



**Washington Suburban
Sanitary Commission**

Water and Sewer Rate Study Executive Summary Report



Prepared by



Municipal & Financial Services Group

In Association with

PEER
CONSULTANTS, P.C.



Est. 1978

January 9, 2014



Municipal & Financial Services Group

January 9, 2014

Christopher Cullinan
Acting Chief Financial Officer
Washington Suburban Sanitary Commission
14501 Sweitzer Lane
Laurel, MD 20707

Dear Mr. Cullinan:

The Municipal & Financial Service Group is pleased to submit to the Washington Suburban Sanitary Commission the attached Water and Sewer Rate Study Executive Summary Report. This document provides an overview of the results of our analysis of the cost of providing water and sewer service to the Commission's customers and our recommendations for how the Commission should recover these costs. The study provides a number of recommendations that will increase the financial health and stability of the Commission's operations while equitably charging its customers for water and sewer service.

It has been our distinct pleasure to work with and for the Commission. The assistance provided by the Commission's staff was essential in the completion of the study. The dedication you and other Commission staff providing during the study process should be acknowledged and was vital to the completion and success of the study. Thank you for the opportunity to work with and for the Washington Suburban Sanitary Commission on this study.

Very truly yours,

A handwritten signature in black ink, appearing to read "David Hyder", written in a cursive style.

David Hyder
Vice President
The Municipal & Financial Services Group

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This document was prepared to summarize the work performed by the Municipal & Financial Services Group (“MFSG”) during the water and sewer cost of service and rate study authorized by the Washington Suburban Sanitary Commission (“WSSC”). The study is predicated on the use of a cash flow analysis to support the pricing of utility services. The cost of service analysis uses a planning period of 10 years (2015 - 2024). This report provides an overview of the study. Comprehensive documentation for the study is provided in a separate technical report, titled the *Water and Sewer Rate Study Technical Report*, dated January 9, 2014.

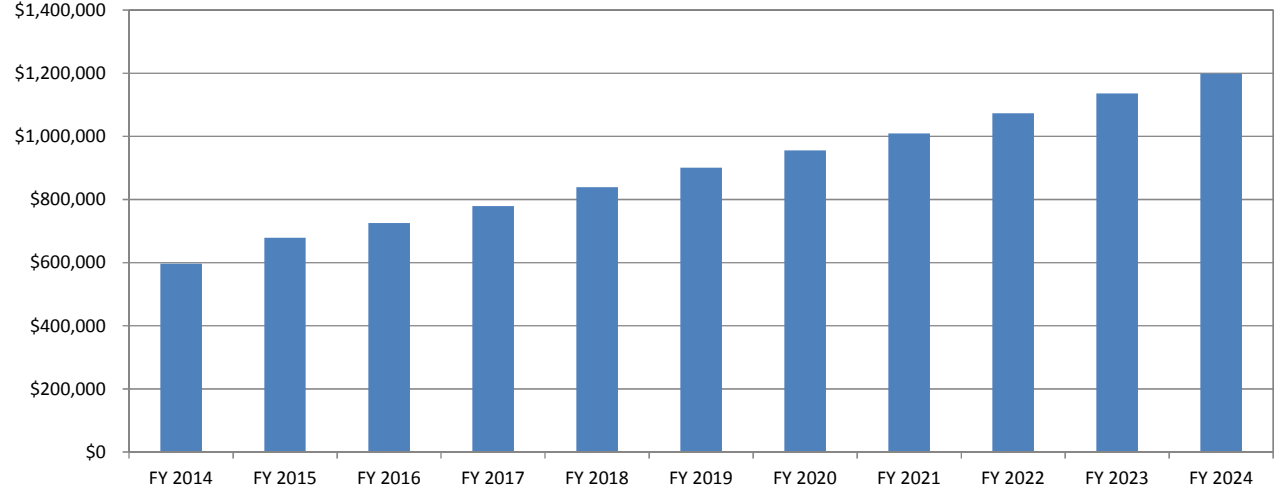
1. Findings and Conclusions

The following section presents a summary of the key findings and conclusions developed during the completion of the study.

1.1 Revenue Requirements and Affordability Guidelines

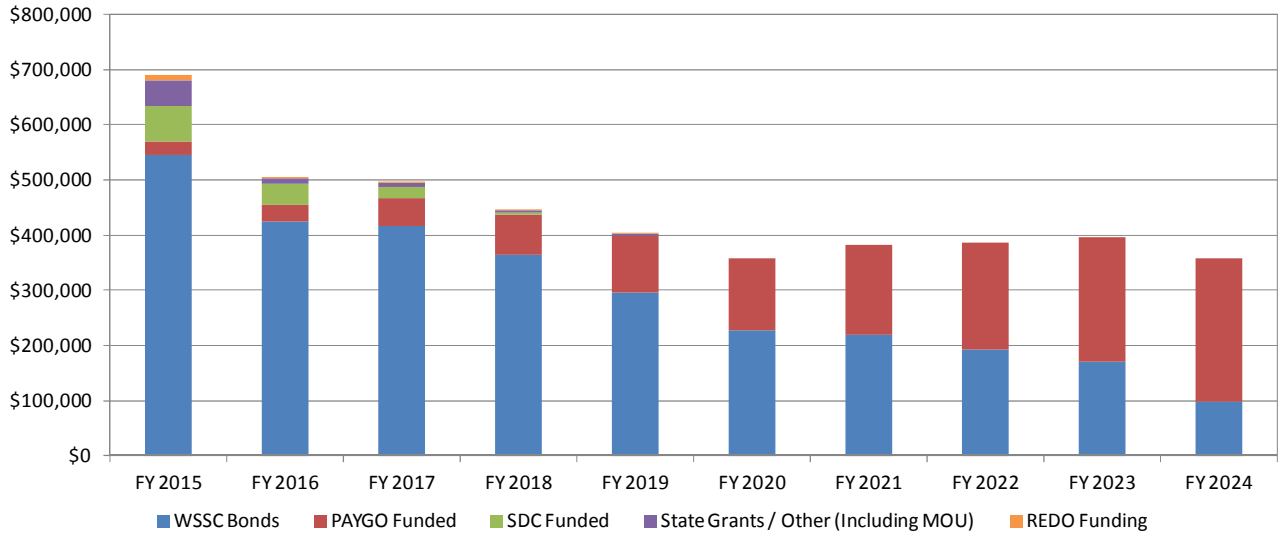
The system revenue requirements constitute the total cost incurred by WSSC to operate and maintain the water and sewer systems. Revenue requirements include operating and maintenance expenses, existing debt service, capital improvement projects (funded with cash or future debt) and contributions to reserves. Exhibit 1.1 shows graphically the projected revenue requirements for the study period.

Exhibit 1.1 - Projected Revenue Requirements (thousands)



As shown in Exhibit 1.1, revenue requirements are expected to steadily increase over the next ten years. The primary driver for the increases in revenue requirements over the period is the tremendous capital investments required within the water and sewer systems. Like many utilities around the United States, WSSC is facing the need to repair and replace infrastructure that is at or nearing the end its useful life. The estimated ten year capital improvements and the anticipated funding sources are shown in Exhibit 1.2.

Exhibit 1.2 - Capital Investments by Funding Source (thousands)



WSSC has developed an annual process of evaluating the financial needs of the water and sewer system. A financial model has been developed internally that is used to evaluate WSSC’s finances and to arrive at an annual combined rate adjustment. In the development of MFSG’s revenue requirements we evaluated the financial model used by WSSC and the results in comparison to our results of our analysis. In most cases, the results were consistent. To demonstrate the results of our analysis, MFSG calculated the affordability guidelines currently utilized by WSSC using our financial model. Table 1.1 shows MFSG’s affordability guidelines based on the rate model that has been developed.

Table 1.1 - WSSC Affordability Guidelines (thousands)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Combined Rate Increase	6.0%	10.4%	8.8%	8.4%	7.2%
Total Operating Budget	\$678,591	\$721,343	\$775,209	\$834,956	\$895,742
Debt Service Expense	\$227,042	\$250,013	\$267,835	\$282,596	\$292,612
New Debt	\$384,622	\$364,894	\$335,620	\$310,226	\$241,952

1.2 Customer and Usage Analysis

The majority of WSSC revenues are generated from the sale of water and sewer service. Like most utilities in the Northeastern portions of the country, WSSC has experienced an ongoing decline in the volumes of water sold. One of the reasons for the decline in water consumption appears to be the reduction in water usage per account. Based on a detailed review of water usage for each individual customer over the last three years, it was determined that the average usage per residential customer account has declined steadily over this period of time. Table 1.2 presents the average usage by meter size over the last three years.

Table 1.2 - Average Gallons Per Day (FY 2010 – FY 2012)

Meter Size	# of Meters	FY 2010 Average (GPD)		FY 2011 Average (GPD)		FY 2012 Average (GPD)	
		Commercial	Residential	Commercial	Residential	Commercial	Residential
5/8"	144,318	171	155	172	154	164	150
3/4"	238,612	193	165	198	164	193	159
1"	47,363	490	202	491	202	470	194
1 1/2"	4,453	1,182	1,609	1,175	1,622	1,142	1,623
2"	3,763	1,906	3,064	1,887	3,088	1,937	3,088
3"	924	4,979	10,687	5,076	10,998	4,856	11,069
4"	638	6,650	14,990	6,783	15,714	6,790	15,338
6"	1,146	10,540	27,064	10,390	27,298	8,389	26,043
8"	644	25,474	46,579	27,277	46,063	25,351	43,359
10"	119	38,407	84,288	41,210	85,120	36,946	83,511
12"	6	67,974	-	79,311	-	70,969	-

The vast majority of the Commission’s customers are residential with 5/8” or 3/4” meters. As the table shows, there has been a steady decline in usage per account over the last three years, as highlighted in red.

Given the historical reduction in water consumption, an accurate water demand forecast is a critical component of the financial plan. To develop the forecast, PEER Consultants, serving as a sub-consultant to MFSG, completed a review and update of the last demand forecasts developed internally by WSSC staff including the *2011 Water Production Projection Report* and the *2011 Wastewater Flow Projections Report*. Based on the analysis completed by PEER, future demands will be approximately 5% lower than those previously developed. Customer growth is anticipated to grow at approximately 0.5% annually, which equates to rough 450 new accounts per year, and total water sales is estimated to decrease annually at 0.5%.

1.3 Existing Rates and Fees and Pricing Objectives

WSSC currently bills all its residential customers on a quarterly basis and commercial customers on both a quarterly and a monthly basis. All customers are charged an account maintenance fee (AMF) and billed usage charges based on metered water usage. The vast majority of WSSC’s revenues are generated from usage charges, representing approximately 96% of total revenues. As a result, WSSC is currently highly dependent on revenues that vary with customer usage patterns (variable revenues). The fixed revenue collected through the account maintenance fee represents just a small fraction of the total revenues. The industry’s “normal” percentage of revenue collected from fixed fees and charges typically ranges from 10% to 30%. Given the minimal amount of fixed revenues generated within WSSC’s current rate structure, actions should be taken to increase the amount of fixed revenue generated. This action to mitigate revenue decline is even more important given the likely decrease in per household consumption.

As part of the work completed by the Bi-County Infrastructure Working Group, twelve common pricing objectives were reviewed and ranked by the Working Group members. The top ranked objectives included financial sufficiency, defensibility, revenue stability, rate stability, affordability

to disadvantage customers, minimization of customer impacts and cost of service based allocations. These objectives along with our industry expertise were used to evaluate modifications to the Commission's current rates and fees as well to assist with evaluation of additional fees.

1.4 Rate Alternatives

MFSG completed an assessment of the current WSSC rates and fees and, in light of pricing objectives, developed several rate structure alternatives that were considered during the course of the study. In addition to reviewing the current rate structure, MFSG evaluated the opportunity for the Commission to implement a separate fee to fund expenditures related to water and sewer line reconstruction within each system. The following findings and conclusions were developed based on our review of existing rates and fees and the addition of a reconstruction fee.

- The fixed portion of revenues generated by the current rate structure as a percentage of total revenues is extremely low at approximately 4%. As a result, WSSCs' revenues are highly dependent on water consumption which continues to decline and are subject to a high level of volatility.
- The concept of a separate fee for the funding of system reconstruction is an approach that merits serious consideration. The adoption of a reconstruction fee would provide a dedicated funding source for the tremendous reconstruction investments facing the Commission. The separation of the costs associated with reconstruction and the supporting fee will provide for greater transparency and increased customer understanding. The adoption of a reconstruction fee in the form of a fixed charge would assist in increasing the portion of the Commission's revenues that are fixed.
- The Commission established the current account maintenance fee (AMF) in 1990 and the fee has not been adjusted in magnitude or structure since its inception. The fee is assessed based on the size of a customer meter and billed quarterly or monthly depending on the customer type. The fee is intended to recover the cost of providing customer account services (billing, meter reading, meter replacement) and private fire protection. The current AMF does not generate sufficient revenues to recover the cost of providing these services. The AMF should be updated to recover the costs and to ensure that the cost of service allocations are appropriate.
- The current usage rate structure used by the Commission is markedly unique among utilities around the United States. While inclining block rates are fairly common, most utilities step customers' usage successively through the blocks (e.g. the first quantities of metered water is priced at the first tier, the second quantities of water is priced at the second tier and so on). Additionally, most utilities with inclining block rates maintain anywhere from three to six blocks, as compared to the Commission's rate design which includes sixteen tiers. Based on our review of the current rate structure we were able to

identify several benefits associated with the current structure as well as some areas of concern (primarily from a customer perception perspective). As a result, a review of alternative rate structures was deemed appropriate. However, the alternative rate structures considered were limited to those that the Commission could actually implement. The alternatives considered included a consolidated tier structure (reducing the tiers from 16 to 8) and a uniform structure (essentially one tier) for all customers.

2. Recommendations

The following section presents a summary of the recommendations developed during the development of the cost of service and rate study.

- We recommend that WSSC increase water and sewer rates and fees over the next five years to fund the ongoing operations of the system. The increases are necessary to ensure the ongoing operation of the system and specifically to meet coverage requirements on debt service obligations and to maintain cash reserves.
- We recommend that the amount of revenue that is generated from fixed fees be increased to reduce the Commission's dependency on water usage and to reduce volatility in cash flow.
- We recommend that WSSC implement a separate reconstruction fee to fund the necessary capital investments in water and sewer line reconstruction. The reconstruction fee should be:
 - Assessed as a fixed fee that will provide a stable stream of revenue to fund the debt service associated with line reconstruction. A volumetric charge would result in a less stable revenue stream and would be subject to the ongoing reduction in water usage among WSSC customers.
 - Assessed by meter size using the average usage by meter size as the basis for the differential between meter sizes. This approach will appropriately allocate the cost of reconstruction based on the customer's share of reconstruction costs.
 - Based on the average cost of debt service over the next five years, allowing for a reconstruction fee that will remain the same for a five year period. This approach will provide predictability for WSSC and the customer over a five year period and increase the portion of WSSCs revenues that are fixed.
- The recommended reconstruction fees are presented in Table 1.3.

Table 1.3 - Recommended Reconstruction Fee (FY 15 - 19)

Meter Size / Type	Quarterly Reconstruction Fee (FY 15 - FY19)
5/8"	\$11.00
3/4"	12.00
1"	14.00
1 1/2" - Residential	119.00
1 1/2"	84.00
2"	185.00
3"	585.00
4"	813.00
6"	1,265.00
10"	4,425.00
Flow Meter - 4"	499.00
Flow Meter - 6"	616.00
Flow Meter - 8"	2,524.00
Flow Meter - 10"	2,714.00
Flow Meter - 12"	5,214.00

- We recommend that the Commission adopt a cost of service based AMF that will recover the five-year average cost of providing account maintenance services and fire protection. The updated AMF would meeting nearly all of the pricing objectives, specifically meeting the top four objectives by providing increased revenue and rate stability within a structure that can easily be defended. The recommended AMF is shown in Table 1.4.

Table 1.4 - Recommended Account Maintenance Fee (FY 15 - 19)

Meter Size / Type	Customer Services	Meter Services	Fire Protection	Total Quarterly AMF FY 15 - 19
5/8" through 1 1/2" - Residential	\$14.00	\$2.00	-	\$16.00
1 1/2"	14.00	10.00	-	24.00
2"	14.00	13.00	-	27.00
3"	14.00	52.00	-	66.00
4"	14.00	128.00	-	142.00
6"	14.00	140.00	-	154.00
10"	14.00	232.00	-	246.00
Detector Check - 2"	14.00	13.00	\$6.00	33.00
Detector Check - 4"	14.00	128.00	35.00	177.00
Detector Check - 6"	14.00	140.00	101.00	255.00
Detector Check - 8"	14.00	232.00	215.00	461.00
Detector Check - 10"	14.00	232.00	387.00	633.00
Flow Meter - 4"	14.00	133.00	35.00	182.00
Flow Meter - 6"	14.00	178.00	101.00	293.00
Flow Meter - 8"	14.00	223.00	215.00	452.00
Flow Meter - 10"	14.00	281.00	387.00	682.00
Flow Meter - 12"	14.00	350.00	625.00	989.00

- Based on our review of the current usage rate structure and consideration of alternative rate structures, we recommend that at this time that the Commission maintain its current user rate structure. While the current rate structure is unique and appears complicated, we do not believe that there are compelling reasons to change it. We were not able to identify any glaring issues with the current rate structure, nor were alternatives identified that would help to achieve the stated pricing objectives. Changes to the current structure would have significant impacts on WSSC customers. Without compelling reasons to change the structure, we do not believe it is in the Commission’s best interest to impact its customers just for the sake of trying to look more like other utilities. The recommended rates for FY 2015 are presented below. It should be noted that these rates account for the increases in revenues from the recommended reconstruction fee and AMF. The rates are increased approximately 4.5% as compared to the proposed budget of 6% due to the increased revenues from the reconstruction and account maintenance fees.

Table 1.5 - Recommended Usage Rates (FY 2015)

Average Daily Consumption (Gallons Per Day)	FY 2015 Usage Rate per 1,000 Gallons
0 – 49	\$7.33
50 – 99	8.39
100 – 149	9.54
150 – 199	10.88
200 – 249	12.21
250 – 299	13.22
300 – 349	14.06
350 – 399	14.71
400 – 449	15.14
450 – 499	15.58
500 – 749	15.89
750 – 999	16.25
1,000 - 3,000	16.79
4,000 - 6,999	17.18
7,000 - 8,999	17.41
9,000 & Greater	17.81