FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM

Quality of Water = Quality of Life

Wastewater Revenue Sufficiency and Rate Analysis

Forecast Period Fiscal Year 2014 Through Fiscal Year 2019

January 31, 2014

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

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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: **2014 Wastewater Revenue Sufficiency and Rate Analysis**

Dear Mr. Bartlett:

Public Resources Management Group, Inc. (PRMG) has 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 2014 Budget and encompassed the subsequent five (5) fiscal year period ending June 30, 2019 (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, 2023 (referred to as the "Planning Period") to support management's ongoing 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;
- Wastewater rates should comply with requirements associated with adopted County financial policies attributable to the wastewater utility system; and

- Proposed wastewater rates should promote the Wastewater Management Program's (the "WMP") 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 PRMG 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.

Robert J. Ori
President

Thierry Boveri, CGFM
Supervising Analyst

Michael P. Francis
Senior Analyst

Attachments

FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

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FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

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FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

EXECUTIVE SUMMARY

General

The mission of the Wastewater Management Program (WMP) is to collect, treat and monitor wastewater in compliance with all regulatory requirements, using state-of-the-art technology in the most effective manner. Financial management and planning is integral to the mission of the utility recognizing that revenues and rates should be sustainable to meet the needs of the wastewater system. As part of the management and planning cycle, WMP annually prepares a six (6) year projection of utility financial operations, cash balances, and financial position in order to assess, among other things, the adequacy of rates and revenues to meet: i) future or planned funding requirements for operations and capital investment; ii) compliance with financial policies and required debt covenants; and iii) financial targets and maintain the overall creditworthiness of the utility. The basis for the financial forecast relied upon a review of the recent historical revenues, expenses and customer billing / sales records to identify trends, the adopted budget and planned capital improvements, as well as information provided by others (e.g., treatment by contract providers). The financial forecast is developed with a conservative outlook of the utility's financial performance and considers, among other things, external conditions affecting future costs such as projections of near-term and long-term inflation as reported by the Congressional Budget Office and industry trends in actual construction and capital costs as reported by Engineering News Record. WMP staff also considers and evaluates the financial effects of new regulation, such as the Clean Water Act and the Chesapeake Bay Program.

Fiscal Year 2013 Results Summary

WMP continuously tracks and reviews prior financial forecasts relative to the actual results and considers such actual results in the financial and rate planning process. For Fiscal Year 2013, WMP observed better than forecasted results primarily due to: i) lower operating expenses of approximately $8.7 million; and ii) marginally greater revenues and availability charge receipts totaling approximately $1.4 million. The lower than forecasted operating expenses were primarily due to: i) the continued success of cost saving measures implemented by WMP; ii) lower than projected power, fuel, and chemical costs due to the continued downturn in unit prices; and iii) lower Treatment by Contract (TBC) operating costs from what was initially budgeted as provided by the TBC partners (due to the same factors [e.g., unit price reductions]).

In aggregate for the Fiscal Year 2013, the utility outperformed the net revenue forecast which resulted in increased funds available to finance the ongoing capital needs by approximately $10.3 million which equates to approximately 5% of gross revenues and income for such period. The current financial forecast takes into account the additional funds generated for the Fiscal Year 2013 actual operating results. For more detail concerning the actual operating results please reference the *Fiscal Year 2013 Results* in subsequent sections of this report (reference page 4).

Principal Findings and Recommendations

As previously mentioned, the development of the financial forecast relied upon certain information such as reported financial results, customer billing statistics, adopted budget, projected capital funding requirements, as well as certain assumptions concerning the forecast as discussed in greater detail throughout this report, which should be read in its entirety. The forecast also relies upon information and forecasts of operations and capital funding requirements as provided by the County's contractual wastewater treatment providers, which primarily include: Alexandria Renew Enterprises, Arlington County, District of Columbia Water and Sewer Authority (DCWASA), Loudoun Water and the Upper Occoquan Service Authority (UOSA). Based upon this information and assumptions disclosed throughout this report the following findings and recommendations are offered for consideration:

<u>Revenue Forecast:</u>

- The utility primarily generates revenues from: i) quarterly bills for wastewaters service; and ii) availability charges related to new customer growth. For the Fiscal Year 2013 the utility generated approximately $173 million in user charge revenue (including approximately $10 million in bulk wastewater sales of service) and receiving approximately $20 million in Availability Charges. These revenues account for 99% of gross revenues, with the remaining revenues derived from miscellaneous fees, charges and investment income.

- With respect to revenue derived from quarterly wastewater service charges, billed wastewater flows have declined by approximately 0.5% annually since the Fiscal Year 2009. This trend in billed flow is consistent with trends being experienced in other utilities located in northern Virginia as well as across the nation. This decline has resulted in a loss of approximately $3.2 million in annual wastewater sales revenues. However, for the same period the County recognized the addition of approximately 12,000 customer accounts, which generally relates to the amount of Availability Charge collections and new customers paying quarterly service charges. The financial forecast generally assumes a continuation in this trend.

<u>Expenditure Forecast:</u>

- The expenditures of the utility funded from the utility revenues (the "Gross Revenue Requirements") can be categorized as: i) operating expenses accounting for 45% of the Gross Revenue Requirements; ii) annual debt service payments accounting for 24% of the Gross Revenue Requirements; and iii) required transfers for cash reserves and direct capital re-investment (for utility plant renewals, replacements, upgrades and betterments) accounting for approximately 31% of the Gross Revenue Requirements.

- With respect to operating expenses, the utility has observed average annual growth in such expenses of approximately 4% per year since the Fiscal Year 2009. The projection of operating expenses assumes a continuation in this rate of operating expense growth primarily due to: i) forecast of TBC operating costs based on information provided by the providers which account for approximately 45% of total operating expenses; ii) assumed average annual increases in personnel expenses of 4% to account for cost-of-living adjustments and inflation of employee benefits (e.g., health insurance) representing approximately 30% of total operating expenses; and iii) escalation of remaining expenses employing varying factors for electricity, chemicals, general inflation, etc. resulting in an average annual increase of 3.9% and representing 25% of the total operating expenses.

- With respect to existing indebtedness, the utility as of June 30, 2013 had approximately $643 million in debt outstanding, which includes approximately $283 million in subordinated debt issued by UOSA on behalf of the County. The existing annual debt service payments for the Fiscal Year 2013 were approximately $48 million. The outstanding debt was issued to finance capital improvements to the utility or for the acquisition of wastewater treatment capacity rights from the County's TBC providers.

- WMP has identified approximately $724 million in both County-owned wastewater and TBC capital projects for the next six (6) fiscal years (i.e., FY14-FY19), which includes approximately $63 million in projects financed through subordinated debt issuance by UOSA allocable to the County. Based on direction from WMP staff and based on recent historical trends in capital budget to expenditure relationships, approximately $56 million in capital funding was deferred beyond the Fiscal Year 2019 resulting in a net amount of capital funding identified at $668 million in order to minimize the financial impact to existing customers. The majority or 72% of the recognized capital projects are anticipated to be funded from internal sources including: rate revenues, existing cash reserves and availability charges. To finance the remaining capital improvements the following assumptions of additional indebtedness were recognized:

Additional Debt for the Forecast Period Fiscal Year 2014 through 2019

	Series 2017	**Proposed UOSA Debt [2]**			
	Bonds [1]	**Series 2014**	**Series 2016**	**Series 2018**	**Total**
Principal Amount	$66,820,000	$14,503,129	$34,224,635	$24,702,966	$140,250,730
Fiscal Year of Final Maturity	2046	2045	2047	2050	N/A
Annual Debt Service:					
2014	$0	$0	$0	$0	$0
2015	0	348,075	0	0	348,075
2016	0	696,150	0	0	696,150
2017	4,597,576	922,428	821,391	0	6,341,395
2018	4,597,576	922,240	1,642,782	0	7,162,598
2019	4,597,576	921,540	2,174,772	0	7,693,888
2020 (Outside Forecast)[3]	4,597,576	922,462	2,176,357	592,871	8,289,266
2021 (Outside Forecast) [3]	4,597,576	922,770	2,176,641	1,185,742	8,882,729
2022 (Outside Forecast) [3]	4,597,576	922,462	2,175,623	1,570,778	9,266,439

[1] Reflects projected senior lien parity bond issue by the County on or about July 1, 2016.
[2] Amounts reflect County's allocated share of the proposed UOSA Regional Sewer Revenue Bonds, which are considered as a subordinate obligation.
[3] Amounts shown present projected debt service beyond the Forecast Period for informational purposes to identify the initial year (FY2022) of when the proposed debt service payments will become level. As can be seen the incremental growth in debt service payments is estimated at $7.7 million by the Fiscal Year 2019 and increases to approximately $9.3 million and essentially level thereafter beginning in the Fiscal Year 2022.

- In order to provide sufficient funds for funding the aforementioned capital improvements and to maintain sufficient operating and capital reserves the financial forecast assumes average annual transfers to capital and operating reserves of approximately $71 million primarily generated from rate revenues and availability charges. The transfers support a strong level of capital reinvestment from internal sources roughly equivalent to the annual depreciation expense. However, it should be noted that the programed transfers are susceptible to reduction from lower than expected revenues or increased costs. In particular, it should be noted that the forecast assumes annual collections of approximately $20 million in one-time / growth related availability charges. Therefore any reduction in availability charge collections, all other things held constant, would result in reduced funds available for programed transfers and available funding for capital improvements.

Risk and Forecast Sensitivity

With any financial forecast there exists certain assumed risks. The following provides a summary of the primary risks identified for this study:

- The majority of a utility's costs are fixed and include, but not limited to: personnel, insurance, debt, capital and other related costs. Continued declines in billed wastewater flows beyond what is already assumed within this study can erode financial margins from what is projected and result in lower capital reinvestment. For every one (1.0%) percent decline in billed wastewater flows the utility would currently realize an approximate (0.9%) decline in rate revenues. The adopted and recommended rates attempt to minimize this risk through an increase in the phasing of increased fixed charges during the next several years; assuming implementation of the recommended rates would result in less than a (0.8%) decline in rate revenues by the Fiscal Year 2019.

- The financial forecast has assumed average collection of Availability Charges at approximately $20 million annually, which recognizes recent increases in growth for the Fiscal Years 2012 and 2013. Historically, the utility has averaged annual collections of approximately $24 million since the Fiscal Year 2000, with the greatest collections reported during the Fiscal Year 2006 at $36 million and the least collections during the Fiscal Year 2010 at less than $11 million. If the utility realized lower collections than what is assumed in this forecast, the projected level of transfers for capital reinvestment would be proportionally reduced. For perspective, a one (1%) percent rate revenue adjustment produces approximately $1.7 million in additional rate revenue. It should also be noted that since the Fiscal Year 2011 the utility has increased the sewer availability charge by approximately 6%, however the forecast assumes no increase in the availability charge.

- Treatment by Contract (TBC) providers account for a substantial portion of the total utility costs as evidenced by the following: $42 million or 45% of total annual operating expenses and $230 million or 34% of the identified capital improvements through the Fiscal Year 2019 are associated with TBC service. Additional increases in the cost of operations or capital needs beyond what is assumed within the forecast and which is not under the control of WMP can materially affect the projected financial position of the utility, however it should be noted that the utility is currently in a strong financial position and annually re-evaluates the financial forecast and position to address such risks.

- The financial forecast assumes average annual capital spending at approximately $111 million with dedicated annual transfers from annually recurring rate revenues and availability charges for capital reinvestment averaging approximately $71 million. The differential of funding in excess of amounts from direct capital reinvestment amounts to approximately $240 million through the Fiscal Year 2019. The differential is assumed to be funded from other sources including: i) additional debt accounting for approximately $125 million in capital funding (includes debt issued by UOSA on behalf of the County); and ii) the use of approximately $115 million in available cash reserves derived from previously issued debt proceeds and prior period operations. Specifically, the forecast assumes declines in operating cash reserves from approximately $70 million to a minimum targeted balance of $45 million or 150 days of operating expenses by the Fiscal Year 2019. This is important to note because a continuation in capital spending at this level in anticipated to result in the need for the issuance of additional debt beyond the Forecast Period and should be closely monitored to balance the need to preserve adequate cash reserves and issue additional debt.

- Regulations, such as the Clean Water Act and the Chesapeake Bay Program, have required significant investment from wastewater utilities to improve the quality and reduce the amount of pollution or loadings contained in treated wastewater effluent released back to the Chesapeake Bay. Pursuant to the *FY 2013 Chesapeake Bay and Virginia Waters Clean-up Plan* as prepared by the Virginia Secretary of Natural Resources for the Governor and the Chairmen of the Senate and House Committees for Agriculture, Conservation and Natural Resources dated November 2013:

  > *"<u>From 2009 to 2012, Virginia saw greater reductions from wastewater facilities than any other state in the Chesapeake Bay watershed.</u> Annual nitrogen discharges were reduced by about 7,010,000 pounds; phosphorus annual loads were reduced by almost 567,000 pounds, exceeding the milestone commitments set in Virginia's Watershed Implementation Plan (WIP) for both nutrients. As a result of these ongoing nutrient control upgrades, point source loads continue to be well below the allocations called for in the WIP and TMDL."*

  It is unclear how additional regulation may affect future costs, however recent success experienced with reductions from point-source pollution at wastewater treatment facilities may place more focus on non-point source pollution and stormwater management for the future.

<u>Observations and Recommendations:</u>

WMP reviewed the financial forecast last year through the Wastewater Revenue Sufficiency and Rate Analysis for the Forecast Period Fiscal Year 2013 through Fiscal Year 2017 (the "2013 Report"). The 2013 report was prepared in support of the Fiscal Year 2014 Budget and made several recommendations including: i) recommendation of additional rate revenue increases; and ii) increase in the fixed charges assessed to customers in order to minimize financial risk and recover a greater proportion of the system fixed costs. The table below provides a summary of the previously adopted rates based on the forecast performed during the Fiscal Year 2013 and associated average rate revenue increases:

Adopted Rate Adjustments

Description	2014	2015	2016	2017	2018	2019
Adopted Rates:	(existing)					
Rate Revenue Adjustment	6.5%	6.4%	4.0%	3.9%	N/A	N/A
Quarterly Base Charge	$12.79	$20.36	$25.34	$30.45	N/A	N/A
Flow Charge	$6.55	$6.55	$6.55	$6.55	N/A	N/A

- The recommended rates and the annual changes identified in the 2013 Report which were subsequently approved by the Board included the introduction of a fixed cost recovery charge and no increase in the recommended volumetric rate or to the per bill service charge. The purpose of introducing the fixed cost recovery charge was to: i) promote revenue stability (certainty) in revenue recovery; ii) promote equitability in the recovery of cost among the wastewater users; and iii) reflect industry norms and trends in rates.

- WMP's financial and rate implementation plan has resulted in a strong financial position in support of meeting the adopted financial policies and selected performance metrics or targets. The rates for service allows for the continuation of a capital re-investment rate equivalent to the annual depreciation, which will minimize the need for long-term debt and help promote the sustainability of rates. It is recommended that the business-evaluation approach for the development of the annual net revenue requirements be maintained and that the financial forecast be reviewed annually.

- It is recommended that the Board adopt the recommended rates as contained in this report, which are less than the Board-approved rates. This reduction in projected wastewater service rates will provide a financial benefit to the customers of the County. The table below provides a summary of the recommended rates:

Recommended Rate Adjustments

Description	2014	2015	2016	2017	2018	2019
Recommended Rates:	(existing)					
Rate Revenue Adjustment	6.5%	3.5%	4.0%	4.0%	3.0%	2.0%
Quarterly Base Charge	$12.79	$15.86	$20.15	$24.68	$27.52	$29.72
Flow Charge	$6.55	$6.62	$6.65	$6.68	$6.75	$6.78

It is recommended that the County continue with the rate structure modification plan to phase in the fixed cost recovery charge to promote the revenue stability of the System and to promote fairness and reasonableness among its ratepayers.

- The proposed rate adjustments by the County are anticipated to be sufficient to provide Net Revenues to meet the Rate Covenant in the General Bond Resolution that authorized the issuance of the County's outstanding bonds, meet the terms and conditions of the VRA Financing Agreement between the County and the Virginia Water Facilities

Revolving Fund acting by and through the VRA, fund System expenditures, including the debt service on Additional Bonds anticipated to be issued by the County to fund System capital improvements, and to meet the financial targets or objectives of the System during the Forecast Period.

- The recommended rates for the Fiscal Year 2015 will remain competitive with the rates charged by other neighboring public wastewater utility systems. This competitive position is anticipated to be maintained during the Forecast Period. The table below provides a comparison of the existing, adopted and recommended monthly wastewater utility bill at 6,000 gallons relative to other or neighboring utilities:

Single-Family Residential Wastewater Service
6,000 Gallons of Billed Wastewater Service Per *Month* [1][2]

	Monthly Bill
Fairfax County:	
Existing Rates Effective July 1, 2013	$43.56
Adopted FY15 Rates Effective July 1, 2014	46.09
Recommended FY15 Rates Effective July 1, 2014	45.01
Other Neighboring Utilities:	
Alexandria Renew Enterprises [3][4]	$54.94
Arlington County	51.78
DC Water [3][5]	52.34
Loudoun Water [3][6]	34.45
Prince William County Service Authority [3]	46.80
Washington Suburban Sanitary Commission [3][7]	43.59
Other Neighboring Utilities' Average	$47.32

[1] Unless otherwise noted, amounts shown reflect residential rates in effect January 2014 and are exclusive of taxes or franchise fees, if any, and do not include any surcharges for service rendered outside the corporate limits of the local jurisdiction, for specific capital improvements or for any other purpose. All rates are as reported by the respective utility. This comparison is intended to show comparable charges for similar service for comparison purposes only and is not intended to be a complete listing of all rates and charges offered by each listed utility.

[2] It should be noted that utilities may differ as to the term of billing period and units of measurement used in order to determine the respective utility customer's wastewater bill. For purposes of this comparison, all bills shown have been adjusted to match bills rendered on a monthly basis and recognized in units of gallons.

[3] Utilities shown bill a fixed cost or base charge per billing period per respective account or meter.

[4] The bill shown for Alexandria Renew Enterprises includes the collection charge billed by the City of Alexandria to provide consistency to the rates charged for the other surveyed utilities.

[5] Amounts shown assumes: i) the Clean Rivers Impervious Area Charge of $11.85 per month associated with runoff entering the sewer system; ii) a 50% allocation of the $3.86 metering fee; iii) a 50% allocation of the a Right-of-Way fee to the District of Columbia of $0.22 per 1,000 gallons; iv) 60% allocation of the PILOT fee charged to water and wastewater customers of $0.71 per 1,000 gallons; and v) the residential wastewater flow charge of $5.89 per 1,000 gallons.

[6] Loudoun Water has adopted an approximate 3% rate increase for wastewater service to become effective April 1, 2014. Amounts shown reflect the current rates in effect (without the anticipated rate adjustment).

[7] The Washington Suburban Sanitary Commission (WSSC) bills customers of the utility by calculating the respective customer's average daily flow of use, which is in turn used to determine the variable rate charged to the customer. The calculated bill assumes 6,000 gallons per month or approximately 200 gallons per day. Amounts shown assume a 50% allocation of the quarterly Account Maintenance fee of $11.00.

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FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

INTRODUCTION

As shown on Figure 1 below, the County provides wastewater service to residents through a combination of wastewater treatment and disposal facilities owned and operated by the County as well as through wholesale service agreements with four adjacent public utilities providing regional wastewater treatment and disposal service, referred to as Treatment by Contract ("TBC"), based on the sewer shed location within the County. Wastewater collected from customers in the northern part of the County is routed to the Blue Plains Advanced Wastewater Treatment Plant, owned and operated by the District of Columbia Water and Sewer Authority (DCWASA). Wastewater collected from customers in the western part of the County is routed to the Upper Occoquan Service Authority's (UOSA) Regional Water Reclamation Plant. Wastewater collected from customers in the central and southern part of the County is routed to the County-owned Noman Cole Pollution Control Plant (Noman Cole PCP). Wastewater collected from customers in the eastern part of the County is routed either to the Alexandria Renew Enterprise's (formally Alexandria Sanitation Authority) (ARenew) Advanced Wastewater Treatment Plant or to Arlington County's Water Pollution Control Plant (WPCP) depending on the physical location of the customers in this sewer shed.

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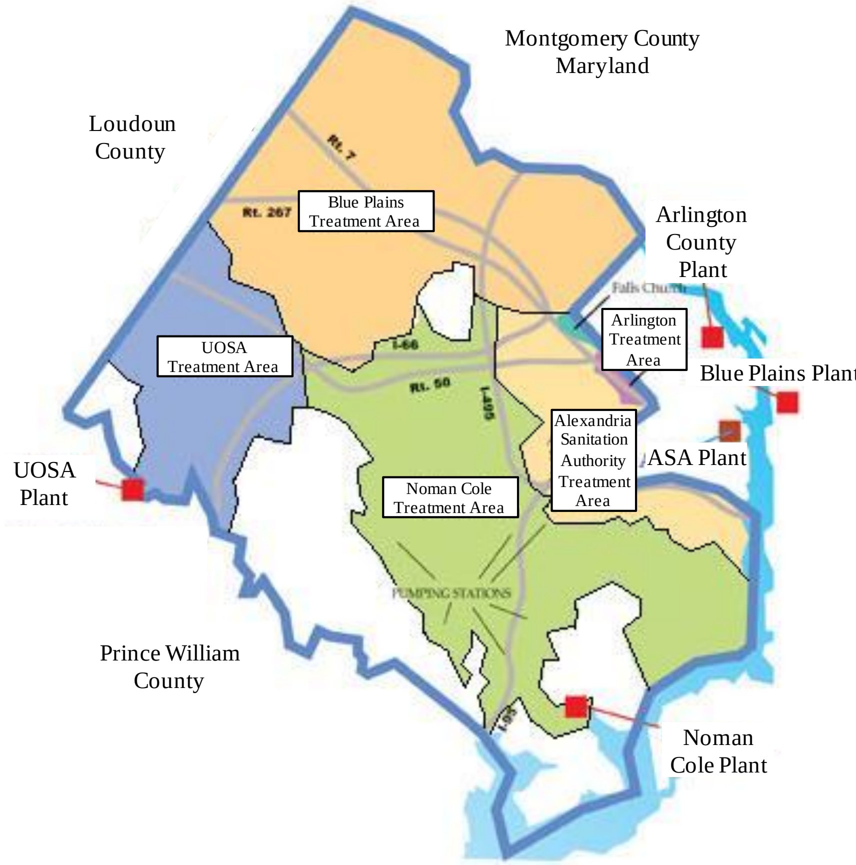
FIGURE 1- WASTEWATER SERVICE AREA MAP



As shown below, WMP staff currently manages the County-owned capacity of 67.0 million gallons a day (MGD) at Noman Cole PCP as well as having secured an entitlement to 92.0 MGD of TBC wastewater treatment capacity. The County's TBC capacity represents 58% of the total wastewater treatment capacity of the System. In this Report, the County's Noman Cole PCP and TBC capacity, together with the County's collection and transmission system, pumping stations and related facilities and equipment are referred to collectively as the "System."

Total Wastewater Capacity – As of July, 1, 2013

Wastewater Entity	Current Capacity (MGD)
Fairfax County (Noman Cole PCP)	67.0
Alexandria Renew Enterprises (ARenew)	32.4
Arlington County	3.0
UOSA	22.6
DCWASA	31.0
Loudoun Water	1.0
Total	157.0

The WMP currently provides service to an estimated population of 933,000 residents. As of June 30, 2013, WMP reported that its gross plant investment in the System, including capacity entitlements in wastewater treatment facilities owned by other local governments, was approximately $2.149 Billion.

WMP monitors its financial position and results on an ongoing basis, continuously prepares financial forecasts to identify anticipated trends in financial position and establishes rates and charges to meet certain financial goals. To support this financial evaluation and rate process, the WMP has engaged the services of Public Resources Management Group, Inc. (PRMG) to assist in the preparation of a five-year financial forecast in order to evaluate trends and anticipated performance results based on the most recent actual and current year budgetary information and WMP's management practices. 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 to provide our observations and recommendations as to the level of wastewater system rates that should be charged for utility service and support the recommendations for sewer service charges to be adopted by the Board of Supervisors (the "Board").

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 2014 Budget and encompassed the subsequent five (5) fiscal year period ending June 30, 2019 (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 ongoing long-term planning efforts.

As documented in this Report, '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) changed economic conditions and reductions in new customer growth trends which has impacted the financial resources of the System and its ability to fund the overall capital needs; iii) the continued effects of inflation on the cost of operations and construction (even though 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[1]; 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"); and vii) providing sufficient funds for the payment of subordinate debt issued by the Upper Occoquan Service Authority (UOSA) of which a portion is allocable to the System.

[1] The Outstanding Bonds reflect bonds issued by the County in accordance with the General Bond Resolution and include: Sewer Revenue Bonds, Series 2004 originally issued in the principal amount of $94,005,000; Sewer Revenue Bonds, Series 2009 originally issued in the principal amount of $152,255,000; and the Sewer Revenue Bonds, Series 2012 originally issued in the principal amount of $90,710,000.

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 2013 through Fiscal Year 2017, which was prepared in support of the Fiscal Year 2014 Budget (the "2013 Report"). The 2013 Report evaluated the overall expenditure requirements of the System and recognized the criticality of the need for a change in the level and structure of wastewater rates charged for service to meet the projected financial requirements but also to increase revenue stability (reduced financial risk). The recommended rates and the annual changes identified in the 2013 Report which were subsequently approved by the Board included the introduction of a fixed cost recovery charge and no increase in the recommended volumetric rate or to the per bill service charge. The purpose of introducing the fixed cost recovery charge was to: i) promote revenue stability (certainty) in revenue recovery; ii) promote equitability in the recovery of cost among the wastewater users; and iii) reflect industry norms and trends in rates. The following is a summary of the Board-adopted rates for the Fiscal Years 2014 through 2017 and the net change in the quarterly wastewater bill for the typical residential customer.

Summary of Fiscal Year 2013 Board-Adopted Rates

	Fiscal Year Ending June 30, [1]			
	In Effect	Adopted		
	2014 [2]	2015	2016	2017
Volumetric Rate – $ per 1,000 Gallons	$6.55	$6.55	$6.55	$6.55
Change from Prior Year [3]	$0.00	$0.00	$0.00	$0.00
Base Charge – $ per ERC per Meter Size [4]	$12.79	$20.36	$25.34	$30.45
Change from Prior Year	$12.79	$7.57	$4.98	$5.11
Average Quarterly Residential Bill – Usage of 18,000 Gallons per Quarter				
Quarterly Residential Bill	$130.69	$138.26	$143.24	$148.35
Percent Combined Change from Prior Year for Usage of 18,000 Gallons per Quarter [5]	5.9%	5.8%	3.6%	3.6%
Quarterly Increase in Wastewater Bill for Usage of 18,000 Gallons per Quarter [6]	$7.29	$7.57	$4.98	$5.11

[1] All rates scheduled to be effective with service rendered beginning July 1st of each fiscal year.
[2] Recommended rates as identified in the 2013 Report which were adopted by the Board in April 2013.
[3] Amount shown for the Fiscal Year 2014 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. [2013 established rates in effect during Fiscal Year 2014].
[4] Amount reflects increase in the based charge in Fiscal Year 2013 to recover a portion of the identified fixed costs incurred to provide wastewater service in order to improve revenue stability and equitability in cost recovery. Prior to 2013, the base charge only included a service charge to pass-through the cost of billing for wastewater service.
[5] It should be noted that the estimated System increase in rates is slightly greater than the average annual rate adjustment for the typical quarterly-residential customer due to changes in cost recovery practices. The System-average rate revenue adjustments based on the adopted rates as shown above are as follows:

	2014	2015	2016	2017
Total System Rate Adjustment	6.5%	6.4%	4.0%	3.8%

[6] Calculated from immediately preceding Fiscal Year bills.

FISCAL YEAR 2013 RESULTS

The adopted rates for the Fiscal Years 2014 through 2017 were based on, among other things, the Fiscal Year 2012 actual results, the Fiscal Year 2013 Budget, the year-to-date Fiscal Year 2013 actual results available at the time of rate evaluation, and the Fiscal Year 2013 ten-year capital improvement plan including capital expenditures associated with the County's TBC providers. A comparison of the forecasted and actual results for the Fiscal Year 2013 is now available for consideration and incorporation into the Fiscal Year 2014 Financial Forecast. In evaluating the Fiscal Year 2013 results, a number of observations were made:

1. Actual Fiscal Year 2013 Service Charge (retail) revenues were $163,052,022 which was approximately $3.1 million higher than the estimates developed for the financial forecast included in the 2013 Report. This difference is less than 2.0% of the budget estimates and was considered to be due primarily to higher than anticipated billed wastewater flow coupled with increased growth in the customers served by the System.

2. Actual Fiscal Year 2013 Sales of Service (wholesale) revenues were $9,886,546 which was approximately $0.71 million lower than the estimates developed in the Fiscal Year 2013 Financial Forecast as presented in the 2013 Report. This difference is approximately 0.7% less than what was forecasted and was considered to be due primarily to reductions in County-owned facility operating expenses (reduces shared costs allocated to the wholesale customers).

3. Actual Fiscal Year 2013 Service Availability Charges revenues were $20,477,318, which was i) approximately $8.5 million lower than actual reported Fiscal Year 2012 receipts but ii) essentially equal to the Fiscal Year 2013 forecast estimates assumed in the financial model. The projections of Service Availability Charges revenues, which are considered as non-recurring revenue and are received only from new development requesting wastewater capacity, are very difficult to forecast. The Fiscal Year 2013 fee receipts were less than the amounts received during the relatively high growth period of the Fiscal Years 2002 through 2006 (averaging approximately $31.7 million annually) and significantly higher than the lower growth period of Fiscal Years 2007 through 2011 (averaging approximately $13.4 million annually). The collection of Service Availability Charges revenues, which are assumed to average approximately $18.0 million for the Forecast Period, provide a financial benefit to offset new customer (expansion)-related debt payments during the Forecast Period reflected in this Report, thus providing improved cash flow projections from Service Charge revenues.

4. Actual Fiscal Year 2013 Operating Expenses (not including depreciation expenses which are a non-cash expense) were $86,441,125, which was approximately $8.7 million less than the estimates recognized in the Fiscal Year 2013 Financial Forecast. The lower than forecasted expenses were primarily due to: i) the continued success of cost saving measures implemented by WMP; ii) lower than projected power, fuel, and chemical costs due to the continued downturn in unit prices; and iii) lower TBC operating costs (due to the same factors [e.g., unit price reductions]).

5. Actual Fiscal Year 2013 capital expenditures were $91,031,244, which was approximately $7.4 million less than what was anticipated to be spent during such fiscal year as referenced in the Fiscal Year 2013 Financial Forecast, which represents a positive forecast variance from a cash flow standpoint. The reduced capital expenditures were primarily due to delays in timing and completion of County and TBC capital projects. The remainder of the project appropriations for the active carry-forward projects is considered as an expenditure requirement in subsequent fiscal years of the Forecast Period (remains as a requirement of

end-of-year fund balances). Overall, a significant amount of capital additions to utility plant was recognized during the Fiscal Year 2013 with the majority of the funding being provided from bond proceeds from the County's Sewer Revenue Bonds, Series 2012 originally issued in the principal amount of $90,710,000 and available capital reserves.

6. The total debt service payments (cash basis – when payments are made) for Fiscal Year 2013 were $44,308,658. When expressed on an accrual basis (when deposits required to Debt Service Sinking Fund), the total debt service liability was $47,686,970 which was approximately $238,210 less than what was anticipated to be required from System revenues during the Fiscal Year 2013 Financial Forecast.

Recognizing the above, the financial results experienced during the Fiscal Year 2013 were positive when compared to the projections contained in the financial forecast as shown below:

Fiscal Year 2013 Financial Results Comparison

	Actual Results	Financial Forecast [1]	Variance Positive/(Negative)
Operating Revenues and Income [2]	$ 174,539,719	$ 171,606,876	$ 2,932,843
Operating Expenses	(86,441,125)	(95,129,637)	8,688,512
Net Revenues	88,098,594	76,477,239	11,621,355
Total Debt Service Payments [3]	(47,686,970)	(47,925,180)	238,210
Net Available for Capital Funding	40,411,624	28,552,059	11,859,565
Capital Funding Allowance [4]	(60,336,520)	(60,336,520)	0
Net Available before Service Availability Charges	(19,924,896)	(31,784,461)	11,859,565
Service Availability Charges [5]	20,477,318	21,984,500	(1,507,182)
Net Available for System Use [6]	$ 552,422	$ (9,799,961)	$ 10,352,383

[1] Represents forecast prepared and dated January 28, 2013 and was based on Fiscal Year 2013 Budget and Fiscal Year 2012 and Fiscal Year 2013 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 (when deposits to sinking fund is required) and not when the debt payments are made to the lenders. The actual debt service payments during Fiscal Year 2013 were $44,308,658.

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

[5] Reflects Service Availability Charges actually received by WMP. Amounts shown include interest income derived from the investment of fund balances from Service Availability Charges 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.

[6] Negative amounts shown represent use/dedication of available reserves to meet the Fiscal Year 2013 financial needs of System.

As can be seen the table above, the historical Fiscal Year 2013 revenues, including Service Availability Charges, derived from annual operations were sufficient to fully fund the identified revenue requirements, including the dedication of funds for ongoing programmed capital reinvestment (with any deficiency in funding being financed either by available operating reserves or the application of Service Availability Charges to fund debt service payments, which allows operating funds to be used for other purposes). However, it should be noted that the System does rely on the receipt of Service Availability Charges it order to fully fund the programmed capital funding allowance; to the extent the fees were less than projected this would affect the long-term capital funding plan and the amount of future bonds that may need to be issued to finance the identified capital improvements. The forecast of revenues and Service Availability Charges was based on customer and flow growth projections which PRMG considers as being reasonable for financial and rate planning purposes.

PROJECTED FINANCIAL RESULTS

The Board annually approves a five-year rate phasing plan and constantly re-evaluates its financial position as part of its rate evaluation process. As previously above, the most recent Board-approved rates were based on an analysis prepared by WMP and PRMG dated January 28, 2013 and the first year rates of the plan (Fiscal Year 2014) are currently in effect. The Board-approved rates adopted in connection with the Fiscal Year 2013 Financial Forecast were designed with the intent of meeting the expenditure funding needs of the System and achieving the financial parameters and performance measures established for the System during the Forecast Period presented in such study. These results and assumptions have enhanced the ability to fund the System expenditure requirements and meet the identified financial benchmarks for the Forecast Period. Accordingly as part of this revenue sufficiency study, a re-evaluation of the System rate adjustments (i.e., total rate revenues estimated to be earned) was considered.

The Fiscal Year 2014 financial forecast includes a multi-year rate phasing program which was prepared to identify the Fiscal Year 2015 through 2019 rates to fund the identified revenue requirements for the System and continue to meet the financial planning benchmarks (i.e., financial position and targets) identified with WMP staff to promote the long-term creditworthiness of the System. The creditworthiness objective focuses on maintaining a "AAA" credit rating with the bond rating agencies, limiting long-term financial risks to the System through prudent liquidity and financial operating strategies, and promoting the long-term sustainability of rates while limiting future increases to wastewater customers. Based on the assumptions recognized in the development of the financial forecast and the result of actual Fiscal Year 2013 results the following identified rate adjustments in comparison to the previously Board-approved average System rate adjustments are summarized below:

Prior Board Approved and Current Recommended System Rate Adjustments

	In Effect	Approved or Recommended				
	2014	2015	2016	2017	2018	2019
Board Approved – FY 2013 [1]	6.5%	6.4%	4.0%	3.9%	n/a	n/a
Recommended – FY 2014 [2]	n/a	3.5%	4.0%	4.0%	3.0%	2.0%

[1] Reflects Board Approved System average rate adjustments in support of the Fiscal Year 2013 Financial Forecast. Such approved adjustments were for the five-fiscal year forecast period of 2014 to 2017.

[2] Reflects recommended rate adjustments identified in this Report which are to be presented to the Board for the five-fiscal year Forecast Period of 2015 to 2019.

As can be seen above, it is recommended that the adopted Fiscal Year 2015 rate adjustment be reduced for the overall benefit of the wastewater customers. Furthermore, future rate adjustments are identified beyond the Fiscal Year 2017, for which rates have not yet been adopted, at inflationary levels ranging from 2% - 3%.

Principal Considerations and Assumptions Regarding Projected Operating Results

The development of the projected net revenue requirements for the System required several assumptions and considerations and the presentation of certain analysis relative to utility operations. Major assumptions, considerations and analyses that were considered in the development of the projected revenue requirements for the Forecast Period for the System are as follows:

1. The forecast in accounts, equivalent residential units (ERU) and billed wastewater flow was based on historical trends and is summarized below:

Summary of Historical and Projected Customers and Sales Statistics [1]

Fiscal Year	Accounts	Equivalent Residential Units (ERU)	Billed Wastewater Sales (Flow)	Average Use per ERU
Historical Period				
2009	259,859	356,205	24,510,612	5,734
2010	261,423	360,311	24,962,443	5,773
2011	271,918	367,106	24,582,928	5,580
2012	268,649	368,440	23,913,067	5,409
2013	271,882	369,763	24,012,730	5,412
Average Annual Compound Growth Rate	1.14%	0.94%	(0.51%)	(1.44%)
Forecast Period [2]				
2014	273,182	371,544	24,007,227	5,385
2015	274,777	373,729	24,026,494	5,357
2016	276,620	376,254	24,067,039	5,330
2017	278,462	378,778	24,105,891	5,303
2018	280,212	381,176	24,196,859	5,290
2019	281,962	383,574	24,287,072	5,276
Average Annual Compound Growth Rate [3]	0.61%	0.61%	0.19%	(0.42%)

[1] Amounts shown derived from Tables 1 and 2.
[2] Reflects customer and sales forecast which formed the basis of the rate revenue from approved and recommended rates.
[3] Reflects annual compound growth rate from Fiscal Year 2013.

As can be seen above, the projection in accounts and equivalent residential connections is assumed to increase approximately 0.6% annually through Fiscal Year 2019. This average growth rate is slightly more conservative, but approximates the recent historical trends in customer growth statistics and is assumed to be attainable by County staff. With respect to billed wastewater sales or flow, although billed sales are anticipated to increase during the Forecast Period, the projections assume a continued reduction billed wastewater flow per customer (sales) based on recent trends resulting in reduced operating revenue per customer received.

2. The Adopted Fiscal Year 2014 Budget and certain preliminary Fiscal Year 2015 Budget estimates as provided by WMP staff served as the basis for the expenditure projections for the System. The underlying assumptions and expenditure amounts included therein were assumed to be reasonable and reflect anticipated operations, unless otherwise noted. Such budgetary amounts are incorporated into the development of the Operating Expenses and certain other funding revenue requirements for the first two years of the Forecast Period, except for adjustments and assumptions as noted hereunder.

3. Projected revenues from existing and adopted rates (sewer service charges) for the System were based on the customer, equivalent residential unit (ERU), and sales forecast as shown on Table 2 and summarized above (reference item no. 1) and the schedule of rates approved by the Board of Supervisors on April 26, 2013 as reflected in the Rate Resolution.

4. The projected bulk sales of service revenues were based on the individual parameters of each specific agreement for providing service, a review of recent invoices rendered by the County for such service, the adopted and projected County retail wastewater rates and billing relationships, the capital plan (as discussed later in this Report), the forecast of Operating Expenses at both the Noman Cole PCP and the TBC Contract wastewater facilities and the recovery of costs from those bulk customers required to share in such costs and other factors. Based on the contract parameters and the overall costs reflected in the analysis, the following sales of service revenue for bulk service by respective customer was recognized:

Summary of Sales of Service Revenues [1]

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
City of Fairfax	$1,535,423	$1,446,763	$1,419,117	$1,380,726	$1,350,838	$1,328,074
Town of Herndon	3,344,000	3,344,000	3,396,800	3,449,600	3,502,400	3,608,000
Arlington County	644,641	674,396	713,810	750,129	794,784	844,227
Fort Belvoir	2,152,000	2,152,000	2,152,000	2,152,000	2,152,000	2,152,000
City of Falls Church	1,035,435	1,052,437	1,084,620	1,112,812	1,148,876	1,188,942
Town of Vienna	463,488	443,036	436,688	427,856	420,989	415,770
Fairfax Water	78,600	78,600	78,600	78,600	78,600	78,600
I-95 ERRF (Covanta)	327,500	327,500	327,500	327,500	327,500	327,500
Loudoun (County) Water	164,888	173,517	182,162	191,315	201,011	211,285
Total Sales of Service Revenues	$9,745,976	$9,692,249	$9,791,297	$9,870,538	$9,976,998	$10,154,397

[1] Amounts based on respective wastewater flow forecast and current contractual billing relationships for each sales of service customer; does include projected impacts associated with potential changes in retail rates based on adopted rates for service as approved by the Board of Supervisors for customers whose rates are the same as the retail rates. For sale of service customers that have contractual rates tied to the County's retail rates, such revenues include the pro rata increase due to the implementation of the adopted rates as provided in such agreement for service with the County.

5. The System receives Service Availability Charges from retail customer growth associated with new development occurring in the County's wastewater service area. The general policy of WMP is to use the charges first to pay for expansion-related debt service payments (to limit immediate rate increases to existing customers) and then to fund capital expenditures associated with growth or expansion. The use of the Service Availability Charges to fund annual expenditures serves to reduce the amount of net revenue requirements that need to be funded annually from Sewer Service Charges or rates. For the

Forecast Period, the estimate of Service Availability Charge revenues is based on the forecast of ERUs and the current rate for service which was held constant for the Forecast Period (includes no increase or indexing provision applied to the current Service Availability Charges). The estimated amount of Service Availability Charges anticipated to be received during the Forecast Period was determined as follows:

Summary of Estimated Service Availability Charges (SAC) Revenues

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
ERCs Connecting to System	2,581	2,324	2,055	2,055	2,398	2,398
Service Availability Charge ($/ERU) [1]	$7,750	$7,750	$7,750	$7,750	$7,750	$7,750
SAC Revenue ($ millions)	$20.003	$18.007	$15.926	$15.926	$18.581	$18.581

[1] Fiscal Year 2014 to 2017 Service Availability Charges adopted by the Board of Supervisors. For the remaining years of the Forecast Period, assumed that the approved Fiscal Year 2017 fees would be continued at the then current fee levels.

6. The County does not formally segregate the Service Availability Charges received from other revenues of the System. To estimate the amount of funds on hand, a historical analysis of fee collections and expenditures was performed. Based on the estimated beginning cash balance associated with the Service Availability Charge receipts, a forecast of the use of the fees and ending cash balances were estimated. For the Forecast Period, such amounts were based on: i) the estimated current cash balance in the new customer (Service Availability Charge) fund as of July 1, 2014; ii) the level of fees anticipated to be collected during such period, including interest income earned on funds on deposit; and iii) the amount of expansion-related debt service payments identified during the Forecast Period. Based on the above, the following use of the availability charge funds was recognized during the Forecast Period:

Summary of Estimated Balance of Service Availability Charge (SAC) Funds [1]

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Beginning Fund Balance	$27,428,361	$0	$0	$0	$0	$0
Plus Sources of Funds:						
Estimated SAC Receipts	20,003,370	18,007,280	15,926,250	15,926,250	18,580,625	18,580,625
Investment Income [2]	68,000	0	0	0	0	0
Less Uses of Funds:						
Debt Service Payments	$20,071,370	$18,007,280	$15,926,250	$15,926,250	$18,580,625	$18,580,625
Capital Project Expenditures	27,428,361	0	0	0	0	0
Ending Fund Balance	$0	$0	$0	$0	$0	$0

[1] Amounts reflect funds that are allocated to new customers; which resources are derived primarily from the application of service availability charges.
[2] Amounts include earnings of funds that are allocable to new customers which are in addition to earnings on the service availability charge funds (primarily earnings on expansion-related debt service – related accounts).

As can be seen above, it is projected that the estimated Service Availability Charge fund balance funded from new customer growth are projected to be exhausted during the Forecast Period (all funds received will be applied to expansion-related debt payments) and that the revenues derived from sewer service charges will be responsible to fund a portion of the ongoing expansion-related debt service payments. As can be seen below, it is estimated that the existing customers may need to finance new customer debt payments and that a carry-forward liability will accrue over time which should eventually be funded from new development.

Summary of Estimated Carry Forward Balance of Service Availability Charge (SAC) Funds (in $000s) [1]

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Beginning Balance – Carry Forward [1]	$0	$13,020	$27,788	$44,793	$64,150	$80,876
Total Debt Service Payments	48,758	48,799	49,317	55,000	55,854	56,420
Expansion-related Allocation						
Expansion Debt Percentage	68%	67%	67%	64%	63%	63%
Allocated Debt Service	33,091	32,775	32,931	35,283	35,306	35,333
SAC Applied to Debt Service Payments [2]	20,071	18,007	15,926	15,926	18,581	18,581
Current Period Exp.- Debt not Funded	13,020	14,768	17,005	19,357	16,726	16,752
Ending Balance – Carry Forward	$13,020	$27,788	$44,793	$64,150	$80,876	$97,628

[1] Assumes no carry-forward balance and historical application of all applicable Service Availability Charges to the payment of expansion related debt. It is estimated that a balance of approximately $27 million in additional Service Availability Charge (see prior table) are to fund other expansion related construction projects.

[2] Assumes all Service Availability Charges applied to expansion-related debt service payments. Any balance of fees available after payment of the expansion-related debt service payments is carried over to the subsequent years for application; any deficiency in Service Availability Charge expansion-related debt funding represents a due from the Service Availability Charge to operating reserves as fees are received.

7. Included in the financial projections are other operating revenues associated with lateral spur fees, connection charges and other customer related requested service revenues. For the purposes of this Report, other operating revenues were based on: i) the Fiscal Year 2014 budgeted revenues; ii) a review of historical amounts received from such charges; and iii) discussions with WMP staff. Based on a review of such sources, it was assumed that such revenues would fluctuate either in relation to anticipated new connections to the System during the Forecast Period or would be held constant during such period.

8. Table 3 at the end of this Report summarizes the projected Operating Expenses for the System. The projected System Operating Expenses have been escalated from Fiscal Year 2014 levels based upon several assumptions and the nature of the expense being incurred by the System. The Fiscal Year 2014 budget represents the County's most recent annual financial plan for the System and based on a comparison of such projections to recent reported amounts, it was assumed that the underlying assumptions used by the County in the development of such budget was considered reasonable and reflects anticipated costs for the System operations. For the Fiscal Year 2015, such amounts were based on the preliminary budget estimates and essentially assumes no real change in overall expenses when compared to the Fiscal Year 2014 estimates. With respect to the remainder of the Forecast Period, such amounts were projected above the Fiscal Year 2015 preliminary budget amounts based on a variety of escalation parameters respective of the specific cost to provide service. A summary of the primary assumptions is provided below:

    a. Personnel expenses were escalated recognizing: i) inflation in salaries and wages at annual factors ranging from 3% to 4% recognizing cost of living adjustments and merit increases; and ii) increases in medical and other benefits assumed at 6.0% annually based on a review of recent historical increases and expectations for such costs for the forecast period.

b. Based on discussions with the County, no additional personnel will be required for the Forecast Period to meet additional demands due to System growth, the imposition of the capital improvement program, as a result of the increased treatment requirements associated with the Chesapeake Bay Program or due to increased utility service needs during the Forecast Period. Accordingly, no additional personnel costs have been recognized over the Forecast Period.

c. General expenses, other contractual services and certain other operating expenses have been projected to increase at an annual rate equal to inflation ranging from 2.1% to 2.3%. These escalation factors were based on the Consumer Price Index and the Implicit GDP Deflator forecasts prepared by the Congressional Budget Office as contained in the Economic and Budget Outlook dated August 2013, recent historical trends experienced by the System and discussions with WMP Staff.

d. Repair and Maintenance operating expenses were escalated based upon a factor of 4.0% over the Forecast Period, reflecting the continued trend in increased construction materials costs used in the repair and maintenance of existing wastewater facilities.

e. General insurance for property, plant and equipment was escalated at a rate of 5.0% over the Forecast Period, which is greater than the rate of inflation however provides an allowance for increases due to accidents, weather related events, the addition of new capital and equipment or other contributing factors.

f. The projection of variable costs for the County's Noman Cole PCP operations, which included purchased power and chemicals cost, was determined utilizing the cost estimates as outlined in the County's Fiscal Year 2014 budget. These costs were escalated for the Forecast Period based on an allowance for inflation, which is consistent with recent historical trends, and the projection of flow requirements as discussed earlier in this Report. For the Forecast Period, the following was assumed for specific variable expenses:

    i. Electrical expenses were escalated over the Forecast Period at a base annual inflation rate of 5.0% based on information published by the Bureau of Labor Statistics regarding historical trends in energy prices and the anticipation of increased energy costs. Based on discussions with WMP staff with respect to the Chesapeake Bay Program regarding the cost of power, no additional significant increase in power expenses is anticipated with the increased treatment requirements as a result of the anticipated energy efficiencies expected to be achieved based on the implementation of the capital plan as previously discussed.

    ii. Chemical expenses were escalated at the same rate as electrical expenses assumed at 5.0% annually based on a review of historical indices published by the bureau of labor statistics for industrial chemicals as well as a historical review of actual chemical expenses for WMP.

g. Bills for retail wastewater service are rendered on a contractual basis by Fairfax Water, the Town of Vienna and the City of Falls Church (beginning January 3, 2014, City of Falls Church billings will be rendered by Fairfax Water). For the Forecast Period, the cost of the billing services was based on: i) a composite cost to provide such service predicated on the total bills being rendered; ii) the growth in accounts billed for the Forecast Period; and iii) allowances for inflation on the cost of billing (rate charged for service by the billing agents). For the Forecast Period, this expense was estimated to average approximately $6.7 million annually.

h. No contingency allowance has been recognized during the Forecast Period to account for any unknown or unplanned expenditures that may occur during such period or to account for potential changes in the revenues that may occur due to weather, conservation, and other factors has been recognized based on discussions with WMP staff. The forecast in operating expenses is considered reasonable and attainable by PRMG.

9. As previously mentioned, the County has entered into several service agreements with other local governments or agencies (i.e., the TBC Partners) for wastewater treatment and disposal service. The costs associated with the service for each entity supplying wastewater treatment services were based on: i) the agreement for service between the County and the specific TBC Partners; ii) where available and applicable, the costs reflected in the fiscal year 2014 operating and capital budget for the TBC Partners; iii) recent invoices as billed by the TBC Partners to the County for service; and iv) the recognition of inflation and flow growth in the projection of the operating costs billed by the respective entity. The cost for wastewater treatment purchases is summarized on Table 4 at the end of the Report and was estimated as follows:

   a. <u>Alexandria Renew Enterprises (formally Alexandria Sanitation Authority) (ARenew)</u> – The operating expenses include the allocated share of the wastewater treatment and certain conveyance (referred to as joint facilities) costs based on the wastewater flow relationships between the two entities as reflected in the service agreement. The projection of the total joint facility costs was provided by ARE as part of its financial planning process. In addition, the costs include deposits to a joint use facilities account of ARenew to be used exclusively for improvement, repair and replacement of certain County and ARenew shared facilities (the "Joint IR&R") in an amount equal to 0.7% of the total amount of the capital expenditures made with respect to the joint use facilities as defined in the service agreement. For the Forecast Period and based on a review of trends in the percent of flow delivered to the ARenew wastewater treatment plant, it was assumed that the County would account for approximately 53% of the total wastewater flows at the ARenew wastewater treatment facilities and therefore responsible for the proportionate share of the joint facility operating expenses. With respect to the County, the costs are considered as an Operating Expense of the System and were estimated as follows:

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Purchases from Alexandria Renew Enterprises

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Operating Expenses	$11,563,357	$11,877,741	$12,551,583	$13,259,080	$14,275,289	$15,286,988
Deposit to Joint IR&R Account	2,183,186	2,367,072	2,667,290	2,693,780	2,728,679	2,801,885
Accruals/Fiscal Year End Adjustments	(169,980)	(124,568)	(243,515)	(183,497)	(262,777)	(271,226)
Total Expenses	$13,576,562	$14,120,246	$14,975,358	$15,769,363	$16,741,191	$17,817,647

The County also shares in the capital expenditures by ARenew for the facilities that are considered joint facilities (with the County being responsible for 60% of such capital costs based on the capacity entitlement in the wastewater treatment facility). Any costs that are required to be directly funded by the County for the joint facility plant in service are included as a component of the capital improvement plan for the System since they must be funded upfront by the County (it should be noted that the agreement between the parties does allow ARenew to issue debt for joint use improvements for which the County would be responsible for 60% of such debt, but based on discussions with Arenew staff and historical precedent, we have assumed that no Arenew debt obligations will be issued to fund joint use facility capital costs during the Forecast Period).

b. Arlington County – The projected Operating Expenses include the County's allocated share of the wastewater treatment and certain conveyance costs based on the wastewater flow relationships between the two entities as reflected in the service agreement. The projection of the total wastewater plant flows and wastewater plant operating expenses was provided by Arlington County as part of its financial planning process. For the Forecast Period, it was assumed that the County would account from 9% to 10% of the total wastewater flows at the Arlington County wastewater treatment facilities. Based on the estimated operating costs for the Arlington County facilities and the County's flow contribution to such facilities, the expenses for wastewater treatment and disposal services provided by Arlington were estimated as follows:

Estimated Purchases from Arlington County

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Operating Expenses	$1,879,930	$1,983,418	$2,110,330	$2,242,605	$2,380,443	$2,524,048

The County also shares in the capital costs performed by Arlington County on certain facilities (with the County being responsible for approximately 10% of such capital costs). Any allocable capital costs that are required to be funded by the County are included in the capital improvement plan of the County since it is assumed that such improvements will not be financed by Arlington County on behalf of the County but will require the complete payment upfront by the County for its proportionate share of such capital costs.

c. District of Columbia Water and Sewer Authority (DCWASA) – The projected Operating Expenses include the allocated share of the wastewater treatment and certain conveyance costs based on the wastewater flow relationships between the two entities as reflected in the service agreement. The projection of the total wastewater plant flows and operating expenses for the Fiscal Year 2014 was provided by DCWASA as part of its budgetary process. The estimated cost for wastewater treatment and disposal service by DCWASA is shown below:

Estimated Purchases from DCWASA

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Operating Expenses	$12,765,126	$13,293,895	$13,456,603	$13,776,489	$14,199,077	$14,627,316

The County also shares in the capital costs performed by DCWASA on the facilities that are considered as being allocable to the County (the County being responsible for 8.4% of such capital costs). Any capital costs that are required to be funded by the County for the allocated plant in service are included in the capital improvement plan of the County since it is assumed that such improvements will not be financed by DCWASA on behalf of the County but will require the complete payment upfront by the County for its proportionate share of such capital costs.

d. Upper Occoquan Service Authority (UOSA) – The projected Operating Expenses include the allocated share of the wastewater treatment and certain conveyance costs based on the wastewater flow relationships between the two entities as reflected in the service agreement. The projection of the total wastewater treatment costs was provided by UOSA as part of its annual budgeting process and such costs were escalated for inflationary allowances. In addition, the County's allocated costs under the service agreement include deposits to a Reserve and Maintenance Account, which costs are allocated based on the County's reserved capacity in the UOSA facilities. For the Forecast Period, it was assumed that the County would account for an average of 45% of the total wastewater flows at the UOSA wastewater treatment facilities and maintain a 22.6 MGD capacity allocation in such facilities. With respect to the County, the costs considered as System Operating Expenses were estimated as follows:

Estimated Purchases from Upper Occoquan Sewage Authority

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Operating Expenses	$11,805,586	$12,583,988	$13,227,348	$13,889,810	$14,572,064	$15,274,823
Deposit to Reserve & Maintenance Account	1,674,076	1,707,558	1,758,784	1,811,548	1,865,894	1,921,871
Total Expenses	$13,479,662	$14,291,546	$14,986,132	$15,701,358	$16,437,958	$17,196,694

The County also shares in the capital costs expended by UOSA on the facilities based on the allocated capacity to the County (with the County being responsible for approximately 46% of the treatment-related capital costs; the conveyance allocation basis varies by interceptor use). Any major treatment or conveyance capital expenditures are generally debt financed by UOSA, and the County is responsible for its allocable share of the UOSA debt service payments with such debt requirements being considered as subordinate to the County-issued bonds for the wastewater system.

e. Utilities, Inc. (Colchester Facilities) – Utilities, Inc. currently operates and maintains a wastewater treatment and collection system for service within a development referred to as Harbor View which consists of approximately 170 accounts that are considered as retail customers of the County. No additional growth in the service area served by the Utilities, Inc. wastewater facilities is anticipated by the County. The cost for wastewater treatment and collection service to be paid to Utilities, Inc. was based on recent invoices for services provided by Utilities, Inc. and cost was escalated annually for inflationary allowances for the remainder of the Forecast Period.

f. Other Miscellaneous Purchases – In addition to the specifically identified TBC Partners purchases as described above, the County purchases a minor amount of wastewater treatment and disposal services from other local governments. The forecast of the additional purchased wastewater treatment and disposal services was based on historical trends and recognition of inflationary allowances on the cost of providing service and were estimated as follows:

Purchases from Other Miscellaneous TBC Partners

	For the Forecast Period – Fiscal Years Ending June 30,					
	2014	2015	2016	2017	2018	2019
Loudoun Water	$0	$0	$0	$0	$0	$0
Colchester / Harbor View	531,175	455,629	465,197	475,432	486,366	497,553
Town of Vienna	64,118	65,000	66,810	68,735	70,757	72,837
City of Falls Church	125,276	78,013	80,186	82,495	84,923	87,419
Total Expenses	$720,569	$598,642	$612,193	$626,661	$642,047	$657,809

10. As of June 30, 2013, the County had $311,835,000 in debt outstanding issued pursuant to the General Bond Resolution ("Outstanding Senior Lien Bonds"). A summary of the debt service attributes for the Outstanding Senior Lien Bonds is presented below:

Outstanding Senior Lien Bonds

Description	Series 2004	Series 2009	Series 2012	Total
Principal Amount of Bonds Outstanding [1]	$76,235,000	$144,890,000	$90,710,000	$311,835,000
Fiscal Year of Final Maturity	2029	2040	2043	N/A
Annual Debt Service [3]:				
2014	$6,774,342	$9,714,463	$5,575,083	$22,063,888
2015	6,787,967	9,718,661	5,584,811	22,091,439
2016	6,810,925	9,725,629	5,593,067	22,129,621
2017	6,830,175	9,725,702	5,593,016	22,148,893
2018	6,844,185	9,731,775	5,598,350	22,174,310
2019	6,861,873	9,735,213	5,600,038	22,197,124

[1] Amounts shown reflect amounts outstanding as of June 30, 2013 as reported by the County in the Comprehensive Annual Financial Report.

The debt service requirements included in this Report for the Outstanding Senior Lien Bonds were based on the actual debt service schedules for the issue and are presented on a "gross" basis (i.e., not net of interest earnings on any debt service related funds or accounts). Furthermore, the amounts shown are based on the monthly funding requirements for the Outstanding Senior Lien Bonds under the General Bond Resolution (essentially an accrual basis) as opposed to when the debt service requirements are actually paid.

11. The County has incurred and issued Subordinate Obligations to finance capital improvements to the System. The Subordinate Obligations consist of: i) loans incurred by the County from the State of Virginia's Water Facilities Revolving Fund loan program acting by and through the Virginia Resources Authority (VRA); and ii) the County's share of debt service on bonds issued by UOSA for capital projects, which debt service is allocated to the County by a wastewater service agreement based on the amount of wastewater treatment capacity reserved for the County by UOSA. A summary of the Subordinate Obligations liability as reported by the County is set forth below:

Outstanding Subordinate Obligations

	VRA Sewer Revenue Bonds		**UOSA Revenue**	
Description	**Series 2001**	**Series 2002**	**Bonds**	**Total**
Principal Amount of Bonds Outstanding [1]	$20,247,399	$27,534,588	$283,269,711	$331,051,698
Fiscal Year of Final Maturity	2021	2022	2015 - 2041 [2]	N/A
Annual Debt Service [3]:				
2014	$2,791,079	$3,412,198	$20,490,661	$26,693,938
2015	2,791,078	3,412,199	20,156,637	26,359,914
2016	2,791,078	3,412,198	20,287,813	26,491,089
2017	2,791,078	3,412,199	20,306,381	26,509,658
2018	2,791,078	3,412,199	20,313,682	26,516,959
2019	2,791,079	3,412,198	20,325,313	26,528,590

[1] Amounts shown reflect amounts outstanding as of June 30, 2013 as reported by the County in the Comprehensive Annual Financial Report.
[2] The County has an allocable share of several series of subordinate obligations with UOSA with final maturities ranging from Fiscal Year 2015 through 2041.
[3] Amounts shown reflect the accrued debt service payments (i.e., when payments are deposited to the debt service sinking fund and not when actual payments are made) associated with the outstanding subordinate debt service. Amounts shown were also adjusted to reflect the reduction in the annual debt service realized from the recent issuance of the Series 2013B Bonds (during the Fiscal Year 2014) to refinance the then outstanding UOSA Series 2003 Revenue Bonds. Amounts shown for UOSA are also shown net of any BAB subsidies and/or use of debt service reserve funds applied towards final maturity for repayment.

The Subordinate Obligations loan repayment requirements included in this Report for the currently outstanding VRA and UOSA debt were based on the actual loan repayment schedules for each issue. With respect to debt service issued on behalf of the County by UOSA, amounts shown are presented net of any applicable BAB subsidy payments and use of debt service reserve funds applied to final payment for maturity, where applicable. The amounts shown are based on monthly funding (accrual basis) for the interest and principal components of the Subordinate Obligations of the System to the VRA and UOSA. It should also be noted that during the Fiscal Year 2014 UOSA issued Series 2013B Bonds to refinance the then outstanding Series 2003 Bonds. Annual debt service identified in the prior table reflect the recent refinancing. A summary of the Subordinate Obligations debt service payments for the Forecast Period is included on Table 8 at the end of this Report.

12. In order to fund the capital improvement plan for the System as shown on Table 10, it is anticipated that the County will issue additional utility system revenue bonds on parity with the Outstanding Senior Lien Bonds (the "Additional Parity Bonds"). The issuance of such Additional Parity Bonds was assumed to be incurred consistent with the capital funding plan based on the estimated construction drawdown or needs schedule as identified in the County's Capital Improvement Plan, which is shown on Table 10. The following Additional Parity Bonds were assumed in the financing plan reflected in this Report:

Additional Parity Bonds

Description	**2017**
Principal Amount of Bonds Outstanding [1]	$66,820,000
Fiscal Year of Final Maturity	2046
Annual Debt Service [3]:	
2014	$0
2015	0
2016	0
2017	4,597,576
2018	4,597,576
2019	4,597,576

The following is a summary of the primary assumptions associated with the issuance of the Additional Parity Bonds assumed in the development of the financial forecast. It was assumed that the incremental debt service Reserve Subfund Requirement for the Additional Parity Bonds would be cash funded from the proceeds of such additional bonds.

Average Annual Interest Rate	5.50%
Term of Issue	30 Years
Debt Service Reserve Fund	$4,597,576
Capitalized Interest During Construction	None
Bridge Financing – Type and Term	None Assumed
Annual Debt Repayment Structure	Level Debt Payments – All Years
Assumed Issue Date	July 1, 2016

Table 8 at the end of this Report provides a summary of the annual Debt Service Requirements for each year of the Forecast Period.

13. UOSA plans to issue additional bonds to finance the capital needs of its wastewater treatment plant, including funding the increased treatment compliance requirements associated with the Chesapeake Bay Program. Pursuant to the wastewater service agreement between UOSA and the County, the County is, among other things, responsible for the payment of its allocable share of debt service on the bonds. The County recognizes its obligation of the UOSA's debt payments as a subordinated debt. As part of the financing program, UOSA has adopted a comprehensive finance plan for its capital improvement program and it is anticipated that UOSA will issue additional Regional Sewer Revenue Bonds during the Forecast Period.

Because UOSA is responsible for the financing of the projects, the County's share of the improvement projects are not contained within its capital improvement program.

Historically, the County has treated its payment obligations to UOSA with respect to the County's portion of the debt service on UOSA's bonds as a "Debt Service Component" of the "Cost of Contracted Services" under the County's General Bond Resolution on a basis subordinate to its Outstanding Senior Lien Revenue Bonds. The following additional Regional Sewer Revenue Bonds were assumed to be issued by UOSA during the Forecast Period based on their current financing plan:

Additional UOSA Bonds – Subordinate Obligations Allocated to County [1]

	Series 2014	Series 2016	Series 2018	Total
Principal Amount of Bonds Outstanding	$14,503,129	$34,224,635	$24,702,966	$73,430,731
Fiscal Year of Final Maturity	2045	2047	2050	N/A
Annual Debt Service:				
2014	$0	$0	$0	$0
2015	348,075	0	0	348,075
2016	696,150	0	0	696,150
2017	922,428	821,391	0	1,743,819
2018	922,240	1,642,782	0	2,565,022
2019	921,540	2,174,772	0	3,096,312
2020 [2]	922,462	2,176,357	592,871	3,691,691
2021 [2]	922,770	2,176,641	1,185,742	4,285,153
2022 {2]	922,462	2,175,623	1,570,778	4,668,863

[1] Amounts reflect estimated allocated share of the UOSA Regional Sewer Revenue Bonds to the County which are considered as a subordinate obligation; such amounts do not represent the total issuance of bonds anticipated by UOSA.

[2] Amounts shown are beyond the Forecast Period and are presented for informational purposes only to demonstrate the maximum level of annual debt service anticipated from the proposed issuance.

As can be seen above, the amount of UOSA annual debt service payments allocated to the County is assumed to increase by approximately $4.7 million in total and approximately $3.1 million by the end of the Forecast Period. No other additional subordinated debt was assumed during the Forecast Period. Based on the above assumptions relative to the allocable existing and future debt liability allocable to the System, the following figure reflects the anticipated senior and subordinated debt service payments required to be funded from System revenues during the Forecast Period.

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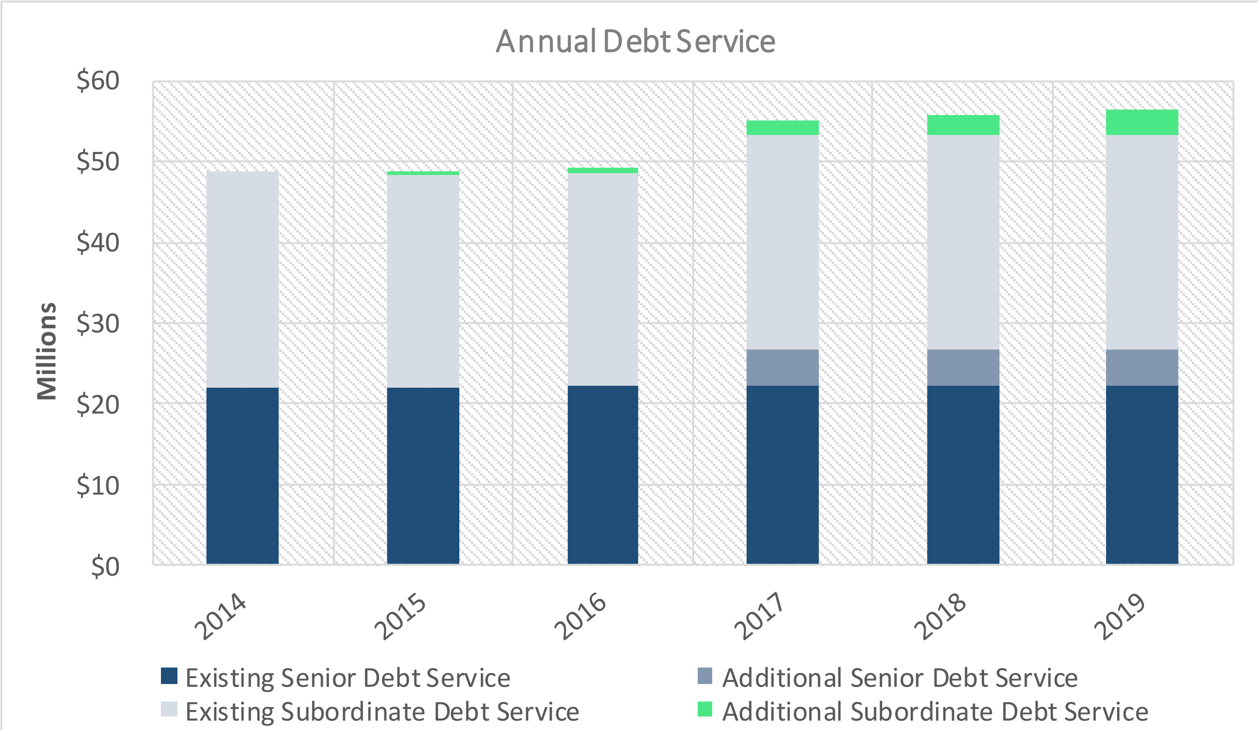


14. The Capital Improvement Program for the System was based on: i) the current status of projects under construction or appropriated (funded) for future construction as of June 2013; ii) the County's most recent Ten Year Capital Improvement Plan; iii) deferral of certain projects based on discussions with WMP staff; and iv) projections for capital expenditure requirements as provided by the TBC entities. The capital improvement plan is summarized on Table 10 at the end of this Report.

In order to minimize the financial impacts to customers and based on discussions with staff, the financial forecast assumes the deferral of capital funding beyond the Forecast Period. The following table provides a summary of the total funding requirements and proposed deferral:

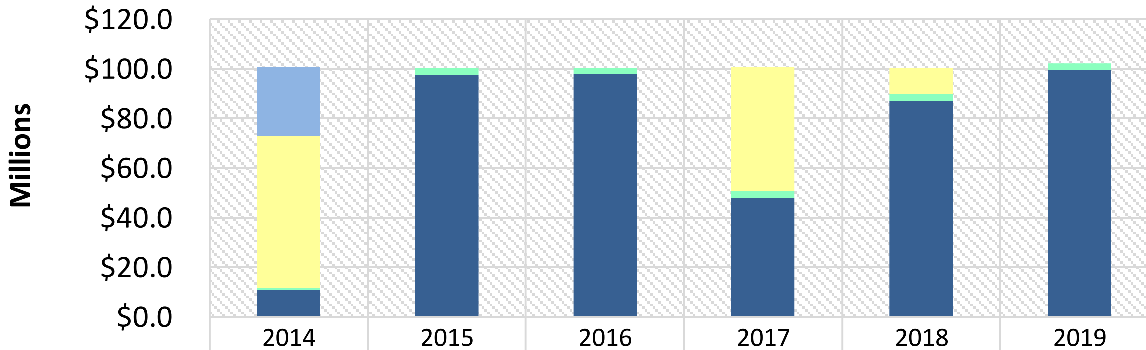
Deferred Capital Funding ($000s)

	Projected Fiscal Year Ending June 30,						
Description	2014	2015	2016	2017	2018	2019	Total
Capital Funding	$131,562	$112,268	$82,465	$113,839	$118,354	$102,159	$660,647
Deferred Funding	(31,000)	(12,000)	18,000	(13,000)	(18,000)	0	(56,000)
Recognized Funding	$100,562	$100,268	$100,465	$100,839	$100,354	$102,159	$604,647
UOSA Projects [*]	11,962	6,551	11,394	12,770	8,953	11,703	63,331
Total Funding	$112,523	$106,819	$111,859	$113,609	$109,306	$113,862	$667,978

[*] Amounts shown reflect County allocable improvements pursuant to projections of capital funding provided by UOSA staff. Such projects are anticipated to be funded from the issuance of additional subordinated indebtedness by UOSA on behalf of the County.

As can be seen above, based on discussions with WMP staff the proposed capital funding plan deferred approximately $56 million in funding requirements beyond the Forecast Period. The capital funding plan associated with the adjusted capital funding program was based on i) the purpose of the expenditures (e.g., renewals and replacements, new customer-related); ii) available fund balances in accounts established by the County which are available for capital projects; iii) anticipated Service Availability Charges for receipts derived from new development which is recognized as a financial resource in the development of the cash flow estimates of the System; iv) the use of existing proceeds from previously issued bonds; and v) additional parity bonds issued during the Forecast Period. The following provides a summary of the Capital Improvement Funding plan as shown in greater detail on Table 11:

Adjusted Capital Funding Plan **(Excludes UOSA Debt Funded Projects $63M)**



	2014	2015	2016	2017	2018	2019
Availability Fee Fund	$27.4	$0.0	$0.0	$0.0	$0.0	$0.0
Debt Proceeds	$61.3	$0.0	$0.0	$50.3	$10.4	$0.0
Rev & Op Fund	$1.0	$2.5	$2.6	$2.6	$2.7	$2.8
E&I Fund (R&R / Ext.)	$10.8	$97.8	$97.9	$48.0	$87.2	$99.4
Total	$100.6	$100.3	$100.5	$100.8	$100.4	$102.2

It should be noted that the capital funding requirement noted above is exclusive of the contractual TBC improvements for UOSA since such improvements are debt financed on behalf of the County. As previously discussed, the County expects UOSA to issue approximately $73 million in additional bonds to finance approximately $63 in improvements based on the County's allocable share of the UOSA capital program. In total the County is expected to fund approximately $668 million in County and TBC constructed capital improvements (includes UOSA Projects and programed deferrals), of which approximately $185 million or 28% is assumed to be funded from either existing or additional debt proceeds during the Forecast Period. This implies that the majority of the capital program is funded from internal sources (i.e., 72%) derived from: i) rate revenues; ii) availability charges; and iii) existing cash reserves. This funding approach through the use of limited additional bonds is also projected to result in the stabilization of rates over the long-term (which is evidenced in the financial forecast as rate adjustments in the later portion of the Forecast Period are projected to approach inflation-only levels).

15. Recognized in the capital improvement program is the use of the Extension and Improvement (E&I) Fund (designated by the County as Fund 69300) which assumes annual dedicated funding transfers from System operations to finance the recurring capital projects for the betterment or replacement of the capital fixed assets. This fund was established by the General Bond Resolution to be used by the County for, among other things, the purpose of paying the costs of unusual or extraordinary maintenance or repairs, repairs or maintenance not recurring annually, and additions to or improvements, extensions or enlargements of the System; the purpose being to recognize an ongoing annual funding mechanism to continue to provide high quality service (i.e., maintain same level of service) to its customers as the System plant in service ages and reaches the end of its useful service live (the E&I Fund in this report is not just a fund used for the extension of wastewater service to unserved developed areas to eliminate on-site disposal systems). The General Bond Resolution does not mandate a minimum funding requirement or an annual deposit for the Subfund. For the purposes of this Report, we have assumed annual minimum deposits to the Extension and Improvement Subfund equal to three percent (3.00%) of the estimated gross book value of the County-owned utility plant in service (utility assets owned and operated by the County) averaging approximately $41.1 million annually during the Forecast Period. Based on these assumptions, the following minimum deposits to the E&I Fund for ongoing renewals and replacements for the Forecast Period were determined as follows:

Minimum Deposit from Rates for Deposit to E&I Fund (Capital Reinvestment) for the Forecast Period (in $000s)

	Fiscal Year Ending June 30,					
	2014	2015	2016	2017	2018	2019
Gross Plant in Service(Beginning of Year)	$2,244,528	$2,344,796	$2,445,261	$2,546,100	$2,646,454	$2,748,614
Less Non-Applicable Assets						
Land	(17,814)	(17,814)	(17,814)	(17,814)	(17,814)	(17,814)
Construction-Work-in-Process	(32,671)	(42,826)	(84,703)	(85,431)	(83,272)	(94,728)
Equipment	(13,159)	(15,642)	(18,198)	(20,832)	(23,545)	(26,339)
Assumed Retirements due to Plant Additions	(23,989)	(19,528)	(15,339)	(20,764)	(22,872)	(20,908)
Purchased Capacity – TBC Partners	(931,173)	(986,133)	(999,339)	(1,012,114)	(1,026,483)	(1,031,120)
Net Applicable Plant-in-Service	$1,225,722	$1,262,853	$1,309,868	$1,389,145	$1,472,468	$1,557,705
Assumed Annual Deposit Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Minimum E&I Fund Deposit	$36,772	$37,886	$39,296	$41,674	$44,174	$46,731

Net Revenues on a stand-alone basis are anticipated to be sufficient to fully fund the transfer shown above for all fiscal years. It should be noted that the actual amount of funds available for capital needs during the Forecast Period is greater than the minimum funding deposit. This is due primarily to i) the annual debt coverage requirement being met solely from rate revenues without availability charges to meet the financial policies of the County and ii) the application of service availability charge receipts towards the payment of new customer-related debt service payments which improves overall cash flow.

16. In addition to the minimum deposits to the E&I Fund for ongoing renewals, replacement and betterments of utility plant, the County also deposits funds into an account to fund the extension of wastewater service to developed but unserved customers. WMP and County policy is to make deposits into the fund (considered as a sub-fund of the E&I Fund) until there is on deposit an unencumbered balance of $5,000,000 for service extensions and then

no further deposits are assumed. In addition, the County also deposits other related revenue into this account for service extension purposes (lateral spur fee, connection charge and frontage fee revenues). For the Forecast Period, it was assumed that the County would expend approximately $3,000,000 annually in facility extension capital costs and would fund a like-kind amount from annually revenues and deposits such that a $5,000,000 balance in the fund for extensions was maintained.

17. Included as a source of funds is interest income earned on available System fund balances. For the Forecast Period, interest income was based on the estimated balances for all cash accounts or funds anticipated to be on deposit for the System and the availability of such earnings to fund the revenue requirements based on the purpose of the fund. The earnings on cash balances included the Revenue Subfund, Debt Service Subfund, Debt Service Reserve Subfund, Extension and Improvement Subfund, and other funds established by WMP, including the capital-related accounts, which were recognized as being available to fund System revenue requirements. Earnings on the estimated wastewater service availability charge balances (although considered as a component of operating revenues) were assumed to be restricted for expansion-related expenditure funding and therefore were considered restricted to such fund. Any earnings on balances from debt proceeds held in the Construction Funds were considered restricted. The earnings on service availability charge and Construction Fund balances were assumed in this Report to: i) not be a component of the Gross Revenues and not be available to fund the revenue requirements or for determination of the rate covenant as defined in the General Bond Resolution for the System; and ii) only available to provide an additional source of funds for capital expenditure financing in relation to expansion-related projects as designated from time-to-time by the County.

    In the development of the estimated interest earnings, an assumed average annual interest rate ranging from 0.50% to 2.0% was applied to the estimated average fund balances in each account maintained by the County during the Forecast Period. This interest rate assumption is based on WMP's recent earnings performance results and discussions with WMP Staff. The assumed average interest rate was maintained at a low level to limit the overall volatility of such earnings in the financial plan and to provide a level of assurance that such earnings would be available for the determination of Net Revenues. The assumed average interest rate was applied to the estimated average fund balances for each specific fund as maintained by the County for financial reporting and accounting purposes of WMP. A summary of the interest earnings recognized in the financial forecast for each Fiscal Year are summarized as follows:

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Summary of Projected Interest Earnings - Forecast Period

	Fiscal Year Ending June 30,					
Unrestricted Interest Earnings:	2014	2015	2016	2017	2018	2019
Funds 69000 and 69010 – Revenue fund [1]	$306,000	$373,000	$457,000	$686,000	$686,000	$914,000
Fund 69000A – VRA Subordinate Obligation Reserve fund [2]	31,000	47,000	62,000	93,000	93,000	124,000
Fund 69300 – Extension and Improvement Fund [3]	258,000	560,000	480,000	640,000	665,000	450,000
Fund 69300A – Extension fund	25,000	38,000	50,000	75,000	75,000	100,000
Fund 69020 – Debt Service fund	37,000	55,000	74,000	134,000	134,000	179,000
Fund 69030 – Debt Service Reserve fund	117,000	175,000	234,000	385,000	419,000	559,000
Fund 69040 – Subordinate Obligations fund	33,000	50,000	68,000	106,000	109,000	148,000
Total Unrestricted Interest Earnings [4]	$807,000	$1,298,000	$1,425,000	$2,119,000	$2,181,000	$2,474,000
Restricted Interest Earnings:						
Fund 400-A – Service Availability Charge Fund [5]	68,000	0	0	0	0	0
Fund 69310 – Bond Construction fund	153,000	0	0	0	0	0
Total Restricted Interest Earnings [6]	$221,000	$0	$0	$0	$0	$0
Total Interest Earnings	$1,028,000	$1,298,000	$1,425,000	$2,119,000	$2,181,000	$2,474,000

[1] Reflects estimated earnings on Fund 69000 and 69010 cash balances that were assumed to benefit existing customers and therefore earnings are available to meet any expenditure requirement allocable to existing customers.

[2] Reflects estimated earnings on Fund 69000 cash balances that are allocable to the VRA debt service reserve requirements. The VRA loans were fully allocated to existing customers and therefore earnings on any balances associated with repayment of the VRA loans were assumed to be available to meet any expenditure requirement allocable to existing customers.

[3] For the purposes of this analysis, this amount serves as a capital account for funding a portion of existing customers CIP.

[4] Reflects earnings on various funds and reflects earnings recognized in development of Gross Revenues.

[5] Reflects earnings that were assumed to be allocable to new customers (expansion-related) and therefore were restricted to this particular purpose for the purposes of the review of rates.

[6] Interest earnings presented for information purposes only; amounts were assumed to be restricted for a specific purpose and not included in the forecast of Gross Revenues.

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Based on the assumptions recognized in the development of the financial forecast and the result of actual Fiscal Year 2013 results, the following forecast of the net revenue requirements and availability of funds for financial performance evaluations was prepared:

Projected Net Revenue Requirements from Rates - Forecast Period ($000's) [1]

	Fiscal Year Ending June 30,					
	2014	2015	2016	2017	2018	2019
Gross Revenue Requirements						
Operating Expenses	$92,365	$94,151	$97,879	$101,871	$106,320	$111,054
Senior Lien Debt Service	22,064	22,091	22,130	26,746	26,772	26,795
Subordinate Lien Debt Service	26,694	26,708	27,187	28,253	29,082	29,625
E&I Fund Deposit (capital re-invest.) [2]	36,772	37,886	39,296	41,674	44,174	46,731
E&I Fund Deposit (Additional)	25,266	25,614	25,726	22,418	24,228	21,738
E&I Fund Deposit (sewer extension program)	2,890	2,890	2,889	2,889	2,888	2,888
Departmental Capital from Rates [3]	980	2,482	2,557	2,634	2,713	2,794
Total Gross Revenue Requirements	$207,030	$211,823	$217,664	$226,486	$236,177	$241,625
Less Other Revenue and Income:						
Sales of Service and Other Revenues[4]	(10,703)	(11,140)	(11,366)	(12,140)	(12,308)	(12,778)
Service Availability Charges – Pay Debt [5]	(20,071)	(18,007)	(15,926)	(15,926)	(18,581)	(18,581)
Net Revenue Requirements	$176,256	$182,675	$190,372	$198,420	$205,289	$210,266
Recognized System Rate Adjustment	n/a	3.5%	4.0%	4.0%	3.0%	2.0%
Proposed Rates [6]	$176,256	$182,675	$190,372	$198,420	$205,289	$210,266
Surplus / (Deficiency)	$0	$0	$0	$0	$0	$0

[1] Amounts shown derived from Table 6.

[2] Represents minimum capital funding allowance of 3.0% of County-owned depreciable utility plant, exclusive of capital equipment which is funded annually as part of the WMP budget process.

[3] Reflects equipment funded annually from rate revenues (short service live assets which are recurring).

[4] Includes other miscellaneous operating revenues not set aside for extension program, interest income on available fund balances exclusive of service availability charge and bond-funded construction funds which were assumed to be restricted to such account, and sales of service (bulk) revenue which is predicated on a contractual service agreement.

[5] Since first priority of service availability charges is to fund new customer-related debt service payments and since full debt service requirements included as a component of the gross revenue requirements, such estimated fees collected (after the payment of the debt) provide additional monies for funding operating reserves at minimum reserve levels and for additional capital funding (was recognized as available funds in the overall capital financing plan; if funds were not available, an increase in additional bonds issued would result and increase the total debt service payment liability).

[6] Fiscal Year 2014 represents Board-adopted rates; all other years represent proposed rates which include the application of the recognized system rate adjustment.

Based on the assumptions recognized in the development of the financial forecast and the result of actual Fiscal Year 2013 results, updated System rate adjustments for the Forecast Period were determined. As shown above and as summarized below, the proposed System rate adjustments, and a comparison to the previous Board-approved rates identified during the preparation of the Fiscal Year 2013 Financial Forecast, are summarized below:

Projected Net Revenue Requirements from Rates

	In Effect	Approved or Recommended				
	2014	2015	2016	2017	2018	2019
Board Approved – FY 2013 [1]	6.5%	6.4%	4.0%	3.9%	n/a	n/a
Recommended – FY 2014 [2]	n/a	3.5%	4.0%	4.0%	3.0%	2.0%

[1] Reflects Board Approved System average rate adjustments in support of the Fiscal Year 2013 Financial Forecast. Such approved adjustments were for the five-fiscal year forecast period of 2014 to 2017.

[2] Reflects recommended rate adjustments identified in this report which are to be presented to the Board for the four-fiscal year Forecast Period of 2015 to 2018.

Primary Reasons for Rate Adjustments

The primary reasons for the continued implementation of additional rate adjustments during the Forecast Period include:

1. Continued inflationary impacts on the cost of providing service and construction of capital improvements, especially as the economy continues to improve and the demand for goods and services increases.

2. The need to fund the capital program, including addressing compliance with increased regulations, including the Chesapeake Bay Program improved levels of treatment initiatives.

3. The continued effects of reduced billed wastewater flow per customer due to continued declines in wastewater use which reduces "per customer" contributions to meeting the annual net revenue requirements.

4. The ongoing effects of low growth when compared to prior historical periods which results in reduced service availability charge revenue. It should be noted that the service availability charge revenue is anticipated to increase during the Forecast Period when compared to the immediate recent trends (i.e., Fiscal Years 2009 to 2012) which will provide additional resources to WMP.

5. The need to meet the adopted financial policies and targets for the System which, among other things, is structured to be a "AAA" credit utility which results in the lowest costs to borrow and recognizes the reduced financial risks to the System resulting in a long-term sustainable (lowest cost over time) rate program. The presentation of the financial position is presented below.

PROPOSED RATE STRUCTURE AND CUSTOMER IMPACT

General

In Fiscal Year 2013, WMP 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 base charge as well as a usage charge (volumetric-based) in the determination of the quarterly bill. In Fiscal Year 2013 the County adjusted the rate structure to include a fixed cost recovery or base charge to more equitably recover the cost of providing wastewater service based on the recommendations of the rate consultant. The purpose of the charge is to recognize that the System must invest in a significant amount of capital and must provide service on a "readiness-to-serve" basis (which links to demand or capacity reservation, not flow). This change is in keeping with industry norms; the advantages and disadvantages to this structure are as follows:

Advantages	Disadvantages
1. Increases revenue stability since a higher proportion of the rate revenues are recovered on a fixed basis (not subject to flow which is variable and has been decreasing).	1. Low-flow customers experience a higher proportionate (%) increase in wastewater charges during the implementation phases of the rate structure change. Results in a higher percentage (%) increase to the bill, but should be noted not a higher overall increase to the bill.
2. Reflects industry trends in rates; especially as the predictability in flows and corresponding revenue per customer decreases.	2. May be more difficult to explain utility bill to customers since reflects a change (recent) in rate structure and most do not understand the magnitude of the capital investment required to serve the customer base.
3. Promotes fairness since it recovers costs from users that impact the system from a demand standpoint even though the amount of use may be low.	
4. Residential Customers with low winter quarter average to total annual use relationships are paying their fair share of the cost of providing service.	
5. Structure favorably viewed by Credit Rating Agencies since tends to increase rate revenue predictability and recovery.	

The rate structure change was structured to 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.

It should be noted that prior to the implementation of the base charge in Fiscal Year 2013, the County charged a billing charge ($5.50 per quarter per bill) which recovered approximately 3.5% of the total identified revenue requirements of the System. This is a very low fixed cost recovery threshold and resulted in rates being based on a flow charge which varies and has trended downward over the past ten fiscal years (lower billed use per customer which results in a lower rate of growth in flow when compared to the rate of growth in customers). Increasing the fixed cost recovery in rates: i) provides a more equitable recovery of the costs incurred by to provide service to customers, and ii) stabilizes System revenues by decreasing the reliance of cost recovery on volumetric charges. It is projected that the proposed rates as delineated in this report (presented below) will recover the total identified System revenue requirements during the Forecast Period.

Proposed Rates for Sewer Service

The proposed rates continue the phase-in of the fixed cost recovery charge over a five-fiscal year period to limit the impact to low use customers as a result of the rate structure change. The Fiscal Year 2013 adopted rates were designed to: i) target a fixed cost recovery relationship (i.e., the percent of total rate revenue recovered from a non-volumetric rate) equal to approximately 20% of the total rate revenues by the end of the phase-in period and ii) maintain a constant flow charge during such phase-in period, all as based on the then revenue requirement needs (cost recovery) of the wastewater system. As a result of the development of the updated revenue requirements to be recovered from rates as identified during the Fiscal Year 2014 study, the projected increase in rates when compared to the 2013 revenue sufficiency analysis has been reduced. This is due to a variety of factors, including i) increases in sales revenues due to higher than anticipated customer growth; ii) an increase in Service Availability Charges which are used to offset new-customer debt service payments and improving Wastewater System cash flow; iii) lower operating expenses than originally projected; iv) reduced subordinate debt payments (i.e., UOSA) as a result of a recent bond refunding program which reduced the annual payments as a result of securing lower interest rates; and v) reduced future increases in senior lien debt due to the deferral of certain capital improvements coupled with increased funds availability.

Since the fixed cost recovery charge was previously adjusted to recover the total net change in revenue requirements in the Fiscal Year 2013 analysis and since there is a recommended reduction in the overall percent change in rates as determined in the 2014 study, the proposed rates reflect the adjustment primarily to the fixed cost charge. Additionally, this change in fixed cost was further dampened by a marginal increase in the flow charge to further reduce the rate impact to low wastewater users. Overall, the rate plan to meet the advantages of the implementation of the fixed cost recovery charge is maintained but is scheduled to be over a longer period of time. The proposed rates based on the results of the 2014 Revenue Sufficiency Analysis are summarized below:

Summary of Proposed Residential Quarterly Rates per Fiscal Year 2014 Rate and Forecast Period [1]

	Fiscal Year Ending June 30					
	In Effect	Proposed				
	2014	2015	2016	2017	2018	2019
Proposed System Rate Adjustment		3.5%	4.0%	4.0%	3.0%	2.0%
Volumetric Rate – $ per 1,000 Gallons	$6.55	$6.62	$6.65	$6.68	$6.75	$6.78
Base Charge – $ per ERC per Meter Size [2]	$12.79	$15.86	$20.15	$24.68	$27.52	$29.72

[1] Rates shown reflect proposed rates in support of the Fiscal Year 2014 Financial and Rate Forecast and represent an overall reduction in the rates charged when compared to the Adopted 2013 Rates beginning in Fiscal Year 2015.

[2] Amount reflects new charge implemented in Fiscal Year 2013 to recover a portion of the identified fixed costs, improve revenue stability and equitability in cost recovery.

For non-residential accounts, it is recommended that the base charge be adjusted to account for the size of the meter serving the property by multiplying the standard residential charge (3/4-inch meter or lowest meter size) by a meter equivalent factor based on information published by the American Water Works Association. The premise is that the meters are sized for non-residential properties based on the anticipated demands for the customers predicated on engineering plans and development information and that all non-residential water use is generally returned to the wastewater system. The meter equivalent factors are based on the demand criteria of the meters (gallons per minute for flow measurement) and are also used by utilities in other jurisdictions for the application of fixed-cost recovery charges. The meter equivalent factors to be applied to the non-residential customers based on the size of the meter for the application of the base charge 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

Proposed Rates – Average Residential Customer Impact

The following is a summary of the monthly rate impact to residential customers (the majority of the customers served by the System) for the Fiscal Years 2015 through 2017 when comparing the Approved Rates to the proposed rates based on the 2014 Revenue Sufficiency Analysis:

Average *Monthly* Residential Bill at Proposed Rates at Usage of 6,000 Gallons per Month

	Fiscal Year Ending June 30,			
	Existing	Forecast Period Projected Rates		
Scenario	2014	2015	2016	2017
Adopted Rates:				
Existing and Adopted Rates	$43.56	$46.09	$47.75	$49.45
Monthly Customer Increase		$2.53	$1.66	$1.70
Proposed Rates:				
Proposed Rates	$43.56	$45.01	$46.62	$48.31
Monthly Customer Increase		$1.45	$1.61	$1.69
Difference from Adopted 2014 Rates		($1.08)	($1.13)	($1.14)

The proposed rates as recommended in this report are lower than the most recent rates approved by the Board. The recommended charges identify an average monthly increase from $1.45 to $1.69 for the Fiscal Years 2015 through 2017. The recommended rates result in a monthly bill that is from approximately $1.08 to $1.14 less per month on average than the previously adopted rates.

Average Residential Sewer Charge Rate Comparisons

The average residential customer for the System is billed approximately 18,000 gallons of wastewater service on a quarterly basis (6,000 gallons per month). A comparison of the wastewater bill for service between the County and a number of utilities surveyed is shown on the table below. As can be seen on the comparison, the Fiscal Year 2014 existing rates and the proposed 2015 rates for the County produce bills which are lower on average when compared with the bills charged for similar service by other neighboring utilities. It should be noted that several of the utilities surveyed are anticipating a rate change in the next twelve months (pursuant to a rate evaluation that is underway, an adopted rate-phasing program, or through the application of a price [inflationary] index) which should promote the continuing favorable competitive position of the County during the Forecast Period.

Single-Family Residential Wastewater Service
6,000 Gallons of Billed Wastewater Service Per *Month* [1][2]

	Monthly Bill
Fairfax County:	
Existing Rates Effective July 1, 2013	$43.56
Proposed Rates Effective July 1, 2014	45.01
Other Neighboring Utilities:	
Alexandria Renew Enterprises [3][4]	$54.94
Arlington County	51.78
DC Water [3][5]	52.34
Loudoun Water [3][6]	34.45
Prince William County Service Authority [3]	46.80
Washington Suburban Sanitary Commission [3][7]	43.59
Other Neighboring Utilities' Average	$47.32

[1] Unless otherwise noted, amounts shown reflect residential rates in effect January 2014 and are exclusive of taxes or franchise fees, if any, and do not include any surcharges for service rendered outside the corporate limits of the local jurisdiction, for specific capital improvements or for any other purpose. All rates are as reported by the respective utility. This comparison is intended to show comparable charges for similar service for comparison purposes only and is not intended to be a complete listing of all rates and charges offered by each listed utility.

[2] It should be noted that utilities may differ as to the term of billing period and units of measurement used in order to determine the respective utility customer's wastewater bill. For purposes of this comparison, all bills shown have been adjusted to match bills rendered on a monthly basis and recognized in units of gallons.

[3] Utilities shown bill a fixed cost or base charge per billing period per respective account or meter.

[4] The bill shown for Alexandria Renew Enterprises includes the collection charge billed by the City of Alexandria to provide consistency to the rates charged for the other surveyed utilities.

[5] Amounts shown assumes: i) the Clean Rivers Impervious Area Charge of $11.85 per month associated with runoff entering the sewer system; ii) a 50% allocation of the $3.86 metering fee; iii) a 50% allocation of the a Right-of-Way fee to the District of Columbia of $0.22 per 1,000 gallons; iv) 60% allocation of the PILOT fee charged to water and wastewater customers of $0.71 per 1,000 gallons; and v) the residential wastewater flow charge of $5.89 per 1,000 gallons.

[6] Loudoun Water has adopted an approximate 3% rate increase for wastewater service to become effective April 1, 2014. Amounts shown reflect the current rates in effect (without the anticipated rate adjustment).

[7] The Washington Suburban Sanitary Commission (WSSC) bills customers of the utility by calculating the respective customer's average daily flow of use, which is in turn used to determine the variable rate charged to the customer. The calculated bill assumes 6,000 gallons per month or approximately 200 gallons per day. Amounts shown assume a 50% allocation of the quarterly Account Maintenance fee of $11.00.

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Service Availability Charges

It is recommended that the County maintain the current Service Availability Charge (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 2015. The following charges for the standard residential dwelling unit were recognized during the Forecast Period:

Recommended Service Availability Charges

	Existing Charge	Recommended Charge				
	2014 ($/SFRE)	2015 ($/SFRE) [1]	2016 ($/SFRE) [1]	2017 ($/SFRE) [1]	2018 ($/SFRE) [1]	2019 ($/SFRE) [1]
Single-Family Detached	$7,750	$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	$7,750
Townhouse	6,200	6,200	6,200	6,200	6,200	6,200
Apartment	6,200	6,200	6,200	6,200	6,200	6,200
Mobile Home	6,200	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	6,200
Hotel, Motel, or Dormitory Rental Unit	1,938	1,938	1,938	1,938	1,938	1,938
All Other Uses per Fixture Unit Commercial or Industrial	$401	$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 charge each year; these fees will be adjusted based upon the results of this review in the FY 2016 through FY 2020 rate recommendations.

The service availability charges were initially developed from a detailed analysis performed by WMP 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.

Residential Customer Service Availability Charge Impact and Charge Comparison

It is recommended that the County not adjust the Service Availability Charges at this time based on discussions with the County. The WMP conducts a detailed review of the service available fees annually. A survey of the County's existing and recommended Service Availability Charges with neighboring utilities levels was prepared. This comparison was based on wastewater Service Availability Charges 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 imposed by the County produce charges which are similar to the level of fees billed 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 may affect the competitive position of the County.

Wastewater Service Availability Charge – Rate per ERC

	Rate per ERC
Fairfax County:	
Existing Charge Effective July 1, 2013	$7,750
Recommended Charge Effective July 1, 2014	7,750
Other Neighboring Utilities [1]	
City of Alexandria [2]	$8,404
Arlington County [3]	2,760
DC Water	N/A
Loudoun Water	7,896
Prince William County	10,800
WSSC – Unimproved [4]	3,500
WSSC – Improved [4]	10,750
Other Surveyed Average Utilities	$7,352

[1] It should be noted that no evaluation of the methodology for determining these availability charges was conducted. The availability charges 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] Alexandria Renew Enterprises does not charge an Availability charge. Amounts shown reflect charges from the City of Alexandria related to the collection system infrastructure.

[3] The County charges the availability based on a number of fixture counts or equivalent dwelling fixture unit (DFU)

[4] Washington Suburban Sanitation Commission (WSSC) charges separate availability charges based a customer's geographic location for improved and unimproved areas.

DEBT SERVICE COVERAGE AND COVENANT COMPLIANCE

An important component in the development of the revenue sufficiency analysis is the determination of whether the rate covenants as outlined in the General Bond Resolution authorizing the issuance of 's outstanding senior lien and any additional parity bonds (the "County 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,

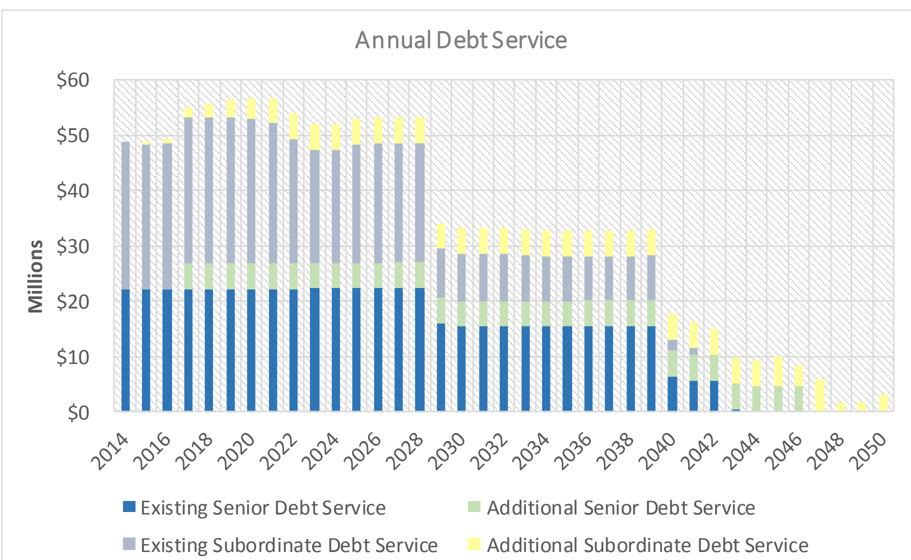
(II) the Debt Service Requirements relating to Parity Indebtedness in such Bond Year; and

(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."

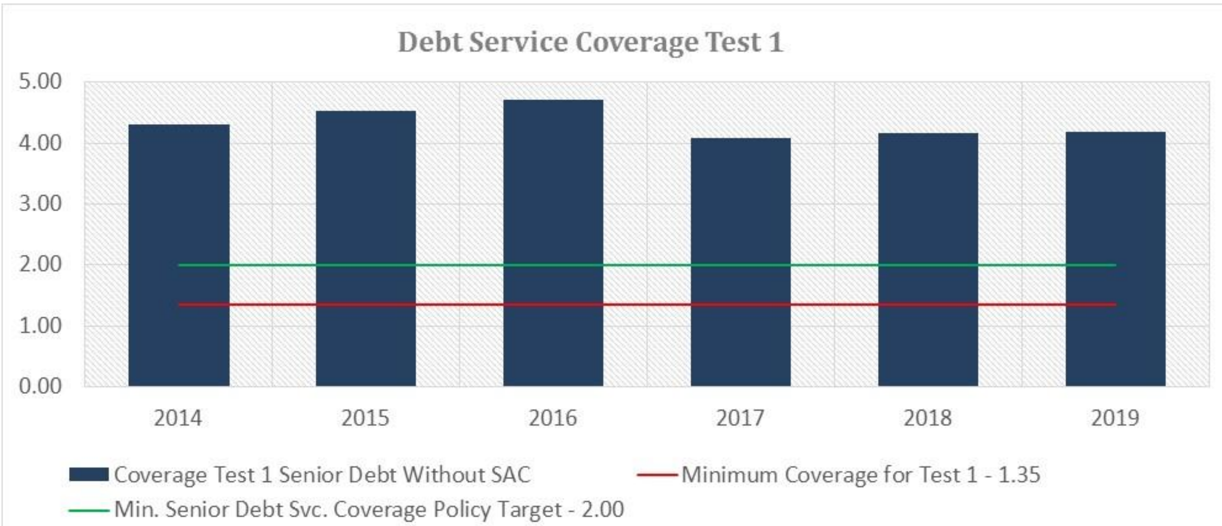
In addition to the terms of the General Bond Resolution, the County must also set rates to meet the terms and conditions of the Virginia Resources Authority (VRA) Financing Agreement between the County and the Virginia Water Facilities Revolving Fund acting by and through the VRA. The VRA Loans are considered as subordinate obligations 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:

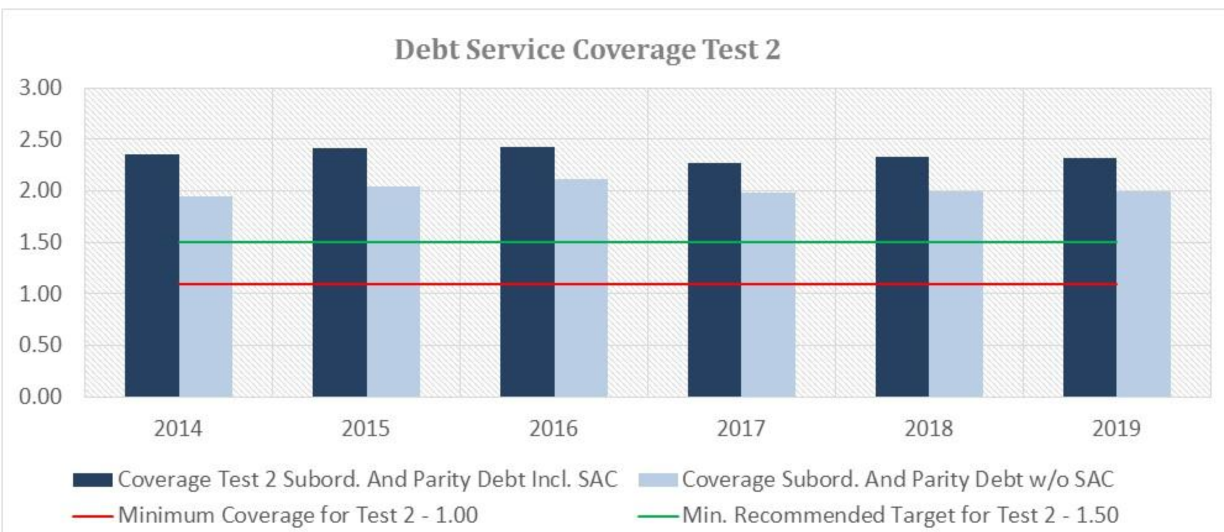
"...each Fiscal Year the Net Revenues Available for Parity Debt Service will equal at least the amount required during the Fiscal Year to pay the principal of and interest on the Local Bond, the Additional Payments, if any, and all other Parity Indebtedness and Subordinate Indebtedness of the Borrower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

As can be seen below and based on the financial forecast presented in this report, the annual debt service payments on all of the outstanding senior and subordinate lien debt is the highest in the most recent years. After Fiscal Year 2028, the County will have future additional bonding capacity to fund capital needs of the System without a potential increase in rates (since the debt payments are currently reflected in the rates for service. This debt structure will provide the County a significant amount of financial flexibility relative to the funding of its future capital improvement program.



As shown below and summarized on Table 7 at the end of this report, 's anticipated revenue which recognizes the recommended rate adjustments as identified in this report for the Fiscal Years 2015 through 2019, are projected to 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) WMP's Net Revenues (not including service availability charges which are referred to as Excluded Revenues) are projected to meet the minimum 125% debt service coverage requirement on the County Bonds and additional parity bonds assumed to be issued during the Forecast Period (collectively, the "Senior Lien Bonds") as required by the General Bond Resolution; ii) 's Net Revenues are projected to meet the 100% debt service coverage requirement of the sum of the debt service requirements of the Senior Lien Bonds and the Subordinate Obligations; and iii) the Net Revenues after the payment of the County 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.

PROJECTED FINANCIAL POSITION AND PERFORMANCE MEASURES

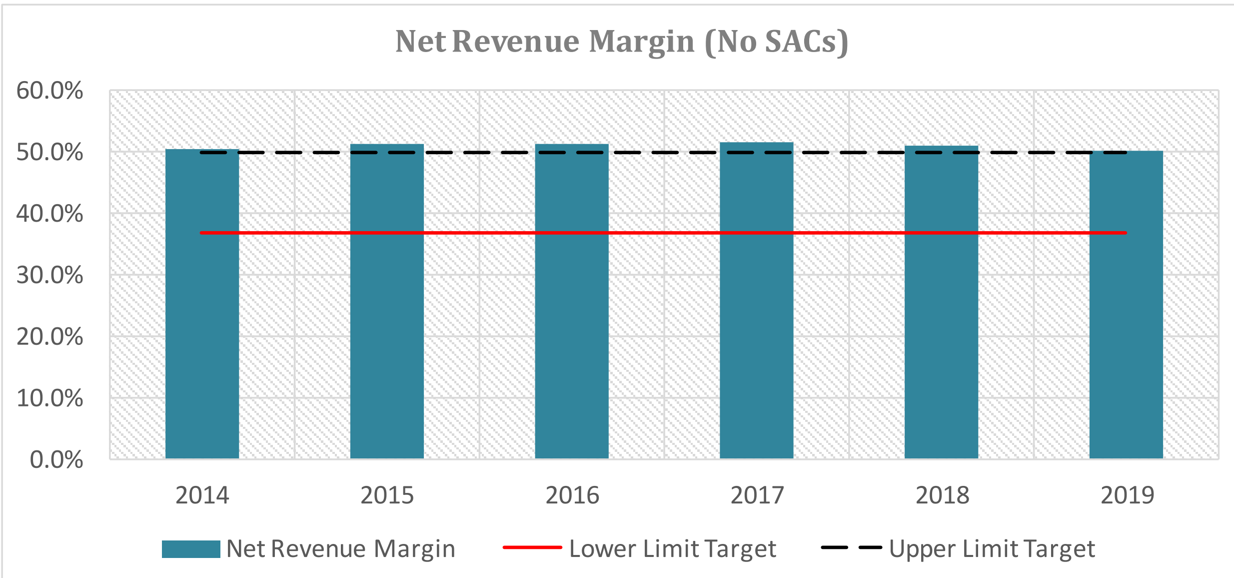
Included as part of the development of the Five-Year Financial Forecast and the review of the overall sufficiency of revenues, is an evaluation of 's financial position which recognize the implantation of the recommended rates as identified for the Forecast Period. This evaluation includes the development of ratios and the review of financial performance indicators to evaluate "where WMP is estimated to be financially" during the Forecast Period and 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 (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 WMP with a visual representation of the financial and statistical trends in the selected financial ratios or benchmarks anticipated for WMP 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 WMP's consideration.

Net Revenue Margin 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 WMP. The contribution margin represents the amount of Net Revenues from WMP operations that are available to meet WMP's other expenditure requirements after the payment of the operating expenses (e.g., debt service, deposits to a capital fund, etc.). Since service availability charges were recognized as being restricted as to use for new customers (expansion-related expenditures) and are a one-time revenue (not recurring like sales of service revenue), PRMG has not recognized the service availability charges in the evaluation of the Net Revenue Margin ratio. A relatively low Net Revenue Margin ratio (e.g., 25 percent) indicates that a large portion of operating revenue is used to pay operating expenses. A high Net Revenue Margin ratio (e.g., 45 percent) indicates a significant portion of operating revenues is available for WMP expenditures other than the payment of operating expenses (e.g., capital reinvestment). As can be seen below and assuming the implementation of the recommended rate adjustments, the Net Revenue Margin ratio is projected to remain stable during the Forecast Period which indicates that 's contribution margins will remain constant thereby supporting the programmed need of providing a dedicated deposit to the E&I Fund for ongoing (existing customer) pay-as-you-go (PAYGO) capital financing.

PRMG recommends that WMP should aim to maintain the Net Revenue Margin ratio at a target level ranging from 35% to 50% during the Forecast Period to promote the financial health of the System, which is also within the median range identified by Moody's Investors Services, Inc. and FITCH for municipal water and wastewater utilities. As can be seen in the figure below, it is projected WMP will maintain a favorable Net Revenue Margin ratio (at the upper end of the ratio range) throughout the Forecast Period. This indicates that rates on a stand-alone basis are producing sufficient revenue to fund other utility expenditures and that WMP is not totally reliant on the use of service availability charges to fund annual expenditures during the Forecast Period. This ratio is considered to be favorable by PRMG but WMP will need to monitor its operating expenses closely after the CIP program is completed to maintain a long-term favorable Net Revenue Margin ratio beyond the Forecast Period.



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 WMP debt and loans paid from WMP revenues, which more accurately reflects the ability of the Net Revenues of WMP to fund the annual debt service requirements. The ratio includes a presentation using only WMP's Net Revenues since service availability charges (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. PRMG 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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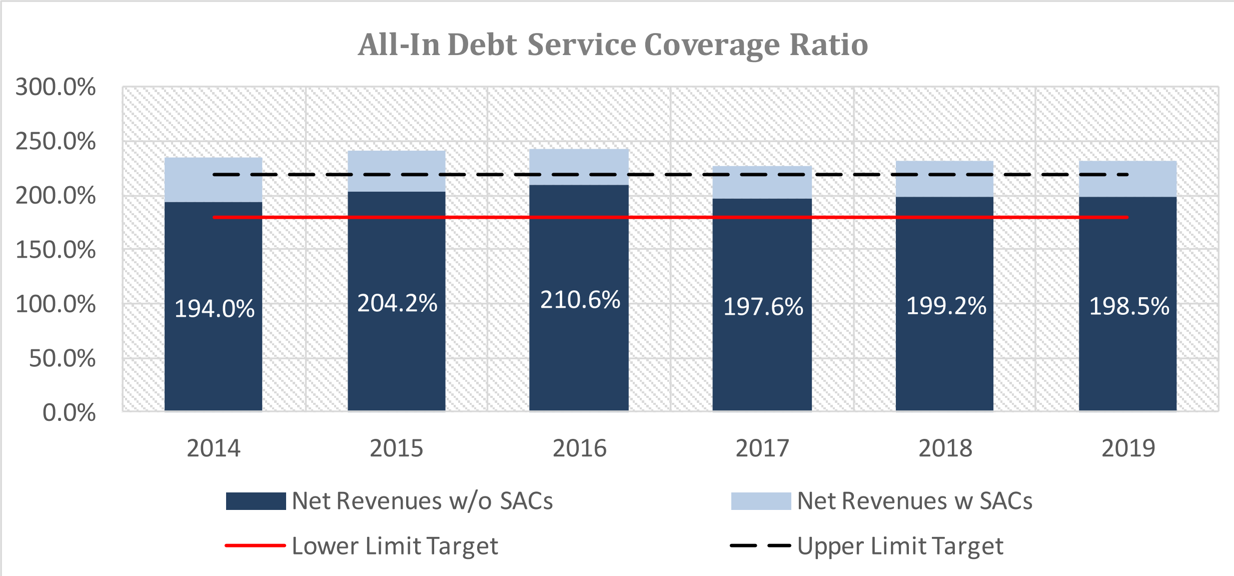


PRMG recommends that WMP should aim to maintain a minimum debt service coverage ratio determined on a Net Revenue basis (i.e., without service availability charges) at a target level ranging from 180% to 225%. This range was based on the financial policies approved by the Board and the median debt service coverage ratio as reported by credit rating agencies that are typical for an "AAA" rated utility. With respect to the County's financial policy, 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 which are considered by WMP in its financial planning activities and in the preparation of the financial forecast state that the Net Revenues of the System, less any Excluded Revenues, will be sufficient to provide the following:

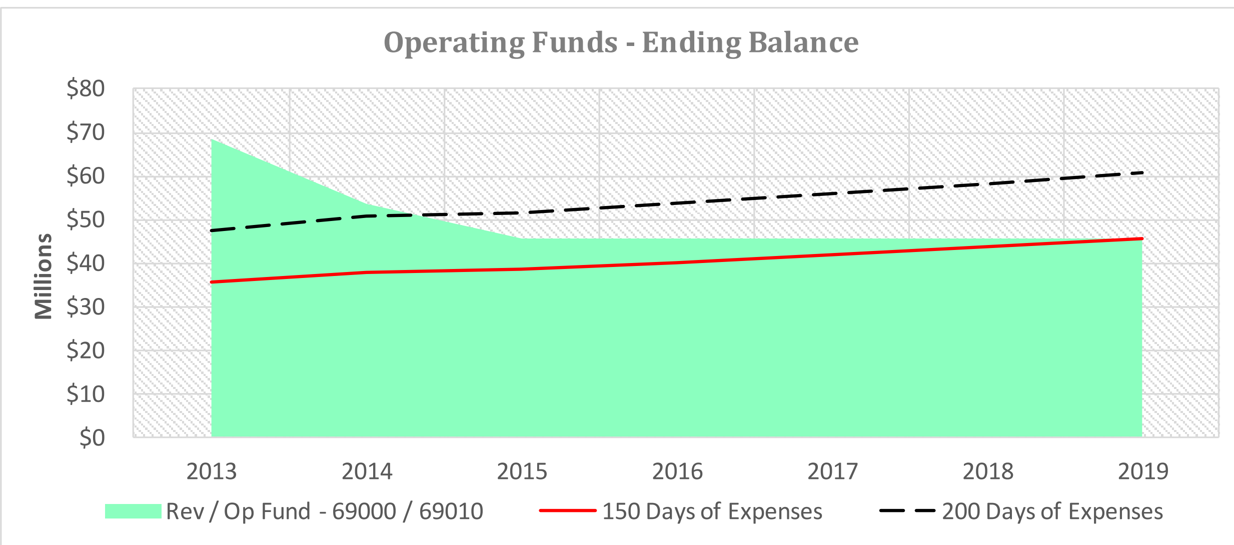
> *"...an amount at least equal to the sum of two hundred percent (200%) of the sum of (A) the Principal and Interest Requirements in such Bond Year on account of all the Bonds then outstanding under the General Resolution in such Bond Year and (B) the Debt Service Requirements relating to Parity Indebtedness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

As can be seen above, it is projected that the Net Revenues will approximate the target delineated in the County's financial policy and the range reflected in the financial forecast. The debt coverage improves when consideration of service availability charges is recognized. This ratio is considered to be favorable by PRMG and will support the County's ability to issue additional bonds and to limit the financial risk to the utility.

Available Working Capital and Cash Balances

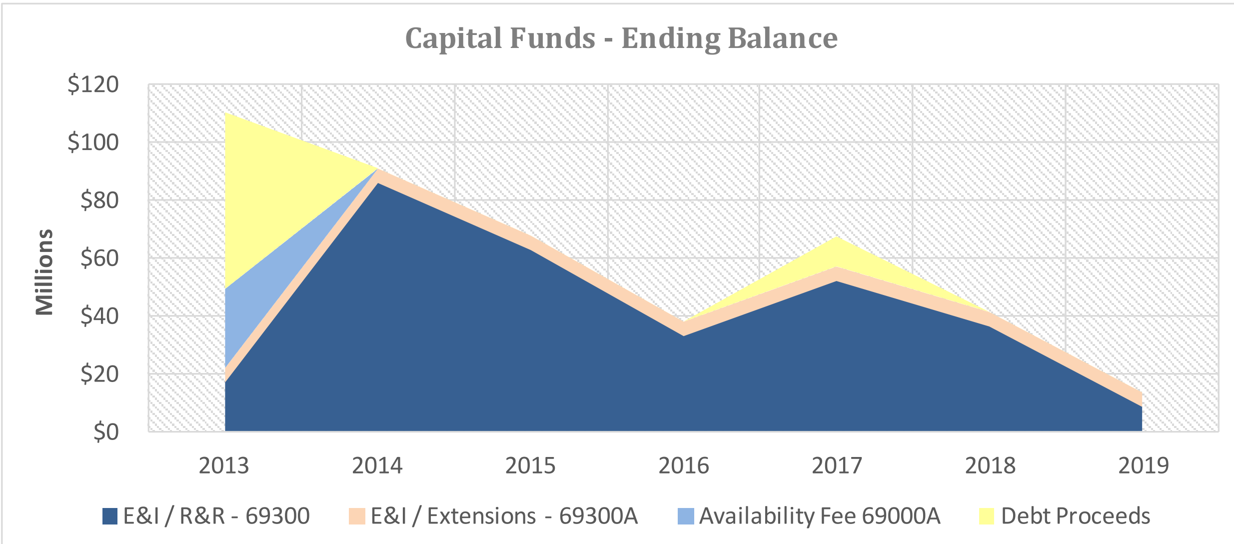
Another important component of the evaluation of WMP's operations is the resulting ending cash balance or cash position of the utility. The estimated cash flow (deposits and withdrawals) are shown in detail on Table 9 at the end of this report and a summary of the estimated ending cash balances allocated to existing and new customers for the Forecast Period is shown below. In the evaluation of System liquidity, the cash balances were segregated as to operating reserves (not restricted to debt payment and capital expenditures) and for capital improvements, whether new customer or for System renewals, replacements and betterments. The cash balances considered as operating reserves are allocable to the existing customers and are driven primarily from sales of service (rate) charges. Cash balances allocable to capital include estimated cash on deposit; i) received from service availability charges (used for new customer debt and capital costs), ii) received through the issuance of indebtedness for capital construction; and iii) deposits to the E&I Fund for ongoing recurring capital re-investment. This segregation of funds allows the County and PRMG to fully evaluate the liquidity picture based on the intent of the purpose of the funds.

With respect to the operating reserves (funds 69000 and 69010), PRMG recommends that WMP should aim to maintain a minimum fund balance ranging from 150 to 200 days of operating expenses. This range was based on discussions with the financial community and median liquidity ratios as reported by credit rating agencies that are typical for an "AAA" rated utility. Although the fund balance is at the lower end of the range, this ratio is considered to be favorable by PRMG and will support the County's ability to limit the financial risk to the utility.



With respect to the estimated funds on deposit from the collection of service availability charges (i.e., new customer funds and designated as fund 69000A – no formal fund has been established by the County), it is anticipated that the funds will be fully utilized during 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 Forecast Period.

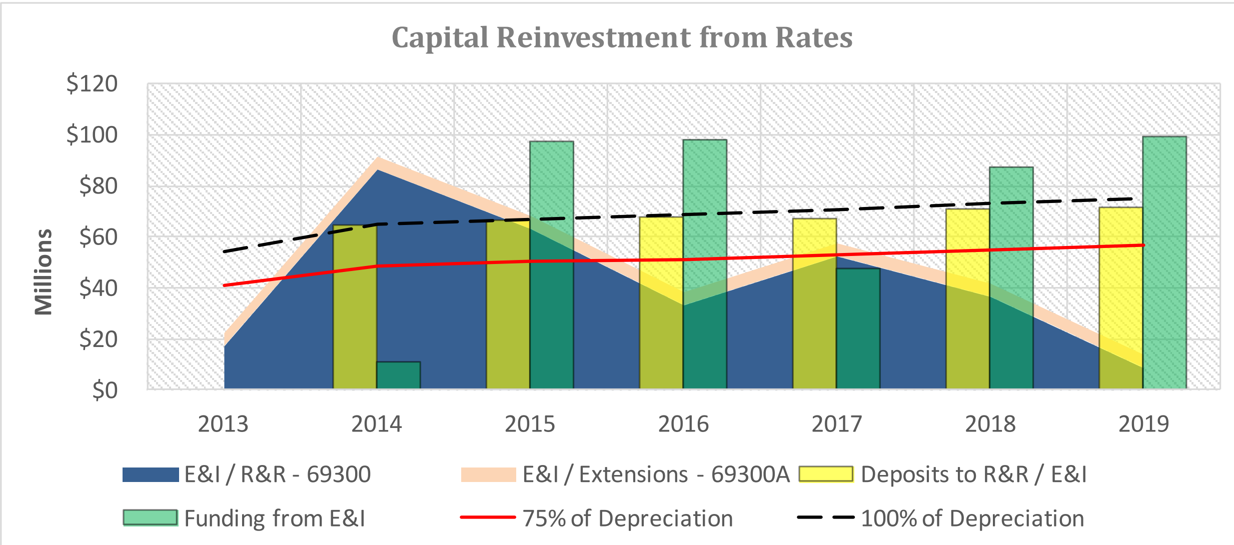
In addition to the service availability charges and as discussed earlier in this report regarding the funding of the capital program, it is recommended that the County: i) establish minimum programmed deposits to the E&I Fund from operations and ii) any available funds from operations that remain after all required payments are made also be deposited into the E&I Fund, only to the extent that adequate operating reserves are available (as indicated in the above graph). The following is a summary of the ending cash balances in the capital funds based on the forecast of operations and the capital funding plan previously presented in this report:



The following observations are made relative to the capital funds:

- All service availability charges received are used to fund new-customer related debt service payments and are not available for capital projects.
- It is anticipated that additional bonds will be issued during Fiscal Year 2017 which will be applied to both existing and new customer capital projects (approximately a 50% allocation to each).
- The balance on deposit in the E&I Fund which is used for capital re-investment varies and is dependent on the capital expenditure needs of the System. As can be seen above, it is projected that the ending balance in the fund will approach the beginning balance of the fund over the Forecast Period.
- The balance on deposit in the E&I Fund attributable to fund wastewater service extensions to developed properties is projected to remain constant at the $5,000,000 balance as established by Board policy.

It should be noted that based on a review of the capital program for the Forecast Period, the primary need for the funding of capital expenditures deals with existing customer requirements (i.e., renewals, replacements, betterments and upgrades to the existing plant in service). This is due to the installed utility plant now beginning to reach its useful service life and the impact of regulations on the cost of treatment (i.e., the Chesapeake Bay Program) which is allocable to and benefits the existing customer (not providing new capacity but maintaining the availability of existing capacity). The following graph summarizes the assumed sources and uses of funds in the E&I Fund as it relates to the ongoing capital funding program allocable to the existing customer

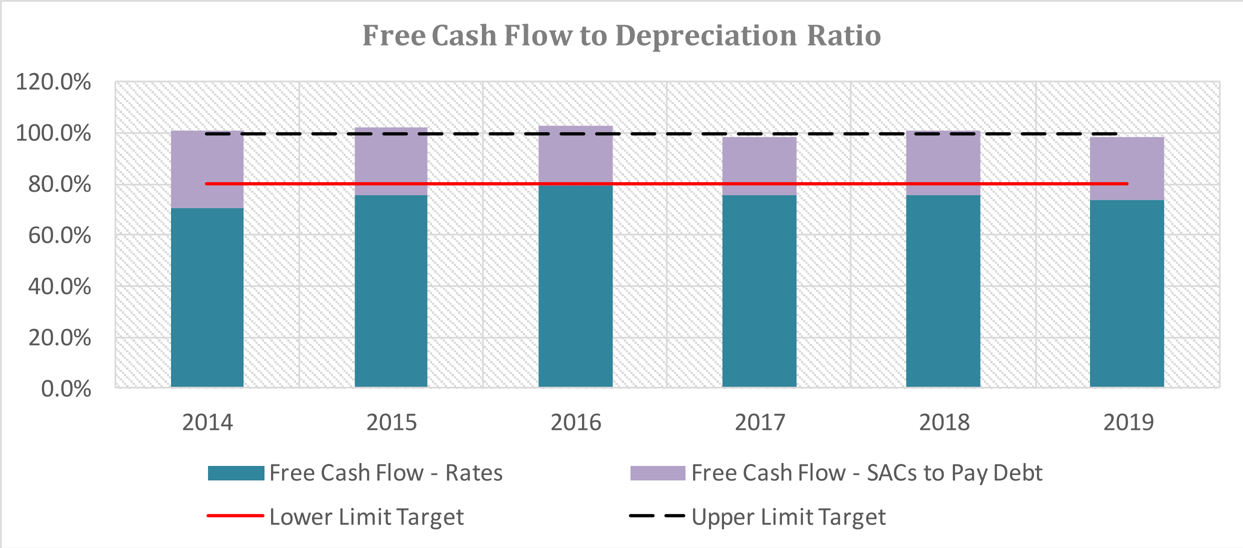


As can be seen above, the deposits to the fund are programmed to be relatively stable yet the expenditures (uses of fund) are "lumpy" and need to be planned in advance such that rate impacts are minimized. It should be noted that to the extent that System growth is greater than assumed, if there is a 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.

Free Cash to Depreciation

This figure illustrates the amount of funds available for equity capital funding or for other System purposes after the payment of Operating Expenses, the annual debt service requirements, and any other required deposits or funding needs. This ratio is a key ratio of the credit rating agencies since it provides a measure of the annual financial capacity to maintain utility plant facilities at current levels of service. As can be seen below, the System is producing sufficient funds after all required transfers (assumes that the Extension and Improvement Fund deposit is considered as a component of the available funds for capital and not a required deposit since it is to be used solely for capital needs) to maintain a strong capital reinvestment rate for ongoing equity capital funding and the avoidance of long-term debt.

With respect to the annual funding of the capital needs, PRMG recommends that WMP should aim to maintain a minimum cash flow ratio ranging from 80% to 100% of the annual depreciation expense for the County-owned utility assets. This range was based on discussions with the financial community and median cash flow ratios as reported by credit rating agencies that are typical for an "AAA" rated utility. The projected ratio is considered to be favorable by PRMG and will support the County's ability to limit the financial risk to the utility.



Net Outstanding Debt per ERC

The net principal amount of debt outstanding per customer (ERC) measures the amount of net 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 to the System (all fixed costs) and generally the rates for service are higher with a greater reliance on service availability charges (growth) 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 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.

With respect to the amount of outstanding debt relative to the customer base, PRMG recommends that WMP should aim to maintain a maximum customer debt level ranging from $2,000 to $3,000 per ERC served. This range approximates 50% to 80% of the plant investment expressed on a per ERC basis and is consistent with the debt per equity ratio in terms of overall net utility plant funding. Overall, the debt per customer appears reasonable recognizing the amount of plant investment that has been funded by the County on behalf of WMP.

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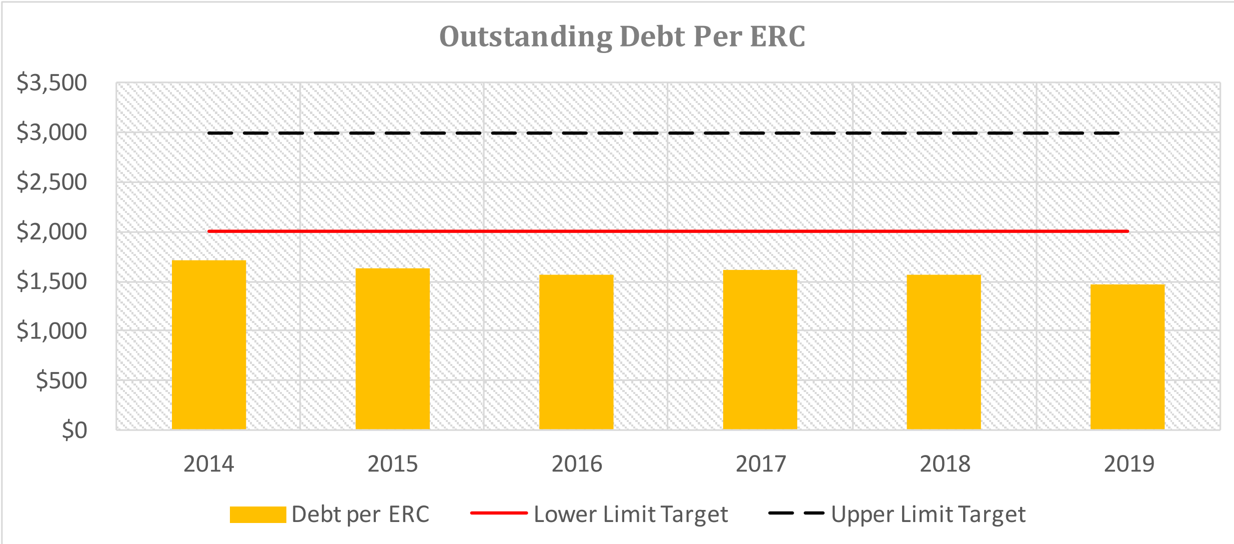
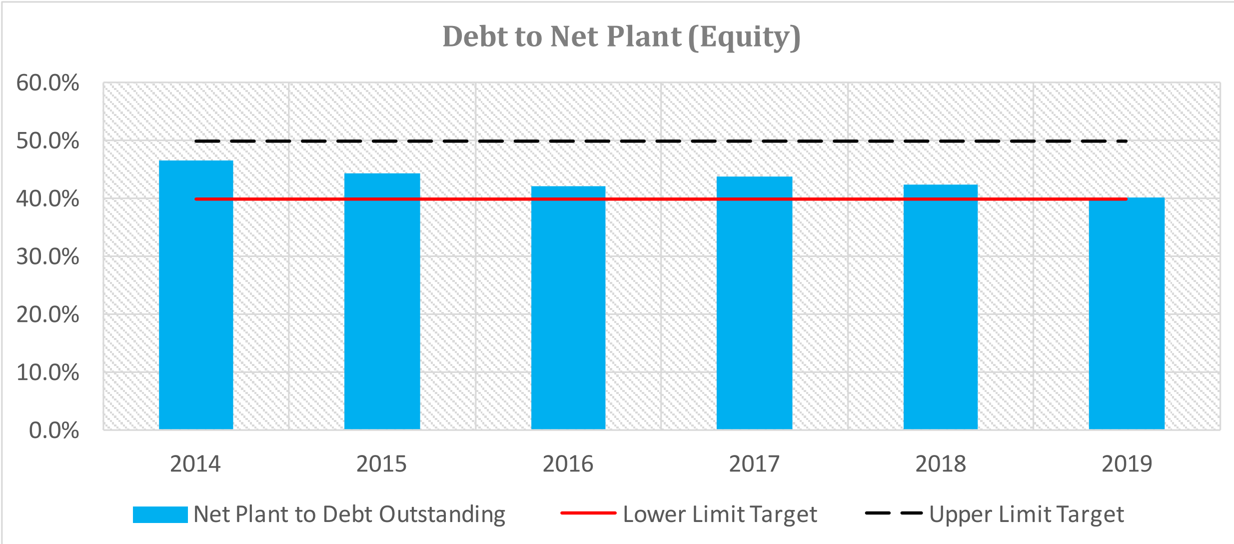


Debt Outstanding to Net Plant Investment (Debt) Ratio

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 PRMG 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 the this ratio ranging from 40% to 50% of the total net plant investment (including TBC capacity entitlements) to maintain an sustainable funding relationship of infrastructure (not relying totally on debt) and recognizing that a significant amount of the capital needs is for the renewal and replacement of existing assets which should be limited as to the amount of debt issued to fund such investment). This range was based on discussions with the financial community and median liquidity ratios as reported by credit rating agencies that are typical for an "AAA" rated utility.

As previously mentioned, it is expected that additional capital projects anticipated to be funded from additional bond proceeds will be required during the Forecast Period. As can be seen below, the Debt Ratio is projected to remain in the target range during the Forecast Period which is considered positive by PRMG. Overall, the ratio tends to be below the maximum target (although remaining close to the target) and will support the County’s ability to limit the financial risk to the utility.



CONCLUSIONS AND RECOMMENDATIONS

Based on our analyses of the financial position and rates for the wastewater system, we are of the opinion that:

1. WMP's financial and rate implementation plan has resulted in the County being in a strong financial position in support of meeting the adopted financial policies and selected performance metrics or targets. The rates for service allows for the continuation of a capital re-investment rate equivalent to the annual depreciation expense which will minimize the need for long-term debt which will promote the sustainability of rates. It is recommended that the business-evaluation approach for the development of the annual net revenue requirements be maintained and that the financial forecast be reviewed annually.

2. It is recommended that the Board adopt the recommended rates as contained in this report which are less than the Board-approved rates. This reduction in projected wastewater service rates will provide a financial benefit to the customers of the County.

3. The proposed rate adjustments by the County are anticipated to be sufficient to provide Net Revenues to meet the Rate Covenant in the General Bond Resolution that authorized the issuance of the County's outstanding bonds, meet the terms and conditions of the VRA Financing Agreement between the County and the Virginia Water Facilities Revolving Fund acting by and through the VRA, fund System expenditures, including the debt service on Additional Bonds anticipated to be issued by the County to fund System capital improvements, and to meet the financial targets or objectives of the System during the Forecast Period.

4. It is recommended that the County continue with the rate structure modification plan to phase in the fixed cost recovery charge to promote the revenue stability of the System and to promote fairness and reasonableness among its ratepayers.

5. The proposed rates for the Fiscal Year 2014 will remain competitive with the rates charged by other neighboring public wastewater utility systems; this competitive position is anticipated to be maintained during the Forecast Period.

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FAIRFAX COUNTY

WASTEWATER MANAGEMENT PROGRAM
WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

LIST OF TABLES

Table No.	Description
1	Summary of Implied Historical Customer Billing Statistics
2	Summary of Projected Customer Billing Statistics
3	Projection of Operating Expenses
4	Projection of Operating Expenses for Treatment By Contract (TBC)
5	Historical and Projected Sales of Service (Bulk Sales) and Other Revenue
6	Development of Wastewater System Revenue Requirements and Revenue Sufficiency
7	Projected Operating Results and Debt Service Coverage Analysis
8	Summary of Debt Service Payments – Outstanding and Additional Debt
9	Projected Fund Balances and Interest Income Determination
10	Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in $000s)
11	Funding Sources for the Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in $000s)
12	UOSA Capital Improvement Projects (in $000s)
13	Comparison of Typical Quarterly Residential Bills for Wastewater Service

APPENDIX A

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS
MODEL OUTPUT – MANAGEMENT DASHBOARD

Chart No.	Description
Chart 1	**Operating Cash Reserves / Liquidity** ▪ Identifies the forecast of projected and targeted operating cash reserves, which are used by the utility to maintain working capital for cash flow and to provide a reserve for contingencies such as unexpected increases in expenses or reductions in revenues all to ensure the utility can fund the near-term requirements of the system.
Chart 2	**Revenue Sufficiency** ▪ Provides an indication of the annual expenditures funded from revenues by category or type of expenditure and whether existing or recommended rates are sufficient to fund such requirements to essentially determine the sufficiency of the forecast revenues.
Chart 3	**Capital Reinvestment from Rates** ▪ Primarily identifies the transfers in and out of capital related funds for capital investment. Provides an indication of the level or amount of capital reinvestment as a percent of depreciation.
Chart 4	**Net Revenue Margin (No SACs)** ▪ Is a ratio calculated as: i) the Gross revenues (excluding SACs) less operating expenses = net revenues (excluding SACs); divided by ii) gross revenues (excluding SACs). Indicates how much net revenue as a percent (%) is available to fund other expenditures above the cost of operation. Higher ratios (above 35%) generally indicate more funds available for capital reinvestment.
Chart 5	**Capital Cash Reserves / Liquidity** ▪ In addition to operating reserves the utility builds funds up within capital related funds to finance future capital projects. The forecast of such cash by fund provides an indication of the amount of funds available for unexpected capital improvements or cost increases. This also aids in identifying trends, such as declining reserve balances, which may not be sustainable.
Chart 6	**Projected Capital Funding Program** ▪ Identifies the annual capital funding (excluding UOSA capital projects) by source (e.g., internal sources such as rate revenues, availability charges, existing reserves or debt proceeds)
Chart 7	**Free Cash Flow to Depreciation Ratio** ▪ Is a ratio to determine the annual cash flow available for capital reinvestment expressed as a percent of depreciation. Free cash is determined as the Gross Revenues less operating expenses and annual debt service payments. Amounts shown are expressed with and without service availability charges.

APPENDIX A

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS
MODEL OUTPUT – MANAGEMENT DASHBOARD (CONT'D)

Chart 8 **Debt to Net Plant Investment (Equity)**

- Is a ratio which identifies the amount of debt outstanding relative to the capital / plant investment less accumulated depreciation. Helps indicate the ratio or percent of equity invested in capital assets. A higher ratio (above 50%) may indicate a need to evaluate the level of capital reinvestment from rates or minimize future debt issuance where possible.

Chart 9 **Annual Debt Service Payments**

- Indicates the existing and proposed annual debt service payments. Helps to identify trends and timing for projected increases or declines in annual debt service.

Chart 10 **All-In Debt Service Coverage Ratio (Net Revenue / Annual Debt Service)**

- Provides an indication of the amount of net revenues (with and without SACs) available to cover or fund existing and projected debt service. The ratio is expressed as Net Revenues as a percent of Annual Debt Service Payments.

Chart 11 **Single Family Residential Quarterly Bill**

- Reflects the quarterly residential wastewater bill for Fairfax County customers under recommended rates for the forecast period. Recognizing the recommended rates are lower than the adopted rates through the Fiscal Year 2017, the chart also indicates the overall reduction to the projected bill.

Chart 12 **Rate Affordability – Residential Bill as a % of MHI**

- Tests the annual charges for wastewater service assuming 6,000 gallons of water use relative to varying amounts of annual household income. Based on industry standards affordability may become an issue as the wastewater bill accounts for more than 1% of annual household income.

Chart 13 **Outstanding Debt per ERC**

- Debt per customer account is a metric used by rating agencies to compare utilities.

Chart 14 **Monthly Residential Wastewater Bill Comparison at 6,000 Gallons**

- Provides a comparison of the monthly residential bill for wastewater service assuming 6,000 gallons relative to neighboring utilities in order to determine the competitiveness of rates for service.