

THE PRINCE GEORGE'S COUNTY GOVERNMENT

MEMORANDUM

October 29th, 2015

TO: Mary A. Lehman, Chair

Transportation, Housing and Environment Committee (THE)

FROM: Hawi Sanu, Director

Transportation, Housing and Environment Committee (THE)

THRU Robert Williams, Council Administrator

Prince Georges County Council

SUBJECT: WSSC FY 2017 Spending Control Limits

Background

In May of 1993, the Montgomery and Prince George's County Councils created a Bi-County Working Group on WSSC Spending Controls to focus on the financial concerns of increasing water and sewer rates, debt, and debt service levels. This group's January 1994 report recommended "the creation of a Spending Affordability Process that requires the Counties to set annual ceilings on WSSC's rates and debt, and then place corresponding limits on the size of the capital and operating budgets of the Commission."

A Bi-County team was put together and a process was created to control capital, operational, and new debt service costs for the purpose of moderating or avoiding water and sewer bill increases. WSSC's FY 1996 Budget was the first budget to be formulated with the limits set by the Spending Affordability Process. The Spending Affordability Process focused the financial performance discussions on the need to balance affordability considerations against providing resources necessary to serve existing customers, meet environmental mandates, and provide the facilities needed to accommodate growth.

The major objectives of this process are to establish the framework for (1) controlling costs, (2) achieving low or moderate water/sewer bill increases, and (3) slowing the rate at which WSSC incurs debt, (below 40% of the Operating Budget). The impact of this process has been integral in keeping customer bill increases at a stable and reasonable level.

The Spending Affordability process provides a framework within which the Council can review and decide on spending control limits. The limits do not cap what the Councils can approve within the regular budget process that concludes in May of each year. For FY 2016, the Commission built on the new fee structure, which revised or recaliberated the Account Maintenance Fees (AMF) to recover a five year average cost for account maintenance services. The total Infrastructure Funding Fee is also a part of the FY 2017 spending affordability scenarios; this fee exclusively covers water and sewer pipes reconstruction and rehabilitation. All corresponding funds will be held in a restricted account to be used exclusively for rehabilitation and reconstruction. The AMF will directly offset account maintenance costs. With this new fee structure, the percentage of rate increase will be substantially less than the pre FY 2016 era; where the rate increase represented funds

to subsidize account maintenance costs and funds to rehabilitate and reconstruct the ailing infrastructure.

Bi- County Infrastructure Funding Work Group

Due to the constant rate increases by the Washington Suburban Sanitary Commission, (WSSC), there was a need to create a dedicated revenue source, that will not be exclusively dependent on water and sewer rates. The growing need for the infrastructure rehabilitation and reconstruction, warranted the Commission to be financially structured to accommodate these financial challenges. The Work Group, in collaboration with a renowned consultant, recommended several steps that would enable the Commission to meet its financial goals.

They were as follows:

- Increase the terms on new debt from 20 to 30 years and maintain a debt service coverage target and a matching principle of benefits and costs.
- Excess cash flow will be used as PAYGO capital funding to reduce borrowing.
- Creation of a dedicated infrastructure rehabilitation charge (fixed or volumetric).
- Creation of a more robust customer affordability program, to be enabled at the State level; MEAP guidelines will be utilized because it is an existing affordability program.

The increment of debt terms from 20 to 30 years was instituted in FY 2015 and produced an immediate benefit of approximately 2% reduction of rates. The new IFF and AMF were also a part of the FY 2016 budget, along with a 1% general rate increase. Along with the new rate structure, was the creation of a robust Customer Affordability program that started on July 1st, 2015. This program is being administered by the Maryland Energy Assistance Program (MEAP).

Schedule and Scenarios

The FY 2017 Spending Affordability Group met on September 9th and 23rd, 2015. This year's spending affordability process presented four scenarios.

- A base case, which represented FY 2016 with the full Infrastructure
 Funding Fees, which was part of the FY 2016 SAR recommendation.
 This scenario calculated a rate increase of 4.4%. (Scenario 1 –
 Attachment 1)
- 2. Scenario #2 assumed the base case without the IFF phase in; that calculated a rate increase of 7.8%. (Scenario 2 Attachment 2)
- Scenario #3 was exactly the same as scenario 1, with Additional and Reinstated Programs, which yielded a rate increase of 5%. (Scenario 3 -Attachment 3) Additional and Reinstated Programs (Attachment 3A)
- For comparison purposes, Scenario #4 assumed that the new structure rate structure was not adopted; that calculated a rate increase of 7.5%.
 (Scenario 4 Attachment 4)

WSSC FY 2017 SPENDING CONTROL LIMITS SCENARIOS

SCENARIOS	RATE INCREASE		MONTHLY RATE IMPACT FOR 160GPD	INFRASTRUCTURE INVESTMENT FEES		TOTAL MONTHLY INCREASE AT 160 GPD
Base Case with AMF and IFF phased in (Attachment 1)	4.40%		\$2.36	\$2.00	7.10%	\$4.36
Base Case with AMF, No IFF Phase In (Attachment 2)	7.80%		\$4.19	\$0.00	6.80%	\$4.19
Base Case with AMF and IFF phased in - with Additional & reinstated Programs (Attachment 3)	5.00%	*	\$2.70	\$2.00	7.60%	\$4.70
FY'15 Status Quo (No AMF, IFF or A&R) - (Attachment 4)	7.50%		\$4.15	\$0.00	7.01%	\$4.15
*This scenario only represent	s additional	and	reinstated pi	ograms of \$3,599	,000	

5. The recommended scenario is as follows: (Scenario 5 - Attachment 5)

WSSC FY 2017 SPENDING CONTROL LIMITS - RECOMMENDED SCENARIO

SCENARIO	W/S RATE INCREASE AVERAGE \$ IMPACT	INFRASTRUCTURE RENEWAL FEES AVERAGE \$ IMPACT	TOTAL AVERGAE IMPACT				
Scenario 3, restrained at 3.5% rate increase, and full Infrastructure Fees with A/R	\$1.89	\$2.00	\$3.89				
NOTE: This scenario assumes \$26.1 million use	of Fund Balance	and \$8.6 Million in uns	pecified reductions				
Rate Increase		3.5%					
Operating Budget		\$729,168,000					
Debt Service Expense	\$250,762,000						
New Debt		\$476,810,000					
Debt Service Ratio (Debt Service / Budget)		34.4%					

Calculated Rate increase for recommended scenario is 6.4%

Historical Data on Spending Control Limits

Historically, the Spending Affordability Process has worked and the limits have been used as a basis to formulate the Commission's budget. Over the years, lower rate increases were achieved by use of fund balance; staff continues to urge caution in using a one-time revenue source such as fund balance to reduce rates as this only reassigns expenses to later years and does not eliminate it. Fund balance can be used for one time expenditures.

While the Spending Affordability Process was put in place to review four limits: Rates, Operating Budget, Debt Service Expense and New Debt; the most reviewed has been the rate increase and the other three limits are then adjusted accordingly.

HISTORICAL DATA OF WSSC'S RATE INCREASES

Fiscal Year =>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Adopted Rate Increase	2.50%	3.00%	6.50%	8.00%	9.00%	8.50%	8.50%	7.50%	7.25%	5.50%	1.00%
Montgomery County SAG	2.50%	3.00%	5.30%	9.70%	9.50%	9.90%	9.90%	8.50%	8.00%	6.00%	2.10%
Prince George's County SAG	2.50%	3.00%	5.30%	8.00%	6.00%	8.00%	8.00%	8.50%	7.50%	6.00%	2.10%

Rate Structure and Increases:

WSSC's current rate structure has remained unchanged since 1978, it was modified in 1992 from 100 tiers to 16 tiers. (Attachment 6) The tiers are based on average daily consumption, which means that once a consumer crosses tiers, they are effectively billed at that higher tier rate for previous waters consumed, within the same billing period. For example, if a consumer was at tier 1 for the first 2 months of the billing period, but had guests during the 3rd month of the same billing cycle, which resulted in a higher usage than normal, all water used during that billing period will be billed at the higher tiered rate.

This practice was deemed unusual by the consultant's report, on a study commissioned by WSSC in 2014. While the inclining block structure was fairly common amongst utilities, most do not charge for all water usage at the same high rate and have fewer tiers, (3 to 6 tiers).

There are a number of impacts from WSSC's current rate structure including:

- Ratepayers can see large fluctuations in their water bills if their average daily consumption from one quarter to another moves between tiers.
- These fluctuations can also result in WSSC's water and sewer rate revenue being less predictable from quarter to quarter.

- As per capita water consumption has declined over the last 20 years, the decline in WSSC's revenue collection has been magnified.
- Large households and large commercial ratepayers are effectively subsidizing the rest of the ratepayer base, since the rates they pay for all of their water usage are in higher tiers than the tiers which typically affect most small commercial ratepayers and small households.

WSSC, has for many years depended on rate increases to fund its operations and infrastructure needs. Water production levels have generally remained flat or have declined since FY 96, which has resulted in less revenues than was projected. With water productions declining, there was a need to move to a fixed fee base. Water production for FY 2017 will be based on 164MGD, down from 166 MGD in FY 2016.

Council Staff Recommendations

- Council Staff recommends Scenario 5 which adds no more than \$3.89 to an average consumer's bill. This scenario also recommends \$8.6 million in unspecified reductions and \$26.1 million use of fund balance. This scenario represents a 3.5% rate increase plus \$2.00 in Infrastructure Renewal Fees.
- Council Staff believes WSSC's current rate structure needs a
 comprehensive review. The current rate structure dates back to the late
 1970's and some of the negative impacts of the rate structure noted earlier
 have further compounded as rates have increased. Council Staff
 recommends that language be added to the Spending Control Limits
 resolution to indicate the Council's support for a rate study to be funded
 out of the FY 2017 budget.
- The Commission must continue to implement strategies and plans that will have long term benefits to the Commission and Consumers.

FY17_6yr_Preliminary Forecast IIF Phase-in.xlsx

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WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - Infrastructure Fee Phase-In (Base Case) Estimated Revenues and Expenditures (\$1,000)

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NOTE: Impact of Rate Increase on Residential Monthly Bill with 160 GPD usage Impact of Phased-in infrastructure investment Fee Total Impact of Rate Increase on Residential Monthly Bill with 100 GPD usage Impact of Phased-in infrastructure investment Fee Total	Rate Increase Operating Budget Debt Service Expense New Debt	Debt Service Ratio (debt service / budget)	Total Expenses Revenue Gap (Revenue - Expenses) Water Production (MGD)	Maintenance & Operating Regional Sewage Disposal Debt Service PAYGO Additional Operating Reserve Contribution Adjustments to Expenses (SDC Debt Service Offset, REDO) Unspecified reductions Unspecified reduction of future year's expenditure base	1 Revenue 2 Water & Sewer Rate Revenue 3 All Other Sources 4 Total Revenue 5 Expenses
	EY 2016 1.0% \$693,665 235,574 422,681	34.0%	693,665 - 166.0	377,219 54,895 235,574 19,677 6,300	FY 2016 Approved \$583,375 110,290 693,665
FY 2017 \$2.36 \$2.00 \$4.36 7.1% \$1.30 \$2.00 \$3.30 9.0%	EY 2017 4.4% \$728,289 250,762 476,810	34.4%	728,289 (25,198) 164.0	393,741 51,601 250,762 25,661 6,524	FY 2017 Proposed \$576,346 126,745 703,091
FY 2018 \$5.76 \$0.00 \$5.78 8.7% 8.7% \$3.16 \$0.00 \$3.16 7.9%	FY 2018 10.2% \$773,545 273,606 462,345	35.4%	773,545 (61,444) 164.0	410,268 53,510 573,606 31,995 4,166	Estimate \$601,544 110,557 712,101
FY 2019 \$4.70 \$0.00 \$4.70 0.5% \$2.58 \$0.00 \$2.58 \$0.00 \$0.00	FY 2019 7.6% \$823,899 296,463 396,326	36.0%	823,899 (50,100) 164.0	427,522 55,490 296,463 39,489 4,935	FY 2019 Estimate \$662,988 110,811 773,799
FY 2020 \$4.51 \$0.00 \$4.51 5.9% \$2.40 \$0.00 \$2.48 5.4%	EY 2020 6.8% \$871,365 317,287 365,349	36.4%	871,365 (48,157) 164.0	445,554 57,543 317,287 46,249 4,732	FY 2020 Estimate \$713,088 110,120 823,208
FY 2021 \$4.14 \$0.00 \$4.14 5.1% 5.1% \$2.27 \$0.00 \$2.27 4.7%	EY 2021 5.8% \$914,149 333,817 303,170	36.5%	914,149 (44,205) 164.0	464,345 59,672 333,817 52,029 4,286	FY 2021 Estimate \$761,245 108,699 869,944
FY 2022 \$3.43 \$0.00 \$3.43 4.0% \$1.00 \$1.80 3.7%	FY 2022 4.5% \$950,636 343,669 238,095	36.2%	950,636 (36,549) 164.0	483,972 61,880 343,669 56,829 4,286	FY 2022 Estimate \$805,450 108,637 914,087

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WSSC's Multi-Year Financial Forecast: Combined Water/Sower Operating Funds Summary FY 2017 thru 2022 Forecast: Proliminary Budget - Infrastructure Fee Phase-In (Base Case) Estimated Revenues and Expenditures (\$1,000)

 Revenue - Expenditure Gap before rate increase Rate Increase FY17_6yr_Preliminary Forecast IFF Phase-in.xlsx 	32 NET EXPENSES	31 TOTAL GROSS EXPENSES (Operating & Financial)	28 Debt Service 29 Debt Reduction (PAYGO) 30 Total Financial Expenses	27 Total Operating Expenses	 Unspecified reductions Unspecified reduction of future year's expenditure base 	17 EXPENDITURES 18 Salaries and Wages 19 Salaries and Wages - Additional & Reinstated Programs 20 Heat, Light and Power 21 Regional Sewage Disposal 22 All Other 23 All Other - Additional & Reinstated Programs 24 Additional Operating Reserve Contribution	16 FUNDS AVAILABLE	10 Adjustments to Revenue 11 Use of Fund Balance 12 Less Rate Stabilization 13 SDC Debt Service Offset 14 Reconstruction Debt Service Offset 15 Adjustments to Total Revenue	9 Total Revenue	1 REVENUE Water / Sewer Use Charges Account Maintenance Fee (Ready to Serve Charge) Infrastructure Renewal Fee (Ready to Serve Charge) Interest Income Plumbing/Inspection Fees Rockville Sewer Use Miscellaneous
3ase - 1.0%	693,665	& Financial) 693,665	235,574 19,677 255, <u>251</u>	438,414	diture base	111,309 ad Programs 23,353 54,895 242,557	693,665	21,577 728 8,500 30,805	662,860	FY 2016 Approved \$583,376 \$583,375 Charge) 19,418 Charge) 7,920 7,920 2,773 16,000
(25,198) 4.4%	728,289	728,289	250,762 25,661 276,423	451,066	9 10	116,875 26,656 51,601 250,210 6,524	703,091	20,138 207 7,000 27,345	675,746	FY 2017 Proposed \$576,346 32,553 38,963 700 7,300 2,632 17,252
(61,444) 10.2%	773,545	773,545	273,606 31,995 305,601	467,944	• •	122,719 27,731 53,510 259,818 4,166	712,101	4,666 5,500 10,166	701,935	FY 2018 Estimate \$601,544 32,732 39,091 700 7,500 2,664 17,704
(50,100) 7.6%	823,899	823,899	296,463 39,489 335,952	487,947	3 v	128,855 - 28,056 55,490 269,811 4,935	773,799	5,435 4,000 9,435	764,364	FY 2019 <u>Estimate</u> \$662,988 32,911 39,220 7,700 7,700 2,680 18,165
(48,157) 6.8%	871,365	871,365	317,287 46,249 363,536	507,829	9 ×	135,298 30,053 57,543 280,203 4,732	823,208	5,232 - - 2,500 7,732	815,476	FY 2020 Eslimate \$713,088 33,090 39,349 700 7,900 2,711 18,638
(44 205) ATT	914,149	914,149	333,817 52,029 385,846	528,303		142,063 31,271 59,672 291,011 4,286	869,944	4,286 1,000 5,286	864,658	FY 2021 Estimate \$761,245 33,270 39,478 700 8,100 2,741 19,124
ATTACHMENT	950,636	950,636	343,669 56,829 400,498	550,138	iki d	149,166 32,555 61,880 302,251 4,286	914,087	4,286	909,801	FY 2022 Estimate \$805,450 33,449 39,607 700 8,300 2,771 19,524

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WSSC's Multi-Year Financial Forocast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - No Infrastructure Investment Fee Phase-In Estimated Revenues and Expenditures (\$1,000)

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Impact of Rate Increase on Residential Monthly Bill พให้ <u>100</u> GPD แรลge Impact of Phased-In Infrastructure Investment Fee Total	NOTE: Impact of Rate Increase on Residential Monthly Bill with 160 GPD usage Impact of Phased-in infrastructure investment Fee	Rate Increase Operating Budget Debt Service Expense	Debt Service Ratio (debt service / budget)	Total Expenses Revenue Gap (Revenue - Expenses) Water Production (MGD)	Expenses Maintenance & Operating Regional Sewage Disposal Debt Service PAYGO Additional Operating Reserve Contribution Unspecified reductions Unspecified reduction of future year's expenditure base	Revenue Water & Sewer Rate Revenue All Other Sources Total Revenue
	-	FY 2016 1.0% \$693,665 235,574 422,681	34.0%	693,665 166.0	377,219 54,895 235,574 19,677 6,300	FY 2016 Approved \$583,375 110,290 693,665
2.30 \$0.00 \$2.30 6.2%	FY 2017 4.19 \$0.00 \$4.19 6.8%	FY 2017 7.8% \$728,289 250,762 476,810	34,4%	728,289 (44,679) 164.0	393,741 51,601 250,762 25,661 6,524	FY 2017 Proposed \$576,346 107,264 683,610
3,21 \$0,00 \$3,21 8,2%	FY 2018 5.84 \$0.00 \$5.84 8.9%	FY 2018 10.1% \$773,545 273,606 462,345	35.4%	773,545 (62,508) 164.0	410,268 53,510 273,606 31,995 4,166	FY 2018 Estimate \$621,025 90,012 711,037
2.59 \$0.00 \$2.59 6.1%	FY 2019 4.72 \$0.00 \$4.72 6.6%	FY 2019 7.3% \$823,899 296,463 396,326	36.0%	823,899 (50,165) 164,0	427,522 55,490 296,463 39,489 4,935	FY 2019 <u>Estimate</u> \$663,533 90,201 773,734
2.46 \$0.00 \$2.46 5.5%	FY 2020 4.53 \$0.00 \$4.53	FY 2020 6.6% \$871,365 317,287 365,349	36.4%	871,365 (48,220) 164.0	445,554 57,543 317,287 46,249 4,732	FY 2020 Estimate \$733,698 89,447 823,145
2.22 \$0.00 \$2.22 4.7%	FY 2021 4.04 \$0.00 \$4.04 5.0%	5.5% \$914,149 333,817 303,170	36.5%	914,149 (43,271) 164.0	464,345 59,672 333,817 52,029 4,286	FY 2021 Estimate \$781,919 88,959 870,878
7.89 \$0.00 \$1.89 3.8%	FY 2022 3.46 \$0.00 \$3.46 4.1%	FY 2022 4.4% \$950,726 343,759 238,095	36.2%	950,726 (36,703) 164.0	483,972 61,880 343,759 56,829 4,286	FY 2022 Estimate \$825,189 88,834 914,023

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Rate Increase Components (FY'17 Preliminary Proposed Budget Base Case)

Total Gross Expenses		Expenses Subtotal	cuspectified (seductions	Heat, Light & Power	For I isla B. Dames	rund balance PAYGO	E D. L. BANGO	Operating Reserve Contribution	Regional Sewage Disposal	Regional & Keinstated Programs	Additional of the Additional o	Expenses All Other	<u>Debt Service</u> Debt Service		Revenue Sulitatal	SDC Debt Service Offset	Reconstruction Debt Service Offset	Use of Fund Balance - Watershed	Use of Fund Balance	Use of Fund Balance	Use of rund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Miscellaneous Revenue	Infrastructure Fee	Account Maintenance Fee	Water & Sewer Revenue	Кеусине		
693,665,000		458,091,000	e	23,353,000	16,671,000	1,600,000	1,406,000	6,300,000	54,895,000		111,309,000	242,557,000	235,574,000	0,0,000,000	000 599 869	728,000	8,500,000	1,600,000	2,000,000	8,000,000	2,086,000	6,300,000	1,500,000	000,16	7.	27,693,000	19,418,000	32,374,000	583,375,000	DAAOMOON	A Daniel	FY 2016
728,289,000		477,527,000	g	26,656,000	24,061,000	1,600,000	1	6,524,000	51,601,000		116,875,000	250,210,000	250,762,000	703,092,000	000 000 507	207,000	7,000,000	1,600,000	è	8,000,000	500,000	6,524,000			3,514,000	27,885,000	38,963,000	32,553,000	576,346,000	athmissy	E TOT	EV 2017
	Total	19,436,000	1	3,303,000	7,390,000		(1,406,000)	224,000	(3,294,000)		5,566,000	7,653,000	15,188,600	9,427,000	0 477 000	(521,000)	(1,500,000)	ır	(2,000,000)	1	(1,586,000)	224,000	(1,500,000)	(91,000)	3,514,000	192,000	19,545,000	179,000	(7,029,000)	Donar Change	2	
	4.4%	3.4%	0.0%	0.6%	1.3%	0.0%	-0.2%	0.0%	-0.6%	0.0%	1.0%	1.3%	2.6%	-1.6%	2011	0.1%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	0.3%	0.0%	-0.6%	0.0%	-3.4%	0.0%	1.2%	Impact	Kate	Data
				Based on projection from WSSC Energy Manager.	NOT INTERPLACED TO A CONTROL OF THE	Easements & Land Acquisition	Jt. Council Reduction in COLA to PAYGO										SACIONA COMPANIA MANDO PER COCCIONA DE LA CARTA DE COMPANIA DE LA CARTA DE COMPANIA DE COM	Easements & Land Acquisition	AMI	IT Strategic Plan	Multi-year Additional & Reinstated	For operating reserve contribution	REDO Extinguishment	Blue Plains Debt Service Bi-County Council adjustment	Lessen impact of decreased water production	Based on historical miscellaneous revenue			Decrease in water production	Description		

WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - No Infrastructure Investment Fee Phase-In Estimated Revenues and Expenditures (\$1,000)

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EV17 for Dreliminary Forecast! o(wout raising Infrastructure Fee viev	Revenue - Expenditure Gap before rate increase Rate Increase	NET EXPENSES	TOTAL GROSS EXPENSES (Operating & Financial)	Total Financial Expenses	Debt Service Debt Reduction (PAYGO)	Total Operating Expenses	Unspecified reductions Unspecified reduction of future year's expenditure base	All Other - Additional & Reinstated Programs Additional Operating Reserve Contribution	All Other	Heat, Light and Power Regional Sewage Disposal	Salaries and Wages Salaries and Wages - Additional & Reinstated Programs	EXPENDITURES	FUNDS AVAILABLE	Adjustments to Total Revenue	SDC Debt Service Offset Reconstruction Debt Service Offset	Less Rate Stabilization	Adjustments to Revenue Use of Fund Balance	Total Revenue	Miscellaneous	Plumbing/Inspection Fees	Infrastructure Renewal Fee (Ready to Serve Charge)	Water / Sewer Use Charges Account Maintenance Fee (Ready to Serve Charge)	REVENUE	
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	1.0%	693,665	693,665	255,251	235,574 19,677	438,414	3 (6,300	242,557	23,353 54.895	111,309		693,665	30,805	0,500		21.577	662,860	16,000	7,920	19,418	\$583,375 32,374	Approved	FY 2016
	(44,679) 7.8%	728,289	728,289	276,423	250,762 25,661	451,866	i 16	6,524	250,210	26,656 51,601	116,875		683,610	27,345	7,000		20.138	656,265	2,632 17,253	7,300	19,481 700	\$5/6,346 32,553	Proposed	FY 2017
	(62,508) 10.1%	773,545	773,545	305,601	273,606 31,995	467,944		4,166	259,818	27,731 53,510	122,719		711,037	9,166	5,500	1	3,666	701,871	17,704	7,500	19,546 700	\$621,025 32,732	Estimate	FY 2018
	(50,165) 7.3%	823,899	823,899	335,952	296,463 39,489	487,947	4 E	4,935	269,811	28,856 55,490	128,855		773,734	8,435	4,000		4.435	765,299	18, 165	7,700	19,610 700	\$683,533 32,911	Estimate	FY 2019
	(48,221) 6.6%	871,365	871,365	363,536	317,287 46,249	507,829	3 - 2	4,732	280,203	30,053 57,543	135,298		823,144	6,732	2,500	17-17	4,232	816,412	18,639	7,900	19,674 700	33,090	Estimate	FY 2020
ATT.	(43,270) 5.5%	914,149	914,149	385,846	333,817 52,029	528,303	1 1	4,286	291,011	31,271 59,672	142,063		970,879	5,286	1,000		4,286	865,593	19,124	8,100	19,739 700	33,270	Estimate	FY 2021
ATTACHMENT	(36,703) 4.4%	950,726	950,726	400,588	343,759 56,829	550,138	3. E	4,286	302,251	32,555 61,880	149,166		914,023	4,286	, s		4,286	909,737	19,525	8,300	19,803 700	33,449	Estimate	FY 2022

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Copy of FY17_6yr_Preliminary Forecast A&R adjusted REDO.xlsx

WSSC's Multi-Year Financial Forecast : Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast : Preliminary Budget - Infrastructure Investment Fee Phase-In and Additional & Reinstated Programs Estimated Revenues and Expenditures (\$1,000)

23 Impact of Rate Increase on Residential Monthly Bill with 100 GPD usage 24 Impact of Phased-In infrastructure investment Fee Total Bill percentage increase	NOTE: 21 Impact of Rate Increase on Residential Monthly Bill with 160 GPD usage 22 Impact of Phased-in Infrastructure Investment Fee Total Bill percentage Increase	Rate Increase Operating Budget Debt Service Expense New Debt	16 Deht Service Ratio (debt service / budget)	15 Water Production (MGD)	13 Total Expenses 14 Revenue Gap (Revenue - Expenses)	5 Expenses 6 Maintenance & Operating 7 Regional Sewage Disposal 8 Debt Service 9 PAYGO 10 Additional Operating Reserve Contribution 11 Unspecified reductions 12 Unspecified reduction of future year's expenditure base	1 Revenue 2 Water & Sewer Rate Revenue 3 All Other Sources 4 Total Revenue
		FY 2016 1.0% \$693.665 235,574 422,681	34.0%	166.0	693,665	377,219 54,895 235,574 19,677 6,300	FY 2016 Approved \$583,375 110,290 693,665
\$1.48 \$2.00 \$3.48 9.4%	FY 2017 \$2.70 \$2.00 \$4.70 7.6%	5 0% 5 0% \$737,800 250,762 476,810	34.0%	164.0	737,800 (28,797)	403,252 51,601 250,762 25,661 6,524	FY 2017 Proposed \$576,346 132,657 709,003
\$3.18 \$0.00 \$3.18 7.8%	FY 2018 \$5.80 \$0.00 \$5.80	FY 2018 10.2% \$777,539 273,606 462,345	35.2%	164.0	777,539 (61,839)	414,262 53,510 273,606 31,995 4,166	FY 2018 Estimate \$605,143 110,557 715,700
\$2.58 \$0.00 \$2.58 5.9%	FY 2019 \$4.71 \$0.00 \$4.71 6.6%	FY 2019 7.5% \$828,069 296,463 396,326	35.8%	164.0	828,069 (50,276)	431,692 55,490 296,463 39,489 4,935	FY 2019 Estimate \$666,982 110,811 777,793
\$2.48 \$0.00 \$2.48 5.4%	FY 2020 \$4,53 \$0,00 \$4,63 5.9%	FY 2020 6.7% \$876,719 317,287 365,349	36.2%	164.0	875,719 (48,341)	449,908 57,543 317,287 46,249 4,732	FY 2020 Estimate \$717,258 110,120 827,378
\$2.28 \$0.00 \$2.28 4.7%	FY 2021 \$4.16 \$0.00 \$4.16 54.16	FY 2021 5.8% \$918,695 333,817 303,170	36.3%	164.0	918,695 (44,397)	468,891 59,672 333,817 52,029 4,286	FY 2021 Estimate \$765,599 108,699 874,298
\$1.89 \$0.00 \$1.89 3.7%	FY 2022 \$3.44 \$0.00 \$3.44 4.1%	FY 2022 4.5% \$955,382 343,669 238,095	36.0%	164.0	955,382 (36,749)	488,718 61,880 343,669 56,829 4,286	FY 2022 Estimate \$809,996 108,637 918,633

13

WSSC's Multi-Year Financial Forecast : Comblned Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast : Preliminary Budget - Infrastructure Investment Fee Phase-In and Additional & Reinstated Programs Estimated Revenues and Expenditures (\$1,000)

33 Copy	32	31	30	28 29	27	25 26	24	23	27	20	1 6	17 E	16	16	14 3		9	870	D C7	4 ω	N		
33 Revenue - Expenditure Gap before rate increase 34 Rate Increase Copy of FY17_6yr_Preliminary Forecast A&R adjusted REDO.xlsx	NET EXPENSES	TOTAL GROSS EXPENSES (Operating & Financial)	Total Financial Expenses	Debt Service Debt Reduction (PAYGO)	Total Operating Expenses	Unspecified reductions Unspecified reduction of future year's expenditure base	Additional Operating Reserve Contribution	All Other - Additional & Reinstated Programs	Regional Sewage Disposal All Other	Heat, Light and Power	Salaries and Wages Salaries and Wages - Additional 8 Paintained Programs	EXPENDITURES	FUNDS AVAILABLE	Adjustments to Total Revenue	SDC Debt Service Offset Reconstruction Debt Service Offset	Adjustments to Revenue Use of Fund Balance Less Rate Stabilization	Total Revenue	Rockville Sewer Use Miscellaneous	Interest Income	Account Maintenance Fee (Ready to Serve Charge)	Water / Sewer Use Charges	REVENUE	
1.0%	693,665	693,665	255,251	235,574	438,414	S 8	6,300	242,337	54,895	23,353	111,309		693,665	30,805	728 8,500	21,577	662,860	7,920 2,773 16,000	1,000	32,374	\$583.375	FY 2016 Approved	
(28,797) 5.0%	737,800	737,800	25,661	250,762	461,377	3 f	6,524	7,987	51,601	1,524 26,656	116,875		709,003	33,257	207 7,000	26,050	675,746	7,300 2,632 17,252	38,963 700	32,553	\$576 346	FY 2017 Proposed	
(61,839) 10.2%	777,539	777,539	305,601	273,606	471,938		4,166	259,818 2,394	53,510	1,600 27,731	122,719		715,700	10,166	5,500	4,666	705,534	7,500 2,664 17,704	39,091 700	32,732	TROK 143	FY 2018 Estimate	
(50,276) 7.5%	828,069	828,069	39,489	296,463	492,117	¥ T	4,935	269,811 2,490	55,490	1,680 28,856	128,855		777,793	9,435	4,000	5,435	768,358	7,700 2,680 18,165	39,220 700	32,911	CRO BRRITA	FY 2019 Estimate	
(48,341) 6.7%	875,719	875,719	46,249 363,536	317,287	512,183	I a	4,732	2,590	57,543	1,764 30,053	135,298		827,378	7,732	2,500	5,232	819,646	7,900 2,711 18,638	39,349 700	33,090	\$717 OFB	FY 2020 Estimate	
/// чог\ A T Т <i>I</i>	918,695	918,695	52,029 385,846	333,817	532,849	ė i	4,286	291,011 2,694	59,672	1,852 31,271	142,063		874,298	5,286	1.000	4,286	869,012	8,100 2,741 19,124	39,478 700	33,270	# 785 500	FY 2021	
ATTACHMEN	955,382	955,382	56,829 400,498	343,669	554,884		4,286	302,251 2,802	61,880	1,944 32,555	149,166		918,633	4,286		4,286	914,347	8,300 2,771 19,524	39,607 700	÷		FY 2022	

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FY17 Additional & Reinstated	Programs:
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2 AND THE RESERVE OF	Cost	W/S Impact
New Workyears Impacting Water & Sewar Rates	• • • • • • • • • • • • • • • • • • • •	tiro impaor
Operations		
1 Potomac Solids Facility Operator	33,100	22 400
1 Patuxent Facility Technician	41,700	33,100
Wastewater Preventive Maintenance	41,100	41,700
2 Unit Coordinators	470.000	470.000
Supply Chain Management	170,000	170,000
7 Various Positions	000.000	500.000
Water Quality	628,600	502,880
1 Water Quality Technician		722 <u>2</u> 333
Contact Center Optimization	63,700	63,700
5 Various Positions		SEASON STATE OF SEASON
County Permitting Offices	425,700	426,700
2 Permit Specialists		
Dental Mercury Compliance	103,300	103,300
2 Industrial Investigators	137,000	137,000
21 Subtotal Workyears		
New Workyears With No Water & Sewer Rate Impact		
Bio-Energy Project		
1 Bio-Energy Superintendent	0.000	
In-House Design and Infrastructure Projects	102,000	≦
1 Survey Instrument Operator		
Infrastructure Projects	55,500	-
2 Sr. Civil Engineers Asset Management Program	145,300	2
Asset Management Program		
1 Investment Planning Manager (50% operating)	91,000	45,500
26 New Workyears Salaries & Wages Impact	\$ 1,997,900	\$ 1,523,900
Benefits	1,098,800	838,100
4 Vehicles	98,000	8,200
Other Additional & Reinstated Programs	00,000	5,200
Eventual of Community O		
Expansion of Community Outreach Activities	50,000	40,000
IT Security & Compliance	90,000	72,000
Storm Water Pollution Prevention Public Information Dissemination	95,000	95,000
Applied Michigan Dissemination	200,000	160,000
Annual Maintenance Fees on new system implementations Software Licensing	877,000	701,600
Windows 10 / Office 2042 U	200,000	160,000
Windows 10 / Office 2013 Upgrade	250,000	200,000 *
Water Quality Monitoring System	1,000,000	- +
Historical Archiving	100,000	80,000 *
WSSC 100th Anniversary	270,000	216,000 *
Demolition on Land Acquisition	250,000	250,000 *
Supply Chain Management Transformation	420,000	336,000 *
Contact Center Optimization	750,000	750,000 *
Additional IT Strategic Plan Costs	5,100,000	4,080,000 *
Total Other Additional & Reinstated Programs	10,848,800	7,986,900
Total Additional & Reinstated Programs	\$ 12,846,700	\$ 9.510,800
	A 1510-01100	3 5.010,000

*Projects funded via use of fund balance. (5,912,000)

Water & Sewer operating impact of additional & reinstated programs. \$ 3,588,800

FY 2017 Additional & Reinstated Workyear Requests

					Proposed		
	Program		ziæyJ50W	Position Costs With Benefits	Vehicle	Total	Water & Sewer Operating
ylqqu	Supply Chain Management	Multi-year re-engineering of WSSC's Supply Chain Management Transformation (year 3)	7	\$ 974,300	64	\$ 974,300	\$ 779,400
Co-1.c	Co-Location of County Offices	Permit Specialists to Support County Requests for Co- Location at County Permitting Offices	2	160,100	t	160,100	160,100
_	Bio-Energy	This Superintendent will have overall responsibility for the operations and maintenance of the Bio-Energy Project.	_	158,100	24,500	182,600	2,000
Cupita	Capital Improvement Program	Add one Instrument Operator because of the expansion of In-House Design and Increase in Infrastructure Prejects	-	86,000		86,000	II.
Capital	Capital Improvement Program	To support: 1. Capital Improvement Program; 2. Large Diameter Water Program; 3. Small Diameter Water Program; 4. Relocations Program; 5. Sewer Program & 6. Structural Lining Program.	2	225,200	3	225,200	3
Ente	Enterprise Asset Management Program	This position is needed to manage the development of the capital program investment requirements, new CIP/ESP Validation and Prioritization process and development of the Enterprise Asset Management Plan (EAMP).	-	141,100	ı	141,100	70,500
d(O	Operations	Although the Potonne Plant treats and dewaters about 32 million wet pounds of water treatment residuals annually (over 4,000 dry tons) at the Solids Handling Facility, the new Discharge Permit will likely require significantly higher residuals process volumes and continuous operation. This will necessitate the requested staffing modification.	_	51,200		51,200	51,200
RSG D	RSG Dental Mercury Compliance	EPA is proposing to adopt offluent limitations guidelines and standards for dental facilities. EPA expects to pronulgate the rule by June/July 2016.	2	212,400	т.	212,400	212,400
Con	Contact Center Optimization	This initiative is to begin the implementation of the Contact Center Strategie Optimization Project Consultant's recommendations to ensure the level of service to support the WSSC vision "that our customers will be delighted with our excellent products and innovative services."	5	661,400	ı	661,400	661,400

FY 2017 Additional & Reinstated Workyear Requests

						Proposed	75	
Category	Position	Program	Brief Desertption	Z1E97Á10W	Position Costs with Benefits	Vehicle Costs	Total	Water & Sewer Operating
Salety	Water Quality Technician	Water Qualily	The Water Quality Technician will allow full operation of existing fish bio-monitors and full operation of on-line water quality monitoring system. This position will also be part of Contamination Rapid Reponses Team (CRRT), greatly strengthening the CRRT's capacity to respond to contamination events in timely manner.		98,700	24,500	123,200	100,700
Operations	Patuxent Facility Technician I	Operations	A new water treatment process, solids handling, is currently in the construction process as part of the Patuxent Plant Phase II Expansion Project. When completed It is anticipated that up to 70% of the solids currently being treated at the Parkway WWTP will be fundled at the Patuxent Water Treatment Plant. There will be considerable efforts required to bring the new treatment process on line and functionally maintained thereafter. Current Patuxent staffing pattern is not sufficient for the operational demands of this new treatment process.	_	64,600	ı	64,600	64,600
Operations	Field Unit Coordinators	Wastewater Preventative Maintenance Program	Request for additional Wastewater Field Unit Coordinators to improvement management's span of control.	2	263,500	49,000	312,500	267,600
			26	_	\$ 3.096,600	\$ 98,000	\$ 3,194,600	\$ 2,369,900

WSSC SPENDING AFFORDABILITY

FY 2017 ADDITIONAL & REINSTATED PROGRAM REQUESTS SUMMARY

Program: OPERATIONS

Request: 1 Solids Facility Operator

Cost including benefits: \$51,200, Water/Sewer Impact: \$51,200

Justification:

The current Discharge Permit for the Potomac WFP expired in 2002 though the request for renewal was duly submitted by WSSC in a timely manner. It is with certainty the new Discharge Permit will include provisions that will include significantly increased water plant residuals processing requirements and continuous operation. It is anticipated, the Potomac Solids Facility will be pushed to its limits operationally, the need for additional dedicated staffing at that facility will be of paramount importance both from a Clean Water Act perspective as well as a Safe Drinking Water Act perspective because if solids are not moved from the basins effectively and on a continuous basis, water quality, WSSC's primary mission, can be negatively impacted. Additionally, this position will be actively involved in sharing the responsibility of maintaining Solids Facilities equipment through the preventative maintenance program.

Request: 1 Facility Technician

Cost including benefits: \$64,600, Water/Sewer Impact: \$64,600

Justification.

A new water treatment process, solids handling, is currently in the construction process as part of the Patuxent Plant Phase II Expansion Project. When completed it is anticipated that up to 70% of the solids currently being treated at the Parkway WWTP will be handled at the Patuxent Water Treatment Plant. There will be considerable efforts required to bring the new treatment process on line and functionally maintained thereafter. Current Patuxent staffing pattern is not sufficient for the operational demands of this new treatment process.

Program: WASTEWATER PREVENTATIVE MAINTENANCE PROGRAM

Request: 2 Wastewater Field Unit Coordinators

Cost including benefits and vehicles: \$312,500, Water/Sewer Impact: \$267,600

Justification:

Currently, the Utility Management Group only has two Field Unit Coordinators and they both manage at least 10 crews in two locations. They are responsible for their entire County Service area, which is making it very difficult to effectively manage field personnel. Two more field unit coordinators would improve management and efficiency for Collection Technicians. If approved, the Field Unit Coordinators will have approximately 10 to 11 (5 to 6 crews) employees to manage. This will increase and encourage more opportunities for field training, coaching sessions, goal setting, improved workload management, improved accountability and performance evaluation, and increased productivity/efficiency.

Program: PISCATAWAY BIO-ENERGY

Request: 1 Bio-Energy Superintendent

Cost including benefits and vehicle: \$182,600, Water/Sewer Impact: \$2,000

Justification:

During the feasibility study for the Anaerobic Digestion/Combined Heat and Power (AD/CHP) Project, the Project Team identified the need for a Superintendent for the project. This position is needed during the design phase of the project to assist in the engineering review and as well as the design of the project.

Program: SUPPLY CHAIN MANAGEMENT TRANSFORMATION

Request: 7 workyears, funds for professions services

Cost including benefits and professional services: \$1.394,300, Water/Sewer Impact: \$779,000

Justification:

Supply Chain Management Transformation allows WSSC to bring all areas of spend within the scope of best in class procurement practices. WSSC will also be able to better control spending and ensure compliance within all major areas of contracting. As WSSC transforms, opportunities abound for cost reductions and added value via improved spend analytics, strategic sourcing, category management, supplier relationship management, procurement dashboards, early pay incentives, improved asset recovery (idle asset identification, internal redeployment and surplus asset disposition that compliments total lifecycle costing, or total cost of ownership). Further, those involved in the process need to be properly trained and provided the right tools for successful implementation.

Programs: CONTACT CENTER STRATEGIC OPTIMIZATION and C.A.P.

Request: Additional funding and 5 workyears to implement the recommendations of the Contact Center Strategic Optimization Project and handle increased workload associated with the Customer Assistance Program

Cost including benefits and professional services: \$1,411,400, Water/Sewer Impact: \$661,400

Justification:

The Contact Center is a complex eco-system that requires specialized skills and tools to plan work, allocate resources, and achieve performance goals. The Contact Center Optimization Project Consultant identified two gaps that are resulting in standard Contact Center operating fundamentals and best practices not being followed. A Workforce Management Center of Excellence (CoE) is needed to forecast, plan, schedule, and handle intraday adjustments, so staffing levels required to meet service levels are achieved. The benefit of this initiative is that the Workforce Management CoE will proactively monitor staffing levels. This includes maintaining best services routing between in-house and out-sourced staff. The Quality Management CoE will develop and lead training in Quality Management processes and standards for supervisors on "how to coach" design, develop, and assist in the delivery of new hire and existing staff training.

Program: SURVEYS

Request: 1 Survey Instrument Operator

Cost including benefits: \$86,000, Water/Sewer Impact: \$0

Justification:

The Commission currently has only one Instrument Operator. Since last year, workload has increased from 7500 man-hours to 9700 man-hours. This instrument operator will complete the second team survey and allow our teams to meet the requirements of our customers. The request addresses an increase in workload for infrastructure, development design, and to support the expansion of the in-house design program in the Civil Engineering Unit as well as to provide for additional survey support for the Asset Management Program. Unable to keep up with the survey support required for the continued expansion will result in having to hire an outside consultant to provide an instrument operator to meet our needs will cost approximately \$110,000/year.

Program: WATER QUALITY

Request: Water Quality Monitoring System

Cost including design and implementation: \$1,000,000, Water/Sewer Impact: \$0

Justification:

WSSC is significantly behind compared to other utilities in the region in its capability to detect contamination events and provide early warning to protect safety of water. Currently the only on-line monitoring specifically designed to detect accidental/deliberate contamination events are the fish-monitors and two water quality panels. WSSC will make full use of monitoring capabilities that are regionally owned and shared, but a water quality monitoring system strategically designed and placed in WSSC system will markedly reduce the response time and improve our ability to minimize the impact if a contamination event occurs. The monitoring system will also provide significant dual use benefit in day to day operations, providing real-time water quality data in general water quality problems areas, which will help addressing problems proactively and assure continued compliance with drinking water regulations.

Request: 1 Water Ouality Technician

Cost including benefits and vehicle: \$123,200, Water/Sewer Impact: \$100,700

Justification:

WSSC operates three fish bio-monitors at Potomac and Patuxent WFPs, which are currently the only line of defense against drinking water contamination events. These instruments have been minimally operational for several years due to limited staff resources to properly maintain and operate them. In addition, WSSC is in process of implementing additional on-line Water Quality Monitoring (WQM) system at WFPs and in the distribution system. Implementation and successful operation of WQM system will require dedicated staff to monitor, calibrate, and troubleshoot the equipment on routine basis. The Water Quality Technician will allow full operation of existing fish bio-monitors and full operation of on-line water quality monitoring system. This position will also be part of Contamination Rapid Reponses Team (CRRT), greatly strengthening the CRRT's capacity to respond to contamination events in timely manner.

Program: INFRASTRUCTURE

Request: 2 Senior Civil Engineers

Cost including benefits: \$225,200, Water/Sewer Impact: \$0

Justification:

Capital Improvement Program includes the replacement of distribution and transmission mains. This supports that effort as well as the relocation of existing infrastructure when others need it done. This program provides engineering design and project management for all new water pipeline projects in the CIP. The Distribution, Transmission and Meter / Vault programs have increased by approximately 51%, 248%, and 67% respectively. New programs such as Looping and Structural Lining have further increased the workload. Additionally, 12 miles are identified for the Systems Enhancement Unit within the Support Services Group, Utility Services Team. These projects must be identified, analyzed, reviewed, and packaged into individual projects before being scoped for designed. The benefit is that the work years will strengthen the Commission's ability to handle the growing workload required for accomplishing the WSSC's mission for infrastructure renewal. Major risks include inadequate resources for complex CIP projects; the increase in CIP projects was not accompanied by the requisite work years to handle the load, lack of resources for the evaluation, analysis, and planning for Water Programs.

Program: ASSET MANAGEMENT

Request: 1 Investment Planning Manager

Cost including benefits: \$141,100, Water/Sewer Impact: \$70,500

Justification:

This position was identified as part of the Asset Management Program Long Term Organization Structure approved in November 2008. This is a key position to manage the development, analysis and optimization of the capital investment requirements needed to sustain the infrastructure, coordinate with the Finance team and perform the financial analysis needed for the Enterprise Asset Management Plan (EAMP), develop the EAMP, and manage the new CIP/ESP Validation and Prioritization process which includes functions transferred from the Project Delivery Group. This position would supervise one or more economics analysts. The analysis will improve the decision making process to ensure that utilization of available resources achieves the best balance in meeting levels of service, reducing risk, and making cost effective decisions to address the infrastructure needs.

Program: STORM WATER POLLUTION PREVENTION INSPECTIONS

Request: Inspection & Monitoring Services Funding

Cost: \$95,000, Water/Sewer Impact: \$95,000

Justification:

In order to meet MDE Permit 12-SW Inspection & Monitoring Requirements; without increasing WSSC staffing levels. The Engineering & Construction Team's Environmental Group identified a new MDE/NPDES Requirement for WSSC to register and manage their Depots [Maintenance, Repair, &

Operations (MRO)] Facilities under MDE General Permit for Discharges from Storm water Associated with Industrial Activities: Permit 12-SW; by December 31, 2014, WSSC Submitted to MDE Notice of Intent (NOI) to Comply with and Register our Depots for Discharge Permit No. 12-SW; An Engineering Consultant was hired to develop the required Pollution Prevention Plans and Inspection, Monitoring, and Record Keeping Programs for WSSC Staff/Contractors; All Depot Permits are managed by the Utilities Services Zone Group Leaders with half of Anacostia assigned to the Property Management Group Leader; To provide additional programming time needed for budgets, the Depot Manager/Zone Group Leaders have decided it to be in the best interest of the Commission to contract this inspection service and not increase staffing levels. This is a request for Inspection & Monitoring Services Funding.

Program: CO-LOCATION OF COUNTY OFFICES

Request: 2 Permit Specialists

Cost including benefits: \$160,100, Water/Sewer Impact: \$160,100

Justification:

The Counties have both requested that WSSC co-locate in County Permit Buildings. This program is to expand the staff in both offices from one Supervisor Program manager and one Project Manager to include one permit specialist. The benefit of this is that it will promote better coordination with a one stop shop at county permitting buildings.

Program: DENTAL MERCURY COMPLIANCE

Request: 2 Industrial Investigators

Cost including benefits: \$212,400, Water/Sewer Impact: \$212,400

Justification:

On the basis of the Commission's 2005 dental survey and the 2011 dental facilities list from the State of Maryland's Department of Health and Mental Hygiene, it is estimated that the Commission would have to permit and regulate an additional 708 dental facilities as Significant Industrial Users (SIUs). The dental amalgam program will be a federal and state requirement. The success of this program can be measured by the percent reduction of mercury concentrations in the wastewater treatment plant headworks, and sludge, as well as the number of dental facilities permitted as SIUs. The need for this expanded program is based on adoption of the proposed Dental Category rule (40 CFR Part 441). Once this rule is finalized, the Commission must comply with all federal pretreatment program implementation requirements. If the Commission does not comply with the rule requirements within 3 years of promulgation, the Commission could be found in significant noncompliance with the federal pretreatment program implementation requirements as well as the Commission's delegation requirements with the State.

Program: WATERSHED PROTECTION

Request: Funds for demolition

Cost: \$250,000, Water/Sewer Impact: \$0

Justification:

An expanded program acquisition of properties and easements to serve as riparian buffers along streams of the Patuxent Reservoirs watershed, upstream from T. Howard Duckett Dam was approved as part of the TSG FY16 budget. Acquisitions of properties and easements to serve as riparian buffers along streams will require some demolition if the property contains an existing structure. This initiative will provide operating budget for demolition of existing structures, re-grading of the property, elimination of any hazardous materials on the sites, installation of fencing, trees and native grasses, if required. These activities will restore the property to the nature buffer required to protect the riparian buffers along streams.

Program: PROJECT COMMUNICATION AND OUTREACH

Request: Funds for program implementation Cost: \$50,000, Water/Sewer Impact: \$0 Justification:

WSSC receives a large volume of complaints regarding the lack of communication at the community and municipality level. The goal is to better inform the public at the local level regarding projects and related inconveniences. The Project Outreach Manager (new FY16 workyear) will be responsible for creating the program to ensure reliable dissemination of information about projects to communities and municipalities. This is expected to require a combination of existing resources as well as the potential to use operating and capital funds to contract vendors.

Program: PUBLIC INFORMATION DISSEMINATION

Request: Funds for advertising Cost: \$200,000, Water/Sewer Impact: \$0 Justification:

WSSC continues to launch new initiatives and promote existing ones, it would be appropriate to add dollars for broadcast time and other outlets. One issue is basement backups and SSOs, which under the Consent Decree, we must reduce. A substantial portion of this money will coincide with efforts by the FOG Unit (Regulatory Services) to see new information and data related to backups and SSOs. The new Project Outreach Manager could conceivably use some of these dollars for public outreach. In general, the benefits will be customers who are not only better-informed about WSSC programs and projects, but also more inclined to think WSSC is doing a good job in the present and in planning for the future, and more inclined to think WSSC is an environmental and valuable organization that performs well.

Program: WSSC HISTORICAL ARCHIVING

Request: Funding for document management vendor Cost: \$100,000, Water/Sewer Impact: \$0 Justification:

The Commission possesses thousands of photographs, negatives and documents that hold historical value and capture the robust history of WSSC. The goal is to have a searchable database that includes all of the documents. This will allow authorized staff to quickly access digital assets. Digital assets include all kinds of files in different formats: product images, stock photos, audio, video, presentations, etc. This digital asset would be used to create the WSSC 100th Anniversary History Book.

Program: WSSC 100TH ANNIVERSARY

Request: Funding for preparation of the 100th Anniversary Cost: \$270,000, Water/Sewer Impact: \$0

Justification:

During FY'17, the Commission will begin the necessary planning to properly celebrate the 100th anniversary of WSSC which will occur May 1, 2018. Historically, planning has been done solely by the staff members of the Communications and Community Relations office. The funds will cover the cost of the writer for the 100th Anniversary Book, Promotional Items and Advertising. The objective will be to produce a program that reflects the importance of the Commission's core values of individual initiative. environmental stewardship, integrity & respect, accountability, cost awareness and excellence.

Program: IT SYSTEMS MAINTENANCE

Request: Funding for software fees

Cost: \$877,000, Water/Sewer Impact: \$701,600

Justification:

When new software systems and IT infrastructure systems are implemented, an annual maintenance fee is usually incurred. Software and hardware products, when applicable, incur an annual maintenance fee approximately 20% of its initial purchase price. Maintenance insures that WSSC's IT assets (software and hardware) remain vendor-supported and in compliance with the original software/hardware contract.

Program: IT STRATEGIC PLAN

Request: Funds for implementation of technology initiatives Cost: \$5,100,000, Water/Sewer Impact: \$0 Justification:

Delivering high quality services in the modern era requires more of a water utility than just our pipes and pumps. The 21st century water and wastewater utility faces many substantial issues in the coming years relative to availability of clean drinking water, new regulations, an aging infrastructure and the increasing funding needs to support it. When it comes to how today's water and wastewater utility must respond to challenges, modernizing business processes and improving infrastructure management practices are the heart of the challenge. Leading utilities are more and more aware that information technology is integral to every aspect of its operations and that an organization's ability to take advantage of new solutions will depend on the strength of its IT investments. This Project will measurably enhance operational efficiency and customer service.

Program: WINDOWS 10/ OFFICE 2013 UPGRADES

Request: Windows 10/ Office 2013 Upgrades Cost: \$250,000, Water/Sewer Impact: \$0

Justification:

The Commission's desktop computing assets require upgrades in order to sustain new software applications and system integrations built upon ever changing, advancing platforms. IT implements and configures the necessary infrastructure enhancements to support consolidation efforts. This budget requires extensive amount of severally tasks completed since it would be an enterprise change. Professional services funds are required for the system administrator tasks such as implementation, project management, software testing and more etc. Training is required to ensure all end users are made familiar with the new Windows Operating system and Office.

Program: SOFTWARE LICENSING

Request: Funds for general software licensing Cost: \$200,000, Water/Sewer Impact: \$160,000 Justification:

WSSC must make sure it is properly licensed for all software products to be deployed to meet our needs. New initiatives require additional software licensing. This project will ensure that WSSC is compliant with all agreements covering deployed software. The software licensing program will enhance monitoring efforts as well as new self-service initiatives. This budget assumes a standard growth of the number of virtual machines and general use. A failure to proceed with this project could cause compliance issues with the software vendors, leading to penalties and/or termination of right-to-use.

Program: IT SECURITY & COMPLIANCE

Request: Funds for IT security and compliance Cost: \$90,000, Water/Sewer Impact: \$72,000 Justification:

Reliable and dependable data are critical for almost every business activity in WSSC. In order to reconfigure the IT security posture at WSSC, IT plans on being able to predict behavior based on information garnered from critical points and assets connected to the network either hard-wired or through wireless fidelity. Policies, Technology and Tools have been created and identified to provide these capabilities and will be implemented over the near, medium and long terms.

Rate Increase Components (FY'17 Preliminary Proposed Budget - No Changes to Ready to Serve Charge in FY16)

Total Gross Expenses	Expenses Subtotal	Unspecified Reductions	Heat, Light & Power	30 Year 1.25x Coverage PAYGO	Fund Balance PAYGO	Additional PAYGO	Cherating Reserve Contribution	Additional & Reinstated Programs	Salaries & Wages	Expenses All Other	Debt Service Debt Service	Revenue Subtotal	SDC Debt Service Offset	Reconstruction Debt Service Offset	Use of Fund Balance - Watershed	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Use of Fund Balance	Miscellaneous Revenue	Account Maintenance Fee	Water & Sewer Revenue		
693,665,000	458,091,000	ſ	23,353,000	16,671,000	1,600,000	1,406,000	6300,000	64 005 000	111,309,000	242,557,000	235,574,000	693,665,000	728,000	8,500,000	1,600,000	2,000,000	8,000,000	2,086,000	6,300,000	1,500,000	91,000	•	27,693,000	22,900,000	612,267,000	Estimate	FY 2016
728,289,000	477,527,000	,	26,656,000	24,061,000	1,600,000		6 524 000	51 201 000	116,875,000	250,210,000	250,762,000	683,020,000	207,000	7,000,000	1,600,000	,	8,000,000	500,000	6,524,000	•	ı	3,514,000	27,885,000	22,900,000	604,890,000	Estimate	FY 2017
Total	19,436,000	1	3,303,000	7,390,000	,	(1.406,000)	224,000	79 707 700	5,566,000	7,653,000	15,188,000	(10,645,000)	(521,000)	(1,500,000)		(2,000,000)	•	(1,586,000)	224,000	(1,500,000)	(91,000)	3,514,000	192,000	ŧ	(7,377,000)	Dollar Change	
7.5%	3.2%	0.0%	0.5%	1.2%	0.0%	-0.2%	0.0%	0.0%	0.9%	1.3%	2.5%	1.8%	0.1%	0.2%	0.0%	0.3%	0.0%	0.3%	0.0%	0.2%	0.0%	-0.6%	0.0%	0.0%	1.2%	Impact	Rate
			Based on projection from WSSC Energy Manager.		Easements & Land Acquisition	Jt. Council Reduction in COLA to PAYGO									Easements & Land Acquisition	AMI	IT Strategic Plan	Multi-year Additional & Reinstated	For operating reserve contribution	REDO Extinguishment	Blue Plains Debt Service Bi-County Council adjustment	Lessen impact of decreased water production	Based on historical miscellaneous revenue		Decrease in water production	Description	

26

WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - FY15 Status Quo (No Recalibrated AMF, No Infrastructure Investment Fee) Estimated Revenues and Expenditures (\$1,000)

NOTE: Impact of Rate Increase on Residential Monthly Bill with <u>160</u> GPD usage	Rate Increase Operating Budget Debt Service Expense New Debt	16 Debt Service Ratio (debt sorvice / budget)	15 Water Production (MGD)	Total Expenses Revenue Gap (Revenue - Expenses)	Unspecified reductions Unspecified reduction of future year's expenditure base	6 Maintenance & Operating 7 Regional Sewage Disposal 8 Debt Service 9 PAYGO 10 Additional Operating Reserve Contribution	1 Revonue 2 Water & Sewer Rate Revenue 3 All Other Sources 4 Total Revenue
usago	FY 2016 6.0% \$693,665 235,574 422,681	34.0%	166.0	693,665	The state of the s	377,219 54,895 235,574 19,677 6,300	## 2016 Approved \$612,267 \$1,398 693,665
FY 2017 4.23 1 7.01%	FY 2017 7.5% \$728,288 250,762 476,810	34.4%	164,0	728,288 (45,268)	The state of the s	393,741 51,601 250,762 25,661 6,524	FY 2017 Proposed \$604,890 78,130 683,020
FY 2018 5 5.89 9.12%	EY 2018 9.7% \$773,545 273,606 462,345	35.4%	164.0	773,545 (62,752)		410,268 53,510 273,606 31,995 4,166	FY 2018 Estimate \$650,159 60,634 710,793
FY 2019 \$ 4.72 6.70%	FY 2019 7.1% \$823,899 296,463 396,326	36.0%	164.0	823,899 (50,408)		427,522 55,490 296,463 39,489 4,935	\$712,911 60,580 773,491
FY 2020 \$ 4.53 6.02%	6.3% \$871,365 317,287 365,349	36.4%	164.0	871,365 (48,465)		445,554 57,543 317,287 46,249 4,732	FY 2020 Estimate \$763,319 59,581 822,900
FY 2021 \$ 4.09 5.13%	5.4% \$914,149 333,817 303,170	36.5%	164.0	914,149 (43,514)	1 1	464,345 59,672 333,817 52,029 4,286	FY 2021 Eslimate \$811,784 58,852 870,636
FY 2022 \$ 3.46 4.12%	FY 2022 4.3% \$950,726 343,769 238,095	36.2%	164.0	950,726 (36,947)	a P	483,972 61,880 343,759 56,829 4,286	\$855,297 \$855,297 58,482

4

WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - FY15 Status Quo (No Recalibrated AMF, No Infrastructure Investment Fee) Estimated Revenues and Expanditures (\$1,000)

33	32	3	28 29 30	27	25 26	17 I 18 19 20 20 21 22 22 23	16	10 10 15 15 15 15 15 15 15 15 15 15 15 15 15	9	- 4845878
Revenue - Expenditure Gap before rate increase Rate Increase FY17_6yr_Forecast_Revisionist History Adjusted REDO.xlsx	NET EXPENSES	TOTAL GROSS EXPENSES (Operating & Financial)	Debt Service Debt Reduction (PAYGO) Total Financial Expenses	Total Operating Expenses	Unspecified reductions Unspecified reduction of future year's expenditure base	Salaries and Wages Salaries and Wages Salaries and Wages - Additional & Reinstated Programs Heat, Light and Power Regional Sewage Disposal All Other All Other - Additional & Reinstated Programs Additional Operating Reserve Contribution	FUNDS AVAILABLE	Adjustments to Revenue Use of Fund Balance Less Rate Stabilization SDC Debt Service Offset Reconstruction Debt Service Offset Adjustments to Total Revenue	Total Revenue	REVENUE Water / Sewer Use Charges Account Maintenance Fee (Ready to Serve Charge) Infrastructure Renewal Fee (Ready to Serve Charge) Interest Income Plumbing/Inspection Fees Rockville Sewer Use Miscellaneous
6.0%	693,665	693,665	235,574 19,677 255,251	438,414	r 4	111,309 23,353 54,895 242,557 6,300	693,665	21,577 728 8,500 30,805	662,860	FY 2016 <u>Approved</u> \$612,267 22,900 1,000 7,920 2,773 16,000
(45,269) 7.5%	728,289	728,289	250,762 25,661 276,423	451,866		116,875 26,656 51,601 250,210 6,524	683,020	20,138 207 7,000 27,345	655,675	FY 2017 Proposed \$604,890 22,900 700 7,300 2,632 17,263
(62,752) 9.7%	773,545	773,545	273,606 31,995 305,601	467,944	1 .	122,719 27,731 53,510 259,818 4,166	710,793	3,666 5,500 9,166	701,627	FY 2018 Estimate \$650,159 22,900 7,500 7,500 2,664 17,704
(50,408) 7.1%	823,899	823,899	296,463 39,489 335,952	487,947	K 16	128,855 28,856 55,490 269,811 4,935	773,491	4,435 4,000 8,435	765,056	FY 2019 Estimate \$712,911 22,900 7,700 2,680 18,165
(48,465) 6,3%	871,365	871,365	317,287 46,249 363,536	507,829	i 10	135,298 30,053 57,543 280,203 4,732	822,900	4,232 - 2,500 6,732	816,168	FY 2020 Estimate \$763,319 22,900 700 7,900 2,711 18,638
	914,149	914,149	333,817 52,029 385,846	528,303	3 E	142,063 31,271 59,672 291,011 4,286	870,636	4,286 1,000 5,286	865,350	FY 2021 Estimate \$811,784 22,900 700 8,100 2,741 19,125
/43.514) /36.947) ATTACHMEN' 12	950,726	950,726	343,759 56,829 400,588	550,138	2 10	149,166 32,555 61,880 302,251 4,286	913,779	4,286	909,493	FY 2022 Estimate \$855,297 22,900 700 8,300 2,771 19,525

WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - Infrastructure Investment Fee Phase-In and Additional & Reinstated Programs (3.5% Rate Increase) Estimated Revenues and Expenditures (\$1,000)

23 24	21	17 18 19 20	16	t 1 t	11 10 8 7 6 5	- 0 0 4
Impact of Rate increase on Residential Monthly Bill with <u>100</u> GPD usage Impact of Phased-in Infrastructure Investment Fee Total Bill percentage Increase	NOTE: Impact of Rate Increase on Residential Monthly Bill with 160 GPD usage Impact of Phased-in Infrastructure Investment Fee Total Bill percentage Increase	Rate Increase Operating Budget Debt Service Expense New Debt	Debt Service Ratio (debt service / budget)	Total Expenses Revenue Gap (Revenue - Expenses) Water Production (MGD)	Expenses Maintenance & Operating Regional Sewage Disposal Debt Service PAYGO Additional Operating Reserve Contribution Unspecified reductions Unspecified reduction of future year's expenditure base	Revenue Water & Sewer Rate Revenue All Other Sources Total Revenue
		FY 2016 1.0% \$693,665 235,574 422,681	34.0%	693,665 - 166.0	377,219 54,895 235,574 19,677 6,300	FY 2016 Approved \$583,375 110,290 693,665
\$1.04 \$2.00 \$3.04 8.2%	FY 2017 \$1.89 \$2.00 \$3.89	3.5% \$729,168 250,762 476,810	34.4%	729,168 (20,165) 164.0	403,252 51,601 250,762 25,661 6,524 (8,632)	FY 2017 Proposed \$576,346 132,657 709,003
\$3.16 \$0.00 \$3.16 7.9%	FY 2018 \$5.76 \$0.00 \$5.76 8.8%	FY 2018 10.3% \$768,561 273,606 462,345	35.6%	768,561 (61,493) 164.0	414,262 53,510 273,606 31,995 4,166 (8,978)	FY 2018 Estimate \$596,511 110,557 707,068
\$2.57 \$0.00 \$2.57 5.9%	FY 2019 \$4.69 \$0.00 \$4.69 6.6%	7.6% \$818,731 296,463 396,326	36.2%	818,731 (49,916) 164.0	431,692 55,490 296,463 39,489 4,935	Estimate \$658,004 110,811 768,815
\$2.47 \$0.00 \$2.47 5.4%	FY 2020 \$4.51 \$0.00 \$4.51 5.9%	6.8% \$866,007 317,287 365,349	36.6%	866,007 (47,967) 164.0	449,908 57,543 317,287 46,249 4,732 (9,712)	FY 2020 Estimate \$707,920 110,120 818,040
\$2.25 \$0.00 \$2.25 4.7%	FY 2021 \$4.11 \$0.00 \$4.11 5.2%	5.8% 5.8% \$908,595 333,817 303,170	36.7%	908,595 (44,009) 164.0	468,891 59,672 333,817 52,029 4,286 - (10,100)	FY 2021 Estimate \$755,887 108,699 864,586
\$1.87 \$0.00 \$1.87 3.7%	FY 2022 \$3.40 \$0.00 \$3.40 4.0%	FY 2022 4.5% \$944,878 343,669 238,095	36.4%	944,878 (36,345) 164.0	488,718 61,880 343,669 56,829 4,286	FY 2022 Estimate \$799,896 108,637 908,533

29

WSSC's Multi-Year Financial Forecast: Combined Water/Sewer Operating Funds Summary FY 2017 thru 2022 Forecast: Preliminary Budget - Infrastructure Investment Fee Phase-In and Additional & Reinstated Programs (3.5% Rate Increase) Estimated Revenues and Expenditures (\$1,000)

ω ω	ťω	W	W NI KI	N	N 13	NNNNN	_	and the annual recommend			
33 34 FY17	32	31	28 29 30	27	25 26	17 EX 18 19 20 21 21 22 22 23	16	10 Ad 11 12 13 14	Φ	3 7 RE	
 Revenue - Expenditure Gap before rate increase Rate Increase FY17_6yr_Preliminary Forecast A&R adjusted REDO - 3.5%.xlsx 	NET EXPENSES	TOTAL GROSS EXPENSES (Operating & Financial)	Debt Service Debt Reduction (PAYGO) Total Financial Expenses	Total Operating Expenses	Unspecified reductions Unspecified reduction of future year's expenditure base	EXPENDITURES Salaries and Wages Salaries and Wages - Additional & Reinstated Programs Heat, Light and Power Regional Sewage Disposal All Other All Other - Additional & Reinstated Programs Additional Operating Reserve Contribution	FUNDS AVAILABLE	Adjustments to Revenue Use of Fund Balance Less Rate Stabilization SDC Debt Service Offset Reconstruction Debt Service Offset Adjustments to Total Revenue	Total Revenue	Water / Sewer Use Charges Account Maintenance Fee (Ready to Serve Charge) Infrastructure Renewal Fee (Ready to Serve Charge) Interest Income Plumbing/Inspection Fees Rockville Sewer Use Miscellaneous	
1.0%	693,665	693,665	235,574 19,677 255,251	438,414	t, st	111,309 23,353 54,895 242,557 6,300	693,665	21,577 728 8,500 30,805	662,860	FY 2016 <u>Approved</u> \$583,375 32,374 19,418 1,000 7,920 2,773 16,000	
(20,165) 3.5%	729,168	729,168	250,762 25,661 276,423	452,745	(8,632)	116,875 1,524 26,656 51,601 250,210 7,987 6,524	709,003	26,050 207 7,000 33,257	675,746	FY 2017 Proposed \$576,346 \$2,553 38,963 700 7,300 2,632 17,252	
(61,493) 10.3%	768,561	768,561	273,606 31,995 305,601	462,960	(8,978)	122,719 1,600 27,731 53,510 259,818 2,394 4,166	707,068	4,666 - 5,500 10,166	696,902	Estimate \$596,511 32,732 39,091 7,500 2,664 17,704	
(49,916) 7.6%	818,731	818,731	296,463 39,489 335,952	482,779	(9,338)	128,855 1,680 28,856 55,490 269,811 2,490 4,935	768,815	5,435 - 4,000 9,435	759,380	Estimate \$658,004 32,911 39,220 7,700 2,680 18,165	
(47,967) 6.8%	866,007	866,007	317,287 46,249 363,536	502,471	(9,712)	135,298 1,764 30,053 57,543 280,203 2,590 4,732	818,040	5,232 - 2,500 7,732	810,308	FY 2020 Estimate \$707,920 33,090 39,349 700 7,900 2,711 18,638	
ATTA	908,595	908,595	333,817 52,029 385,846	522,749	(10,100)	142,063 1,852 31,271 59,672 291,011 2,694 4,286	864,586	4,286 - 1,000 5,286	859,300	FY 2021 Estimate \$755,887 33,270 39,478 700 8,100 2,741 19,124	
ATTACHMENT	944,878	944,878	343,669 56,829 400,498	544,380	(10,504)	149,166 1,944 32,555 61,880 302,251 2,802 4,286	908,533	4,286 - 4,286	904,247	FY 2022 Estimate \$799,896 33,449 39,607 700 8,300 2,771 19,524	

3 0

^{10.3%} 7.6%

^{6.8%} ATTACHMENT

ATTACHMENT 6

WASHINGTON SUBURBAN SANITARY COMMISSION WATER AND SEWER RATE SCHEDULE

APPROVED FOR IMPLEMENTATION JULY 1, 2015

	Water	Rates	Sewer	Rates	Com Water & S	
Average Daily Consumption by Custorner Unit During Billing Period (Gallons Per Day)	July 1, 2014 Rates Per 1,000 Gallons	July 1, 2015 Rates Per 1,000 Gallons	July 1, 2014 Rates Per 1,000 Gallons	July 1, 2015 Rates Per 1,000 Gallons	July 1, 2014 Rates Per 1,000 Gallons	July 1, 2015 Rates Per 1,000 Gallons
0-49	\$ 3.17	\$ 3.20	\$ 4.22	\$ 4.26	\$7.39	\$ 7.46
50-99	3,54	3.57	4.93	4.98	8.47	8.55
100-149	. 3.89	3.94	5.75	5.80	9.64	9,74
150-199	4.36	4.41	6,63	6.69	10.99	11.10
200-249	5.10	5.16	7.23	7.29	12.33	12.45
250-299	5.53	5.59	7.83	7.90	13.36	13.49
300-349	5.85	5.92	8,35	8.42	14.20	14.34
350-399	6.09	6.16	8.76	8.84	14.85	15.00
400-449	6.33	6.40	8.96	9.04	15,29	15.44
450-499	6.50	6.58	9.24	9.32	15.74	15.90
500-749	6.62	6.70	9.43	9.51	16.05	16.21
750-999	6.78	6.86	9.64	9.72	16.42	16.58
1,000-3,999	6.91	6.99	10.05	10.14	16.96	17.13
4,000-6,999	7.07	7.15	10.28	10.37	17.35	17.52
7,000-8,999	7.16	7.25	10.43	. 10.52	17.59	17.77
9,000 & Greater	7.29	7.37	10.70	10.80	17.99	18.17

Flat Rate Sewer Charge - \$104.00 per quarter

Drinking water systems imperiled by failing infrastructure

By RYAN J. FOLEY

Sep. 26, 2015 10:05 AM EDT

DES MOINES, Iowa (AP) — Deep inside a complex of huge tanks, drinking water for Iowa's capital city is constantly cleansed of the harmful nitrates that come from the state's famously rich farmland.

Without Des Moines Water Works, the region of 500,000 people that it serves wouldn't have a thriving economy that has become a magnet for tech companies such as Microsoft. But after decades of ceaseless service, the utility is confronting an array of problems: Water mains are cracking open hundreds of times every year. Rivers that provide its water are more polluted than ever. And the city doesn't know how it will afford a \$150 million treatment plant at a time when revenues are down and maintenance costs are up?

"We're reaching the end of the life cycle of some of the most critical assets we've got," said Bill Stowe, CEO and general manager of the utility, which has a downtown treatment plant that was built in the 1940s, long before nitrates, which can harm infants, became a pressing concern. He said the industry is getting "all kinds of these warning alarms that we haven't heard before."

A similar crisis is unfolding in cities across the country. After decades of keeping water rates low and deferring maintenance, scores of drinking water systems built around the time of World War II and earlier are in need of replacement. The costs to rebuild will be staggering. The costs of inaction are already piling up. The challenge is deepened by drought conditions in some regions and government mandates to remove more contaminants.

At stake is the continued availability of clean, cheap drinking water — a public health achievement that has fueled the nation's growth for generations and that most Americans take for granted.

The U.S. Environmental Protection Agency projects that it will cost \$384 billion over 20 years to maintain the nation's existing drinking water systems, which will require tens of thousands of miles of replacement pipe and thousands of new or renovated plants. The American Water Works Association, an industry-backed group, puts the price even higher — \$1 trillion to replace all outdated pipes and meet growth over the next quarter-century.

"The future is getting a little dark for something as basic and fundamental as water," said Adam Krantz of the Water Infrastructure Network, a lobbying group that is fighting cuts to key federal water programs.

A HIDDEN CRISIS, A SHORTAGE OF MONEY

Unlike pothole-scarred roads or crumbling bridges, decaying water systems often go unnoticed until they fail.

"Buried infrastructure is out of sight, out of mind. We take it for granted. We turn on the faucet and we get good, clean, quality water," said Will Williams, head of asset management for the engineering firm Black & Veatch and an expert on water infrastructure.

When failures happen, help can be hard to come by.

Without big changes in national policy, local governments and their ratepayers will be largely on their own in paying for the upgrades. The amount of federal money available for drinkingwater improvements is just a drop in the bucket.

Cities and utilities have historically been reluctant to raise rates sharply or to incur high levels of debt to pay for them, although both are increasingly happening.

"That's the key that Americans have to understand: If they want this system, they are going to have to be willing to finance it, to pay for it," said Greg DiLoreto, past president of the American Society of Civil Engineers.

The group's 2013 report warned of a looming funding crisis and a future with more equipment failures that will disrupt water service, transportation and commerce.

"Not meeting the investment needs of the next 20 years risks reversing the environmental, public health and economic gains of the last three decades," the report said.

The largest source of federal assistance is the Drinking Water State Revolving Fund, which goes largely to small towns and mid-sized cities. Some communities that need the most help shun the program because it offers mostly loans, not grants. A new program authorized by Congress to attract private investment in larger, big-city projects has yet to get off the ground.