26,828,246)	(25,776,158)
Less: Interest Income	(8,860,000)	(4,518,600)	(4,341,400)
Net O&M from Rates	$554,716,375	$257,828,551	$296,887,824
Capital			
Capital Expenses	$424,283,739	$195,605,872	$228,677,867
Less: Transfers[1]	(7,772,000)	(3,373,504)	(4,398,496)
Net Capital from Rates	$416,511,739	$192,232,367	$224,279,371
Total Rate Revenue Requirements	$971,228,114	$450,060,918	$521,167,196

1 Transfers from Cost Sharing Reimbursement, Reconstruction Debt Service Offset, SDC Debt Service Offset, Premium Transfer, Underwriter's Discount Transfer, and Miscellaneous Offset.

3.1.2 Cost Allocation

In order to allocate costs to customer classes, both the operating and capital-related portions of the FY2025 rate revenue requirement were categorized into seven different cost categories. These categories are described below:

1. Base Costs – Include costs associated with handling average daily water demands (ADD) (i.e., costs associated with providing water service under average demand conditions).
2. Maximum Day Extra Capacity Costs – Include costs associated with providing system capacity to meet maximum day water demands (MDD) in excess of average daily demands.
3. Maximum Hour Extra Capacity Costs – Include costs associated with providing system capacity to meet maximum hour water demands (MHD) in excess of average day and maximum day demands.
4. Equivalent Meter Costs – Include costs associated with services where the costs vary by the size of the meter or service line. Examples of such costs include the cost to maintain, service, and replace water meters and associated water service lines.
5. Billing Costs – Include costs that vary in proportion to the number or type of customers served and bills issued. Includes costs associated with preparing and issuing customer bills and collecting and processing payments as they are received.
6. Infrastructure Investment Fee Costs – Includes costs associated with pipeline reconstruction projects.
7. Fire Protection Costs – Include costs related to providing public fire protection to WSSC Water customers. Such costs include maintaining and servicing fire hydrants in a manner sufficient to provide fire suppression capabilities throughout the service area.

Following the base-extra capacity method, costs are separated between base costs, allocated to ADD, and extra capacity costs, allocated to MDD and MHD. The ADD, MDD, and MHD demand factors are calculated using historical demands of the water system from FY2010 to FY2022. The system demand factors for the water system are shown in the following table.

Table 3-2 Water System Demand Factors

Description	ADD (MGD)	MDD (MGD)	MHD (MGD)
Total Combined System	164.22	214.35	272.30

Note: Determined using historical demands of the water system from FY2010 to FY2022.

The combined plant data in the previous table is used to calculate the capacity allocation factors in Table 3-3.

The MDD allocation was calculated as follows:

ADD = 164.22 / 214.35 x 100 = 76.6%

MDD = (214.35 – 164.22) / 214.35 x 100 = 23.4%

The MHD allocation was calculated as follows:

ADD = 164.22 / 272.30 x 100 = 60.3%

MDD = (214.35 – 164.22) / 272.3 x 100 = 18.4%

MHD = (272.30 – 214.35) / 272.30 x 100 = 21.3%

Table 3-3 Water System Demand Factors

Description	ADD	MDD	MHD
ADD	100%		
ADD / MDD	76.6%	23.4%	
ADD / MDD / MHD	60.3%	18.4%	21.3%

Costs were allocated to Base (ADD) and Extra Capacity (MDD and MHD) cost components using the appropriate allocation factors from the above table. For example, some water system costs are incurred to meet the maximum day demand, such as treatment plant costs, and are allocated 76.6% to the Base ADD cost component and 23.4% to the MHD Extra Capacity cost component. Other costs are incurred to meet base average daily demands, such as the cost associated with the source of supply facilities and are allocated 100% to the Base ADD cost component. Thus, allocating costs to ADD, MDD, and MHD categories allows extra-capacity related costs to be equitably allocated to customer classes.

In addition to the functional cost components discussed above, capital and operating costs are allocated between Common-to-All and Retail Only functional classifications. WSSC Water provides water service to Retail and Wholesale customers. Water system capital and operating functions utilized by both Retail and Wholesale customers are classified as Common-to-All. Water system capital and operating functions utilized by Retail customers only are classified as Retail Only. For example, the supply and treatment systems are utilized by Retail and Wholesale customers. Therefore, capital and operating costs associated with supply and treatment are shared and classified as Common-to-All. Wholesale customers do not use or benefit from the distribution system, and as such, the capital and operating costs associated with the distribution system are classified as Retail Only.

3.1.2.1 Capital Allocations

Existing debt service, transfers and sources and uses of funds were allocated to cost categories using WSSC Water's FY2021 fixed asset list. New debt service and capital projects funded with rate revenues were allocated to cost categories using WSSC Water's CIP schedule. Costs in the current asset list and CIP schedule were first identified on the basis of one of the following functional categories: supply, treatment, transmission, distribution, pipeline reconstruction, meters, fire protection, general, or customer service. Once the costs were allocated by function, costs were next allocated to cost categories and respective Common-to-All or Retail Only allocation classifications based on the design basis of that function. Table 3-4 below provides a summary of the Water System Function Allocation Basis and Classification.

Table 3-4 Water System Function Allocation Basis and Classification

Water System Function	Allocation Basis	Allocation Classification
Supply	Source of supply facilities designed to meet total supply requirements.	Common to All
Treatment	Designed to meet maximum daily demands.	Common to All
Transmission	Designed to meet maximum daily demands and hourly demands.	Common to All
Distribution	Designed to meet maximum daily demands and hourly demands of Retail customers.	Retail Only
Pipeline Reconstruction	Pipeline Reconstruction costs are allocated to Infrastructure Investment Fee.	Common to All: Infrastructure Investment Fee
Meters	Costs were assigned based on the number of equivalent meters.	Common to All: Customer
Fire Protection	Costs were assigned to fire protection.	Common to All: Fire Protection
General	Costs were assigned to functions in the same ratio as capital costs.	Common to All
Customer Service	Costs were assigned to billing component.	Retail Only

Table 3-5 provides the existing capital asset allocations using the FY2021 fixed asset registry. The allocation percentages shown at the bottom of Table 3-5 are used to allocate existing capital costs to the appropriate cost categories of average day water demand, peak demands, meters, billing, IIF, and fire protection, and classified as Common-to-All or Retail Only. Table 3-6 provides the CIP capital allocations. Forecasted capital costs, including new debt and "paygo", were allocated to the appropriate cost categories using the allocation percentages shown at the bottom of Table 3-6. Table 3-7 shows the FY2025 capital revenue requirement allocation utilizing the allocation percentages from Tables 3-5 and 3-6.

Table 3-5 Water Capital Allocations (FY2021 Asset List)

Description	G/L Balance	Common to All			Retail Only			Customer		IIF	Fire Protection	Total
		Base	Extra-Capacity		Base	Extra-Capacity		Meters	Billing			
			Max Day	Max Hour		Max Day	Max Hour					
Supply	$ 37,172,770	$ 37,172,770	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 37,172,770
Treatment	557,877,786	427,406,998	130,470,788	-	-	-	-	-	-	-	-	557,877,786
Transmission	325,732,066	102,953,577	31,427,736	36,330,287	-	-	-	-	-	155,020,465	-	325,732,066
Distribution	435,584,610	-	-	-	137,674,483	42,026,683	48,582,610	-	-	207,300,834	-	435,584,610
Reconstruction	-	-	-	-	-	-	-	-	-	-	-	-
Meters	2,037,317	-	-	-	-	-	-	2,037,317	-	-	-	2,037,317
Fire Protection	9,893,336	-	-	-	-	-	-	-	-	-	9,893,336	9,893,336
General	106,640,257	26,660,064	-	-	-	-	-	26,660,064	26,660,064	-	26,660,064	106,640,257
Customer Service	2,798,484	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,399,242	$ 1,399,242	$ -	$ -	2,798,484
Total	$ 1,477,736,626	$ 594,193,409	$ 161,898,524	$ 36,330,287	$ 137,674,483	$ 42,026,683	$ 48,582,610	$ 30,096,624	$ 28,059,306	$ 362,321,299	$ 36,553,400	$ 1,477,736,626
Allocation Percentages		40.2%	11.0%	2.5%	9.3%	2.8%	3.3%	2.0%	1.9%	24.5%	2.5%	100.0%

Table 3-6 Water Capital Allocations (CIP Schedule)

Description	FY25 - FY30 CIP Costs	Common to All			Retail Only			Customer		IIF	Fire Protection	Total
		Base	Extra-Capacity		Base	Extra-Capacity		Meters	Billing			
			Max Day	Max Hour		Max Day	Max Hour					
Supply	$ 121,093,000	$ 121,093,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,093,000
Treatment	90,257,000	69,148,610	21,108,390	-	-	-	-	-	-	-	-	90,257,000
Transmission	794,983,000	479,442,190	146,355,115	169,185,695	-	-	-	-	-	-	-	794,983,000
Description	278,007,000	-	-	-	167,661,805	51,180,650	59,164,545	-	-	-	-	278,007,000
Reconstruction	974,365,000	-	-	-	-	-	-	-	-	974,365,000	-	974,365,000
General	360,216,500.00	90,054,125.00	-	-	-	-	-	90,054,125.00	90,054,125.00	-	90,054,125.00	360,216,500.00
Total	$ 2,636,053,500	$ 759,737,925	$ 167,463,505	$ 169,185,695	$ 167,661,805	$ 51,180,650	$ 59,164,545	$ 107,186,125	$ 90,054,125	$ 974,365,000	$ 90,054,125	2,636,053,500
Allocation Percentages		28.8%	6.4%	6.4%	6.4%	1.9%	2.2%	4.1%	3.4%	37.0%	3.4%	100.0%

Table 3-7 Water Capital Revenue Requirements

Description	Costs	Common to All			Retail Only			Customer		IIF	Fire Protection	Total
		Base	Extra-Capacity		Base	Extra-Capacity		Meters	Billing			
			Max Day	Max Hour		Max Day	Max Hour					
Water Capital Expenditures												
Existing Debt Service	$ 141,733,851	$ 56,990,751	$ 15,528,140	$ 3,484,539	$ 13,204,745	$ 4,030,897	$ 4,659,694	$ 2,886,651	$ 2,691,247	$ 34,751,249	$ 3,505,939	$ 141,733,851
New-General Obligation Bond	20,175,231	5,814,710	1,281,694	1,294,875	1,283,212	391,715	452,820	820,357	689,236	7,457,375	689,236	20,175,231
Capital Projects Funded with Cash	33,696,790	9,711,764	2,140,694	2,162,708	2,143,228	654,245	756,303	1,370,165	1,151,166	12,455,352	1,151,166	33,696,790
Total Water Capital Expenditures	$ 195,605,872	$ 72,517,225	$ 18,950,528	$ 6,942,123	$ 16,631,185	$ 5,076,856	$ 5,868,817	$ 5,077,173	$ 4,531,648	$ 54,663,975	$ 5,346,341	$ 195,605,872
Less Revenue from Other Sources												
Transfers From Restricted Fund	$ 3,373,504	$ 1,356,476	$ 369,596	$ 82,938	$ 314,295	$ 95,942	$ 110,909	$ 68,707	$ 64,056	$ 827,138	$ 83,447	$ 3,373,504
Net Water Capital Revenue Requirements	$ 192,232,367	$ 71,160,750	$ 18,580,932	$ 6,859,185	$ 16,316,890	$ 4,980,914	$ 5,757,909	$ 5,008,466	$ 4,467,592	$ 53,836,837	$ 5,262,893	$ 192,232,367

3.1.2.2 Operation and Maintenance (O&M) Allocations

Similar to the capital cost allocation and classification steps in the previous section, Operating and Maintenance (O&M) costs must first be allocated to functional categories before they can be allocated to cost categories and the respective Common-to-All and Retail Only classifications. O&M expenses in the budget were first allocated to functions based on the nature of the costs incurred. These allocations are based on budget descriptions, functional statements, and additional explanations provided by WSSC Water staff. Next, O&M costs were allocated to the appropriate cost categories of average day water demand, peak demands, meters, billing, IIF, and fire protection, and classified as Common-to-All or Retail Only. A summary of the allocation rationale is provided in the previous section, Table 3-4. Table 3-8 provides the allocation of O&M Revenue Requirements.

Table 3-8 Water O&M Revenue Requirements

Description	Cost	Common to All			Retail Only					IIF	Fire Protection	Total
		Base	Extra-Capacity		Base	Extra-Capacity		Customer				
			Max Day	Max Hour		Max Day	Max Hour	Meters	Billing			
O&M Expenditures	$ 289,175,397	$ 112,562,346	$ 34,010,159	$ 13,909,008	$ 28,677,232	$ 8,754,047	$ 7,362,853	$ 51,291,129	$ 18,595,799	$ 6,522,143	$ 7,490,682	$ 289,175,397
Less: Miscellaneous Revenues	26,828,246	10,442,971	3,155,292	1,290,408	2,660,530	812,157	683,089	4,758,534	1,725,225	605,092	694,948	26,828,246
Less: Interest Income	4,518,600	1,758,878	531,436	217,340	448,105	136,789	115,051	801,465	290,574	101,914	117,048	4,518,600
Net O&M Revenue Requirement	$ 257,828,551	$ 100,360,497	$ 30,323,430	$ 12,401,260	$ 25,568,597	$ 7,805,101	$ 6,564,713	$ 45,731,129	$ 16,579,999	$ 5,815,137	$ 6,678,686	$ 257,828,551

3.1.3 Units of Service

Units of service reflect the service requirements for each customer class by cost category as discussed above. Water customer classes include residential, multi-family residential, nonresidential, and wholesale customers. All non-wholesale customer classes are categorized as retail customers. Wholesale customers include Howard County and Charles County. WSSC Water also provides wholesale water service to the City of Rockville, but based on its lower water usage, which resembles a retail customer, the City of Rockville is classified as a retail customer for the purposes of this analysis.

Base-Extra Capacity

The base-extra capacity units of service include the amount of annual billed water usage (ADD), MDD, and MHD, as well as the number of equivalent meters, and customer bills.

- Base/Average Day Demand – Units of total annual billed water consumption (kgal)
- Maximum Day Demand – Units of extra-capacity maximum day demand (kgal/day)
- Maximum Hour Demand – Units of extra-capacity maximum hour demand (kgal/day)
- Equivalent Meters – Number of equivalent meters (for billing and IIF fees)
- Bills – Number of customer bills
- Fire Protection

Annual water usage data for each customer class was provided by WSSC Water and was based on billed usage from FY2020 to FY2022. Maximum day and maximum hour demands for each class were estimated based on the calculation of non-coincidental peaking factors using this data. The number of customer accounts by meter size was also provided by WSSC Water. The base-extra capacity units of service used for FY2025 associated with each cost category are listed in the following table.

Table 3-9 Water Units of Service – Base-Extra Capacity

Line No.	Description	(1) Billed Consumption	(2) Average Day	(3) Maximum Day	(4) Maximum Day	(5) Maximum Day	(6) Maximum Hour	(7) Maximum Hour	(8) Maximum Hour	(9) AMF Meters	(10) IIF Meters	(11) No. of Bills	(12) Fire Protection
				Factor	Total	Extra	Factor	Total	Extra				
	Units - Base Extra Capacity	(kgal)	(kgal/day)		(kgal/day)	(kgal/day)		(kgal/day)	(kgal/day)	(EquivM)	(EquivM)	(bills)	(EquivM)
1	Residential	23,128,669	63,366	1.94	122,761	59,394	2.46	155,949	33,189	691,748	691,748	1,821,387	
2	MF Residential	12,283,690	33,654	1.88	63,374	29,720	2.39	80,507	17,133	29,926	29,926	17,187	
3	Non-residential	10,593,266	29,023	1.86	53,855	24,833	2.36	68,415	14,560	81,905	81,905	75,365	
4	Wholesale	1,918,645	5,257	1.74	9,129	3,873	2.21	11,597	2,468	266	266	8	
5	Subtotal	47,924,271	131,299		249,119	117,819		316,468	67,350	803,845	803,845	1,913,947	
6	Public Fire												142,253
7	Subtotal												142,253
8	Total - Base Extra Capacity	47,924,271	131,299		249,119	117,819		316,468	67,350	803,845	803,845	1,913,947	142,253

The projected billed consumption for the test year is shown in Column 1 for each customer class. The estimated maximum day and maximum hour capacity factors are shown in Columns 3 through 8. The number of equivalent meter sizes and fire connections are shown in Columns 9 through 12. Equivalent meter sizes and ratios were calculated based on maximum meter flow rates provided in AWWA's M1 Manual.

Reserved Capacity

The reserved capacity units of service reflect the water system capacity allocated to the customer classes. The WSSC Water system total capacity is 315.5 MGD. WSSC Water maintains contractual agreements to sell Howard County a maximum of 5.0 MGD and to sell Charles County a maximum of 1.4 MGD for a total of 6.4 MGD reserved capacity allocated to wholesale customers. The remaining reserved capacity of 309.1 MGD is allocated to the retail customers. As discussed previously, the City of Rockville is characterized as a retail customer. The WSSC Water system capacity is constant and does not change with demand. Therefore, the reserved capacity units of service are constant across the average day, maximum day, and maximum hour cost categories in determination of unit cost of service. The reserved capacity units of service for FY2025 are listed in the following table.

Table 3-10 Water Units of Service – Reserved Capacity

Line No.	Description	Reserved Capacity
	Units - Reserve Capacity	(MGD)
1	Retail	309.1
2	Wholesale	6.4
3	Total - Reserve Capacity	315.5

3.1.4 Customer Class Cost of Service

The allocated costs by cost category are divided by the respective units of service for the test year for each cost category to derive the unit COS. This step in the COS analysis is reflected in Table 3-11. O&M unit cost of service presented on line 11 is equal to the net O&M shown on line 8 divided by the total units of service shown on line 6.

The capital unit cost of service is calculated separately for retail and wholesale customers. The capital unit cost of service for retail customers is calculated from the base-extra capacity units of service, whereas the capital unit cost of service for wholesale customers is calculated from the reserved capacity units of service. This provides the basis for distributing water system costs to customers in a fair and equitable manner as each class pays unit costs based on their respective units of service. As shown in Table 3-11, the capital unit cost of service for wholesale customers in line 14 is derived by dividing the net capital on line 9 by the system capacity on line 7. The capital unit cost of service for wholesale in line 14 is multiplied by the wholesale reserved capacity units of service in line 22 to determine the wholesale capital cost of service shown in line 24.

The capital unit cost of service for retail customers in line 12 is calculated by dividing the net capital on line 9, less the wholesale capital cost of service established in line 24, divided by the sum of the retail units of service shown in lines 1 through 3. With the O&M unit cost of service and capital unit cost of service established, the total unit cost of service for retail customers shown in line 13 is the sum of lines 11 and 12.

The retail customer class cost of service is determined by applying the unit cost of service to units of service for each customer class. For example, the total retail unit cost of service on line 13 is multiplied by the residential units of service in line 15 to determine the residential cost of service shown in line 16. The cost of service for residential customers is $266,860,366, which can be seen in the third column of line 16. This process is repeated for the other retail customer classes in lines 18, 20, and 27, respectively.

The wholesale customer class cost of service shown on line 25 is the sum of the O&M cost of service in line 23 and the capital cost of service in line 22. The total cost of service for wholesale customers is $7,465,283, which can be seen in the third column of line 25.

Table 3-11 Water Customer Class COS

Line No.	Description	Total	Common to All			Retail Only			Customer		IIF	Fire Protection
			Base	Extra-Capacity		Base	Extra-Capacity		Meters	Billing		
				Max Day	Max Hour		Max Day	Max Hour				
1	Residential		23,128,669	59,394	33,189	23,128,669	59,394	33,189	691,748	1,821,387	691,748	
2	MF Residential		12,283,690	29,720	17,133	12,283,690	29,720	17,133	29,926	17,187	29,926	
3	Non-residential		10,593,266	24,833	14,560	10,593,266	24,833	14,560	81,905	75,365	81,905	
4	Wholesale		1,918,645	3,873	2,468				266	8	266	
5	Public Fire											142,253
6	Total		47,924,271	117,819	67,350	46,005,625	113,947	64,882	803,845	1,913,947	803,845	142,253
	Units		(kgal)	(kgal/day)	(kgal/day)	(kgal)	(kgal/day)	(kgal/day)	(EquivM)	(bills)	(EquivM)	(EquivM)
7	System Capacity		315.5	315.5	315.5							
	Units		(MGD)	(MGD)	(MGD)							
8	Net O&M	$ 257,828,551	$ 100,360,497	$ 30,323,430	$ 12,401,260	$ 25,568,597	$ 7,805,101	$ 6,564,713	$ 45,731,129	$ 16,579,999	$ 5,815,137	$ 6,678,686
9	Net Capital	$ 192,232,367	$ 71,160,750	$ 18,580,932	$ 6,859,185	$ 16,316,890	$ 4,980,914	$ 5,757,909	$ 5,008,466	$ 4,467,592	$ 53,836,837	$ 5,262,893
10	Subtotal	$ 450,060,918	$ 171,521,247	$ 48,904,362	$ 19,260,445	$ 41,885,486	$ 12,786,015	$ 12,322,622	$ 50,739,595	$ 21,047,591	$ 59,651,974	$ 11,941,580
11	O&M Unit Cost of Service (Ln 8 / Ln 6)		$2.09	$257.37	$184.13	$0.56	$68.50	$101.18	$56.89	$8.66	$7.23	$46.95
12	Capital Unit Cost of Service Retail (Ln 9 - Ln 24)/(Ln1+Ln2+Ln3)		$1.52	$159.76	$103.57	$0.35	$43.71	$88.74	$6.23	$2.33	$66.97	$37.00
13	Total Unit Cost of Service Retail (Ln 11+ Ln 12)		$3.61	$417.13	$287.71	$0.91	$112.21	$189.92	$63.12	$11.00	$74.21	$83.95
14	Capital Unit Cost of Service Wholesale (Ln 9 / Ln 7)		$225,549.13	$58,893.60	$21,740.68							
Cost of Service by Customer Class												
	Residential											
15	Units		23,128,669	59,394	33,189	23,128,669	59,394	33,189	691,748	1,821,387	691,748	
16	Cost of Service (Ln 13 x Ln 15)	$ 266,860,366	$ 83,484,188	$ 24,775,236	$ 9,548,553	$ 21,057,328	$ 6,664,667	$ 6,303,325	$ 43,663,907	$ 20,029,716	$ 51,333,445	
	MF Residential											
17	Units		12,283,690	29,720	17,133	12,283,690	29,720	17,133	29,926	17,187	29,926	
18	Cost of Service (Ln 13 x Ln 17)	$ 83,736,250	$ 44,338,647	$ 12,397,086	$ 4,929,338	$ 11,183,596	$ 3,334,881	$ 3,254,024	$ 1,888,942	$ 189,004	$ 2,220,734	
	Non-residential											
19	Units		10,593,266	24,833	14,560	10,593,266	24,833	14,560	81,905	75,365	81,905	
20	Cost of Service (Ln 13 x Ln 19)	$ 80,057,439	$ 38,236,971	$ 10,358,413	$ 4,188,958	$ 9,644,562	$ 2,786,467	$ 2,765,274	$ 5,169,956	$ 828,781	$ 6,078,056	
	Wholesale											
21	Units - Base Extra Capacity		1,918,645	3,873	2,468				266	8	266	
22	Units - Reserved Capacity		6.4	6.4	6.4							
23	O&M Cost of Service (Ln 11 x Ln 21)	$ 5,486,218	$ 4,017,926	$ 996,709	$ 454,456				$ 15,132	$ 71	$ 1,924	
24	Capital Cost of Service (Ln 14 x Ln 22)	$ 1,979,065	$ 1,443,514	$ 376,919	$ 139,140				$ 1,657	$ 19	$ 17,814	
25	Cost of Service (Ln 23 + Ln 24)	$ 7,465,283	$ 5,461,441	$ 1,373,628	$ 593,597				$ 16,789	$ 90	$ 19,739	
	Public Fire											
26	Units											142,253
27	Cost of Service (Ln 13 x Ln 26)	$ 11,941,580										$ 11,941,580
28	Total (Ln 16+Ln 18+Ln 20+Ln 25+Ln 27)	$ 450,060,918	$ 171,521,247	$ 48,904,362	$ 19,260,445	$ 41,885,486	$ 12,786,015	$ 12,322,622	$ 50,739,595	$ 21,047,591	$ 59,651,974	$ 11,941,580

A comparison of water COS by class and revenues under existing rates for each customer class is shown in Table 3-12. Fire protection costs are reallocated to each customer class based on their proportionate share of COS as these costs are not recovered through direct charges. This step is calculated in Columns 1 through 3. The difference between adjusted COS and revenues under existing rates is shown in Columns 5 and 6. The percent increase or decrease required for revenues to equal the adjusted COS is also shown in Column 6.

Table 3-12 Water Comparison of Adjusted COS to Revenues Under Existing Rates

Customer Class	(1) COS	(2) Re-allocate Public Fire	(3) Adjusted COS	(4) Revenues Under Existing Rates	(5) Difference ($)	(6) Difference (%)
Residential	$ 266,860,366	$ 7,399,755	$ 274,260,121	$ 182,065,351	$ 92,194,771	50.6%
MF	83,736,250	$ 2,321,917	86,058,168	$ 85,997,234	$ 60,934	0.1%
Non-residential	80,057,439	$ 2,219,908	82,277,347	$ 106,555,611	$ (24,278,265)	-22.8%
Wholesale	7,465,283	-	7,465,283	$ 6,566,175	$ 899,108	13.7%
Subtotal	$ 438,119,339	$ 11,941,580	$ 450,060,918	$ 381,184,371	$ 68,876,547	18.1%
Public Fire	11,941,580	(11,941,580)	-	-		
Total	$ 450,060,918	$ -	$ 450,060,918	$ 381,184,371	$ 68,876,547	18.1%

Note: Water Cost of Service includes all Meter and Billing related costs.

3.2 Sewer System Cost of Service

The sewer cost of service (COS) evaluation was completed in accordance with industry best practice, as detailed in *Financing and Charges for Wastewater Systems: Manual of Practice 27*, published by the Water Environment Federation (WEF). In general, the COS evaluation involved (1) determining the sewer rate revenue requirement in FY2025, (2) allocating rate revenue requirements to cost driver categories and (3) allocating costs from these categories to customer classes. A summary of the COS evaluation and its results are provided in this section of the report.

3.2.1 Rate Revenue Requirements

The sewer system rate revenue requirements for FY2025 were prepared using the cash-needs approach, in which rate revenue requirements are calculated to recover necessary O&M expenditures, transfer payments, debt service payments, and capital expenditures that are funded with rate revenues or “pay-go”. The FY2025 O&M costs were allocated to the sewer system using the allocation percentages established in the FY 2024 Joint Council Fund Splits document dated May 30, 2023. Existing capital costs, including existing debt service, were allocated using the WSSC Water fixed asset registry. Forecasted capital costs, including new debt and “paygo”, were allocated using the WSSC Water capital improvement plan (CIP). Any capital projects identified as shared between water and sewer were allocated based on a 50/50 split. The sewer rate revenue requirements are summarized in Table 3-13. The following sections will provide the basis for allocating the sewer system rate revenue requirements to cost categories and to the customer classes.

Table 3-13 Sewer Rate Revenue Requirements

Description	FY 2025 Total Rate Revenue Requirements	FY 2025 Water Rate Revenue Requirements	FY 2025 Sewer Rate Revenue Requirements
O&M			
Operation & Maintenance Expenses	$616,180,779	$289,175,397	$327,005,382
Less: Miscellaneous Revenue	(52,604,404)	(26,828,246)	(25,776,158)
Less: Interest Income	(8,860,000)	(4,518,600)	(4,341,400)
Net O&M from Rates	$554,716,375	$257,828,551	$296,887,824
Capital			
Capital Expenses	$424,283,739	$195,605,872	$228,677,867
Less: Transfers[1]	(7,772,000)	(3,373,504)	(4,398,496)
Net Capital from Rates	$416,511,739	$192,232,367	$224,279,371
Total Rate Revenue Requirements	$971,228,114	$450,060,918	$521,167,196

1 Transfers from Cost Sharing Reimbursement, Reconstruction Debt Service Offset, SDC Debt Service Offset, Premium Transfer, Underwriter's Discount Transfer, and Miscellaneous Offset.

3.2.2 Cost Allocation

In order to allocate costs to customer classes, the sewer rate revenue requirement in FY2025 was categorized into five different cost categories. These categories are shown below.

1. Volume-Based Costs – Include costs that vary based on the volume of wastewater collected and treated (e.g., chemical and electricity costs).
2. Capacity-Based Costs – Include costs associated with providing excess capacity to meet peak demands.
3. Strength-Based Costs – Include costs associated with treatment of biological oxygen demand (BOD) and total suspended solids (TSS).
4. Customer Costs – Include costs that vary in proportion to the number or type of customers served.
5. Infrastructure and Investment Fee Costs – Includes costs associated with pipeline capital reconstruction projects.

WSSC Water's sewer assets were identified and allocated among the cost driver categories. This was completed according to the design basis approach. Under the design basis approach, capital and O&M costs are allocated to cost driver categories based on design of system components. For example, it is recognized that peak flow rates determine the size of collection mains. Therefore, these assets would be allocated to the Capacity cost category.

3.2.2.1 Capital Allocations

Existing debt service, transfers and sources and uses of funds were allocated to cost categories using WSSC Water's current fixed asset list. New debt service and capital projects funded with rate revenues were allocated to cost categories using WSSC Water's CIP schedule for FY2025 through FY2029. Costs in the current asset list and CIP schedule were first identified on the basis of one of the following functional categories: collection, pipeline reconstruction, pumping, treatment, other treatment, general, or customer service. Once the costs were allocated by function, costs were allocated to cost categories based on the design basis of that function. Table 3-14 below

provides the Sewer System Function Allocation Basis and Tables 3-15 and 3-16 provide allocated assets and CIP. Table 3-17 provides a summary of allocated Sewer Capital Revenue Requirements.

Table 3-14 Sewer System Function Allocation Basis

Sewer System Function	Allocation Basis
Collection	Collection sewers carry wastewater at variable rates of flow, so costs were assigned to volume component.
Pipeline Reconstruction	Pipeline Reconstruction costs will be allocated to IIF fee.
Pumping	Peak flowrates determine the appropriate size, so costs were assigned to the capacity component.
Treatment	Facilities directly related to treatment facilities which handle variable rate of flow and remove BOD and TSS so costs were assigned to volume, BOD and TSS components.
Other Treatment	General facilities most closely correlated with treatment so costs were assigned to volume, BOD and TSS components.
General	Costs were assigned based on the average capital cost allocation for plant assets.
Customer Service	Costs were assigned to billing component.

Table 3-15 provides the existing capital asset allocations using the FY2021 fixed asset registry. The allocation percentages shown at the bottom of Table 3-15 are used to allocate existing capital costs to the appropriate cost categories of volume, capacity, BOD, TSS, customer billing, and IIF. Table 3-16 provides the CIP capital allocations. Forecasted capital costs, including new debt and “paygo”, were allocated to the appropriate cost categories using the allocation percentages shown at the bottom of Table 3-16. Table 3-17 shows the FY2025 capital revenue requirement allocation utilizing the allocation percentages from Tables 3-15 and 3-16.

Table 3-15 Sewer Capital Allocations (FY2021 Asset List)

Description	G/L Balance	Volume	Capacity	BOD	TSS	Customer Billing	IIF	Total
Collection	$ 742,985,180	$ -	$ 389,388,098	$ -	$ -	$ -	$ 353,597,083	$ 742,985,180
Pumping	246,297,699	-	246,297,699	-	-	-		246,297,699
Treatment Plant	2,309,569,511	1,154,784,755	-	528,974,113	625,810,643	-		2,309,569,511
Other Treatment Plant	76,482,618	76,482,618	-	-	-	-		76,482,618
General	89,001,702	17,800,340	17,800,340	17,800,340	17,800,340	17,800,340		89,001,702
Customer Service	4,646,163	-	-	-	-	4,646,163		4,646,163
Total	$ 3,468,982,873	$ 1,249,067,714	$ 653,486,137	$ 546,774,453	$ 643,610,983	$ 22,446,503	$ 353,597,083	$ 3,468,982,873
Allocation Percentages		36.0%	18.8%	15.8%	18.6%	0.6%	10.2%	100.0%

Table 3-16 Sewer Capital Allocations (CIP Schedule)

Description	FY25 - FY30 CIP Costs	Volume	Capacity	BOD	TSS	Customer Billing	IIF	Total
Collection	$ 18,239,000	$ -	$ 18,239,000	$ -	$ -	$ -		$ 18,239,000
Pumping	195,206,000	-	195,206,000	-	-	-		195,206,000
Reconstruction	756,274,000	-	-	-	-	-	756,274,000	756,274,000
Treatment Plant	820,664,000	410,332,000	-	187,961,440	222,370,560	-		820,664,000
Other Treatment Plant	1,737,000	1,737,000	-	-	-	-		1,737,000
General	355,016,500	71,003,300	71,003,300	71,003,300	71,003,300	71,003,300		355,016,500
Total	$ 2,147,136,500	$ 483,072,300	$ 284,448,300	$ 258,964,740	$ 293,373,860	$ 71,003,300	$ 756,274,000	$ 2,147,136,500
Allocation Percentages		22.5%	13.2%	12.1%	13.7%	3.3%	35.2%	100.0%

Table 3-17 Sewer Capital Revenue Requirements

Description	Costs	Volume	Capacity	BOD	TSS	Customer Billing	IIF	Total
Water Capital Expenditures								
Existing Debt Service	$ 184,797,656	$ 66,539,615	$ 34,812,137	$ 29,127,453	$ 34,286,073	$ 1,195,757	$ 18,836,620	$ 184,797,656
New-General Obligation Bond	16,433,268	3,697,230	2,177,046	1,982,006	2,245,359	543,429	5,788,199	16,433,268
Capital Projects Funded with Cash	27,446,942	6,175,135	3,636,115	3,310,358	3,750,211	907,638	9,667,485	27,446,942
Total Sewer Capital Expenditures	$ 228,677,867	$ 76,411,980	$ 40,625,298	$ 34,419,817	$ 40,281,643	$ 2,646,825	$ 34,292,304	$ 228,677,867
Less Revenue from Other Sources								
Transfers From Restricted Fund	$ 4,398,496	$ 1,583,755	$ 828,588	$ 693,282	$ 816,066	$ 28,461	$ 448,343	$ 4,398,496
Net Sewer Capital Revenue Requirements	$ 224,279,371	$ 74,828,225	$ 39,796,711	$ 33,726,535	$ 39,465,577	$ 2,618,364	$ 33,843,960	$ 224,279,371

3.2.2.2 Operation and Maintenance Allocations

Similar to the capital cost allocation step in the previous section, O&M costs must first be allocated to functional categories before they can be allocated to cost categories. O&M expenses in the budget were first allocated by function based on the nature of the costs incurred. This was determined based on budget line-item descriptions as well as WSSC Water explanations. Then O&M costs were allocated to the appropriate cost categories of volume, capacity, BOD, TSS, billing, IIF, and customer. A summary of the allocation rationale was provided in the previous section. Table 3-18 provides the allocated Sewer O&M Revenue Requirements.

Table 3-18 Sewer O&M Revenue Requirements

Description	Cost	Volume	Capacity	BOD	TSS	Customer Billing	IIF	Total
O&M Expenditures	$ 327,005,382	$ 211,286,985	$ 15,190,050	$ 33,892,950	$ 40,021,811	$ 18,394,349	$ 8,219,237	$ 327,005,382
Less: Miscellaneous Revenues	25,776,158	16,654,670	1,197,354	2,671,608	3,154,714	1,449,932	647,880	25,776,158
Less: Interest Income	4,341,400	2,805,095	201,667	449,971	531,339	244,208	109,121	4,341,400
Net O&M Revenue Requirement	$ 296,887,824	$ 191,827,220	$ 13,791,030	$ 30,771,372	$ 36,335,758	$ 16,700,209	$ 7,462,236	$ 296,887,824

3.2.3 Units of Service

Costs accumulated in the cost driver categories were allocated to sewer customer classes based on the service characteristics and units of service of each class. Sewer system customer classes include residential, multi-family residential and non-residential customers. Units of service are the number of units for each customer classification that corresponds to the cost driver categories discussed previously.

The units of service categories include the volume of wastewater discharged, volume of extra capacity, pounds of BOD and TSS collected and treated, and the number of customer bills.

- Volume – Units of total annual billed sewer use (kgal).
- Capacity – Excess-capacity flow rate, including inflow and infiltration (kgal).
- BOD – Pounds of BOD received at the WWTPs annually.
- TSS – Pounds of TSS received at the WWTPs annually.
- Billing – Number of customer bills issued during the year.
- IFF – Based on number of equivalent meters.

The volume of wastewater generated from each customer class was provided from WSSC Water's billing records. Wastewater flows and loadings received at the Utility's treatment plants and diverted to Blue Plains were also provided. Based on this information, a mass balance was completed by comparing the annual amount of wastewater flow, BOD, and TSS measured at the treatment plants and Blue Plains with the sum of the billed and calculated amounts from each customer class. Any difference was attributed to the flow and strength of inflow and infiltration (I/I) of water into the sewer system. The proportion of I/I for each customer class was weighted by their percentage of volume usage. An inflow and infiltration factor was then applied to the billed sewer usage to determine the capacity units of service for each customer class. The total projected units of service by customer class for FY2025 is summarized in the table below.

Table 3-19 Sewer Units of Service

Line No.	Description	(1) Volume (kgal)	(2) Capacity (kgal/day)	(3) BOD (lb)	(4) TSS (lb)	(5) Customer Billing (bills)	(6) IIF (EquivM)
1	Residential	37,840,816	223,890	52,630,541	63,425,281	1,821,387	691,748
2	MF Residential	20,720,484	122,202	29,983,195	33,896,608	17,187	29,926
3	Non-residential	15,279,677	89,743	23,750,451	30,946,776	75,365	81,905
4	Total	73,840,977	435,836	106,364,187	128,268,665	1,913,939	803,579

The projected billed volume for the test year is shown in Column 1 for each customer class. The estimated capacity and loadings are shown in Columns 2 through 4. The number of customer bills and equivalent meter sizes are shown in Columns 5 and 6.

3.2.4 Customer Class Cost of Service

The allocated costs by cost category are divided by the respective units of service for the test year for each cost category to derive the unit COS. This step in the COS analysis is reflected in Table 3-20. The total unit COS for each cost category is shown on line 8 and is derived by dividing cost subtotal in line 7 by the units in line 4. This provides the basis for distributing sewer system costs to customers in a fair and equitable basis as each class pays the same unit cost based on their respective units of service.

The customer class COS is determined by applying the unit COS to units of service for each customer class. This step is shown below in Table 3-20. For example, the residential units of service on line 1 are multiplied by the unit COS on line 8 to get the allocated cost of service for residential customers on line 10. The COS for residential customers is $287,517,700, which can be seen in the third column of line 10. This process is repeated for each customer class.

Table 3-20 Sewer Customer Class COS

Line No.	Description	(1) Total	(2) Volume	(3) Capacity	(4) BOD	(5) TSS	(6) Customer Billing	(7) IIF
1	Residential		37,840,816	223,890	52,630,541	63,425,281	1,821,387	691,748
2	MF Residential		20,720,484	122,202	29,983,195	33,896,608	17,187	29,926
3	Non-residential		15,279,677	89,743	23,750,451	30,946,776	75,365	81,905
4	Total		73,840,977	435,836	106,364,187	128,268,665	1,913,939	803,579
	Units		(kgal)	(kgal/day)	(lb)	(lb)	(bills)	(EquivM)
5	Net O&M	$ 296,887,824	$ 191,827,220	$ 13,791,030	$ 30,771,372	$ 36,335,758	$ 16,700,209	$ 7,462,236
6	Net Capital	$ 224,279,371	$ 74,828,225	$ 39,796,711	$ 33,726,535	$ 39,465,577	$ 2,618,364	$ 33,843,960
7	Subtotal	$ 521,167,196	$ 266,655,445	$ 53,587,741	$ 64,497,907	$ 75,801,334	$ 19,318,572	$ 41,306,196
8	Unit Cost of Service (Ln 7 / Ln 4)		$3.61	$122.95	$0.61	$0.59	$10.09	$51.40
Cost of Service by Customer Class								
9	Residential							
	Units		37,840,816	223,890	52,630,541	63,425,281	1,821,387	691,748
10	Cost of Service (Ln 1 x Ln 8)	$ 287,517,700	$ 136,651,221	$ 27,528,169	$ 31,914,499	$ 37,481,648	$ 18,384,392	$ 35,557,771
11	MF Residential							
	Units		20,720,484	122,202	29,983,195	33,896,608	17,187	29,926
12	Cost of Service (Ln 2 x Ln 8)	$ 129,775,971	$ 74,826,067	$ 15,025,274	$ 18,181,433	$ 20,031,456	$ 173,478	$ 1,538,263
	Non-residential							
13	Units		15,279,677	89,743	23,750,451	30,946,776	75,365	81,905
14	Cost of Service (Ln 3 x Ln 8)	$ 103,873,525	$ 55,178,157	$ 11,034,298	$ 14,401,975	$ 18,288,231	$ 760,702	$ 4,210,162
15	Total (Ln 10 + Ln 12 + Ln 14)	$ 521,167,196	$ 266,655,445	$ 53,587,741	$ 64,497,907	$ 75,801,334	$ 19,318,572	$ 41,306,196

A comparison of sewer COS by class and revenues under existing rates for each customer class is shown in Table 3-21. The difference between COS and revenues under existing rates is provided in Columns 3 and 4. The percent increase or decrease required for revenues to equal the COS is also provided in Column 4.

Table 3-21 Sewer Comparison COS to Revenues Under Existing Rates

Customer Class	(1) COS	(2) Revenues Under Existing Rates	(3) Difference ($)	(4) Difference (%)
Residential	$ 287,517,700	$ 230,716,919	$ 56,800,781	24.6%
MF	129,775,971	114,945,700	14,830,271	12.9%
Non-residential	103,873,525	143,306,533	(39,433,008)	-27.5%
Total	$ 521,167,196	$ 488,969,152	$ 32,198,044	6.6%

3.3 Total System Cost of Service

Table 3-22 presents the FY2025 total system COS by customer class compared to the revenue under the FY2024 existing rates. The total COS presented in Column 1 is equal to the sum of the water COS and the sewer COS established in the previous sections in Tables 3-12 and 3-21, respectively. The FY2025 total COS of $971,228,114 and increase of 11.6% compared to existing rates aligns with the rate revenue requirement and increase found in the WSSC Water Long Term plan.

Table 3-22 Total Comparison COS to Revenues Under Existing Rates

Customer Class	(1) COS	(2) Revenues Under Existing Rates	(3) Difference ($)	(4) Difference (%)
Residential	$ 561,777,821	$ 412,782,269	$ 148,995,552	36.1%
MF	215,834,139	200,942,934	14,891,205	7.4%
Non-residential	186,150,871	249,862,144	(63,711,273)	-25.5%
Wholesale	7,465,283	6,566,175	899,108	13.7%
Total	$ 971,228,114	$ 870,153,523	$ 101,074,591	11.6%

Table 3-23 presents the FY2025 COS results by revenue type compared to revenue under the FY2024 existing rates. The AMF and IIF revenue are generated from fixed fees. The water and sewer volume revenue are generated from tiered rates according to usage. The COS results indicate that a larger portion of revenue should be generated from fixed fees compared to the existing rates.

Table 3-23 Revenue Type Comparison COS to Revenues Under Existing Rates

Revenue Type	(1) COS	(2) Revenues Under Existing Rates	(3) Difference ($)	(4) Difference (%)
AMF	$ 91,105,759	$ 37,712,290	$ 53,393,469	141.6%
IIF	100,958,170	46,561,836	54,396,334	116.8%
Water Volume	318,621,758	344,460,845	(25,839,088)	-7.5%
Sewer Volume	460,542,427	441,418,551	19,123,876	4.3%
Total	$ 971,228,114	$ 870,153,523	$ 101,074,591	11.6%

4 Considerations for Developing Rates

The development of any rate structure incorporates the balancing of various objectives and priorities. Based on the cost of service results presented herein, the following are considerations for the FY2025 rate setting process:

- The cost-of-service results indicate a larger portion of revenue should be generated from fixed fees: 19.8%, versus 9.7% currently. It is important to note that the industry average percentage of revenue from fixed fees, 20% - 23%, is much higher than WSSC Water's current percentage of 9.7%. The following figures show an industry bill comparison of fixed versus volumetric fees. Figure 5 shows the industry fixed fees as a percentage of the total water bill. Figure 6 shows the industry fixed fees as a percentage of the total sewer bill. Future rates should consider increases in the fixed AMF and IIF fees.

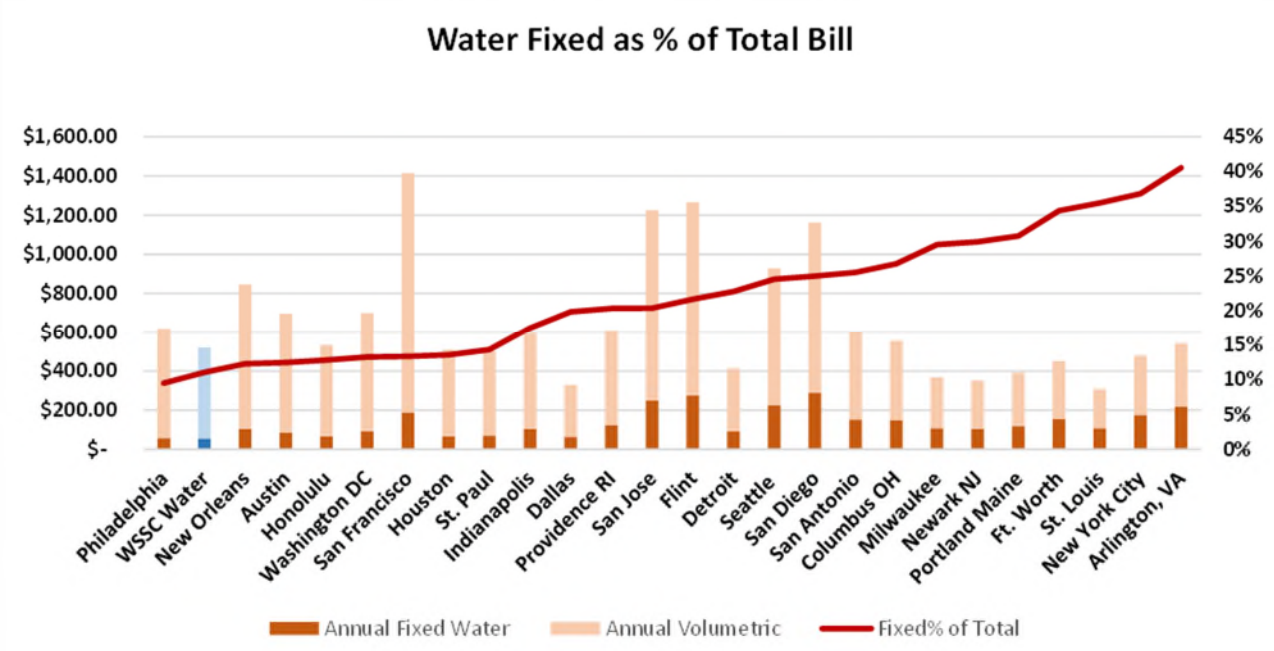

Figure 5 Water Fixed Fees

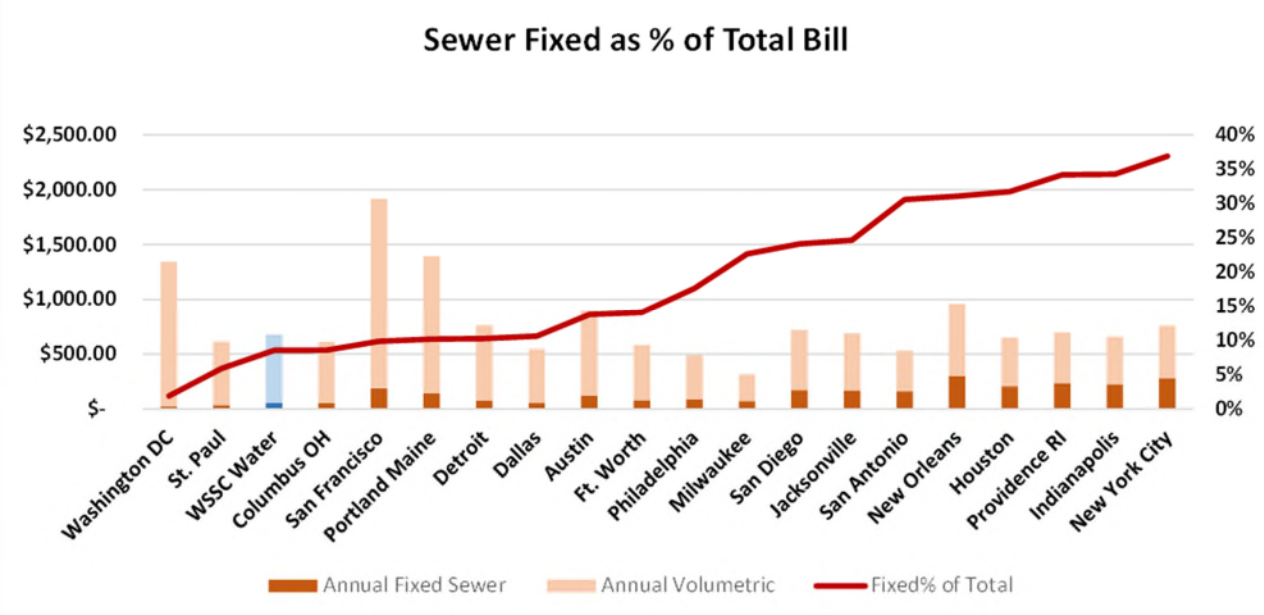

Figure 6 Sewer Fixed Fees

- Adjusting rates yields different impacts to different customers based primarily on usage levels. Increasing fixed fees will increase the quarterly bill percentage at a greater proportion for customers at lower usage levels. However, the dollar amount of the increase for lower usage customers is less than the increase for customers at higher usage levels. As such, WSSC Water could consider a phased approach to increasing fixed fees. The phased approach could achieve the needed fixed fee increase over the course of several increases over several years.

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WSSCWATER
DELIVERING THE ESSENTIAL

Policy Consideration Workshop

December 15, 2023

Agenda

- Discussion of policy considerations

WORKSHOP OBJECTIVES

- Identify policy consideration preferences

POLICY CONSIDERATIONS

- Affordability
- Conservation/Demand Management
- Cost of Service Based Rates
- Ease of Implementation
- Easy to Understand and Update
- Minimize Customer Impacts
- Rate Stability
- Revenue Stability

AFFORDABILITY

The rate structure should help ensure that all customers can afford essential services.

Pricing Options:

- Rate structures that minimize cost of non-discretionary consumption including:
  - Inclining block rates with low base charge
  - Lifeline rates
- Rate structures with volume allowance included in base charge
- Customer assistance programs

CONSERVATION/DEMAND MANAGEMENT

The rate structure should encourage conservation as well as assist in managing system demand.

Pricing Options:

- Rate structures that target discretionary consumption and focus on volumetric revenue including:
  - Inclining block rates
  - Seasonal rates

COST OF SERVICE BASED ALLOCATIONS

The rate structure should ensure that each customer is contributing equitably towards revenue requirements based upon the costs of providing service.

Pricing Options:

- Uniform rates by customer class
- Declining block rates

EASE OF IMPLEMENTATION

The rate structure should be compatible with the existing billing system and not take significant employee time to implement.

Pricing Options:

- Inclining block rates
- Uniform rates
- Others depending on billing system capabilities

EASY TO UNDERSTAND

The rate structure should be easy for customers to understand.

Pricing Options:

- Uniform rates with base and volume charge

MINIMIZATION OF CUSTOMER IMPACTS

The rate structure should be developed such that adverse rate impacts on each customer or customer class are minimized.

Pricing Options:

- Phase in larger impacts, if necessary
- Avoid dramatic changes in rate structures

RATE STABILITY

The rate structure should be developed such that dramatic year-to-year rate increases or decreases can be avoided

- Maintain smooth program of rate
- Adjustments
- Avoid volatile swings in rates

REVENUE STABILITY

The rate structure should provide for a steady and predictable stream of revenues and closely match revenue streams with expenditures.

Pricing Options:

- Rate structures focused on fixed revenue including:
  - Uniform rates
  - Base charge with readiness to serve component

CONFLICTING CONSIDERATIONS

EXAMPLES

Revenue Stability	VS.	Conservation/Demand Management
Easy to Understand and Update	VS.	Cost of Service Based Rates

ADDITIONAL PRESENTATIONS ON POLICY CONSIDERATIONS

- Jay Sakai on Maryland Water Conservation law and policy
- Jay Sakai on WSSC Water's demographic customer base
- Kelly Caplan on WSSC Water's Financial Assistance Program's

WSSCWATER
DELIVERING THE ESSENTIAL

Questions?


WSSCWATER
DELIVERING THE ESSENTIAL

Water and Sewer Pricing Policy Considerations

December 5, 2023

Affordability

Pricing Policy Consideration: The rate structure should help ensure that all customers can afford essential service.

Affordability is the ability of individual customers to pay for water and wastewater services that are adequate to meet their basic human needs, while maintaining the ability to pay for other essential costs. Affordability is a customer-level phenomenon that must be evaluated at the customer level.

Affordability is central to a utility's public health mission. Customers — especially low-income customers — must be able to pay for these services without sacrificing other essential needs if a community is to maintain the full benefits of water and wastewater services. If customers are faced with utility bills that they find burdensome, the result may be excessive account delinquencies, customer complaints, and utility theft. If a significant percentage of customers begin to perceive their utility bills as burdensome, actual revenues collected are likely to fall short of projected revenues. When combined with the higher costs of managing disgruntled and delinquent customers, this revenue shortfall poses a distinct problem for financial managers. More broadly, water and wastewater affordability can also play a role in a community's economic development and quality of life.

Implications/Challenges

Measuring affordability is one of the key challenges that utilities face in their attempts to address affordability. Careful, rigorous measurement of affordability is important for many reasons. First and foremost, reliable affordability metrics help utility managers and policymakers understand the financial effects of their decisions on customers. Valid affordability measurement allows affordability to be considered alongside other criteria when evaluating capital, operating, and rate design decisions. Second, measuring affordability carefully demonstrates to customers, elected officials, and regulators that a utility's leaders are sensitive to affordability concerns. Finally, valid measurement of affordability helps utility leaders design appropriate and effective measures to address affordability challenges. Common affordability metrics such as number of customer complaints, delinquency rates and average bill as a percentage of median household income provide some insights into the burden that water and wastewater bills place on average customers, but they fail to address affordability at the customer level and specifically at the level of a customer facing significant economic challenges. Newer metrics, such as the Affordability Ratio, more accurately communicate the burden that utility bills place on low income customers.

From a pricing perspective, developing rate designs that address affordability and still adhere to cost of service principals is challenging in that most rate structures that are focused on affordability result is some customers paying less than the true cost to serve them and often, the customers that benefit are not necessarily low income customers. As such, while rates can be developed in a way that makes utility service more affordable, other, non-rate approaches such as customer assistance programs generally prove to be more effective.

Resources

"Measuring Fairness: Assessing the Equity of Municipal Water Rates."; Teodoro, Manuel P.; Journal AWWA 97.4 (2005): 111-124.

WEF Manual of Practice No. 27 *Financing and Charges for Water Systems,* Chapter 12

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015

Low-Income Water Customer Assistance Program Assessment
https://www.awwa.org/Portals/0/AWWA/Communications/liwcap-full-final-report-formatted.pdf
Improving the Evaluation of Household-Level Affordability in SDWA Rulemaking: New Approaches

https://www.awwa.org/Portals/0/AWWA/Government/ImprovingtheEvaluationofHouseholdLevelAffordabilityinSDWARulemakingNewApproaches.pdf

"Compendium of Drinking Water and Wastewater Customer Assistance Programs"; US EPA; https://www.epa.gov/waterfinancecenter/compendium-drinking-water-and-wastewater-customer-assistance-programs

EFAB Report, "Household Affordability in the Water Sector" 2016
https://nepis.epa.gov/Exe/ZyPDF.cgi/P100O2UC.PDF?Dockey=P100O2UC.PDF

Addressing the Affordability of Water and Wastewater Services in the U.S.
https://www.nacwa.org/docs/default-source/resources---public/utility-affordability-case-studies_2021.pdf

Water Conservation, Demand Management, and Efficiency

Pricing Policy Consideration: The rate structure should discourage wasteful use of all resources and encourage and efficient water use, as well as assisting in the management of system demands

In recent years, the objective to encourage water conservation has become a higher priority for many communities in response to increased pressure on available water supply and significant short-term shortages due to persistent droughts. It is also recognized that both water and wastewater treatment and transportation require significant energy resources that can contribute to the utility's carbon footprint. In general, this objective addresses the degree to which the rate structure promotes the optimal use of available water resources. Conservation goals, as stated by different utilities or communities, might include elements of several related, but separate objectives such as increasing the efficiency of water use (e.g. reducing waste and lost water), reducing peak demand levels, and/or reducing the average consumption per customer. Pricing structures that send the right signals to customers are an integral part of a broader water resource management programs. However, it is important to emphasize that pricing signals and rate structures are only one part of an effective resource conservation program, and that pricing alone is not likely be as effective without other program elements. A broad-based approach, emphasizing customer education, is necessary to achieve real, long-term reductions in usage by customers.

Implications/Challenges

Many water utility mangers are placed in a situation in which they are expected to implement practices that are intended to convince their customers to buy less of the product the utility produces. This seemingly paradoxical situation, promoting water conservation, is generally in the long term best interest of the utility and its customers as it can help in delaying or avoiding large capital investment in additional capacity and significantly reduce the carbon footprint of the utility. A recent study by the Alliance for Water Efficiency (AWE) indicates that water rates in communities served by utilities that have strong conservation programs that include conservation price structures, are lower than they would have been had their customers not conserved water to the extent they did. However, developing rates that promote conservation presents the utility manager with a number of challenges. First, conservation pricing can introduce significant revenue risk; however, despite hundreds of studies to determine the price elasticity of demand for water, the magnitude of that risk is often unknown because customer reaction to conservation signals is very unpredictable. Second, conservation rate structures are typically data intensive and difficult to develop and explain to customers. Third, for these rate structures to be most effective, they require multiple rate blocks and customer classes, and typically require more sophisticated metering and billing systems that support monthly billing of all customers.

Resources

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015; Chapter 11

"A Balanced Approach to Water Conservation in Utility Planning"; Chesnutt, T.J.; Journal AWWA; February, 2015

"Water Conservation Keeps Rates Low in Tucson, Arizona Demand Reductions Over 30 Years Have Dramatically Reduced Capital Costs in the City of Tucson"; Alliance for Water Efficiency; June 2017

"Comparing Price and Non-Price Approaches to Urban Water Conservation";
Olmstead, Sheila and Stavins, Robert; John F. Kennedy School of Government - Harvard University
June 2008

Cost Based Rates

Pricing Policy Consideration: The rate structure should ensure that each customer class is contributing equitably towards revenue requirements based upon the costs of providing service to each customer class

The process of determining the total annual revenue requirement to be recovered from each customer based on the costs of providing them service. That is, the cost of providing service to each customer should be recovered from that customer. Different types of customers generate different costs because their usage characteristics are different. The cost of service analysis allows for the matching of rates charged to each group to the cost of servicing them.

AWWA Manual M-1 *Principles of Water Rates, Fees and Charges* and WEF Manual of Practice No. 27 *Financing and Charges for Water Systems* provide detailed descriptions and guidance with respect to developing cost of service water and wastewater rates.

Implications/Challenges

In water and wastewater rate setting the term "cost of service" has several meanings. At one level, rates that are designed to only recover the actual costs of providing service can be considered cost of service rates. However, the term is more commonly used to describe rates that recover the costs of providing service from groups of customers with similar demand characteristics in a manner that reflects the costs incurred to meet the demands of each group. As such, true cost of service rates must, in some way, differentiate between groups of customers.

Developing true cost of service rates is a labor-intensive process that requires a lot of data to do correctly. Additionally, it can be difficult to explain to customers why a gallon of water from their tap at home often costs more to produce and deliver than a gallon of water used in the production of a bottle of soft drink.

Resources

AWWA Manual M-1 *Principles of Water Rates, Fees and Charges*

WEF Manual of Practice No. 27 *Financing and Charges for Water Systems*

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015; Chapters 6-10

Ease of Implementation

Pricing Policy Consideration: The rate structure should be compatible with the existing billing system, not take an inordinate amount of employee time to implement and should be based on readily available data.

The difficulty of implementing a new rate structure should be carefully considered. Possible implementation issues include the availability of data for initial and future rate structure changes, the ability to modify the customer-billing system to accommodate a new rate structure, changes to customer service procedures and policies, and the additional effort to perform future rate updates.

Implications/Challenges

A utility's pricing objectives can change over time, driving the need to adopt new rate structures that will support these new objectives. For example, a utility that is quickly approaching its source of supply and/or treatment capacity may opt to institute an aggressive conservation program including conservation rates instead of making a large capital investment in constructing new supply or treatment assets.

Resources

AWWA Manual M-1 *Principles of Water Rates, Fees and Charges;* Section VIII Implementation Issues, Pages 351-368

Ease of Understanding

Pricing Policy Consideration: The rate structure should be easy for customers to understand. In addition, the rate structure should be able to be effectively maintained by staff in future years

The ability for the rate structure to be explained in a manner that can be understood by customers, as well as elected officials and other stakeholders, can have important impacts on the ability to build consensus around rate adjustments. Additionally, a rate structure that is not easily understood by customers can impact customer service and collections functions leading to increased costs and more delinquent accounts.

Implications/Challenges

Cost of service based rates with multiple rate classes and rate structures designed to promote conservation are inherently complex and can be difficult for customers to understand. The use of simpler, more straight forward rate structures may allow a utility to achieve its objectives and eliminate customer misunderstanding. However, when circumstances dictate the use of more complex rate structures, many utilities have found that early involvement in the rate setting process by members of key stakeholder groups can result in better understanding by customers. Participation in the rate setting process allows for those involved to serve as "ambassadors" for the utility during the rate approval process.

Resources

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015; Chapters 10 and 16

AWWA Manual M-1 *Principles of Water Rates, Fees and Charge;* Section III

WEF Manual of Practice No. 27 *Financing and Charges for Water Systems,* Chapter 11

Minimization of Impact on Customers

Pricing Policy Consideration: The rate structure should be developed such that adverse rate impacts on each customer class are minimized

This objective includes the extent to which customers or customer classes will be impacted after implementing a rate increase, and recognition that if the rate structure is changed, some types or classes of customers may be impacted more than others. Being able to explain and justify the variability in customer impacts that result from a rate structure change may be as important, or more important, than providing justification for an overall cost increase.

Implications/Challenges

The easiest way to avoid adverse rate impacts is to not make rate adjustments. However, as costs to operate and maintain a utility continue to increase, failure to make regular reasonable rate adjustments will leave a utility in a position where either it cannot provide the level of service its customers expect or it cannot pay its employees and vendors. Making "across the board" increases to all rates is an easy way of avoiding large differential impacts on different customer classes, but across the board increases often fail to recognize changes in class demand characteristics that may impact the cost of service that would justify larger increases for one class. While it may be acceptable to ignore these changes for a short period of time; failure to make timely adjustments that recognize changes in cost of service can result in severe rate impacts when new cost of service rates are developed.

Differential impacts often result when a utility makes needed changes to its rate structure to address changing priorities and objectives. While it is difficult to completely avoid adverse impacts in this situation, careful planning that may involve phased changes can mitigate adverse impacts.

Resources

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015; Chapters 1-5 and 14

WEF Manual of Practice No. 27 *Financing and Charges for Water Systems,* Chapters 2-4

Rate Stability

Pricing Policy Consideration: The rate structure should be developed such that dramatic year-to-year rate increases or decrease can be avoided.

This objective addresses concerns about maintaining rate continuity and consistency over time and avoiding large, one-time increases in rates. Careful capital and financial planning are important to insure rate stability and avoid erratic changes in rates and charges from one year to the next. Also, a steady or consistent program of smaller annual rate adjustments is generally recognized as preferable to a significantly larger increase once every three or four years. Not only does this avoid customer issues associated with rate shock, but it provides for a more stable and credit-worthy stream of revenues.

Implications/Challenges

Rates should always generate enough revenue to cover the costs of operating, maintaining and sustaining the utility. When costs increase in measured and smooth manner it is easy to make reasonable annual rate adjustments such that rates continue to cover costs. However, year to year increases in utility costs, especially capital costs, are often neither measured nor smooth. Funding large capital projects with rate revenues can drive up revenue requirements for a short time leading to dramatic rate increases followed by commensurate decrease4s once the project is complete. Sound financial planning that utilizes a well thought out mix of rate revenue, debt and reserves should result more reasonable increases in annual revenue requirements that can be addressed with reasonable rate increases.

Resources

"Water and Wastewater Finance and Pricing – The Changing Landscape", Raftelis, George A.; 4th Edition, 2015; Chapters 1-5 and 14

WEF Manual of Practice No. 27 *Financing and Charges for Water Systems,* Chapters 2-4

Revenue Stability

Pricing Policy Consideration: The rate structure should provide for a steady and predictable stream of revenues.

The ability of the rate structure to generate stable and predictable revenues from year to year is an important consideration. Stable predictable revenues alleviate short term cash flow concerns and help ensure the utility can pay wages and vendor invoices in a timely manner. Additionally, bond rating agencies place a high value on revenue stability thereby making revenue stability a key objective of utilities that have a need to borrow money to address capital investment needs.

Measuring revenue stability is rather simple and involves tracking revenue on a regular basis. It is also important to assess the extent to which monthly revenue matches monthly expenses and the degree to which the relationship between revenue from fixed and variable sources is consistent with the relationship between fixed and variable costs. It has been determined that somewhere between 75% and 90% of most water utility costs are fixed, at least in the short term. Conversely, only between 15% and 30% of most water utility revenue comes from fixed revenue sources such as base or service charges

Implications/Challenges

Pricing structures that emphasize revenue stability place the utility in a strong position with respect to cash flow and credit ratings, but they can have a adverse impact on affordability and conservation. With respect to affordability, relatively large fixed charges that are often associated with rate structures that emphasize revenue stability can make it difficult for low-income customers to pay their water bill regardless of how much water they use. Similarly, large fixed charges can have an adverse impact on conservation oriented pricing signals since a decrease in water consumption does not result in a commensurate reduction in the water bill; although a recent decision by the California Public Utilities Commission indicates that rate structures that are designed to achieve a 50/50 split between fixed and variable revenue can still send meaningful conservation signals.

Resources

Decision 16-12-026 before the Public Utilities Commission of the State of California DECISION PROVIDING GUIDANCE ON WATER RATE STRUCTURE AND TIERED RATES; December 1, 2016

"Designing Water Rate Structures for Conservation & Revenue Stability" Environmental Finance Center at the University of North Carolina, Chapel Hill School of Government, 2014

"Strategies and Practices for Revenue Resiliency" Alternative Pricing Structures Webinar; Tiger, Mary; Environmental Finance Center at the University of North Carolina, Chapel Hill School of Government

WSSCWATER
DELIVERING THE ESSENTIAL

Water Conservation In Maryland

WSSC Water Water Commissioner Briefing

Jay Sakai, P.E., Consultant

December 15, 2023

Rate Setting and Water Conservation

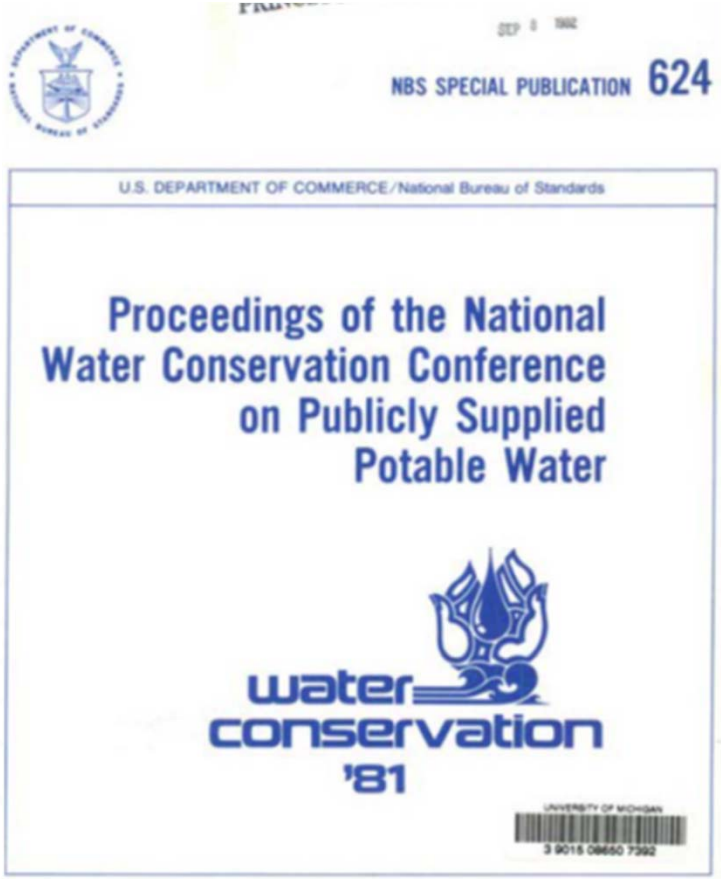
- Pricing and rate design are tools to promote conservation.
- State and Federal guidance specifically identify pricing as a cost-effective strategy to promote water conservation.
- Approach must balance goals with other policies, such as revenue stability and ease of implementation.
- Numerous examples of conservation-based rates.
- WSSC Water Water's current 4-tier inclining block structure promotes conservation.

Policy Considerations for WSSC Water Water

- What are WSSC Water's conservation objectives?
- How is conservation linked to WSSC Water's environmental protection, resource management, sustainability goals?
- What are WSSC Water's customers expectations about water conservation?
- Are there specific regulatory or operating requirements that require WSSC Water to implement water conservation?
- How does conservation factor into WSSC Water's infrastructure planning?
- How does conservation factor into WSSC Water's ability to meet the region's long-term growth needs?

WSSC's 1978 Conservation-Based Rate Structure

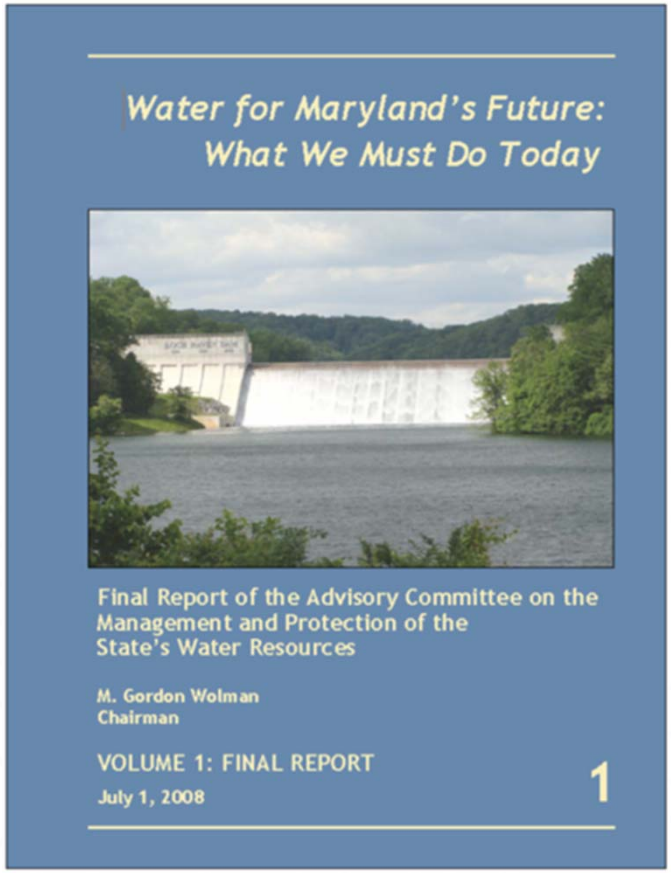
- Three Phase Conservation Strategy:
  - Publicity & Education
  - Plumbing Code revisions
  - Conservation-oriented rate structure based on:
    - Customers making increase demand would pay more for extra capacity.
    - A price structure that would encourage all customers to conserve.
- New rates reduced residential usage by 13% in first year.
- Small reductions in commercial usage.
- Usage above 300 gallons per day was reduced by 9.3%.



Maryland Water Conservation Policies

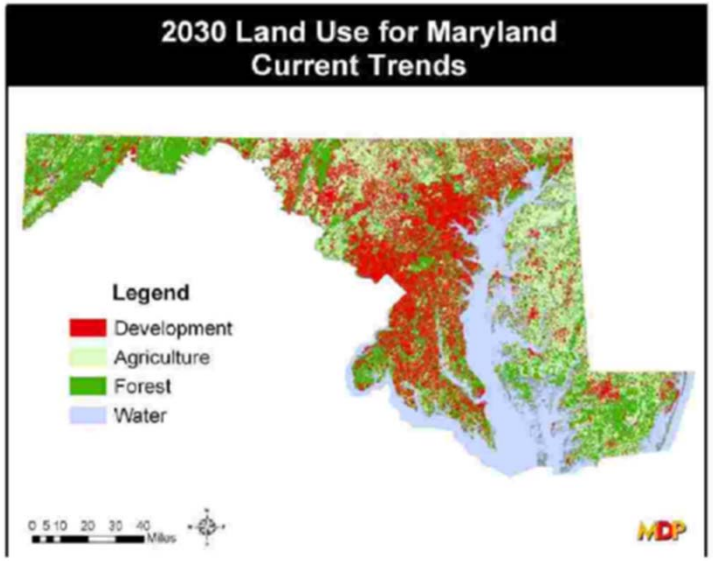
Advisory Committee on the Management and Protection of the State's Water Resources

- Severe droughts in 1999 and 2002 led to the creation of committee to develop recommendations to ensure a sustainable water supply for Maryland's citizens.
- Final report of the "Wolman Committee was issued on July 1, 2008.



Key Findings of the Advisory Committee

- The State's population will increase by another 1.4 million Marylanders between 2000 and 2030, an additional 27 percent.
- The projected growth will result in about 670,000 new Maryland households between 2000 and 2030.
- Agricultural water use is expected to increase.
- Marylanders will compete for water.
- Water quality concerns may reduce the available supply of water.
- Climate change poses an additional challenge.



Final Advisory Committee Recommendations

- State and local governments should strengthen their programs for water conservation, water reuse, and demand management.
- MDE should require the use of best management practices to the extent practicable before issuing a water appropriation permit for a new or increased appropriation.
- State and local agencies should explore possible regulatory or other strategies that could provide users with incentives to conserve, reclaim and reuse water.
- MDE should review existing laws and regulations on the use of reclaimed water, which focus on public health protection, to determine what changes could be made that would better encourage water reuse projects without compromising public health protection.

Maryland Water Conservation Act

Article – Environment
Section §5–5B–03.

"It is the policy of the State of Maryland to:

(1) Encourage investment in cost-effective measures that improve the efficiency with which water is used, treated, stored, and transmitted in the State;

(2) Reduce costs associated with treating, storing, and transmitting water; and

(3) Protect the State's natural resources, including the fish and wildlife of the Potomac River, the Chesapeake Bay, and all other waters and waterways of the State."

Maryland Water Conservation Act

Article – Environment
Section §5–5B–04

"(a) When applying for a new or expanded water appropriation permit or State financial assistance, public water systems shall include a description of best management practices currently in use, or to be implemented, for improving water conservation and the efficiency with which water is used, treated, stored, and transmitted. The application shall also include a schedule for the implementation of best management practices.

(b) ***Best management practices may include the following:***

(1) Practices designed to measure the amount of water conveyed through the system's infrastructure to water users, such as universal metering;

(2) Audits of large-volume users;

(3) Reuse and recycling of water for nonpotable, nonresidential applications;

(4) Management of system pressure to reduce usage;

(5) Retrofit programs;

(6) Efficiency in landscape design and irrigation techniques;

(7) Wastewater reclamation and recycling programs;

(8) Fixture replacement programs;

(9) ***Water and wastewater pricing structures that encourage improved efficiency;***

(10) Rebates and other financial incentives;

(11) An education program for users designed to promote increased efficiency and conservation; and

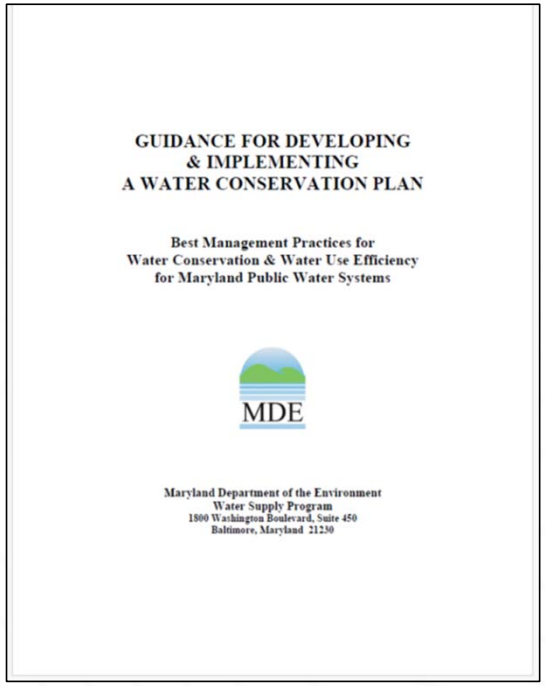
(12) Promotion or adoption of local water-use ordinances that encourage water conservation."

MDE Water Conservation Regulatory Guidance

- Conservation Planning Elements:
  - Accurate Metering
  - Water Accounting & Loss Control
  - **Pricing**
  - Information & Public Education

"Water conservation will prove to be most cost effective when rate structures are modified to encourage customers to conserve water. There are several pricing strategies that can encourage water conservation:

- Repeal volume discounts to eliminate any disincentive for conservation.
- **Charge a higher unit price as use rises (i.e. increasing block rates).**
- Implement higher rates during seasons when water use is higher.
- Charge excess use fees where appropriate for high-use consumers.


GUIDANCE FOR DEVELOPING
& IMPLEMENTING
A WATER CONSERVATION PLAN

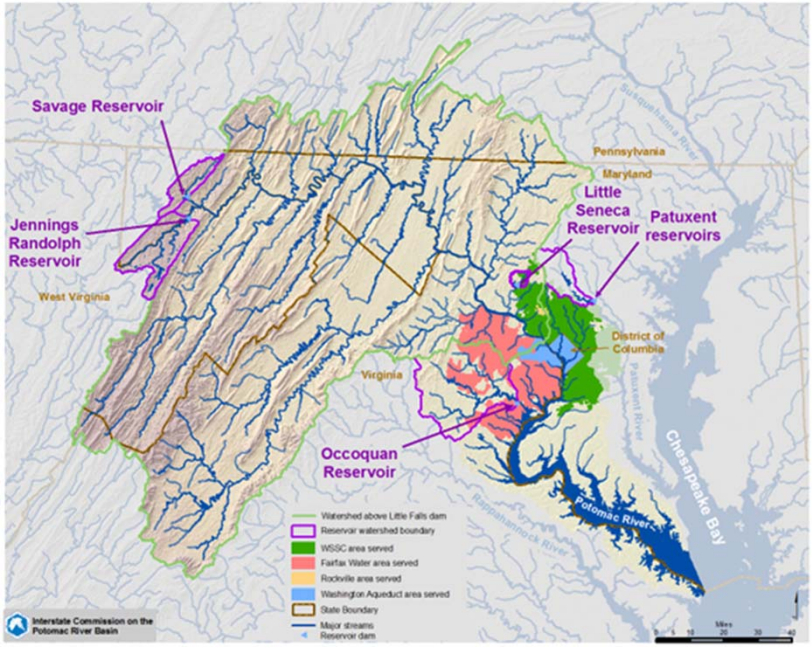
Best Management Practices for
Water Conservation & Water Use Efficiency
for Maryland Public Water Systems

MDE

Maryland Department of the Environment
Water Supply Program
1800 Washington Boulevard, Suite 450
Baltimore, Maryland 21230

1978 Potomac Low Flow Allocation Agreement

- Signed by Secretary of the Army, Maryland, Virginia, DC, Fairfax Water, and WSSC in 1978.
- Established allocation formula in the event of emergency shortages during times of drought.
- Established minimum "flow-by" for Potomac River of 100 million gallons per day at the Little Falls Dam.
- Agreement established demand management framework for continued use of the Potomac.



1978 Potomac Low Flow Allocation Agreement

"Any formula…shall allocate water on a fair and equitable basis and shall take into consideration:

A. steps taken by parties which can do so to minimize dependence upon the Potomac River during periods of low flow,

B. the nature and effectiveness of water conservation methods put into effect

C. steps taken to increase the water supply available for the Washington Metropolitan Area,

D. then current population growth and planning for future growth,feasibility and availability of new sources of water

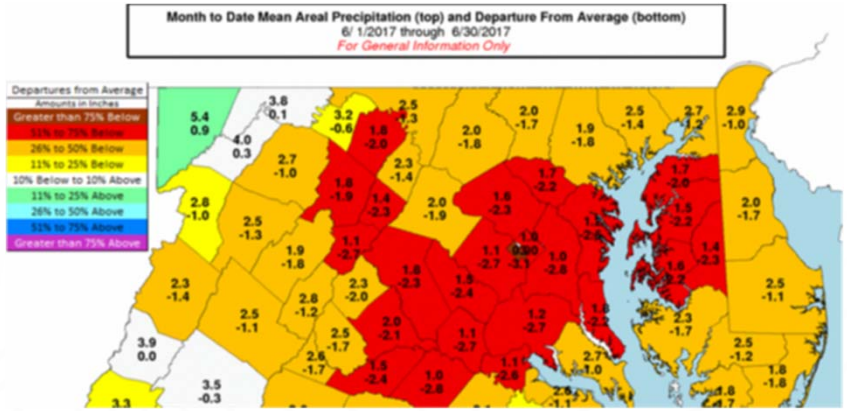
E. technological advances in water treatment and water quality measurement,

1982 Water Supply Coordinating Agreement

- Agreement between WSSC, Corps of Engineers, Washington Aqueduct, DCWater, Fairfax County Water Authority, and ICPRB to cooperatively manage their use of the Potomac River.
- Established operating rules and procedures to reduce the impact of severe droughts in the Potomac River basin, which supplies 78% of the water the Washington metro region.
- Formalized demand management requirements for regional water suppliers.

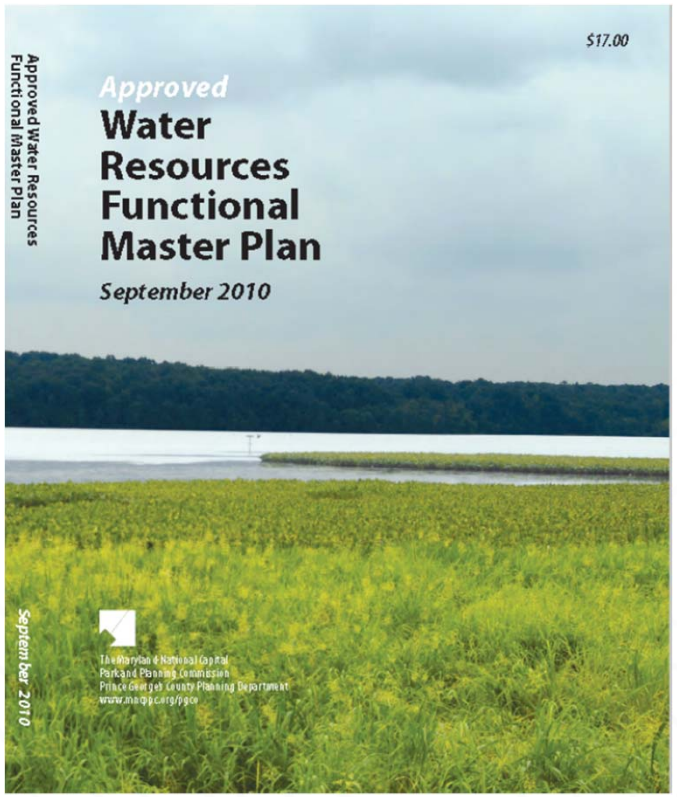
ICPRB CO-OP

- Conducts periodic reviews of the adequacy of the regional supply.
- Provides water supply outlooks and real-time drought monitoring for regional suppliers.
- Provides streamflow assessments to support reservoir release schedules.



Regional Planning Implications

- Counties are required under Maryland law to prepare comprehensive water & sewer plans.
- Plans ensure that water supplies and sewage treatment capacity are adequate to meet future demand.
- Water Resources Element (House Bill 1141) is a required element of the Comprehensive Master Planning process.
- Montgomery & Prince Georges County adopted plans incorporate water conservation as a key strategy in their water supply planning.



WSSC Water's 2022 Facility Planning Estimates

- Recent consumption data indicates a continued downward trend in per capita consumption"
- "Production over the last five years (2015 to 2019) has been consistent with a slight downward trend.
- The average water production for the last five years was 163.9 MGD."
- Average water production is projected to reach 196.9 MGD by 2045 under the High Scenario, and 160.7 and 179.0 MGD under the Low and Mid-Rang Scenarios, respectively.

Table 2-1. Daily Average Consumption per Single-Family Household Unit

Fiscal Year	SFH DAC/Unit All existing units (gpd)	SFH DAC/Unit Constructed after 1993 (gpd)
2010	172.1	177.8
2011	172.8	177.9
2012	168.2	177.5
2013	164.5	176.8
2014	168.5	171.1
2015	169.7	169.8
2016	193.0[1]	201.7
2017	161.3	165.1
2018	155.2	164.7
2019	147.6	165.1

Summary

- Water Conservation is integral to the management of the Potomac River.
- Water Conservation is assumed in demand projections used in county planning.
- Water Conservation is a regulatory mandate.
- Water Conservation is needed to ensure a viable long-term supply for region and to preserve the ecological health of Maryland's water resources.
- Pricing & Rate Structures can be effective tools to encourage & promote water conservation by WSSC's customers.

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Questions?


WSSCWATER
DELIVERING THE ESSENTIAL

WSSCWATER
DELIVERING THE ESSENTIAL

Customer Financial Assistance Programs

Kelly Caplan, Division Manager, Customer Engagement & Advocacy

December 15, 2023

Agenda

- Introduction
- Current Financial Assistance Programs
- Future Affordability Enhancements
- Q & A

FINANCIAL ASSISTANCE for Our Neighbors

Financial Assistance Programs

Serving Montgomery & Prince George's Customers

- Customer Assistance Program (CAP)
- Bay Restoration Fund (BRF) fee exemption
- Water Fund
- PipeER
- Promise Pay
- Bill adjustments
- External Customer Financial Assistance

FINANCIAL ASSISTANCE for Our Neighbors

Customer Assistance Program (CAP) Benefits

- Exemption from Ready-to-Serve Charges (up to $136/year)
- Bay Restoration Fund Exemption: Waiver of State-mandated $60 annual fee
- Bill Adjustments: 100% removal of excess water/sewer charges in one billing cycle once every three years
- Flexible Pay Plans: Up to 48 months
- Permanent waiver of late fees
- Free annual inspection to identify leaks

Customer Assistance Program (CAP)

- Customers automatically enrolled in CAP once they qualify for energy assistance thru Office of Home Energy Programs
- **$2.37 million in fixed fees waived in FY2023**
- **16,479 customers enrolled end of FY2023**
- Utilizes 200% of Federal Poverty Limit for income qualification (OHEP expansion)
- wsscwater.com/cap

FINANCIAL ASSISTANCE for Our Neighbors

CAP Income Eligibility

FY2024 ELIGIBILITY GUIDELINES - Effective July 1, 2023 - June 30, 2024
Based On 200% Of Federal Poverty Level

Persons in family/household*	Annual poverty guideline
1	$29,160
2	$39,444
3	$49,716
4	$60,000
5	$70,284
6	$80,556
7	$90,840
8	$101,124

***For families/households with more than 8 persons, add $10,284 for each additional person.**

Where to Apply for CAP Program

Montgomery County

Department of Health & Human Services

1301 Piccard Drive
Rockville, MD 20850
(240)777-4450
ohep@montgomerycountymd.gov

Prince George's County

Department of Social Services
425 Brightseat Road
Landover, MD 20785
(301)909-6300
pgcdss.energy@maryland.gov

Bay Restoration Fund (BRF) Fee Exemption

- WSSC Water collects this fee on behalf of State of Maryland
- Exemption program waiving fee up to $60/year
- CAP-certified customers are automatically enrolled
- Customers can enroll separately
- wsscwater.com/bayexempt

The Water Fund

- Established in 1994 by WSSC Water employees
- Administered by The Salvation Army
- WSSC Water pays all administrative costs
- Allows *for multiple requests* for **emergency assistance** with water/sewer bills, up to **$500/calendar year**
- 100% of donations go to water bill assistance
- Utilizes 200% of federal poverty level to qualify customers

Water Fund – Income Eligibility

FY2024 ELIGIBILITY GUIDELINES - Effective July 1, 2023 - June 30, 2024
Based On 200% Of Federal Poverty Level

Persons in family/household*	Annual poverty guideline
1	$29,160
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7	$90,840
8	$101,124

*For families/households with more than 8 persons, add $10,284 for each additional person.

How The Water Fund Helps

- Since inception, more than **$2.78 million in assistance** helping more than **25,300 people**
- Since 2020, the Water Fund has provided more than **$1.65 million in assistance to 11,000 people**
- Information about assistance: **wsscwater.com/waterfund**
- Donation information: **wsscwater.com/donate**
- Application: **salvationarmynca.org/gethelp**

WATER FUND
Sharing the Essential

The Water Fund – Salvation Army

Montgomery County

20021 Aircraft Drive
Germantown, MD 20847
Phone: (301) 515-5354
Fax: (301) 515-7253

Prince George's County

4825 Edmonston Road
Hyattsville, MD 20781
Phone: (301) 277-6103
Fax: (301) 779-8020

Pipe Emergency Replacement Loan Program

- Loan program providing $100,000 annually to customers needing emergency funds for water pipe replacement
- **Qualified customers are eligible to receive a loan up to $5,000**
- Funds available on a first-come, first-served basis until fund is depleted
- Program is administered by the WSSC Federal Credit Union
- The Credit Union is responsible for underwriting and administering program loans
- wsscfcu.org/pipeER

Promise Pay as of December 1, 2023

14,557 Active Plans

- 14,360 residential
- 197 commercial

$807 Average Plan Balance

Collected to Date

- $4.1 million payments collected
- 31,258 payments processed

Scheduled

- $11.7 million scheduled to be paid
- 369,189 future payments scheduled

Bill Adjustments

- CAP-approved customers may be eligible to receive high bill adjustment removing 100% of excess water & sewer usage for one billing cycle in any three-year period.
- Bill adjustments are available to residential customers once every three years.

External Customer Financial Assistance

Total assistance provided to more than 11,086 customers since March 2020

TOTAL: $11.1 million

$3.76 million	$5.09 million	$1.77 million	$400,000	$96,000
State of Maryland's Water Assistance Relief Program	Low Income Household Water Assistance Program (LIHWAP)	Maryland Homeowner Assistance Fund (HAF)	Emergency Rental Assistance Program	American Rescue Plan Act

New Affordability Programs/Enhancements Fiscal Year 2025

- CAP Leak Repair Program
- Enrollment in CAP every two years
- Provides WSSC Water authority for volumetric credit
- Expansion of PipeER to include sewer work
- Updates to bill adjustments regulation for CAP customers

In FY 2025, we added more than **$4.2 million** to enhance our financial assistance programs, bringing the total to more than **$7.7 million - a 121% increase**

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Affordability Considerations in Rate Setting

WSSC Water Commissioner Briefing

Jay Sakai, P.E., Consultant

December 15, 2023

Agenda

- Defining Affordability
- Bi-County Demographic Profile
- Best Practice Approach To Affordability

Defining Affordability

"Affordability" means different things to different constituents

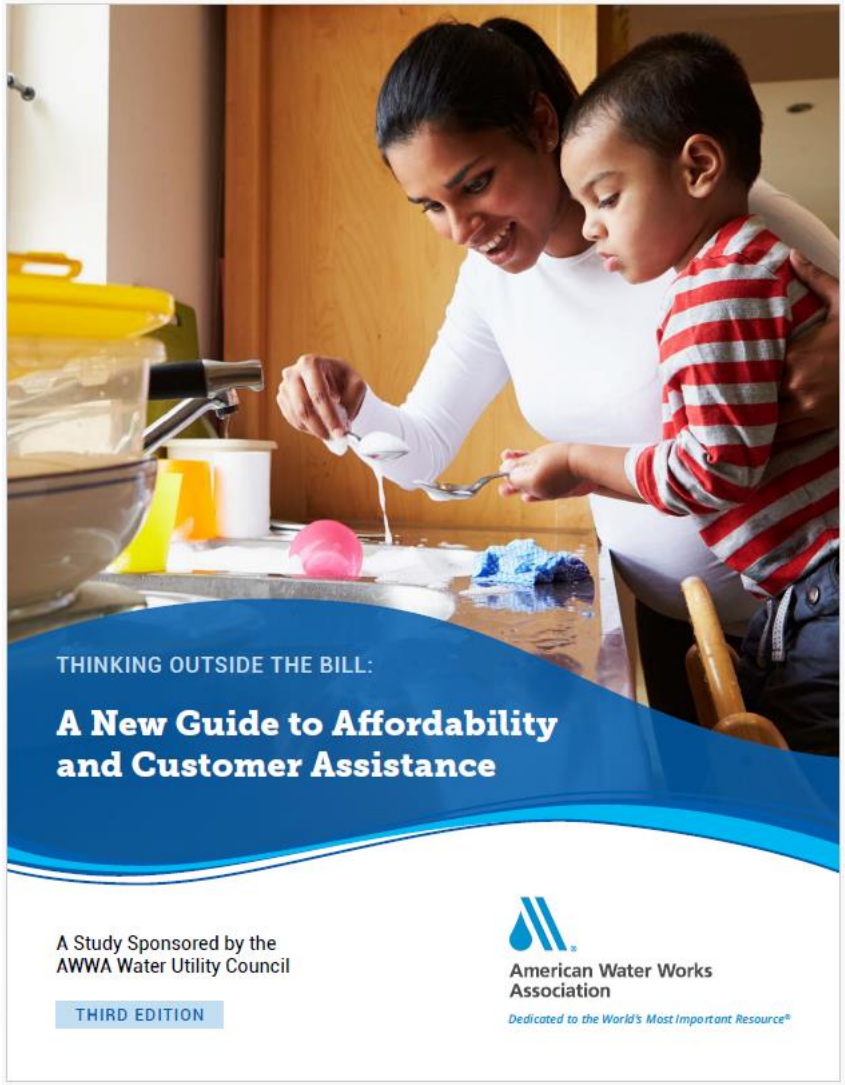
- Community's ability to pay for improvements needed to meet federal water standards.
- Average/Median customers' ability to pay water & sewer bill.
- Ability to pay essential needs (water, housing, food, heating, basic medical needs, etc)
- Ability of low-income customers to pay water & sewer bills.
- Ability to pay is not the same as willingness to pay.

The Old Approach: EPA's Community Affordability Thresholds

- Wastewater & Stormwater: 2.0% of Median Household Income (EPA CSO Guidance, 1997)
- Water: 2.5% of Median Household Income (EPA Small Water System Guidance 1996)
- Combined Water & Sewer: 4.5% of Median Household Income (EPA Affordability Guidance 2014)

New Approach to Defining Affordability

- Focus on Equity & Environmental Justice
- EPA's Revised Financial Capability Assessment Methodology
- Water burden measured for most vulnerable customers, not Median Households.
- New Affordability Metrics:
  - Household Burden Indicator (HBI)
  - Poverty Prevalence Indicator (PPI)
  - Affordability Ratio (AR)
  - Household Water Bill Cost as Hours Worked at Minimum Wage (HM)
  - Residential Indicator (RI)



AWWA's Affordability Methodology

- Water Affordability Measured on Most Vulnerable Customers
- Examines Rate and Charges against lowest Quintile Income, Not MHI.
- Affordability expressed as a range of impacts.

HBI – Water Costs as a Percent of Lowest Quintile Income	PPI – Percent of Households Below 200% of FPL		
	>=35%	20% to 35%	<20%
>=10%	Very High Burden	High Burden	Moderate-High Burden
7% to 10%	High Burden	Moderate-High Burden	Moderate-Low Burden
<7%	Moderate-High Burden	Moderate-Low Burden	Low Burden

EPA's Revised Financial Capability Guidance

- Replaces the "*1997 Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development*"
- Supplements the 2014 FCA Framework for Municipal Clean Water Act Requirements and the 1995 Interim Economic Guidance for Water Quality Standards.
- The FCA Guidance describes the financial information and formulas that can be used to assess the financial resources a community has available to implement Clean Water Act control measures.
- Replaces the 2% Community Affordability Threshold with a multi-faceted set of financial metrics:
  - Residential Indicator (RI)
  - 6 socioeconomic Financial Capability Indicators
  - Lowest Quintile Poverty Indicator

Bi-County Demographic Profile

Bi-County Demographic Overview

- 8.5% of residents in Montgomery County and 11.5% of residents in Prince George's County live in poverty.
- There are approximately 61,000 households in the Bi-County area with incomes at or below the federal poverty level.

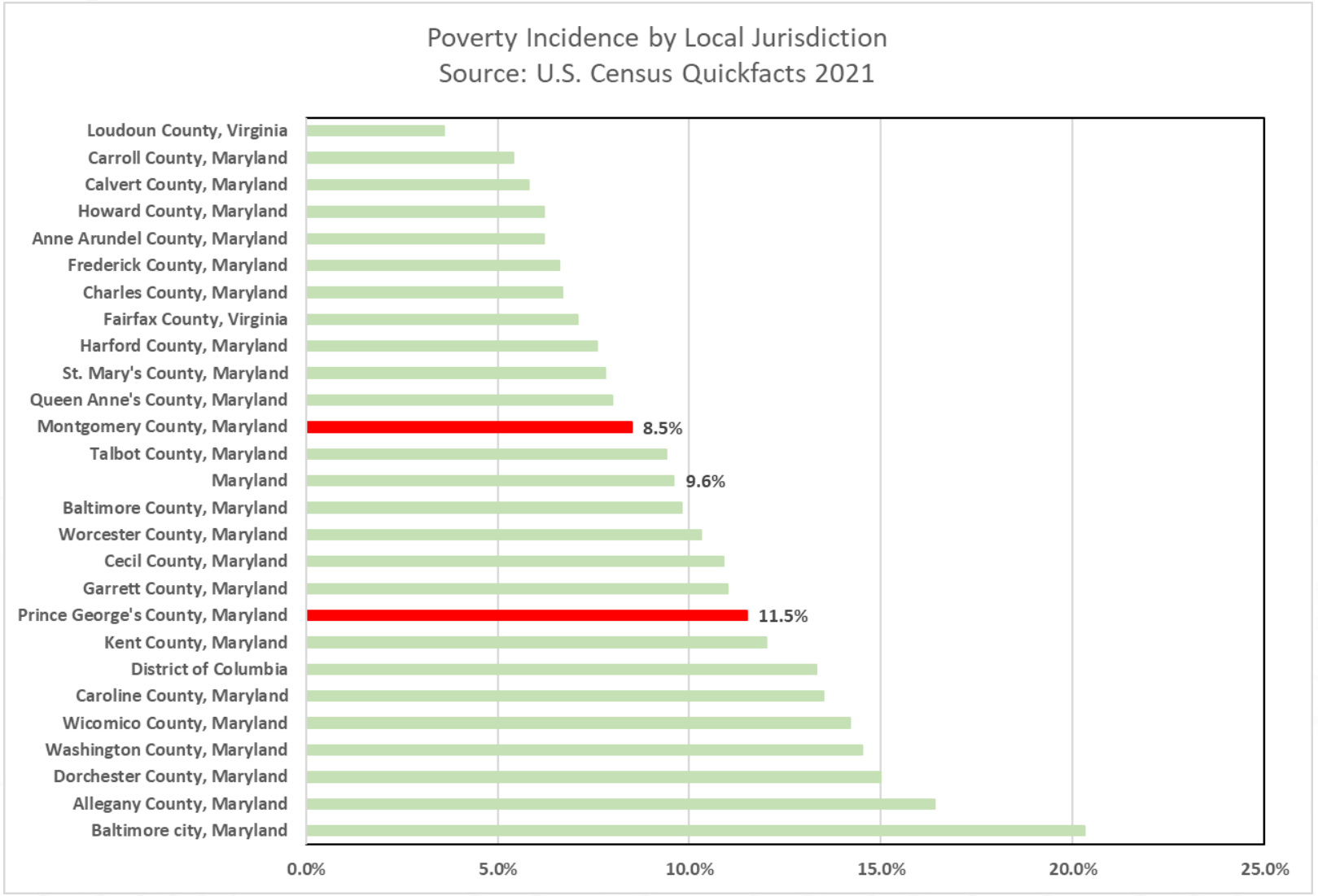
U.S. Census American Community Survey 2022 1-Yr Estimates

Metric	Montgomery County	Prince George's County	Bi-County Total
Total Population	*1,052,521*	*946,971*	*1,999,492*
Population In Poverty	*82,410*	*100,631*	*183,041*
Percent of Population In Poverty	*8.5%*	*11.5%*	*9.2%*
Number of Households	*391,297*	*347,207*	*738,504*
Number of Family Households	*261,250*	*227,294*	*488,544*
Median Household Income (1)	*$ 117,345*	*$ 91,124*	*N/A*
Households Below Poverty	**27,904**	**33,618**	**61,522**
Family Households Below Poverty	**15,164**	**16,200**	**31,364**
Number of Households with Incomes < $25,000	**33,948**	**36,130**	**70,078**

Notes: (1) MHI data from 2017-2021 ACS 5-Year Estimates

Poverty Rate Comparison

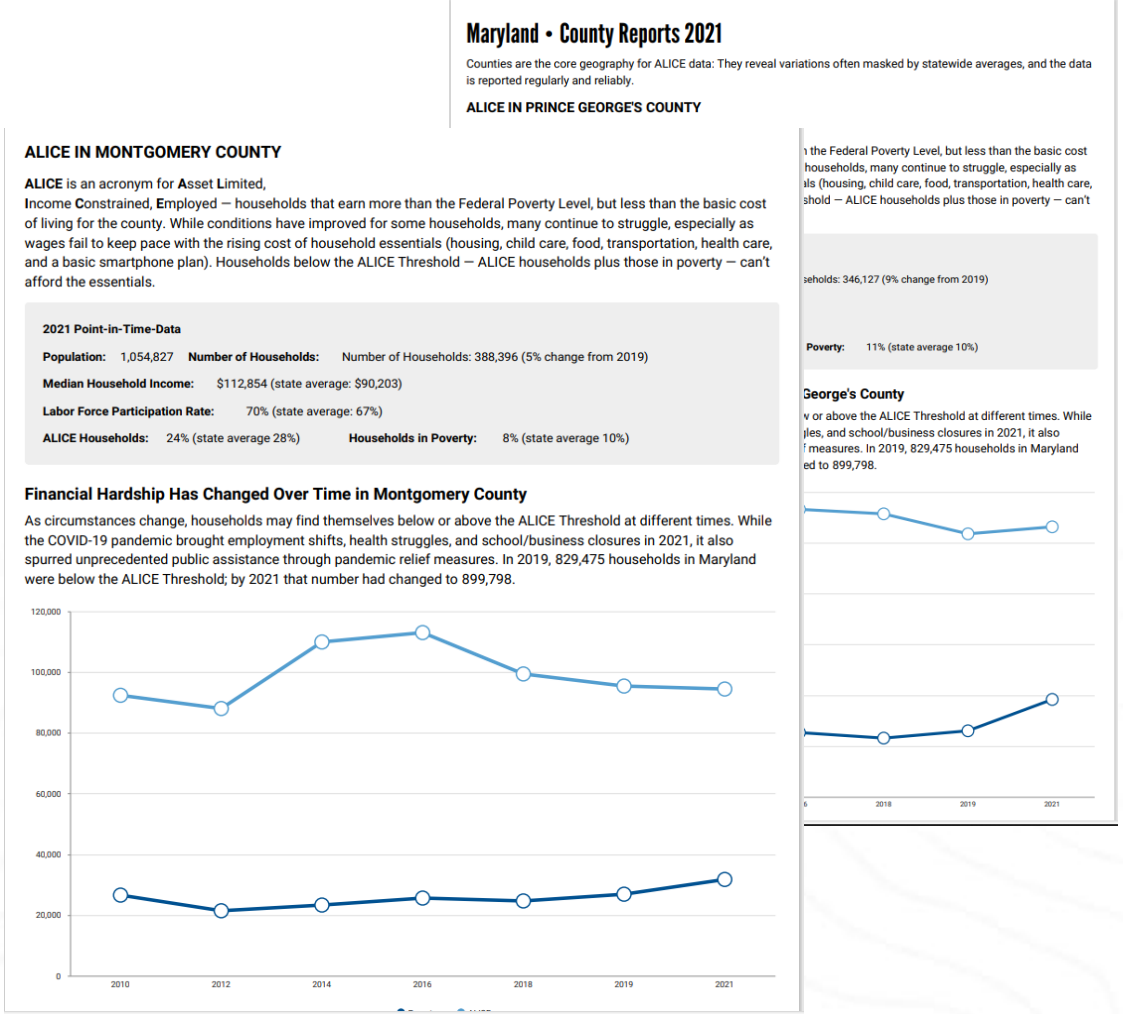
- Montgomery County's poverty rate is slightly below the statewide average of 9.6%.
- Prince George's poverty rate is approximately 2% higher than the statewide average.



ALICE (Asset-Limited, Income Constrained, Employed) Households

- ALICE is a broader measure of financial hardship than the HHS Federal Poverty Level
- ALICE includes:
  - Other affordability factors include:
  - Health care costs
  - Housing costs
  - Food Costs
  - Access to Transit
  - Employment Trends
  - Child care costs

- ALICE Households in Montgomery County = 24%
- ALICE Households in Prince George's County = 31%
- Statewide Average = 28%



Maryland • County Reports 2021

Counties are the core geography for ALICE data: They reveal variations often masked by statewide averages, and the data is reported regularly and reliably.

ALICE IN PRINCE GEORGE'S COUNTY

ALICE IN MONTGOMERY COUNTY

ALICE is an acronym for **A**sset **L**imited, **I**ncome **C**onstrained, **E**mployed — households that earn more than the Federal Poverty Level, but less than the basic cost of living for the county. While conditions have improved for some households, many continue to struggle, especially as wages fail to keep pace with the rising cost of household essentials (housing, child care, food, transportation, health care, and a basic smartphone plan). Households below the ALICE Threshold — ALICE households plus those in poverty — can't afford the essentials.

2021 Point-in-Time-Data

Population: 1,054,827 **Number of Households:** Number of Households: 388,396 (5% change from 2019)

Median Household Income: $112,854 (state average: $90,203)

Labor Force Participation Rate: 70% (state average: 67%)

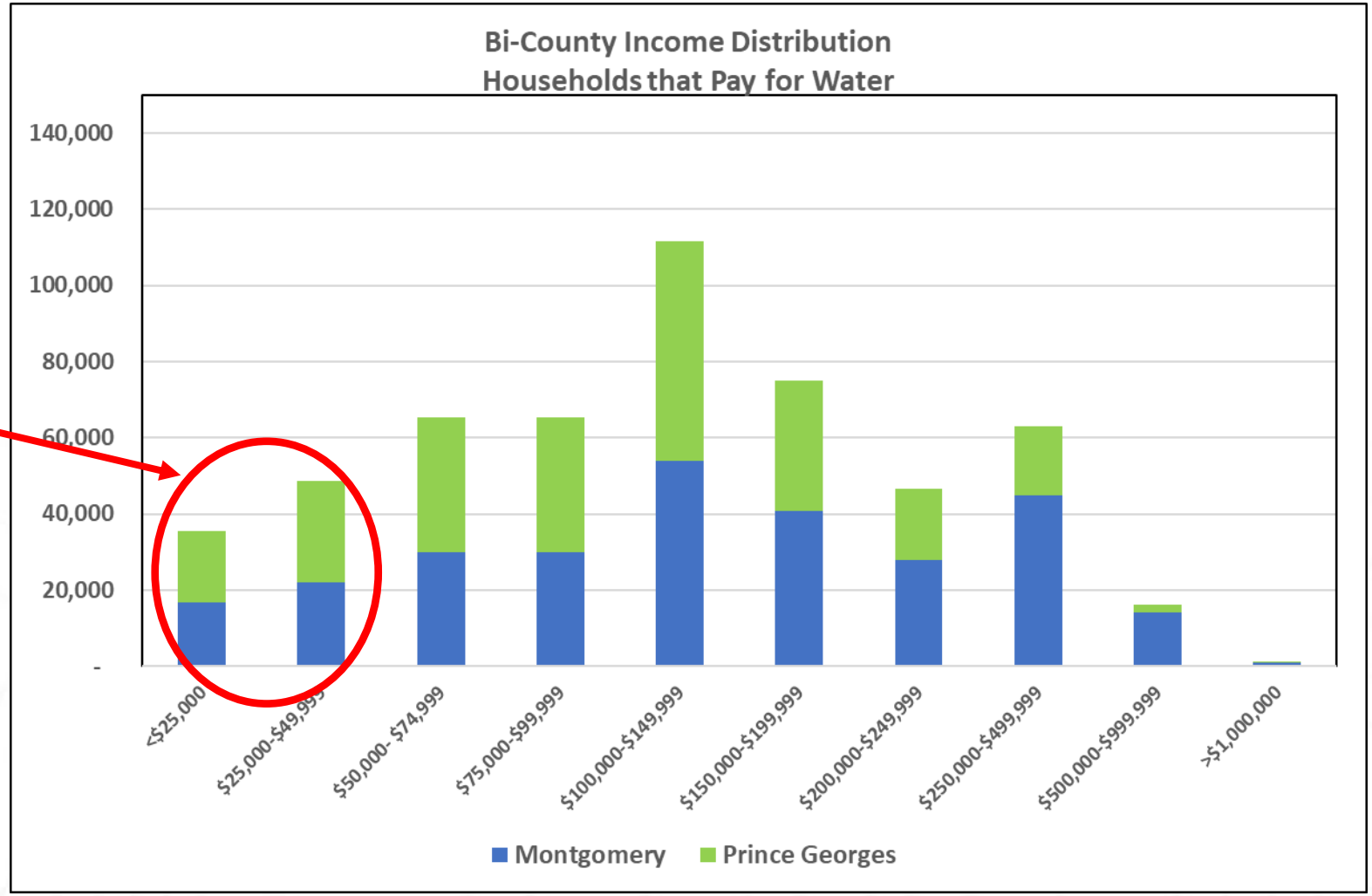
ALICE Households: 24% (state average 28%) **Households in Poverty:** 8% (state average 10%)

Financial Hardship Has Changed Over Time in Montgomery County

As circumstances change, households may find themselves below or above the ALICE Threshold at different times. While the COVID-19 pandemic brought employment shifts, health struggles, and school/business closures in 2021, it also spurred unprecedented public assistance through pandemic relief measures. In 2019, 829,475 households in Maryland were below the ALICE Threshold; by 2021 that number had changed to 899,798.

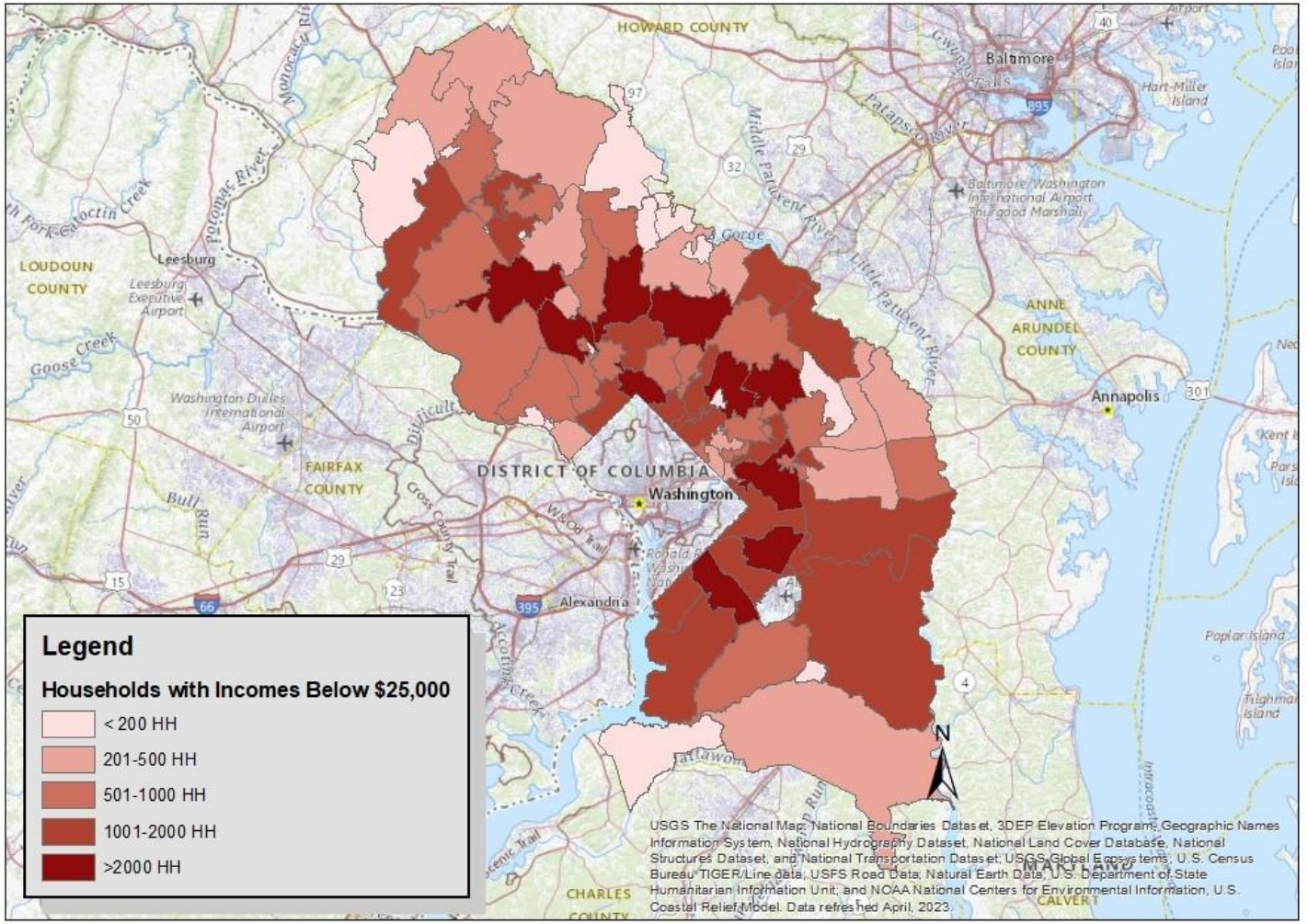
Bi-County Household Income Distribution

- Census Microdata can be used to refine a utility's analysis of its customer base.
- Target for WSSC Water's Affordability Programs: Approximately 84,000 low and moderate income households that pay for water.



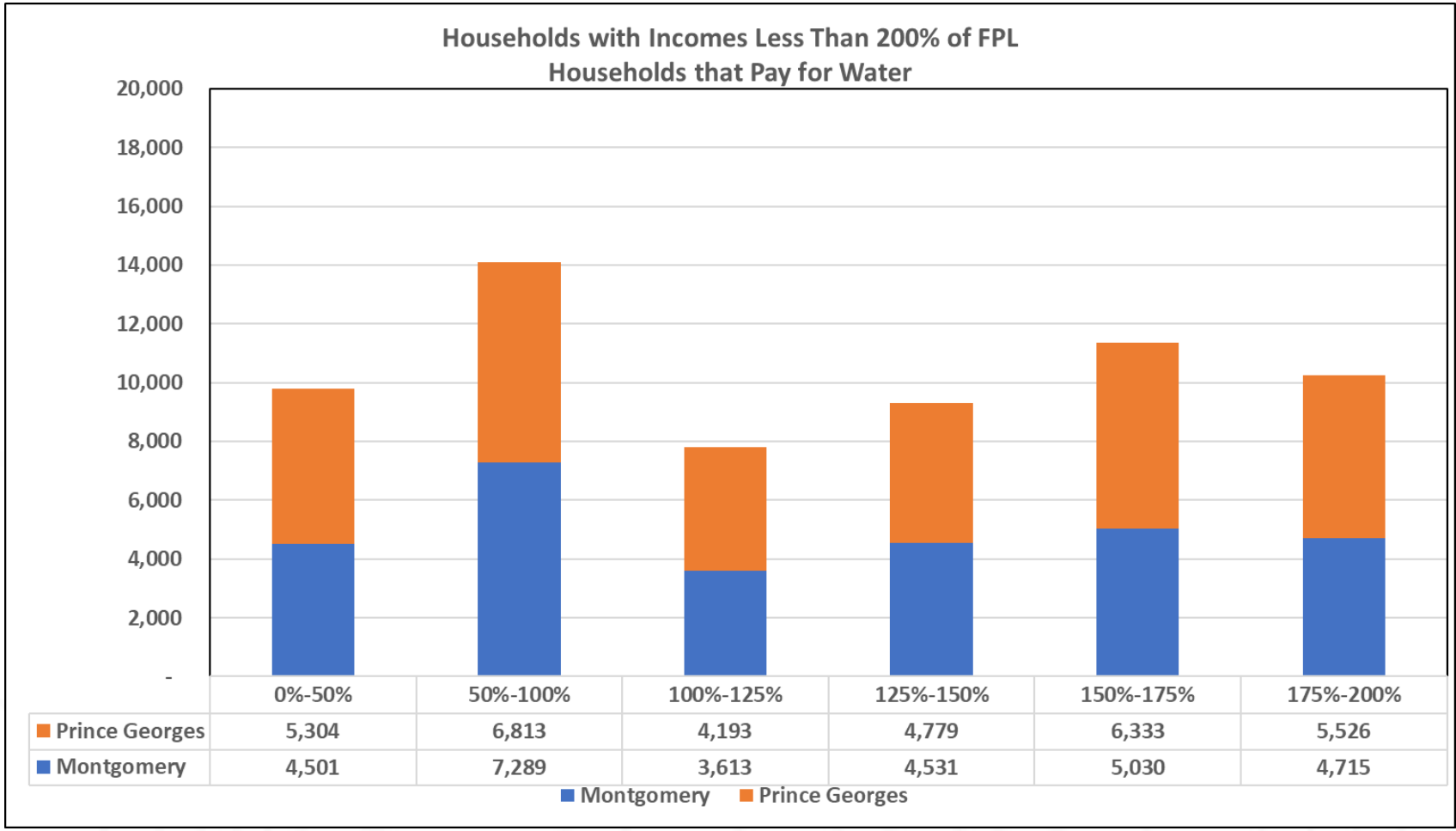
Household Income Distribution in WSSC Water's Service Area (2021)

- GIS Data can be used to map where programs are needed most.
- This data can help with outreach and communications.
- Partnering with local community organizations, churches and NGO's can help bolster enrollment.



Household's Below 200% of the HHS Federal Poverty Income Threshold

- Current OHEP & CAP Income Eligibility Criteria is 200% of Federal Poverty Level.
- Census Data Used to Develop Estimate of CAP Program universe of 62,000 households.

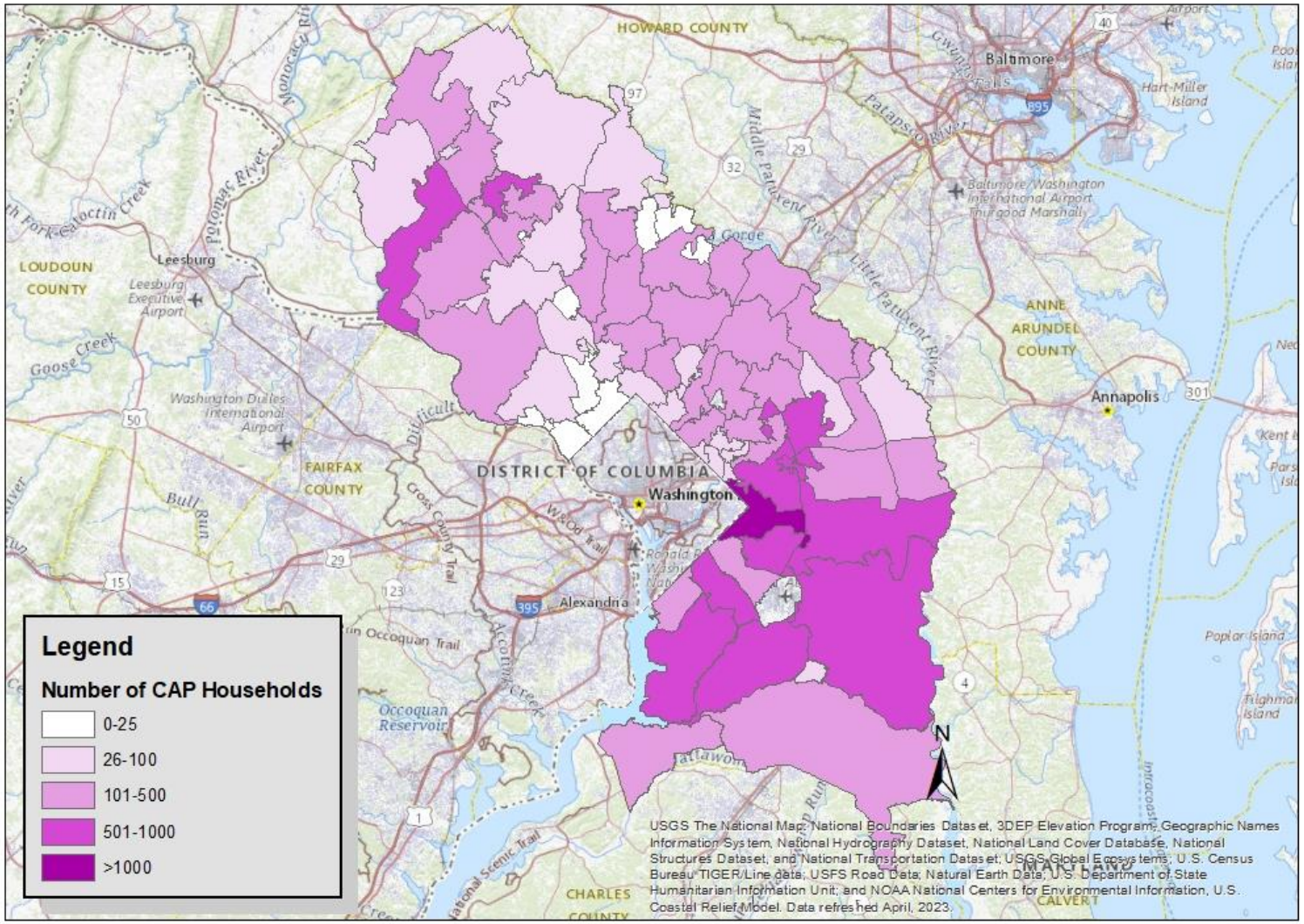


	0%-50%	50%-100%	100%-125%	125%-150%	150%-175%	175%-200%
Prince Georges	5,304	6,813	4,193	4,779	6,333	5,526
Montgomery	4,501	7,289	3,613	4,531	5,030	4,715

Distribution of CAP Customers (FY2023)

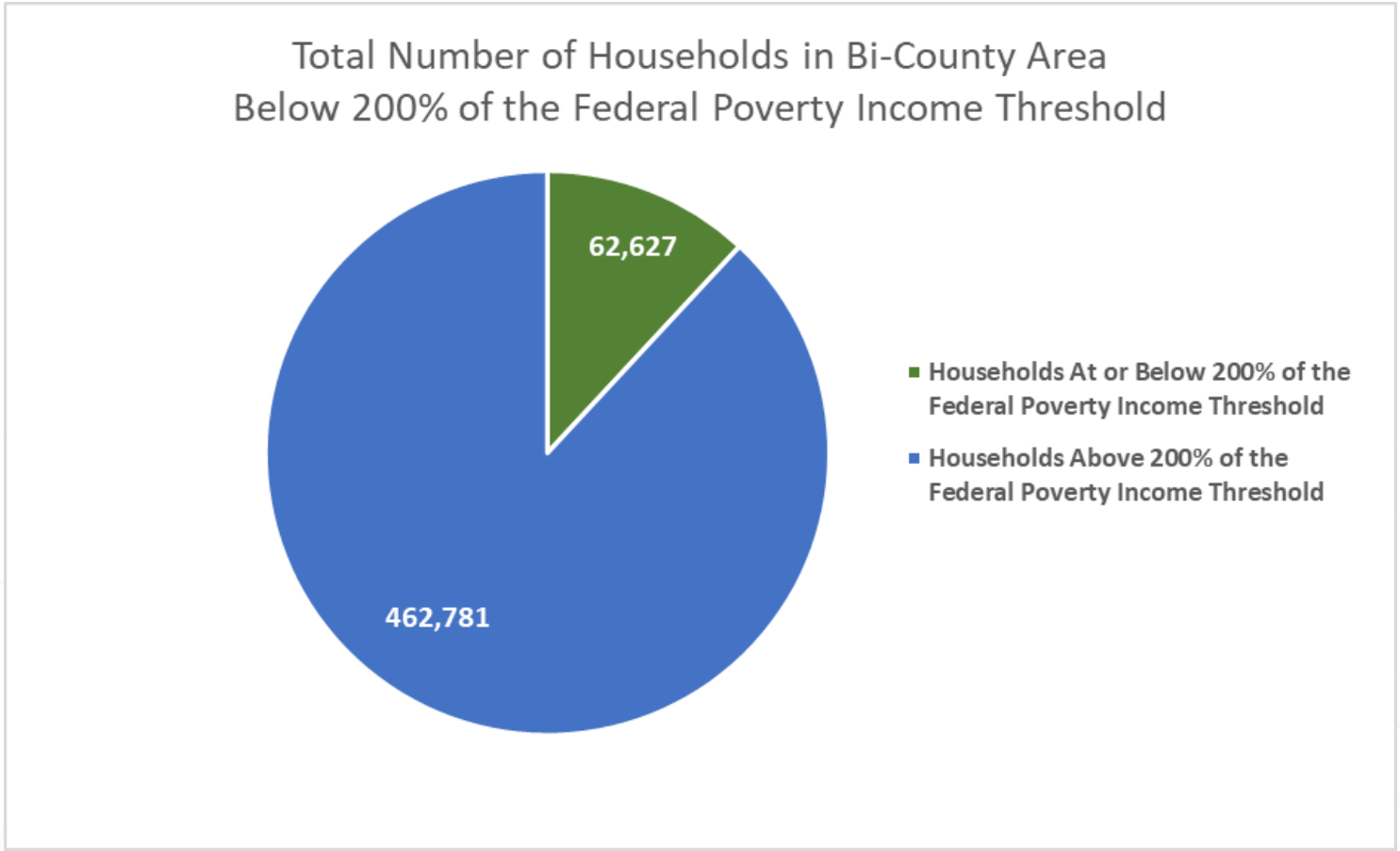
WSSC Zipcodes with More Than 500 CAP Customers

ZipCode	Number of CAP Customers
20743	1402
20744	890
20785	779
20874	772
20748	770
20774	750
20747	729
20735	680
20772	665
20886	600



Universe of Eligible Households

- Current CAP enrollment represents approximately 28% of the potential CAP eligible universe of customers.
- This is consistent with OHEP's assessment that 25% of all eligible households are enrolled in energy assistance.
- Legislation adopted in 2023 will expand enrollment in Maryland's Energy Assistance Programs



Industry Best Practice Approach to Affordability

Affordability Trends

"A best practice utility is one that recognizes that going beyond the normal realm of standard commercial collections practices is pragmatic and worthwhile when weighed in terms of the overall mission of the utility within the community."

-Best Practices in Customer Payment Assistance Programs, Water Research Foundation

Best Practices in Affordability

- Uses a comprehensive and systematic view in the design of customer assistance programs
- Uses a business process methodology that defines clear strategies and objectives, evaluating results and outcomes regularly, and measuring program effectiveness through well- defined performance measures.
- Recognizes that there are various causes of nonpayment at the household level, not just income. Job loss, illness, disability, domestic turmoil, and unexpected expenses are factors that all contribute to non-payment of water bills.
- A well-designed assistance program will offer a mix of solutions that address these different problems.

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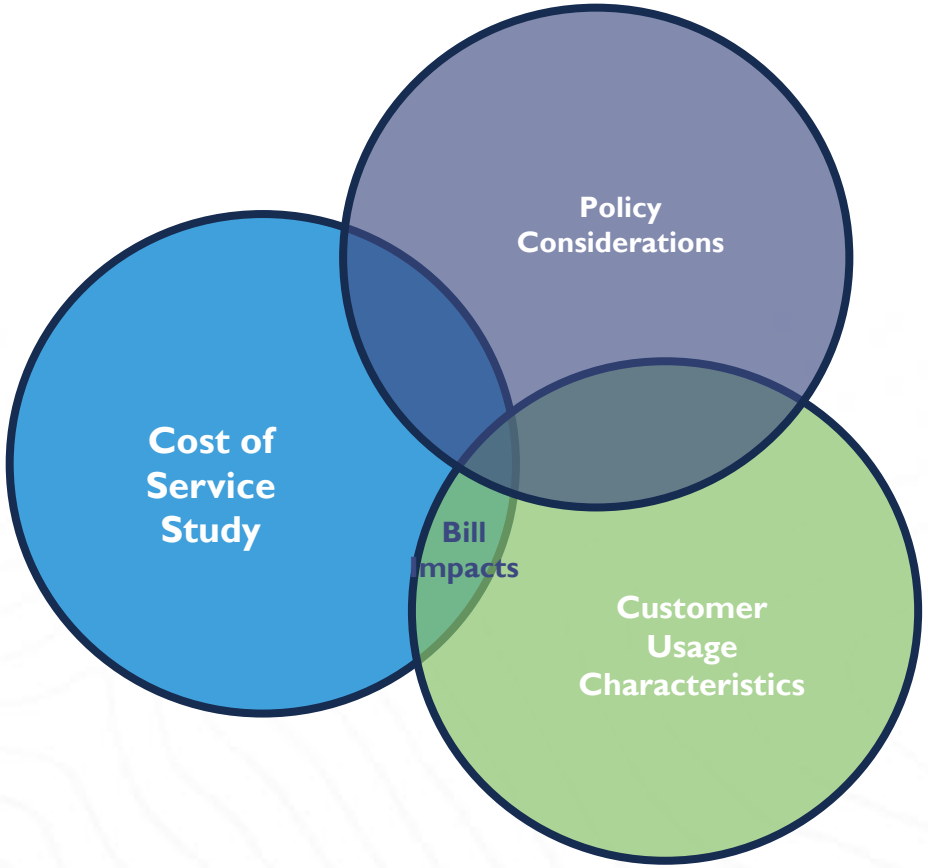
Next Steps: Rate Design Process

Rate Design Process

Key Considerations During Rate Design

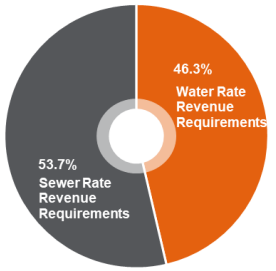
- Results of the Cost-of-Service Study
- Policy Priorities
- Customer Usage Characteristics

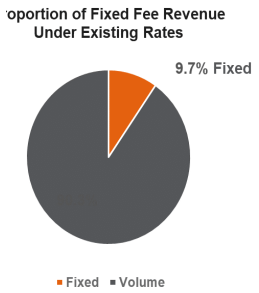


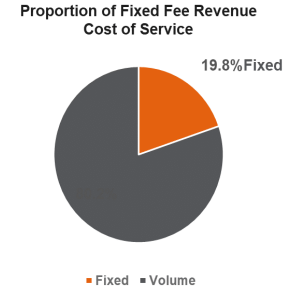
Cost-of-Service Study

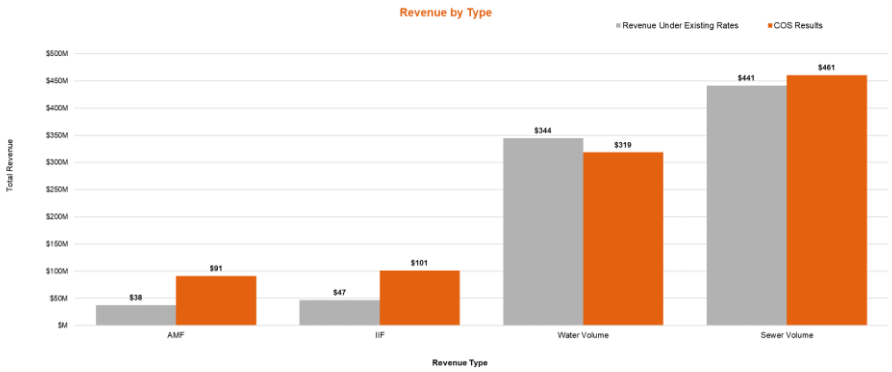
The cost-of-service study provides information about where our revenue should come from

- Water or Sewer Rates
- Fixed vs. Variable Charges
- Customer Classes (not for WSSC Water)





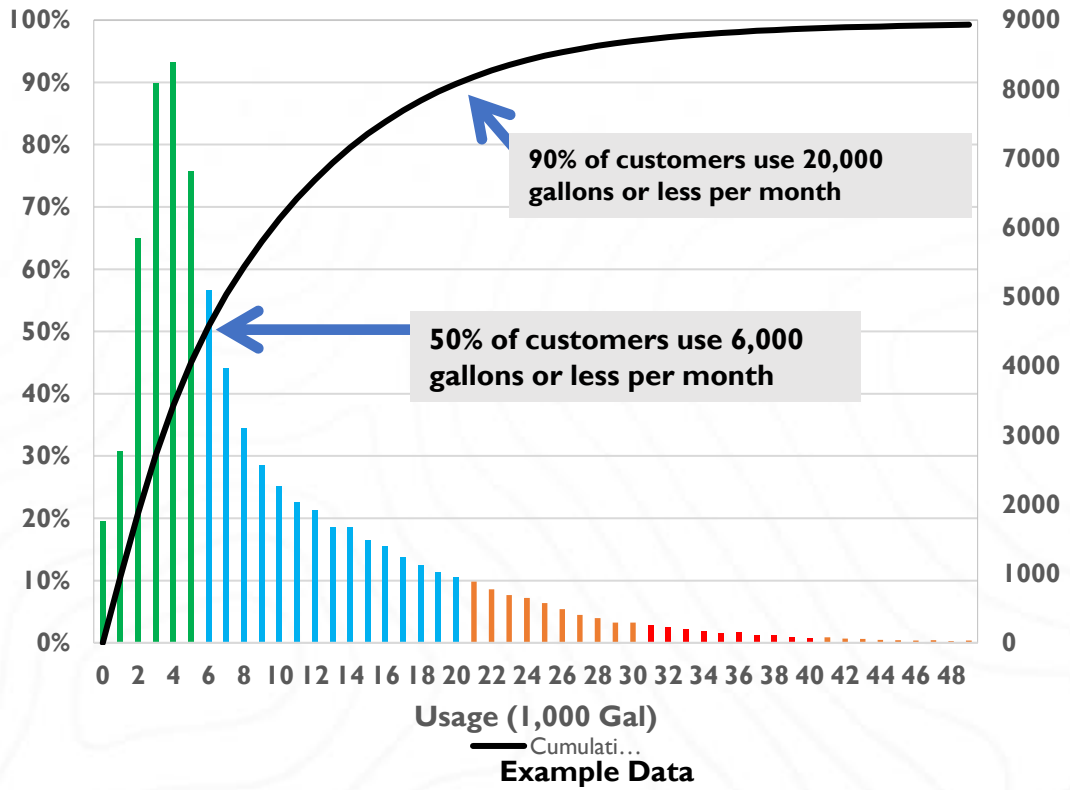




Customer Usage Characteristics

Data on customer usage characteristics allows us to:

- Verify tier cut-offs
- Calculate bill impacts for various customer types



Analyzing Bill Impacts

Bill impact analysis involves:

- Comparing the dollar impact of rate structure changes on various customers
- Assessing whether the rate structure supports policy priorities

					Average Family Impact					
		W/WW Tier Cut-offs (gpd)	Combined Rate ($/kgal)	Current Bill ($/quarter)	Bill ($/quarter)	$ Change ($/quarter)	% MHI PGC	% MHI MC	% LQI PGC	% LQI MC
4 Block Inclining	Option A	80	$10.66	$205.45	$200.62	($4.83)	1.1%	0.8%	4.0%	3.3%
		165	$12.25							
		275	$14.86							
		>275	$18.74							
	Option B	80	$10.66	$205.45	$207.34	$1.89	1.1%	0.8%	4.1%	3.4%
		165	$13.09							
		9,000	$16.16							
		>9,000	$20.52							

Bill Impact Results from 2017 Study

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