

FAIRFAX COUNTY WASTEWATER MANAGEMENT PROGRAM



Quality of Water = Quality of Life

Wastewater Revenue Sufficiency and Rate Analysis

Forecast Period Fiscal Year 2013
Through Fiscal Year 2018

January 28, 2013



Public Resources Management Group, Inc.
Utility, Rate, Financial and Management Consultants

BLUE WATER CONSULTING, INC.



January 28, 2013

Mr. Randy Bartlett
Deputy Public Works Director
County of Fairfax, Virginia
Department of Public Works and Environmental Services
12000 Government Center Parkway, Suite 358
Fairfax, VA 22035-0058

Subject: **2013 Wastewater Revenue Sufficiency and Rate Analysis**

Dear Mr. Bartlett:

Public Resources Management Group, Inc. (PRMG) and BlueWater Consulting, Inc. (collectively, the "Project Team") have completed the study of the sufficiency of the existing and adopted wastewater rates for Fairfax County, Virginia (the "County") and have summarized the results of our analyses, assumptions, recommendations, and conclusions in this report that is submitted for your consideration. This report summarizes the basis for the recommended rates for wastewater services that are considered necessary, along with other appropriate sources of funds, to meet the near term expenditure requirements of the wastewater system (the "System"). The System revenue sufficiency and rate analysis was based on the Adopted Fiscal Year 2013 Budget and encompassed the subsequent five (5) fiscal year period ending June 30, 2018 (collectively, the "Forecast Period"). Although the analysis focused primarily on the financial needs identified for the Forecast Period, the financial analysis also included a ten fiscal year period ending June 30, 2022 (referred to as the "Planning Period") to support management's long-term planning efforts.

The proposed rates are intended to meet a number of goals and objectives. The most important objective of the study was to develop proposed wastewater utility rates that fully recover the projected expenditure requirements of the System in order to maintain sound financial operations and fund the anticipated capital needs of the utility system. The other goals and objectives considered in the study include:

- Wastewater rates should be based on cost of service (full cost recovery) principles;
- Wastewater rates should be reasonable among customer classes;
- Wastewater rates should comply with the covenants as required by the resolutions and loan agreements adopted by the County associated with the issuance of outstanding debt; and

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- Proposed wastewater rates should promote the Wastewater Management Program's (the "WWM") financial creditworthiness and maintain adequate reserves for emergencies and unforeseen capital needs.

The report following this letter summarizes the results of our study and outlines our recommendations and conclusions with respect to the recommended rates for the Forecast Period. The accompanying study provides additional details regarding the rate and financial analyses conducted on behalf of the County.

The recommended rates for wastewater service are based on the recovery of the total costs anticipated for the County's wastewater utility service area and overall capacity needs of the System. As such, the recommended rates and charges are considered by the Project Team to be reasonable and to reflect the cost of providing service.

We appreciate the opportunity to be of service to the County.

Respectfully submitted,

Public Resources Management Group, Inc.

BlueWater Consulting, Inc.

Robert J. Ori
President

G. Blair Troutman, P.E.
President

RJO/dlc
Attachments

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

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**FAIRFAX COUNTY
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WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

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**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

INTRODUCTION

The purpose of this rate sufficiency and rate analysis report (the "Report") is to document the financial and rate evaluation prepared on behalf of Fairfax County, Virginia (the "County") and the Fairfax County Wastewater Management Program (the "WWM") and to provide our observations and recommendations as to the level of system rates that should be charged for utility service. This analysis is prepared annually, primarily in support of the County's budget and capital improvement planning process. The revenue sufficiency and rate analysis reflected in this Report was based on the Adopted Fiscal Year 2013 Budget and encompassed the subsequent five (5) fiscal year period ending June 30, 2018 (collectively, the "Forecast Period") and supports the recommendations for the rates for wastewater service to be presented to the Fairfax County Board of Supervisors (the "Board"). Although the analysis focused primarily on the financial needs identified for the Forecast Period, the financial analysis also included a ten fiscal year period ending June 30, 2022 (referred to as the "Planning Period") to support management's long-term planning efforts.

WWM's System is comprised of wastewater treatment facilities, both owned and operated by the County as well as treatment capacity entitled to the County through specific service agreements with other public entities, a wastewater collection system, and a pumping and transmission system (all of these assets are collectively referred to as the "System"). The WWM currently provides service to an estimated population of 880,000 residents. As of June 30, 2012, WWM reported that its gross plant investment in the System, including capacity entitlements in wastewater treatment facilities owned by other local governments was \$2.048 Billion.

As documented in this Report, WWM's operations and financial position are continuing to be impacted by a variety of factors, including: i) increased and immediate capital expenditures predominantly required to meet the effluent discharge standards associated with the Chesapeake Bay Program as well as the need to continually perform needed renewals and replacements to maintain adequate and ongoing levels of service; ii) the lingering effects of the economic downturn, which is immediately impacting cash flow and overall capital funding needs; iii) the continued effects of inflation on the cost of operations and construction (even though WWM has continued to perform systematic evaluations of its operations to reduce costs); iv) the need to maintain a strong financial position in the market in order to attract future capital as well as maintain competitive rates over the long-term and meet the rate covenant requirements of the General Bond Resolution adopted by the Board on July 29, 1985, as amended, restated, and supplemented from time to time by the County (the "General Bond Resolution") authorizing the issuance of the Outstanding Bonds; and v) meeting the terms and conditions of the Virginia Resources Authority (VRA) Financing Agreement between the County and the Virginia Water Facilities Revolving Fund acting by and through the Virginia Resources Authority (VRA) (the "VRA Financing Agreement").

The effect of these significant factors was recognized last year in the preparation of the Wastewater Revenue Sufficiency and Rate Analysis for the Forecast Period Fiscal Year 2012 through Fiscal Year 2017, which was prepared in support of the Fiscal Year 2013 Budget (the "2012 Report"). The 2012 Report recognized the immediate strain on the ability of the existing wastewater rates for service to meet the overall expenditure requirements during the Forecast Period and recognized the criticality of the need for a change in the level and structure of wastewater rates charged for service. The recommended changes identified in the 2012 Report included an increase in the recommended volumetric rate with no increase in the per bill service charge.

	Fiscal Year Ending June 30, [1]			
	2013	2014	2015	2016
Volumetric Rate – \$ per 1,000 Gallons				
Approved in Support of FY 2013 Budget [2]	\$6.55	\$7.07	\$7.49	\$7.79
Change from Prior Year	\$0.54	\$0.52	\$0.42	\$0.30
Service Charge – \$ per Bill Rendered [4]	\$5.50	\$5.50	\$5.50	\$5.50
Change from Prior Year	\$0.00	\$0.00	\$0.00	\$0.00
Percent Combined Change from Prior Year for				
Usage of 18,000 Gallons per Quarter	13.34%	13.36%	9.40%	5.77%
Quarterly Increase in Wastewater Bill for				
Usage of 18,000 Gallons per Quarter [5]	<u>\$13.32</u>	<u>\$15.12</u>	<u>\$12.06</u>	<u>\$8.10</u>

[1] All rates assumed to be effective with service rendered beginning July 1st of each fiscal year.

[2] Recommended rates as identified in the 2012 Report which were adopted by the Board in April 2012.

[3] Amount shown for the Fiscal Year 2012 volumetric rate reflects no change in the level of the rates charged for billed wastewater flow when compared to the rate that was previously adopted by the Board. [2012 rates are currently in effect]

[4] Amount reflects new charge implemented in Fiscal Year 2010 (in addition to volumetric rates) to pass-through the cost of billing and to initiate a fixed cost recovery process in the rates for wastewater service.

[5] Calculated from prior Fiscal Year bills.

SUMMARY OF RECOMMENDATIONS

Based on the financial plan as presented herein, we offer the following observations and recommendations:

1. As part of last year's Fiscal Year 2013 rate and financial planning process, the Project Team developed wastewater rate recommendations for the Board's consideration which were based on certain financial assumptions, including year-to-date Fiscal Year 2012 actual results, the Fiscal Year 2013 Budget, as well as other data provided by the WWM. The following is a summary of the Board adopted and Project Team recommended rates.

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Summary of Adopted and Recommended Rates from the 2012 Report [1]

	Fiscal Year Ending June 30,				
	Adopted				Recommended [4]
	2013	2014	2015	2016	2017
Approved in Support of FY 2013 Budget: [2]					
Volumetric Rate – \$ per 1,000 Gallons	\$6.55	\$7.07	\$7.49	\$7.79	\$8.10
Rate Change from Prior Year – \$ per 1,000 Gallons	\$0.54 [5]	\$0.52	\$0.42	\$0.30	\$0.31
Service Charge – \$ per Bill Rendered [3]	\$5.50	\$5.50	\$5.50	\$5.50	\$5.50

- [1] Rates shown were based on the analysis dated January 30, 2012 in support of the Fiscal Year 2012 Financial and Rate Forecast.
- [2] Amounts shown for the adopted rates reflect rates that are currently in effect or have been previously adopted by the Board (through Fiscal Year 2015) and are shown for comparable purposes; all rates assumed to be effective beginning July 1st of each fiscal year.
- [3] Amount reflects new charge implemented in Fiscal Year 2010 (in addition to volumetric rates) to pass-through the cost of billing and to initiate a fixed cost recovery process in the rates for wastewater service.
- [4] Recommended rates reflect Project Team recommendations for the fourth fiscal year of the Planning Period that was not formally approved by the Board but was considered as implied rate level requirements to meet financial goals for the Planning Period.
- [5] Reflects change from \$6.01 volumetric rate that was in effect on July 1, 2012.

2. Subsequent to the development of the adopted rates, the Fiscal Year 2012 has now been completed and the financial results are now available for incorporation into the financial forecast. In evaluating the Fiscal Year 2012 results, the System's financial position improved from last year's projection for numerous reasons, detailed subsequently in this report. As a result of the improvement in the financial results, the Project Team conducted a detailed financial analysis of the adequacy of modifications to the adopted and recommended rates in meeting the System's financial goals and objectives. This analysis, presented as the *"Technical Memorandum – Five Year Financial Forecast and Sewer Service Charge FY 2013 to FY 2018"* (hereinafter, the "Technical Memorandum") dated December 1, 2012, developed an alternative rate scenario that provided customers with initial rate relief while still meeting the financial goals and objectives of the System. The rates developed under this alternative scenario compared to the previously adopted rates are as follows:

Volumetric Rate per Thousand Gallons for Different Scenarios for the Forecast Period

Scenario	Fiscal Year Ending June 30									
	2013		2014		2015		2016		2017	
	Rate	Increase	Rate	Increase	Rate	Increase	Rate	Increase	Rate	Increase
Previously										
Recommended	\$6.55	9.0%	\$7.07	7.9%	\$7.49	6.0%	\$7.79	4.0%	\$8.10	4.0%
Alternative Scenario	\$6.55	9.0%	\$6.94	6.0%	\$7.36	6.0%	\$7.65	4.0%	\$7.96	4.0%

Billing Charge for Different Scenarios for the Forecast Period

Scenario	Fiscal Year Ending June 30				
	2013	2014	2015	2016	2017
Previously					
Recommended	\$5.50	\$5.50	\$5.50	\$5.50	\$5.50
Alternative Scenario	\$5.50	\$5.50	\$5.50	\$5.50	\$5.50

3. As part of the financial planning process, WMP has evaluated changing the design of rates to more fully recover fixed costs of operations. This approach to rate design, currently utilized by the majority of regional wastewater utilities, includes a minimum charge as well as a usage charge (volumetric-based) in the determination of the quarterly bill. WMP initiated the change from a volumetric-based only in the Fiscal Year 2012 rates with the inclusion of a quarterly charge of \$5.00 per bill rendered to recover the fixed cost of account billing.

The current quarterly billing charge of \$5.50 recovers approximately 3.5 percent of the total revenue requirements of the System. WMP is currently evaluating increasing fixed cost recovery to be more consistent with the industry average of 15 to 25 percent of total revenue requirements. Increasing the fixed cost recovery: i) provides a more equitable recovery of the costs incurred by WMP to provide service to customers, and ii) stabilizes System revenues by decreasing the reliance of cost recovery on volumetric charges.

To support this evaluation, a rate design was conducted that maintained the quarterly usage charge at the current Fiscal Year 2013 volumetric rate of \$6.55 per thousand gallons and determined the required base charge to provide the same annual sewer service charge revenues as the rate design based on the Alternative Scenario rates previously discussed in this memo. A comparison of the recommended volumetric rate increase schedule and the recommended fixed cost recovery increase schedule is as follows:

	Fiscal Year Ending June 30,				
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Percent Rate Increase	na	6.0%	6.0%	4.0%	4.0%
Volumetric Rate Increase					
Usage Charge	\$ 6.55	\$ 6.94	\$ 7.36	\$ 7.65	\$ 7.96
Billing Charge	5.50	5.50	5.50	5.50	5.50
Fixed Cost Recovery Charge	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Total Fixed Charges	\$ 5.50	\$ 5.50	\$ 5.50	\$ 5.50	\$ 5.50
% Fixed Cost Revenue Recovery	3.52%	3.52%	3.52%	3.52%	3.52%
Fixed Cost Recovery Increase					
Usage Charge	\$ 6.55	\$ 6.55	\$ 6.55	\$ 6.55	\$ 6.55
Billing Charge	5.50	5.50	5.50	5.50	5.50
Fixed Cost Recovery Charge	<u>\$ -</u>	<u>\$ 7.29</u>	<u>\$ 14.86</u>	<u>\$ 19.84</u>	<u>\$ 24.95</u>
Total Fixed Charges	\$ 5.50	\$ 12.79	\$ 20.36	\$ 25.34	\$ 30.45
% Fixed Cost Revenue Recovery	3.52%	8.70%	13.51%	16.37%	19.09%

The rate structure change will have minimal impact on the average customers and will slightly impact the low volume customers, with the greatest impact to the approximately 3,600 customers using between 0 to 1,000 gallons per quarter. Due to the winter quarter billing average rate design, these customers' low winter quarter average has the greatest financial impact on the System if winter quarter average flows are not representative of the remaining three billing quarters.

4. It is recommended that the County adopt the following rates for wastewater service, incorporating the alternative rate scenario rates as developed in the Technical Memorandum:

Recommended Rates and Percent Change in Rates					
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Volumetric Rate – \$ per 1,000 Gallons [1]	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55
Change from Prior Year	\$0.54	\$0.00	\$0.00	\$0.00	\$0.00
Service Charge – \$ per Bill Rendered [2]	\$5.50	\$5.50	\$5.50	\$5.50	\$5.50
Change from Prior Year	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Fixed Cost Charge – \$ per Bill Rendered [2]	\$0.00	\$7.29	\$14.86	\$19.84	\$24.95
Change from Prior Year	\$0.00	\$7.29	\$7.57	\$4.98	\$5.11
Average Monthly Residential Wastewater Bill [3]	\$41.13	\$43.56	\$46.09	\$47.75	\$49.45
Change from Prior Year on Monthly Bill	\$1.40	\$2.43	\$2.52	\$1.66	\$1.70

[1] Amounts shown reflect change in the level of the rates charged for wastewater service when compared to the rates that were previously adopted by the Board; all rates assumed to be effective with service rendered beginning July 1st of each fiscal year.

[2] Amount reflects new charge implemented in Fiscal Year 2011 (in addition to volumetric rates) to pass-through the cost of billing and to initiate a fixed cost recovery process in the rates for wastewater service.

[3] Amounts shown are based on average residential wastewater bill of 18,000 gallons per quarter expressed on a monthly basis.

For non-residential accounts, it is recommended that the fixed cost recovery charge be adjusted to account for meter size by multiplying the fixed cost recovery charge by the American Water Works' meter equivalency factor. Those factors are summarized in the following table.

Meter Size	Meter Equivalent Factor
5/8" or 3/4"	1.0
1"	2.5
1-1/2"	5.0
2"	8.0
3"	15.0
4"	25.0
6"	50.0
8"	80.0
10"	115.0

5. The recommended wastewater rates anticipate the need to fund the issuance of additional bonds during the Forecast Period (estimated in the principal amount of approximately \$112,000,000 in Fiscal Year 2015) in order to: i) finance a portion of WWM's capital program; and ii) allow WWM to maintain appropriate levels of cash reserves.

6. It is recommended that the County maintain the current service availability fee (which is charged to new development to recover the cost of capacity allocated to such development and which provides additional funds to the System) for the Fiscal Year 2013, which will result in the following fees for the standard residential dwelling unit:

Recommended Service Availability Fees

	Existing Fee	Recommended Fee			
	2013 (\$/SFRE)	2014 (\$/SFRE) [1]	2015 (\$/SFRE) [1]	2016 (\$/SFRE) [1]	2017 (\$/SFRE) [1]
Single-Family Detached	\$7,750	\$7,750	\$7,750	\$7,750	\$7,750
Lodging House, Hotel, Inn, or Tourist Cabin	\$7,750	\$7,750	\$7,750	\$7,750	\$7,750
Townhouse	6,200	6,200	6,200	6,200	6,200
Apartment	6,200	6,200	6,200	6,200	6,200
Mobile Home	6,200	6,200	6,200	6,200	6,200
Any Other Residential Dwelling Unit	6,200	6,200	6,200	6,200	6,200
Hotel, Motel, or Dormitory Rental Unit	1,938	1,938	1,938	1,938	1,938
All Other Uses per Fixture Unit					
Commercial or Industrial	\$401	\$401	\$401	\$401	\$401

[1] Represents no change from previous year. The County will conduct a detailed review of the calculation of the availability fee each year; these fees will be adjusted based upon the results of this review in the FY 2015 through FY 2018 rate recommendations.

The recommended service availability fees result from a detailed analysis performed by WWM which included a review of the unit flow factors, identification of the capital costs associated with new customer capacity, and allocation of new customer administrated-related operating expenses and recovery of such costs from future customers.

7. Because of the inherent risks associated with utility operations and financial planning in the current dynamic environment, we recommended that WWM review its operations and financial position on a continuous basis and continue its formal annual review and reporting activities.

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SUMMARY OF FISCAL YEAR 2012 FINANCIAL RESULTS

As previously mentioned, the recommended rates were based on, among other things, the Fiscal Year 2013 Budget, the Fiscal Year 2012 actual results, and year-to-date Fiscal Year 2013 actual results. In evaluating the Fiscal Year 2012 results, the following observations are critical to consideration of recommended rates:

1. Actual Operating Revenues including miscellaneous and investment earnings allocated to existing customers were \$160,218,550, which were approximately \$2.3 million higher than the estimates assumed in the financial model for such fiscal year due to higher than anticipated billed wastewater flow.
2. Actual Service Availability Fee Revenues including investment earnings allocated to new customers were \$31,789,972, which were approximately \$13.0 million higher than the initial Fiscal Year 2012 estimates assumed in the financial model due to higher than anticipated customer growth. This amount was approximately equal to the amounts received during the relatively high growth period of Fiscal Years 2002 through 2006 (averaging approximately \$31.7 million annually). These revenues are projected to decrease from Fiscal Year 2012 levels to moderate growth levels of approximately \$15 million per year over the next two years.
3. Actual Fiscal Year 2012 Operating Expenses were \$85,454,838, which were approximately \$5.1 million less than the respective year estimates assumed in the 2012 Report. This reduction in expenses was due primarily to: i) continued successful cost saving measures implemented by WWM; ii) lower than projected power, fuel, and chemical costs due to the downturn in unit prices; and iii) lower Treatment by Contract ("TbC") operating costs (due to the same factors [e.g., unit price reductions] being experienced by WWM).
4. Actual Fiscal Year 2012 capital expenditures were \$87,236,411, which were approximately \$14.8 Million less than what was anticipated to be expended during such fiscal year in the 2012 Report due to differences between forecasted and actual construction cash flows on both TbC and County owned projects.

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Recognizing the above, the financial results experienced during the Fiscal Year 2011 were positive when compared to the projections contained in the 2011 Report as shown below:

	Fiscal Year 2012 Results Comparison		
	Financial Forecast [1]	Actual Results	Variance Positive/(Negative)
Operating Revenues [2]	\$ 157,910,812	\$ 160,218,550	\$ 2,307,738
Operating Expenses	90,586,880	85,454,838	(5,132,042)
Net Revenues	67,323,932	74,763,712	7,439,780
Total Debt Service Payments [3]	42,143,962	41,674,232	(469,730)
Net Available for Capital Funding	25,179,971	33,089,480	7,909,509
Capital Funding Allowance [4]	36,385,000	30,259,083	(6,125,917)
Net Available before Service Availability Fees [5]	(11,205,029)	2,830,397	14,035,426
Service Availability Fees [6]	30,038,750	28,959,575	(1,079,175)
Net Available for System Use [5]	<u>\$ 18,833,721</u>	<u>\$ 31,789,972</u>	<u>\$ 12,956,251</u>

[1] Represents forecast prepared and dated January 2012 and was based on Fiscal Year 2012 Budget and Fiscal Year 2011 and Fiscal Year 2012 then year-to-date operating results.

[2] Includes charges for service, sales of service (wholesale sales), and other operating revenues. Additionally, amounts shown include interest income on available fund balances.

[3] Includes debt payments on senior debt and subordinate obligations on an accrual basis.

[4] Amount shown based on a 3% capital asset replacement funding ratio based on County reported gross plant in service, less land, which is considered necessary for ongoing capital funding needs and is the funding target recognized in the current financial forecast.

[5] Negative amounts shown represent use/dedication of available reserves to meet the Fiscal Year 2012 financial needs of System.

[6] Reflects Service Availability Fees actually received by WMP. Amounts shown include interest income derived from the investment of fund balances from Service Availability Fee reserves based on information as provided by County. Does not include any receivables or contributed property donations which are available to fund expansion-related debt service payments and capital additions.

As can be seen above, the historical revenues derived from annual operations are sufficient to fully fund the identified revenue requirements, including the dedication of funds for ongoing capital reinvestment (with any deficiency in funding being financed either by available operating reserves or by issuance of additional debt in the future, or the application of Service Availability Fees to fund debt service payments, which allows operating funds to be used for other purposes). The forecast of revenues and Service Availability Fees was based on customer and flow growth projections which the Project Team still considers as being reasonable for planning purposes.

PRIMARY REASONS FOR RATE INCREASE

The three primary reasons for the increase in the rates for wastewater service are associated with: i) the funding requirements associated with identified capital improvement plan (CIP); ii) the impact of a reduced customer growth and new development upon the financial resources of WWM; and iii) the need to continue maintain the creditworthiness of the County (AAA rating) in order to attract capital, especially recognizing the current condition and overall credit requirements of the financial markets. The following is a summary of these three primary factors.

Funding of Capital Improvement Plan

During the initial capital planning process, WWM staff developed recommendations for the 5-year and 10-year CIP based on consideration of a number of factors including regulatory compliance requirements, system asset condition and criticality, and status of projects currently

under construction. To limit the effect of the CIP on the requested rate adjustments, WWM staff conducted a series of evaluations designed to prioritize capital projects and to align the CIP budget requests with those identified in last year's study.

The CIP for the ten-year Planning Period was estimated to be approximately \$896 million, based on: i) the information contained in the Noman Cole Pollution Control Plant (NCPCP) master plan; ii) the capital plans provided by the wholesale wastewater providers to the County (referred to as the "treatment by contract" or "TbC providers"); iii) County cost estimates for the collection system; and iv) the results of the WWM capital evaluation mentioned above. As shown on the table below, the CIP recognized in this report represents an increase in the amount of capital expenditures to be funded of \$114.1 million when compared to the capital plan included in the last financial forecast prepared on behalf of the Fiscal Year 2013 Budget as shown below. The difference is due to increases in the CIP over the entire Planning Period. This increase is predominantly due to capital project expenditures required to meet anticipated future regulatory requirements.

	Capital Improvement Program in \$ Millions		
	5-Year FY 2013 to 2017	4-Year FY 2018 to 2021	9-Year Total
Current (FY 2013) Study	\$494.6	\$401.4	\$896.0
Prior (FY 2012) Study [1]	425.4	356.5	781.9
Cost Increase / (Decrease) from Prior Study	<u>\$69.2</u>	<u>\$44.9</u>	<u>\$114.1</u>

[1] Based on information as contained in the 2012 Report.

In addition to the 67.0 million gallons a day (MGD) of wastewater treatment capacity at NCPCP, the County has also secured 91.0 MGD of wastewater treatment capacity on a contractual basis from four adjacent public utilities. Referred to as Treatment by Contract (TbC), this capacity currently represents approximately 58% of the total wastewater treatment capacity of the System. Based on information recently received by WWM, the public entities providing the contracted wastewater treatment service have increased their estimated CIP expenditures significantly to account for costs associated primarily with complying with the Chesapeake Bay Program effluent discharge standards.

In recent capacity planning efforts, WWM has reviewed its current capacity entitlements at neighboring TbC treatment facilities and compared those capacities to projected needs. Based on this evaluation, WWM has identified several options for adjustments to its current capacities that could be realized to meet changing capacity needs to major redevelopments in the system (such as the Tyson's Corner Redevelopment). These options include the potential purchase of additional wastewater treatment capacity at the Blue Plains Wastewater Treatment Plant owned by the District of Columbia Water and Sewer Authority (DC Water) and the potential sale of existing wastewater treatment capacity at the Alexandria Renew Enterprises' Advanced Wastewater Treatment facility. Because WWM is currently reviewing these alternatives and has not made a commitment to capacity purchase or sale, it is assumed that no changes to current capacities will be made. A summary of current and projected System capacity is presented as follows:

Wastewater Entity	WWM Capacity		
	Current Capacity (MGD)	Planned Additional/(Sold) Capacity (MGD)	Total Capacity (MGD)
Fairfax County (NCPCP)	67.0	0.0	67.0
Alexandria Renew Enterprises	32.4	0.0	32.4
Arlington County	3.0	0.0	3.0
UOSA	22.6	0.0	22.6
DC Water (Blue Plains)	31.0	0.0	31.0
Loudoun Water (Broad Run)	<u>1.0</u>	<u>0.0</u>	<u>1.0</u>
Total	<u>158.0</u>	<u>0.0</u>	<u>158.0</u>

The County's wastewater collection, pumping, and transmission system (collectively, the "Collection System") is in constant need of renewals, replacement and improvements as a result of the facilities reaching their useful service life. Historically, WWM has spent between \$6 million to \$10 million annually on the ongoing capital needs of the Collection System and based on the service life conditions of such plant, it is expected that similar levels of expenditures will continue to be required during the Forecast Period.

It should be noted that the CIP cost estimate does not include an estimated \$85.6 million in County allocated capital costs from the Upper Occoquan Sewer Authority (UOSA and a TbC provider), which finances the capital costs directly (included as a component of subordinated debt of the County). The County generally has no direct control over the capital plans of the TbC providers and is obligated by contract to finance its allocable cost for any capital improvements when requested. The estimated County capital costs for the six-year Forecast Period are \$635.9 Million, which includes \$575.0 Million in CIP costs and \$60.9 Million in UOSA capital costs.

Summary of Capital Costs for the Forecast Period (in \$000s)

Description	Fiscal Year Ending June 30,						Total
	2012	2013	2014	2015	2016	2017	
Pump Station & Collection	\$21,947	\$25,549	\$32,714	\$24,509	\$24,469	\$24,648	\$153,836
Noman Cole PCP	26,590	29,408	31,461	35,492	40,639	40,176	203,767
TbC Plant	<u>49,853</u>	<u>52,500</u>	<u>41,893</u>	<u>33,366</u>	<u>24,174</u>	<u>15,603</u>	<u>217,389</u>
Total CIP Cost	\$98,390	\$107,457	\$106,068	\$93,367	\$89,282	\$80,427	\$574,992
UOSA Capital Cost [1]	<u>12,162</u>	<u>7,252</u>	<u>7,252</u>	<u>11,408</u>	<u>11,408</u>	<u>11,408</u>	<u>60,890</u>
Total Capital Cost	\$110,553	\$114,708	\$113,320	\$104,776	\$100,690	\$ 91,835	\$635,881

[1] The UOSA capital cost estimate was developed from: i) conversations with WMP staff; and ii) capital project cost information and cost allocation factors contained in the "Preliminary Analysis- Upper Occoquan Sewage Authority, Plan of Finance" presented by Davenport & Company LLC to UOSA.

Customer and Sales Forecast

In addition to the capital plan, the negative impact of the severe downturn in the economy and its effects on the growth of the System is projected to continue to have a material effect on the financial forecast during the Planning Period (primarily in the first four years of such period). Specifically, it is projected that growth in new customers will continue to be materially less than

recent historical periods and that the growth will continue to be dampened during the Planning Period. The prior forecast presented in the 2012 Report assumed a reduction in growth, with the actual reductions in growth being approximately what was expected. The net effect of this reduction in customer growth is that both rate revenues derived from new customer additions and service availability fee receipts from new customers are less than the amount that would be realized under historic growth rates.

Maintenance of County's Current Credit Rating

The County has established an excellent credit rating for the System (AAA from Standard and Poor's Ratings Services, AAA from Fitch Ratings, and Aa2 from Moody's Investors Service Inc.) through a history of prudent financial management. This high rating results in a significantly lower interest rate when the County issues revenue bonds and provides an overall indication of the current and projected financial strength of the System.

CUSTOMER IMPACT

Residential Customer Sewer Service Charge Impact and Rate Comparison

In order to provide additional information to the County regarding the effects of the recommended change in monthly rates for service, an analysis to illustrate the impact for the typical residential customer was prepared. This customer was selected since it represents the majority of customers served by the System. The effect of the recommended rate adjustments for Fiscal Year 2013, recognizing an average quarterly use per residence of 18,000 gallons, will result in an approximate increase of \$10.22 per quarter (\$3.41/month) or 9.0% above current rates as shown below:

Single-Family Residential Wastewater Service – Change in Bills at 18,000 Quarterly Gallons	
	Wastewater Bill
<u>Existing Rates Effective July 1, 2012</u>	
Volumetric Charge	\$117.90
Service Charge	5.50
Total Bill Rates Effective July 1, 2012	\$123.40
 <u>Recommended Rates Effective July 1, 2013</u>	
Volumetric Charge	\$117.90
Service Charge	5.50
Fixed Cost Recovery Charge	7.29
Total Bill Rates Effective July 1, 2013	\$130.69
 <u>Difference:</u>	
Amount	\$7.29
Percent	5.9%

In addition to the estimated impact for the typical residential customer, a survey of the County's existing and recommended rates with other neighboring utilities was prepared. This comparison was based on wastewater service or user rates that would be charged to a typical residential

single-family customer using approximately 18,000 quarterly gallons of service. Based on the results of this survey, the existing and recommended rates charged by the County result in bills that are very comparable with the average of the bills charged for similar service by other surveyed utilities. It should be noted that several of the utilities surveyed are anticipating a rate change in the next twelve months, which would allow the County to maintain the competitive position of its wastewater rates for service.

**Single-Family Residential Wastewater Service
Using 18,000 Quarterly Water Gallons [1]**

	Wastewater Bill
<u>Fairfax County:</u>	
Existing Rates Effective July 1, 2012	\$123.40
Recommended Rates Effective July 1, 2013	130.69
 <u>Other Neighboring Utilities:</u>	
Alexandria Renew Enterprises	\$168.91
Arlington County	155.34
DC Water	143.04
Loudoun Water	100.35
Prince William County Service Authority	140.40
Washington Suburban Sanitary Commission	118.00
 Other Neighboring Utilities' Average	 \$145.14

Note: Based on information provided by the County, it has been assumed that the average residential single-family water consumption during the winter quarter for County customers is approximately 18,000 gallons.

[1] Amounts derived from utility survey exclusive of taxes or Franchise Fees, if any. Reflects rates in effect January 2013.

Residential Customer Service Availability Fee Impact and Fee Comparison

As discussed previously, WWM has conducted an in-depth evaluation of the service availability fees. Based upon this evaluation, it is recommended that the County does not adjust the service availability fees. The WWM conducts a detailed review of the service available fees annually. In order to provide consistent information to the County regarding the effects of the recommended service availability fees, the following table illustrates the impact to the residential customer.

**Single-Family Residential Service –
Change in Service Availability Fees**

	Fee
<u>Fairfax County:</u>	
Existing Fee Effective July 1, 2012	\$7,750
Recommended Fee Effective July 1, 2013	<u>7,750</u>
 <u>Difference:</u>	
Amount	\$0
Percent	<u>0.0%</u>

In addition to the above, a survey of the County's existing and recommended service availability fees with neighboring utilities levels was prepared. This comparison was based on wastewater service availability fees that would be charged to a typical residential single family residence (considered as 1 equivalent residential connection or "ERC") as shown below. As can be seen in the comparison, the existing and recommended fees charged by the County produce charges which are higher when compared with the fees charged by other neighboring utilities. It should be noted that several of the utilities surveyed are anticipating a fee change in the next twelve months, which should improve the competitive position of the County.

Wastewater Service Availability Fee – Rate per ERC	
	<u>Rate per ERC</u>
<u>Fairfax County:</u>	
Existing Fee Effective July 1, 2012	\$7,750
Recommended Fee Effective July 1, 2013	7,750
<u>Other Neighboring Utilities [1]</u>	
City of Alexandria	\$7,937
Arlington County	2,860
DC Water	N/A
Loudoun Water	7,616
Prince William County	10,800
Washington Suburban Sanitary Commission (WSSC)	5,090
Other Surveyed Average Utilities [2]	\$6,861

[1] It should be noted that no evaluation of the methodology for determining these availability fees was conducted. The availability fees reflect differences in the methodology utilized in their development as well as differences in such factors as the level of service, regulatory requirements, and receipt of grants.

[2] Average of utilities charging a fee.

CRITICAL ASSUMPTIONS

This Report utilizes assumptions that are considered critical to the results and recommendations in this Report. Because the results and recommendations may be materially affected to the extent that the assumptions change, WWM should annually evaluate these assumptions on a continuous basis. These assumptions, documented throughout this Report include, but are not limited to, the following:

1. It is assumed that the growth in accounts and equivalent residential connections will average approximately 0.5% annually through Fiscal Year 2017, which is substantially less than recent historical periods; such reduced rate of growth will affect the amount of sewer service charge revenues and service availability fees received for the benefit of the System.
2. It was generally assumed that trends in billed sewer flows will continue to reflect historic trends, with the level of billed wastewater flows per dwelling unit continuing to decrease. Therefore, it is assumed that the rate revenue contribution margin per customer served (absent any rate adjustment) is projected to decrease consistent with the historical trends.

3. Additional operations and maintenance (O&M) costs for compliance with the discharge requirements of the Chesapeake Bay Program at the NCPCP and the TbC wastewater treatment plants were recognized in the forecast based on estimates provided by WWM staff; such costs will not be known until such facilities are placed into service and such costs may be greater than anticipated, which could materially affect the financial plan presented in this Report.
4. No adjustments have been made to the NCPCP and TbC CIP in regard to the timing of projects or magnitude of project costs.
5. In order to develop a programmed capital funding plan from rates, the study recognizes a minimum deposit for renewals and replacements equal to 3.0% of the original gross plant in service; this funding plan (referred to as pay-as-you-go) needs to be enhanced in the future due to the magnitude of the capital investment in wastewater facilities that are owned by the County.
6. In order to fund WWM's capital plan, it is anticipated that the County will issue additional utility system revenue bonds on parity with the Outstanding Senior Lien Bonds in February 2015 and in February 2018 for a principal amount of \$112 million and \$113 million respectively, each under the terms and assumptions subsequently documented in this Report. It should be noted that the County and the TbC providers are currently implementing a significant capital program, mostly in order to comply with regulatory requirements. Should the construction cash draw schedule be delayed from that anticipated, the County may be able to postpone the issuance of the additional utility system revenue bonds.
7. Only grant funding for capital project financing that has been received to date by the County was recognized; the receipt of any additional grant funds in the future would provide a financial and capital funding benefit to the System.

To the extent that the UOSA CIP and resulting debt service payment requirements change as UOSA continues to refine its CIP and corresponding financing plan, WWM's payment requirements could change, which could be material and potentially affect WWM's financial position.

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DEBT SERVICE COVERAGE AND COVENANT COMPLIANCE

An important component in the development of the revenue sufficiency and rate analysis is the determination of whether the rate covenants as outlined in the General Bond Resolution authorizing the issuance of WWM's Outstanding Senior Lien and Additional Parity Bonds will be met. Generally, these covenants are in the form of certain debt service coverage ratios, which are applicable to the level of rates both currently and projected to be in place. The County's General Bond Resolution contains a rate covenant (reference is made to Article V, Section 501 (a)) which provides that the County will at all times fix, charge and collect reasonable rates and charges so that:

"The Net Revenues, excluding for purposes of paragraph (a)(i)(A) Excluded Revenues, will be sufficient to provide in each Bond Year and amount at least equal to

(A) one hundred twenty-five percent (125%) of the sum of

(I) the Principal and Interest Requirements in such Bond Year on account of all the Bonds then outstanding under this Resolution in such Bond Year, and

(II) the Debt Service Requirement relating to Parity Indebtedness in such Bond Year; and

(B) one hundred percent (100%) of the sum of

(I) the debt service requirements of Subordinate Obligations in such applicable Bond Year,

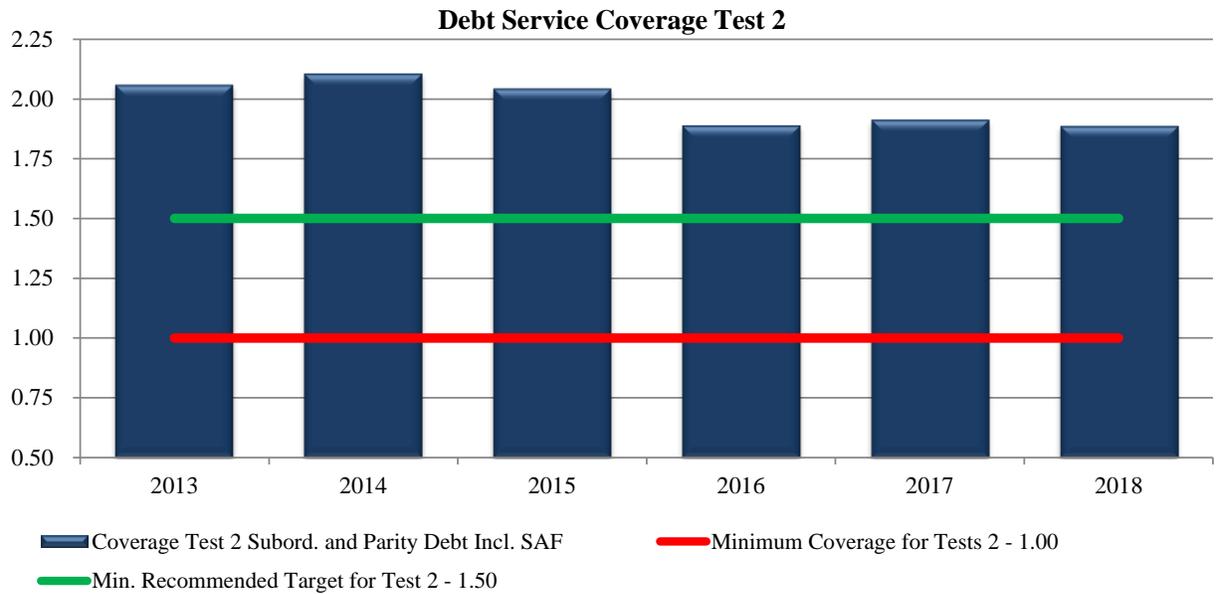
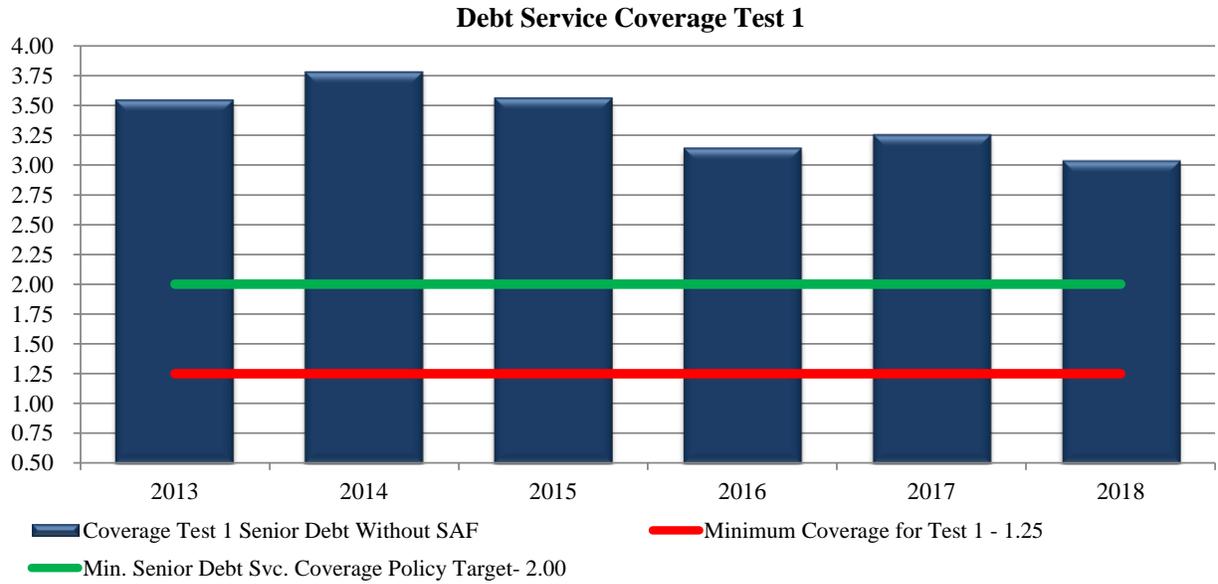
(II) the Debt Service Requirements relating to Parity Indebtedness in such Bond Year; and

(III) the sum of Principal and Interest Requirements in such Bond Year on account of all the Bonds then outstanding under this Resolution in such Bond Year."

In addition to the terms of the General Bond Resolution, the County must also set rates to meet the terms and conditions of the Virginia Resources Authority (VRA) Financing Agreement between the County and the Virginia Water Facilities Revolving Fund acting by and through the VRA. The VRA Loans are considered as a subordinate obligation to the Outstanding Senior Lien Bonds. Under the terms of the Financing Agreement, the County shall fix, charge, and collect reasonable rates and charges so that:

"...each Fiscal Year the Net Revenues Available for Parity Debt Service will equal at least the amount required during the Fiscal Year to pay the principal of and interest on the Local Bond, the Additional Payments, if any, and all other Parity Indebtedness and Subordinate Indebtedness of the Borrower payable from Net Revenues Available for Parity Debt Service."

As shown below and summarized on Table 5 at the end of this report, WWM's anticipated revenue, assuming that the County adopts the recommended rate adjustments as identified in this report for the Fiscal Years 2013 through 2018, should be adequate for the Forecast Period to meet the rate covenant requirements defined in the County's General Bond Resolution.



As can be seen above and assuming the implementation of the proposed adjustments as identified in this report, it is anticipated that: i) WWM's Net Revenues excluding the Excluded Revenues will meet the 125% debt service coverage requirement on the Outstanding Bonds and the Debt Service Requirements relating to Parity Indebtedness, as required by the General Bond Resolution; ii) WWM's Net Revenues will meet the 100% debt service coverage requirement of the sum of the debt service requirements of the Subordinate Obligations, the Debt Service Requirements relating to Parity Indebtedness and the sum of Principal and Interest Requirements, also as required by the General Bond Resolution; and iii) the Net Revenues after the payment of the Outstanding Senior Lien Bonds and Additional Parity Bonds will meet the loan coverage requirement as required by the VRA Financing Agreement executed with the Virginia Water Facilities Fund during the Forecast Period.

In addition to these requirements, the County Board of Supervisors approved a resolution that adopted financial policies for the financial management of the System. These policies are not legally binding but "...state the current and continuing good faith intentions of this Board of Supervisors as to its intended management of the System and its finances." These policies, considered by WWM in its financial planning activities, state that the Net Revenues of the System, less any Excluded Revenues will be sufficient to provide the following:

Beginning with the Fiscal Year commencing July 1, 2010:

"...an amount at least equal to the sum of two hundred percent (200%) of the sum of (A) the Principal and Interest Requirements in such Bond Year on account of all the Bonds then outstanding under the General Resolution in such Bond Year and (B) the Debt Service Requirements relating to Parity Indebtedness in such Bond Year (the "Senior Debt Service Coverage Policy")."

And beginning no later than the Fiscal Year commencing July 1, 2012:

"...an amount at least equal to (A) the amounts required to meet the Senior Debt Service Coverage Policy and (B) one hundred twenty-five percent (125%) of the sum of (I) the debt service requirements of Subordinate Obligations in such applicable Bond Year, (II) the Debt Service Requirements relating to Parity Indebtedness in such Bond Year and (III) the Principal and Interest Requirements in such Bond Year on account of all the Bonds then outstanding under the General Resolution in such Bond Year (the "Collective Debt Service Coverage Policy")."

FINANCIAL POSITION AND PERFORMANCE MEASURES

Included as part of the development of the Ten-Year Financial Forecast and the review of the overall sufficiency of WWM revenues, is an evaluation of WWM's financial position. This evaluation includes: i) the development of ratios and the review of financial performance indicators to evaluate "where WWM is estimated to be financially" during the Forecast Period; and ii) a presentation of the projected financial statements (Forecasted Statement of Net Assets and Forecasted Statement of Liabilities and Equity) to illustrate the projected financial position of the utility based on the assumptions documented in this Report. In the development of the net

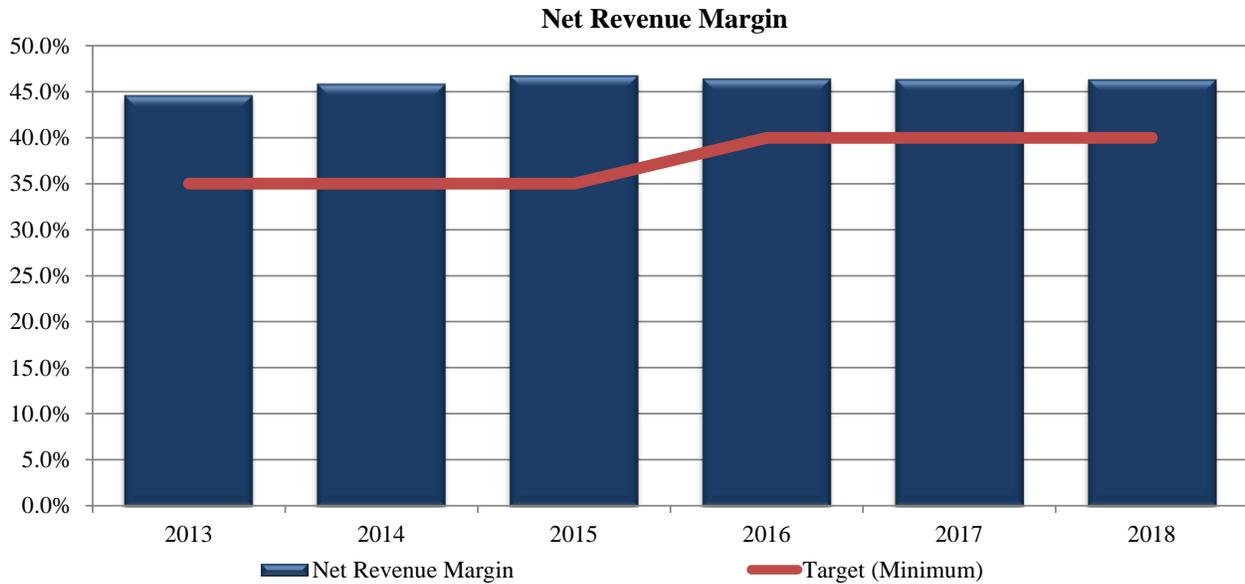
revenue requirements to be funded from rates, consideration as to the financial performance was recognized. The primary purpose of this additional analysis was to develop a financial plan to maintain a strong credit rating, especially when one recognizes the current financial constraints being placed upon WWM (e.g., low growth and development, need to meet increased regulations due to Chesapeake Bay Program, etc.).

The analysis includes a series of charts and figures prepared to provide the WWM with a visual representation of the financial and statistical trends in the selected financial ratios or benchmarks anticipated for WWM over the Forecast Period. A complete copy of the Management Dashboard prepared as a component of the financial modeling process is included in Appendix A at the end of this Report. The following is a brief description of financial ratios and financial results evaluated for WWM's consideration.

Projected Net Revenue Ratio

The Net Revenue Ratio is a measure of a utility system's ability to meet its operating expenses and indicates the net contribution margin estimated to be earned by WWM. The contribution margin represents the amount of Net Revenues from WWM operations that are available to meet WWM's other expenditure requirements after the payment of the operating expenses (e.g., debt service, deposits to a capital fund, etc.). Since service availability fees are restricted as to use for new customers (expansion-related expenditures) and are a one-time revenue (not recurring like sales of service revenue), the Project Team has not recognized the service availability fees in the evaluation of the Net Revenue Margin. A relatively low Net Revenue Ratio (for example, 25 percent) indicates that a large portion of operating revenue is used to pay operating expenses. A high Net Revenue Ratio (for example, 45 percent) indicates a significant portion of operating revenues is available for WWM expenditures other than the payment of operating expenses. As can be seen below and assuming the implementation of the recommended rate adjustments, the Net Revenue Ratio is projected to increase during the Forecast Period. This increase in the Net Revenue Ratio is recommended by the Project Team. This indicates that WWM's contribution margins will increase over time which is consistent with the need fund increased debt service payments to finance the capital program as well as the establishment of a dedicated deposit for ongoing (existing customer) pay-as-you-go (PAYGO) capital financing.

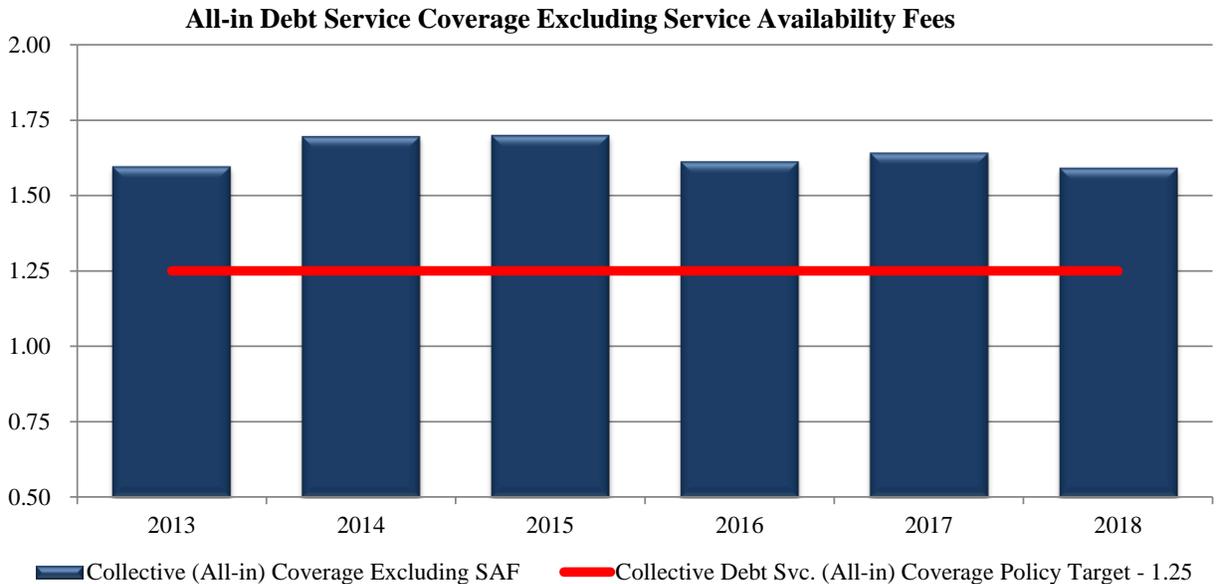
WWM should aim to maintain the Net Revenue Ratio at a minimum of 35% in the early portion of the Forecast Period to promote WWM's financial health for the next five Fiscal Year period, which also approximates Moody's Investors Services, Inc. median for municipal water and wastewater utilities. The Project Team recommends that a minimum Net Revenue Margin of 45% be targeted by the end of the Planning Period. As can be seen in the figure below, it is projected WWM will generally maintain a favorable Net Revenue Ratio throughout the majority of the Forecast Period, with the ratio increasing over time. This indicates that rates on a stand-alone basis are producing sufficient revenue to fund other utility expenditures and that WWM is not reliant on the use of service availability fees to fund annual expenditures. WWM will need to monitor its operating expenses closely after the CIP program is completed to maintain a long-term favorable Net Revenue Margin.



All-In Debt Service Coverage

In addition to the debt service coverage ratio by individual category (priority) of bonds as discussed earlier in this report, an evaluation of the debt service coverage on a combined or "All-in" basis was prepared. This calculation presents the debt service coverage for the aggregate of all WWM debt and loans paid from WWM revenues, which more accurately reflects the ability of the Net Revenues of WWM to fund the annual debt service requirements. The ratio includes a presentation using only WWM's Net Revenues since service availability fees (although considered as a pledged revenue) are one-time fees and not considered as a recurring revenue for debt repayment purposes. Additionally, the rating agencies rely on this ratio in the review of utility credits since it links to the total ability to pay debt from ongoing revenues of the utility over the life of the repayment term of such debt and presents the overall leveraging capability of such utility. The Project Team would recommend that the County consider the evaluation of the debt on a Net Revenue-only basis to promote the overall financial health and ability to pay the debt in the future. The All-In Debt Service Coverage ratio for the Forecast Period is presented below:

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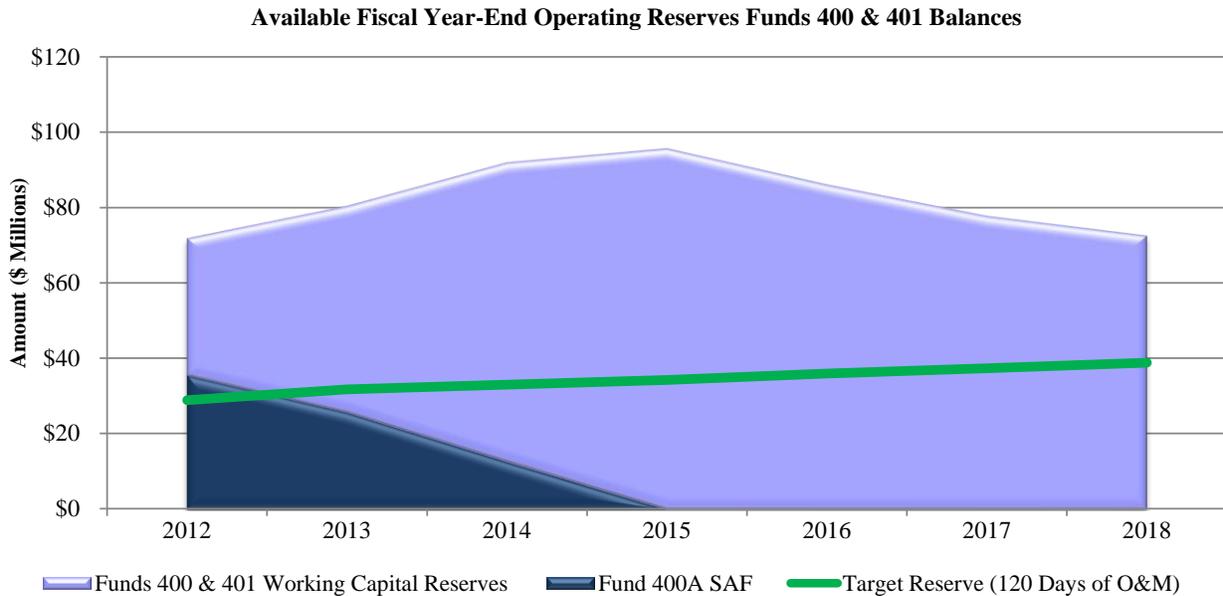
The median debt service coverage ratio is 2.00 as reported by Moody's Investor Service, Inc. (for Outstanding Bonds) and the debt service coverage ratio target was set at 1.25. Although slightly higher than the median average, it is worth noting that these medians serve as broad indicators and any significant deviation is not necessarily an indicator of credit quality. The debt service coverage ratios are considered by the Project Team to be somewhat low in the beginning of the Forecast Period due to the low amount of service availability fees being received by WWM. As can be seen on the figure above, we are recommending an approach to limit the necessity of using service availability fees to meet the debt service requirements during the Forecast Period. Based on this change in financial policy, the debt service coverage ratios become more favorable during the Forecast Period, especially with a utility that has a high degree of additional investment due to enhanced treatment standards being imposed on the System.

Available Working Capital and Cash Balances

Another important component of the evaluation of WWM's operations is the resulting ending cash balance or cash position of the utility. The estimated cash flow (deposits and withdrawals) are shown in detail on Table 8 at the end of this report and a summary of the estimated ending cash balances allocated to existing and new customers for the Forecast Period is shown below. In the development of the cash balances, such amounts do not include: i) debt service reserve funds established as part of the issuance of bonds; and ii) funds on deposit in the Construction Fund which is funded by bond proceeds; both of which are restricted to a particular purpose in accordance with the issuance of bonds. The cash balances allocable to the existing customers are driven primarily from sales of service (rate) charges and the cash balances allocable to new customers is primarily a result of the receipt of service availability fees.

As can be seen below, the ending cash balance for the existing customer funds are relatively stable and are projected to be higher than the target reserve. With respect to the new customer funds, it is anticipated that the funds will be fully utilized to meet the annual new customer debt service payments. With respect to the recommended rate increases, it is evident that even with

the increases, the projected existing customer cash balances are not substantively increasing; this is due to the need to fund the capital program which is primarily allocated to existing customers during the Planning Period. It should be noted that to the extent that System growth is greater than assumed, if there is a delay in the need to fund the CIP in what is reflected in the financial forecast presented in this report, or if the County were to receive grant funds for capital financing, then it is expected that the cash balances as presented in the figure below would improve.

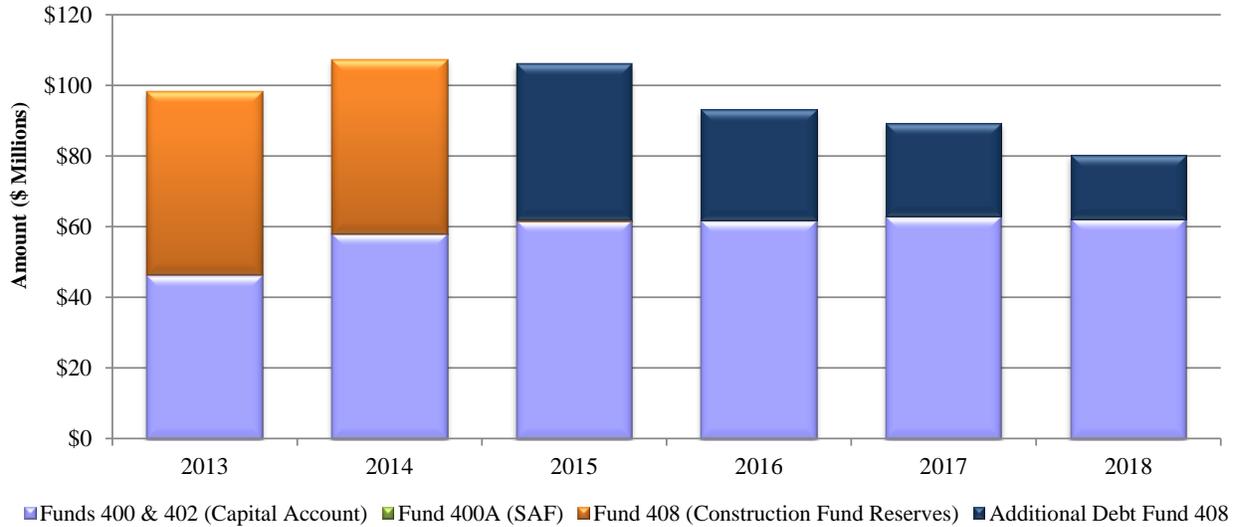


Capital Improvement Program Allocation and Funding

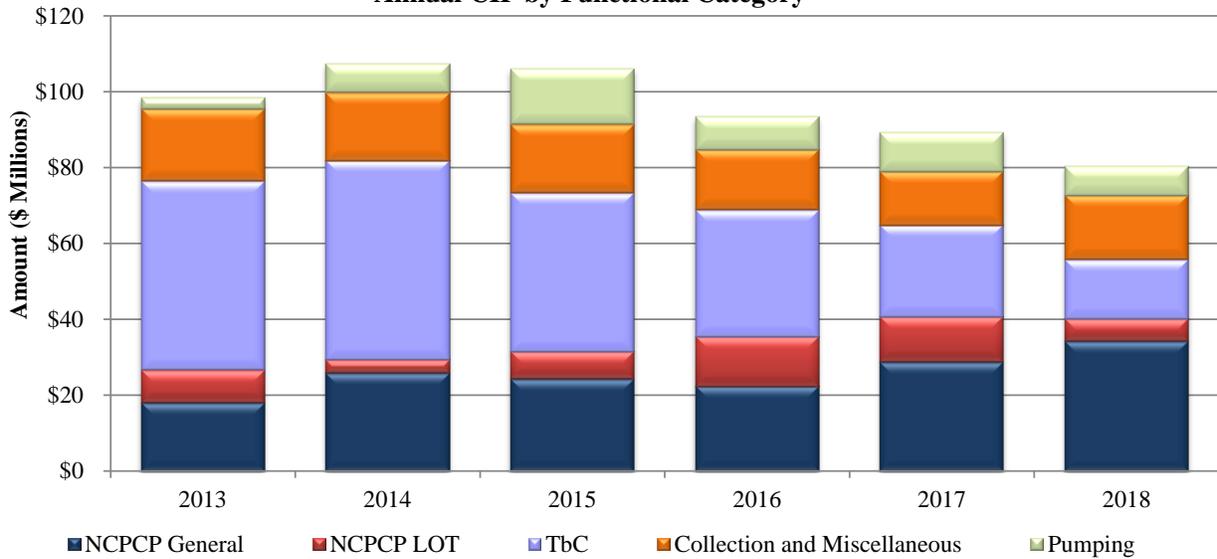
As previously mentioned, the funding of the capital program is a major driver with respect to the level of rates being recommended and on the resulting financial position (primarily as it relates to the ending cash balances). The following figure summarizes not only the total amount of the annual capital needs of the System allocated to existing and new customer service requirements during the Forecast Period but also the anticipated projected funding sources of the County's CIP during such period. A summary of the functional capital requirements and the breakdown of the funding of the Capital Program, which is based on information provided by the County and its consulting engineers, was derived utilizing 2011 dollars (i.e., does not reflect an allowance for the impact of inflation in the future Fiscal Years).

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Capital Improvements Funding



Annual CIP by Functional Category

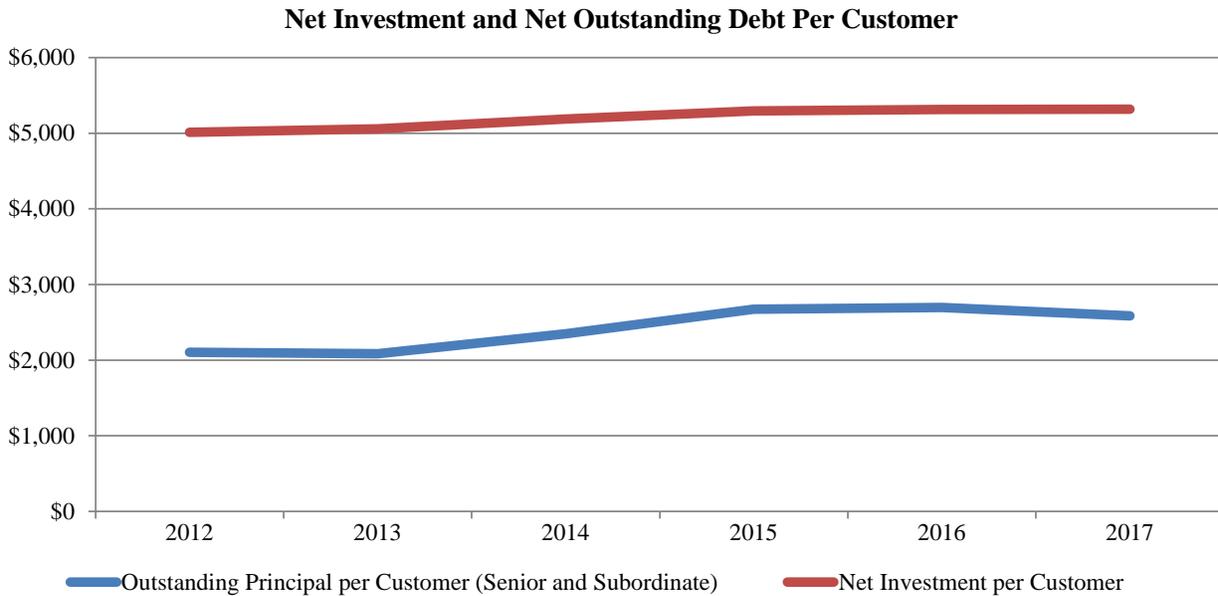


As can be seen above, the majority of the capital expenditures are allocable to improvements at wastewater treatment facilities (primarily due to increased levels of treatment without increased capacity) and therefore should be funded by wastewater rates for service.

Net Investment and Principal Amount of Outstanding Indebtedness per Customer

The net investment and principal amount of debt outstanding per customer measures the amount of utility plant investment that a utility has in service and the financial risk a utility has undertaken relative to the customers served. The higher the net customer debt burden, the greater the financial risk (all fixed costs) and generally the higher the rates for service with a greater reliance on service availability fees or other external sources of funds to meet the

expenditure needs. It is also an indication of the amount of potential "leveraging" capability a utility may have relative to funding future capital needs. The figure shown below illustrates for the System during the most recent historical Fiscal Year and for the Forecast Period, the amount of outstanding principal debt (both senior- and subordinate-related debt) in relation to the amount of projected System customers served. Overall, the debt per customer appears reasonable recognizing the amount of plant investment that has been funded by the County on behalf of WWM.

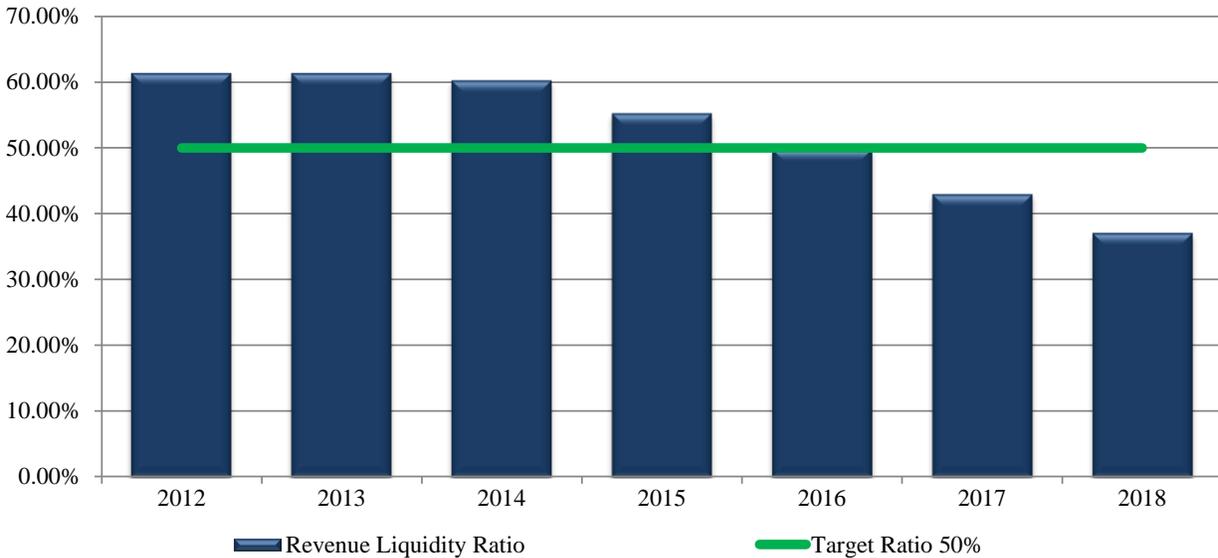


Projected Revenue Liquidity Ratio

This figure recognizes the amount of available unrestricted fund balances in relation to WWM's total revenues during the Forecast Period. The purpose of this ratio is to determine if a utility is maintaining a level of reserves commensurate with WWM's corresponding revenue. Although it is projected that the amount of unrestricted fund balances will decrease during the Forecast Period, WWM's liquidity ratio averages 45% during the Forecast Period but is expected to be at low levels by the end of the Forecast Period. The Project Team is of the opinion that the resultant ratios at the end of the Forecast Period are well below the ratio target assumed for the purposes of this report and is considered as an issue for future County consideration. As was the case with the Net Revenue Margin, the County will need to monitor its cash position after completion of the capital program to maintain a long-term favorable financial position.

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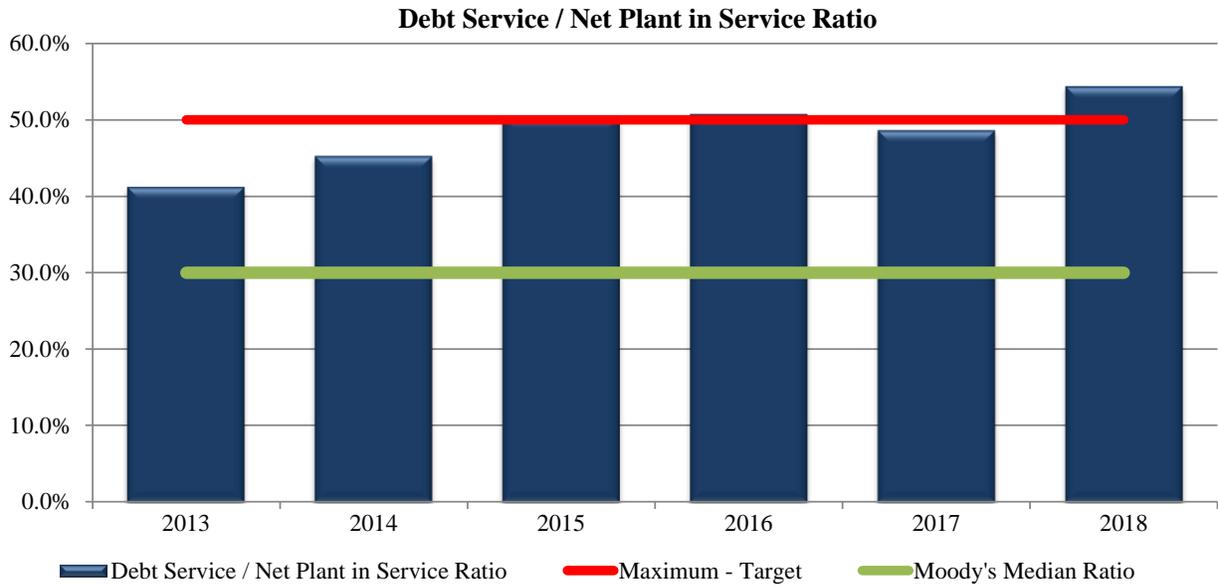
Unrestricted Fund Balances to Total System Revenues Ratio



Debt Outstanding to Net Plant Investment (Debt) Ratio

This figure illustrates the amount of debt issued to fund the net plant investment in service to meet the wastewater demands of the System service area. This ratio presents the net equity of the utility (in terms of plant investment) and provides an indication of the reliance on debt to fund existing assets as well as the flexibility in terms of funding future capital assets and overall rate stability. Generally, the higher the ratio, the greater the need to have a larger portion of the rate revenues being dedicated to principal retirement. The median Debt Ratio is approximately 30% as reported by Moody's Investor Service, Inc. for wastewater utilities (note that this is an average and the Project Team believes that the Debt Ratio for "high growth" systems or systems with increased treatment standards [higher technology] would have a higher debt ratio). With respect to the County, we have identified a maximum target for this ratio since it is expected that additional capital projects anticipated to be funded from additional bond proceeds will be required during and beyond the Forecast Period. As can be seen below, the Debt Ratio is projected to increase during the Forecast Period and be higher than the Moody's median ratio. Overall, the ratio tends to be below the maximum target (although remaining close to the target) which the Project Team considers to be generally favorable with respect to the County.

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Projected Financial Statements

As part of the Annual Disclosure Report requirements, the County annually publishes forecasted annual financial statements (the "Projected Forecasted Statements"), which include the Forecasted Statement of Net Assets, and the Forecasted Statement of Liabilities and Equity. Included in Tables 8A and 8B at the end of this report are the Projected Forecasted Statements for the Planning Period which are based on the assumptions included in this report for the County's consideration.

The Project Team developed the Forecasted Statements for disclosure purposes only and they should not be considered as audited Financial Statements and the Project Team offers no opinion thereto.

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FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM
WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

LIST OF TABLES

Table No.	Description
1	Projection of Operating Expenses
2	Historical and Projected Sales of Service and Other Revenue
3	Development of Wastewater System Revenue Requirements and Revenue Sufficiency
4	Projected Operating Results and Debt Service Coverage Analysis
5	Summary of Debt Service Payments - Outstanding and Additional Debt
6	Projected Fund Balances and Interest Income Determination
7	Forecasted Statements of Flows of Financial Resources and Changes in Fund Balance (in \$000s)
8	Forecasted Statement of Net Assets (in \$000s)
9	Forecasted Statement of Liabilities and Equity (in \$000s)
10	Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in \$000s)
11	Comparison of Typical Quarterly Residential Bills for Wastewater Service
12	Development of Wastewater System Availability Fee

APPENDIX A

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS MODEL OUTPUT – MANAGEMENT DASHBOARD

Figure No.	Description
Panel 1	Control Panel Contains the following for the Planning Period: <ul style="list-style-type: none">▪ Adopted and Proposed Wastewater Rates▪ Available Fiscal Year-End Fund Balances (Existing and New Customers) Graph▪ Debt Service Coverage Ratio Graph▪ Operating Margin Graph▪ Additional Parity Bonds Issuance Assumptions
Panel 2	Additional Indicators (1 of 3) Contains the following Graphs for the Planning Period: <ul style="list-style-type: none">▪ Total Outstanding Debt Graph▪ Summarized Revenue Requirements – Existing Customers Graph▪ Debt Service Coverage Ratio (All Senior And subordinate Debt) – Existing Customers Graph▪ Existing and County/UOSA Proposed Debt Service Payments Graph▪ Debt Service / Net Plant in Service Ratio Graph▪ Net Investment and Net Outstanding Debt per Customer Graph
Panel 3	Additional Indicators (2 of 3) Contains the following Graphs for the Planning Period: <ul style="list-style-type: none">▪ O&M Components Graph▪ Historical and Projected Capitalized Construction Expenses (CIP) Graph▪ Annual CIP by Functional Category Graph▪ End of Year Existing Customer Available CIP Funds Graph▪ End of Year New Customer Available CIP Funds Graph▪ End of Year Funds 400 and 401 Balances – New and Existing Customers Graph
Panel 4	Additional Indicators (3 of 3) Contains the following Graphs for the Planning Period: <ul style="list-style-type: none">▪ Revenue Scenarios Graph▪ Proposed Rate – Rate per (1,000 Gallons) Graph▪ Comparison of Yearly Service Charges for Single-Family Residential Customers Using 19,000 Quarterly Water Gallons (Dec. 2008) Graph▪ Historical and Projected Billed Accounts Growth Graph▪ Historical and Projected Billable Flow Graph▪ Historical and Projected ISS Flows in Total Treatment Area Average Annual Flows Graph