

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**



Quality of Water = Quality of Life

**Wastewater Revenue Sufficiency
and Rate Analysis**

**Forecast Period Fiscal Year 2016
Through Fiscal Year 2021**

February 11, 2016



Public Resources Management Group, Inc.

Utility, Rate, Financial and Management Consultants



February 11, 2016

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

Subject: **2016 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 and availability charges (the "Study") for Fairfax County, Virginia (the "County") and has summarized the results of our analyses, assumptions, recommendations, and conclusions in this report (the "Report") that is submitted for your consideration. This Report summarizes the basis for the recommended rates and availability charges for wastewater services that are considered necessary to meet the near term expenditure requirements of the wastewater system (the "System"). The Study period encompassed the current Fiscal Year 2016 and the subsequent five (5) fiscal year period ending June 30, 2021 (collectively, the "Forecast Period").

The proposed wastewater utility rates and charges are intended to meet a number of goals and objectives. The most important objective of the Study was to develop proposed wastewater utility rates and availability charges that fully recover the identified 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 Board of Supervisors of the County (the "Board");
- Wastewater rates should comply with requirements associated with adopted County financial policies attributable to the wastewater utility system;

Mr. Randy Bartlett
County of Fairfax
February 11, 2016
Page 2

- Proposed wastewater rates should promote the Wastewater Management Program's (the "WMP") financial creditworthiness and maintain adequate reserves for emergencies and unforeseen capital needs; and
- Availability charges should reasonably recover the incremental cost of wastewater treatment and backbone transmission / collection infrastructure costs from new customers in order for growth to pay for growth (i.e., not funded by existing customers).

The Report following this letter summarizes the findings, results and recommendations of this Study. The Report also 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 estimated 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
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Attachments

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

2016 WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

TABLE OF CONTENTS

<u>Description</u>	<u>Page No.</u>
Letter of Transmittal	
Table of Contents	i
List of Tables	iii
Executive Summary	ES 1
General.....	ES 1
Fiscal Year 2015 Results Summary.....	ES 1
Principal Findings and Recommendations	ES 2
Revenue Forecast.....	ES 2
Expenditure Forecast	ES 3
Risk and Forecast Sensitivity	ES 4
Observations and Recommendations	ES 6
<u>2016 Wastewater Revenue Sufficiency and Rate Analysis</u>	
Introduction.....	1
Fiscal Year 2015 Results	4
Projected Financial Results.....	7
Principal Considerations and Assumptions Regarding Projected Operating Results.....	7
Primary Reasons for Rate Adjustments.....	24
Availability Charge Evaluation.....	26
Methodology and Fee Calculation.....	26

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

2016 WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

TABLE OF CONTENTS (cont'd.)

<u>Description</u>	<u>Page No.</u>
Proposed Rate Recommendations and Customer Impact	29
General.....	29
Proposed Rates for Charges for Sewer Service	30
Proposed Rates – Average Residential Customer Impact	31
Average Residential Sewer Charge Rate Comparisons.....	31
Availability Charges	32
Residential Customer Availability Charge Impact and Charge Comparison	33
Debt Service Coverage and Covenant Compliance	33
Projected Financial Position and Performance Measures	36
Net Revenue Margin Ratio	37
All-In Debt Service Coverage	38
Available Working Capital and Cash Balances.....	39
Free Cash to Depreciation	42
Net Outstanding Debt per ERC	42
Debt Outstanding to Net Plant Investment (Debt) Ratio.....	43
Conclusions and Recommendations	44

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

2016 WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

LIST OF TABLES AND APPENDICES

<u>Table No.</u>	<u>Description</u>
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	Forecasted Statements of Flows of Financial Resources and Changes in Fund Balance
13	Comparison of Typical Quarterly Residential Bills for Wastewater Service
14	Calculation of Availability Fee
15	Comparison of Availability Fee Charges for Equivalent Residential Unit

<u>Appendix No.</u>	<u>Description</u>
A	Model Output – Management Dashboard



EXECUTIVE SUMMARY

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

2016 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 program recognizing that revenues and rates should be sustainable to fund the expenditure requirements 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 fiscal 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 rate (debt) covenants; and iii) certain financial targets to maintain the overall long-term 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, desktop analysis of the utility plant-in-service life, 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 changes in regulations, such as the Clean Water Act and the Chesapeake Bay Program.

Fiscal Year 2015 Results Summary

WMP continuously tracks and reviews prior financial forecasts relative to actual results and considers such actual results in the financial and rate planning process. For Fiscal Year 2015, WMP observed actual results underperforming forecasts primarily associated with: i) lower than projected operating revenues of approximately -\$5.8 million; ii) lower than projected operating expenses of approximately \$2.9 million; and iii) availability charge revenues being approximately \$1.1 million more than previously forecasted. Overall, WMP underperformed net revenue and availability charge forecasts by approximately -\$1.9 million. The lower than expected sales revenues are considered to be associated with an unexpected reduction in the billed wastewater flows of the System. However, reported capital spending was approximately \$31 million less at \$93 million compared to prior forecasts of approximately \$123 million. The decreased spending is attributable to timing of actual expenditures relative to appropriated or planned spending. Overall, WMP began the Fiscal Year 2016 with a higher cash reserve / liquidity balance than previously forecasted due to the less than expected capital expenditures assumed as part of the prior financial forecast. For more detail concerning the actual operating

results please reference the *Fiscal Year 2015 Results* in subsequent sections of this report (Pages 4-6).

Principal Findings and Recommendations

As previously mentioned, the development of the financial forecast relied upon certain information such as recent financial reports, customer billing statistics, adopted budgets, year-to-date results, projected capital expenditure and associated 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 projections 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 to the County for consideration:

Revenue Forecast

- The System primarily generates revenues from: i) ongoing charges for wastewater service (user charges); and ii) availability charges related to new customer growth. For the Fiscal Year 2015 the utility generated approximately \$187 million in user charges, which was -\$5.8 million less than forecasted (includes approximately \$10 million in wholesale wastewater sales of service). In addition to the reported user charges, WMP reported approximately \$22 million in growth-related availability charges. These two revenue sources account for the majority or 99% of gross revenues, with the remaining revenues derived from investment earnings, sewer connection charges, grants and other revenues reported at approximately \$0.8 million for the Fiscal Year 2015. Overall the County reported approximately \$210 million in gross revenues and income during Fiscal Year 2015.
- The reduction in operating revenues is considered to be associated with a decline in billed wastewater flows of -4% when compared to the prior year and may be attributable to changes in weather conditions affecting water sales (i.e., the basis for billed wastewater flows) and the residential wastewater billing cap. Billed wastewater flows are on par with sales reported in the Fiscal Year 2011. It is unknown at this time if the County can expect a future rebound in billed wastewater flows; however, the reduction is generally consistent with trends experienced by other northern Virginia utilities (i.e., declining billed wastewater flows). Moreover, other northern Virginia utilities are implementing greater increases to their respective fixed user charges (i.e., the Base Charge) to help offset declines in billed usage charge revenues.
- While changes in the amount of billed wastewater flows is a significant driver for reported user charges, customer account growth from a development is also a primary driver for growth in availability charge collections. The financial forecast generally assumes a modest decline in availability charge revenues when compared to Fiscal Year 2015 estimated at \$18 million on average during the Forecast Period. This is also consistent with recent

historical trends of a slightly declining availability charge revenue collection rate. It should also be noted that although availability charge revenues are assumed every year, such revenues represent one-time charges to the new development (not recurring) and can be very cyclical in nature.

Expenditure Forecast

- The expenditures of the System funded from the utility revenues (referred to as the "Gross Revenue Requirements") can be primarily categorized as follows: i) operating and maintenance expenses accounting for 46% of the Gross Revenue Requirements; ii) annual debt service payments accounting for 22% of the Gross Revenue Requirements; and iii) transfers for maintaining minimum cash reserves and for funding capital (for utility plant renewals, replacements, upgrades and betterments) accounting for approximately 32% of the Gross Revenue Requirements.
- With respect to the operating and maintenance expenses, the System has observed average annual growth in such expenses of approximately 2.9% per year since the Fiscal Year 2010. The projection of the operating and maintenance expenses assumes a higher rate of growth in such expenses at 3.2%, which is primarily due to: i) average annual growth in Treatment by Contract ("TBC") provider expenses of 3.2% annually based on forecasts of wastewater treated flows and information reported by the TBC providers, which account for approximately 42% of total operating expenses; ii) assumed average annual increases in personnel salaried and benefit expenses of 3.2% above budgeted Fiscal Year 2016 amounts to account for cost-of-living adjustments and inflation of employee benefits (e.g., health insurance) representing approximately 32% 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 3.3% and representing 26% of the total operating expenses.
- With respect to existing indebtedness, as of June 30, 2015 the System had approximately \$592 million in debt outstanding (excluding premiums), which includes approximately \$266 million in subordinated debt issued by UOSA which is allocable to the County. The annual debt service payments (expressed on accrued basis) for the Fiscal Year 2015 was approximately \$47 million. The outstanding debt was issued to finance capital improvements to the System or for the acquisition of wastewater treatment capacity rights from the County's TBC providers.
- WMP has identified approximately \$778 million in both County-owned wastewater and TBC capital projects for the next six (6) fiscal years (i.e., Fiscal Years 2016 through 2021) (the "CIP"). Approximately \$209 million or 27% of the CIP is associated with TBC capital funding requirements, which the County has no control relative to the timing or amount of such expenditures. The identified funding also includes approximately \$15 million for departmental (operating) capital outlay related to vehicles, equipment, and other short-lived assets (commonly referred to as General Plant). Based on discussions with WMP staff, it is anticipated that a portion of the identified capital funding requirements (County projects) may be deferred during the Forecast Period due to timing of initiation and duration of construction for such projects. Therefore, for purposes of this analysis the financial forecast

assumes approximately \$68 million in deferred capital funding beyond the Fiscal Year 2021 resulting in a net amount of capital funding identified at \$710 million or approximately \$118 million a year on average.

- With respect to funding for the capital program, approximately sixty-three percent (63%) or \$450 million of the total capital expenditure requirements are anticipated to be funded from internal sources. The forecast assumes the majority of internal funding to be derived from programmed transfers from annual operations totaling approximately \$409 million or \$68 million on average during the Forecast Period. The remainder of funding from internal sources is derived from the use of existing cash reserves generated in prior periods and unspent proceeds from previously issued bonds totaling \$41 million. WMP has applied for future grants to fund capital projects; should the County receive such additional grants, the need for additional debt to finance the capital improvements in subsequent years to the Forecast Period may be reduced or deferred.
- The remaining thirty-seven percent (37%) or approximately \$260 million of identified capital improvement program for the Forecast Period assumes the issuance of the additional parity bonds. The following summarizes the principal amount of bonds assumed to be issued and the corresponding estimated annual debt service payments on such additional bonds (the "Additional Bonds").

Proposed Bonds [1]				
	Series 2017	Series 2019	Series 2021	Total
Principal Amount	\$110,355,000	\$110,590,000	\$66,495,000	\$287,440,000
Issuance Date (On or About)	July 1, 2016	July 1, 2018	July 1, 2020	N/A
Fiscal Year of Final Maturity	2046	2048	2050	N/A
Annual Debt Service Payment:				
2016	\$0	\$0	\$0	\$0
2017	7,593,019	0	0	7,593,019
2018	7,593,019	0	0	7,593,019
2019	7,593,019	7,820,509	0	15,413,528
2020	7,593,019	7,820,509	0	15,413,528
2021	7,593,019	7,820,509	4,830,789	20,244,317

[1] Amounts reflect additional senior lien parity bonds issued by the County.

Risk and Forecast Sensitivity

With any financial forecast there exist 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 are not limited to, the following: personnel, insurance, debt repayment, capital funding, 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 reduced funds available for ongoing capital reinvestment. For every one (1.0%) percent decline in billed wastewater flows (approximately 180 gallons / quarter per average residential customer) the utility

would currently realize an approximate (0.86%) percent or \$1.6 million decline in retail rate revenues. The adopted and recommended rates attempt to minimize this risk through an increase in fixed base rates, which does not vary by flow and is recommended to be phased in over the next several years.

- The financial forecast has assumed average collection of availability charges at approximately \$18 million annually, which is \$1.8 million less than the average annual collection in such charges for the last ten (10) fiscal years. The receipt of these fees varies greatly and is based on new development in the wastewater service area. For the last ten years the greatest annual amount of collections was reported during the Fiscal Year 2006 at \$36 million (prior to the economic downturn) while the lowest amount of collections was reported during the Fiscal Year 2010 at less than \$11 million. If the System realized lower collections than what is assumed for the forecast, the projected level of transfers for capital reinvestment would be proportionally reduced or would require a corresponding reduction in expenditures (e.g., additional capital deferral) or increase in rate revenues to offset such a decline in the availability charge revenues.
- TBC providers account for a substantial portion of the total utility expenditures, accounting for: i) approximately \$42 million or 42% of total operating expenses; and ii) \$209 million or 27% of the identified capital funding for the Forecast Period. 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 and minimize the long-term effect of such risks.
- The financial forecast assumes average annual capital spending of approximately \$118 million which is approximately 5.5% of the reported gross fixed assets of the System. Capital spending at this level is greater than the reported depreciation expense (accounts for 2.7% of reported gross fixed assets) and is indicative of the significant capital reinvestment and regulatory improvement needs. The continuation in capital spending at current period levels is anticipated to result in continued declines to cash reserves and may require the issuance of additional debt beyond the Forecast Period. WMP staff should continue to closely monitor capital spending requirements relative to fiscal policy targets for the fiscal strength and credit rating of the utility.
- Regulations such as the Federal Clean Water Act and the Environmental Protection Agency (EPA) Chesapeake Bay Total Maximum Daily Load (TMDL) requirements have required significant capital investment from wastewater utilities, including the County and the County's TBC providers, in order to improve water quality by limiting the amount of pollution or nutrient loadings (e.g., nitrogen) contained in wastewater effluent discharged to the Chesapeake Bay. Pursuant to the FY 2014 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 2014:

"From 2009 to 2014, annual nitrogen discharges were reduced by about 7,500,000 pounds; phosphorus annual loads were reduced by almost 537,000 pounds, exceeding the milestone commitments set in Virginia's Watershed Implementation Plan 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 implementation of additional regulation, if any, may affect future costs, however recent success experienced with reductions from point-source pollution at wastewater treatment facilities may result in more focus on non-point source pollution and stormwater management.

Observations and Recommendations

- The Wastewater Revenue Sufficiency and Rate Analysis for the Forecast Period Fiscal Year 2015 through Fiscal Year 2020 (the "2015 Report") was prepared in support of the Fiscal Year 2015 Budget and made several recommendations including: i) additional increases in wastewater service rates; and ii) as part of the service rate adjustments, an increase in the level of fixed charges assessed to customers in order to minimize financial risk and recover a greater proportion of the System fixed costs from a non-variable rate and promote rate equity. The table below provides a summary of the adopted rates based on the forecast performed during the Fiscal Year 2015 Report and associated average rate revenue increases:

Fiscal Year 2015 Adopted Rate Adjustments				
Description	2016	2017	2018	2019
Adopted Rates:	Existing	Adopted	Adopted	Adopted
Quarterly Base Charge	\$20.15	\$24.68	\$27.62	\$29.83
Flow Charge	\$6.65	\$6.68	\$6.75	\$6.82
Rate Revenue Adjustment [*]	N/A	3.6%	3.1%	2.5%

[*] Amounts shown reflect projected increases to revenues from adopted rates.

- The recommended rates and the annual changes identified in the 2015 Report which were subsequently approved by the Board of Supervisors of the County (the "Board") included: i) a continuation of the phase-in of the fixed cost recovery charge; and ii) marginal increases in the recommended volumetric rates. 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 equal to or greater than 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.

- Based on the assumptions and findings as identified in this report it is recommended that the Board continue with implementation of the adopted rates (as initially identified in the 2015 Report) through the Fiscal Year 2018. The following table illustrates the identified rate adjustments for the remainder of the Forecast Period which are recommended to be adopted by the Board:

Recommended Quarterly Rate Adjustments						
Description	Existing	Prior Board Adopted		Identified		
	2016	2017	2018	2019	2020	2021
Recommended Rates:						
Quarterly Base Charge	\$20.15	\$24.68	\$27.62	\$30.38	\$33.42	\$36.76
Flow Charge	\$6.65	\$6.68	\$6.75	\$6.85	\$7.05	\$7.21
Rate Revenue Adjustment [*]	N/A	3.6%	3.1%	3.0%	4.0%	4.0%

[*] Amounts shown reflect projected increases to revenues from recommended rates.

WMP staff should continue monitoring the need for the adopted and identified rate adjustments closer towards implementation of the respective rate adjustments; however, the County should continue to target the increased fixed charge recovery to promote increased revenue stability and reduce financial risk.

- The proposed rate adjustments by the County are anticipated to be sufficient to provide net revenues to meet the rate covenant of the General Bond Resolution initially adopted by the Board on July 29, 1985, and as amended and restated from time to time (the "General Bond Resolution") that authorized the issuance of the County's outstanding senior lien bonds, meet the terms and conditions of the Virginia Resources Authority ("VRA") Financing Agreement between the County and the Virginia Water Facilities Revolving Fund administered by the VRA, 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 adopted rates for the Fiscal Year 2016 and the Fiscal Year 2017 will remain competitive with the rates charged by other neighboring public wastewater utility systems. This competitive position is also anticipated to be maintained during the remainder of the Forecast Period. The table below provides a comparison of the existing and adopted monthly wastewater utility bill at 6,000 gallons relative to other or neighboring utilities:

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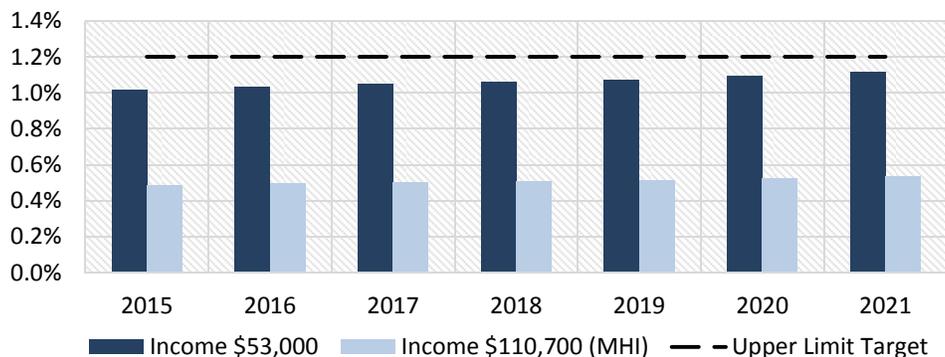
**Single-Family Residential Wastewater Service
6,000 Gallons of Billed Wastewater Service Per Month [1][2]**

	Monthly Bill
Fairfax County:	
Existing Rates – Fiscal Year 2016	\$46.62
Adopted and Recommended Rates – Fiscal Year 2017	48.31
Other Neighboring Utilities:	
City of Alexandria (Served by AlexRenew) [3][4]	\$56.50
Arlington County	54.36
District of Columbia Water and Sewer Authority[3][5]	68.43
Loudoun Water [3]	47.50
Prince William County Service Authority [3]	36.54
Washington Suburban Sanitary Commission [3][6]	46.96
Other Neighboring Utilities' Average	<u>\$51.78</u>

- [1] Unless otherwise noted, amounts shown reflect residential rates in effect October 2015 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 System or facilities 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 \$20.30 per month associated with runoff entering the sewer system; ii) a 50% allocation of the metering fee of \$3.86; iii) a 50% allocation of the a Right-of-Way fee to the District of Columbia of \$0.22 per 1,000 gallons; iv) 50% allocation of the PILOT fee charged to water and wastewater customers of \$0.62 per 1,000 gallons; and v) the residential wastewater flow charge of \$7.27 per 1,000 gallons.
- [6] 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 \$16.00.

- In addition to the competitiveness of utility rates, a common measure of rate affordability is to evaluate the typical residential bill (annualized) relative to the annual median household income ("MHI") within the service area. Specifically, a two (2) percent factor of the MHI is used when evaluating the affordability for combined water and wastewater services. For our purposes and recognizing the affordability of wastewater services only, we have assumed a 1.2% factor of MHI for the County. The following chart presents a forecast of affordability assuming the adopted and recommended rates for the Forecast Period:

Affordability - Residential Bill as % of MHI



As can be seen from the prior chart, the residential wastewater charges for the County is expected to remain within the range of affordability and approximates 0.5% of the MHI for the County. The County is also expected to remain below the affordability threshold assuming a lower base year household income of \$53,000, which is based on the average MHI for the United States ("US") as reported by the US Census Bureau. It should be noted that the projection of the MHI assumes 2% per annum growth rate from the indicated base year amounts.

- To ensure adequate funding for growth related expenditures and associated debt service payments the existing Availability Fees were evaluated relative to: i) the reported gross investments in capital infrastructure; ii) the identified capital improvement plan; and iii) assumed level of service per ERU. Based on this analysis as discussed in greater detail in subsequent section to this report, it is recommended that the County maintain the existing Availability Charges at current levels per ERU. The existing Availability Charges are considered to be competitive with other surveyed Virginia wastewater utilities. The table below provides a comparison of the existing wastewater Availability Fee for one (1) ERU relative to other or neighboring utilities:

Wastewater Availability Charge – Rate per ERU	
	<u>Rate per ERC</u>
Fairfax County – Availability Charge (ERU)	\$7,750
Other Surveyed Average Utilities	\$7,352

Amounts shown derived from Table 15.

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WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

**FAIRFAX COUNTY
WASTEWATER MANAGEMENT PROGRAM**

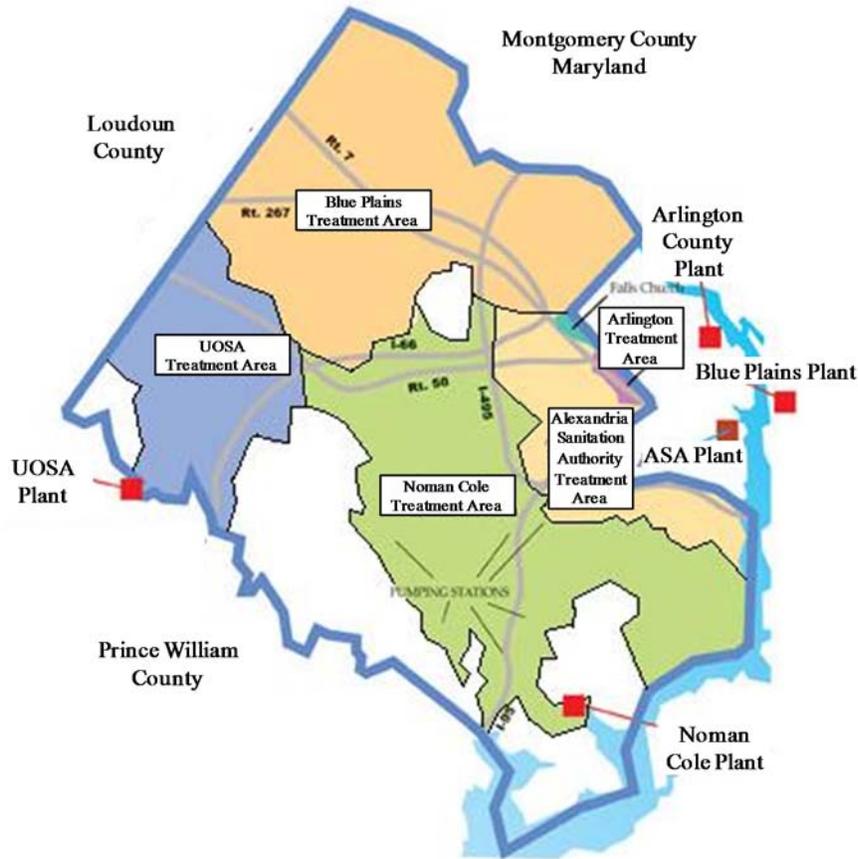
WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS

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) ("AlexRenew") 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, Wastewater Management Program ("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 90.18 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, 2015	
<u>Wastewater Entity</u>	<u>Current Capacity (MGD)</u>
Fairfax County (Noman Cole PCP)	67.00
Alexandria Renew Enterprises (AlexRenew)	32.40
Arlington County	3.00
UOSA	22.60
DCWASA	31.00
Prince William	0.10
Loudoun Water	1.00
Colchester	0.08
Total	<u>157.18</u>

The WMP currently provides service to an estimated population of 938,245^[1] residents. As of June 30, 2015, WMP reported that its gross plant investment in the System, including construction-in-progress and capacity entitlements in wastewater treatment facilities owned by other local governments, was approximately \$2.4 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 of the County (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 2016 Budget and encompassed the subsequent five (5) fiscal year period ending June 30, 2021 (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, 2025 (referred to as the "Planning Period") to support management's ongoing long-term planning efforts.

As documented in this Report, WMP's operations and financial position are impacted by a variety of factors, including: i) increased and immediate capital expenditures required for renewals and replacements and regulatory mandates associated with the Chesapeake Bay Program; ii) continued effects of inflation on the cost of operations and construction; iii) need to maintain a strong financial position to promote the creditworthiness and sustainability of sewer service charges or user fees for the System; and iv) maintain compliance with 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 (the "General Bond Resolution") authorizing the issuance of the Outstanding Bonds^[2]; 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 VRA (the "VRA Financing Agreement"); and vi) providing sufficient funds for the payment of the System's allocable share of subordinate debt issued (and held) by UOSA on behalf of the County.

[1] Population figures per Demographic and Economic Statistics reported in the County's Comprehensive Annual Financial Report for the Fiscal Year 2015 for the Integrated Sewer System Enterprise Fund.

[2] The Outstanding Bonds reflect bonds issued by the County in accordance with the General Bond Resolution and include: Sewer Revenue Refunding Bonds, Series 2014 originally issued in the principal amount of \$61,755,000; 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 factors was recognized last year in the preparation of the Wastewater Revenue Sufficiency and Rate Analysis for the Forecast Period Fiscal Year 2015 through Fiscal Year 2020 dated October 31, 2014, which was prepared in support of the Fiscal Year 2015 Budget (the "2015 Report"). The 2015 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 2015 Report which were subsequently approved by the Board included: i) continuation of the phase-in of a fixed cost recovery charge; and ii) a marginal 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 (readiness-to-serve); and iii) reflect industry norms and trends in rates. The following is a summary of the Board adopted rates for the Fiscal Years 2016 through 2019 and the net change in the quarterly wastewater bill for the typical residential customer.

Summary of Fiscal Year 2015 Board-Adopted Rates

	Fiscal Year Ending June 30, [1]			
	In Effect	Adopted		
	2016 [2]	2017	2018	2019
Volumetric Rate – \$ per 1,000 Gallons	\$6.65	\$6.68	\$6.75	\$6.82
Change from Prior Year	\$0.10	\$0.03	\$0.07	\$0.07
Base Charge – \$ per ERC per Meter Size [3]	\$20.15	\$24.68	\$27.62	\$29.83
Change from Prior Year	\$7.36	\$4.53	\$2.94	\$2.21
Average Quarterly Residential Bill – Usage of 18,000 Gallons per Quarter				
Quarterly Residential Bill	\$139.85	\$144.92	\$149.12	\$152.59
Percent Combined Change from Prior Year for Usage of 18,000 Gallons per Quarter	3.58%	3.63%	2.90%	2.33%
Quarterly Increase in Wastewater Bill for Usage of 18,000 Gallons per Quarter [4]	<u>\$4.83</u>	<u>\$5.07</u>	<u>\$4.20</u>	<u>\$3.47</u>

[1] All rates scheduled to be adopted on July 1st and became effective with bills rendered on October 1st of each fiscal year.

[2] Recommended rates as identified in the 2015 Report which were adopted by the Board in April 2015.

[3] Amount reflects increase in the base charge 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.

[4] Calculated from immediately preceding Fiscal Year bills.

FISCAL YEAR 2015 RESULTS

The adopted rates for the Fiscal Years 2016 through 2019 were based on, among other things, the Fiscal Year 2014 actual results, the Fiscal Year 2015 Budget, the then year-to-date Fiscal Year 2015 actual results available at the time of rate evaluation, and the Fiscal Year 2015 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 2015 is now available for consideration and incorporated into the Fiscal Year 2016 Financial Forecast. In evaluating the Fiscal Year 2015 results, a number of observations were made:

1. The reported Fiscal Year 2015 Gross Revenues was approximately \$210 million, which is -\$4.8 million or -2.3% less than identified in the prior financial forecast. The following provides a brief discussion detailing analysis of the variance among the various actual and previously projected revenues:
 - a. The reported Fiscal Year 2015 Service Charge (retail) revenues were approximately \$176.6 million which is approximately \$6.4 million or -3.6% lower than the estimates developed for the financial forecast included in the 2015 Report. The difference is a result of lower than projected billed wastewater flows for the Fiscal Year 2015.
 - b. Actual Fiscal Year 2015 Sales of Service (wholesale) revenues was approximately \$10.1 million, which was slightly less than the estimated \$10.4 million projection presented in the 2015 Report for the same period.
 - c. Actual Fiscal Year 2015 availability charge revenues was approximately \$21.7 million, which was \$1.1 million greater than presented in the 2015 Report for the same period. Although actual results and prior forecasts were comparable, the projection of availability charges revenues is considered difficult to forecast recognizing that such fees are a one-time charge to new development and forecasting is dependent upon timing associated with new development. Forecasts of availability charges are based on a review of: i) recent historical trends in availability charge collections; ii) review of known developments in the planning phases; iii) County forecasts of new customer connections; and iv) general discussions with WMP staff. Based on our review of the recent history in availability charge receipts, the Fiscal Year 2015 fee receipts were less than the amounts received during the relatively high growth period from the Fiscal Years 2002 through 2006 (averaging approximately \$31.7 million annually), yet higher than the low growth period of Fiscal Years 2007 through 2011 (averaging approximately \$13.4 million annually). The collection of availability charge revenues, which are assumed to average approximately \$18 million for the Forecast Period is considered reasonable and attainable.
 - d. Other operating revenues, including investment income, accounted for approximately \$1.6 million of gross revenues and were slightly greater than forecasted in the 2015 Report at approximately \$0.8 million.
2. Actual Fiscal Year 2015 operating and maintenance expenses (not including depreciation which is a non-cash operating expense) was \$92.3 million, which was less than the estimates forecasted in the 2015 Report at approximately \$95.2 million. The reduction in operating expenses when compared to the forecasted amount was primarily due to lower than forecasted personnel and TBC operating costs.
3. Actual Fiscal Year 2015 capital expenditures was approximately \$93 million as reported in the statement of cash flows of the County's financial statements, which was \$31 million less than what was anticipated to be spent during such fiscal year as referenced in the 2015 Report. The lower level of spending resulted in a greater beginning net position for the

current forecast; however, the lower expenditures are primarily attributable to the variance in timing for the appropriation of funds and actual expenditures.

4. The total debt service payments (cash basis – when payments are made to investors or the VRA) for Fiscal Year 2015 was approximately \$46.8 million. When expressed on an accrual basis (when deposits are made to the Debt Service Sinking Fund for upcoming payments), the total debt service liability was \$47.4 million, which is consistent with what was forecasted in the 2015 Report.

Recognizing the above, the financial results experienced during the Fiscal Year 2015 underperformed prior projections of operating revenues, however was partially offset by better than forecasted projections in availability charges and operating expenses as shown below:

Fiscal Year 2015 Financial Results Comparison

	Actual Results	Financial Forecast [1]	Variance Positive/ (Negative)
Operating Revenues and Investment Earnings [2]	\$188,319,208	\$194,099,002	(\$5,779,794)
Operating Expenses	(92,311,556)	(95,166,614)	2,855,058
Net Revenues	\$96,007,652	\$98,932,388	(\$2,924,736)
Total Debt Service Payments [3]	(47,419,172)	(47,419,172)	-
Net Available for Capital Funding	\$48,588,480	\$51,513,216	(\$2,924,736)
Capital Funding Allowance [4]:			
County Owned Facilities	(37,873,585)	(37,873,585)	N/A
Treatment-by-Contract Facilities	(29,382,341)	(29,382,341)	N/A
Net Available before Availability Charges	(\$18,667,446)	(\$15,742,710)	(\$2,924,736)
Availability Charges [5]	21,689,013	20,606,477	1,082,536
Net Available for System Use	\$3,021,567	\$4,863,767	(\$1,842,200)

- [1] Represents forecast prepared and presented in the 2015 Report and was based on Fiscal Year 2015 Budget and Fiscal Year 2014 and year-to-date Fiscal Year 2015 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 2015 were \$46,763,830.
- [4] Amount shown reflects a 3% capital asset replacement funding ratio based on: i) County reported original gross plant in service, less land and construction-work-in-progress; and ii) original book value of capacity rights for the County's Treatment-by-Contract providers. The allowance is considered necessary for ongoing capital funding needs and is the funding target recognized in the current financial forecast.
- [5] Reflects availability charges received by WMP. Amounts shown do not include any receivables or contributed property donations which are available to fund expansion-related debt service payments and capital additions.

As can be seen the table above, although the actual results for the Fiscal Year 2015 underperformed prior forecasts, revenues including 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 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 availability charges in 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 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 multi-year rate plan and constantly re-evaluates its financial position as part of its rate evaluation process. As previously mentioned above, the most recent Board-approved rates, including the currently effective rates for the Fiscal Year 2016, were based on an analysis prepared by WMP and PRMG and presented in the 2015 Report. The Board-approved rates adopted in connection with the Fiscal Year 2015 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 2016 financial forecast includes a multi-year rate phasing program which was prepared to identify the Fiscal Year 2017 through 2021 rates which are considered necessary 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 2015 results the following rate adjustments are recommended:

Description	Recommended Rate Adjustments					
	Existing 2016	Prior Board Adopted		Identified		
		2017	2018	2019	2020	2021
Recommended Rates:						
Quarterly Base Charge	\$20.15	\$24.68	\$27.62	\$30.38	\$33.42	\$36.76
Flow Charge	\$6.65	\$6.68	\$6.75	\$6.85	\$7.05	\$7.21
Rate Revenue Adjustment [*]	N/A	3.6%	3.1%	3.0%	4.0%	4.0%

[*] Amounts shown reflect projected increases to revenues from recommended rates.

As can be seen above, it is recommended that the previously Board-adopted rate adjustments (through Fiscal Year 2018) be maintained and additional identified rate adjustments for the Fiscal Years 2019 thru 2021 be adopted.

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]			
<u>Fiscal Year</u>	<u>Equivalent Residential Units (ERU) [2]</u>	<u>Billed Wastewater Sales (Flow)</u>	<u>Average Use per ERU</u>
Historical Period			
2010	315,248	24,962,443	6,599
2011	324,084	23,934,607	6,154
2012	324,023	24,672,538	6,345
2013	327,882	24,518,064	6,231
2014	325,578	24,764,339	6,339
2015	329,274	23,730,492	6,006
Average Annual Compound Growth Rate	0.87%	(1.01%)	(1.87%)
Forecast Period [3]			
2016	331,696	24,256,440	6,094
2017	334,088	24,370,285	6,079
2018	336,449	24,481,154	6,064
2019	338,780	24,589,138	6,048
2020	341,081	24,694,258	6,033
2021	343,352	24,796,532	6,018
Average Annual Compound Growth Rate [4]	0.70%	0.74%	0.03%

[1] Amounts shown derived from Tables 1 and 2.

[2] The County determines the Equivalent Residential Unit (ERU) for each active customer account based upon application of a meter equivalency factor per water meter associated with wastewater service for a customer. The meter equivalency factors are based on the information published by American Water Works Association (AWWA) regarding instantaneous demand relationships among meter sizes relative to a 5/8" meter and are also used to factor the base charge for the adopted rates. The County bills customers the base charge based on the number of ERUs associated with the customer account. For purposes of this analysis the historical ERUs were calculated based on the reported historical base charge revenue or estimated based on a relationship of 1.2 ERUs per active customer account..

[3] Reflects customer and sales forecast which formed the basis of the rate revenue from approved and recommended rates.

[4] Reflects average annual compound growth rate from Fiscal Year 2015.

As can be seen above, the projection in equivalent residential connections is assumed to increase approximately 0.7% annually through the Fiscal Year 2021. This average growth rate generally approximates the recent historical trends in customer growth statistics and is assumed to be attainable by County staff. It should be noted that the forecast assumes a slight increase in billed wastewater flows for the Fiscal Year 2016 based on the estimated average billed flows for the historical Fiscal Years 2014 and 2015. Additionally, the forecast recognizes marginal declines in the average wastewater billed per ERU resulting in billed flows per ERU of 6,018 gallons per month by the Fiscal Year 2021, which is comparable to the billed flows reported for the Fiscal Year 2015. As can be seen above, which is consistent with the decline in rate revenue, the average billed wastewater flow per

ERC declined by over 4% in 2015 when compared to the prior year; the lowest billed use relationship for the past 6 years. Although a rebound in use is assumed, such amounts are assumed to still be less than the Fiscal Year 2014 levels.

2. The Adopted Fiscal Year 2016 Budget estimates as provided by WMP staff served as the basis for the expenditure projections for the System. The budget estimates were compared to actual historical period results and 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 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 29, 2015.
4. The projected sales of service (wholesale) 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 wholesale service by respective customer was recognized:

Summary of Sales of Service Revenues [*]						
For the Forecast Period – Fiscal Years Ending June 30,						
	2016	2017	2018	2019	2020	2021
City of Fairfax	\$1,816,462	\$1,862,490	\$1,910,205	\$1,959,674	\$2,011,312	\$1,816,462
Town of Herndon	3,420,000	3,420,000	3,420,000	3,420,000	3,420,000	3,420,000
Arlington County	624,811	639,567	654,748	670,366	686,434	624,811
Fort Belvoir	2,130,480	2,130,480	2,130,480	2,130,480	2,130,480	2,130,480
City of Falls Church	1,024,809	1,068,684	1,095,814	1,118,920	1,141,730	1,165,317
Town of Vienna	579,554	591,528	603,941	616,809	630,239	579,554
Fairfax Water	126,208	126,778	127,918	129,248	129,580	126,208
I-95 ERRF (Covanta)	378,623	380,333	383,753	387,743	388,740	378,623
Loudoun (County) Water	151,595	156,243	160,381	164,631	169,077	151,595
Total Sales of Service Revenues	<u>\$10,252,542</u>	<u>\$10,376,103</u>	<u>\$10,487,239</u>	<u>\$10,597,870</u>	<u>\$10,707,592</u>	<u>\$10,819,770</u>

[*] 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 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 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 availability charge revenues is based on the forecast of ERUs and the current rate for service (i.e., \$7,750 per ERU), which was assumed be held constant for the Forecast Period (includes no fee increase or inflationary indexing provision applied to the current availability charges). The estimated amount of availability charges anticipated to be received during the Forecast Period was determined as follows:

Summary of Estimated Availability Charges Revenues						
	For the Forecast Period – Fiscal Years Ending June 30,					
	2016	2017	2018	2019	2020	2021
ERCs Connecting to System	2,422	2,392	2,361	2,331	2,301	2,271
Availability Charge (\$/ERU) [*]	\$7,750	\$7,750	\$7,750	\$7,750	\$7,750	\$7,750
SAC Revenue (\$ millions)	\$18.771	\$18.536	\$18.301	\$18.067	\$17.832	\$17.597

[*] Amounts shown for the Fiscal Years 2015 to 2018 reflect adopted availability charges by the Board of Supervisors. The remainder of the Forecast Period assumes no change to the availability charge.

For additional discussion concerning the evaluation and recommendation to maintain the current Availability Fee please reference the discussion of the *Availability Fee Evaluation* found on page 26 of this Report.

6. The County does not formally segregate the availability charges received from other revenues of the System. To estimate the amount of funds on deposit attributable to the receipt and estimated use of such funds, a historical analysis of fee collections and expenditures was performed to estimate beginning availability charge fund balances allocable to new customers. For the Forecast Period, such amounts were based on: i) the estimated current cash balance in the new customer (availability charge) fund as of June 30, 2015 representing the beginning fund balance; ii) the level of fees anticipated to be collected during the Forecast Period, including interest income earned on funds on deposit; and iii) the projected 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:

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

	For the Forecast Period – Fiscal Years Ending June 30,					
	2016	2017	2018	2019	2020	2021
Beginning Fund Balance	\$6,845,784	\$0	\$0	\$0	\$0	\$0
Plus Sources of Funds:						
Estimated SAC Receipts	18,770,661	18,536,028	18,301,394	18,066,761	17,832,128	17,597,495
Investment Income [2]	17,000	0	0	0	0	0
Less Uses of Funds:						
Debt Service Payments	\$18,787,661	\$18,536,028	\$18,301,394	\$18,066,761	\$17,832,128	\$17,597,495
Capital Project Expenditures [3]	<u>6,845,784</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Ending Fund Balance	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>

- [1] Amounts reflect funds that are allocated to new customers; which resources are derived primarily from the application of availability charges.
- [2] Amounts include earnings of funds that are allocable to new customers which are in addition to earnings on the availability charge funds (primarily earnings on expansion-related debt service – related accounts).
- [3] Based on a multi-year historical review of expansion related debt service and proceeds from the sale of capacity, a beginning fund balance allocable to availability charges was assumed for purposes of this analysis and were used to fund a portion of the new customer-related capital improvements for the System.

As can be seen above, it is projected that the estimated availability charge fund balance funded from new customer growth will be exhausted during the Forecast Period (all funds received will be applied to expansion-related debt payments or capital project funding) 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 expansion-related debt payments are expected to exceed projected receipts of availability charges resulting in a carry-forward balance of expansion-related debt payments, which must be funded in the interim from existing customer sewer service charge revenues.

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

	For the Forecast Period – Fiscal Years Ending June 30,					
	2016	2017	2018	2019	2020	2021
Beginning Balance – Carry Forward [1]	(\$6,846)	\$6,457	\$23,874	\$41,549	\$63,766	\$85,897
Total Debt Service Payments	47,462	55,122	55,155	63,029	62,716	66,882
Expansion-related Allocation						
Expansion Debt Percentage	68%	65%	65%	64%	64%	63%
Allocated Debt Service	32,090	35,953	35,976	40,284	39,963	42,042
Availability Charges to Pay Expansion Debt [2]	18,788	18,536	18,301	18,067	17,832	17,597
Net Funding	<u>13,303</u>	<u>17,417</u>	<u>17,675</u>	<u>22,217</u>	<u>22,131</u>	<u>24,444</u>
Ending Balance – Carry Forward	<u>\$6,457</u>	<u>\$23,874</u>	<u>\$41,549</u>	<u>\$63,766</u>	<u>\$85,897</u>	<u>\$110,341</u>

- [1] Assumes a negative carry-forward balance equal to the starting balance of approximately \$6.8 million based upon information provided by WMP staff.
- [2] Assumes all availability charges applied to expansion-related debt service payments. Any balance of fees available after payment of the expansion-related debt service payments was assumed to be carried over to the subsequent years for future debt service payment application; any deficiency in availability charge expansion-related debt funding represents a due from the 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 2016 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 2016 levels based upon several assumptions and the nature of the expense being incurred by the System. The Fiscal Year 2016 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. With respect to the remainder of the Forecast Period, such amounts were projected above the Fiscal Year 2016 adopted 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 2% recognizing cost of living adjustments and merit increases; and ii) increases in medical and other benefits assumed at 5% annually based on a review of recent historical increases and expectations for such costs for the forecast period. It should be noted that the County provides healthcare benefits through a self-insurance policy.
 - 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 2.3% to 2.4%. 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 2015, recent historical trends experienced by the System and discussions with WMP Staff.
 - d. Based on repair and Maintenance operating expenses were escalated based upon a factor of 5.2% over the Forecast Period based on discussions with WMP staff, reflecting the continued trend in increased capital reinvestment needs and increases in construction materials costs used in the repair and maintenance of existing wastewater facilities.

- e. General insurance for property, plant and equipment was held constant for the Forecast Period based on discussions with WMP staff and recognizing that the County is expected to control costs through a self-insurance policy.
 - 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 2016 budget. These costs were compared to recent trends, fiscal year-to-date 2015 reported amounts and 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 3.2% based on a review information published by the Bureau of Labor Statistics regarding historical trends in electricity and energy prices over the past twenty (20) years 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 over the Forecast Period at a base annual inflation rate of 3.0% 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 and the Town of Vienna. 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 \$8.2 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 providers) 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 providers; ii) where available and applicable, the costs reflected in the Fiscal

Year 2016 operating and capital budget for the TBC providers; iii) recent invoices as billed by the TBC providers 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. Alexandria Renew Enterprises (formally Alexandria Sanitation Authority) ("AlexRenew") – 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 AlexRenew as part of its financial planning process. In addition, the costs invoiced to the County include deposits to a joint use facilities account maintained by AlexRenew to be used exclusively for improvement, repair and replacement of certain County and AlexRenew shared facilities (the "Joint IR&R") in an amount equal to 0.7% of the total amount of the capital expenditures made (reported gross plant investment) 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 AlexRenew wastewater treatment plant, it was assumed that the County would account for approximately 51% of the total wastewater flows at the AlexRenew wastewater treatment facilities and therefore responsible for the proportionate share of the joint facility operating expenses.

With respect to the County, the estimated invoiced TBC wastewater treatment costs from AlexRenew are considered as an Operating Expense of the System and were projected as follows:

	Purchases from Alexandria Renew Enterprises					
	For the Forecast Period – Fiscal Years Ending June 30,					
	2016	2017	2018	2019	2020	2021
Operational Maintenance Expenses	\$10,680,839	\$11,442,515	\$11,898,191	\$12,353,866	\$12,809,542	\$13,315,848
Deposit to Joint IR&R Account	3,218,692	3,327,103	3,428,773	3,535,356	3,638,563	3,719,168
Accruals / Fiscal Year End Adjustments	(304,597)	(217,522)	(139,336)	(140,565)	(139,721)	(146,728)
Total Operating Expenses	\$13,594,935	\$14,552,097	\$15,187,627	\$15,748,658	\$16,308,384	\$16,888,288

The County also shares in the capital expenditures by AlexRenew 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 AlexRenew to issue debt for joint use improvements for which the County would be responsible for 60% of such debt, but based on discussions with AlexRenew staff and historical precedent, we have assumed that no AlexRenew 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 9.3% 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,						
	2016	2017	2018	2019	2020	2021
Operating Expenses	<u>\$2,627,923</u>	<u>\$2,688,365</u>	<u>\$2,750,198</u>	<u>\$2,813,452</u>	<u>\$2,880,975</u>	<u>\$2,950,119</u>

The County also shares in the capital costs performed by Arlington County on certain facilities (with the County being responsible for approximately 7.5% 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 2016 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,						
	2016	2017	2018	2019	2020	2021
Operating Expenses	<u>\$13,146,989</u>	<u>\$13,541,397</u>	<u>\$13,947,639</u>	<u>\$14,366,068</u>	<u>\$14,797,050</u>	<u>\$15,240,962</u>

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 40% 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,						
	2016	2017	2018	2019	2020	2021
Operating Expenses	\$11,915,009	\$12,261,898	\$12,543,921	\$12,832,432	\$13,140,410	\$13,455,780
Deposit to Reserve and Maintenance Account	1,707,558	1,758,784	1,811,548	1,865,894	1,921,871	1,979,527
Total Expenses	\$13,622,567	\$14,020,682	\$14,355,469	\$14,698,326	\$15,062,281	\$15,435,307

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 42% 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. It should be noted that most of the primary capital expenditures (i.e., which are not funded from the Reserve and Maintenance Account) are debt financed by UOSA, which the County's proportionate share is allocated to the System. Such debt liability and payment is considered as a subordinated debt of the 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 costs were escalated annually for inflationary allowances for the remainder of the Forecast Period.
10. As of June 30, 2015, the County had \$288,965,000 in senior lien bonds 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 2009	Series 2012	Series 2014	Total
Principal Amount of Bonds Outstanding [1]	\$139,415,000	\$87,795,000	\$61,755,000	\$288,965,000
Fiscal Year of Final Maturity	2040	2043	2029	
Annual Debt Service [2]:				
2016	\$9,725,629	\$5,593,067	\$5,750,813	\$21,069,509
2017	9,725,702	5,593,016	5,799,844	21,118,562
2018	9,731,775	5,598,350	5,813,718	21,143,843
2019	9,735,213	5,600,038	5,850,688	21,185,939
2020	9,739,493	5,601,808	5,865,896	21,207,197
2021	9,744,546	5,603,840	5,883,323	21,231,709

[1] Amounts shown reflect amounts outstanding as of June 30, 2015 as reported by the County in the Comprehensive Annual Financial Report.

[2] Amounts shown on an accrued basis predicated on the monthly deposits to a sinking fund for payments coming due and are not representative of the timing of when the actual payment is made by fiscal year.

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 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

Description	VRA Sewer Revenue Bonds		UOSA Revenue	Total
	Series 2001	Series 2002	Bonds [2]	
Principal Amount of Bonds Outstanding [1]	\$15,534,615	\$21,906,079	\$265,680,629	\$303,121,324
Fiscal Year of Final Maturity	2021	2022	2043	N/A
Annual Debt Service [3]:				
2016	\$2,791,078	\$3,412,198	\$20,188,946	\$26,392,222
2017	2,791,078	3,412,199	20,207,514	26,410,791
2018	2,791,078	3,412,199	20,214,815	26,418,092
2019	2,791,079	3,412,198	20,226,446	26,429,723
2020	2,791,079	3,412,199	19,891,666	26,094,944
2021	1,628,129	3,412,199	20,365,582	25,405,910

[1] Amounts shown reflect amounts outstanding as of June 30, 2015 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 2016 through 2043.

[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 Obligations 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 Bonds. Amounts shown for UOSA are also shown net of the receipt of Federal Direct Subsidies associated with the issuance of Build America Bonds and / or use of debt service reserve funds applied towards final maturity for repayment.

The Outstanding Subordinate Obligations loan repayment requirements included in this Report 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 (funded from previous UOSA bond financing) 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. A summary of the Outstanding 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 capital improvement financing plan reflected in this Report:

Additional Parity Bonds (Senior Obligations)				
Description	Series 2017 Bonds [1]	Series 2019 Bonds [2]	Series 2021 Bonds [3]	Total
Principal Amount of Bonds Issued	\$110,355,000	\$110,590,000	\$66,495,000	\$287,440,000
Fiscal Year of Final Maturity	2046	2048	2050	N/A
Annual Debt Service:				
2016	\$0	\$0	\$0	\$0
2017	7,593,019	0	0	7,593,019
2018	7,593,019	0	0	7,593,019
2019	7,593,019	7,820,509	0	15,413,528
2020	7,593,019	7,820,509	0	15,413,528
2021	7,593,019	7,820,509	4,830,789	20,244,317

[1] Assumes construction fund deposit of \$100,000,000, 5.5% interest rate, 30 year repayment term, 1.0% issue costs, level debt service and issuance on or about July 1, 2016 (i.e., Fiscal Year 2017).

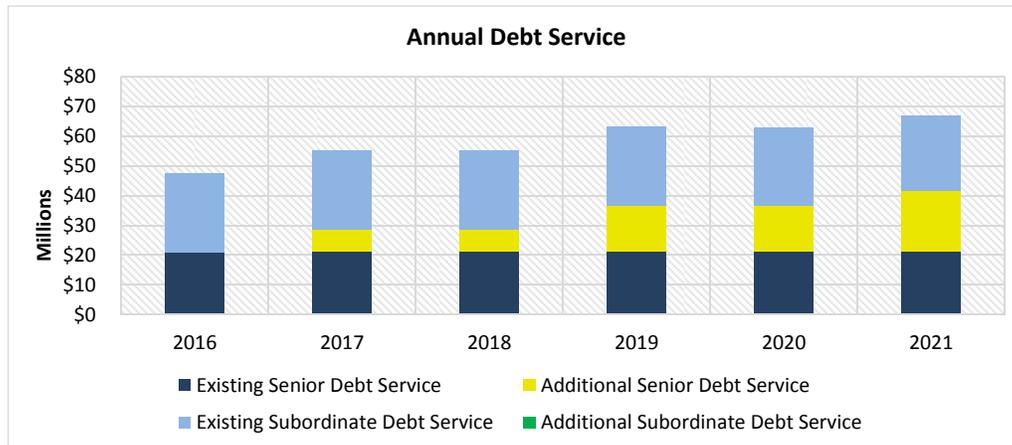
[2] Assumes construction fund deposit of \$100,000,000, 5.75% interest rate, 30 year repayment term, 1.0% issue costs, level debt service and issuance on or about July 1, 2018 (i.e., Fiscal Year 2019).

[3] Assumes construction fund deposit of \$60,000,000, 6.0% interest rate, 30 year repayment term, 1.0% issue costs, level debt service and issuance on or about July 1, 2020 (i.e., Fiscal Year 2021).

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. 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 issued by UOSA. Historically, the County has treated its payment obligations to UOSA 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.

For the Fiscal Year 2016 and based on information provided by UOSA's financial advisor, the UOSA Board anticipates issuing additional bonds to finance certain capital improvements to their treatment facilities. The County anticipates directly cash-funding these improvements with available reserves; thus, no additional subordinated debt associated with the UOSA is assumed to be allocated to the County during the Forecast Period. The following table provides a summary of the existing and proposed annual debt service:



- 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 2015; ii) the County's most recent Ten Year Capital Improvement Plan; iii) deferral of certain projects based on discussions with WMP staff to reflect adjustments for timing variances among appropriations and actual expenditures or reprioritization of capital spending; and iv) projections of TBC capital expenditure requirements as reported to the County by the TBC providers. 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:

Description	Level of Capital Funding Recognized (\$000s)						Total
	Projected Fiscal Year Ending June 30,						
	2016	2017	2018	2019	2020	2021	
Capital Funding [*]	\$122,789	\$96,578	\$134,541	\$146,132	\$143,181	\$134,315	\$777,536
Deferred Funding	(12,789)	13,422	(19,541)	(26,132)	(18,181)	(4,315)	(67,536)
Total Funding Recognized	<u>\$110,000</u>	<u>\$110,000</u>	<u>\$115,000</u>	<u>\$120,000</u>	<u>\$125,000</u>	<u>\$130,000</u>	<u>\$710,000</u>

[*] Includes estimated allocable capital expenditures from UOSA.

As can be seen above, based on discussions with WMP staff the proposed capital funding plan deferred approximately \$68 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 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:



In total the County is expected to fund approximately \$710 million in County and TBC constructed capital improvements (after programmed deferrals), of which approximately \$260 million or 37% is assumed to be funded from additional debt proceeds during the Forecast Period. This implies that the majority of the capital program is funded from internal sources (i.e., 63%) derived from: i) rate revenues (ongoing operations); ii) availability charges; and iii) existing cash reserves and previously issued bond proceeds. This funding approach through the use of limited additional bonds is also projected to result in the stabilization of rates over the long-term.

15. Recognized in the capital improvement program is the use of the Sewer Construction Fund (the "Sewer Construction 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, for 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 of the fund is to provide a defined ongoing annual capital financing 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 life. The General Bond Resolution does not mandate a minimum funding requirement or an annual deposit for the SubFund. For purposes of this report and based on discussions with WMP staff the programmed transfers to the Sewer Construction Fund recognized: i) minimum transfers for capital funding allowance of 3.0% of County-owned depreciable utility plant; and ii) additional transfers recognizing investments in capacity rights for the County's TBC providers and based on the level of identified capital improvement program funding requirements. The following table provides a summary of the projected transfer to the sewer construction:

Programmed Deposit to Sewer Construction Fund (Capital Reinvestment) for the Forecast Period (in \$000s) [1]

	Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Gross Depreciable Plant-in-Service [2]	\$2,408,466	\$2,489,671	\$2,609,744	\$2,723,855	\$2,836,619	\$2,952,559
Less Non-Applicable Assets [3]	(1,079,570)	(1,104,770)	(1,150,190)	(1,193,071)	(1,225,042)	(1,247,465)
Net Applicable Plant-in-Service	\$1,328,896	\$1,384,901	\$1,459,553	\$1,530,784	\$1,611,576	\$1,705,094
% of Net Applicable [4]	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Minimum Sewer Construction Deposit (\$) [4]	\$39,867	\$41,547	\$43,787	\$45,924	\$48,347	\$51,153
Additional Sewer Construction Deposits [5]	\$23,272	\$16,572	\$17,519	\$11,363	\$15,167	\$14,251
Total Recognized Deposits	\$63,139	\$58,120	\$61,306	\$57,286	\$63,514	\$65,403
As % of Gross Depreciable Plant-in-Svc.	2.9%	3.1%	2.9%	2.9%	2.7%	2.7%

- [1] Reflects deposits for ongoing renewals, replacement and betterments of utility plant, but does not include deposits for the wastewater line extension program for developed but unserved customers.
- [2] Amounts shown are exclusive of land and construction work-in-progress; was based on reported utility plant as of June 30, 2015 as contained in the Comprehensive Annual Financial Report adjusted for the Forecast Period based on the addition of the capital plan assets being placed into service less an estimated allowance for asset retirements for utility plant assumed to be replaced.
- [3] Amounts shown include equipment, purchased capacity rights by TBC providers and allowances for retirement of fixed assets.
- [4] Reflects minimum deposit at 3% of Net Applicable Plant-in-Service.
- [5] Reflects additional deposits for additional Pay-Go funding associated with the identified capital funding program and the need for capital reinvestment associated with the purchased capacity rights of the County's TBC providers.

As can be seen above, the forecast assumes annual deposits to the Sewer Construction fund of approximately 3% of the projected gross depreciable fixed assets of the System during the Forecast Period, which is considered a strong rate for the annual (recurring) funding of capital reinvestment.

16. In addition to the minimum deposits to the Sewer Construction 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 Sewer Construction 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 annual 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, Sewer Construction 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 availability charge balances (although considered as a component of operating revenues) were assumed to be restricted for expansion-related expenditure funding to provide a match between the purpose of the funds received and the cost of expansion capital and, therefore, were considered restricted to such fund. Any earnings on balances from debt proceeds held in the Construction Fund were considered restricted. The earnings on 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 expansion-related debt repayment (availability fees only) and for capital expenditure financing in relation to expansion-related projects as designated from time-to-time by the County. A summary of the interest earnings recognized in the financial forecast for each Fiscal Year are summarized as follows:

Summary of Projected Interest Earnings – Forecast Period (\$000s)

	Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Unrestricted Interest Earnings:						
Funds 69000 and 69010 – Revenue Fund [1]	\$234,000	\$258,000	\$311,000	\$367,000	\$425,000	\$487,000
Fund 69000B – VRA Subordinate Obligation Reserve Fund [2]	31,000	37,000	43,000	50,000	56,000	62,000
Fund 69300 – Sewer Construction Fund [3]	173,000	200,000	252,000	268,000	244,000	199,000
Fund 69300A – Sewer Construction Fund	25,000	30,000	35,000	40,000	45,000	50,000
Fund 69020 – Debt Service Fund [3]	35,000	57,000	67,000	98,000	110,000	138,000
Fund 69030 – Debt Service Reserve Fund [3]	110,000	151,000	203,000	263,000	331,000	392,000
Fund 69040 – Subordinate Obligations Fund	33,000	40,000	46,000	53,000	59,000	64,000
Total Unrestricted Interest Earnings [4]	\$641,000	\$773,000	\$957,000	\$1,139,000	\$1,270,000	\$1,392,000
Restricted Interest Earnings:						
Fund 400-A – Availability Charge Fund [5]	17,000	0	0	0	0	0
Fund 69310 – Bond Construction Fund	21,000	0	0	0	0	0
Total Restricted Interest Earnings [6]	\$38,000	\$0	\$0	\$0	\$0	\$0
Total Interest Earnings	\$679,000	\$773,000	\$957,000	\$1,139,000	\$1,270,000	\$1,392,000

- [1] Reflects estimated earnings on available cash balances in Funds 69000 and 69010 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 available cash balances in Fund 69000 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] Amounts shown include additional interest earnings due to increases in annual debt payments and debt service reserves balances based on the issuance of the Additional Parity Bonds.
- [4] Reflects earnings on various funds which are 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 fund and not included as a component of Gross Revenues.
- [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.

The growth in investment income is primarily related to assumed increases in the rate of return on investments which range from 0.5% for the current period to 1.5% in the final year of 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.

18. Based on the assumptions recognized in the development of the financial forecast and the result of actual Fiscal Year 2015 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 (\$000s) [1]						
	Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Gross Revenue Requirements						
Operating Expenses	\$100,523	\$104,021	\$107,659	\$110,974	\$114,336	\$117,850
Senior Lien Debt Service	21,070	28,712	28,737	36,599	36,621	41,476
Subordinate Lien Debt Service	26,392	26,411	26,418	26,430	26,095	25,406
Sewer Construction Fund Deposit [2]	63,139	58,120	61,306	57,286	63,514	65,403
Sewer Construction Fund Deposit (Extension Program)	2,918	2,917	2,917	2,916	2,915	2,915
Transfer to Reserves	0	1,438	1,495	1,362	1,382	1,444
Departmental Capital from Rates [3]	2,325	2,394	2,466	2,540	2,616	2,695
Total Gross Revenue Requirements	\$216,366	\$224,013	\$230,998	\$238,108	\$247,479	\$257,189
Less Other Revenue and Income:						
Sales of Service and Other Revenues [4]	(\$10,253)	(\$10,376)	(\$10,487)	(\$10,598)	(\$10,708)	(\$10,820)
Other Operating Revenues	(250)	(250)	(250)	(250)	(250)	(250)
Unrestricted Interest Income	(641)	(773)	(957)	(1,139)	(1,270)	(1,392)
Transfers from Reserves – Fund 69000	0	0	0	0	0	0
Availability Charges – Pay Expansion-related Debt [5]	(18,788)	(18,536)	(18,301)	(18,067)	(17,832)	(17,597)
Net Revenue Requirements	\$186,435	\$194,077	\$201,002	\$208,054	\$217,420	\$227,130
Recognized System Rate Adjustment						
Existing Rate Revenue – Fiscal Year 2016 Rates	\$186,435	\$188,990	\$189,917	\$190,823	\$191,708	\$192,571
Effective Rate Adjustment [6]	N/A	3.6%	3.1%	3.0%	4.0%	4.0%
Adjusted Rate Revenue	\$186,435	\$194,077	\$201,002	\$208,054	\$217,420	\$227,130
Surplus / (Deficiency)	\$0	\$0	\$0	\$0	\$0	\$0

[1] Amounts shown derived from Table 6.

[2] Reflects total transfers to the Sewer Construction Fund, with exception to transfers for the extension program, and include: i) minimum transfer for capital funding allowance of 3.0% of County-owned depreciable utility plant; and ii) additional transfers recognizing investments in capacity rights for the County's TBC providers and funding requirements of the identified capital improvement program.

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

[4] Includes other miscellaneous operating revenues not set aside for extension program, interest income on available fund balances exclusive of 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] The first priority of use for 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] Amounts shown reflect the effect of proposed rate changes to rate revenues, including recognition of timing and application of recommended rates. Assumes implementation of recommended rates on or before October 1st of each fiscal year.

The following table provides a summary of the recommended rate adjustments for the Forecast Period:

Description	Recommended Rate Adjustments					
	Existing	Prior Board Adopted			Identified	
	2016	2017	2018	2019	2020	2021
Recommended Rates:						
Quarterly Base Charge	\$20.15	\$24.68	\$27.62	\$30.38	\$33.42	\$36.76
Flow Charge	\$6.65	\$6.68	\$6.75	\$6.85	\$7.05	\$7.21
Rate Revenue Adjustment [*]	N/A	3.6%	3.1%	3.0%	4.0%	4.0%

[*] Amounts shown reflect projected increases to revenues from recommended rates.

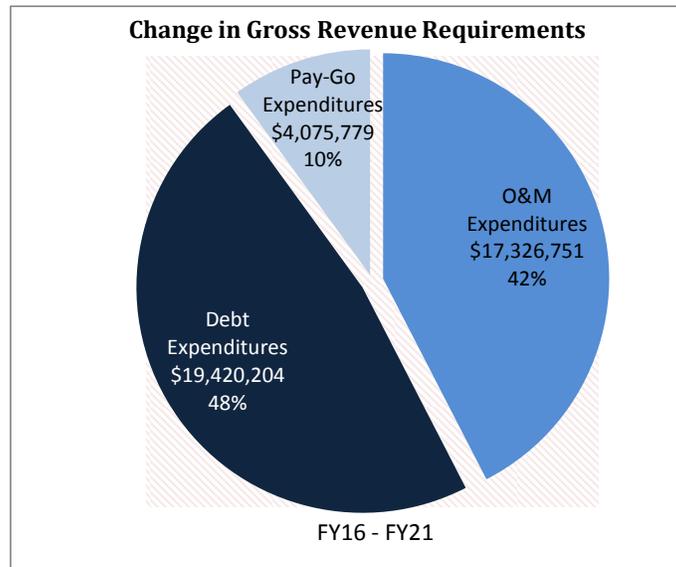
Primary Reasons for Rate Adjustments

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

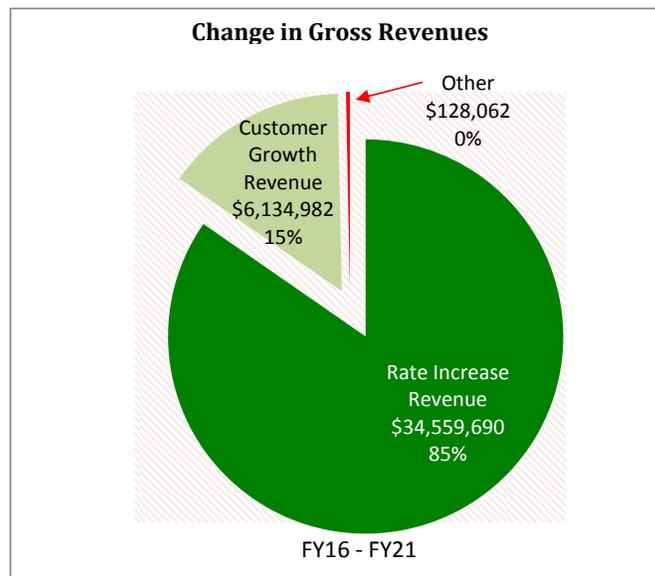
1. Continued inflationary impacts on the cost of providing service and construction of capital improvements, especially as the economy continues to improve and the demand for goods and services increases;
2. Issuance of additional indebtedness required to fund the WMP identified capital program associated with repairs, betterments, and improvements and compliance with regulatory driven capital improvements (i.e., Chesapeake Bay Program);
3. The need to maintain existing net revenue margins to promote capital reinvestment on a "Pay-As-You-Go" basis, which reduces the need for issuing debt and maintains lower rate levels over the long-run;
4. The continued effects of reduced billed wastewater flow per customer due to continued declines in wastewater use (based on metered water use) which reduces "per customer" contributions to meeting the annual net revenue requirements; and
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 can be found in subsequent sections to this report.

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The following charts provide an illustration of the incremental changes in gross revenue requirements and revenues during the Forecast Period in order to highlight the rate drivers and funding sources for the increases in overall costs:



As can be seen above, the incremental growth in revenue requirements is attributable to: i) \$17.3 million growth in annual operating expenses accounting for approximately 42% of the total growth in revenue requirements; ii) \$19.4 million growth in additional annual debt service payments accounting for approximately 58% of the total growth in revenue requirements; and iii) \$4.1 million growth in additional transfers to capital reserves to fund Pay-Go capital and maintain financial margins for creditworthiness accounting for approximately 10% of the total growth in revenue requirements. As previously discussed, to finance the incremental growth in annually recurring revenue requirements the forecast recognizes application of rate adjustments, however customer additions also contribute to the growth in operating revenues. The following chart provides a summary of the sources for the growth in revenues projected during the Forecast Period:



As can be seen from the prior chart, the majority or 85% of the incremental growth in revenues at approximately \$35 million is attributable to application of adopted and identified rate adjustments, while customer growth and minor changes in income and funds from other sources accounts for the balance of the incremental growth in revenues at approximately \$6.3 million or 15%.

AVAILABILITY CHARGE EVALUATION

As previously discussed, PRMG performed an evaluation of the existing availability fee charges to determine the adequacy of such fees based on current and forecasted capital investment. The evaluation comprised a comprehensive review of the County's existing fixed assets, TBC purchased capacity rights, ten (10) year capital improvement and level of service assumptions per ERU. The following discussion provides a summary of the methodology, assumptions and findings of the evaluation.

Methodology and Fee Calculation

The methodology in development of the availability fee generally follows a "system buy-in" approach or reimbursement method for recovering the incremental cost infrastructure for new customers connecting to the System. The identified infrastructure costs included, among other things, the fixed asset records reported by the County as of June 30, 2015 and the identified ten (10) year capital improvement (the "10yr CIP"). The fixed asset records and the 10yr CIP were allocated by function and categorized as either allocable to the treatment or conveyance function of the System. Non-treatment assets include fixed assets associated with conveyance such as force mains, pump stations, manholes, meters and indirect capital costs such as storage or administrative facilities. Conveyance assets excluded any equipment or donated assets as reported by the County. The following table provides a summary of the recognized and allocated fixed asset costs:

Allocation of Existing Capital Assets Recognized in Determination of the Availability Charge [1]			
Description	Treatment	Conveyance	Total Assets
County Capital Assets [2]	\$606,921,650	\$762,256,739	\$1,369,178,389
TBC Capacity Rights [3]			
Upper Occoquan Service Authority (UOSA)	\$319,998,585	\$4,434,649	\$324,433,234
DC Water (Blue Plains)	266,730,513	0	266,730,513
Alexandria Renew Enterprises (ARE)	313,930,039	5,893,325	319,823,364
Arlington County Water Pollution Control Plant	51,210,729	0	51,210,729
Loudon County Sanitation Authority	20,942,294	0	20,942,294
Subtotal	\$1,579,733,810	\$772,584,714	\$2,352,318,524
Less Donated Assets [4]	(24,837)	(215,086,822)	(215,111,659)
Recognized Existing Capital Assets	\$1,579,708,973	\$557,497,892	\$2,137,206,865

[1] Amounts shown reflect existing capital assets recognized in calculation of the availability charge as of June 30, 2015.

[2] Amounts shown include depreciable and non-depreciable assets such as land, easements and construction work in process, but are exclusive of minor units of property and equipment (i.e., Capital Outlay).

[3] Amounts shown reflect the reported reservation of capacity rights associated with the County's TBC providers; however, excludes approximately \$0.9 million associated with reservations of capacity with Prince William County.

[4] Amounts shown reflect the exclusion of donated or contributed assets reported by the County.

As can be seen above, the existing capital assets included in the evaluation of the impact fee total approximately \$2.1 billion, which is net of donated assets primarily associated with contributed

collection lines, pump stations or other conveyance assets within the County's service territories. As discussed, in addition to the existing assets recognized in determination of the Availability Fee an allocation of the 10yr CIP improvements was performed for recognition in calculation of the Availability Fee as follows:

Allocation of Ten (10) Year Projected Capital Improvement Program (CIP) [1]			
Description	Treatment	Conveyance	Total Assets
County Capital Asset Additions	\$342,272,752	\$523,803,600	\$866,076,352
TBC Capacity Right Improvements:			
Upper Occoquan Service Authority (UOSA)	\$67,350,500	\$0	\$67,350,500
DC Water (Blue Plains)	93,166,250	0	93,166,250
Alexandria Renew Enterprises (ARE)	110,133,000	0	110,133,000
Arlington County Water Pollution Control Plant	6,516,000	0	6,516,000
Loudon County Sanitation Authority	0	0	0
Subtotal	\$619,438,502	\$523,803,600	\$1,143,242,102
Less Assumed Retirements [2]	(68,454,550)	(104,760,720)	(173,215,270)
Recognized Capital Asset Additions and Improvements	\$550,983,952	\$419,042,880	\$970,026,832

[1] Amounts shown reflect projected capital improvements identified by WMP for the Fiscal Years 2016 through 2025.

[2] Amounts shown reflect estimated utility plant retirements associated with assumed renewals and replacements of existing assets based on a review of actual asset additions and retirements reported by the County in the financial statements.

As can be seen above, the allocated 10yr CIP net of estimated retirements totals approximately \$1 billion. Based on a review of the specific capital improvements and discussions with WMP staff no improvements are anticipated to increase treatment capacity of the facilities and are primarily related to regulatory improvements, system extension and renewals / replacements.

The allocated capital costs were then weighted based on the remaining retail customer capacity reservations expressed in Millions of Gallons per Day ("MGD") and calculated in terms of the cost per Average Daily Flow – Gallons per Day ("ADF-GPD"). The remaining retail treatment capacity was determined based on a historical five (5) year review of the treated retail customer flows. The following table provides a summary of the calculated capital costs per ADF-GPD:

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Summary of Calculated Cost of Treatment and Conveyance Capital per ADF-GPD [1]

Description	FFX	UOSA	DC Water	Alex Renew	Arlington	Loudoun Water	Total
<u>Calculated Cost of Treatment Capacity:</u>							
Net Treatment Assets (\$ Millions) [2]	\$881.9	\$387.3	\$359.9	\$424.1	\$57.7	\$20.9	\$2,131.8
Total Capacity / Reservations (MGD)	67.00	22.60	31.00	32.40	3.00	1.00	157.00
Cost per Gallon (\$ per ADF-GPD)	\$13.16	\$17.14	\$11.61	\$13.09	\$19.23	\$20.90	\$13.58
<u>Weighted Retail Customer Cost:</u>							
Unused Retail Capacity (MGD) [3]	20.96	8.18	0.32	11.80	0.98	1.00	43.24
Remaining Retail Capacity Weighting	48.5%	18.9%	0.7%	27.3%	2.3%	2.3%	100.0%
Weighted Cost per Gallon (\$ per ADF-GPD)	\$6.38	\$3.24	\$0.09	\$3.57	\$0.44	\$0.48	\$14.20
<u>Calculated Cost of Conveyance Capacity:</u>							
Net Treatment Assets (\$ Millions) [2]	\$965.06	\$4.43	\$0.00	\$5.89	\$0.00	\$0.00	\$975.39
Retail Capacity (MGD) [4]	57.55	21.60	26.20	31.40	3.00	1.00	140.75
Cost per Gallon (\$ per ADF-GPD)	\$16.77	\$0.21	\$0.00	\$0.19	\$0.00	\$0.00	\$6.93
<u>Combined Calculated Cost of Conveyance (\$ per ADF-GPD)</u>							<u>\$21.13</u>

[1] Amounts shown derived from Table 14.

[2] Amounts shown reflect the recognized existing and projected capital assets net of equipment, donated assets and estimated retirements associated with the 10yr CIP.

[3] Amounts shown reflect the net retail customer treatment capacity based on a review of a five (5) year history of retail customer treated flows.

[4] Amounts shown reflect the total retail customer treatment facility capacity

As can be seen above, the calculated cost of the remaining retail customer capital reservation is estimated at approximately \$21.13 per ADF-GPD. The calculated cost per gallon was then adjusted for a five (5) year carrying cost allowance based on the current weighted average cost of capital ("wacc") at 4.24% (i.e., 5yrs x 4.24% = 21.2% wacc adjustment) resulting in an adjusted cost per gallon of \$25.61. The resultant calculated and adjusted cost per gallon is approximately 6% greater than the current charge by the County at \$24.22 per gallon (i.e., Existing Availability Charge = \$7,750 per ERU / 320 gallons per day per ERU).

The determination of the Availability Fee also encompassed an evaluation of the Level of Service ("LOS") assumed per ERU currently at 320 GPD. Based on discussions with WMP staff and a historical review of the average annual treated flows per ERU for the last five (5) years it is recommended that the County reduce the assumed LOS assumed for calculation of the Availability Fee. The reduction in the LOS is consistent with observed industry trends in declining wastewater flows per ERU attributable to increasing water conservation trends from changing consumer behavior to improvements in water fixtures and water efficient appliances, among other things. For purposes of this analysis, the Availability Charge was calculated assuming a 300 GPD LOS representing an approximate 6% reduction in the assumed LOS. It is recommended that the County continue to monitor the actual treated flows per ERU for further future adjustments and to be consistent with WMP planning LOS assumptions. The following page provides a summary of the calculated Availability Charge with comparison to the existing charge:

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Summary of the Calculated Availability Charge	
Description	Calculation
<u>Existing Availability Charge:</u>	
Fee (\$ per GPD)	\$24.22
Level of Service (GPD)	<u>320</u>
Fee (\$ per ERU)	<u>\$7,750.00</u>
<u>Calculated Availability Charge:</u>	
Net Assets / CIP (\$ per GPD)	\$21.13
Level of Service (GPD)	<u>300</u>
Fee (\$ per ERU)	\$6,339.05
Carrying Costs:	
Years of Carry Cost	5
Current Weighted Cost of Capital	<u>4.24%</u>
Carry Cost (\$ per ERU)	\$1,343.61
Carry Cost (\$ per GPD)	\$4.48
Total Calculated Fee	
Per ERC	<u>\$7,682.67</u>
Per GPD	<u>\$25.61</u>
<u>Difference to Existing Fee:</u>	
Change in Fee per GPD – Amount	\$1.39
Change in Fee per GPD – Percent	5.74%
Change in LOS (GPD) – Amount	(20)
Change in LOS (GPD) – Percent	(6.25%)
Change in Fee per ERU – Amount	(\$67.33)
Change in Fee per ERU – Percent	<u>(0.87%)</u>

As can be seen above, the offsetting adjustments of the increased calculated cost per gallon relative to the reduction in the assumed LOS results in a marginal variance to the existing Availability Charge. Recognizing the relatively minor variance it is recommended that the County not raise the current Availability Charge and continue to periodically reevaluate the sufficiency of the Availability Charge.

PROPOSED RATE RECOMMENDATIONS AND CUSTOMER IMPACT

General

In Fiscal Year 2013, WMP evaluated changing the design of rates to more fully recover fixed costs of operations and subsequently adopted a multi-year rate plan to phase-in over-time a 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

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).
2. Reflects industry trends in rates; especially as the predictability in flows and corresponding revenue per customer decreases.
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.

Disadvantages

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. 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.

Proposed Rates for Sewer Service Charges

The proposed and recommended rates continue the phase-in of the fixed cost recovery charge over a five (5) fiscal year period to limit the impact to low use customers as a result of the rate structure change. The recommended 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 22% 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. Based on the updated revenue requirements identified for the current Fiscal Year 2016 study, the recommended rates are consistent with those previously recommended in the 2015 Report through Fiscal Year 2018. Recognizing that the County has adopted rates through the Fiscal Year 2019 the currently recommended rates identify additional increases for the Fiscal Year 2019 and the remainder of the Forecast Period for the Fiscal Years 2020 and 2021. The recommended rates for the Fiscal Years 2019 through 2022 continue the overall rate initiative to increase the fixed cost recovery with the goal of targeting an approximate 22% fixed cost recovery. The following table provides a summary of the recommended rates and resulting calculated fixed charge recovery as percent of total retail rate revenues:

	Fiscal Year Ending June 30,					
	Existing	2017	2018	2019	2020	2021
Base Charge – \$ per ERC per Meter Size	\$20.15	\$24.68	\$27.62	\$30.38	\$33.42	\$36.76
Volumetric Rate – \$ per 1,000 Gallons	\$6.65	\$6.68	\$6.75	\$6.85	\$7.05	\$7.21
Calculated Fixed Charge Recovery [*]	<u>13.6%</u>	<u>16.2%</u>	<u>18.0%</u>	<u>19.3%</u>	<u>20.5%</u>	<u>21.7%</u>

[*] Presented as a percent of total revenues derived from charges for sewer service (user rates).

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 2017 through 2021 when comparing the Approved Rates to the proposed rates based on the 2016 Revenue Sufficiency Analysis:

Average Monthly Residential Bill at Proposed Rates at Usage of 6,000 Gallons per Month						
Scenario	Fiscal Year Ending June 30,					
	Existing	2017	2018	2019	2020	2021
Adopted Rates:						
Existing and Adopted Rates	\$46.62	\$48.31	\$49.71	\$50.86	N/A	N/A
Monthly Customer Increase		\$1.69	\$1.40	\$1.15	N/A	N/A
Recommended Rates:						
Proposed Rates	\$46.62	\$48.31	\$49.71	\$51.23	\$53.44	\$55.51
Monthly Customer Increase		\$1.69	\$1.40	\$1.52	\$2.21	\$2.07

The proposed rates as recommended in this report are consistent with that of the most recent rates approved by the Board through the Fiscal Year 2018. The adopted recommended charges identify an average monthly increase ranging from \$1.52 to \$2.07 for the Forecast Period.

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.

Single-Family Residential Wastewater Service 6,000 Gallons of Billed Wastewater Service Per Month [1][2]	
	Monthly Bill
Fairfax County:	
Existing Rates – Fiscal Year 2016	\$46.62
Adopted and Recommended Rates – Fiscal Year 2017	48.31
Other Neighboring Utilities:	
City of Alexandria (Served by AlexRenew) [3][4]	\$56.50
Arlington County	54.36
District of Columbia Water and Sewer Authority[3][5]	68.43
Loudoun Water [3]	47.50
Prince William County Service Authority [3]	36.54
Washington Suburban Sanitary Commission [3][6]	46.96
Other Neighboring Utilities' Average	<u>\$51.78</u>

[1] Unless otherwise noted, amounts shown reflect residential rates in effect October 2015 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.

Footnotes continued on following page.

Footnotes (cont'd.)

- [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 System or facilities 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 \$20.30 per month associated with runoff entering the sewer system; ii) a 50% allocation of the metering fee of \$3.86; iii) a 50% allocation of the a Right-of-Way fee to the District of Columbia of \$0.22 per 1,000 gallons; iv) 50% allocation of the PILOT fee charged to water and wastewater customers of \$0.62 per 1,000 gallons; and v) the residential wastewater flow charge of \$7.27 per 1,000 gallons.
- [6] 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 \$16.00.

As can be seen in the prior comparison, the Fiscal Year 2016 existing rates and the proposed 2017 rates produce bills which are lower on average when compared with other neighboring utilities for similar service. 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 an inflation based price index) which should promote the competitive position of the County's rates during the Forecast Period.

Recommended Availability Charges

As previously discussed in the prior section of this Report, it is recommended that WMP staff continue to monitor changes in treated flows per ERU reflecting the LOS in determination of the Availability Charge. Based on the evaluation of the existing Availability Charge no increases to the projected availability charges are recommended or assumed during the Forecast Period as noted below:

Recommended Availability Charges

	Existing Charge	Recommended Charge [*]				
	2016 (\$/SFRE)	2017 (\$/SFRE)	2018 (\$/SFRE)	2019 (\$/SFRE)	2020 (\$/SFRE)	2021 (\$/SFRE)
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

[*] Represents no change from previous year. The County will conduct a detailed review periodic review of the calculation of the availability charge each year.

Residential Customer Availability Charge Impact and Charge Comparison

A survey of the County's existing and recommended availability charges with neighboring utilities levels was prepared as follows:

Wastewater Availability Charge – Rate per ERU	
	<u>Rate per ERU</u>
<u>Fairfax County:</u>	
Existing Charge – Fiscal Year 2016	\$7,750
Recommended Charge – Fiscal Year 2017	7,750
<u>Other Neighboring Utilities [1]</u>	
City of Alexandria [2]	\$8,404
Arlington County [3]	2,760
District of Columbia Water and Sewer Authority	N/A
Loudoun Water	7,896
Prince William County	10,800
Washington Suburban Sanitary Commission – Unimproved [4]	3,500
Washington Suburban Sanitary Commission – 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] WSSC charges separate availability charges based a customer's geographic location for improved and unimproved areas.

This comparison was based on wastewater availability charges that would be charged to a typical residential single family residence (considered as 1 equivalent residential unit or "ERU") as shown above. As can be seen in the comparison, the existing and recommended fees imposed by the County produce charges which are similar to the average level of fees charged by other surveyed 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.

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 WMP's Outstanding Senior Lien Bonds 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 an 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,

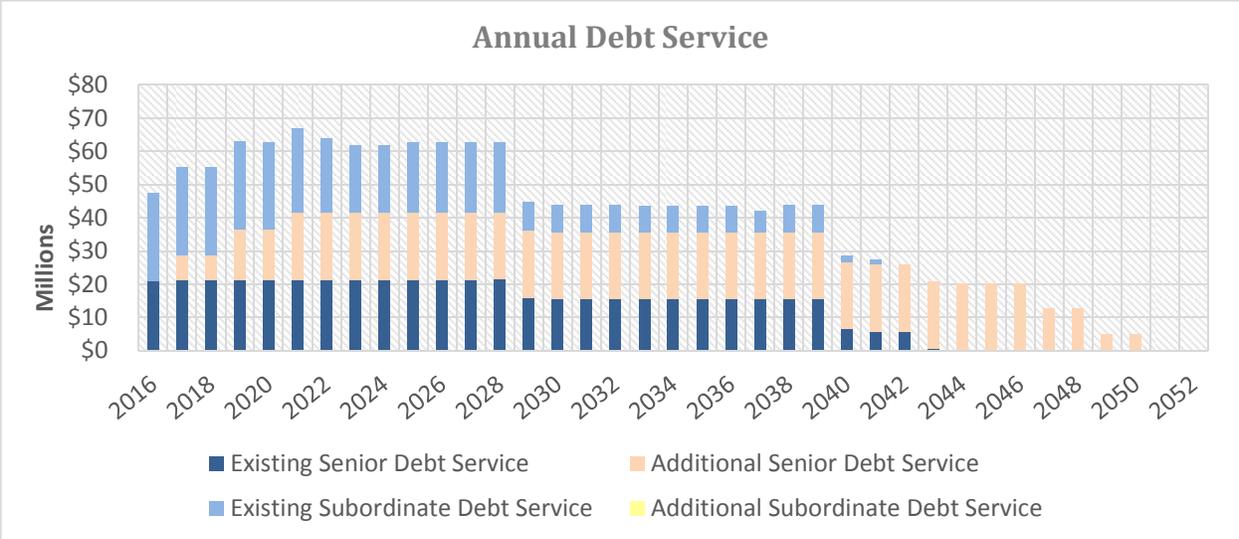
(II) the Debt Service Requirements relating to Parity Indebtedness in such Bond Year; and

(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."

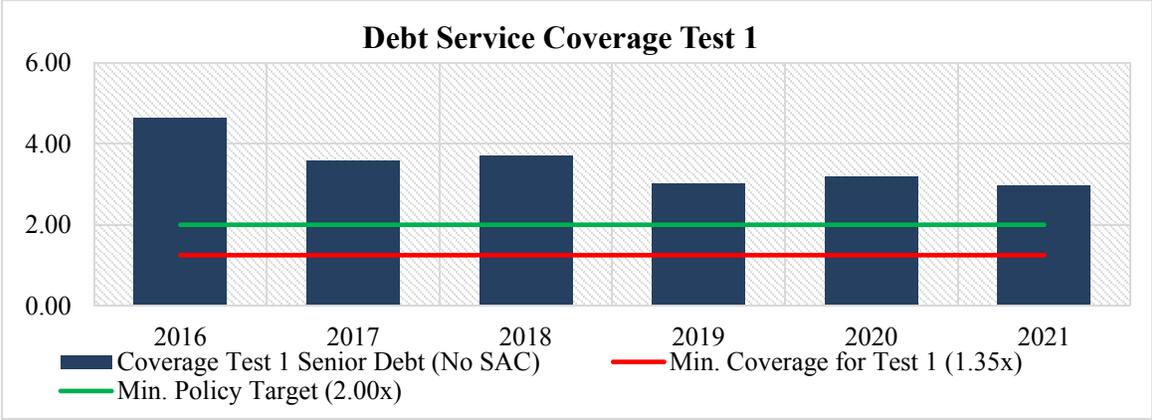
In addition to the terms of the General Bond Resolution, the County must also set rates to meet the terms and conditions of the VRA Financing Agreement between the County and the Virginia Water Facilities Revolving Fund acting by and through the VRA. The VRA Loans are considered as Subordinate Obligations 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."

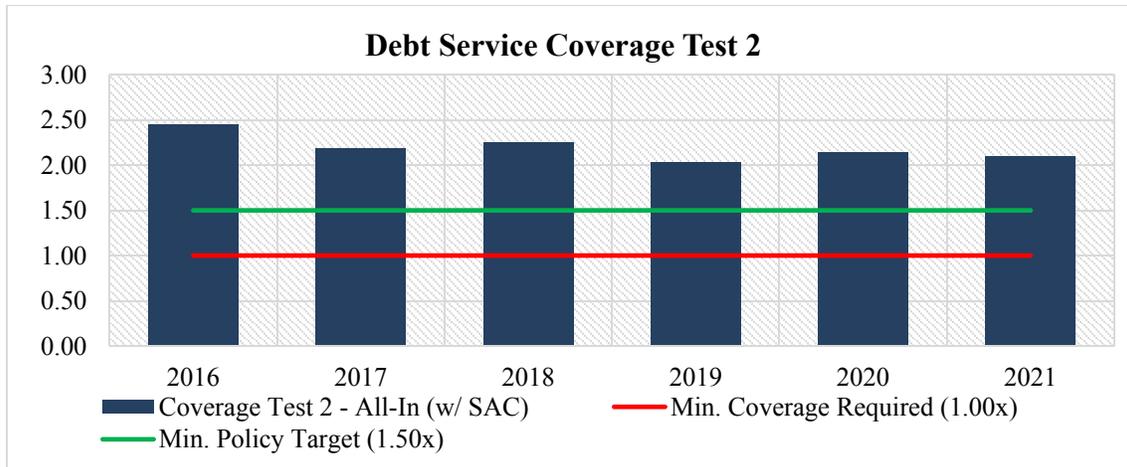
As can be seen from the following chart and based on the financial forecast presented in this report, the annual debt service payments on the Outstanding and Additional Senior Lien Bonds and Subordinate Obligations, debt is the highest in the most recent years. After Fiscal Year 2028, the County will have future additional bonding capacity to fund capital needs of the System due to the maturing of certain outstanding series bonds. 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, WMP's anticipated revenue, which recognize the recommended rate adjustments as identified in this report for the Fiscal Years 2017 through 2021, are projected to be adequate for the Forecast Period to meet the rate covenant requirements defined in the County's General Bond Resolution.



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As can be seen from the prior charts and assuming the implementation of the recommended rates as identified in this report, it is anticipated that: i) WMP's Net Revenues (not including 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 "County Bonds") as required by the General Bond Resolution; ii) WMP'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.

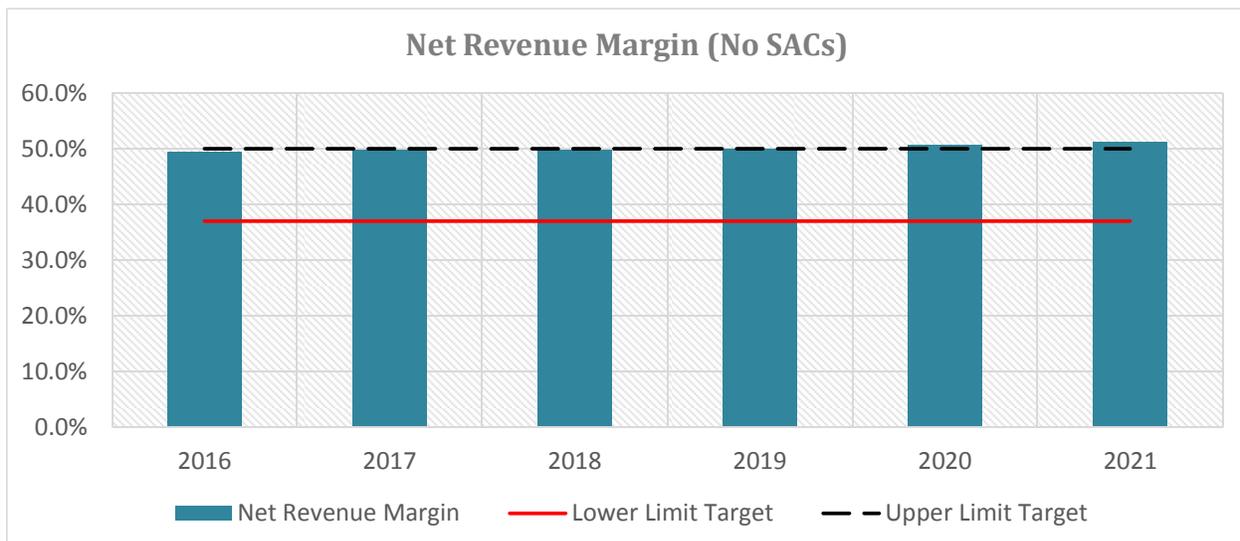
PROJECTED FINANCIAL POSITION AND PERFORMANCE MEASURES

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 WMP's financial position which recognize the implementation of the recommended rates as identified for the Forecast Period. This evaluation includes the development of ratios and 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 key 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., funds available for debt service payments, deposits to a capital fund, etc.). Since 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 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 higher Net Revenue Margin ratio (e.g., 45 percent) indicates a greater 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 WMP's contribution margins will remain constant thereby supporting the programmed need of providing a dedicated deposit to the Sewer Construction Fund for ongoing (existing customer) pay-as-you-go ("PAYGO") capital financing.

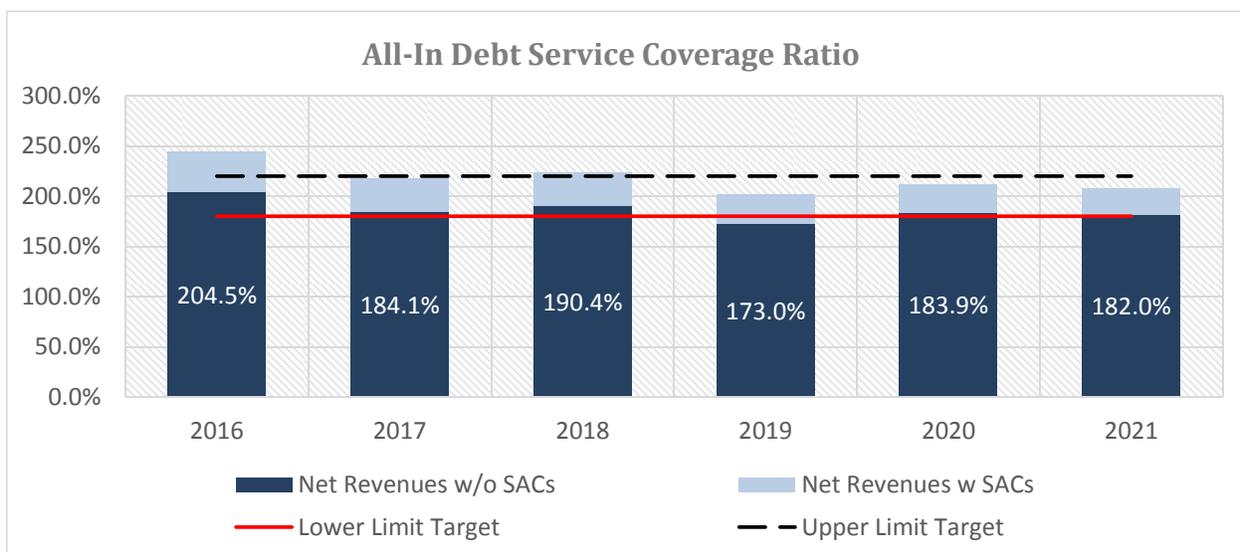
Net Revenue Margin (No SACs) (Millions)						
Description	Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Net Revenues	\$97	\$101	\$105	\$109	\$115	\$122
Gross Revenues	\$198	\$205	\$213	\$220	\$230	\$240
Net Revenue Margin	49.1%	49.4%	49.4%	49.6%	50.2%	50.8%
Targets:						
Lower Limit Target	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Upper Limit Target	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%



PRMG recommends that WMP should aim to maintain the Net Revenue Margin ratio at a target level ranging from 37% 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. It is projected WMP will maintain a favorable Net Revenue Margin ratio (at or slightly above the upper target) 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 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 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:



PRMG recommends that WMP should aim to maintain a minimum debt service coverage ratio determined on a Net Revenue basis (i.e., without 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")."

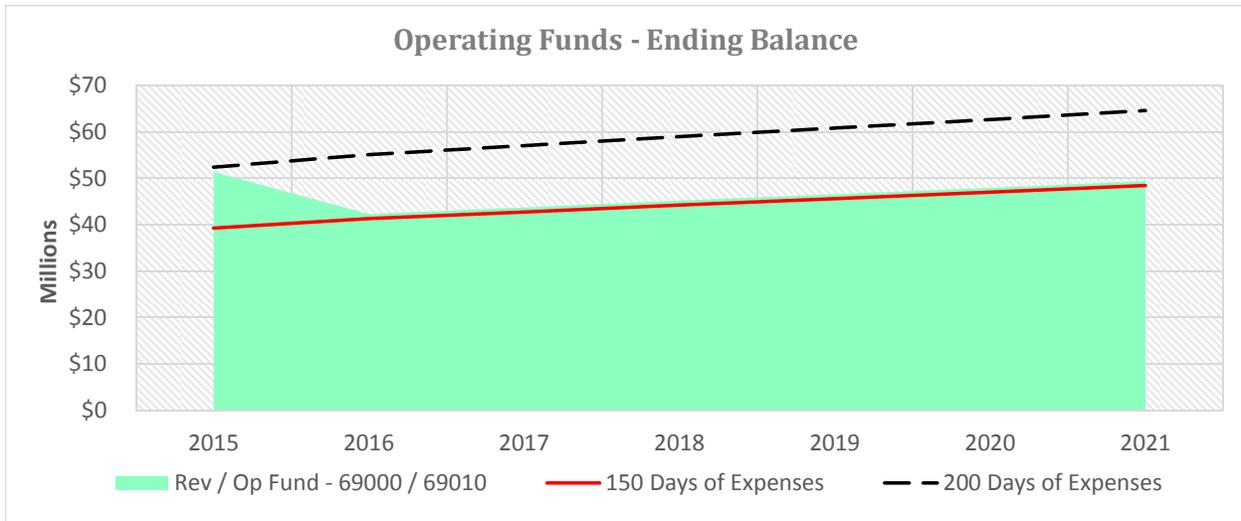
As can be seen from the prior chart, it is projected that the Net Revenues will approximate the target delineated in the County's financial policy and the range reflected in the financial forecast. The debt coverage improves when consideration of availability charges is recognized. This ratio is considered 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

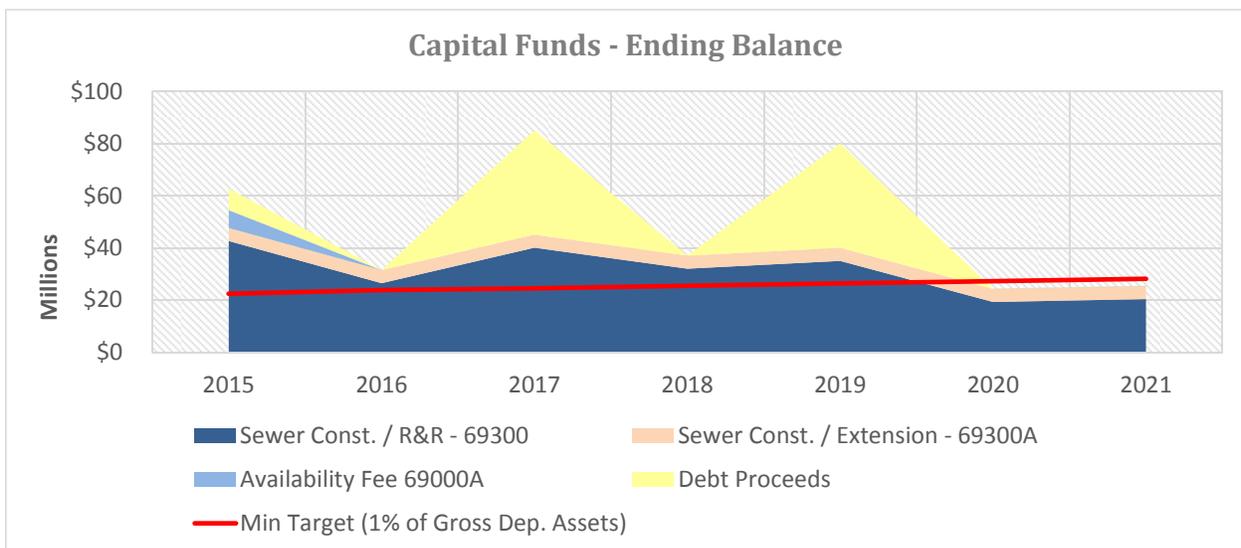
Another important component of the evaluation of WMP's operations is the resulting ending cash balance or cash position of the utility. The estimated cash flows (deposits and withdrawals) and projected ending cash balances for the Forecast Period are shown in detail on Table 9 at the end of this report. In the evaluation of System liquidity, the cash balances were segregated as either i) operating reserves (not restricted to debt payment and capital expenditures); ii) capital reserves for capital improvements, replacements and betterments; or iii) restricted for other purposes (i.e., debt service sinking fund and / or reserves, customer deposits, etc.).

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.

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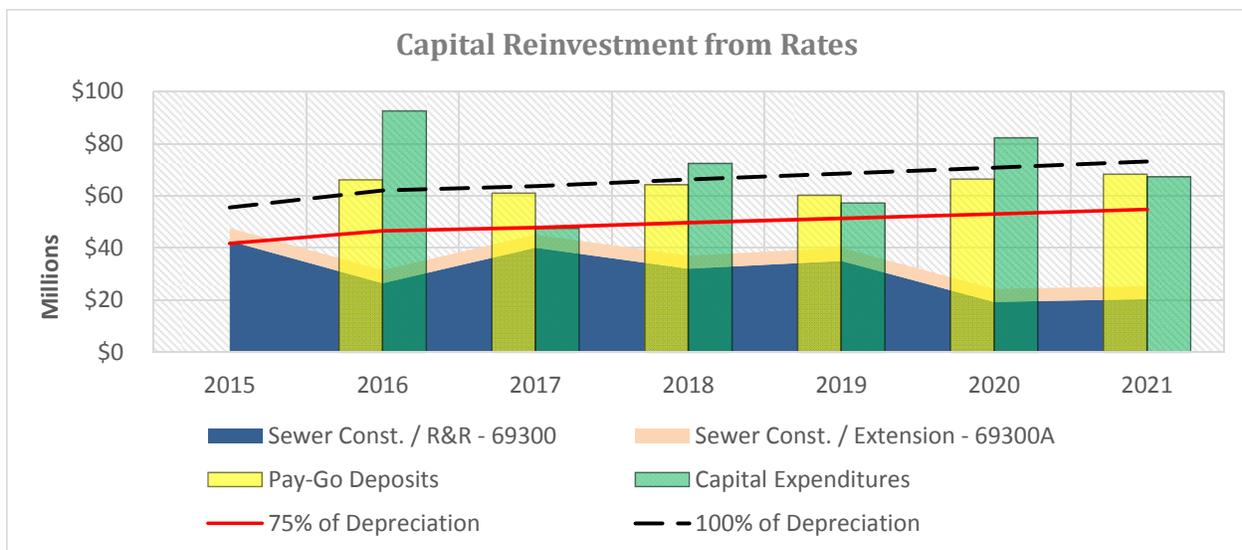
With respect to capital reserves, such cash reserves include funds: i) received from availability charges (used for new customer debt and capital costs); ii) received through the issuance of indebtedness for capital construction; and iii) received from rate revenues and deposited to the Sewer Construction 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. 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:



As can be seen above the capital funds generally fluctuate during the Forecast Period. Fluctuations in cash balances are due to the timing of capital needs and the timing of the issuance of additional debt assumed during the Fiscal Year 2017, Fiscal Year 2019, and Fiscal Year 2021. However, it should be noted that subsequent to the final year of the Forecast Period during the Fiscal Year 2022, the currently outstanding VRA loans C-515259-01 and C-515273-01 will have

matured and result in the release of approximately \$6 million in restricted funds associated with the debt service reserve requirement currently being maintained on such loans. The additional funds are anticipated to be transferred and deposited to the Sewer Construction Fund to aid in maintaining the minimum targeted reserve. Should the cash position continue to deteriorate, the County may be required to issue additional debt or defer capital spending and, therefore, it is recommended that WMP staff continue to closely monitor the cash position for the Sewer Construction Fund. With respect to the availability charge funds, the forecast assumes the use of availability charges to fund expansion-related debt service payments, minimal or no availability fee fund balances are assumed to be carried through the Forecast Period. The remainder of capital-related fund balances is associated with debt proceeds and is generally assumed to be spent in the same year of issuance with exception to existing debt proceeds carried forward at the start of the Forecast Period.

As previously discussed, the forecast assumes annual transfers to the Sewer Construction Fund for capital reinvestment. Such transfers are necessary recognizing that 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 Sewer Construction Fund as it relates to the ongoing capital funding program allocable to the existing customer.

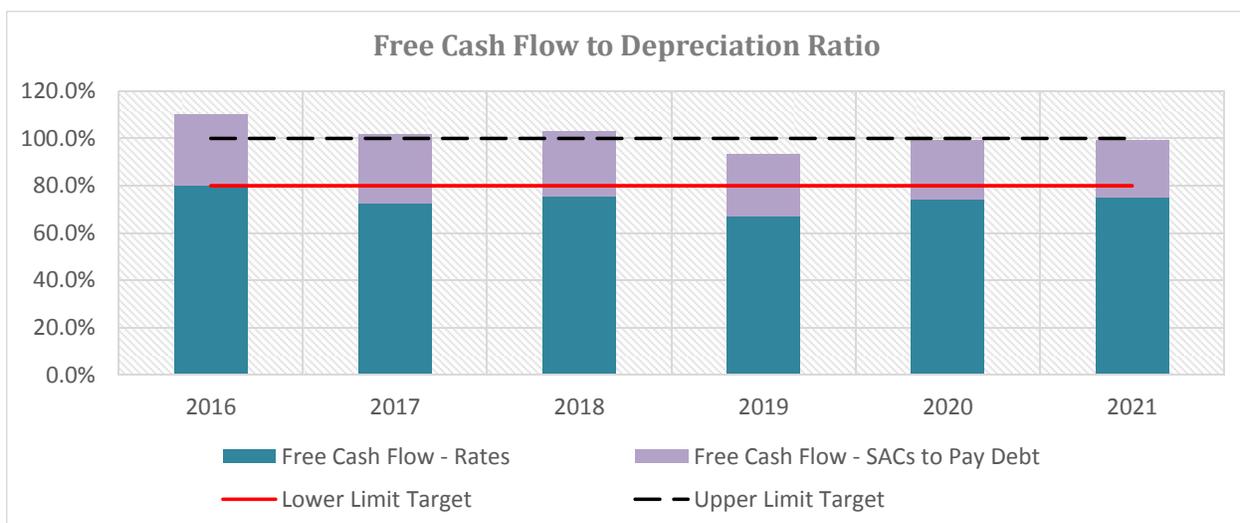


As can be seen above, the deposits to the fund are programmed to be relatively stable yet the expenditures (uses of fund) fluctuate by year and need to be planned in advance such that rate impacts are minimized. Moreover, such transfers to the Sewer Construction Fund are comparable to the annual rate of depreciation and are considered a strong level of capital reinvestment (also reference Free Cash to Depreciation). 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 proceeds for capital financing, then it is expected that the cash balances as presented in the figure below would improve.

Free Cash to Depreciation Ratio

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 from the following chart, the System is producing sufficient funds after all required transfers (assumes that the Sewer Construction 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.

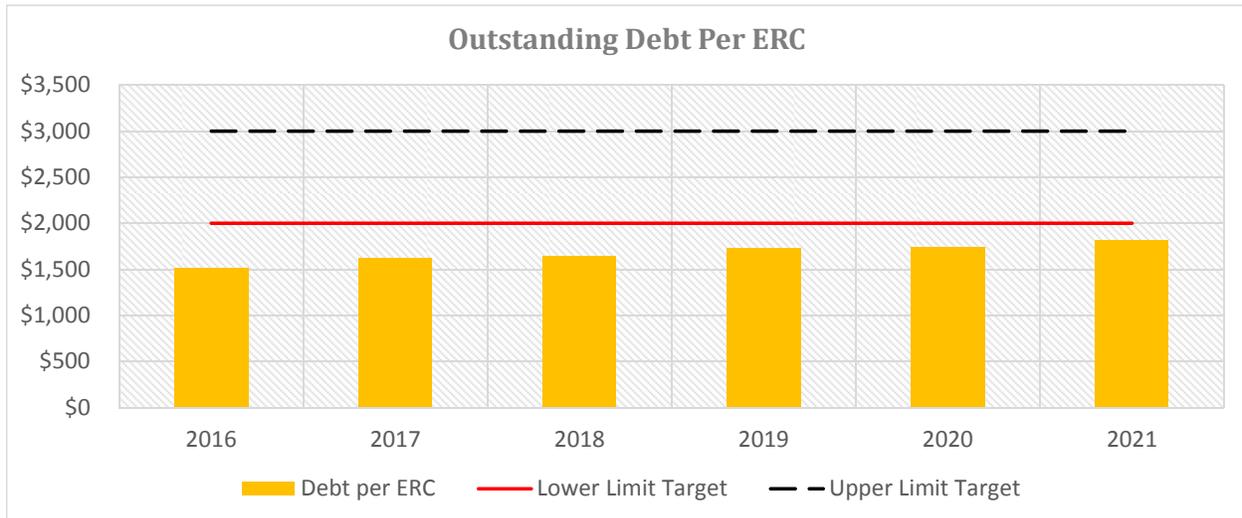


With respect to the annual funding of the capital needs, PRMG recommends that WMP should aim to maintain a minimum cash flow ratio ranging from 80% to 100% of the annual depreciation expense for the County-owned utility assets. This range was based on discussions with the financial community and median 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 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 following chart illustrates the

amount of outstanding principal debt (both senior- and subordinate-related debt) in relation to the amount of projected System customers served.

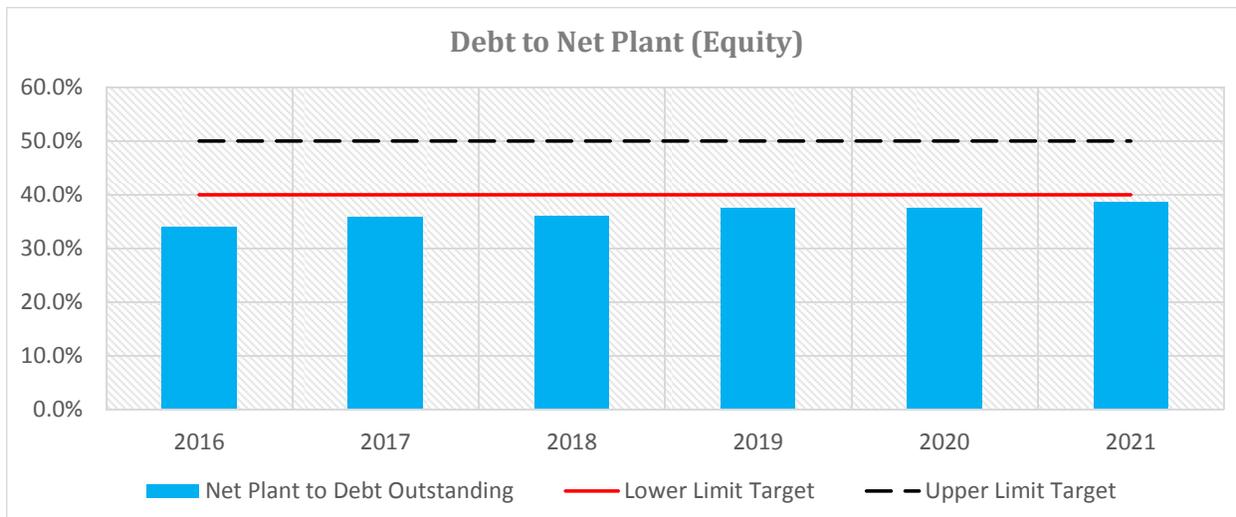


With respect to the amount of outstanding debt relative to the customer base, PRMG recommends that WMP should aim to maintain a maximum customer debt level ranging from \$2,000 to \$3,000 per ERC served. This range approximates 50% to 80% of the plant investment expressed on a per ERC basis and is consistent 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.

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).

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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 a 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.

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 or above 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 includes the continuation of the adopted rates through Fiscal Year 2018 and additional identified adjustments for the Fiscal Years 2019 through 2021.
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 Senior Lien 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, finance System expenditures, including the debt service on Additional Parity 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 increased revenue stability of the System and to promote fairness and reasonableness among its ratepayers.
5. It is recommended that the County not raise the current Availability Charge recognizing a net offset among the calculated costs and reduction in the assumed LOS per ERU from 320 GPD to 300 GPD. WMP staff should continue to monitor trends in treated wastewater flows per ERU affecting the assumed LOS for possible future adjustments.
6. The proposed rates for the Fiscal Year 2017 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	Forecasted Statements of Flows of Financial Resources and Changes in Fund Balance
13	Comparison of Typical Quarterly Residential Bills for Wastewater Service
14	Calculation of Availability Fee
15	Comparison of Availability Fee Charges for Equivalent Residential Unit

APPENDIX A

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS MODEL OUTPUT – MANAGEMENT DASHBOARD

Chart No.	Description
1	<p>Operating Cash Reserves / Liquidity</p> <ul style="list-style-type: none">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.
2	<p>Revenue Sufficiency</p> <ul style="list-style-type: none">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.
3	<p>Capital Reinvestment from Rates</p> <ul style="list-style-type: none">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.
4	<p>Net Revenue Margin (No SACs)</p> <ul style="list-style-type: none">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.
5	<p>Capital Cash Reserves / Liquidity</p> <ul style="list-style-type: none">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.
6	<p>Projected Capital Funding Program</p> <ul style="list-style-type: none">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)
7	<p>Free Cash Flow to Depreciation Ratio</p> <ul style="list-style-type: none">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 availability charges.

APPENDIX A (cont'd.)

WASTEWATER REVENUE SUFFICIENCY AND RATE ANALYSIS MODEL OUTPUT – MANAGEMENT DASHBOARD

Chart No.	Description
8	Debt to Net Plant Investment (Equity) <ul style="list-style-type: none">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.
9	Annual Debt Service Payments <ul style="list-style-type: none">Indicates the existing and proposed annual debt service payments. Helps to identify trends and timing for projected increases or declines in annual debt service.
10	All-In Debt Service Coverage Ratio (Net Revenue / Annual Debt Service) <ul style="list-style-type: none">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.
11	Single Family Residential Quarterly Bill <ul style="list-style-type: none">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.
12	Rate Affordability – Residential Bill as a % of MHI <ul style="list-style-type: none">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.
13	Outstanding Debt per ERC <ul style="list-style-type: none">Debt per customer account is a metric used by rating agencies to compare utilities.
14	Monthly Residential Wastewater Bill Comparison at 6,000 Gallons <ul style="list-style-type: none">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.



TABLES

Table 1
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Summary of Implied Historical Customer Billing Statistics

Line No.	Description	Historical Fiscal Year Ended June 30,								
		1998	1999	2000	2001	2002	2003	2004	2005	2006
Total System Customer Statistics (FY 1998 - FY 2006)										
	ERU Growth	n/a	4,841	4,979	6,835	12,305	4,680	2,960	4,582	1,514
1	Estimated ERUs [1]	300,208	305,049	310,028	316,863	329,168	333,848	336,808	341,390	342,904
2	Average Billed Wastewater Flows (Kgal) [2]	22,550,811	24,461,205	23,854,053	24,983,284	24,484,367	25,013,186	25,080,085	24,713,152	24,380,182
3	Average Monthly Flow Per Billed ERC	6,260	6,682	6,412	6,570	6,199	6,244	6,205	6,032	5,925
Line No.	Description	Historical Fiscal Year Ended June 30,								
		2007	2008	2009	2010	2011	2012	2013	2014	2015
Total System Customer Statistics (FY 2007 - FY 2015)										
4	ERU Growth	7,407	3,167	(40,116)	1,886	8,836	(61)	3,859	(2,304)	3,696
5	Estimated ERUs [1]	350,311	353,478	313,362	315,248	324,084	324,023	327,882	325,578	329,274
6	Average Billed Wastewater Flows (Kgal) [2]	25,112,557	24,624,563	24,510,612	24,962,443	23,934,607	24,672,538	24,518,064	24,764,339	23,730,492
7	Average Monthly Flow Per Billed ERC	5,974	5,805	6,518	6,599	6,154	6,345	6,231	6,339	6,006

Footnotes:

- [1] Amounts shown through the Fiscal Year 2008 represent flow based ERUs reported by the County. Beginning with the Fiscal Year 2009 ERUs were estimated based on reported revenues.
[2] Billable Wastewater Flow is based on reported revenue divided by the rate in effect.

Table 2
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Summary of Projected Customer Billing Statistics

Line No.	Description	Historical	Projected Results Ending June 30,					
		2015	2016	2017	2018	2019	2020	2021
Total System Customer Statistics								
1	ERU Growth	3,696	2,422	2,392	2,361	2,331	2,301	2,271
2	Estimated ERUs [1]	329,274	331,696	334,088	336,449	338,780	341,081	343,352
3	Average Billed Wastewater Flows (Kgal)	23,730,492	24,256,440	24,370,285	24,481,154	24,589,138	24,694,258	24,796,532
4	Average Monthly Flow Per Billed ERU	6,006	6,094	6,079	6,064	6,048	6,033	6,018

Footnotes:

[1] Amounts shown for the Fiscal Year 2015 are estimated based on reported revenues.

**Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis**

Line No.	Description	Escalation Reference	Projection of Operating Expenses							Projected Fiscal Year Ending June 30,						
			Actual 2015	Adopted 2016	Adjustments	Adjusted 2016	Adopted 2017	Adjustments	Adjusted 2017	2018	2019	2020	2021			
WWC - WASTEWATER COLLECTION DEPARTMENT:																
WWC - Administration																
Personnel Services																
1	Regular Salaries	Labor	\$ 533,684	\$ 593,940	\$ -	\$ 593,940	\$ 592,642	\$ -	\$ 605,819	\$ 617,935	\$ 630,294	\$ 642,900	\$ 655,758			
2	Annual Comp Inceas	Labor	-	19,016	-	19,016	13,176	-	19,396	19,784	20,180	20,584	20,995			
3	POS Turnover-Pay	Labor	-	(54,437)	-	(54,437)	(54,765)	-	(55,526)	(56,636)	(57,769)	(58,924)	(60,103)			
4	Reg Sal Non Mert Em	Labor	-	-	-	-	-	-	-	-	-	-	-			
5	Shift Differential	Labor	-	3,924	-	3,924	4,002	-	4,002	4,083	4,164	4,247	4,332			
6	Extra pay	Labor	(427)	54,238	-	54,238	54,815	-	55,323	56,429	57,558	58,709	59,883			
7	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-			
8	Leave Pay Out	Labor	786	-	-	-	-	-	-	-	-	-	-			
9	Fringe Benefits	Benefits	183,066	257,805	-	257,805	264,950	-	270,695	284,230	298,442	313,364	329,032			
10	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-			
11	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-			
12	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-			
13	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-			
14	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-			
15	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-			
16	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-			
17	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-			
18	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-			
19	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-			
20	Worker Comp Ins Plc	Benefits	-	-	-	-	114,664	-	-	-	-	-	-			
21	Total Personnel Services		\$ 717,109	\$ 874,486	\$ -	\$ 874,486	\$ 989,485	\$ -	\$ 899,710	\$ 925,825	\$ 952,868	\$ 980,879	\$ 1,009,897			
Operating Expenses																
22	Office Equip&Furnit	Inflation	\$ 35	\$ 931	\$ -	\$ 931	\$ 313	\$ -	\$ 952	\$ 974	\$ 997	\$ 1,021	\$ 1,045			
23	Office Supplies	Inflation	9,515	14,284	-	14,284	13,353	-	14,612	14,948	15,292	15,659	16,035			
24	Computer Equipment	Inflation	-	-	-	-	-	-	-	-	-	-	-			
25	Computer Acces&Supl	Inflation	-	-	-	-	2,060	-	-	-	-	-	-			
26	Postage	Inf/Cust	348	100	-	100	534	-	103	106	109	113	116			
27	Bldg Maint & Repair	Repair	67	548	-	548	1,223	-	577	607	638	671	706			
28	Educational Supplie	Inflation	-	-	-	-	-	-	-	-	-	-	-			
29	Tools County	Inflation	-	-	-	-	-	-	-	-	-	-	-			
30	Water Treat Eqp&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-			
31	Hshl Aplice/Supl/Rep	Inflation	2,625	-	-	-	117	-	-	-	-	-	-			
32	Med&Lab Eqp and Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-			
33	Other Operating Sup	Inflation	-	2,319	-	2,319	67	-	2,372	2,427	2,483	2,542	2,603			
34	Automotive Eqp&Sup	Inflation	22,105	-	-	-	1,762	-	-	-	-	-	-			
35	Uniform/Wear Appare	Inf/Emp	-	41,018	-	41,018	29,327	-	41,961	42,926	43,913	44,967	46,047			
36	Of: Eqp Maint&Repair	Repair	70,182	-	-	-	2,981	-	-	-	-	-	-			
37	Bldg Maint & Repair	Repair	29,324	22,686	-	22,686	33,993	-	23,866	25,107	26,412	27,786	29,231			
38	Bldg Maint & Repair	Repair	777	-	-	-	-	-	-	-	-	-	-			
39	Other Maint & Repai	Repair	41,634	46,630	-	46,630	368	-	49,055	51,606	54,290	57,113	60,082			
40	Edu/Training Service	Inflation	5,035	3,819	-	3,819	2,661	-	3,907	3,997	4,089	4,187	4,287			
41	Computer Services	Inflation	-	-	-	-	-	-	-	-	-	-	-			
42	Other Pro Cntrct Sv	Inflation	-	10,000	-	10,000	9,542	-	10,230	10,465	10,706	10,963	11,226			
43	Comm & Media Servie	Inflation	252,423	390,906	-	390,906	261,957	-	399,897	409,095	418,504	428,548	438,833			
44	Licensing Fees	Inflation	5,337	5,375	-	5,375	10,603	-	5,499	5,625	5,754	5,893	6,034			
45	Electricity County	Electricity	48,656	50,416	-	50,416	59,954	-	52,034	53,705	55,428	57,208	59,044			
46	Natural Gas County	Gas	6,537	5,851	-	5,851	4,349	-	6,114	6,389	6,677	7,010	7,361			
47	Water County	Water	3,281	5,241	-	5,241	989	-	5,398	5,560	5,727	5,899	6,076			
48	Housing Admin Fee	Inflation	-	-	-	-	-	-	-	-	-	-	-			
49	Gen Liab Admin	Insurance	-	-	-	-	-	-	-	-	-	-	-			
50	Auto Liab Admin	Insurance	-	15,000	-	15,000	16,226	-	15,000	15,000	15,000	15,000	15,000			
51	Certification	Inflation	918	2,011	-	2,011	-	-	2,058	2,105	2,153	2,205	2,258			
52	Mgmt/Prof Training	Inflation	-	-	-	-	-	-	-	-	-	-	-			
53	Technical Train Cnt	Inflation	18,368	19,576	-	19,576	19,908	-	20,026	20,486	20,958	21,461	21,976			
54	Departmental Awards	Inflation	2,376	5,347	-	5,347	1,377	-	5,470	5,596	5,724	5,862	6,003			
55	Copying	Inflation	21,142	2,542	-	2,542	2,598	-	2,600	2,660	2,721	2,787	2,854			
56	Phototypesetting	Inflation	-	-	-	-	-	-	-	-	-	-	-			
57	Printing and Bindin	Inflation	2,290	10,521	-	10,521	3,909	-	10,763	11,011	11,264	11,534	11,811			
58	Assigned Agency Veh	Inflation	454,166	190,771	-	190,771	457,552	-	195,159	199,647	204,239	209,141	214,160			
59	Motor Pool	Inflation	310	-	-	-	258	-	-	-	-	-	-			
60	Fuel	Fuel	242,278	-	-	-	313,205	-	-	-	-	-	-			
61	Vehicle Replacement	Inflation	-	-	-	-	-	-	-	-	-	-	-			
62	Internal FFX Suppor	Inflation	-	9,639	-	9,639	-	-	9,861	10,087	10,320	10,567	10,821			
63	Prof Memberships	Inflation	10,330	1,833	-	1,833	-	-	1,875	1,918	1,962	2,010	2,058			
64	Prof Subscriptions	Inflation	-	-	-	-	-	-	-	-	-	-	-			
65	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-			
66	Other Operating Exp	Inflation	26,215	22,117	-	22,117	-	-	22,626	23,146	23,678	24,247	24,829			
67	Indirect Cost Allocation	Constant	1,800,000	-	2,904,000	2,904,000	-	2,918,000	2,918,000	3,417,000	3,518,000	3,622,000	3,730,000			
68	Total Operating Expenses		\$ 3,076,274	\$ 879,481	\$ 2,904,000	\$ 3,783,481	\$ 1,251,187	\$ 2,918,000	\$ 3,820,015	\$ 4,342,194	\$ 4,467,040	\$ 4,596,392	\$ 4,730,495			
Capital Equipment [1]																
69	Equipment Expense	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
70	Total Capital Equipment [1]		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -			
71	Total WWC - Administration		\$ 3,793,383	\$ 1,753,967	\$ 2,904,000	\$ 4,657,967	\$ 2,240,672	\$ 2,918,000	\$ 4,719,725	\$ 5,268,019	\$ 5,419,908	\$ 5,577,271	\$ 5,740,393			
WWC - Gravity Sewer																
Personnel Services																
72	Regular Salaries	Labor	\$ 2,369,230	\$ 3,267,110	\$ -	\$ 3,267,110	\$ 3,332,452	\$ -	\$ 3,332,452	\$ 3,399,101	\$ 3,467,083	\$ 3,536,425	\$ 3,607,153			
73	Annual Comp Inceas	Labor	-	106,928	-	106,928	-	-	109,067	111,473	113,473	115,742	118,057			
74	POS Turnover-Pay	Labor	-	(146,624)	-	(146,624)	(146,100)	-	(149,556)	(152,548)	(155,599)	(158,711)	(161,885)			
75	Reg Sal-Non Mert Em	Labor	84,337	99,137	-	99,137	98,694	-	101,120	103,142	105,205	107,309	109,455			
76	Shift Differential	Labor	-	-	-	-	-	-	-	-	-	-	-			
77	Extra pay	Labor	206,164	241,758	-	241,758	243,928	-	246,593	251,525	256,556	261,687	266,920			
78	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-			
79	Leave Pay-out	Labor	12,897	-	-	-	-	-	-	-	-	-	-			
80	Fringe Benefits	Benefits	1,164,598	1,450,387	-	1,450,387	1,489,821	-	1,522,906	1,599,052	1,679,004	1,762,954	1,851,102			
81	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-			
82	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-			
83	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-			
84	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-			
85	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-			
86	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-			
87	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-			
88	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-			
89	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-			
90	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-			
91	Workers Comp Idnty-P	Benefits	-	-	-	-	-	-	-	-	-	-	-			
92	Total Personnel Services		\$ 3,837,226	\$ 5,018,696	\$ -	\$ 5,018,696	\$ 5,018,795	\$ -	\$ 5,162,582	\$ 5,311,520	\$ 5,465,722	\$ 5,625,407	\$ 5,790,804			
Operating Expenses																

**Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis**

Projection of Operating Expenses

Line No.	Description	Escalation Reference	Actual	Adopted	Adjustments	Adjusted	Adopted	Adjustments	Adjusted	Projected Fiscal Year Ending June 30,				
			2015	2016		2016	2017		2017	2018	2019	2020	2021	
98	Lighting Equipment	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
99	Educational Supplie	Inflation	473	1,030	-	1,030	1,053	-	1,054	1,078	1,103	1,129	1,156	
100	Tools County	Inflation	5,277	2,176	-	2,176	2,224	-	2,226	2,276	2,326	2,386	2,443	
101	Water Treat Eqp&Sup	Inflation	68,710	121,560	-	121,560	135,770	-	124,356	127,216	130,142	133,265	136,464	
102	Hshl Aplnc/Supl/Rep	Inflation	1,728	3,802	-	3,802	3,886	-	3,889	3,979	4,070	4,168	4,268	
103	Med&Lab Eqp and Sup	Inflation	2,965	3,597	-	3,597	3,676	-	3,680	3,764	3,851	3,943	4,038	
104	Park/Rctn Area Equi	Inflation	998	2,369	-	2,369	2,421	-	2,423	2,479	2,536	2,597	2,659	
105	Other Operating Sup	Inflation	146,592	187,489	-	187,489	71,558	-	191,801	196,213	200,726	205,543	210,476	
106	Goods Receipt W/O P	Inflation	-	-	-	-	-	-	-	-	-	-	-	
107	Automotive Eqp&Sup	Inflation	891	734	-	734	750	-	751	768	786	805	824	
108	Fire Protec. Eqp&Sup	Inflation	87	-	-	-	457	-	-	-	-	-	-	
109	Uniform/Wear Appare	Inf/Emp	3,007	5,071	-	5,071	35,843	-	5,188	5,307	5,429	5,559	5,693	
110	Pub Safety Equip M&K	Inflation	13,796	12,458	-	12,458	7,165	-	12,745	13,038	13,338	13,658	13,985	
111	Other Maint & Repai	Repair	114,099	164,110	-	164,110	46,324	-	172,644	181,621	191,065	201,001	211,453	
112	Safety&Emergency Sv	Inflation	-	-	-	-	-	-	-	-	-	-	-	
113	Health Related Svcs	Inflation	-	-	-	-	-	-	-	-	-	-	-	
114	Misc Services	Inflation	184,166	266,219	-	266,219	59,414	-	272,342	278,606	285,014	291,854	298,859	
115	Rent- Operat Equipmn	Inflation	-	-	-	-	-	-	-	-	-	-	-	
116	Water County	Water	5,129	4,272	-	4,272	13,825	-	4,400	4,532	4,668	4,808	4,952	
117	Technical Train Cnt	Inflation	-	-	-	-	-	-	-	-	-	-	-	
118	Crime Ins Prem	Insurance	-	-	-	-	-	-	-	-	-	-	-	
119	Copying	Inflation	-	-	-	-	-	-	-	-	-	-	-	
120	Assigned Agency Veh	Inflation	-	310,000	-	310,000	-	-	317,130	324,424	331,886	339,851	348,007	
121	Motor Pool	Inflation	-	-	-	-	-	-	-	-	-	-	-	
122	Fuel	Fuel	-	309,496	-	309,496	-	-	328,066	347,750	368,615	390,732	414,175	
123	Service-Other Agenc	Inflation	-	-	-	-	-	-	-	-	-	-	-	
124	Internal FFX Suppor	Inflation	-	-	-	-	-	-	-	-	-	-	-	
125	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-	
126	Refuse Disposal Exp	Inflation	10,254	12,383	-	12,383	12,578	-	12,668	12,959	13,257	13,575	13,901	
127	Other Operating Exp	Inflation	18,531	54,900	-	54,900	48,271	-	56,163	57,455	58,776	60,187	61,631	
128	Total Operating Expenses		\$ 609,820	\$ 1,497,728	\$ -	\$ 1,497,728	\$ 491,516	\$ -	\$ 1,549,262	\$ 1,570,667	\$ 1,661,968	\$ 1,682,604	\$ 1,742,710	
Recovered Costs														
129	WPFO-Labor Charges	Labor	\$ (396,226)	\$ (396,226)	\$ -	\$ (396,226)	\$ (149,599)	\$ -	\$ (404,151)	\$ (412,234)	\$ (420,478)	\$ (428,888)	\$ (437,466)	
130	WPFO-Agency OH Cost	Inflation	(52,680)	(52,680)	-	(52,680)	-	-	(53,892)	(55,131)	(56,399)	(57,753)	(59,139)	
131	Reimb-CptlFringe Be	Benefits	-	-	-	-	-	-	-	-	-	-	-	
132	WPFO-Materials	Inflation	(43,116)	(43,116)	-	(43,116)	-	-	(44,108)	(45,122)	(46,160)	(47,268)	(48,402)	
133	WPFO-Equipment	Inflation	(3,375)	(3,375)	-	(3,375)	-	-	(3,453)	(3,532)	(3,613)	(3,700)	(3,789)	
134	Total Recovered Costs		\$ (495,397)	\$ (495,397)	\$ -	\$ (495,397)	\$ (149,599)	\$ -	\$ (505,602)	\$ (516,019)	\$ (526,651)	\$ (537,608)	\$ (548,795)	
Capital Equipment [1] [1]														
135	Equipment Expense	Bud Cap	\$ 186,480	\$ 186,480	\$ -	\$ 186,480	\$ -	\$ 186,480	\$ 192,074	\$ 197,837	\$ 203,772	\$ 209,885	\$ 216,181	
136	Vehicles Expense	Bud Cap	1,024,268	1,024,268	-	1,024,268	-	1,024,268	1,054,996	1,086,646	1,119,245	1,152,823	1,187,407	
137	FCG General Capital	Bud Cap	-	-	-	-	-	-	-	-	-	-	-	
138	Total Capital Equipment [1] [1]		\$ 1,210,748	\$ 1,210,748	\$ -	\$ 1,210,748	\$ -	\$ 1,210,748	\$ 1,247,070	\$ 1,284,483	\$ 1,323,017	\$ 1,362,708	\$ 1,403,589	
139	Total WWC - Gravity Sewer		\$ 5,162,397	\$ 7,231,775	\$ 0	\$ 7,231,775	\$ 5,360,712	\$ 1,210,748	\$ 7,453,312	\$ 7,650,651	\$ 7,924,057	\$ 8,133,111	\$ 8,388,307	
WWC - Pumping Stations														
Personnel Services														
140	Regular Salaries	Labor	\$ 1,597,412	\$ 1,951,041	\$ -	\$ 1,951,041	\$ 1,990,062	\$ -	\$ 1,990,062	\$ 2,029,863	\$ 2,070,460	\$ 2,111,870	\$ 2,154,107	
141	Annual Comp Increases	Labor	-	64,150	-	64,150	-	-	65,433	66,742	68,076	69,438	70,827	
142	POS Turnover-Pay	Labor	-	(147,527)	-	(147,527)	(146,100)	-	(150,478)	(153,487)	(156,557)	(159,688)	(162,882)	
143	Reg Sal-Non Mert Em	Labor	42,567	13	-	13	-	-	14	14	14	14	14	
144	Extra pay	Labor	81,966	82,761	-	82,761	82,368	-	84,416	86,105	87,827	89,583	91,375	
145	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-	
146	Leave Pay-out	Labor	30,761	-	-	-	-	-	-	-	-	-	-	
147	Fringe Benefits	Benefits	738,082	742,550	-	742,550	760,755	-	779,678	818,661	859,594	902,574	947,703	
148	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-	
149	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-	
150	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-	
151	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-	
152	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-	
152	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-	
153	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-	
154	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-	
155	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-	
156	Workers Comp Idmnty-P	Benefits	-	-	-	-	-	-	-	-	-	-	-	
157	Total Personnel Services		\$ 2,490,788	\$ 2,692,988	\$ -	\$ 2,692,988	\$ 2,687,086	\$ -	\$ 2,769,124	\$ 2,847,897	\$ 2,929,415	\$ 3,013,791	\$ 3,101,144	
Operating Expenses														
158	IT Replacement Part	Inflation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
159	Bldg Maint & Repair	Repair	-	-	-	-	-	-	-	-	-	-	-	
160	Chemicals	Chem-Flow	80,781	83,302	-	83,302	102,573	-	86,362	89,413	92,564	95,817	99,175	
161	Tools County	Inflation	-	-	-	-	-	-	-	-	-	-	-	
162	Water Treat Eqp&Sup	Inflation	51,260	58,177	-	58,177	50,100	-	59,515	60,884	62,285	63,780	65,310	
163	Other Operating Sup	Inflation	262,980	142,666	-	142,666	95,848	-	145,947	149,304	152,738	156,403	160,157	
164	Automotive Eqp&Sup	Inflation	305	-	-	-	-	-	-	-	-	-	-	
165	Uniform/Wear Appare	Inf/Emp	-	-	-	-	18,197	-	-	-	-	-	-	
166	Bldg Maint & Repair	Repair	38,400	67,624	-	67,624	46,273	-	71,140	74,839	78,731	82,825	87,132	
167	Other Maint & Repai	Repair	215,396	338,833	-	338,833	260,061	-	356,452	374,988	394,487	415,000	436,581	
168	Other Pro Cntret Sv	Inflation	-	-	-	-	-	-	-	-	-	-	-	
169	Safety&Emergency Sv	Inflation	-	-	-	-	-	-	-	-	-	-	-	
170	Licensing Fees	Inflation	5,223	9,005	-	9,005	7,596	-	9,212	9,424	9,641	9,872	10,109	
171	Misc Services	Inflation	19,602	20,929	-	20,929	3,193	-	21,410	21,903	22,407	22,944	23,495	
172	Electricity County	Electricity	965,075	1,105,531	-	1,105,531	1,010,869	-	1,141,018	1,177,645	1,215,447	1,254,463	1,294,731	
173	Water County	Water	12,886	20,691	-	20,691	19,160	-	21,312	21,952	22,610	23,288	23,987	
174	Technical Train Cnt	Inflation	-	-	-	-	-	-	-	-	-	-	-	
175	Operational Travel	Inflation	-	-	-	-	-	-	-	-	-	-	-	
176	Assigned Agency Veh	Inflation	-	61,974	-	61,974	-	-	63,399	64,858	66,349	67,942	69,572	
177	Motor Pool	Inflation	-	-	-	-	-	-	-	-	-	-	-	
178	Fuel	Fuel	-	-	-	-	-	-	-	-	-	-	-	
179	Internal FFX Suppor	Inflation	-	-	-	-	-	-	-	-	-	-	-	
180	Other Operating Exp	Inflation	92,420	40,565	-	40,565	97,860	-	41,498	42,453	43,429	44,471	45,539	
181	Total Operating Expenses		\$ 1,744,328	\$ 1,949,297	\$ -	\$ 1,949,297	\$ 1,711,730	\$ -	\$ 2,017,267	\$ 2,087,662	\$ 2,160,688	\$ 2,236,807	\$ 2,315,789	
Recovered Costs														
182	WPFO-Labor Charges	Labor	\$ (13,101)	\$ (13,101)	\$ -	\$ (13,101)	\$ (18,896)	\$ -	\$ (13,363)	\$ (13,630)	\$ (13,903)	\$ (14,181)	\$ (14,465)	
183	WPFO-Agency OH Cost	Inflation	(6,323)	(6,323)	-	(6,323)	-	-	(6,468)	(6,617)	(6,769)	(6,932)	(7,098)	
184	WPFO-Materials	Inflation	(14,479)	(14,479)	-	(14,479)	-	-	(14,812)	(15,153)	(15,501)	(15,873)	(16,254)	
185	WPFO-Equipment	Inflation	(735)	(735)	-	(735)	-	-	(752)	(769)	(787)	(806)	(825)	
186	Total Recovered Costs		\$ (34,638)	\$ (34,638)	\$ -	\$ (34,638)	\$ (18,896)	\$						

Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Line No.	Description	Escalation Reference	<u>Projection of Operating Expenses</u>							Projected Fiscal Year Ending June 30,			
			Actual 2015	Adopted 2016	Adjustments	Adjusted 2016	Adopted 2017	Adjustments	Adjusted 2017	2018	2019	2020	2021
WWC - Project & Assets													
Personnel Services													
191	Regular Salaries	Labor	\$ 1,690,927	\$ 1,747,112	\$ -	\$ 1,747,112	\$ 1,782,054	\$ -	\$ 1,782,054	\$ 1,817,695	\$ 1,854,049	\$ 1,891,130	\$ 1,928,953
192	Annual Comp Inceas	Labor	-	-	-	57,182	-	-	58,326	59,492	60,682	61,896	63,134
193	Reg Sal Non Mert Em	Labor	22,745	57,182	-	-	-	-	-	-	-	-	-
194	Shift Differential	Labor	4,397	-	-	-	-	-	-	-	-	-	-
195	Extra pay	Labor	84,178	288	-	288	-	-	294	300	306	312	318
196	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
197	Leave Pay Out	Benefits	276	775,599	-	-	-	-	-	-	-	-	-
198	Fringe Benefits	Benefits	751,654	-	-	775,599	796,693	-	814,379	855,098	897,853	942,745	989,883
199	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
200	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
201	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
202	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
203	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
204	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-
205	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
206	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
207	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
208	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
208	Total Personnel Services		\$ 2,554,177	\$ 2,580,181	\$ -	\$ 2,580,181	\$ 2,578,747	\$ -	\$ 2,655,053	\$ 2,732,585	\$ 2,812,890	\$ 2,896,083	\$ 2,982,287
Operating Expenses													
209	Other Operating Sup	Inflation	\$ 59,228	\$ 51,885	\$ -	\$ 51,885	\$ 52,173	\$ -	\$ 53,079	\$ 54,300	\$ 55,548	\$ 56,882	\$ 58,247
210	Bldg Maint&Rep Svcs	Repair	74	2,926	-	2,926	-	-	3,078	3,238	3,407	3,584	3,770
211	Other Maint & Repai	Repair	74	104,000	-	104,000	108,160	-	109,408	115,097	121,082	127,379	134,002
212	Other Pro Cntrct Sv	Inflation	200,728	139,154	-	139,154	114,781	-	142,354	145,628	148,978	152,553	156,214
213	Comm & Media Serv	Inflation	-	-	-	-	-	-	-	-	-	-	-
214	Misc Services	Inflation	-	15,050	-	15,050	-	-	15,396	15,750	16,113	16,499	16,895
215	Other Operating Exp	Inflation	-	-	-	-	-	-	-	-	-	-	-
216	Total Operating Expenses		\$ 260,104	\$ 313,015	\$ -	\$ 313,015	\$ 275,114	\$ -	\$ 323,315	\$ 334,013	\$ 345,127	\$ 356,896	\$ 369,129
Capital Equipment [1]													
217	Equipment Expense	Bud Cap	\$ 610,286	\$ 610,286	\$ -	\$ 610,286	\$ -	\$ 610,286	\$ 628,595	\$ 647,453	\$ 666,876	\$ 686,882	\$ 707,489
218	Vehicles Expense	Bud Cap	131,818	131,818	-	131,818	-	131,818	135,772	139,845	144,041	148,362	152,813
219	Total Capital Equipment [1]		\$ 742,104	\$ 742,104	\$ -	\$ 742,104	\$ -	\$ 742,104	\$ 764,367	\$ 787,298	\$ 810,917	\$ 835,244	\$ 860,302
220	Total WWC - Project & Assets		\$ 3,556,385	\$ 3,635,300	\$ -	\$ 3,635,300	\$ 2,853,861	\$ 742,104	\$ 3,742,735	\$ 3,853,896	\$ 3,968,934	\$ 4,088,224	\$ 4,211,717
221	Total Wastewater Collection Department		\$ 16,808,797	\$ 17,324,843	\$ 2,904,000	\$ 20,228,843	\$ 14,835,164	\$ 4,967,006	\$ 20,765,806	\$ 21,773,966	\$ 22,471,111	\$ 23,119,633	\$ 23,830,177
WT- WASTEWATER TREATMENT (Noman M. Cole, Jr., Pollution Control Plant)													
WWT - Administration													
Personnel Services													
222	Regular Salaries	Labor	\$ 568,655	\$ 630,742	\$ -	\$ 630,742	\$ 643,357	\$ -	\$ 643,357	\$ 656,224	\$ 669,348	\$ 682,735	\$ 696,390
223	Annual Comp Inceas	Labor	-	20,645	-	20,645	-	-	21,058	21,479	21,909	22,347	22,794
224	POS Turnover-Pay	Labor	-	(36,233)	-	(36,233)	-	-	(36,958)	(37,697)	(38,451)	(39,220)	(40,004)
225	Reg Sal- Non Mert Em	Labor	29,520	-	-	-	(36,514)	-	-	-	-	-	-
226	Extra pay	Labor	13,865	18,392	-	18,392	18,557	-	18,760	19,135	19,518	19,908	20,306
227	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
228	Leave Pay-out	Labor	-	-	-	-	-	-	-	-	-	-	-
229	Fringe Benefits	Benefits	251,327	279,908	-	279,908	287,622	-	293,903	308,599	324,028	340,230	357,241
230	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
231	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
232	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
233	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
234	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
235	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-
236	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
237	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
238	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
239	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
239	Workers Comp Ins Ple	Benefits	-	80,000	-	80,000	126,214	-	84,000	88,200	92,610	97,241	102,103
240	Workers Comp Idnty-P	Benefits	-	-	-	-	-	-	-	-	-	-	-
241	Total Personnel Services		\$ 863,367	\$ 993,454	\$ -	\$ 993,454	\$ 1,039,236	\$ -	\$ 1,024,120	\$ 1,055,940	\$ 1,088,963	\$ 1,123,241	\$ 1,158,830
Operating Expenses													
242	Office Equip&Furnit	Inflation	\$ 4,652	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
243	Office Supplies	Inflation	32,334	34,509	-	34,509	34,721	-	35,303	36,115	36,945	37,832	38,740
244	Computer Equipment	Inflation	-	-	-	-	-	-	-	-	-	-	-
245	Computer Acces&Supl	Inflation	3,917	6,494	-	6,494	6,453	-	6,643	6,796	6,952	7,119	7,290
246	Clean Supplies Cnty	Inflation	-	-	-	-	-	-	-	-	-	-	-
247	Postage	Inf/Cust	1,914	1,698	-	1,698	1,062	-	1,750	1,802	1,857	1,914	1,973
248	Food Srv Equip	Inf/Cust	1,914	147	-	147	-	-	152	156	161	166	171
249	Bldg Maint & Repair	Repair	1,914	-	-	-	-	-	-	-	-	-	-
250	Educational Supplie	Inflation	-	-	-	-	-	-	-	-	-	-	-
251	Tools County	Inflation	-	-	-	-	-	-	-	-	-	-	-
252	Water Treat Eq&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-
253	Other Operating Sup	Inflation	84,730	20,966	-	20,966	1,681	-	21,448	21,942	22,446	22,985	23,537
254	Automotive Fuel	Fuel	-	-	-	-	-	-	-	-	-	-	-
255	Diesel Fuel	Fuel	-	-	-	-	-	-	-	-	-	-	-
256	Heating Fuel	Fuel	-	10,000	-	10,000	-	-	10,600	11,236	11,910	12,625	13,382
257	Fire Protec Eq&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-
258	Uniform/Wear Appare	Inf/Emp	108,069	101,109	-	101,109	103,333	-	103,435	105,814	108,247	110,845	113,505
259	Ofc Eqp Maint&Repai	Repair	-	1,352	-	1,352	366	-	1,422	1,496	1,574	1,656	1,742
260	Bldg Maint & Repair	Repair	16,972	9,146	-	9,146	10,552	-	9,622	10,122	10,648	11,202	11,784
261	Other Maint & Repair	Repair	21,093	32,483	-	32,483	502	-	34,172	35,949	37,818	39,785	41,854
262	Edu Training Service	Repair	16,616	-	-	-	-	-	-	-	-	-	-
263	Computer Services	Inflation	-	-	-	-	-	-	-	-	-	-	-
264	Other Pro Cntrct Sv	Inflation	24,897	82,823	-	82,823	109,366	-	84,727	86,676	88,670	90,798	92,977
265	Comm & Media Service	Inflation	66,923	24,537	-	24,537	36,859	-	25,101	25,679	26,269	26,900	27,545
266	Safety&Emergency Sv	Inflation	127,836	153,388	-	153,388	156,763	-	156,916	160,525	164,217	168,158	172,194
267	Licensing Fees	Inflation	19,572	22,859	-	22,859	2,922	-	23,385	23,923	24,473	25,060	25,662
268	Natural Gas Company	Gas	77,453	80,547	-	80,547	63,272	-	84,172	87,959	91,918	96,513	101,339
269	Crime Ins Prem	Insurance	-	-	-	-	-	-	-	-	-	-	-
270	Gen Liab Admin	Insurance	5,000	5,409	-	5,409	5,409	-	5,409	5,409	5,409	5,409	5,409
271	Auto Liab Admin	Insurance	20,000	21,727	-	21,727	21,729	-	21,727	21,727	21,727	21,727	21,727
272	Local Travel County	Inflation	-	-	-	-	-	-	-	-	-	-	-
273	Certification	Inflation	43,420	71,930	-	71,930	73,512	-	73,584	75,277	77,008	78,856	80,749
274	Mgmt/Prof Training	Inflation	1,995	-	-	-	-	-	-	-	-	-	-
275	Technical Train Cnt	Inflation	9,035	138,002	-	138,002	141,024	-	141,176	144,423	147,745	151,291	154,922
276	Departmental Awards	Inflation	2,898	3,179	-	3,179	3,249	-	3,252	3,327	3,403	3,485	3,569
277	Copying	Inflation	-	-	-	-	-	-	-	-	-	-	-
278	Phototypesetting	Inflation	-	-	-	-	-	-	-	-	-	-	-
279	Printing and Bindin	Inflation	30	6,859	-	6,859	13,142	-	7,017	7,178	7,343	7,519	7,700
280	Assigned Agency Veh	Inflation	151,465	241,275	-	241,275	164,635	-	246,824	252,501	258,309	264,508	270,856
281	Motor Pool	Inflation	731	-	-								

Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

<u>Projection of Operating Expenses</u>													
Line No.	Description	Escalation Reference	Actual 2015	Adopted 2016	Adjustments	Adjusted 2016	Adopted 2017	Adjustments	Adjusted 2017	2018	Projected Fiscal Year Ending June 30, 2019	2020	2021
285	Prof Memberships	Inflation	48,697	19,531	-	19,531	36,104	-	19,980	20,440	20,910	21,412	21,926
286	Prof Subscriptions	Inflation	6,880	6,225	-	6,225	1,252	-	6,368	6,515	6,664	6,824	6,988
287	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-
288	Refuse Disposal Exp	Inflation	-	-	-	-	-	-	-	-	-	-	-
289	Other Operating Exp	Inflation	10,845	35,936	-	35,936	42,356	-	36,763	37,608	38,473	39,396	40,342
290	Total Operating Expenses		\$ 955,364	\$ 1,132,130	\$ -	\$ 1,132,130	\$ 1,103,097	\$ -	\$ 1,160,947	\$ 1,190,594	\$ 1,221,097	\$ 1,253,986	\$ 1,287,883
Capital Equipment [1]													
291	Equipment Expense	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
292	Total Capital Equipment [1]		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
293	Total WWT - Administration		\$ 1,818,731	\$ 2,125,584	\$ -	\$ 2,125,584	\$ 2,142,333	\$ -	\$ 2,185,067	\$ 2,246,534	\$ 2,310,060	\$ 2,377,227	\$ 2,446,713
<u>WWT - Operations</u>													
Personnel Services													
294	Regular Salaries	Labor	\$ 2,716,672	\$ 3,213,130	\$ -	\$ 3,213,130	\$ 3,277,393	\$ -	\$ 3,277,393	\$ 3,342,940	\$ 3,409,799	\$ 3,477,995	\$ 3,547,555
295	Annual Comp Increases	Labor	-	105,219	-	105,219	-	-	107,323	109,470	111,659	113,892	116,170
296	POS Turnover-Pay	Labor	-	(147,334)	-	(147,334)	(146,100)	-	(150,281)	(153,286)	(156,352)	(159,479)	(162,669)
297	Reg Sal-Non Mert Em	Labor	23,801	97,816	-	97,816	98,694	-	99,772	101,768	103,803	105,879	107,997
298	Shift Differential	Labor	47,485	46,066	-	46,066	46,987	-	46,987	47,927	48,886	49,863	50,861
299	Extra pay	Labor	184,206	184,619	-	184,619	185,702	-	188,311	192,078	195,919	199,838	203,834
300	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
301	Leave Pay-out	Labor	800	-	-	-	-	-	-	-	-	-	-
302	Fringe Benefits	Benefits	1,307,846	1,280,709	-	1,280,709	1,312,731	-	1,344,744	1,411,982	1,482,581	1,556,710	1,634,545
303	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
304	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
305	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
306	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
307	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
308	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-
309	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
310	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
311	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
312	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
313	Total Personnel Services		\$ 4,280,810	\$ 4,780,225	\$ -	\$ 4,780,225	\$ 4,775,408	\$ -	\$ 4,914,251	\$ 5,052,878	\$ 5,196,295	\$ 5,344,698	\$ 5,498,294
Operating Expenses													
314	Office Supplies	Inflation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
315	Bldg Maint & Repair	Repair	978	-	-	-	-	-	-	-	-	-	-
316	Grds Maint Equ&Sup	Inflation	578	-	-	-	-	-	-	-	-	-	-
317	Educational Supplie	Inflation	336	-	-	-	-	-	-	-	-	-	-
318	Chemicals	Chem-Noman	2,461,050	2,882,386	-	2,882,386	2,703,796	-	2,968,858	3,057,924	3,149,662	3,244,151	3,341,476
319	Tools County	Inflation	-	-	-	-	-	-	-	-	-	-	-
320	Water Treat Eqp&Sup	Inflation	162	-	-	-	-	-	-	-	-	-	-
321	Hshl Aplnc/Supl/Rep	Inflation	-	-	-	-	-	-	-	-	-	-	-
322	Med&Lab Eqp and Sup	Inflation	4,874	-	-	-	-	-	-	-	-	-	-
323	Other Operating Sup	Inflation	38	-	-	-	-	-	-	-	-	-	-
324	Automotive Eqp&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-
325	Diesel Fuel	Fuel	-	-	-	-	-	-	-	-	-	-	-
326	Heating Fuel	Fuel	601,413	1,117,245	-	1,117,245	1,247,880	-	1,184,280	1,255,336	1,330,657	1,410,496	1,495,126
327	Fire Protec Eqp&Sup	Inflation	36	-	-	-	-	-	-	-	-	-	-
328	Uniform/Wear Appare	Inf/Emp	338	-	-	-	-	-	-	-	-	-	-
329	Other Pro Cntrct Sv	Inflation	-	-	-	-	-	-	-	-	-	-	-
330	Comm & Media Servic	Inflation	-	-	-	-	-	-	-	-	-	-	-
331	Licensing Fees	Inflation	-	-	-	-	-	-	-	-	-	-	-
332	Misc Services	Inflation	-	-	-	-	-	-	-	-	-	-	-
333	Electricity County	Elec-Noman	2,562,971	3,136,270	-	3,136,270	3,127,358	-	3,236,944	3,340,850	3,448,091	3,558,775	3,673,012
334	Natural Gas County	Gas	200,140	329,604	-	329,604	271,700	-	344,436	359,936	376,133	394,940	414,686
335	Water County	Water	23,943	37,150	-	37,150	38,263	-	38,264	39,412	40,595	41,812	43,067
336	Emergency Assistanc	Inflation	-	-	-	-	-	-	-	-	-	-	-
337	Internal FFX Suppor	Inflation	22,150	25,000	-	25,000	-	-	25,575	26,163	26,765	27,407	28,065
338	Refuse Disposal Exp	Inflation	240,815	309,580	-	309,580	341,941	-	316,700	323,984	331,436	339,391	347,536
339	Other Operating Exp	Inflation	58,531	116,222	-	116,222	103,449	-	118,895	121,630	124,427	127,413	130,471
340	Total Operating Expenses		\$ 6,178,353	\$ 7,953,457	\$ -	\$ 7,953,457	\$ 7,834,387	\$ -	\$ 8,233,953	\$ 8,525,236	\$ 8,827,765	\$ 9,144,386	\$ 9,473,439
Capital Equipment [1]													
341	Equipment Expense	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
342	Vehicles Expense	Bud Cap	91,954	91,954	-	91,954	-	-	91,954	94,713	97,554	100,481	103,495
343	Total Capital Equipment [1]		\$ 91,954	\$ 91,954	\$ -	\$ 91,954	\$ -	\$ -	\$ 91,954	\$ 94,713	\$ 97,554	\$ 100,481	\$ 103,495
344	Total WWT - Operations		\$ 10,551,117	\$ 12,825,636	\$ -	\$ 12,825,636	\$ 12,609,795	\$ -	\$ 13,242,916	\$ 13,675,668	\$ 14,124,541	\$ 14,592,580	\$ 15,078,333
<u>WWT - Maintenance</u>													
Personnel Services													
345	Regular Salaries	Labor	\$ 2,502,643	\$ 3,052,264	\$ -	\$ 3,052,264	\$ 3,029,746	\$ -	\$ 3,113,309	\$ 3,175,575	\$ 3,239,087	\$ 3,303,869	\$ 3,369,946
346	Annual Comp Increases	Labor	-	97,738	-	97,738	83,564	-	99,693	101,687	103,720	105,795	107,911
347	Annual Comp Inc-P4P	Labor	-	-	-	-	-	-	-	-	-	-	-
348	POS Turnover-Pay	Labor	-	(147,806)	-	(147,806)	(146,100)	-	(150,762)	(153,777)	(156,853)	(159,990)	(163,190)
349	Reg Sal-Non Mert Em	Labor	49,489	-	-	-	-	-	-	-	-	-	-
350	Shift Differential	Labor	-	-	-	-	-	-	-	-	-	-	-
351	Extra pay	Labor	65,296	27,310	-	27,310	27,555	-	27,856	28,413	28,982	29,561	30,152
352	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
353	Leave Pay-out	Labor	64,092	-	-	-	-	-	-	-	-	-	-
354	Fringe Benefits	Benefits	1,128,036	1,064,670	-	1,064,670	1,089,128	-	1,117,904	1,173,799	1,232,489	1,294,113	1,358,819
355	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
356	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
357	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
358	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
359	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
360	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-
361	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
362	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
363	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
364	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
365	Workers Comp Idnty-P	Benefits	-	-	-	-	-	-	-	-	-	-	-
366	Total Personnel Services		\$ 3,809,556	\$ 4,094,176	\$ -	\$ 4,094,176	\$ 4,083,893	\$ -	\$ 4,208,000	\$ 4,325,697	\$ 4,447,425	\$ 4,573,348	\$ 4,703,638
Operating Expenses													
367	Inv-DPWES Wastewate	Inflation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
368	Office Equip&Furnit	Inflation	57	-	-	-	-	-	-	-	-	-	-
369	Copier	Inflation	-	-	-	-	-	-	-	-	-	-	-
370	Office Supplies	Inflation	2,057	6	-	6	-	-	6	6	6	6	7
371	Computer Equipment	Inflation	15,191	-	-	-	-	-	-	-	-	-	-
372	IT Replacement Part	Inflation	297	-	-	-	-	-	-	-	-	-	-
373	Clean Supplies Cnty	Inflation	1,011	-	-	-	-	-	-	-	-	-	-
374	Bldg Maint & Repair	Repair	48,951	50,000	-	50,000	-	-	52,600	55,335	58,213	61,240	64,424
375	Grds Maint Equ&Sup	Inflation	2,631	6,000	-	6,000	-	-	6,138	6,279	6,424	6,578	6,736
376	Educational Supplie	Inflation	5,304	-	-	-	-	-	-	-	-	-	-
377	Chemicals	Chem-Noman	-	-	-	-	-	-	-	-	-	-	-
378	Tools County	Inflation	46,509	44,091	-	44,091	42,135	-	45,105	46,143	47,204	48,337	49,497
379	Eng Drft&Sur Eqp&Su	Inflation	-	-	-	-	-	-	-	-	-	-	-

Footnotes on Page 7 of 7

Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projection of Operating Expenses

Line No.	Description	Escalation Reference	Actual	Adopted	Adjustments	Adjusted	Adopted	Adjustments	Adjusted	Projected Fiscal Year Ending June 30,			
			2015	2016		2016	2017		2017	2018	2019	2020	2021
380	Water Treat Eqp&Sup	Inflation	566,094	796,659	-	796,659	734,801	-	814,983	833,727	852,903	873,373	894,333
381	Food Srv Equip/Supl	Inflation	103	-	-	-	-	-	-	-	-	-	-
382	Hshl Aplnc/Supl/Rep	Inflation	1,592	-	-	-	-	-	-	-	-	-	-
383	Med&Lab Eqp and Sup	Inflation	10,898	14,000	-	14,000	-	-	14,322	14,651	14,988	15,348	15,716
384	Park/Rctn Area Equip	Inflation	-	-	-	-	-	-	-	-	-	-	-
385	Other Operating Sup	Inflation	14,562	15,000	-	15,000	-	-	15,345	15,698	16,059	16,444	16,839
386	Goods Receipt W/O P	Inflation	-	-	-	-	-	-	-	-	-	-	-
387	Automotive Equip&Sup	Inflation	2,295	7,000	-	7,000	-	-	7,161	7,326	7,494	7,674	7,858
388	Heating Fuel	Inflation	11,437	60,000	-	60,000	-	-	61,380	62,792	64,236	65,778	67,356
388	Fire Protec Eqp&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-
389	Uniform/Wear Appare	Infl/Emp	-	-	-	-	-	-	-	-	-	-	-
390	Bldg Maint & Repair	Repair	505,808	660,256	-	660,256	599,115	-	694,589	730,708	768,705	808,677	850,729
391	Other Maint & Repai	Repair	57,273	151,705	-	151,705	201,453	-	159,594	167,893	176,623	185,807	195,469
392	Gain/loss - Inv adj	Inflation	-	-	-	-	-	-	-	-	-	-	-
393	Grnds/Rec/Parks Svc	Inflation	484	28,000	-	28,000	-	-	28,644	29,303	29,977	30,696	31,433
394	Licensing Fees	Inflation	-	-	-	-	-	-	-	-	-	-	-
395	Misc Services	Inflation	359	-	-	-	-	-	-	-	-	-	-
396	Rent-Operat Equipmm	Inflation	4,338	33,693	-	33,693	34,434	-	34,468	35,261	36,072	36,937	37,824
397	Rent-Construct Equip	Inflation	6,281	-	-	-	-	-	-	-	-	-	-
398	Auto Lia Prop Damng	Inflation	-	-	-	-	-	-	-	-	-	-	-
399	Technical Train Cnt	Inflation	-	-	-	-	-	-	-	-	-	-	-
400	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-
401	Other Operating Exp	Inflation	221,575	197,024	-	197,024	220,817	-	201,555	206,191	210,933	215,996	221,180
402	Total Operating Expenses		\$ 1,525,107	\$ 2,063,434	\$ -	\$ 2,063,434	\$ 1,832,755	\$ -	\$ 2,135,890	\$ 2,211,312	\$ 2,289,836	\$ 2,372,891	\$ 2,459,401
Capital Equipment [1]													
403	Equipment Expense	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
404	Total Capital Equipment [1]		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
405	Total WWT - Maintenance		\$ 5,334,663	\$ 6,157,610	\$ -	\$ 6,157,610	\$ 5,916,648	\$ -	\$ 6,343,889	\$ 6,537,008	\$ 6,737,261	\$ 6,946,239	\$ 7,163,039
WWT - IT Services													
Personnel Services													
406	Regular Salaries	Labor	\$ 643,193	\$ 713,415	\$ -	\$ 713,415	\$ 727,683	\$ -	\$ 727,683	\$ 742,237	\$ 757,082	\$ 772,223	\$ 787,668
407	Annual Comp Increas	Labor	-	23,348	-	23,348	-	-	23,815	24,291	24,777	25,273	25,778
408	Extra pay	Labor	410	-	-	-	-	-	-	-	-	-	-
409	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
410	Fringe Benefits	Benefits	252,066	316,681	-	316,681	325,322	-	332,515	349,141	366,598	384,928	404,174
411	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
412	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
413	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
414	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
415	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
415	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
416	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
417	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
418	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
419	Total Personnel Services		\$ 895,669	\$ 1,053,444	\$ -	\$ 1,053,444	\$ 1,053,005	\$ -	\$ 1,084,013	\$ 1,115,669	\$ 1,148,457	\$ 1,182,424	\$ 1,217,620
Operating Expenses													
420	Computer Equipment	Inflation	\$ 187,593	\$ 452,947	\$ -	\$ 452,947	\$ 460,922	\$ -	\$ 463,365	\$ 474,022	\$ 484,925	\$ 496,563	\$ 508,480
421	Computer Acces&Supl	Inflation	95,801	60,000	-	60,000	61,320	-	61,380	62,792	64,236	65,778	67,356
422	Water Treat Eqp&Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-
423	Ofc Eqp Maint&Repai	Repair	9,248	229,000	-	229,000	238,160	-	240,908	253,435	266,614	280,478	295,063
424	Parks Ctr Facil M&R	Inflation	-	-	-	-	-	-	-	-	-	-	-
425	Scienci/Tech Eqp M&	Inflation	-	-	-	-	-	-	-	-	-	-	-
426	Translation Service	Inflation	-	-	-	-	-	-	-	-	-	-	-
427	Computer Services	Inflation	120,079	121,000	-	121,000	122,640	-	123,783	126,630	129,542	132,652	135,835
428	PC Replacement	Inflation	116,000	116,000	-	116,000	118,668	-	118,668	121,397	124,190	127,170	130,222
429	Tech Infra Chargeback	Inflation	17,753	17,753	-	17,753	-	-	18,161	18,579	19,006	19,462	19,930
430	Other Pro Cntrct Sv	Inflation	-	-	-	-	-	-	-	-	-	-	-
431	Misc Services	Inflation	-	-	-	-	-	-	-	-	-	-	-
432	Mgmt/Prof Training	Inflation	3,598	-	-	-	-	-	-	-	-	-	-
433	Technical Train Cnt	Inflation	-	-	-	-	-	-	-	-	-	-	-
433	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-
434	Prof Subscriptions	Inflation	-	-	-	-	-	-	-	-	-	-	-
435	Other Operating Exp	Inflation	459	-	-	-	-	-	-	-	-	-	-
436	Total Operating Expenses		\$ 550,531	\$ 996,700	\$ -	\$ 996,700	\$ 883,042	\$ -	\$ 1,026,265	\$ 1,056,856	\$ 1,088,513	\$ 1,122,102	\$ 1,156,886
Capital Equipment [1]													
437	Equipment Expense	Bud Cap	\$ 183,718	\$ 183,718	\$ -	\$ 183,718	\$ -	\$ 183,718	\$ 189,229	\$ 194,906	\$ 200,753	\$ 206,776	\$ 212,979
438	Total Capital Equipment [1]		\$ 183,718	\$ 183,718	\$ -	\$ 183,718	\$ -	\$ 183,718	\$ 189,229	\$ 194,906	\$ 200,753	\$ 206,776	\$ 212,979
439	Total WWT - IT Services		\$ 1,629,918	\$ 2,233,862	\$ -	\$ 2,233,862	\$ 1,936,047	\$ -	\$ 2,299,507	\$ 2,367,430	\$ 2,437,723	\$ 2,511,302	\$ 2,587,485
WWT - Engineering													
Personnel Services													
440	Regular Salaries	Labor	\$ 352,721	\$ 409,812	\$ -	\$ 409,812	\$ 418,008	\$ -	\$ 418,008	\$ 426,368	\$ 434,896	\$ 443,594	\$ 452,466
441	Annual Comp Increas	Labor	-	13,414	-	13,414	-	-	13,682	13,956	14,235	14,520	14,810
442	Reg Sal- Non Mert Em	Labor	47,956	-	-	-	-	-	-	-	-	-	-
443	Extra pay	Labor	1,114	-	-	-	-	-	-	-	-	-	-
444	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-
445	Fringe Benefits	Benefits	167,920	181,915	-	181,915	186,876	-	191,011	200,561	210,589	221,119	232,175
446	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-
447	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-
448	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-
449	Health Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
450	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
449	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-
451	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
452	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
453	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
454	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
455	Total Personnel Services		\$ 569,711	\$ 605,141	\$ -	\$ 605,141	\$ 604,884	\$ -	\$ 622,701	\$ 640,886	\$ 659,720	\$ 679,232	\$ 699,450
Operating Expenses													
456	Other Operating Exp	Inflation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
457	Total Operating Expenses		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
458	Total WWT - Engineering		\$ 569,711	\$ 605,141	\$ -	\$ 605,141	\$ 604,884	\$ -	\$ 622,701	\$ 640,886	\$ 659,720	\$ 679,232	\$ 699,450
459	Total Wastewater Treatment Department		\$ 19,904,140	\$ 23,947,833	\$ -	\$ 23,947,833	\$ 23,209,707	\$ 275,672	\$ 24,694,082	\$ 25,467,526	\$ 26,269,305	\$ 27,106,580	\$ 27,975,020
20.32%													
WPM - WASTEWATER PLANNING & MONITORING													
WP&M - Fiscal													
Personnel Services													
460	Regular Salaries	Labor	\$ 1,719,837	\$ 1,822,152	\$ -	\$ 1,822,152	\$ 1,858,595	\$ -	\$ 1,858,595	\$ 1,895,767	\$ 1,933,682	\$ 1,972,356	\$ 2,011,803
461	Annual Comp Increas	Labor	-	59,638	-	59,638	-	-	60,831	62,047	63,288	64,554	65,845
462	POS Turnover-Pay	Labor	-	(22,104)	-	(22,104)	(21,257)	-	(22,546)	(22,997)	(23,457)	(23,926)	(24,405)
463	Reg Sal-Non Mert Em	Labor	17,358	10,614	-	10,614	10,826	-	10,826	11,043	11,264	11,489	11,719
464	Extra pay	Labor	2,898	4,108	-	4,108	4,190	-	4,190	4,274	4,359	4,447	4,536
465	Accrued Leave	Labor	-	-	-	-	132,804	-	-	-	-	-	-

Footnotes on Page 7 of 7

Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projection of Operating Expenses

Line No.	Description	Escalation Reference	Actual	Adopted	Adjustments	Adjusted	Adopted	Adjustments	Adjusted	Projected Fiscal Year Ending June 30,				
			2015	2016		2016	2017		2017	2018	2019	2020	2021	
466	Leave Pay out	Labor	32,114	-	-	-	-	-	-	-	-	-	-	-
467	Fringe Benefits	Benefits	553,014	808,473	-	808,473	830,912	-	848,897	891,341	935,909	982,704	1,031,839	-
468	FICA	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
469	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
470	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
471	OPEB Contributions	Benefits	764,652	769,111	-	769,111	802,885	-	807,567	847,945	890,342	934,859	981,602	-
472	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
473	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
474	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
475	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
476	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
477	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
478	Worker Comp Ins Plc	Benefits	-	102,000	-	102,000	-	-	107,100	112,455	118,078	123,982	130,181	-
479	Total Personnel Services		\$ 3,089,873	\$ 3,553,992	\$ -	\$ 3,553,992	\$ 3,618,955	\$ -	\$ 3,675,459	\$ 3,801,875	\$ 3,933,465	\$ 4,070,464	\$ 4,213,120	\$ -
Operating Expenses														
480	Office Equip&Furnit	Inflation	\$ 11,756	\$ -	\$ -	\$ -	\$ 641	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
481	Office Supplies	Inflation	1,091	1,017	-	1,017	659	-	1,040	1,064	1,089	1,115	1,141	-
482	Computer Equipment	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
483	Computer Acces&Supl	Inflation	2,937	4,445	-	4,445	4,457	-	4,548	4,652	4,759	4,874	4,991	-
484	Printing Acces&Supl	Inflation	329	2,072	-	2,072	2,118	-	2,120	2,168	2,218	2,272	2,326	-
485	Postage	Inf/Cust	84	267	-	267	275	-	275	283	292	301	310	-
486	Bldg Maint & Repair	Repair	171	659	-	659	547	-	693	729	767	807	849	-
487	Educational Supplie	Inflation	320	10,018	-	10,018	10,238	-	10,248	10,484	10,725	10,983	11,246	-
488	Hshl Aplnc/Supl/Rep	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
489	Med&Lab Eq and Sup	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
490	Park/Rctn Area Equi	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
491	Lab Equip and Supl	Inflation	2,205	2,018	-	2,018	5	-	2,064	2,112	2,160	2,212	2,265	-
492	Other Operating Sup	Inflation	179	13,196	-	13,196	2,057	-	13,500	13,810	14,128	14,467	14,814	-
493	Uniform/Wear Appare	Inf/Emp	-	-	-	-	-	-	-	-	-	-	-	-
494	Oic Eq Maint&Repai	Repair	-	-	-	-	-	-	-	-	-	-	-	-
495	Other Maint & Repai	Repair	2,591	9,407	-	9,407	23,269	-	9,896	10,411	10,952	11,522	12,121	-
496	Audit/Acct Services	Inflation	45,141	37,551	-	37,551	38,377	-	38,415	39,298	40,202	41,167	42,155	-
497	Computer Services	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
498	Other Pro Cntrct Sv	Inflation	108,751	364,263	-	364,263	320,785	-	372,642	381,212	389,980	399,340	408,924	-
499	Comm & Media Service	Inflation	9,181	-	-	-	27,003	-	-	-	-	-	-	-
500	Misc Services	Inflation	1,693	-	-	-	-	-	-	-	-	-	-	-
501	Electricity County	Electricity	-	-	-	-	-	-	-	-	-	-	-	-
502	OPEB	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
503	Gen Liab Admin	Inflation	1,000	1,052	-	1,052	1,075	-	1,076	1,101	1,126	1,153	1,181	-
504	Certification	Inflation	700	1,649	-	1,649	1,685	-	1,687	1,726	1,765	1,808	1,851	-
505	Mgmt/Prof Training	Inflation	1,072	7,550	-	7,550	7,716	-	7,724	7,901	8,083	8,277	8,476	-
506	Technical Train Cnt	Inflation	2,886	-	-	-	-	-	-	-	-	-	-	-
507	Departmental Awards	Inflation	464	5,601	-	5,601	614	-	5,730	5,862	5,996	6,140	6,288	-
508	Copying	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
509	Phototypesetting	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
510	Printing and Bindin	Inflation	30	16,730	-	16,730	17,101	-	17,115	17,508	17,911	18,341	18,781	-
511	Assigned Agency Veh	Inflation	10,089	2,954	-	2,954	7,587	-	3,022	3,091	3,163	3,238	3,316	-
512	Motor Pool	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
513	Fuel	Fuel	1,757	-	-	-	3,541	-	-	-	-	-	-	-
514	Service-Other Agenc	Inflation	1,014,309	349,232	-	349,232	465,991	-	357,264	365,481	373,887	382,861	392,049	-
515	Mileage Allow Auto	Inflation	1,101	631	-	631	645	-	646	660	676	692	708	-
516	Prof Memberships	Inflation	29,034	62,678	-	62,678	64,054	-	64,120	65,594	67,103	68,713	70,363	-
517	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
518	Other Operating Exp	Inflation	6,834	21,021	-	21,021	21,395	-	21,505	21,999	22,505	23,045	23,598	-
519	Total Operating Expenses		\$ 1,255,705	\$ 914,011	\$ -	\$ 914,011	\$ 1,021,837	\$ -	\$ 935,327	\$ 957,149	\$ 979,489	\$ 1,003,326	\$ 1,027,754	\$ -
Recovered Costs														
520	WPFO-Labor Charges	Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
521	WPFO-Agency OH Cost	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
522	Misc Exp Reimb	Constant	(145,600)	(145,600)	145,600	-	(145,600)	-	-	-	-	-	-	-
523	Total Recovered Costs		\$ (145,600)	\$ (145,600)	\$ 145,600	\$ -	\$ (145,600)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Equipment [1]														
524	Equipment Expense	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
525	Vehicles Expense	Bud Cap	-	-	-	-	-	-	-	-	-	-	-	-
526	Total Capital Equipment [1]		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
527	Total WP&M - Fiscal		\$ 4,199,978	\$ 4,322,403	\$ 145,600	\$ 4,468,003	\$ 4,495,192	\$ -	\$ 4,610,787	\$ 4,759,025	\$ 4,912,954	\$ 5,073,791	\$ 5,240,873	\$ -
WP&M - Engineer Planning														
Personnel Services														
528	Regular Salaries	Labor	\$ 713,600	\$ 804,679	\$ -	\$ 804,679	\$ 820,773	\$ -	\$ 820,773	\$ 837,188	\$ 853,932	\$ 871,010	\$ 888,431	\$ -
529	Annual Comp Increas	Labor	-	26,337	-	26,337	-	-	26,864	27,401	27,949	28,508	29,078	-
530	POS Turnover-Pay	Labor	-	(36,751)	-	(36,751)	(36,514)	-	(37,486)	(38,236)	(39,000)	(39,780)	(40,576)	-
531	Extra pay	Labor	-	-	-	-	-	-	-	-	-	-	-	-
532	Accrued Leave	Labor	-	-	-	-	-	-	-	-	-	-	-	-
533	Leave Pay out	Labor	563	-	-	-	-	-	-	-	-	-	-	-
534	Fringe Benefits	Benefits	270,179	-	-	-	-	-	-	-	-	-	-	-
535	FICA	Benefits	-	356,915	-	356,915	366,938	-	374,761	393,499	413,174	433,832	455,524	-
536	Medicare	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
537	Retire Contrb-EE Sy	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
538	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
539	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
540	Health-Cigna Low	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
541	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
542	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
543	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
544	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-	-
545	Total Personnel Services		\$ 984,342	\$ 1,151,180	\$ -	\$ 1,151,180	\$ 1,151,197	\$ -	\$ 1,184,911	\$ 1,219,852	\$ 1,256,054	\$ 1,293,570	\$ 1,332,457	\$ -
Operating Expenses														
546	Other Maint & Repai	Repair	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
547	Other Operating Exp	Inflation	-	-	-	-	-	-	-	-	-	-	-	-
548	Total Operating Expenses		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
549	Total WP&M - Engineer Planning		\$ 984,342	\$ 1,151,180	\$ -	\$ 1,151,180	\$ 1,151,197	\$ -	\$ 1,184,911	\$ 1,219,852	\$ 1,256,054	\$ 1,293,570	\$ 1,332,457	\$ -
WP&M - Lab														
Personnel Services														
550	Regular Salaries	Labor	\$ 1,099,357	\$ 1,316,015	\$ -	\$ 1,316,015	\$ 1,342,335	\$ -	\$ 1,342,335	\$ 1,369,182	\$ 1,396,566	\$ 1,424,497	\$ 1,452,987	\$ -
551	Annual Comp Increas	Labor	-	43,070	-	43,070	-	-	43,931	44,810	45,706	46,620	47,553	-
552	POS Turnover-Pay	Labor	-	(55,335)	-	(55,335)	(54,765)	-	(56,442)	(57,571)	(58,722)	(59,896)	(61,094)	-
553	Reg Sal Non Mert Em	Labor	9,701	-	-	-	-	-	-	-	-	-	-	-
554	Extra pay	Labor	40,886	30,394	-	30,394	30,666	-	31,002	31,622	32,254	32,899	33,557	-
554	Accrued Leave													

Table 3
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

<u>Projection of Operating Expenses</u>													
Line No.	Description	Escalation Reference	Actual 2015	Adopted 2016	Adjustments	Adjusted 2016	Adopted 2017	Adjustments	Adjusted 2017	Projected Fiscal Year Ending June 30,			
										2018	2019	2020	2021
559	Health-Cigna High	Benefits	-	-	-	-	-	-	-	-	-	-	-
560	Health OAP 90%	Benefits	-	-	-	-	-	-	-	-	-	-	-
561	Health-BC/BS	Benefits	-	-	-	-	-	-	-	-	-	-	-
562	Health-Kaiser	Benefits	-	-	-	-	-	-	-	-	-	-	-
563	Insurance-Group Life	Benefits	-	-	-	-	-	-	-	-	-	-	-
564	Delta Dental	Benefits	-	-	-	-	-	-	-	-	-	-	-
565	Workers Comp Idmty-P	Benefits	-	-	-	-	-	-	-	-	-	-	-
566	Total Personnel Services		\$ 1,652,731	\$ 1,823,216	\$ -	\$ 1,823,216	\$ 1,818,920	\$ -	\$ 1,874,352	\$ 1,927,245	\$ 1,981,966	\$ 2,038,590	\$ 2,097,196
Operating Expenses													
567	Office Equip&Sup	Inflation	\$ 193	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
568	Office Supplies	Inflation	5,776	1,522	-	1,522	1,533	-	1,557	1,593	1,630	1,669	1,709
569	Computer Equipment	Inflation	92	11,303	-	11,303	-	-	11,563	11,829	12,101	12,392	12,689
570	Computer Acces&Supl	Inflation	-	-	-	-	-	-	-	-	-	-	-
571	Printing Access & Suppl	Inflation	-	-	-	-	-	-	-	-	-	-	-
572	Bldg Maint & Repair	Repair	-	-	-	-	-	-	-	-	-	-	-
573	Chemicals	Chemicals	-	-	-	-	-	-	-	-	-	-	-
574	Water Treat Eqp&Sup	Inflation	29	5,523	-	5,523	5,645	-	5,650	5,780	5,913	6,055	6,200
575	Lab Equip and Supl	Inflation	189,215	180,432	-	180,432	174,904	-	184,582	188,827	193,170	197,806	202,554
576	Other Operating Sup	Inflation	1,866	-	-	-	-	-	-	-	-	-	-
577	Uniform/Wear Appare	Inf/Emp	2,630	2,038	-	2,038	1,635	-	2,085	2,133	2,182	2,234	2,288
578	Ofc Eqp Maint&Repai	Repair	-	-	-	-	-	-	-	-	-	-	-
579	Scienti/Tech Eqp M&K	Repair	11,213	12,391	-	12,391	12,887	-	13,035	13,713	14,426	15,176	15,966
580	Other Maint & Repai	Repair	-	-	-	-	-	-	-	-	-	-	-
581	Edu/Training Servic	Inflation	1,847	-	-	49,223	50,216	-	50,355	51,513	52,698	53,963	55,258
582	Other Pro Cnctct Sv	Inflation	105,511	141,247	-	141,247	123,662	-	144,495	147,819	151,219	154,848	158,564
583	Licensing Fees	Inflation	-	-	-	-	-	-	-	-	-	-	-
584	Misc Services	Inflation	4,333	33,400	-	33,400	34,135	-	34,168	34,954	35,758	36,616	37,495
585	Certification	Inflation	150	-	-	-	-	-	-	-	-	-	-
586	Mgmt/Prof Training	Inflation	3,066	-	-	-	-	-	-	-	-	-	-
587	Technical Train Cnt	Inflation	-	-	-	-	-	-	-	-	-	-	-
588	Departmental Awards	Inflation	-	-	-	-	-	-	-	-	-	-	-
589	Microfilm Services	Inflation	-	-	-	-	-	-	-	-	-	-	-
590	Phototypesetting	Inflation	-	-	-	-	-	-	-	-	-	-	-
591	Milage Allow Auto	Inflation	-	-	-	-	-	-	-	-	-	-	-
592	Prof Memberships	Inflation	-	-	-	-	-	-	-	-	-	-	-
593	Credit Card Expense	Inflation	-	-	-	-	-	-	-	-	-	-	-
594	Other Operating Exp	Inflation	128,769	92,710	-	92,710	89,827	-	94,842	97,024	99,255	101,637	104,077
595	Total Operating Expenses		\$ 454,690	\$ 480,566	\$ -	\$ 529,789	\$ 494,443	\$ -	\$ 542,334	\$ 555,186	\$ 568,352	\$ 582,397	\$ 596,799
596	Recovered Costs												
596	WPFO-Labor Charges	Labor	\$ (38,243)	\$ (38,243)	\$ -	\$ (38,243)	\$ (35,700)	\$ -	\$ (39,008)	\$ (39,788)	\$ (40,584)	\$ (41,395)	\$ (42,223)
597	Reimb-CptlFringe Be	Benefits	-	-	-	-	-	-	-	-	-	-	-
598	Total Recovered Costs		\$ (38,243)	\$ (38,243)	\$ -	\$ (38,243)	\$ (35,700)	\$ -	\$ (39,008)	\$ (39,788)	\$ (40,584)	\$ (41,395)	\$ (42,223)
Capital Equipment [1]													
599	Equipment Exp SC Onl	Bud Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
600	Vehicle Expense	Bud Cap	-	-	-	-	-	-	-	-	-	-	-
601	Total Capital Equipment [1]		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
602	Total WP&M - Lab		\$ 2,069,178	\$ 2,265,539	\$ -	\$ 2,314,762	\$ 2,277,663	\$ -	\$ 2,377,678	\$ 2,442,643	\$ 2,509,735	\$ 2,579,592	\$ 2,651,772
603	Total WP&M Department		\$ 7,253,498	\$ 7,739,123	\$ -	\$ 7,933,946	\$ 7,924,052	\$ -	\$ 8,173,376	\$ 8,421,519	\$ 8,678,743	\$ 8,946,953	\$ 9,225,103
TBC - Treatment by Contract													
604	ASA- Alexandria Sanitation A	Input	\$ 13,133,545	\$ 13,687,460	\$ (92,525)	\$ 13,594,935	\$ 15,656,343	\$ (1,104,246)	\$ 14,552,097	\$ 15,187,627	\$ 15,748,658	\$ 16,308,384	\$ 16,888,288
605	Arlington County	Input	2,225,036	2,314,037	313,886	2,627,923	2,544,610	143,755	2,688,365	2,750,198	2,813,452	2,880,975	2,950,119
606	Loudoun Water	AgentFee	640	700	(700)	-	-	-	-	-	-	-	-
607	DCWASA - Blue Plains	Input	11,815,951	12,288,589	858,400	13,146,989	13,212,357	329,040	13,541,397	13,947,639	14,366,068	14,797,050	15,240,962
608	UOSA	Input	12,276,384	12,767,439	855,128	13,622,567	14,304,965	(284,283)	14,020,682	14,355,469	14,698,326	15,062,281	15,435,307
609	Total TBC - Treatment by Contract		\$ 39,451,556	\$ 41,058,225	\$ 1,934,189	\$ 42,992,414	\$ 45,718,275	\$ (915,734)	\$ 44,802,541	\$ 46,240,933	\$ 47,626,504	\$ 49,048,690	\$ 50,514,676
Contracted Billing Services													
610	FCWA	AgentFee	7,596,076	7,199,415	-	7,199,415	7,149,371	-	7,418,108	7,642,365	7,872,309	8,115,995	8,366,105
611	Falls Church	AgentFee	-	80,186	-	80,186	-	-	82,622	85,120	87,681	90,395	93,180
612	Colchester - Harbor View	AgentFee	496,373	465,197	-	465,197	475,432	-	479,328	493,819	508,677	524,423	540,584
613	Inter-Jurisdict	AgentFee	114,617	-	-	-	-	-	-	-	-	-	-
614	Vienna	AgentFee	-	114,617	-	-	-	-	-	-	-	-	-
615	Total Contracted Billing Service		\$ 8,207,066	\$ 7,859,415	\$ -	\$ 7,744,798	\$ 7,624,803	\$ -	\$ 7,980,058	\$ 8,221,303	\$ 8,468,667	\$ 8,730,813	\$ 8,999,870
616	Total O&M Expenses & Capital Outlay		\$ 91,625,057	\$ 97,929,438	\$ 4,838,189	\$ 102,847,833	\$ 99,312,000	\$ 4,326,943	\$ 106,415,862	\$ 110,125,247	\$ 113,514,329	\$ 116,952,669	\$ 120,544,845
617	Capital Outlay		\$ 2,324,678	\$ 2,324,677	\$ -	\$ 2,324,677	\$ -	\$ 2,324,677	\$ 2,394,418	\$ 2,466,250	\$ 2,540,238	\$ 2,616,445	\$ 2,694,938
618	Total O&M Expenses Net of Capital Outlay		\$ 89,300,379	\$ 95,604,761	\$ 4,838,189	\$ 100,523,155	\$ 99,312,000	\$ 2,002,266	\$ 104,021,444	\$ 107,658,997	\$ 110,974,091	\$ 114,336,224	\$ 117,849,907

Footnotes:

[1] WMP capitalizes budgeted equipment and capital outlays and therefore was reclassified to the forecasted Capital Improvement Program (reference Table 10).

[2] Forecasted amounts are based on the apportionment of costs from budgetary estimates and forecasts provided by the respective Treatment by Contract (TBC) provider and based on discussions with WMP staff.

Table 4
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projection of Operating Expenses for Treatment By Contract (TBC)

Line No.	Description	Escalation Reference [1]	Projected Fiscal Year Ending June 30,							
			Proposed Budget	Adjustments	Adjusted 2016	2017	2018	2019	2020	2021
ARE - Alexandria Renew Enterprises										
<u>ARE - O&M Costs Allocated to Fairfax Co.[2]</u>										
1	Total Operating Expenses	O&M ARE	\$ 26,146,428	\$ 0	\$ 26,146,428	\$ 26,500,000	\$ 27,500,000	\$ 28,600,000	\$ 29,600,000	\$ 30,800,000
2	Less: Alexandria Only Expenses	Input	(5,050,807)	0	(5,050,807)	(3,900,000)	(4,000,000)	(4,200,000)	(4,300,000)	(4,500,000)
3	Joint Operating Expenses		\$ 21,095,621	\$ 0	\$ 21,095,621	\$ 22,600,000	\$ 23,500,000	\$ 24,400,000	\$ 25,300,000	\$ 26,300,000
4	Percentage Allocation to Fairfax Co.		50.63%	0.00%	50.63%	50.63%	50.63%	50.63%	50.63%	50.63%
5	Operating Expenses Allocated to Fairfax Co.		\$ 10,680,839	\$ 0	\$ 10,680,839	\$ 11,442,515	\$ 11,898,191	\$ 12,353,866	\$ 12,809,542	\$ 13,315,848
6	Less: Charges for Alexandria City Flow		0	0	0	0	0	0	0	0
7	Adjustments		0	0	0	0	0	0	0	0
8	Operating Expenses Allocated to Fairfax Co.		\$ 10,680,839	\$ 0	\$ 10,680,839	\$ 11,442,515	\$ 11,898,191	\$ 12,353,866	\$ 12,809,542	\$ 13,315,848
9	Gross Joint Assets	IR&R ARE	\$ 766,355,357	\$ 0	\$ 766,355,357	\$ 792,167,333	\$ 816,374,473	\$ 841,751,506	\$ 866,324,559	\$ 885,516,304
10	Funding Percentage per Agreement		0.70%	0.00%	0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
11	Fairfax Co. Share (60%) [3]		3,218,692	0	3,218,692	3,327,103	3,428,773	3,535,356	3,638,563	3,719,168
12	Adjustments		0	0	0	0	0	0	0	0
13	IR&R Expenditures Allocated to Fairfax County [3]		\$ 3,218,692	\$ 0	\$ 3,218,692	\$ 3,327,103	\$ 3,428,773	\$ 3,535,356	\$ 3,638,563	\$ 3,719,168
14	Subtotal ARE - O&M Costs Allocated to Fairfax Co.		\$ 13,899,532	\$ 0	\$ 13,899,532	\$ 14,769,618	\$ 15,326,964	\$ 15,889,223	\$ 16,448,105	\$ 17,035,016
15	Accruals/Fiscal Year End Adjustments [4]		(304,597)	0	(304,597)	(217,522)	(139,336)	(140,565)	(139,721)	(146,728)
16	Total ARE - O&M Costs Allocated to Fairfax Co.		\$ 13,594,935	\$ 0	\$ 13,594,935	\$ 14,552,097	\$ 15,187,627	\$ 15,748,658	\$ 16,308,384	\$ 16,888,288
Arlington County - WPCP										
<u>Arlington WPCP - O&M Costs Allocated to Fairfax Co.[5]</u>										
17	Arlington Total Operating Expenses	Composite	\$ 28,353,231	\$ 0	\$ 28,353,231	\$ 29,005,355	\$ 29,672,478	\$ 30,354,945	\$ 31,083,464	\$ 31,829,467
18	Annual Sewage Flow - Fairfax Co. to Arlington	Input	0	0	744,600	744,600	744,600	744,600	744,600	744,600
19	Annual Sewage Flow at Arlington (WPCP)	Input	0	0	8,033,650	8,033,650	8,033,650	8,033,650	8,033,650	8,033,650
20	Allocation Factor (Line 18/Line 19)		9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
21	Fairfax County Allocable O&M Payment		\$ 2,627,923	\$ 0	\$ 2,627,923	\$ 2,688,365	\$ 2,750,198	\$ 2,813,452	\$ 2,880,975	\$ 2,950,119
22	Accruals/Fiscal Year End Adjustments [6]		0	0	0	0	0	0	0	0
23	Total Arlington WPCP - O&M Costs Allocated to Fairfax Co.[5]		\$ 2,627,923	\$ 0	\$ 2,627,923	\$ 2,688,365	\$ 2,750,198	\$ 2,813,452	\$ 2,880,975	\$ 2,950,119
Blue Plains - DCWater										
<u>DCWater - O&M Costs Allocated to Fairfax Co.[7]</u>										
24	Interceptors	Inflation	\$ 552,880	\$ (82,932)	\$ 469,948	\$ 484,046	\$ 498,567	\$ 513,524	\$ 528,930	\$ 544,798
25	Pumping Stations	Inflation	356,012	(53,402)	302,610	311,688	321,039	330,670	340,590	350,808
26	Screen Chambers	Inflation	95	(14)	81	83	85	88	91	94
27	Wastewater Treatment Plant	Inflation	9,336,385	(1,400,458)	7,935,927	8,174,005	8,419,225	8,671,802	8,931,956	9,199,915
28	D.C. Sludge Costs	DC Sludge	1,743,940	(261,591)	1,482,349	1,526,819	1,572,624	1,619,803	1,668,397	1,718,449
29	Indirect Costs	Inflation	2,377,981	(356,698)	2,021,283	2,081,921	2,144,379	2,208,710	2,274,971	2,343,220
30	Rental and User Fees	Inflation	408,846	(61,327)	347,519	357,945	368,683	379,743	391,135	402,869
31	WSSC Biosolids	Inflation	690,908	(103,636)	587,272	604,890	623,037	641,728	660,980	680,809
32	Excess Flow and Other Payments	Inflation	0	0	0	0	0	0	0	0
33	Additional Costs	Inflation	0	0	0	0	0	0	0	0
34	Accruals/Fiscal Year End Adjustments [8]	Inflation	0	0	0	0	0	0	0	0
35	Total DCWater - O&M Costs Allocated to Fairfax Co.[7]		\$ 15,467,045	\$ (2,320,056)	\$ 13,146,989	\$ 13,541,397	\$ 13,947,639	\$ 14,366,068	\$ 14,797,050	\$ 15,240,962

Table 4
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projection of Operating Expenses for Treatment By Contract (TBC)

Line No.	Description	Escalation Reference [1]	Projected Fiscal Year Ending June 30,							
			Proposed Budget	Adjustments	Adjusted 2016	2017	2018	2019	2020	2021
Upper Occoquan Sewage Authority - UOSA										
<u>UOSA - O&M Costs Allocated to Fairfax Co.[9]</u>										
36	UOSA Total Operating Expenses	Composite	\$ 29,614,100	\$ 0	\$ 29,614,100	\$ 30,295,224	\$ 30,992,014	\$ 31,704,831	\$ 32,465,747	\$ 33,244,925
37	Annual Sewage Flow - Fairfax Co. to UOSA (MG)	Input	0	0	4,689,885	4,736,970	4,736,970	4,736,970	4,736,970	4,736,970
38	Annual Sewage Flow at UOSA (MG)	Input	0	0	11,656,452	11,703,537	11,703,537	11,703,537	11,703,537	11,703,537
39	Allocation Factor		40.2%	0	40.2%	40.5%	40.5%	40.5%	40.5%	40.5%
40	Fairfax County Allocable O&M Payment		11,915,009	0	11,915,009	12,261,898	12,543,921	12,832,432	13,140,410	13,455,780
41	Accruals/Fiscal Year End Adjustments [10]		0	0	0	0	0	0	0	0
42	Reserve and Maintenance Fund Deposits	Composite	\$ 4,080,000	\$ 0	\$ 4,080,000	\$ 4,202,400	\$ 4,328,472	\$ 4,458,326	\$ 4,592,076	\$ 4,729,838
43	Fairfax Co. Reserved Capac. from UOSA	Input	0.00	0.00	22.60	22.60	22.60	22.60	22.60	22.60
44	Total Capacity of UOSA WWTP	Input	0.00	0.00	54.00	54.00	54.00	54.00	54.00	54.00
45	Allocation Factor		41.85%	41.85%	41.85%	41.85%	41.85%	41.85%	41.85%	41.85%
46	Fairfax County Allocable R&M Deposits		\$ 1,707,558	\$ 0	\$ 1,707,558	\$ 1,758,784	\$ 1,811,548	\$ 1,865,894	\$ 1,921,871	\$ 1,979,527
47	Accruals/Fiscal Year End Adjustments [10]		0	0	0	0	0	0	0	0
48	Total UOSA Allocated Cost		<u>\$ 13,622,567</u>	<u>\$ 0</u>	<u>\$ 13,622,567</u>	<u>\$ 14,020,682</u>	<u>\$ 14,355,469</u>	<u>\$ 14,698,326</u>	<u>\$ 15,062,281</u>	<u>\$ 15,435,307</u>
Loudoun County Sanitation Authority										
49	Fairfax Flow to BRWRF		-	-	-	-	-	-	-	-
50	Total Wastewater Treated at BRWRF		1,600,000	-	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
51	Fairfax Proportion		0.00%	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
52	LCSA Total Operating Costs		21,500,000	-	21,500,000	21,500,000	21,500,000	21,500,000	21,500,000	21,500,000
53	Fairfax County Allocable O&M Payment		-	-	-	-	-	-	-	-

Footnotes:

- [1] Escalation reference apply to costs beginning with the Fiscal Year 2016 and beyond.
- [2] Forecasted amounts are based on: i) apportionment of costs from budgetary estimates by ARenew; and ii) escalation of costs based on information provided by ARenew and discussions with WMP Staff.
- [3] Projected IR&R contribution based on the master indenture of trust agreement that entitles ARE to collect IR&R Funds not to exceed 0.70% of the prior year's gross utility plant in service multiplied by the Fairfax Allocation of such plant in service (currently at 60.0%).
- [4] Adjustment made for Historical Fiscal Years to account for: i) true up of the operating costs performed by ARenew at the end of the Fiscal Year; ii) adjustments to account for the difference in the Fiscal Year period between ARenew and Fairfax County.
- [5] Forecasted amounts are based on: i) apportionment of costs from budgetary estimates by Arlington County; and ii) escalation of costs based on information provided by Arlington County and discussions with WMP Staff.
- [6] Adjustment made for Historical Fiscal Years to account for: i) true up of the operating costs performed by Arlington County at the end of the Fiscal Year.
- [7] Forecasted amounts are based on: i) apportionment of costs from budgetary estimates by DCWater; and ii) escalation of costs based on information provided by DCWater and discussions with WMP Staff.
- [8] Adjustment made for Historical Fiscal Years to account for: i) true up of the operating costs performed by DCWater at the end of the Fiscal Year; ii) adjustments to account for the difference in the Fiscal Year period between DCWater and Fairfax County.
- [9] Forecasted amounts are based on: i) apportionment of costs from budgetary estimates by UOSA; and ii) escalation of costs based on information provided by UOSA and discussions with WMP Staff.
- [10] Adjustment made for Historical Fiscal Years to account for: i) true up of the operating costs performed by UOSA at the end of the Fiscal Year; ii) Interest earnings and additional charges/credits that occurred during the Fiscal Year.

Table 5
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Historical and Projected Sales of Service (Bulk Sales) and Other Revenue

Line No.	Description	Escalation Factors	Actual [1] 2015	Projected Fiscal Year Ending June 30,					
				2016	2017	2018	2019	2020	2021
Sales of Service (Bulk Sales)									
1	City of Fairfax [2]	Calculated	\$ 1,667,693	\$ 1,816,428	\$ 1,862,455	\$ 1,910,168	\$ 1,959,637	\$ 2,011,274	\$ 2,064,834
2	Town of Herndon [3]	Calculated	3,229,858	3,420,000	3,420,000	3,420,000	3,420,000	3,420,000	3,420,000
3	Arlington County [4]	Calculated	705,557	624,799	639,554	654,735	670,352	686,420	702,950
4	Fort Belvoir [5]	Calculated	2,189,831	2,130,480	2,130,480	2,130,480	2,130,480	2,130,480	2,130,480
5	City of Falls Church [6]	Calculated	984,470	1,024,809	1,068,684	1,095,814	1,118,920	1,141,730	1,165,317
6	Town of Vienna [7]	Calculated	467,888	579,545	591,519	603,931	616,799	630,229	644,158
7	FCWA [8]	Calculated	158,919	126,208	126,778	127,918	129,248	129,580	129,580
8	I-95 ERRF (Covanta) [9]	Calculated	443,100	378,623	380,333	383,753	387,743	388,740	388,740
9	LCSA [10]	Calculated	163,237	151,595	156,243	160,381	164,631	169,077	173,645
10	Sales of Service (Bulk Revenue)		<u>\$ 10,010,553</u>	<u>\$ 10,252,486</u>	<u>\$ 10,376,045</u>	<u>\$ 10,487,180</u>	<u>\$ 10,597,810</u>	<u>\$ 10,707,530</u>	<u>\$ 10,819,706</u>
11	Percentage Change			2.42%	1.21%	1.07%	1.05%	1.04%	1.05%
Other Revenues									
12	Miscellaneous Revenue	Constant	\$ 352,291	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
13	Industrial Pretreatment Charges	Constant	0	0	0	0	0	0	0
14	Engineering Fees	Constant	0	0	0	0	0	0	0
15	Sale of Capital Equipment	Constant	31,187	0	0	0	0	0	0
16	Sales of Salvage	Constant	39,993	100,000	100,000	100,000	100,000	100,000	100,000
17	Subtotal Other Revenues		<u>\$ 423,471</u>	<u>\$ 250,000</u>	<u>\$ 250,000</u>	<u>\$ 250,000</u>	<u>\$ 250,000</u>	<u>\$ 250,000</u>	<u>\$ 250,000</u>
18	Percentage Change			(40.96%)	0.00%	0.00%	0.00%	0.00%	0.00%
Non-Recurring Revenues (to E&I Fund)									
19	Lateral Spur Fees [11]	Connections	\$ 19,800	\$ 6,000	\$ 6,043	\$ 6,086	\$ 6,128	\$ 6,170	\$ 6,211
20	Connection Charges [11]	Connections	459,158	76,250	76,800	77,343	77,879	78,407	78,929
21	Frontage Fees [11]	Constant	0	0	0	0	0	0	0
22	Subtotal Non-Recurring Revenues		<u>\$ 478,958</u>	<u>\$ 82,250</u>	<u>\$ 82,843</u>	<u>\$ 83,429</u>	<u>\$ 84,007</u>	<u>\$ 84,577</u>	<u>\$ 85,140</u>
23	Percentage Change			(82.83%)	0.72%	0.71%	0.69%	0.68%	0.67%

Footnotes:

[1] Historical amounts obtained from information as provided by the County.

[2] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

City of Fairfax:	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
[a] Based on O&M costs as follows:						
G252302002 NMColeJr PCP	\$ 12,825,636	\$ 13,242,916	\$ 13,675,668	\$ 14,124,541	\$ 14,592,580	\$ 15,078,333
G252302003 NMColeJr PCP	6,157,610	6,343,889	6,537,008	6,737,261	6,946,239	7,163,039
Other Direct Cost Allocation	6,327,749	6,528,935	6,737,559	6,953,934	7,179,606	7,413,791
Total Noman Cole WWTP O&M Costs [a]	<u>\$ 25,310,995</u>	<u>\$ 26,115,741</u>	<u>\$ 26,950,235</u>	<u>\$ 27,815,736</u>	<u>\$ 28,718,425</u>	<u>\$ 29,655,163</u>
Other Direct Cost Allocation - % of Total O&M	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Sewage Flows, MG/Year						
City of Fairfax Allocated	1,055,000	1,055,000	1,055,000	1,055,000	1,055,000	1,055,000
Total Noman Cole WWTP Sewage Flow	<u>14,104,516</u>	<u>14,193,311</u>	<u>14,280,981</u>	<u>14,367,528</u>	<u>14,452,951</u>	<u>14,537,249</u>
City of Fairfax Share of Sewage Flows, MG/Year	7.48%	7.43%	7.39%	7.34%	7.30%	7.26%

Footnotes Continued on Next Page.

Table 5
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Historical and Projected Sales of Service (Bulk Sales) and Other Revenue

Allocated O&M Cost to City of Fairfax	\$ 1,893,230	\$ 1,941,204	\$ 1,990,935	\$ 2,042,495	\$ 2,096,315	\$ 2,152,140
Plus: Overhead Calculated at 9.5% of	179,857	184,414	189,139	194,037	199,150	204,453
Subtotal Allocated O&M Cost to City of Fairfax	\$ 2,073,087	\$ 2,125,618	\$ 2,180,073	\$ 2,236,532	\$ 2,295,465	\$ 2,356,593
City of Fairfax Share of Pender SPS O&M Costs	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
City of Fairfax Share of Noman Cole	0	0	0	0	0	0
Subtotal Allocated Pender O&M Cost	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Sales of Services Allocated to	\$ 2,073,087	\$ 2,125,618	\$ 2,180,073	\$ 2,236,532	\$ 2,295,465	\$ 2,356,593
Adjustments for Accruals/True-Up	0	0	0	0	0	0
Revenue for the City of Fairfax	\$ 2,073,087	\$ 2,125,618	\$ 2,180,073	\$ 2,236,532	\$ 2,295,465	\$ 2,356,593

- [3] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Town of Herndon:						
Sewage Flows, Kg/Year	900,000	900,000	900,000	900,000	900,000	900,000
Rate Charged per Kg of Flow	\$ 3.80	\$ 3.80	\$ 3.80	\$ 3.80	\$ 3.80	\$ 3.80
Total Sales of Services Receivables	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Revenue for the Town of Herndon	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000	\$ 3,420,000

- [4] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

Arlington County:						
Sewage Flows, MG/Year						
Arlington County Allocated	483,000	483,000	483,000	483,000	483,000	483,000
Total Blue Plains WWTP Sewage Flow	10,330,123	10,394,500	10,458,063	10,520,811	10,582,744	10,643,862
County of Arlington Share of Sewage Flows, MG/Year	4.68%	4.65%	4.62%	4.59%	4.56%	4.54%
1. Blue Plains O&M Payments (IMA)						
Fairfax Co. Payments of O&M to Blue Plains (Accrued)	\$ 12,749,470	\$ 13,133,452	\$ 13,528,956	\$ 13,936,325	\$ 14,355,915	\$ 14,788,093
Arlington County Share of Payments [a]	4.68%	4.65%	4.62%	4.59%	4.56%	4.54%
Blue Plains O&M Payments (IMA)	\$ 596,120	\$ 610,271	\$ 624,828	\$ 639,803	\$ 655,209	\$ 671,058
2. Blue Plains User Fee Payments (IMA)						
Fairfax County Payments (Accrued)	\$ 347,519	\$ 357,945	\$ 368,683	\$ 379,743	\$ 391,135	\$ 402,869
Arlington County Share of Payments [a]	5.81%	5.81%	5.81%	5.81%	5.81%	5.81%
Blue Plains User Fee Payments (IMA)	\$ 20,179	\$ 20,784	\$ 21,407	\$ 22,050	\$ 22,711	\$ 23,392
3. Pimmit Run Trunk and Meter O&M Costs						
Fairfax County Payments (Accrued)	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
Arlington County Share of Payments [a]	17.00%	17.00%	17.00%	17.00%	17.00%	17.00%
Blue Plains O&M Payments (IMA)	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500
Total Sales of Services Receivables	\$ 624,799	\$ 639,554	\$ 654,735	\$ 670,352	\$ 686,420	\$ 702,950
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Revenue for Arlington County	\$ 624,799	\$ 639,554	\$ 654,735	\$ 670,352	\$ 686,420	\$ 702,950

[a] Based on sewage flows and/or capacity allocations.

Footnotes Continued on Next Page.

Table 5
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Historical and Projected Sales of Service (Bulk Sales) and Other Revenue

- [5] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Fort Belvoir:						
Sewage Flows, Kg/Year	396,000	396,000	396,000	396,000	396,000	396,000
Rate Charged per Kg of Flow	\$ 5.38	\$ 5.38	\$ 5.38	\$ 5.38	\$ 5.38	\$ 5.38
Total Sales of Services Receivables	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Revenue for Fort Belvoir	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480	\$ 2,130,480

- [6] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
City of Falls Church:						
ARenew WWTP O&M Costs	\$ 13,594,935	\$ 14,552,097	\$ 15,187,627	\$ 15,748,658	\$ 16,308,384	\$ 16,888,288
Sewage Flows, MG/Day						
City of Falls Church Flows	342,000	342,000	342,000	342,000	342,000	342,000
Total Flows Sent to ARenew	6,690,840	6,736,577	6,781,735	6,826,315	6,870,315	6,913,737
City of Falls Church Allocation	5.11%	5.08%	5.04%	5.01%	4.98%	4.95%
Allocated O&M Cost to City of Falls	\$ 694,900	\$ 738,775	\$ 765,906	\$ 789,012	\$ 811,821	\$ 835,409
Plus: Sisters	134	134	134	134	134	134
Plus: Tinnors Hill	1,464	1,464	1,464	1,464	1,464	1,464
Plus: Capital Payments	0	0	0	0	0	0
Plus: Falls Church Share of ASA Upgrade Costs	328,311	328,311	328,311	328,311	328,311	328,311
Plus: Westgate	0	0	0	0	0	0
Total Sales of Services Allocated to	\$ 1,024,809	\$ 1,068,684	\$ 1,095,814	\$ 1,118,920	\$ 1,141,730	\$ 1,165,317
Adjustments for Accruals/True-Up	0	0	0	0	0	0
Revenue for the City of Falls Church	\$ 1,024,809	\$ 1,068,684	\$ 1,095,814	\$ 1,118,920	\$ 1,141,730	\$ 1,165,317

- [7] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Town of Vienna						
Payment Number 1	\$ 104,511	\$ 104,511	\$ 104,511	\$ 104,511	\$ 104,511	\$ 104,511
Payment Number 2	\$ 25,310,995	\$ 26,115,741	\$ 26,950,235	\$ 27,815,736	\$ 28,718,425	\$ 29,655,163
Sewage Flows, MG/Year						
Town of Vienna Sewage Flow	288,000	288,000	288,000	288,000	288,000	288,000
Total Noman Cole Sewage Flow	14,104,516	14,193,311	14,280,981	14,367,528	14,452,951	14,537,249
Town of Vienna Allocation	2.04%	2.03%	2.02%	2.00%	1.99%	1.98%
Allocated O&M Cost to Town of	\$ 516,825	\$ 529,921	\$ 543,497	\$ 557,572	\$ 572,264	\$ 587,504
Plus: Overhead Calculated at 4.0% of	20,673	21,197	21,740	22,303	22,891	23,500
Subtotal Allocated Noman Cole O&M Costs	\$ 537,498	\$ 551,118	\$ 565,237	\$ 579,875	\$ 595,155	\$ 611,004

B. O&M Allocated Expenses: i) Great Falls and ii) Nutley Street & Vienna Woods (Lower Potomac) Flow Meters

Footnotes Continued on Next Page.

Table 5
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Historical and Projected Sales of Service (Bulk Sales) and Other Revenue

1. Great Falls Meter	\$	3,000	\$	3,030	\$	3,060	\$	3,091	\$	3,122	\$	3,153
Town of Vienna Flow Thru Meters, MG/Year		284		284		284		284		284		284
Total Flow Thru Meters, MG/Year		3,808		3,808		3,808		3,808		3,808		3,808
Town of Vienna Share		7.47%		7.47%		7.47%		7.47%		7.47%		7.47%
Allocated Great Falls Meter Cost to City of Fairfax (Costs * City Share of Low)	\$	-	\$	226	\$	229	\$	231	\$	233	\$	235
2. Nutley St. & Vienna Woods	\$	3,700	\$	3,737	\$	3,774	\$	3,812	\$	3,850	\$	3,889
Town of Vienna Flow Thru Meters, MG/Year		316		316		316		316		316		316
Total Flow Thru Meters, MG/Year		316		316		316		316		316		316
Town of Vienna Share		100.00%		100.00%		100.00%		100.00%		100.00%		100.00%
Allocated Nutley St. & Vienna Woods Cost to City of Fairfax	\$	3,700	\$	3,737	\$	3,774	\$	3,812	\$	3,850	\$	3,889
Subtotal Cost Allocated to Town of Vienna (Sum of 1 and 2)	\$	3,700	\$	3,963	\$	4,003	\$	4,043	\$	4,083	\$	4,124
3. Overhead Calculated at 4.0% of Allocated Cost	\$	148	\$	159	\$	160	\$	162	\$	163	\$	165
Subtotal Cost Allocated to Town of Vienna (Including Overhead)	\$	3,848	\$	4,122	\$	4,163	\$	4,205	\$	4,247	\$	4,289

Projected Fiscal Year Ending June 30,

	2016	2017	2018	2019	2020	2021
C. O&M Allocated Expenses, Trunk Sewers "B" and "C" Section "B"	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Section "C"	0	0	0	0	0	0
Subtotal Payment Number 2	\$ 541,346	\$ 555,240	\$ 569,400	\$ 584,080	\$ 599,401	\$ 615,293
Total Sales of Services Alloc. to the Town of Vienna	\$ 645,857	\$ 659,751	\$ 673,911	\$ 688,591	\$ 703,912	\$ 719,804
Adjustments for Accruals/True-Up Revenue for the Town of Vienna	0	0	0	0	0	0
	<u>\$ 645,857</u>	<u>\$ 659,751</u>	<u>\$ 673,911</u>	<u>\$ 688,591</u>	<u>\$ 703,912</u>	<u>\$ 719,804</u>

[8] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	2016	2017	2018	2019	2020	2021
FCWA:						
Sewage Flows, Kgal/Year	19,000	19,000	19,000	19,000	19,000	19,000
Rate Charged per Kgal of Flow	\$ 6.64	\$ 6.67	\$ 6.73	\$ 6.80	\$ 6.82	\$ 6.82
Total Sales of Services Receivables	\$ 126,208	\$ 126,778	\$ 127,918	\$ 129,248	\$ 129,580	\$ 129,580
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Revenue for Fairfax Water	<u>\$ 126,208</u>	<u>\$ 126,778</u>	<u>\$ 127,918</u>	<u>\$ 129,248</u>	<u>\$ 129,580</u>	<u>\$ 129,580</u>

Footnotes Continued on Next Page.

Table 5
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Historical and Projected Sales of Service (Bulk Sales) and Other Revenue

[9] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
I-95 ERRF (Covanta):						
Sewage Flows, Kg/Year	57,000	57,000	57,000	57,000	57,000	57,000
Rate Charged per Kg of Flow	\$ 6.64	\$ 6.67	\$ 6.73	\$ 6.80	\$ 6.82	\$ 6.82
Total Sales of Services Receivables	\$ 378,623	\$ 380,333	\$ 383,753	\$ 387,743	\$ 388,740	\$ 388,740
WCD Expenses	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Revenue for Covanta	\$ 378,623	\$ 380,333	\$ 383,753	\$ 387,743	\$ 388,740	\$ 388,740

[10] Amounts calculated from: i) assumptions as contained on the respective agreement; ii) review of historical invoices as provided by the County; iii) other information as provided by the County. Amounts derived from the following table:

	Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021
Loudoun County Sanitation Authority:						
1. UOSA O&M Payments Billed to Fairfax Co.						
Fairfax Co. Paym. of O&M to UOSA (Accrued)	\$ 11,915,009	\$ 12,261,898	\$ 12,543,921	\$ 12,832,432	\$ 13,140,410	\$ 13,455,780
LCSA Share of Payments [a]	0.64%	0.64%	0.64%	0.64%	0.64%	0.64%
UOSA O&M Payments Allocated to LCSA	\$ 76,039	\$ 78,420	\$ 80,224	\$ 82,069	\$ 84,039	\$ 86,056
2. UOSA Reserve Maintenance Billed to Fairfax Co.						
Fairfax County Payments (Accrued)	\$ 1,707,558	\$ 1,758,784	\$ 1,811,548	\$ 1,865,894	\$ 1,921,871	\$ 1,979,527
LCSA Share of Payments [a]	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%
UOSA R&M Payments Allocated to LCSA	\$ 75,556	\$ 77,822	\$ 80,157	\$ 82,562	\$ 85,039	\$ 87,590
Total Sales of Services Allocated to LCSA	\$ 151,595	\$ 156,243	\$ 160,381	\$ 164,631	\$ 169,077	\$ 173,645
Adjustments:						
Current Period Accrual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Previous Period Accrual	0	0	0	0	0	0
Adjusted Total Sales of Service Revenue for LCSA	\$ 151,595	\$ 156,243	\$ 160,381	\$ 164,631	\$ 169,077	\$ 173,645

[a] Based on sewage flows and/or capacity allocations.

[11] Amounts shown considered as a Non-recurring Revenue pursuant to the General Bond Resolution.

Table 6
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Development of Wastewater System Revenue Requirements and Revenue Sufficiency

Line No.	Description	Projected Fiscal Year Ending June 30,					
		2016	2017	2018	2019	2020	2021
1	Total Operating Expenses (Including TBC) [1]	\$ 100,523,155	\$ 104,021,444	\$ 107,658,997	\$ 110,974,091	\$ 114,336,224	\$ 117,849,907
	Debt Service [2]						
	Senior Debt Service						
2	Existing Debt	\$ 21,069,509	\$ 21,118,562	\$ 21,143,843	\$ 21,185,939	\$ 21,207,197	\$ 21,231,709
3	Proposed Debt [3]	0	7,593,019	7,593,019	15,413,528	15,413,527	20,244,316
4	Subtotal - Senior Debt Service	\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
	Subordinate Debt Service						
5	Existing Debt [4]	\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
6	Proposed Debt [5]	0	0	0	0	0	0
7	Subtotal - Subordinate Debt Service	\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
8	Total Debt Service	\$ 47,461,731	\$ 55,122,372	\$ 55,154,954	\$ 63,029,190	\$ 62,715,668	\$ 66,881,935
	Other Revenue Requirements						
9	Transfer to Capital - Subfund C69300 (Programmed)	\$ 39,866,869	\$ 41,547,039	\$ 43,786,601	\$ 45,923,517	\$ 48,347,279	\$ 51,152,820
10	Transfer to Capital - Subfund C69300 (Additional)	23,272,067	16,573,440	17,518,380	11,362,523	15,165,513	14,251,538
11	Transfer to Extension - Subfund 69300A	2,917,750	2,917,157	2,916,571	2,915,993	2,915,423	2,914,860
12	Transfer to Reserves - Fund 69000	0	1,437,653	1,494,885	1,362,367	1,381,698	1,443,979
13	Capital Improvements Funded from Rates	2,324,677	2,394,418	2,466,250	2,540,238	2,616,445	2,694,938
14	Total Other Revenue Requirements	\$ 68,381,363	\$ 64,869,707	\$ 68,182,687	\$ 64,104,638	\$ 70,426,358	\$ 72,458,135
15	Gross Revenue Requirements	\$ 216,366,250	\$ 224,013,523	\$ 230,996,639	\$ 238,107,920	\$ 247,478,250	\$ 257,189,977
	Less Income and Funds from Other Sources:						
16	Sales of Service (Bulk Revenue) [6]	\$ 10,252,486	\$ 10,376,045	\$ 10,487,180	\$ 10,597,810	\$ 10,707,530	\$ 10,819,706
17	Other Operating Revenues [7]	250,000	250,000	250,000	250,000	250,000	250,000
18	Unrestricted Interest Income [8]	641,000	773,000	957,000	1,139,000	1,270,000	1,392,000
19	Transfers from Reserves - Fund 69000	0	0	0	0	0	0
20	Availability Fees Used to Pay Debt	18,787,661	18,536,028	18,301,394	18,066,761	17,832,128	17,597,495
21	Subtotal Other Operating Revenues	\$ 29,931,147	\$ 29,935,073	\$ 29,995,574	\$ 30,053,571	\$ 30,059,658	\$ 30,059,200
22	Net Revenue Requirements	\$ 186,435,103	\$ 194,078,450	\$ 201,001,064	\$ 208,054,349	\$ 217,418,592	\$ 227,130,776
	Revenues from Proposed Sewer Service Charges:						
23	Proposed Rate Adjustments	N/A	3.6%	3.1%	3.0%	4.0%	4.0%
24	Rate Revenues Under Proposed Rates	\$ 186,435,103	\$ 194,078,450	\$ 201,001,064	\$ 208,054,350	\$ 217,418,592	\$ 227,130,776
25	Rate Revenue Surplus/(Deficiency)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

Footnotes:

- [1] Amounts shown derived from information as contained on Table 3.
- [2] The total Outstanding Senior Lien Debt Service represents the debt service only for the Senior Lien Bonds currently Outstanding (Sewer Revenue Bonds, Series 2009 (the "Series 2009 Bonds"), the Sewer Revenue Bonds, Series 2012 (the "Series 2012 Bonds") and the Sewer Revenue Refunding Bonds, Series 2014 (the "Series 2014 Bonds")).
- [3] The following table summarizes the assumptions utilized for additional Senior Lien Debt:
- | | Series 2017 Bonds | Series 2019 Bonds | Series 2021 Bonds |
|-------------------------------------|-------------------|-------------------|-------------------|
| Term-Years | 30 | 30 | 30 |
| Interest Rate | 5.50% | 5.75% | 6.00% |
| Issue Month - Principal Pmt (Jan=1) | 7/1/2016 | 7/1/2018 | 7/1/2020 |
| Total Projects Funded (Millions) | \$ 100.0 | \$ 100.0 | \$ 60.0 |
| Total Principal Issued (Millions) | \$ 110.4 | \$ 110.6 | \$ 66.5 |
| Annual Debt Service (Millions) | \$ 7.6 | \$ 7.8 | \$ 4.8 |
- [4] Amount shown includes debt service associated with outstanding VRA Loan 2001 C-515259-01, VRA Loan 2002 C-515273-01 and various outstanding UOSA debt issues.
- [5] Based on discussions with WMP staff, the County does not anticipate participating in any debt issuances by UOSA during the Forecast Period.
- [6] Amounts shown derived from information as contained on Table 5.
- [7] Other Revenues includes revenues derived from: miscellaneous revenue, pretreatment changes and the sale of property. Amount shown include Non-Recurring Revenues from growth related miscellaneous charges.
- [8] Amounts shown derived from information as contained on Table 9.

Table 7
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projected Operating Results and Debt Service Coverage Analysis

Line No.	Description	Projected Fiscal Year Ending June 30,					
		2016	2017	2018	2019	2020	2021
Operating Revenues: [1]							
1	Sewer Service Charges (Retail Customers)	\$ 186,435,103	\$ 194,078,450	\$ 201,001,064	\$ 208,054,350	\$ 217,418,592	\$ 227,130,776
2	Sales of Service (Bulk revenue)	10,252,486	10,376,045	10,487,180	10,597,810	10,707,530	10,819,706
3	Other Revenues [2]	250,000	250,000	250,000	250,000	250,000	250,000
4	Interest Income	641,000	773,000	957,000	1,139,000	1,270,000	1,392,000
5	Other	0	0	0	0	0	0
6	Total Operating Revenues Before Availability Charges	\$ 197,578,589	\$ 205,477,496	\$ 212,695,244	\$ 220,041,159	\$ 229,646,122	\$ 239,592,482
Operating Expenses: [3]							
7	Total Operating Expenses	\$ 100,523,155	\$ 104,021,444	\$ 107,658,997	\$ 110,974,091	\$ 114,336,224	\$ 117,849,907
8	Net Operating Revenues	\$ 97,055,434	\$ 101,456,051	\$ 105,036,247	\$ 109,067,068	\$ 115,309,898	\$ 121,742,575
Non-Recurring Revenues and Revenue Subfund Credit: [4]							
9	Availability Charge Revenues [5]	\$ 18,770,661	\$ 18,536,028	\$ 18,301,394	\$ 18,066,761	\$ 17,832,128	\$ 17,597,495
10	Availability Charge Interest Income [5]	17,000	0	0	0	0	0
11	Other Non-recurring Revenues [6]	82,250	82,843	83,429	84,007	84,577	85,140
12	Moneys Held to Credit of Revenue Subfund [7]	0	0	0	0	0	0
13	Net Revenues [8]	\$ 115,925,345	\$ 120,074,922	\$ 123,421,070	\$ 127,217,836	\$ 133,226,604	\$ 139,425,210
<u>Rate Covenant Test [9]</u>							
TEST 1 - Net Revenue Less Excluded Revenues							
14	Net Revenues [8]	\$ 115,925,345	\$ 120,074,922	\$ 123,421,070	\$ 127,217,836	\$ 133,226,604	\$ 139,425,210
Less: Excluded Revenues [4]:							
15	Availability Charge Revenues	\$ (18,770,661)	\$ (18,536,028)	\$ (18,301,394)	\$ (18,066,761)	\$ (17,832,128)	\$ (17,597,495)
16	Availability Charge Interest Earned	(17,000)	0	0	0	0	0
17	Other Non-recurring Revenues [6]	250,000	250,000	250,000	250,000	250,000	250,000
18	Net Revenues Available Less Excluded Revenues	\$ 97,387,684	\$ 101,788,894	\$ 105,369,675	\$ 109,401,075	\$ 115,644,476	\$ 122,077,715
Debt Service Requirements:							
Principal and Interest Requirements [10]							
19	Sewer Revenue Bonds Series 2004	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
20	Sewer Revenue Bonds Series 2009	9,725,629	9,725,702	9,731,775	9,735,213	9,739,493	9,744,546
21	Sewer Revenue Bonds Series 2012	5,593,067	5,593,016	5,598,350	5,600,038	5,601,808	5,603,840
22	Sewer Revenue Refunding Bonds, Series 2014	5,750,813	5,799,844	5,813,718	5,850,688	5,865,896	5,883,323
23	Series 2017 Bonds [11]	0	7,593,019	7,593,019	7,593,019	7,593,018	7,593,019
24	Series 2019 Bonds [11]	0	0	0	7,820,509	7,820,509	7,820,508
25	Series 2021 Bonds [11]	0	0	0	0	0	4,830,789
26	Total Debt Service Requirements	\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
27	Calculated Coverage	4.62	3.55	3.67	2.99	3.16	2.94
28	Required Coverage	1.25	1.25	1.25	1.25	1.25	1.25
29	Policy Target	2.00	2.00	2.00	2.00	2.00	2.00
-AND-							
TEST 2 - Net Revenues With Excluded Revenues							
30	Net Revenues [8]	\$ 115,925,345	\$ 120,074,922	\$ 123,421,070	\$ 127,217,836	\$ 133,226,604	\$ 139,425,210
Debt Service Requirements:							
Subordinate Obligations [12]:							
31	VRA/VRLF 2001 C-515259-01	\$ 2,791,078	\$ 2,791,078	\$ 2,791,078	\$ 2,791,079	\$ 2,791,079	\$ 1,628,129
32	VRA/VRLF 2002 C-515273-01	3,412,198	3,412,199	3,412,199	3,412,198	3,412,199	3,412,199
33	Subtotal VRA Debt Service	\$ 6,203,276	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,278	\$ 5,040,328
UOSA Subordinate Debt							
34	UOSA Existing Subordinate Debt	\$ 20,188,946	\$ 20,207,514	\$ 20,214,815	\$ 20,226,446	\$ 19,891,666	\$ 20,365,582
35	Subtotal UOSA Debt Service	\$ 20,188,946	\$ 20,207,514	\$ 20,214,815	\$ 20,226,446	\$ 19,891,666	\$ 20,365,582
36	Total Subordinate Obligations	\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
37	Principal and Interest Requirements [10]	\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
38	Total Debt Service Requirements	\$ 47,461,731	\$ 55,122,372	\$ 55,154,954	\$ 63,029,190	\$ 62,715,668	\$ 66,881,935

Continued to Following Page / Footnotes on Page 2 of 2.

Table 7
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projected Operating Results and Debt Service Coverage Analysis

TEST 2 - Net Revenues With Excluded Revenues (continued from prior page)

39	Calculated Coverage	2.44	2.18	2.24	2.02	2.12	2.08
40	Required Minimum Coverage	1.00	1.00	1.00	1.00	1.00	1.00
41	Min. Recommended Target for Test 2 - 1.50	1.50	1.50	1.50	1.50	1.50	1.50
42	Net Revenues [8]	\$ 115,925,345	\$ 120,074,922	\$ 123,421,070	\$ 127,217,836	\$ 133,226,604	\$ 139,425,210
	Less Transfers to Other Funds [13]:						
43	Debt Service Subfund [14]	\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
44	Subordinate Obligations Subfund [15]	26,392,222	26,410,791	26,418,092	26,429,723	26,094,944	25,405,910
45	Amount Available for Other Purposes	<u>\$ 68,463,614</u>	<u>\$ 64,952,550</u>	<u>\$ 68,266,116</u>	<u>\$ 64,188,646</u>	<u>\$ 70,510,936</u>	<u>\$ 72,543,275</u>

Footnotes:

[1] Operating Revenues reflect rates recently adopted by the Board of Supervisors pursuant to the Rate Ordinance.

	Projected Fiscal Year Ending June 30,					
	2016 (Existing)	2017 (Adopted)	2018 (Adopted)	2019 (Adopted)	2020 (Identified)	2021 (Identified)
Recommended Rates						
Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 30.38	\$ 33.42	\$ 36.76
Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.85	\$ 7.05	\$ 7.21
Effective Rate Revenue Adjustment (%)		3.6%	3.1%	3.0%	4.0%	4.0%

[2] Amounts shown include other miscellaneous revenues of the System (customer service fees, sale of property, etc.); amounts do not include Non-Recurring Revenues associated with lateral spur fees and connection charges.

[3] Amounts include the Operating Component of the Cost of Contracted Services, i.e., treatment by contract (TbCs) costs. Amounts shown do not include depreciation and amortization expenses, which are non-cash expenses and are not considered Operating Expenses as defined in the General Bond Resolution.

[4] The sum of the amounts shown for Non-recurring Revenue and the Revenue Subfund credit balance is defined in the General Bond Resolution as the "Excluded Revenues".

[5] Amounts shown represent fees charged to new development and interest income earned on the balance of deposits from such fees for the allocable share of conveyance, treatment and disposal capacity constructed by the County for the benefit of such development.

[6] Amounts shown include lateral spur fees, connection charges for meter replacement and other similar charges which are considered as a Non-recurring Revenues in the General Bond Resolution (represents a one-time charge generally to new development to initiate or receive service).

[7] Pursuant to the General Bond Resolution, Net Revenues shall include income previously received and currently held by the County to the credit of the Revenue Subfund and all rights to receive the same (cash and cash equivalents). For the purposes of this report, no recognition for the availability of funds held by the County in the Revenue Subfund has been assumed for purposes of determining Net Revenues as defined in the General Bond Resolution; such amounts were assumed to be available for ongoing System purposes (Operating Expenses and Capital Project Funding) exclusive of compliance with the rate covenant per the General Bond Resolution.

[8] Net Revenues as defined in the General Bond Resolution includes: i) Non-recurring Revenues (e.g., availability fee revenue and investment earnings on available balances, connection fees, reconnection fees, charges for meter replacements, etc.); and ii) income previously received and currently held by the County to the credit of the Revenue Subfund and all rights to receive the same.

[9] Rate Covenant requirements as defined in the General Bond Resolution under Article V, Section 501.

[10] Amounts shown reflect Debt Service Requirement on all Outstanding Bonds and Additional Parity Bonds assumed to be issued during the Forecast Period on parity with the Outstanding Bonds. Amounts shown reflect payments required to the Sinking Fund (accrual basis) and not when such Bonds are paid.

[11] The financial forecast assumes the issuance of additional parity bonds during the Fiscal Years 2017, 2019 and 2021 to fund certain improvements to the System. The terms of the debt assume: i) level annual debt service payments over a 30 year repayment period; ii) interest rate of ranging from 5.5% - 6.0%; iii) debt service reserve funded from the debt proceeds; and iii) issuance costs equal to 2.5% of the principal amount of bonds.

[12] Subordinate Obligations as defined in the General Bond Resolution includes any Debt Service Component of the Cost of Contracted Services (for the UOSA debt obligation) (other than Parity Debt Service Components) and any other obligations of the County with respect to the System (VRA obligations).

[13] Amounts shown reflect transfers to other subfunds as delineated in the General Bond Resolution.

[14] Amounts shown reflect transfers to the Debt Service Subfund associated with the payment of the Principal and Interest Requirements on the Outstanding and Additional Parity Bonds based on the deposit requirements delineated in the General Bond Resolution (on an accrual basis and not when the payments are made). Also included in the recognized deposits would be funds required to pay Parity Indebtedness, if any, which are required to be set aside in a special account in the Debt Service Subfund.

[15] Amounts shown reflect transfers to the Subordinate Obligations Subfund associated with the payment of debt on any loans considered subordinate to the Senior Lien Bonds and the Parity Indebtedness.

Table 8
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Summary of Debt Service Payments - Outstanding and Additional Debt [1]

Line No.	Description	Projected Fiscal Year Ending June 30,					
		2016	2017	2018	2019	2020	2021
Outstanding Senior Lien Debt Service:							
1	Sewer Revenue Bonds Series 2009	\$ 9,725,629	\$ 9,725,702	\$ 9,731,775	\$ 9,735,213	\$ 9,739,493	\$ 9,744,546
2	Sewer Revenue Bonds Series 2012	5,593,067	5,593,016	5,598,350	5,600,038	5,601,808	5,603,840
3	Sewer Revenue Bonds Series 2014	5,750,813	5,799,844	5,813,718	5,850,688	5,865,896	5,883,323
4	Subtotal - Current Senior Lien Debt Service	\$ 21,069,509	\$ 21,118,562	\$ 21,143,843	\$ 21,185,939	\$ 21,207,197	\$ 21,231,709
Additional Senior Lien Debt Service:							
5	Series 2017 Bonds [2]	\$ 0	\$ 7,593,019	\$ 7,593,019	\$ 7,593,019	\$ 7,593,018	\$ 7,593,019
6	Series 2019 Bonds [2]	0	0	0	7,820,509	7,820,509	7,820,508
7	Series 2021 Bonds [2]	0	0	0	0	0	4,830,789
8	Subtotal - Additional Senior Debt Service	\$ 0	\$ 7,593,019	\$ 7,593,019	\$ 15,413,528	\$ 15,413,527	\$ 20,244,316
9	Total Senior Debt Service	\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
Outstanding Subordinate Debt Service:							
10	VRA/VRLF 2001 C-515259-01	\$ 2,791,078	\$ 2,791,078	\$ 2,791,078	\$ 2,791,079	\$ 2,791,079	\$ 1,628,129
11	VRA/VRLF 2002 C-515273-01	3,412,198	3,412,199	3,412,199	3,412,198	3,412,199	3,412,199
12	UOSA Existing Subordinate Debt [3]	20,188,946	20,207,514	20,214,815	20,226,446	19,891,666	20,365,582
13	Subtotal - Current Subordinate Debt Service	\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
Additional Subordinate Debt Service:							
14	Subtotal - Subordinate Debt Service	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
15	Total Subordinate Debt Service	\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
16	Total Debt Service (Senior Lien and Subordinate)	\$ 47,461,731	\$ 55,122,372	\$ 55,154,954	\$ 63,029,190	\$ 62,715,668	\$ 66,881,935

Footnotes:

- [1] Amounts are shown reflect deposits to the sinking fund for future debt service payments (i.e., accrued payments) and do not reflect actual debt service payments (i.e., cash basis)
- [2] The financial forecast assumes the issuance of additional parity bonds during the Fiscal Year 2017 and Fiscal Year 2019 to fund certain improvements to the System. The terms of the debt assume: i) level annual debt service payments over a 30 year repayment period; ii) interest rate of 5.5%; iii) debt service reserve funded from the debt proceeds; and iii) issuance costs equal to 2.5% of the principal amount of bonds.
- [3] Represents subordinated indebtedness issued by UOSA as a contractual wastewater treatment provider on behalf of the County.

Table 9
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projected Fund Balances and Interest Income Determination

Line No.	Description	Historical FY	Fiscal Year Ending June 30,					
		2015	2016	2017	2018	2019	2020	2021
ENDING FUND BALANCE SUMMARY								
1	Revenue and Operating Fund - 69000 / 69010	\$51,358,953	\$ 42,268,810	\$ 43,706,463	\$ 45,201,347	\$ 46,563,714	\$ 47,945,412	\$ 49,389,392
2	Availability Charge Funds - 69000A [1]	6,845,784	0	0	0	0	0	0
3	VRA Debt Service Reserve - 69000B	6,203,277	6,203,277	6,203,277	6,203,277	6,203,277	6,203,277	6,203,277
4	Sewer Construction Fund - 69300 [2]	42,663,165	26,467,127	40,102,024	32,013,255	34,998,533	19,306,770	20,406,066
5	Sewer Construction Subfund - 69300A [2]	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
6	Parity Debt Service Reserve - 69030	22,515,421	21,359,590	28,952,609	28,952,609	36,773,118	36,773,118	41,603,907
7	Sewer Bond Construction - 69310 (Exist Proceeds)	8,227,591	0	0	0	0	0	0
8	Sewer Bond Construction - 69310 (Add'l Proceeds)	0	0	40,000,000	0	40,000,000	0	0
9	Total Projected Ending Balance	\$142,814,192	\$ 101,298,805	\$ 163,964,373	\$ 117,370,489	\$ 169,538,643	\$ 115,228,578	\$ 122,602,642
Allocation of Ending Fund Balances:								
10	Existing Customers	\$126,171,804	\$ 92,004,576	\$ 150,889,382	\$ 104,297,623	\$ 152,918,363	\$ 98,610,263	\$ 102,741,859
11	New Customers (Includes DSR Allocation)	16,642,388	\$ 9,294,229	\$ 13,074,991	\$ 13,072,866	\$ 16,620,280	\$ 16,618,315	\$ 19,860,783
REVENUE AND OPERATING FUND - 69000 / 69010								
12	Beginning Balance		\$ 51,358,953	\$ 42,268,810	\$ 43,706,463	\$ 45,201,347	\$ 46,563,714	\$ 47,945,412
Transfers In:								
13	Operations		\$ 0	\$ 1,437,653	\$ 1,494,885	\$ 1,362,367	\$ 1,381,698	\$ 1,443,979
14	Debt Service Reserve - 69030		1,155,831	0	0	0	0	0
15	VRA Debt Service Reserve - 69000B		0	0	0	0	0	0
16	Subtotal		\$ 1,155,831	\$ 1,437,653	\$ 1,494,885	\$ 1,362,367	\$ 1,381,698	\$ 1,443,979
Transfers Out:								
17	Operations		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
18	Debt Service Reserve - 69030		0	0	0	0	0	0
19	Sewer Construction Fund 69300		10,245,974	0	0	0	0	0
20	CIP		0	0	0	0	0	0
21	Subtotal		\$ 10,245,974	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
22	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
23	Interest Income		\$ 234,000	\$ 258,000	\$ 311,000	\$ 367,000	\$ 425,000	\$ 487,000
24	Recognition Of Interest in Revenue Requirements	Yes	234,000	258,000	311,000	367,000	425,000	487,000
25	Ending Balance (Excl. New Customer Share)		\$ 42,268,810	\$ 43,706,463	\$ 45,201,347	\$ 46,563,714	\$ 47,945,412	\$ 49,389,392
AVAILABILITY CHARGE FUNDS - 69000A [1]								
26	Beginning Balance		\$ 6,845,784	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
27	Transfer In - Availability Charges Collections		\$ 18,770,661	\$ 18,536,028	\$ 18,301,394	\$ 18,066,761	\$ 17,832,128	\$ 17,597,495
28	Transfer In - Sale of Capacity / Other Contributions		0	0	0	0	0	0
Transfers Out:								
29	Debt Service		\$ 18,787,661	\$ 18,536,028	\$ 18,301,394	\$ 18,066,761	\$ 17,832,128	\$ 17,597,495
30	CIP		6,845,784	-	-	-	-	-
31	Total Transfers Out		\$ 25,633,445	\$ 18,536,028	\$ 18,301,394	\$ 18,066,761	\$ 17,832,128	\$ 17,597,495
32	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
33	Interest Income		\$ 17,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
34	Recognition Of Interest in Revenue Requirements	No	0	0	0	0	0	0
35	Ending Balance (Availability Charges Fund)		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
VRA DEBT SERVICE RESERVE - FUND 69000B								
36	Beginning Balance		\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277
Revenues / Transfers In								
37	New Debt		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Expenditures / Transfers Out								
38	Operating Reserves - Fund 69000		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Debt Retirement 2022								
39	Interest Rate	Med. Term	0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
40	Interest Income		\$ 31,000	\$ 37,000	\$ 43,000	\$ 50,000	\$ 56,000	\$ 62,000
41	Recognition of Interest in Revenue Requirements	Yes	31,000	37,000	43,000	50,000	56,000	62,000
42	Ending Balance		\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277	\$ 6,203,277

Footnotes on Page 3 of 3.

Table 9
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projected Fund Balances and Interest Income Determination

Line No.	Description	Historical FY 2015	Fiscal Year Ending June 30,					
			2016	2017	2018	2019	2020	2021
SEWER CONSTRUCTION FUND 69300 [2]								
Renewals and Replacements - Fund 69300								
43	Beginning Balance		\$ 42,663,165	\$ 26,467,127	\$ 40,102,024	\$ 32,013,255	\$ 34,998,533	\$ 19,306,770
Revenues / Transfers In:								
44	Transfers In From Operations		\$ 63,138,936	\$ 58,120,479	\$ 61,304,981	\$ 57,286,040	\$ 63,512,792	\$ 65,404,358
45	Transfers In From Revenue Fund 69000		10,245,974	0	0	0	0	0
46	Total Transfers In		\$ 73,384,910	\$ 58,120,479	\$ 61,304,981	\$ 57,286,040	\$ 63,512,792	\$ 65,404,358
Expenditures / Transfers Out								
47	Transfers Out Capital Expenditures [3]		\$ 89,580,948	\$ 44,485,582	\$ 69,393,750	\$ 54,300,762	\$ 79,204,555	\$ 64,305,062
48	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
49	Interest Income		\$ 173,000	\$ 200,000	\$ 252,000	\$ 268,000	\$ 244,000	\$ 199,000
50	Recognition Of Interest in Revenue Requirements	Yes	173,000	200,000	252,000	268,000	244,000	199,000
51	Ending Balance Fund 69300		\$ 26,467,127	\$ 40,102,024	\$ 32,013,255	\$ 34,998,533	\$ 19,306,770	\$ 20,406,066
Service Line Extensions - Subfund 69300A								
52	Beginning Balance		\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000
Revenues / Transfers In								
53	Transfers In From Operations		\$ 2,917,750	\$ 2,917,157	\$ 2,916,571	\$ 2,915,993	\$ 2,915,423	\$ 2,914,860
54	Non-Recurring Revenues [4]		82,250	82,843	83,429	84,007	84,577	85,140
55	Total Transfers In		\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000
Expenditures / Transfers Out								
56	Transfers Out Capital Expenditures [3]		\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000
57	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
58	Interest Income		\$ 25,000	\$ 30,000	\$ 35,000	\$ 40,000	\$ 45,000	\$ 50,000
59	Recognition Of Interest in Revenue Requirements	Yes	25,000	30,000	35,000	40,000	45,000	50,000
60	Ending Balance Fund C69300A		\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000
SENIOR SINKING FUND - 69020								
61	Annual Senior Debt Service		\$ 21,069,509	\$ 28,711,581	\$ 28,736,862	\$ 36,599,467	\$ 36,620,724	\$ 41,476,025
62	Average Balance		\$ 7,023,170	\$ 9,570,527	\$ 9,578,954	\$ 12,199,822	\$ 12,206,908	\$ 13,825,342
63	Interest Rate	Long Term	0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
64	Interest Income		35,000	57,000	67,000	98,000	110,000	138,000
65	Recognition Of Interest in Revenue Requirements	Yes	35,000	57,000	67,000	98,000	110,000	138,000
DEBT SERVICE RESERVE - FUND 69030								
66	Beginning Balance		\$ 22,515,421	\$ 21,359,590	\$ 28,952,609	\$ 28,952,609	\$ 36,773,118	\$ 36,773,118
Revenues / Transfers In								
67	Transfer In - Deficiency Below Reserve Requirement from Reserves		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
68	Transfer in New Debt Proceeds		0	7,593,019	0	7,820,509	0	4,830,789
Expenditures / Transfers Out								
69	Transfer Out - Excess Above Requirement to Reserves		\$ 1,155,831	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
70	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
71	Interest Income		\$ 110,000	\$ 151,000	\$ 203,000	\$ 263,000	\$ 331,000	\$ 392,000
72	Recognition Of Interest in Revenue Requirements	Yes	110,000	151,000	203,000	263,000	331,000	392,000
73	Ending Balance Fund C69030		\$ 21,359,590	\$ 28,952,609	\$ 28,952,609	\$ 36,773,118	\$ 36,773,118	\$ 41,603,907
SUBORDINATE DEBT SINKING FUND - 69040								
74	Annual Subordinate Debt Service		\$ 26,392,222	\$ 26,410,791	\$ 26,418,092	\$ 26,429,723	\$ 26,094,944	\$ 25,405,910
75	Average Balance		\$ 6,598,056	\$ 6,602,698	\$ 6,604,523	\$ 6,607,431	\$ 6,523,736	\$ 6,351,478
76	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
77	Interest Income		\$ 33,000	\$ 40,000	\$ 46,000	\$ 53,000	\$ 59,000	\$ 64,000
78	Recognition Of Interest in Revenue Requirements	Yes	33,000	40,000	46,000	53,000	59,000	64,000

Footnotes on Page 3 of 3.

Table 9
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Projected Fund Balances and Interest Income Determination

Line No.	Description	Historical FY 2015	Fiscal Year Ending June 30,					
			2016	2017	2018	2019	2020	2021
SEWER BOND CONSTRUCTION - FUND 69310 (Existing Proceeds)								
79	Beginning Balance		\$ 8,227,591	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Revenues / Transfers In								
80	Transfers In		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
81	Interest Income from Additional Debt Proceeds		0	120,000	140,000	159,000	179,000	0
Expenditures / Transfers Out								
82	Transfers Out - CIP		\$ 8,248,591	\$ 120,000	\$ 140,000	\$ 159,000	\$ 179,000	\$ 0
83	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
84	Interest Income		\$ 21,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
85	Recognition Of Interest in Revenue Requirements	No	0	0	0	0	0	0
86	Ending Balance Fund C69310		<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
SEWER BOND CONSTRUCTION - FUND 69310 (Additional Debt Proceeds)								
87	Total Beginning Balance		\$ 0	\$ 0	\$ 40,000,000	\$ 0	\$ 40,000,000	\$ 0
Transfers In - Additional Debt Proceeds								
88	Transfers In Series 2017 Bonds		\$ 0	\$ 100,000,000	\$ 0	\$ 0	\$ 0	\$ 0
89	Total Transfers Out CIP Funded From New Bonds		\$ 0	\$ 100,000,000	\$ 0	\$ 100,000,000	\$ 0	\$ 60,000,000
Transfers Out - CIP								
90	Series 2017 Bonds		\$ 0	\$ 60,000,000	\$ 40,000,000	\$ 0	\$ 0	\$ 0
91	Sweep Interest Income to Fund 69310		0	120,000	140,000	159,000	179,000	0
92	Total Transfers Out CIP Funded From New Bonds		\$ 0	\$ 60,120,000	\$ 40,140,000	\$ 60,159,000	\$ 40,179,000	\$ 60,000,000
93	Interest Rate		0.50%	0.60%	0.70%	0.80%	0.90%	1.00%
94	Interest Income		\$ 0	\$ 120,000	\$ 140,000	\$ 159,000	\$ 179,000	\$ 0
95	Recognition Of Interest in Revenue Requirements	No	0	0	0	0	0	0
96	Ending Balance Fund C69310B		<u>\$ 0</u>	<u>\$ 40,000,000</u>	<u>\$ 0</u>	<u>\$ 40,000,000</u>	<u>\$ 0</u>	<u>\$ 0</u>
97	TOTAL UNRESTRICTED INTEREST INCOME		<u>\$ 641,000</u>	<u>\$ 773,000</u>	<u>\$ 957,000</u>	<u>\$ 1,139,000</u>	<u>\$ 1,270,000</u>	<u>\$ 1,392,000</u>

Footnotes:

- [1] Fund C69000A will be used only to finance new customer capital projects. Fund C69000A includes new customer monies from Fund C69300.
- [2] Fund C69300 includes only existing customers. New customer portion funds are shown in Fund C69000A.
- [3] Capital Expenditures from Fund C69300 are cash funded projects for existing customers only.
- [4] Reflects the fees collected by the County prior to such users' first connection for the System for miscellaneous charges; includes: i) lateral spur fees, ii) connection charges; and iii) frontage fees. Excludes Service availability charges which are shown as part of Fund C69000A above.
- [5] Fund C69030 transfers out due to retirement of debt outstanding.

Table 10
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in \$000s)

Line No.	Project #	Description	Customer Allocation		Projected Fiscal Year Ending June 30,						Total Cost
			Existing	New	2016	2017	2018	2019	2020	2021	
<u>WASTEWATER TREATMENT DIVISION</u>											
<u>Incinerator Rehabilitation Program</u>											
1	IN1	Ash Conditioning System	58%	42%	\$ 360,512	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 360,512
2	IN2	Biosolids Program (Solids Stabilization and Disposal)	59%	41%	4,635,000	4,635,000	26,066,000	26,063,000	26,063,000	22,875,000	110,337,000
3		Subtotal Incinerator Rehabilitation Program	59%	41%	\$ 4,995,512	\$ 4,635,000	\$ 26,066,000	\$ 26,063,000	\$ 26,063,000	\$ 22,875,000	\$ 110,697,512
<u>Plant-wide Rehabilitation Program Total</u>											
4	PR3	Primary Process Rehabilitation	100%	0%	\$ 706,000	\$ 3,106,000	\$ 2,118,000	\$ 1,543,260	\$ 3,086,520	\$ 3,086,520	\$ 13,646,300
5		Subtotal Plant-wide Rehabilitation Program Total	100%	0%	\$ 706,000	\$ 3,106,000	\$ 2,118,000	\$ 1,543,260	\$ 3,086,520	\$ 3,086,520	\$ 13,646,300
<u>Electrical Reliability Program Total</u>											
6	EP1	MCC and DC Replacement	100%	0%	\$ 1,508,000	\$ 1,071,000	\$ 8,568,000	\$ 8,570,000	\$ 8,570,000	\$ 8,571,000	\$ 36,858,000
7	EP2	Backup Power Reliability Improvement	100%	0%	4,500,000	-	-	-	-	-	4,500,000
8	EP4	Scrubber MACT compliance	100%	0%	6,976,950	1,684,680	-	-	-	-	8,661,630
9	EP5	Interim Biosolids Project	100%	0%	-	-	2,865,000	6,268,950	2,565,000	-	11,698,950
10		Subtotal Electrical Reliability Program Total	100%	0%	\$ 12,984,950	\$ 2,755,680	\$ 11,433,000	\$ 14,838,950	\$ 11,135,000	\$ 8,571,000	\$ 61,718,580
<u>Preliminary/Primary Upgrade/Rehabilitation Program</u>											
11	PP3	Raw Wastewater Pumping (old "B & B2 Pump Station Rehabilitation")	100%	0%	\$ 650,000	\$ 2,613,000	\$ 2,692,800	\$ 1,224,000	\$ 7,962,000	\$ 10,689,000	\$ 25,830,800
12		Subtotal Preliminary/Primary Upgrade/Rehabilitation Program	100%	0%	\$ 650,000	\$ 2,613,000	\$ 2,692,800	\$ 1,224,000	\$ 7,962,000	\$ 10,689,000	\$ 25,830,800
<u>Disinfection Process Rehabilitation Program</u>											
13	DP1	Disinfection Rehabilitation	100%	0%	\$ 1,050,000	\$ 2,100,000	\$ 1,050,000	\$ 11,250,000	\$ 15,000,000	\$ 15,000,000	\$ 45,450,000
14	DP4	Non Process Building	100%	0%	471,000	1,413,000	2,160,360	2,882,520	720,120	4,263,420	11,910,420
15		Subtotal Disinfection Process Rehabilitation Program	100%	0%	\$ 1,521,000	\$ 3,513,000	\$ 3,210,360	\$ 14,132,520	\$ 15,720,120	\$ 19,263,420	\$ 57,360,420
<u>Other/Miscellaneous Upgrade/Rehabilitation Program</u>											
16	OT1	Miscellaneous Small Projects	100%	0%	\$ 2,600,000	\$ 1,900,000	\$ 1,900,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 12,400,000
17	OT3	Pohick Creek Stream Stabilization Project	100%	0%	250,000	1,250,000	-	-	-	-	1,500,000
18		Subtotal Other/Miscellaneous Upgrade/Rehabilitation Program	100%	0%	\$ 2,850,000	\$ 3,150,000	\$ 1,900,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 13,900,000
<u>Solids Processing Rehabilitation Program</u>											
19	SP1	Major Grit Removal Improvements	58%	42%	\$ 573,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 573,000
20		Subtotal Solids Processing Rehabilitation Program	58%	42%	\$ 573,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 573,000
<u>LOT Compliance Program</u>											
21	LU8	Phase 1 & 2 Filter Rehabilitation	59%	41%	\$ 840,000	\$ 540,000	\$ 5,361,000	\$ 9,488,000	\$ 7,426,000	\$ 2,559,000	\$ 26,214,000
22	LU9	Phase 3 Filter Rehabilitation - New Filter Building	59%	41%	-	-	1,542,000	2,313,000	2,947,800	2,948,820	9,751,620
23	LU10	ENR Package 6 - QQ Pond Rehabilitation	58%	42%	940,000	6,674,000	3,189,000	250,000	800,000	250,000	12,103,000
24		Subtotal LOT Compliance Program	59%	41%	\$ 1,780,000	\$ 7,214,000	\$ 10,092,000	\$ 12,051,000	\$ 11,173,800	\$ 5,757,820	\$ 48,068,620
25		Total Wastewater Treatment Division	80%	20%	\$ 26,060,462	\$ 26,986,680	\$ 57,512,160	\$ 71,852,730	\$ 77,140,440	\$ 72,242,760	\$ 331,795,232

Footnotes on Page 3 of 3.

Table 10
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in \$000s)

Line No.	Project #	Description	Customer Allocation		Projected Fiscal Year Ending June 30,						Total Cost
			Existing	New	2016	2017	2018	2019	2020	2021	
<u>TREATMENT BY CONTRACT</u>											
<u>ASA Program</u>											
26	TbC3	ASA Construction- Joint Projects	57%	43%	\$ 23,469,500	\$ 14,868,000	\$ 14,343,000	\$ 14,342,500	\$ 9,750,000	\$ 4,950,000	\$ 81,723,000
27		Subtotal ASA Program	57%	43%	\$ 23,469,500	\$ 14,868,000	\$ 14,343,000	\$ 14,342,500	\$ 9,750,000	\$ 4,950,000	\$ 81,723,000
<u>Blue Plains Program Total</u>											
28	TbC5	Blue Plains Liquid Processing	100%	0%	\$ 1,210,000	\$ 2,392,000	\$ 2,959,750	\$ 2,973,500	\$ 1,410,000	\$ 974,000	\$ 11,919,250
29	TbC6	Blue Plains Plantwide Projects	100%	0%	901,000	939,000	1,010,000	1,311,000	3,197,000	2,087,000	9,445,000
30	TbC7	Blue Plains Solids Processing	100%	0%	674,000	1,243,000	820,000	403,000	412,000	1,166,000	4,718,000
31	TbC8	Blue Plains Nitrogen Removal	100%	0%	9,672,250	5,489,250	4,388,250	499,000	333,000	80,000	20,461,750
32	TbC9	Blue Plains CSO	100%	0%	2,807,500	2,008,000	975,750	960,000	1,092,000	1,192,000	9,035,250
33	TbC10	Blue Plains Sanitary Sewers	100%	0%	402,000	231,000	1,892,000	2,734,000	338,000	1,000,000	6,597,000
34		Subtotal Blue Plains Program Total	100%	0%	\$ 15,666,750	\$ 12,302,250	\$ 12,045,750	\$ 8,880,500	\$ 6,782,000	\$ 6,499,000	\$ 62,176,250
<u>Arlington Program</u>											
35	TbC12	Arlington Process Upgrades	68%	32%	\$ 1,474,000	\$ 576,000	\$ 1,358,000	\$ 1,030,000	\$ 548,000	\$ 306,000	\$ 5,292,000
36		Subtotal Arlington Program	68%	32%	\$ 1,474,000	\$ 576,000	\$ 1,358,000	\$ 1,030,000	\$ 548,000	\$ 306,000	\$ 5,292,000
<u>UOSA Projects Place Holder [*]</u>											
37	TbC14	FY 16 Capital Contribution	57%	43%	\$ 16,000,000	\$ -	\$ 10,000,000	\$ -	\$ -	\$ -	\$ 26,000,000
38	TbC15	Project 54	57%	43%	-	-	-	553,600	1,790,300	1,563,900	3,907,800
39	TbC16	Reserve and Maintenance	57%	43%	-	-	-	6,888,800	5,511,900	1,929,400	14,330,100
40	TbC18	Nutrient Cap	57%	43%	-	-	-	5,089,200	5,089,200	5,085,000	15,263,400
41		Subtotal UOSA Projects Place Holder	57%	43%	\$ 16,000,000	\$ -	\$ 10,000,000	\$ 12,531,600	\$ 12,391,400	\$ 8,578,300	\$ 59,501,300
42		Total Treatment By Contract	70%	30%	\$ 56,610,250	\$ 27,746,250	\$ 37,746,750	\$ 36,784,600	\$ 29,471,400	\$ 20,333,300	\$ 208,692,550
<u>WASTEWATER COLLECTION DIVISION (WCD)</u>											
<u>Sewer Rehabilitation/Replacement</u>											
43	CS1	Holmes Run Rehabilitation	0%	0%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
43	CS2	General CIPP Rehabilitation	100%	0%	\$ 6,300,000	\$ 6,300,000	\$ 6,300,000	\$ 6,300,000	\$ 6,300,000	\$ 6,300,000	\$ 37,800,000
44	CS4	Colonial Avenue Sewer Rehabilitation	100%	0%	2,850,000	500,000	1,500,000	-	-	-	4,850,000
45	CS7	Sewer Capacity Slip Lining Replacement	100%	0%	500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,500,000
46	CS8	Sewer Sag Repair Program	100%	0%	1,256,000	1,000,000	1,256,000	1,254,000	1,254,000	1,254,000	7,274,000
47	CS9	Sanitary Sewer Stream Crossings	100%	0%	700,000	700,000	700,000	1,000,000	1,000,000	1,000,000	5,100,000
48	CS10	Tyson Corner Redevelopment Sewer Line Enlargements	66%	34%	-	-	-	3,150,000	3,675,000	6,825,000	13,650,000
49	CS12	Large Diameter Pipe R&R	100%	0%	6,000,000	6,000,000	8,726,000	10,352,000	9,451,000	13,561,000	54,090,000
50		Subtotal Sewer Rehabilitation/Replacement	96%	4%	\$ 17,606,000	\$ 15,500,000	\$ 19,482,000	\$ 23,056,000	\$ 22,680,000	\$ 29,940,000	\$ 128,264,000
<u>Forcemain Replacement Program</u>											
51	FM4	Force Main CIPP Rehab	100%	0%	\$ 150,000	\$ 3,050,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 7,200,000
52	FM5	Dead Run Forcemain Rehabilitation	100%	0%	933,000	760,000	-	-	-	-	1,693,000
53	FM7	Accotink/LHC Force Main Repair	100%	0%	1,400,000	100,000	-	-	-	-	1,500,000
54	FM10	Force Main Testing/Analysis	100%	0%	-	-	-	500,000	-	-	500,000
55	FM11	Difficult Run Force Main Rehabilitation	0%	100%	500,000	4,000,000	1,700,000	-	-	-	6,200,000
56		Subtotal Forcemain Replacement Program	64%	36%	\$ 2,983,000	\$ 7,910,000	\$ 2,700,000	\$ 1,500,000	\$ 1,000,000	\$ 1,000,000	\$ 17,093,000

Footnotes on Page 3 of 3.

Table 10
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in \$000s)

Line No.	Project #	Description	Customer Allocation		Projected Fiscal Year Ending June 30,						Total Cost
			Existing	New	2016	2017	2018	2019	2020	2021	
<u>Pumping Station Rehabilitation</u>											
57	PS1	Pumping Station Rehabilitation - Misc. Repairs	100%	0%	\$ 1,104,000	\$ 698,000	\$ 96,000	\$ 3,094,000	\$ 4,500,000	\$ 4,400,000	\$ 13,892,000
58	PS5	Belle View Pump Station Rehabilitation	100%	0%	1,500,000	-	-	-	-	-	1,500,000
59	PS6	Difficult Run Pump Station & Force Main Rehabilitation	0%	100%	1,000,000	2,000,000	5,065,000	-	-	-	8,065,000
60	PS7	Dogue/Accotink Creek Switch Gear Rehabilitation	100%	0%	2,426,750	2,000,000	-	-	-	-	4,426,750
61	PS8	Smith-Loveless Pump Station Upgrade (4)	100%	0%	308,000	800,000	1,600,000	-	-	-	2,708,000
62	PS9	Barcroft I & II Pump Station Upgrade	100%	0%	300,000	1,000,000	1,000,000	-	-	-	2,300,000
63	PS10	Giles Run Pump Station Upgrade	100%	0%	600,000	1,170,000	-	-	-	-	1,770,000
64	PS11	Little Hunting Creek Pump Station Upgrade	100%	0%	100,000	300,000	1,300,000	2,300,000	1,000,000	-	5,000,000
65	PS12	Penderbrook Pump Station Upgrade	100%	0%	100,000	300,000	1,000,000	1,500,000	1,100,000	-	4,000,000
66	PS14	Accotink Pump Station Upgrade	100%	0%	-	-	-	-	273,000	204,000	477,000
67		Subtotal Pumping Station Rehabilitation	82%	18%	\$ 7,438,750	\$ 8,268,000	\$ 10,061,000	\$ 6,894,000	\$ 6,873,000	\$ 4,604,000	\$ 44,138,750
<u>Other Projects</u>											
68	WC-OT1	Miscellaneous Small Projects	100%	0%	\$ 600,000	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 900,000
69	WC-OT2	Pumps, Gates, Pipes and Valve Replacement	100%	0%	100,000	100,000	100,000	400,000	400,000	500,000	1,600,000
70	WC-OT3	Pohick Creek Stream Stabilization Project	100%	0%	-	473,000	473,000	104,000	-	-	1,050,000
71	WC-OT4	LLV PS Odor Control	100%	0%	100,000	300,000	1,000,000	-	-	-	1,400,000
72	WC-OT6	Pump Station Fall Protection Improvements	100%	0%	700,000	1,000,000	-	-	-	-	1,700,000
73	WC-OT7	Flow Meter Upgrade Project	100%	0%	100,000	100,000	-	-	-	-	200,000
74	WC-OT8	Pump Station Confined Space Improvements	100%	0%	516,000	-	-	-	-	-	516,000
75	WC-OT9	Pump Station Generator Rehabilitation	100%	0%	100,000	-	-	-	-	-	100,000
76	WC-OT11	Fuel Monitoring System	100%	0%	50,000	1,000,000	-	-	-	-	1,050,000
77	WC-OT12	Colvin Mill Dump Site Improvements	100%	0%	500,000	1,500,000	-	-	-	-	2,000,000
78	WC-OT13	Accotink Creek Lining at Noman Cole	0%	0%	4,000,000	-	-	-	-	-	4,000,000
	WC-OT14	SCADA Communication System	0%	0%	-	-	-	-	-	-	-
79		Subtotal Other Projects	100%	0%	\$ 6,766,000	\$ 4,773,000	\$ 1,573,000	\$ 504,000	\$ 400,000	\$ 500,000	\$ 14,516,000
<u>Extension & Improvement Projects</u>											
80	WC-E&I1	Extension & Improvement Projects	100%	0%	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 18,000,000
81		Subtotal Extension & Improvement Projects	100%	0%	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 18,000,000
82		Total Wastewater Collection Division	91%	9%	\$ 37,793,750	\$ 39,451,000	\$ 36,816,000	\$ 34,954,000	\$ 33,953,000	\$ 39,044,000	\$ 222,011,750
83		Capital Outlay (From Operations)	100%	0%	\$ 2,324,677	\$ 2,394,418	\$ 2,466,250	\$ 2,540,238	\$ 2,616,445	\$ 2,694,938	\$ 15,036,966
84		Total System Capital Projects	81%	19%	\$ 122,789,139	\$ 96,578,348	\$ 134,541,160	\$ 146,131,568	\$ 143,181,285	\$ 134,314,998	\$ 777,536,498

Footnotes:

[1] Amounts shown reflect estimated proportionate share of County allocable capital costs pursuant to the service agreement with UOSA to maintain the County's capacity rights with UOSA.

Table 11
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Funding Sources for the Allocated Ten-Year Estimated Capital Improvement Program for the Wastewater System (in \$000s)

Line No.	Description	Projected Fiscal Year Ending June 30,						Total Cost
		2016	2017	2018	2019	2020	2021	
Funding Requirements								
1	New Customer / Expansion	\$ 22,176,346	\$ 17,554,915	\$ 32,617,769	\$ 28,542,956	\$ 26,029,044	\$ 19,740,360	\$ 146,661,389
2	Existing Customer / Non-Expansion	100,612,794	79,023,433	101,923,392	117,588,612	117,152,241	114,574,638	\$ 630,875,109
3	Total	\$ 122,789,139	\$ 96,578,348	\$ 134,541,160	\$ 146,131,568	\$ 143,181,285	\$ 134,314,998	\$ 777,536,498
4	Deferred Funding [1]	(12,789,139)	13,421,652	(19,541,160)	(26,131,568)	(18,181,285)	(4,314,998)	(67,536,498)
5	Net Funding Requirements - Existing	\$ 110,000,000	\$ 110,000,000	\$ 115,000,000	\$ 120,000,000	\$ 125,000,000	\$ 130,000,000	\$ 710,000,000
Funding Sources:								
6	Rate Revenues	\$ 2,324,677	\$ 2,394,418	\$ 2,466,250	\$ 2,540,238	\$ 2,616,445	\$ 2,694,938	\$ 15,036,966
7	Rev & Op Fund - 69000 / 69010	-	-	-	-	-	-	-
8	Availability Fee Fund - 69000A	6,845,784	-	-	-	-	-	6,845,784
9	Sewer Construction (SC) Fund - 69300	89,580,948	44,485,582	69,393,750	54,300,762	79,204,555	64,305,062	401,270,659
10	Sewer Construction (SC) Fund - 69300A (Extensi	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	18,000,000
11	Bond Construction Fund - 69310	8,248,591	120,000	140,000	159,000	179,000	-	8,846,591
12	Grants / Contributions	-	-	-	-	-	-	-
13	Proposed Series 2017 Bonds - Exist Cust.	-	42,445,085	7,382,231	-	-	-	49,827,317
14	Proposed Series 2017 Bonds - New Cust.	-	17,554,915	32,617,769	-	-	-	50,172,683
15	Proposed Series 2019 Bonds - Exist Cust.	-	-	-	31,457,044	13,970,956	-	45,428,000
16	Proposed Series 2019 Bonds - New Cust.	-	-	-	28,542,956	26,029,044	-	54,572,000
17	Subordinate Debt - UOSA [2]	-	-	-	-	-	-	-
18	Total	\$ 110,000,000	\$ 110,000,000	\$ 115,000,000	\$ 120,000,000	\$ 125,000,000	\$ 130,000,000	\$ 710,000,000

Footnotes:

- [1] Based on discussions with WMP staff, certain capital improvements were deferred to reduce existing customer impacts and to recognize timing adjustments for the actual need of funds.
- [2] UOSA is a Treatment by Contract provider (TBC) to the County and funds all jointly shared improvements through the issuance of additional indebtedness. Based on discussions with WMP staff, it is assumed that WMP will finance any required capital contributions internally.

Table 12
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Forecasted Statements of Flows of Financial Resources and Changes in Fund Balance

Line No.		Projected Fiscal Year Ending June 30,					
		2016	2017	2018	2019	2020	2021
1	Beginning Balance [1]	\$ 142,814,192	\$ 101,298,805	\$ 163,964,373	\$ 117,370,489	\$ 169,538,643	\$ 115,228,578
	<u>Operating Revenues:</u>						
2	Sewer Service Charges [2]	\$ 186,435,103	\$ 194,078,450	\$ 201,001,064	\$ 208,054,350	\$ 217,418,592	\$ 227,130,776
3	Sales of Service (Bulk Revenue)	10,252,486	10,376,045	10,487,180	10,597,810	10,707,530	10,819,706
4	Other Operating Revenues [3]	332,250	332,843	333,429	334,007	334,577	335,140
5	Subtotal Operating Revenues	\$197,019,839	\$204,787,339	\$211,821,672	\$218,986,166	\$228,460,700	\$238,285,622
	<u>Non -Operating Revenues:</u>						
6	Proposed (New) Debt Proceeds [4]	\$ -	\$ 100,000,000	\$ -	\$ 100,000,000	\$ -	\$ 60,000,000
7	Additions to Debt Reserve Fund [4]	-	7,593,019	-	7,820,509	-	4,830,789
8	Availability Fees	18,787,661	18,536,028	18,301,394	18,066,761	17,832,128	17,597,495
9	Unrestricted Interest Earned	641,000	773,000	957,000	1,139,000	1,270,000	1,392,000
10	Restricted Interest Income [5]	21,000	120,000	140,000	159,000	179,000	-
11	Grants	-	-	-	-	-	-
12	Subtotal	\$ 19,449,661	\$ 127,022,046	\$ 19,398,394	\$ 127,185,270	\$ 19,281,128	\$ 83,820,284
13	<u>TOTAL FUNDS AVAILABLE</u>	\$ 359,283,692	\$ 433,108,190	\$ 395,184,440	\$ 463,541,925	\$ 417,280,470	\$ 437,334,484
	<u>Operating Expenses</u>						
14	Personnel Services	\$ 31,943,179	\$ 32,801,176	\$ 34,174,215	\$ 35,180,552	\$ 36,222,506	\$ 37,302,454
15	Operating Expenses	26,155,840	26,997,733	27,835,826	28,771,230	29,681,823	30,662,438
16	Recovered Costs	(568,278)	(580,006)	(591,976)	(604,195)	(616,796)	(629,661)
17	TBC and Billing Agent Costs	42,992,414	44,802,541	46,240,933	47,626,504	49,048,690	50,514,676
18	Subtotal	\$ 100,523,155	\$ 104,021,444	\$ 107,658,997	\$ 110,974,091	\$ 114,336,224	\$ 117,849,907
	<u>Capital Expenses by Funding Source</u>						
19	Cash Reserves / Rate Revenues [6]	\$ 94,905,625	\$ 49,880,000	\$ 74,860,000	\$ 59,841,000	\$ 84,821,000	\$ 70,000,000
20	Availability Charge Fund	6,845,784	-	-	-	-	-
21	Existing Debt Proceeds	8,248,591	120,000	140,000	159,000	179,000	-
22	New Debt Proceeds [7]	-	60,000,000	40,000,000	60,000,000	40,000,000	60,000,000
23	Grant Funding	-	-	-	-	-	-
	Use of Operating Reserves to Fund UOSA	-	-	-	-	-	-
24	Subtotal	\$ 110,000,000	\$ 110,000,000	\$ 115,000,000	\$ 120,000,000	\$ 125,000,000	\$ 130,000,000
	<u>Debt Service:</u>						
25	Existing Senior Debt Service	\$ 21,069,509	\$ 21,118,562	\$ 21,143,843	\$ 21,185,939	\$ 21,207,197	\$ 21,231,709
26	Proposed Senior Debt Service [4]	-	7,593,019	7,593,019	15,413,528	15,413,527	20,244,316
27	Existing Subordinate Debt Service	26,392,222	26,410,791	26,418,092	26,429,723	26,094,944	25,405,910
28	Proposed Subordinate Debt Service [7]	-	-	-	-	-	-
29	Subtotal	\$ 47,461,731	\$ 55,122,372	\$ 55,154,954	\$ 63,029,190	\$ 62,715,668	\$ 66,881,935
30	<u>TOTAL USE OF FUNDS</u>	\$ 257,984,886	\$ 269,143,816	\$ 277,813,951	\$ 294,003,281	\$ 302,051,892	\$ 314,731,842
31	<u>ENDING BALANCE BEFORE RESERVES</u>	\$ 101,298,806	\$ 163,964,374	\$ 117,370,489	\$ 169,538,644	\$ 115,228,578	\$ 122,602,642
	<u>RESERVES / RESTRICTIONS:</u>						
32	Operating Reserve Target (150 Days)	\$ 41,310,886	\$ 42,748,539	\$ 44,243,424	\$ 45,605,791	\$ 46,987,489	\$ 48,431,469
33	Debt Reserve Balance	27,562,867	35,155,886	35,155,886	42,976,395	42,976,395	47,807,184
34	Debt Proceeds	-	40,000,000	-	40,000,000	-	-
35	Availability Charge Balance	-	-	-	-	-	-
36	Sewer Construction Fund - 69300A [8]	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
37	Subtotal	\$ 73,873,753	\$ 122,904,425	\$ 84,399,310	\$ 133,582,186	\$ 94,963,884	\$ 101,238,653
38	<u>UNRESTRICTED ENDING BALANCE</u>	\$ 27,425,052	\$ 41,059,949	\$ 32,971,179	\$ 35,956,458	\$ 20,264,694	\$ 21,363,989

Table 12
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Forecasted Statements of Flows of Financial Resources and Changes in Fund Balance

Footnotes:

- [1] Reflects starting fund balance, but is exclusive of funds held in the debt service sinking fund.
 [2] Includes recommended rate adjustments as follows:

	Projected Fiscal Year Ending June 30,					
	2016 (Existing)	2017 (Adopted)	2018 (Adopted)	2019 (Adopted)	2020 (Identified)	2021 (Identified)
Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 30.38	\$ 33.42	\$ 36.76
Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.85	\$ 7.05	\$ 7.21
Effective Rate Revenue Increase	n/a	3.6%	3.1%	3.0%	4.0%	4.0%

- [3] Represents other operating revenues from lateral spur fees, connection charges, miscellaneous revenues, sale of property, etc.
 [4] Represents the proposed issuance of the Series 2017 Bonds on or about July 1, 2016, the Series 2019 Bonds on or about July 1, 2018 and the Series 2021 Bonds on or about July 1, 2019. Terms assume 30 year level debt with proceeds to fund deposits to the debt service reserve fund.
 [5] Includes Interest Income on debt proceeds and availability charge fund balances.
 [6] Includes capital funding from rate revenues, E&I fund balances and operating reserves.
 [7] Represents additional debt service from UOSA issued bonds on behalf of the County.
 [8] Represents restricted funds held on balance within the SC Fund for line extensions.

Table 13
Utility Rate Study
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

Comparison of Typical Monthly Residential Bills for Wastewater Service [1][2]

Line No.	Description	Billing Cycle	Residential Service for a 5/8" or 3/4" Meter											
			0 Gallons	2,000 Gallons	4,000 Gallons	6,000 Gallons	8,000 Gallons	10,000 Gallons	12,000 Gallons	15,000 Gallons	18,000 Gallons	20,000 Gallons	40,000 Gallons	50,000 Gallons
Fairfax County														
1	Existing Rates - FY16	Quarterly	\$6.72	\$20.02	\$33.32	\$46.62	\$59.92	\$73.22	\$86.52	\$106.47	\$126.42	\$139.72	\$272.72	\$339.22
2	Proposed Rates - FY17	Quarterly	8.23	21.59	34.95	48.31	61.67	75.03	88.39	108.43	128.47	141.83	275.43	342.23
Other Neighboring Utilities:														
3	City of Alexandria [3][4]	Monthly	8.38	24.42	40.46	56.50	72.54	88.58	104.62	128.68	152.74	168.78	329.18	409.38
4	Arlington County	Quarterly	0.00	18.12	36.24	54.36	72.48	90.60	108.72	135.90	163.08	181.20	362.40	453.00
5	DCWASA [3][5]	Monthly	22.23	37.63	53.03	68.43	83.83	99.23	114.63	137.73	160.83	176.23	330.23	407.23
6	Loudoun Water [3][6]	Quarterly	10.20	18.98	27.76	36.54	45.32	54.10	62.88	76.05	89.22	98.00	185.80	229.70
7	Prince William County Service Authority [3]	Monthly	8.20	21.30	34.40	47.50	60.60	73.70	86.80	106.45	126.10	139.20	270.20	335.70
8	Washington Suburban Sanitary Commission [3][7]	Quarterly	3.58	13.54	26.78	47.32	66.78	87.78	112.06	146.23	174.76	193.78	409.18	510.58
9	Other Neighboring Virginia Utilities' Average		\$8.77	\$22.33	\$36.45	\$51.78	\$66.93	\$82.33	\$98.29	\$121.84	\$144.46	\$159.53	\$314.50	\$390.93

Footnotes:

- [1] Unless otherwise noted, amounts shown reflect residential rates in effect October, 2015 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 \$16.75 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 \$0.62 per 1,000 gallons; and v) the residential wastewater flow charge of \$6.33 per 1,000 gallons.
- [6] Loudoun Water has adopted an approximate 3% rate increase for wastewater service to become effective April 1, 2015. 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 \$16.00.

Table 15
Fairfax County, Virginia
Comparison of Availability Fees for Water and Wastewater Service [1]

Line No.	Description	Residential 5/8" x 3/4" Meter Wastewater
Fairfax County		
1	Existing Availability Fee	\$7,750
<u>Other Surveyed Virginia Utilities:</u>		
2	City of Alexandria	\$8,404
3	Arlington County [2]	\$2,760
4	Loudoun Water	\$7,896
5	Prince William County Service Authority	\$10,800
6	Washington Suburban Sanitary Commission [3]	\$10,750
7	Washington Suburban Sanitary Commission (Unimproved) [3]	\$3,500
8	Other Surveyed Virginia Utilities' Average	<u>\$7,352</u>

Footnotes:

- [1] Unless otherwise noted, amounts shown reflect residential rates in effect October 2015 and are exclusive of taxes or franchise fees, if any, and reflect rates charged for inside the city service. All rates are as reported by the respective utility. This comparison is intended to show comparable charges for comparison purposes only.
- [2] Impact Fee for Arlington County assumes 24 fixture units (FU's) per Single Family Residential Unit at a cost of \$115/FU.
- [3] WSSC charges a separate availability fees for areas designated as unimproved or "improved".



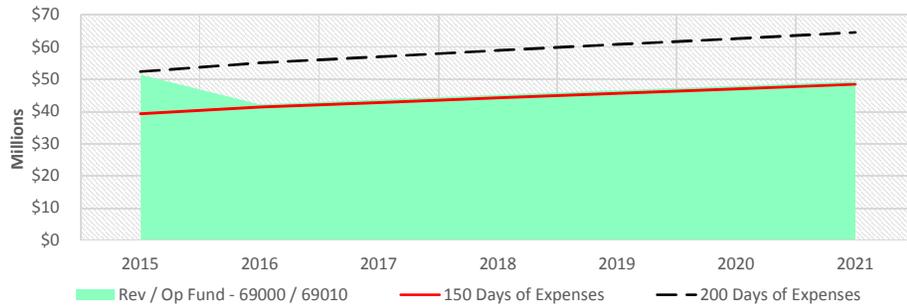
APPENDIX A



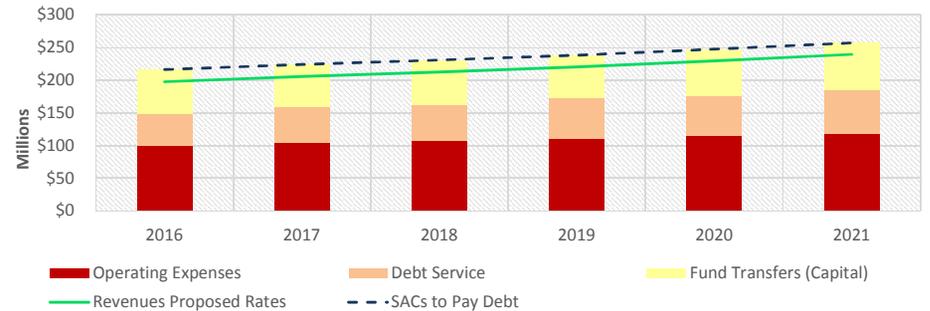
Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

	Adopted Fiscal Year Ending June 30,						Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
Adopted Rate Adj (%):							Incremental Rate Adj (%):					
Quarterly Base Charge	27.0%	22.5%	11.9%	8.0%	0.0%	0.0%	N/A	22.5%	11.9%	10.0%	10.0%	10.0%
Flow Charge	0.5%	0.5%	1.0%	1.0%	0.0%	0.0%	N/A	0.5%	1.0%	1.5%	2.9%	2.3%
Weighted Rate Increase	3.5%	3.6%	3.1%	2.5%	0.6%	0.0%	N/A	3.6%	3.1%	3.0%	4.0%	4.0%
Adopted Rates:							Proposed Rates:					
Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 29.83	\$ 29.83	\$ 29.83	\$ 20.15	\$ 24.68	\$ 27.62	\$ 30.38	\$ 33.42	\$ 36.76
Quarterly Billing Charge	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.82	\$ 6.82	\$ 6.82	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.85	\$ 7.05	\$ 7.21

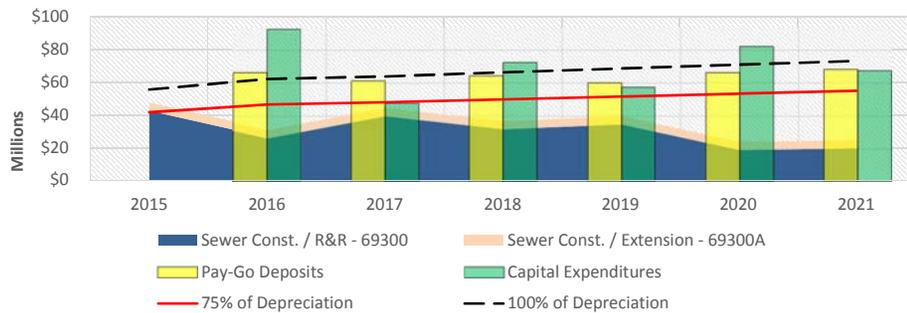
1) Operating Funds. Ending Balance



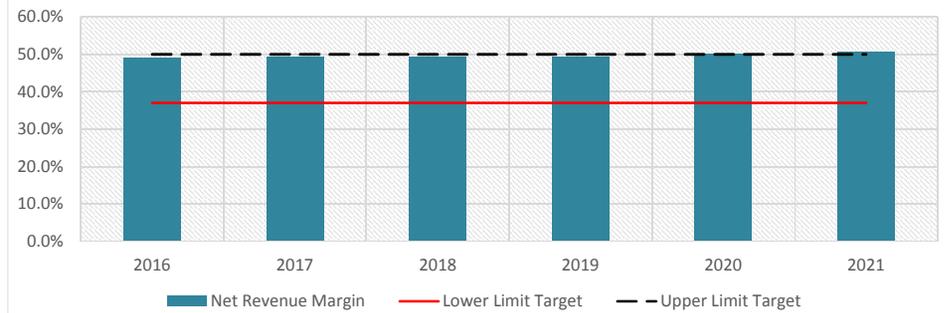
2) Revenue Sufficiency



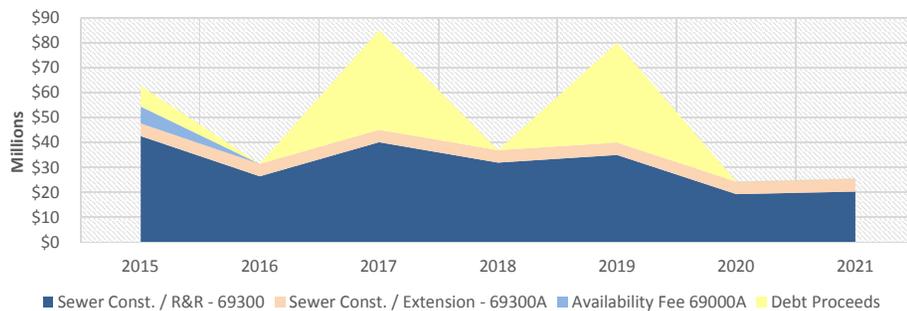
3) Capital Reinvestment from Rates



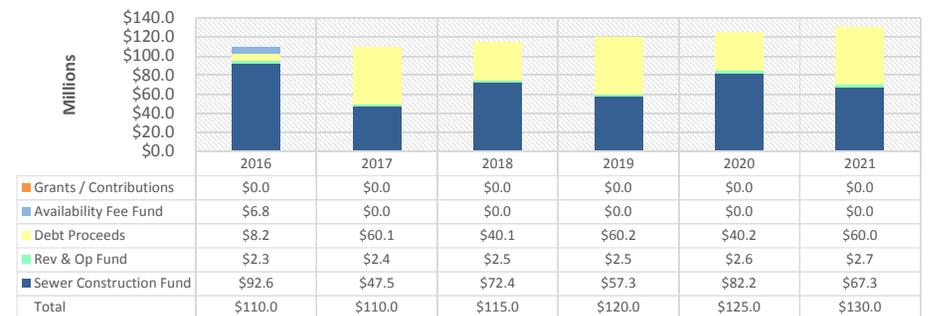
4) Net Revenue Margin (No SACs)



5) Capital Funds. Ending Balance



6) Capital Funding Plan

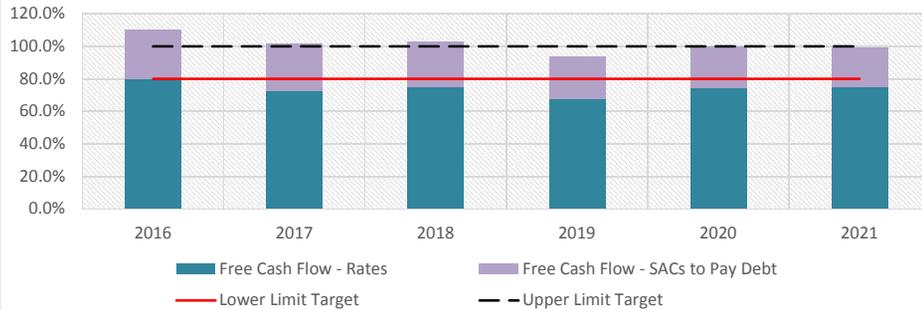




Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

	Adopted Fiscal Year Ending June 30,						Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
Adopted Rate Adj (%):							Incremental Rate Adj (%):					
Quarterly Base Charge	27.0%	22.5%	11.9%	8.0%	0.0%	0.0%	N/A	22.5%	11.9%	10.0%	10.0%	10.0%
Flow Charge	0.5%	0.5%	1.0%	1.0%	0.0%	0.0%	N/A	0.5%	1.0%	1.5%	2.9%	2.3%
Weighted Rate Increase	3.5%	3.6%	3.1%	2.5%	0.6%	0.0%	N/A	3.6%	3.1%	3.0%	4.0%	4.0%
Adopted Rates:							Proposed Rates:					
Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 29.83	\$ 29.83	\$ 29.83	\$ 20.15	\$ 24.68	\$ 27.62	\$ 30.38	\$ 33.42	\$ 36.76
Quarterly Billing Charge	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.82	\$ 6.82	\$ 6.82	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.85	\$ 7.05	\$ 7.21

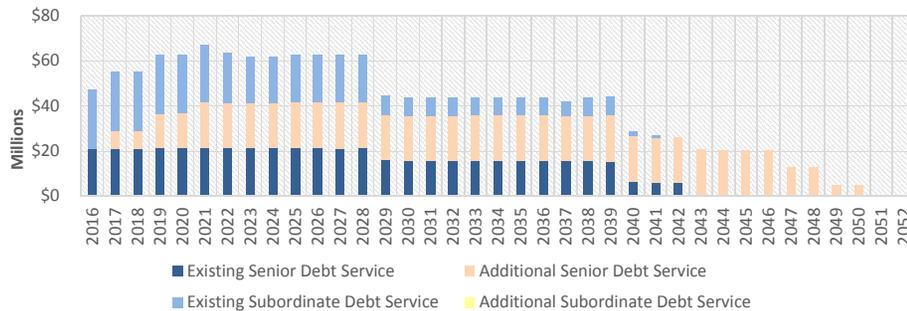
7) Free Cash Flow to Depreciation Ratio



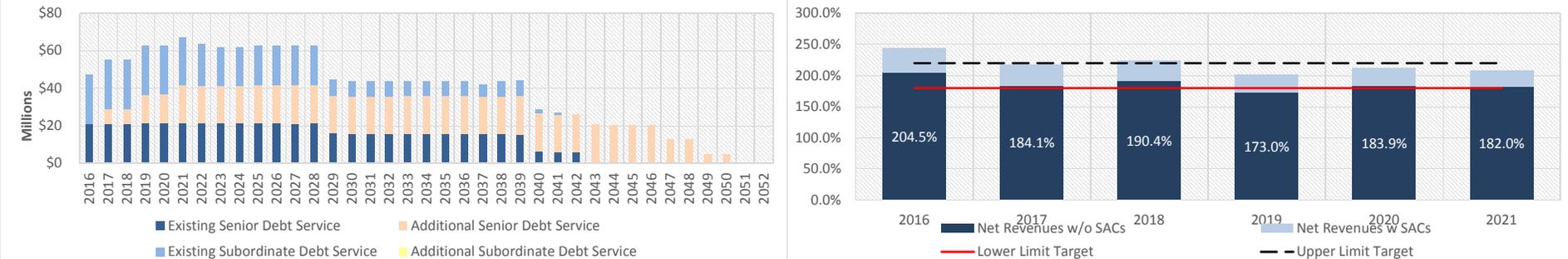
8) Debt to Net Plant (Equity)



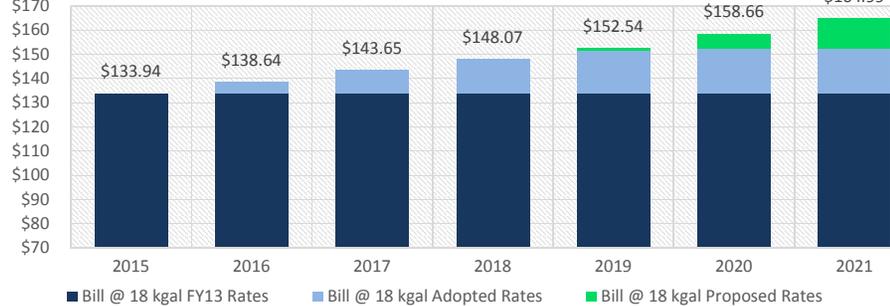
9) Annual Debt Service



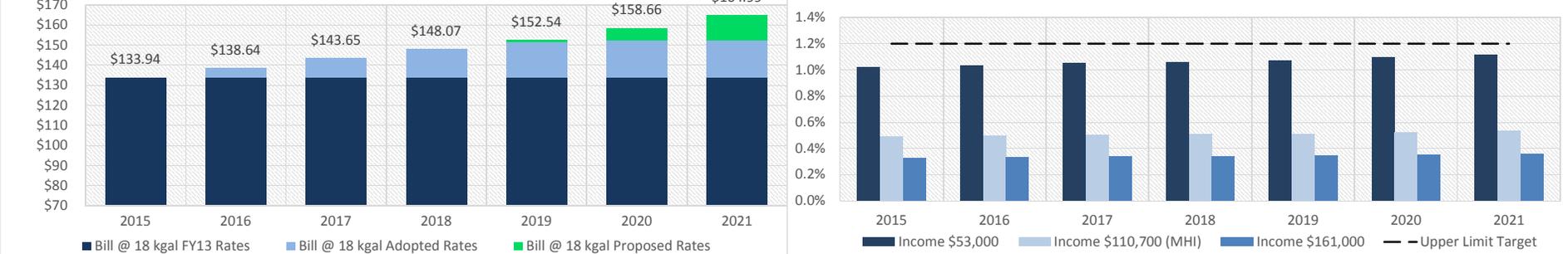
10) All-In Debt Service Coverage Ratio



11) Single-Family Residential Customer Quarterly Bill



12) Affordability- Residential Bill as % of Quarterly MHI

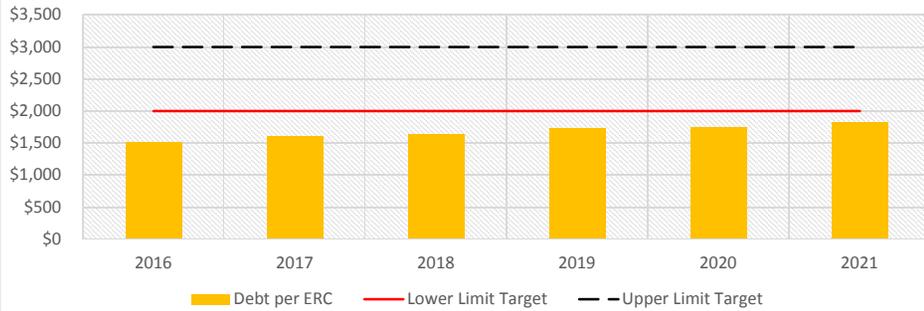




Fairfax County, Virginia
Wastewater Revenue Sufficiency and Rate Analysis

	Adopted Fiscal Year Ending June 30,						Projected Fiscal Year Ending June 30,					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
Adopted Rate Adj (%):							Incremental Rate Adj (%):					
Quarterly Base Charge	27.0%	22.5%	11.9%	8.0%	0.0%	0.0%	Quarterly Base Charge	N/A	22.5%	11.9%	10.0%	10.0%
Flow Charge	0.5%	0.5%	1.0%	1.0%	0.0%	0.0%	Flow Charge	N/A	0.5%	1.0%	1.5%	2.9%
Weighted Rate Increase	3.5%	3.6%	3.1%	2.5%	0.6%	0.0%	Weighted Rate Increase	N/A	3.6%	3.1%	3.0%	4.0%
Adopted Rates:							Proposed Rates:					
Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 29.83	\$ 29.83	\$ 29.83	Quarterly Base Charge	\$ 20.15	\$ 24.68	\$ 27.62	\$ 30.38	\$ 33.42
Quarterly Billing Charge	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	Quarterly Billing Charge	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.82	\$ 6.82	\$ 6.82	Flow Charge	\$ 6.65	\$ 6.68	\$ 6.75	\$ 6.85	\$ 7.05

13) Outstanding Debt Per ERC



14) Comparison of Monthly Sewer Service Charges For Single Family Residential Customers Using 6,000 Monthly Water Gallons

