

# BUDGET

FISCAL YEAR 2019-2020



May 15, 2019

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MEMBERS OF THE BOARD

Sherwood G. Wilson, Chairman  
Marc A. Verniel, Vice-Chairman  
Wayne O. Nelson, Secretary  
F. Craig Meadows, Treasurer  
William R. Knocke

Caleb M. Taylor, P.E.  
Executive Director

The enclosed *Recommended FY2019-2020 Budget* for the NRV Regional Water Authority was presented and passed by the Members of the Board at the regularly scheduled Board Meeting held on May 15, 2019 at 4PM.

Marc A. Verniel, Vice-Chairman

5/15/19

Date

F. Craig Meadows, Treasurer

5/15/19

Date

Caleb M. Taylor, Executive Director

5/15/2019

Date

Attest

5/15/19

Date



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William R. Knocke

Caleb M. Taylor, P.E.  
Executive Director

May 15, 2019

**FY2019-2020 Budget Letter**

Dear NRV Regional Water Authority Board Members:

We are pleased to submit for your review the *Recommended FY2019-2020 Budget* for the period beginning July 1, 2019 through June 30, 2020. This year's budget is balanced and meets the strategic goals of the Water Authority.

The purpose of our budget is to plan necessary operating and capital expenditures for the next fiscal year to meet Water Authority Board expectations and maintain the level of service that has been provided to its customers while servicing the Water Authority's debt. Quality water service will continue to be offered at a reasonable cost. Highlights of the *Recommended FY2019-2020 Budget* include:

1. A water rate increase from \$3.61 to \$3.70 per 1,000 gallons (or a 2.5% increase) as adopted by the NRV Regional Water Authority Board of Directors on February 22, 2017.
2. The proposed budget assumes an increase in sales of 0.5% in the coming year. This is analogous to the 0.5% increase in sales as projected in the revised cash flow projection analysis dated May 15, 2018. Attached to the budget is the 2018 Water and Wastewater Rate Study performed by Draper Aden Associates.
3. Chemical costs are up by 3%. Chemical bids were renewed at the beginning of 2019 only marginal increases due to inflation were experienced which have helped keep pricing consistent for budgeting purposes.
4. A compensation increase of 3.5% for Authority employees.

5. VRS rate remains at 18.30% with insurance remaining the same at 1.31%.
6. Health Insurance premiums will remain the same for FY2019-2020.
7. Capital Improvement expenditures have been projected to be \$3,071,500 paid from the reserve account, and approximately \$38.2 million paid from debt.

This budget incorporates the needs as identified in the Joinder Study and Water Agreement as well as needs identified by the staff. The fiscal condition of the Water Authority remains sound as shown in the ***Recommended FY2019-2020 Budget***. We look forward to the next year and continued success at the NRV Regional Water Authority.

Sincerely,

*Caleb M. Taylor*

Caleb M. Taylor, P.E.  
Executive Director

CMT/sh

# **REVENUES**

## ***Water Rates***

Historical water rates for the Authority's customers are shown in Table 1.

**Table 1. Water Rates 2013-2020**

<b>Fiscal Year</b>	<b>Water Rate</b>	<b>Percent Increase</b>
<b>2013-2014</b>	1.94	7.2
<b>2014-2015</b>	2.08	7.2
<b>2015-2016</b>	2.22	6.7
<b>2016-2017</b>	2.34	5.4
<b>2017-2018</b>	3.08	31.6
<b>2018-2019</b>	3.61	17.2
<b>2019-2020</b>	3.70	2.5

As shown in Table 1, water rates have increased on average 11.1% annually. The water rate increased noticeably in 2018 and 2019 with a 31.6% and 17.2 % increase, respectively. The increase is the result of increases in operations and maintenance costs due to inflation as well as the debt service obligations associated with the following:

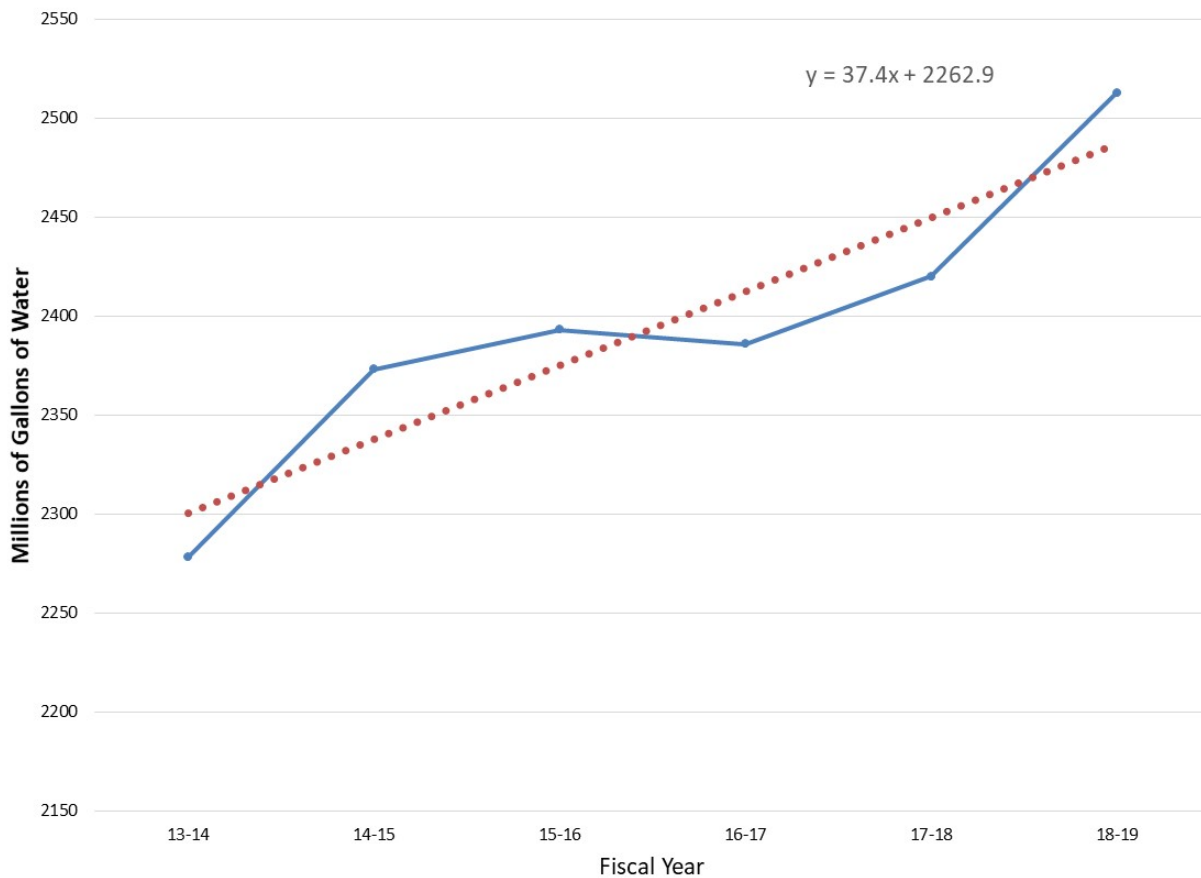
1. 2013 Bond for Prices Fork Transmission Main (Joinder Project)
2. 2014 (refinanced 2005 bond) bond
3. Water Treatment Plant Modernization/Upgrade
4. Plum Creek Transmission Main (Joinder Project)

The NRV Regional Water Authority's Cash Flow Projections that outlines the existing and proposed water rates is provided in Appendix A.

The NRV Regional Water Authority's proposed rate of \$3.70/1,000 gallons is a comparable rate when considering other wholesale water providers in the Commonwealth. More information on the wholesale water rates along with information on each of the Authorities is provided in Appendix B.

## ***Water Sales***

Annual water sales for the NRV Regional Water Authority from 2013-2019 are shown in Figure 1.



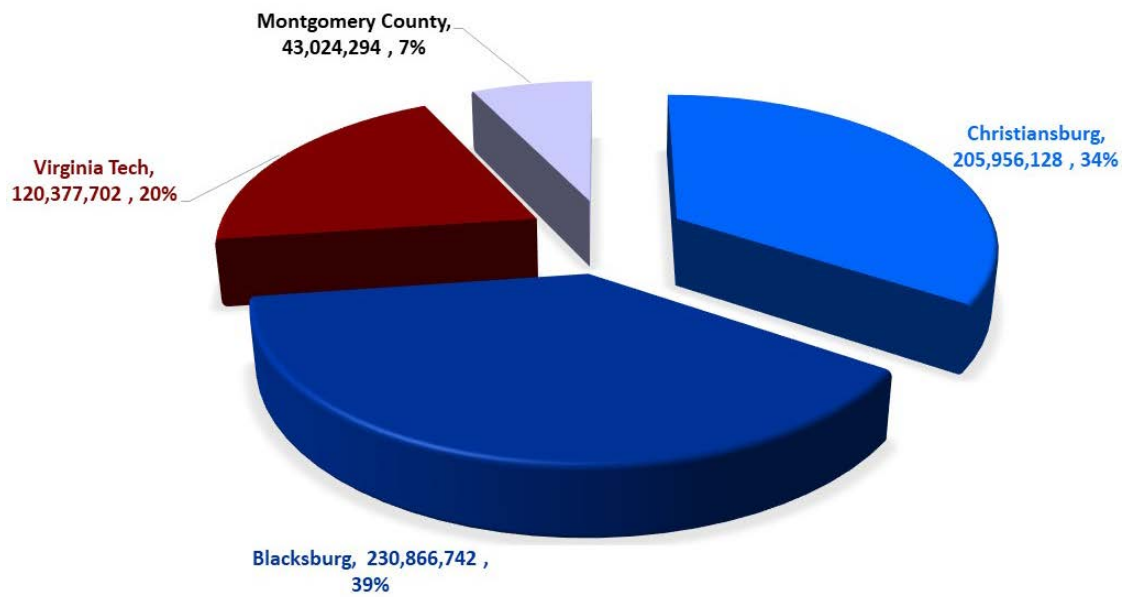
**Figure 1. Annual Water Sales 2013-2019**

The annual water sales in the last five (5) years for the Water Authority since the Joinder Study have risen during that time. In evaluating the trend for where anticipated water sales would be for FY2018-2019, many variables come into play such as weather patterns and economic growth. While weather is unpredictable for determining water sales, these historical numbers suggest that there will be little change in the annual water sales. Additionally, there is not any significant growth projected in the Water Authority’s service area within the next year.

The 2018 Water and Wastewater Rate Report prepared by Draper Aden Associates identifies trends in water rates for residential customers as well as other factors contributing to the water rates. What can be ascertained from the study is that local governments are seeing a downward trend in residential water usage. This is attributed to conservation measures that the customers are taking to reduce water usage as well as replacing older plumbing and fixtures with new plumbing and high efficiency water saving devices. This trend is expected to continue. A copy of the 2018 Water and Wastewater Rate Report is provided in Appendix B.

For the Water Authority, the financial analysis assumed a one-half (0.5) percent increase in water sales for the 2018-2019 fiscal year. In evaluating the trends seen in Figure 1, a 0.5 percent increase in water sales was projected for 2018-2019 which provides a conservative estimate to the projected annual water sales for the Water Authority in 2018-2019.

Average water sales by customer are shown in Figure 2.



**Figure 2. Average Water Sales by Customer in Million Gallons 2013-2018**

Of the four customers (Blacksburg, Christiansburg, Virginia Tech and Montgomery County), approximately 73% of the water is being sold to the Towns of Blacksburg and Christiansburg while Virginia Tech and Montgomery County comprises approximately 20% and 7% of the total sales respectively. The percentages presented in Figure 2 follow historical usage.



## ***Proposed FY2019-2020 Revenue Budget***

The Recommended FY2019-2020 Revenue Budget based on the water rates and sales presented is shown in Table 2.

**Table 2. FY2019-2020 Revenue Budget**

<b><u>REVENUE</u></b>	<b>Proposed Budget FY19-20</b>	<b>Estimated Year End FY18-19</b>	<b>Increase (Decrease) FY19 to FY20</b>
<b>VIRGINIA TECH</b>	<b>\$ 1,797,000</b>		
<b>MONTGOMERY COUNTY</b>	<b>\$ 642,000</b>		
<b>TOWN OF BLACKSBURG</b>	<b>\$ 3,446,000</b>		
<b>TOWN OF CHRISTIANSBURG</b>	<b>\$ 3,074,000</b>		
<b>INTEREST INCOME</b>	<b>\$ 70,000</b>		
<b>MEMBERSHIP INTEREST</b>	<b>\$ 24,000</b>		
<b>TRANSER IN-CAPITAL CONTRIBUTION</b>	<b>-</b>		
<b>MISCELLANEOUS</b>	<b>\$ 5,000</b>		
<b>GAIN/LOSS ON SALE OF ASSETS</b>	<b>-</b>		
<b>TOTAL REVENUE =</b>	<b>\$ 9,058,000</b>	<b>\$ 8,758,000</b>	<b>\$ 300,000</b>

The Recommended FY2019-2020 Revenue Budget is \$9,058,000. This represents a 3.3% increase in revenue from FY2018-2019. The revenue increase is the net result of the water rate increase as well as the small projected increase in water sales. The recommended revenue budget for FY2019-2020 takes a conservative but realistic approach of what the Water Authority could expect over the upcoming year.

## **EXPENSES**

### ***Salaries/Staffing***

Salaries is the single largest operating expense for the Water Authority. This is typical for most utilities that provides a similar type of service such as the Water Authority.

### ***Electrical Service***

Electrical service is the Water Authority's second largest expense in the operating budget. It comprises approximately 20% of the total operating budget.

## ***Chemicals and Testing***

Chemicals and Testing is the Water Authority's third largest expense in the operating budget. In the first quarter of 2019, all of the chemicals utilized by the Water Authority in the treatment of water were advertised and renewed for competitive pricing. Based on the chemical usage in 2018-2019 and anticipated usage in 2019-2020, chemical and testing costs are up 3%. The majority of the cost increases associated with the chemicals is the freight and fuel to have them delivered to the site.

## ***VRS Retirement***

VRS retirement percentages for the Authority were reduced in 2018-2019 due to VRS's two year audit of staffing, staff age, anticipated retirements, and risk analysis. Based on the information of the existing staff, the VRS insurance percentage remained the same at 1.31% while the VRS pension percentage was reduced from 24.56% to 18.30% for fiscal years 2019 and 2020.

## ***Insurance***

Insurance premiums for the Water Authority remain unchanged in the upcoming fiscal year through our provider The Local Choice.

## ***Proposed FY2019-2020 Expense Budget***

The Recommended FY2019-2020 Expense Budget based on the anticipated operational and maintenance expenses is shown in Table 3.

**Table 3. FY2019-2020 Expense Budget**

<b>EXPENSES</b>	<b>Proposed Budget FY19-20</b>	<b>Current Budget FY18-19</b>	<b>Estimated Year End FY18-19</b>	<b>Increase (Decrease) FY19 to FY20</b>
ELECTRICAL SERVICES	\$ 850,000	\$ 900,000	\$ 814,500	\$ (50,000)
CHEMICALS AND TESTING	\$ 393,000	\$ 382,000	\$ 372,800	\$ 11,000
LEGAL SERVICES	\$ 20,000	\$ 20,000	\$ 16,900	\$ 0
SALARIES-REGULAR	\$ 1,480,000	\$ 1,410,000	\$ 1,420,000	\$ 70,000
SALARIES-OVERTIME	\$ 128,000	\$ 126,000	\$ 128,400	\$ 2,000
FICA	\$ 126,000	\$ 120,000	\$ 114,350	\$ 6,000
VRS RETIREMENT	\$ 291,000	\$ 277,000	\$ 239,150	\$ 14,000
EMPLOYEE BENEFITS	\$ 106,000	\$ 103,000	\$ 44,300	\$ 3,000
GENERAL LIABILITY INSURANCE	\$ 62,000	\$ 62,000	\$ 62,600	\$ 0
HEALTH INSURANCE	\$ 238,000	\$ 238,000	\$ 256,600	\$ 0
OTHER POSTEMPLOYMENT BENEFITS	\$ 38,000	\$ 40,000	\$ 33,400	\$ (2,000)
BONDS	\$ -	\$ -	\$ -	\$ -
ENGINEERING AND ARCH. SERVICES	\$ 200,000	\$ 200,000	\$ 50,000	\$ 0
OTHER PROFESSIONAL SERVICES	\$ 68,000	\$ 75,000	\$ 66,000	\$ (7,000)
LAB SUPPLIES	\$ 45,000	\$ 36,000	\$ 46,700	\$ 9,000
ADVERTISING	\$ 7,000	\$ 6,800	\$ 3,500	\$ 200
OFFICE SUPPLIES	\$ 12,500	\$ 12,000	\$ 10,000	\$ 500
POSTAGE	\$ 2,500	\$ 2,000	\$ 2,400	\$ 500
JANITORIAL SUPPLIES	\$ 5,800	\$ 5,600	\$ 4,500	\$ 200
DUES AND MEMBERSHIPS	\$ 17,000	\$ 17,000	\$ 14,650	\$ 0
WEARING APPAREL	\$ 16,000	\$ 16,000	\$ 15,000	\$ 0
EXPENDABLE EQUIPMENT	\$ 25,000	\$ 30,000	\$ 20,000	\$ (5,000)
MAINTENANCE OF LINES	\$ 50,000	\$ 50,000	\$ 7,230	\$ 0
MAINTENANCE OF EQUIPMENT	\$ 68,000	\$ 87,000	\$ 19,500	\$ (19,000)
MAINTENANCE OF BOOSTER STATIONS	\$ 55,000	\$ 50,000	\$ 37,100	\$ 5,000
MAINTENANCE OF TANKS	\$ 20,000	\$ 20,000	\$ 5,000	\$ 0
MAINTENANCE OF INSTRUMENTATION	\$ 15,600	\$ 15,000	\$ 10,000	\$ 600
NON-PROFESSIONAL SERVICES	\$ 38,000	\$ 34,000	\$ 22,000	\$ 4,000
SAMPLING, TESTING, AND MONITORING	\$ 15,000	\$ 15,000	\$ 6,000	\$ 0
METERS	\$ 32,000	\$ 15,000	\$ 12,000	\$ 17,000
MILEAGE	\$ 1,000	\$ 2,000	\$ 0	\$ (1,000)
MEALS AND LODGING	\$ 4,500	\$ 10,000	\$ 4,000	\$ (5,500)
MAINTENANCE OF AUTO EQUIPMENT	\$ 39,000	\$ 33,000	\$ 28,000	\$ 6,000
HEATING SERVICES-GAS, OIL, KEROSENE	\$ 15,000	\$ 15,000	\$ 10,000	\$ 0
TELEPHONE SERVICE	\$ 15,000	\$ 24,000	\$ 19,450	\$ (9,000)
CELL PHONE SERVICE	\$ 9,000	\$ 10,000	\$ 7,500	\$ (1,000)
EDUCATION/REGISTRATION	\$ 9,500	\$ 9,500	\$ 9,500	\$ 0
UTILITIES	\$ 10,000	\$ 10,000	\$ 100	\$ 0
MISCELLANEOUS	\$ 21,000	\$ 30,000	\$ 8,500	\$ (9,000)
PERMITS	\$ 18,000	\$ 22,000	\$ 17,000	\$ (4,000)
SOLIDS HANDLING AND DISPOSAL	\$ 30,000	\$ 36,000	\$ 35,800	\$ (6,000)
MAINTENANCE OF BUILDING AND GROUNDS	\$ 30,000	\$ 50,000	\$ 45,000	\$ (20,000)
DEBT SERVICE	\$ 391,300	\$ 393,720	\$ 393,720	\$ (2,420)
<b>OPERATIONS &amp; MAINTENANCE TOTAL <sup>a</sup> =</b>	<b>\$ 4,626,400</b>	<b>\$ 4,615,900</b>	<b>\$ 4,039,430</b>	<b>\$ 10,500</b>

<sup>a</sup> Operations and Maintenance Total does not include Debt Service.

The Recommended FY2019-2020 Expense Budget is \$4,626,400. This represents a 0.2% increase in expenses from FY2018-2019. The small increase in expenses is the result of inflation coupled with needs identified by staff to maintain a safe working environment and properly functioning equipment. The Financial Analysis projected FY2019-2020 total expenses of \$4,915,078 which is 6.2% more than the recommended expense budget of \$4,626,400. The recommended expense budget for FY2019-2020 takes into account the identified needs of the Water Authority operations over the upcoming year while building the necessary days of cash on hand that the Authority needs to have as recommended by its financial advisors as well as pay for the debt service obligations associated with the capital improvement plan needs of the Authority.

The difference between the Recommended Revenues and Expenses are the funds available for capital improvements. Table 4 presents the Recommended FY2019-2020 Budget summary.

**Table 4. Recommended FY2019-2020 Budget Summary**

	<b>Proposed Budget FY19-20</b>	<b>Budget FY18-19</b>	<b>Increase (Decrease) FY18 to FY19</b>
<b>TOTAL REVENUE =</b>	<b>\$ 9,058,000</b>	<b>\$ 8,758,000</b>	<b>\$ 1,192,000</b>
<b>OPERATIONS &amp; MAINTENANCE TOTAL =</b>	<b>\$ 4,626,400</b>	<b>\$ 4,615,900</b>	<b>\$ 1,208,390</b>
<b>FY2019-2020 180 DAYS CASH ON HAND =</b>	<b>\$ 2,474,480</b>		
<b>TOTAL AVAILABLE FOR IMPROVEMENTS <sup>a</sup> =</b>	<b>\$ 1,957,120</b>	<b>\$ 3,748,380</b>	
<b>PROPOSED IMPROVEMENTS =</b>	<b>\$ 3,071,500</b>	<b>\$ 1,600,000</b>	
<b>SURPLUS/RESERVE PAYMENT =</b>	<b>\$ (1,114,380)</b>	<b>\$ 2,148,380</b>	

<sup>a</sup> Accounts for debt service payment of \$391,300 for FY19-20 and \$393,720 for FY18-19.

The total available funds for capital improvements in FY2019-2020 is \$1,957,120. The total proposed capital improvements for FY2019-2020 totals \$3,071,500. The remaining amount for capital improvements will be funded using cash reserves. The proposed capital improvements funded through the operating budget include: Route 114 pump station improvements and Route 460 pump station improvements, WTP Modernization Phase 1 Contract 2 (Administrative and Shop buildings) and a new truck for the Authority fleet. Major capital improvement projects that will be funded through bonds and low interest rate loans through programs such as the Virginia Department of Health's State Revolving Loan Fund Program include:

1. Water Treatment Plant Modernization Phase 2 Project
2. Plum Creek Transmission Line Project (Phases 1, 2 & 3)

We anticipate FY2019-2020 to be a capital improvements year with the projects identified above progressing through bidding and construction. The Authority will continue to plan in the upcoming fiscal year to review and update the capital outlay using the latest information along with staff input and an overall master plan to build a solid path towards continued sustainability.

# APPENDICES

**APPENDIX A:  
NRV REGIONAL  
WATER AUTHORITY  
CASH FLOW  
PROJECTIONS &  
WHOLESALE  
WATER RATES**

## Memorandum

**To:** Caleb Taylor, PE  
**From:** Sheryl Stephens  
**Date:** May 13, 2019  
**Project Number:** B14128B-01  
**Subject:** Projections for FY2020 – 2025;  
 Wholesale Rates/Other Wholesale Water Authorities

The purpose of this memorandum is to provide:

- Revised revenue and expense projections for the fiscal years 2020 – 2025, and
- Wholesale water rates in effect for other authorities in Virginia.

**Revised Revenue and Expense Projections:**

The cashflow projection for FY2020 – FY2025 was updated using the following assumptions:

- Water sales continue to increase at .5% per year.
- The following wholesale rates are used:

**Table 1: Projected Wholesale Rates (FY2020 – 2025)**

2020	2021	2022	2023	2024	2025
\$ 3.70	\$ 3.77	\$ 3.97	\$ 4.02	\$ 4.12	\$ 4.22

- Most operating expenses increase at 4% per year.
- Debt service on the water treatment plant upgrade is based on a project cost of \$30 million. The project is funded using VDH funds, the loan is for 30 years and has an interest rate of 2.5%. Debt service starts in FY 2022 and is \$1,443,695 per year.
- The Plum Creek project (Phases I and II, and Chrisman Mill) cost is \$10.6 million. The project is funded using VDH funds, the loan is for 30 years and has an interest rate of 2.5%. Debt service starts in FY 2021 and is \$510,106 per year.
- There is no additional “New Debt” during this 5-year period.
- During the 5-year period, the following projects are funded using cash reserves:
  - Administration and Shop Buildings - \$2,414,000, FY2020;
  - Blacksburg Pump Station Study and Upgrades - \$375,000, FY2020 and FY2021;
  - Blacksburg S. Main Street Transmission Main Replacement - \$1,320,000, FY2023; and
  - Prices Fork II - \$6,000,000, FY2025.
- During the five-year period, the reserve fund continues to increase.
- Debt coverage exceeds the “target” of 150% each year.

- Days Cash on Hand exceeds the target of 180 days.

The 5-year projection is attached. see **Table 2** on the following page.

**Recommendation:**

Until the construction cost on the water treatment plant is finalized, it is recommended that the NRV Water Authority maintain the projected wholesale rates. If the project cost exceeds \$30 million, the source of funds, the interest rate and term of the borrowing would impact the annual debt service cost as well as the cash reserves.



**Table 2: NRV Cashflow Projection – FY2020 - FY2025**

	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>
	<b>June 30,</b>	<b>June 30,</b>	<b>June 30,</b>	<b>June 30,</b>	<b>June 30,</b>	<b>June 30,</b>
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Wholesale Rate (\$/1,000 gallons)</b>	<b>\$ 3.70</b>	<b>\$ 3.77</b>	<b>\$ 3.97</b>	<b>\$ 4.02</b>	<b>\$ 4.12</b>	<b>\$ 4.22</b>
<b>Revenue</b>						
Revenue from Water Sales	\$8,959,000	\$9,174,136	\$9,709,131	\$9,880,570	\$10,176,987	\$10,476,121
Other Income	<u>\$ 99,000</u>	<u>\$ 99,000</u>	<u>\$ 99,000</u>	<u>\$ 99,000</u>	<u>\$ 99,000</u>	<u>\$ 99,000</u>
<b>Total Revenue</b>	<b>\$ 9,058,000</b>	<b>\$ 9,273,136</b>	<b>\$ 9,808,131</b>	<b>\$ 9,979,570</b>	<b>\$10,275,987</b>	<b>\$10,575,121</b>
<b>Expenses</b>						
Operating Expenses	\$ 4,626,400	\$ 4,869,093	\$ 5,122,184	\$ 5,390,594	\$ 5,675,400	\$ 5,977,765
Existing Debt Service	\$391,300	\$388,625	\$385,622	\$392,031	\$388,253	\$384,569
<b>Projected Debt Service:</b>						
Plum Creek I and II, Chrisman Mill (\$10.6 M/2.5%/30 yrs.)	\$-	\$510,106	\$510,106	\$510,106	\$510,106	\$510,106
Upgrade WTP/Raw Water PS(\$45 M /2.5%/30 yrs)	<u>\$-</u>	<u>\$-</u>	<u>\$ 1,443,695</u>	<u>\$ 1,443,695</u>	<u>\$ 1,443,695</u>	<u>\$ 1,443,695</u>
<b>Total Expenses</b>	<b>\$ 5,017,700</b>	<b>\$ 5,767,823</b>	<b>\$ 7,461,607</b>	<b>\$ 7,736,425</b>	<b>\$ 8,017,453</b>	<b>\$ 8,316,135</b>
<b>Net Surplus/Contribution to Capital</b>	<b>\$ 4,040,300</b>	<b>\$ 3,505,312</b>	<b>\$ 2,346,525</b>	<b>\$ 2,243,144</b>	<b>\$ 2,258,533</b>	<b>\$ 2,258,986</b>
<b>Analysis of Capital Reserve:</b>						
Beginning Capital Reserve	\$ 8,500,000 <sup>1</sup>	\$10,051,300	\$13,256,612	\$15,603,137	\$16,526,281	\$18,784,815
Additions to Reserve	\$ 4,040,300	\$ 3,505,312	\$ 2,346,525	\$ 2,243,144	\$ 2,258,533	\$ 2,258,986
<b>Use of Unrestricted Reserve:</b>						
<b>Capital Projects Funded with Cash/Reserves:</b>						
Administration and Shop Bldgs.	\$(2,414,000)	\$-	\$-	\$-	\$-	\$-
Prices Fork II	\$-	\$-	\$-	\$-	\$-	\$(6,000,000)
Study - Blacksburg Pump Station	\$ (75,000)	\$-	\$-	\$-	\$-	\$-
Upgrades - Blacksburg Pump Station	\$-	\$(300,000)	\$-	\$-	\$-	\$-
Bburg S. Main St. Transmission Main Replacement	<u>\$-</u>	<u>\$-</u>	<u>\$-</u>	<u>\$(1,320,000)</u>	<u>\$-</u>	<u>\$-</u>
<b>Ending Reserve</b>	<b>\$10,051,300</b>	<b>\$13,256,612</b>	<b>\$15,603,137</b>	<b>\$16,526,281</b>	<b>\$18,784,815</b>	<b>\$15,043,801</b>
<b>Debt Coverage:</b>						
Total Revenue Available for Debt Service (Revenue - Operating Expenses)	\$ 4,431,600	\$ 4,404,043	\$ 4,685,947	\$ 4,588,976	\$ 4,600,587	\$ 4,597,356
Debt Coverage	11.33	4.90	2.00	1.96	1.96	1.97
Does Coverage = 150% or more?	Yes	Yes	Yes	Yes	Yes	Yes
<b>Days Cash on Hand:</b>						
Total Operating Expenses / 365 Days	\$ 12,675	\$ 13,340	\$ 14,033	\$ 14,769	\$ 15,549	\$ 16,377
DCOH (Ending Reserve)/(Total Operating Exp./365)	793	994	1,112	1,119	1,208	919
Does DCOH Exceed 180 days?	Yes	Yes	Yes	Yes	Yes	Yes

<sup>1</sup> Estimated, based on April 30, 2019 Financial Statements.

**Wholesale Water Rates:**

The following table details the historic and current wholesale water rates for select wholesale water providers in Virginia:

**Table 3: Wholesale Water Rates (FY2020 – 2025)**

(\$/1,000 gallons)						
Authority – Locality	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year
	2015	2016	2017	2018	2019	2020
NRV Regional Water Authority	\$2.08	\$2.22	\$2.34	\$3.08	\$3.61	\$3.70
Appomattox River WA - Chesterfield	\$0.76	\$0.92	\$0.90	\$0.90	\$1.00	\$0.98
Appomattox River WA - Colonial Heights	\$0.73	\$0.86	\$0.90	\$0.90	\$0.98	\$1.01
Appomattox River WA – Dinwiddie	\$1.19	\$1.41	\$1.41	\$1.41	\$1.58	\$1.45
Appomattox River WA - Petersburg	\$0.70	\$0.85	\$0.90	\$0.90	\$1.00	\$0.98
Appomattox River WA - Prince George	\$1.14	\$1.30	\$1.35	\$1.35	\$1.45	\$1.37
Maury SA - City of Lexington	\$2.46	\$2.54	\$2.55	\$2.60	\$2.72	\$3.32
Maury SA - Rockbridge PSA	\$2.46	\$2.54	\$2.55	\$2.60	\$2.72	\$3.32
Rivanna W&SA - Albemarle Co. SA <sup>2</sup>	\$3.69	\$3.80	\$3.88	\$4.03	Not Avail	\$3.59
Rivanna W&SA – Charlottesville <sup>1</sup>	\$2.66	\$2.76	\$2.86	\$2.98	Not Avail	\$4.63
Roanoke River Service Authority	\$3.70	\$3.70	\$3.70	\$3.70	\$3.77	\$3.77

Table 4 provides a brief summary of the water sales, water revenues, approximate outstanding debt and the capacity of these wholesale water providers.

**Table 4: Water Sales, Revenue and Debt – Wholesale Authorities**

Provider	Water Sales (Gallons per Year)	Water Sales (MGD)	Annual Water Revenues	Outstanding Debt (approximate)	Capacity
NRV Regional Water Authority	2,421,000,000	6.63 MG	\$8,900,000	\$5.5 Million	12.4 MGD
Maury Service Authority	517,000,000	1.42 MGD	\$1,350,000	<\$ 8 Million	4 MGD
Appomattox River Water Authority	11,000,000,000	30 - 33 MGD	\$10,500,000	\$23.8 Million	N/A
Roanoke River Water Authority	500,000,000	1.38 MGD	\$1,793,735	\$6.2 Million	4.18 MGD
Rivanna W&S Authority	3,401,256,000	9.3 MGD	\$15,400,000	Not Avail.	21.5 MGD

<sup>2</sup> The rates shown for Rivanna Water and Sewer Authority are based on an analysis completed for RWSA in November 2018. In July 2015, the Authority changed the way debt service is charged to its two customers (City of Charlottesville and Albemarle County Service Authority). After July 1, 2015, the debt service is no longer charged as a rate per 1,000 gallons; instead, the debt service is billed as a “lump sum” on a monthly basis. The rates shown in the table are *the estimated* cost per thousand gallons when the operating charge (\$2.17 per 1,000 gallons – projected for FY2020 and the approximate debt service charge per 1,000 gallons are added together).

**APPENDIX B:  
2018 ANNUAL  
WATER and  
WASTEWATER  
RATE REPORT**



# The 30th Annual Virginia Water and Wastewater Rate Report 2018

 **Draper Aden Associates**  
*Engineering • Surveying • Environmental Services*  
*Lasting Positive Impact®*

**VWEA**  
Virginia Water Environment Association

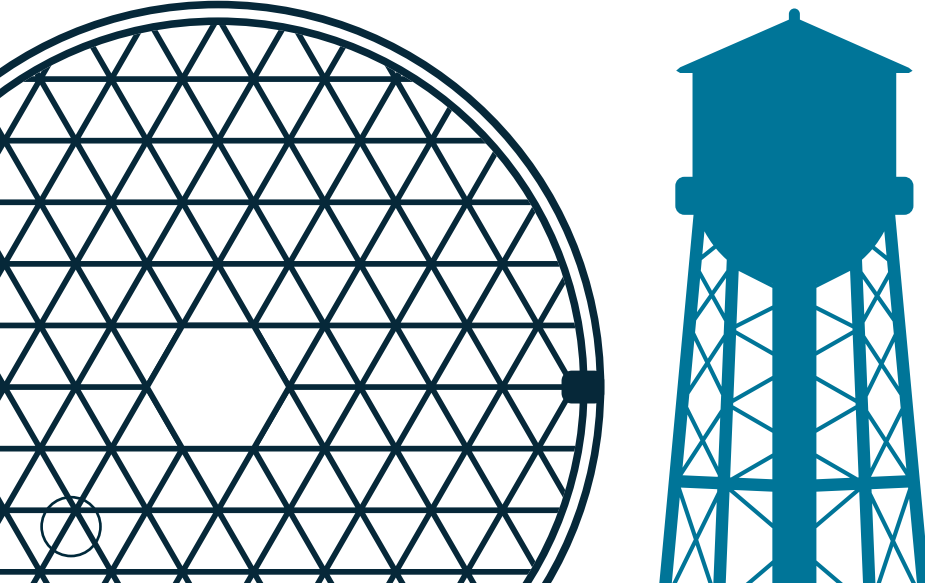
**American Water Works  
Association**  
Virginia Section

**VCo**  
Virginia Association of Counties

**VML**  
VIRGINIA MUNICIPAL LEAGUE

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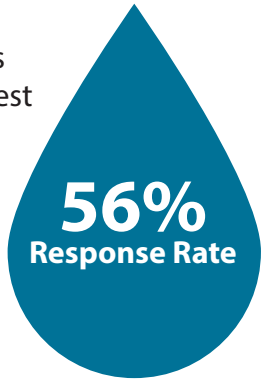
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*Draper Aden Associates has provided water and wastewater rate analysis to local government clients across Virginia for several decades. For questions about this report or rate consultation services, please contact Sheryl Stephens at 804.261.2915 or [sstephens@daa.com](mailto:sstephens@daa.com).*

# About Our Survey

For 30 years, Draper Aden Associates has provided the Annual Virginia Water and Wastewater Rate Report as a service to our clients and to water and sewer providers across the Commonwealth. Earlier this year, Draper Aden Associates conducted a survey to request water and wastewater rate information from 265 water and sewer providers; fifty-six percent (56%), or 149 utilities, responded to the survey and provided the data included in this report. Survey respondents provided information detailing:



- approximate number of residential and non-residential connections
- billing frequency
- the charge for residential customers using 3,000, 4,000, and 5,000 gallons of water per month
- the charge for non-residential customers using 1,000,000 gallons per month
- the current residential connection fee and capital recovery charge
- the year that rates and fees were last changed.

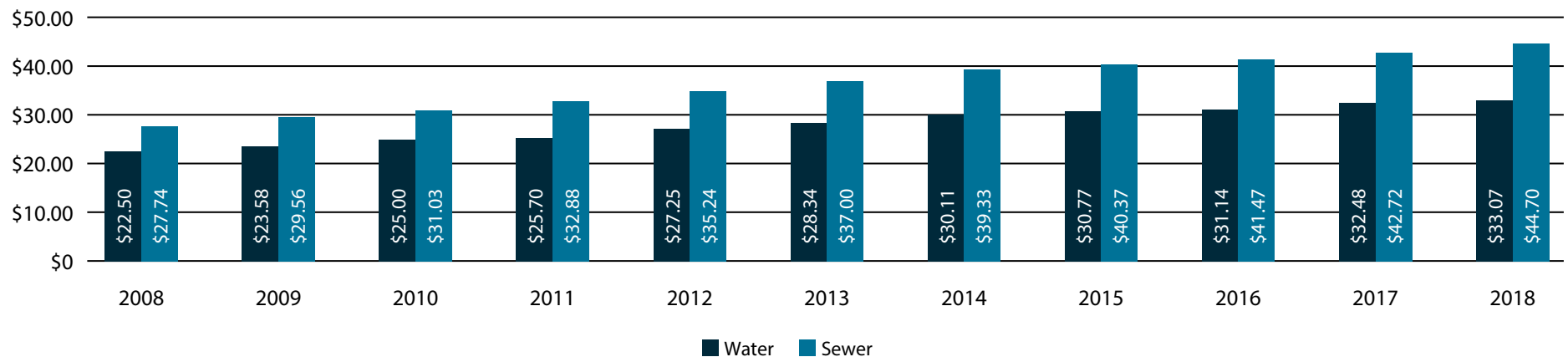
We are pleased to share these results and express our gratitude to all who participated in this effort.

## Control Group Data

For over 20 years, Draper Aden’s survey has tracked a select group comprised of 20 water and wastewater providers who represent a cross section of utilities across the Commonwealth. We have consistently tracked the monthly residential charges of these 20 utilities to provide an indication of trends in water and wastewater rates in Virginia – and to provide an indication of average increases over time.

The average water rate increased by 1.8% in 2018 and the average sewer rate increased by 4.6%. Since 2008, water rates have increased by approximately 3.8% per year and wastewater rates have increased by approximately 4.7% per year.

Average Monthly Water and Sewer Bills (based on 5,000 gallons of usage)



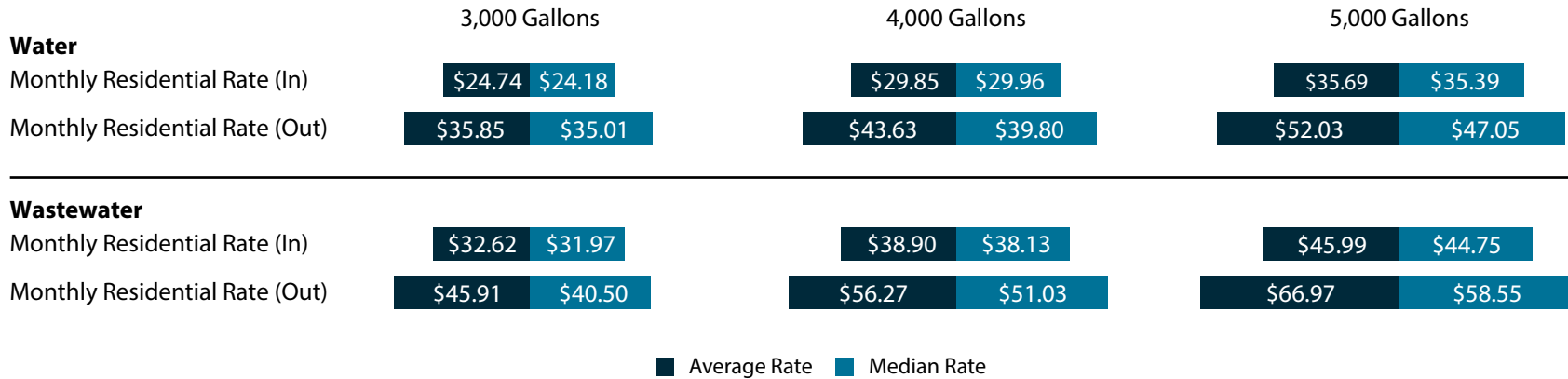
# Water and Wastewater Rates

Utilities were asked to calculate the charges for residential customers using 3,000, 4,000 and 5,000 gallons of water per month. Utilities that bill on a bi-monthly or quarterly basis provided rates based on equivalent usage and the rates were normalized to monthly rates. Respondents were asked to use the rates in effect on July 1, 2018.



Residential Connections	# of Replies	Smallest System # of Connections	Largest System # of Connections	Average # of Connections	Median # of Connections
Water	139	6	359,849	12,012	2,449
Wastewater	126	37	339,708	11,470	1,776

## Monthly Residential Rates

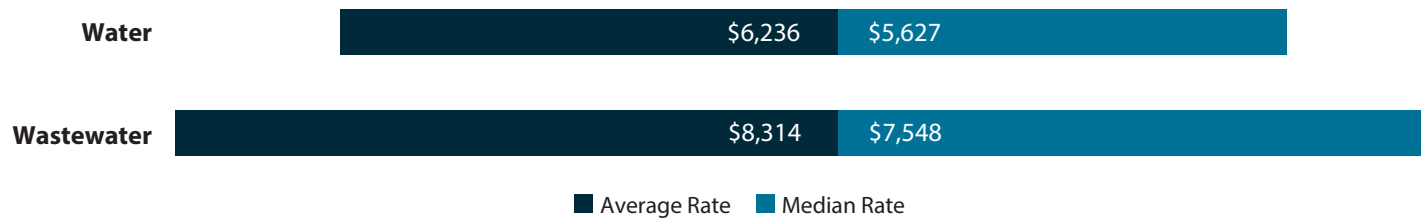


Utilities were also asked to provide the rate for a non-residential customer that uses 1,000,000 gallons per month. If the size of the meter influences the charges, the utility was to assume a 4-inch meter.



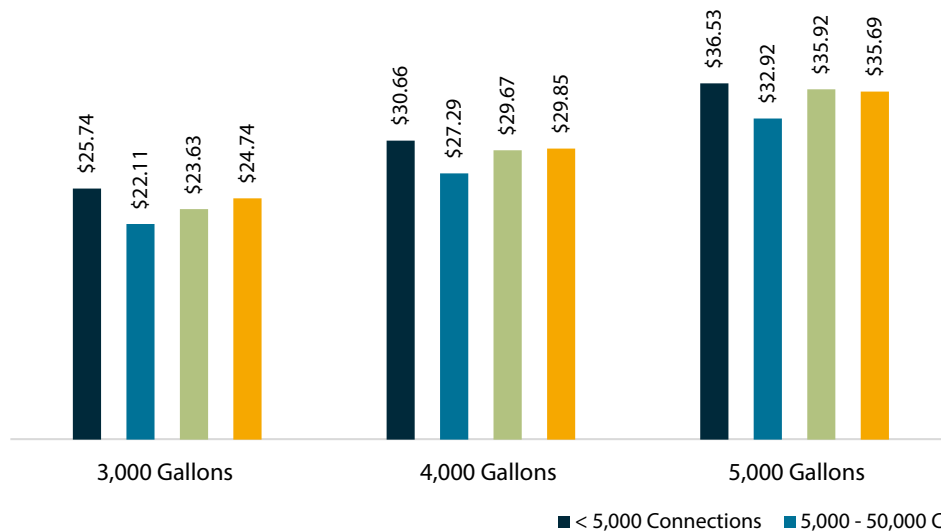
Non-residential Connections	# of Replies	Smallest System # of Connections	Largest System # of Connections	Average # of Connections	Median # of Connections
Water	134	3	12,606	790	197
Wastewater	120	4	28,243	997	189

### Monthly Non-residential Rates (per 1 million gallons)



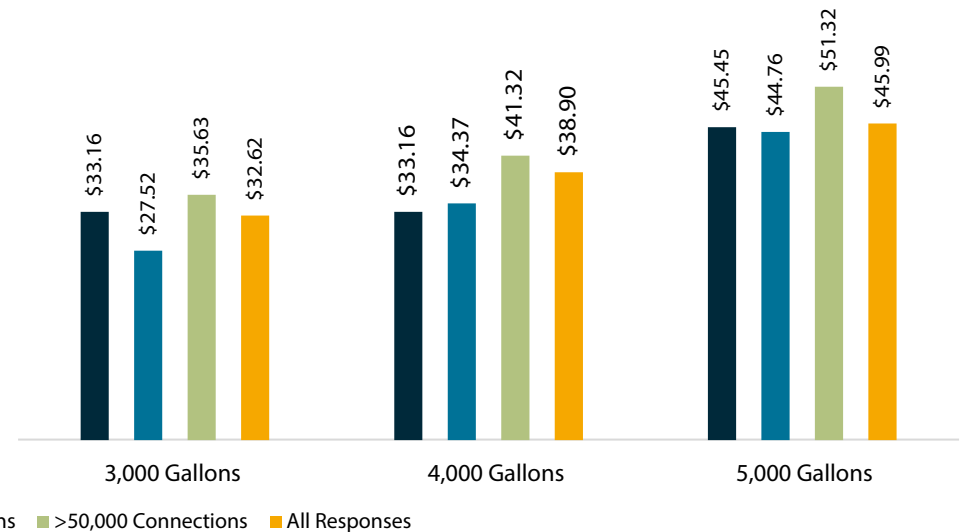
### Water Rate Summary by System Size

Average Residential Water Rates by System Size (Monthly)



### Wastewater Rate Summary by System Size

Average Residential Wastewater Rates by System Size (Monthly)





# Connection and Capital Recovery Charges

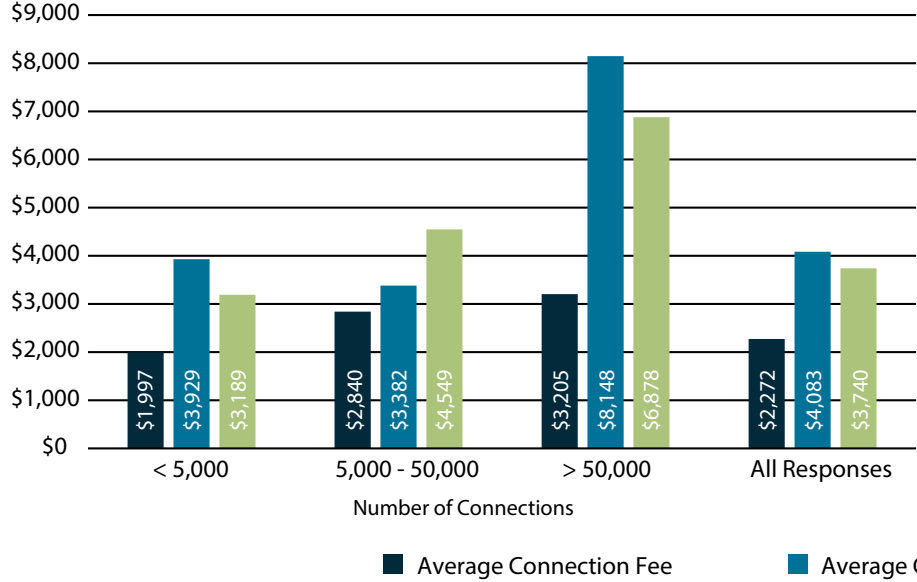
Residential connection fees and capital recovery charges are shown below. Connection fees are charges for tapping into the water main and running a line to the water meter or for tapping into the sewer line and running a lateral to the property line. Capital recovery charges are capital charges for buying into the existing system or charges that recognize the cost of adding capacity to the system. Providers were asked to furnish the charges for a residential connection using a 5/8- or 3/4-inch meter.

	Connection Fees		Capital Recovery Charges		Combined Charges	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Average	\$2,272	\$3,363	\$4,083	\$4,787	\$3,740	\$4,976
Median	\$1,288	\$2,000	\$3,000	\$4,375	\$3,000	\$4,000
High	\$24,754	\$22,750	\$18,100	\$16,200	\$25,754	\$22,750
Low	\$75	\$50	\$400	\$375	\$75	\$50

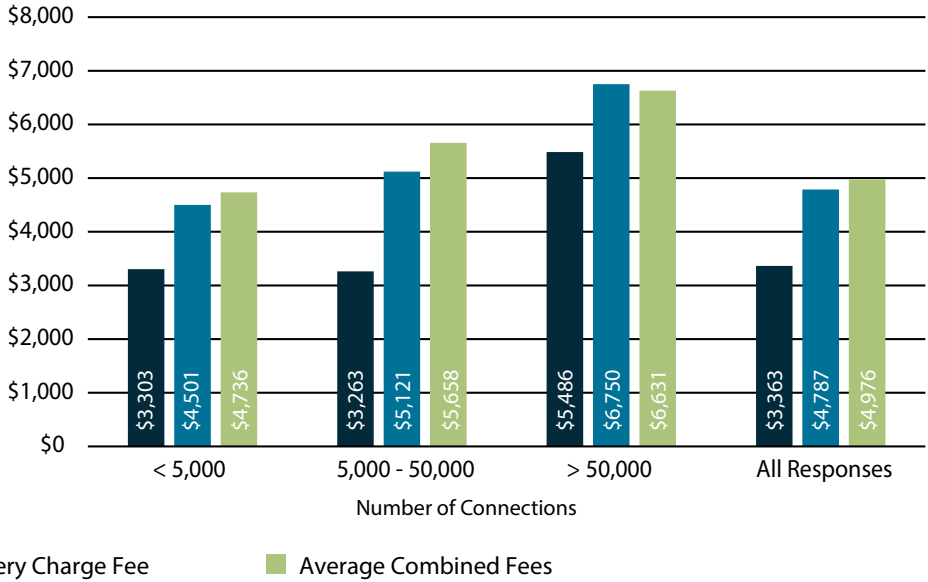
\*Fees and charges in this table are for residential connections using a 5/8- or 3/4-inch meter



### Water Connection and Capital Recovery Charges by System Size



### Wastewater Connection and Capital Recovery Charges by System Size





# Water Data

	# Residential Water Units	# Non-residential Water Units	Residential Water Rate Inside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Outside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Inside (4,000 gal./mo.)	Residential Water Rate Outside (4,000 gal./mo.)	Residential Water Rate Inside (5,000 gal./mo.)	Residential Water Rate Outside (5,000 gal./mo.)	Last Water Rate Change	Water Rate - Business Inside (1 million gal./mo.)	Water Source <sup>2</sup>	Residential Connection Fee <sup>3</sup>	Last Water Connection Rate Change	Residential Capital Recovery Change <sup>3</sup>	Last Water CRC Rate Change
Albemarle County Service Authority	29,478	1,458	\$20.97		\$29.52		\$38.07		2018	\$8,379	S	\$1,026	2013	\$6,650	2017
Alleghany County	2,661	187	\$44.00		\$44.00		\$44.00		2018	\$8,999	S				
Altavista, Town of	1,640	56	\$6.54	\$13.08	\$8.72	\$17.44	\$10.90	\$21.80	2015	\$2,140	C	\$350			
Amelia County	294	147	\$22.50		\$27.00		\$31.50			\$4,725	G			\$3,000	2013
Amherst County Authority	6,341	533	\$30.23		\$36.46		\$42.72		2018	\$6,266	S	\$1,285	2015	\$2,790	2015
Amherst, Town of	1,125	166	\$38.85	\$77.70	\$46.60	\$93.20	\$54.35	\$108.70	2017	\$12,550	S	\$2,700			
Appalachia, Town of	1,030	35	\$23.75	\$34.90	\$28.00	\$42.05	\$32.25	\$49.20	2016		S				
Appomattox, Town of	944	231	\$15.80		\$21.60		\$27.40		2012	\$5,798	S	\$1,500	2013	\$1,500	2013
Arlington County	35,521	1,966	\$13.59		\$18.12		\$22.65		2017	\$4,530	S	\$3,200	2008	\$85/DFU	2013
Augusta County Service Authority	13,989	1,094	\$24.21		\$29.74		\$35.27		2018	\$5,759	C	\$1,250	2016	\$2,645	2008
Bedford Regional Water Authority (Forest, Lakes, Stewartsville, Montvale)	12,783	1,009	\$33.10	\$36.10	\$36.80	\$39.80	\$40.50	\$43.50	2018	\$4,384	C	\$1,500		\$4,000	
Berryville, Town of	1,519	207	\$25.20		\$33.60		\$42.00		2015	\$8,400	S	\$5,575	2008		
Big Stone Gap, Town of	3,570	303	\$27.51	\$44.25	\$33.66	\$54.10	\$39.81	\$63.95	2018	\$6,159	S				
Blacksburg, Town of	9,352	332	\$23.64	\$41.39	\$30.54	\$53.47	\$37.44	\$65.55	2018	\$6,903	S	\$625	2018	\$1,255	2018
Bluefield, Town of	2,200	100	\$32.60	\$48.90	\$40.50	\$60.75	\$48.40	\$72.60	2018	\$6,076	S	\$450	2016		
Bowling Green, Town of	760	100	\$17.42	\$34.84	\$17.42	\$38.21	\$20.79	\$41.57	2018	\$2,275	G	\$750	2007	\$6,000	2017
Bridgewater, Town of	1,993	194	\$15.48	\$19.10	\$19.10	\$24.53	\$22.72	\$29.96	2018		C	\$2,660	2018		
Buchanan County Public Service Authority	7,880	800	\$32.50	\$37.25	\$41.50	\$46.25	\$50.50	\$55.25	2018		S				
Buckingham County	321	95	\$25.36		\$25.36		\$38.56		2018	\$13,000	S	\$2,000	1994		
Buena Vista, Town of	2,520	199	\$22.44		\$29.92		\$37.40		2014	\$7,480	G				
Campbell County Utilities and Service Authority	10,156	553	\$26.65		\$32.88		\$39.09		2012	\$6,293	C	\$1,500	2010	\$1,900	2010
Cape Charles, Town of	1,148	105	\$32.84		\$35.47		\$38.10		2017	\$4,994	G	\$875	2012	\$4,000	2012
Caroline County	1,508	165	\$23.16		\$24.67		\$26.50		2014	\$2,043	G	\$1,000	2018	\$5,000	2018
Carroll County PSA	3,675	208	\$34.60		\$41.20		\$47.80		2016	\$4,773	C	\$1,250	2009		
Charlotte Court House, Town of	257	58	\$37.00		\$41.00		\$45.00		2015		S	\$1,450			
Charlottesville, City of	13,117	1,496	\$23.46		\$31.30		\$39.08		2018	\$7,822	C	\$3,655	2018		
Chase City, Town of	1,200	50	\$25.10	\$32.13	\$30.77	\$39.39	\$36.44	\$46.64	2013	\$4,940	S				
Chesapeake, City of	67,453	3,450	\$27.46		\$32.51		\$37.56		2016	\$7,045	C	\$3,108	2007		
Chesterfield County	125,434	5,845	\$18.48		\$21.25		\$24.03		2018	\$2,961	S	\$1,980	2018	\$5,725	2018

<sup>1</sup>"Inside" refers to inside of municipal boundary. "Outside" rates are listed where the utility has implemented higher rates to users outside of the municipal boundary.

<sup>2</sup>Water Source: S = surface water, G = groundwater, and C = combination.

<sup>3</sup>Connection and Capital Recovery Charge (CRC) Fees: "Cost" = customer pays the cost of making the connection; "Cost +" = the customer pays the cost to make the connection, plus additional charges, "fixture" or DFU means the customer is charged that fee per the number of drainage fixture units in the structure.



# Water Data

	# Residential Water Units	# Non-residential Water Units	Residential Water Rate Inside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Outside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Inside (4,000 gal./mo.)	Residential Water Rate Outside (4,000 gal./mo.)	Residential Water Rate Inside (5,000 gal./mo.)	Residential Water Rate Outside (5,000 gal./mo.)	Last Water Rate Change	Water Rate - Business Inside (1 million gal./mo.)	Water Source <sup>2</sup>	Residential Connection Fee <sup>3</sup>	Last Water Connection Rate Change	Residential Capital Recovery Change <sup>3</sup>	Last Water CRC Rate Change
Chilhowie, Town of	2,095	144	\$22.35	\$44.96	\$26.82	\$53.97	\$31.29	\$62.98	2017	\$5,005	G	\$900	2017		
Chincoteague, Town of	2,507	1,038	\$15.48		\$19.84		\$24.20		2012	\$5,341	G	\$670	2012	\$3,708	
Christiansburg, Town of	9,644	793	\$25.00	\$37.50	\$34.00	\$51.00	\$43.00	\$64.50	2018	\$6,861	S	\$3,000	2015		
Clarke County Sanitary Authority	393	51	\$35.19		\$46.92		\$58.65		2017	\$11,736	G			\$13,800	2006
Clarksville, Town of	732	162	\$30.00	\$59.75	\$37.00	\$73.70	\$44.00	\$87.65	2016	\$7,009	S	\$1,000	2009	\$1,000	2009
Clifton Forge, Town of	1,800	160	\$32.80		\$32.80		\$32.80		2017	\$7,088	S	\$300	2000		
Coeburn, Town of	1,550	165	\$25.74	\$37.02	\$31.68	\$45.90	\$37.62	\$54.78	2015		S	Cost + \$50			
Colonial Beach, Town of	2,415	115	\$24.10	\$36.15	\$24.10	\$36.15	\$24.10	\$36.15			G	\$3,250	2009		
Courtland, Town of	667	48	\$11.00	\$13.00	\$11.00	\$13.00	\$11.00	\$13.00	1994		G	\$1,200	2005		
Craig New Castle Public Service Authority	481	69	\$23.26		\$29.01		\$34.76		2017	\$10,012	G	\$2,000	2005		
Craigsville, Town of	499	22	\$31.00		\$31.00		\$31.00		2018		G	\$2,000	2008		
Culpeper, Town of	6,621	738	\$19.60		\$25.80		\$32.00		2018	\$3,859	C	\$281	2012	\$6,500	2009
Danville, City of	17,374	2,502	\$18.45		\$21.65		\$24.93		2016	\$3,421	S	\$1,500	2018		
Dayton, Town of			\$10.30		\$13.70		\$17.10		2013	\$2,849	G				
Dinwiddie County Water Authority	3,520	182	\$15.70		\$20.01		\$24.32		2017	\$3,902	C	\$1,618	2015		
Dublin, Town of	2,533	155	\$26.21	\$35.01	\$31.48	\$41.03	\$36.75	\$47.05	2018		S	\$1,200	2018		
Dungannon, Town of	237	4	\$24.50	\$28.50	\$29.50	\$33.50	\$34.50	\$38.50	2016	\$5,010	G	\$125	2016	\$750	2016
Edinburg, Town of	567	51	\$27.50	\$41.25	\$33.50	\$47.25	\$39.50	\$53.25	2018	\$6,010	G	\$5,000	2009		
Emporia, City of	2,175		\$29.00		\$38.27		\$47.48		2015		S	\$3,000	2015		
Exmore, Town of	640	130	\$21.25	\$24.25	\$24.00	\$27.00	\$26.75	\$29.75	2017		G	\$1,000	2017		
Fairfax Water	359,849	12,606	\$12.89		\$15.83		\$18.77		2018	\$2,986	S	\$1,260	2018	\$17,570	2018
Farmville, Town of	3,193	636	\$26.81	\$35.22	\$30.49	\$40.74	\$34.17	\$46.26	2018	\$5,240	S	\$4,000	2013		
Fauquier County Water and Sanitation Authority	6,187	177	\$43.44		\$49.71		\$55.98		2018	\$10,585	G	\$11,120	2016		
Ferrum Water and Sewage Authority	192	30	\$24.00		\$29.50		\$35.00		2017	\$5,570	G	Cost + \$500	2014	\$1,500	2017
Fincastle, Town of	200	50	\$27.61		\$31.71		\$35.81		2017	\$5,239	G	\$2,000	2012	\$2,500	2012
Franklin, City of	3,292	252	\$23.82	\$29.86	\$27.02	\$33.82	\$30.22	\$37.78	2016	\$3,214	G	\$3,500	2005		
Frederick Water	14,948	777	\$21.69		\$26.01		\$30.33		2018		C	\$14,115	2018		
Fredericksburg, City of	6,240	1,847	\$13.71		\$16.22		\$18.73		2017	\$2,767	S	\$2,600	2012	\$3,000	2012
Front Royal, Town of	6,181		\$9.92	\$19.84	\$18.43	\$36.86	\$26.94	\$53.88	2014	\$8,573	S	\$4,340	2011		
Galax, City of	3,200	500	\$14.50	\$29.00	\$19.00	\$38.00	\$23.50	\$47.00	2017	\$4,501	S	\$1,000	2010		
Gate City, Town of			\$36.05		\$43.95		\$51.85		2013	\$7,912	S				
Glasgow, Town of	516	12	\$30.00	\$45.00	\$34.70	\$53.50	\$39.40	\$62.00	2017	\$576	G	\$2,500	2015		
Gloucester County	5,558	925	\$30.18		\$40.18		\$50.18		2013	\$10,397	C	\$3,500	2008	\$500	2008



# Water Data

	# Residential Water Units	# Non-residential Water Units	Residential Water Rate Inside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Outside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Inside (4,000 gal./mo.)	Residential Water Rate Outside (4,000 gal./mo.)	Residential Water Rate Inside (5,000 gal./mo.)	Residential Water Rate Outside (5,000 gal./mo.)	Last Water Rate Change	Water Rate - Business Inside (1 million gal./mo.)	Water Source <sup>2</sup>	Residential Connection Fee <sup>3</sup>	Last Water Connection Rate Change	Residential Capital Recovery Change <sup>3</sup>	Last Water CRC Rate Change
Goochland County	1,650	274	\$24.31		\$30.53		\$36.75		2018	\$8,946	S	\$4,000	2012		
Greensville County	1,711	100	\$16.95		\$22.60		\$28.25			\$5,930	C	\$960		\$400	
Gretna, Town of	546	105	\$26.09	\$52.17	\$31.25	\$60.16	\$51.89	\$92.12	2018	\$5,171	G	\$300			
Halifax County Service Authority - UPA	3,890	420	\$23.00		\$28.00		\$33.00		2018		S			\$1,250	2007
Hamilton, Town of	667	32	\$16.80	\$22.95	\$22.40	\$30.60	\$34.90	\$44.60	2014	\$14,690	G	\$3,400	2006	\$18,100	2006
Hampton, City of	45,360		\$8.58		\$11.45		\$14.31		2013		S				
Hanover County	19,593	1,735	\$13.49		\$18.50		\$23.51		2018	\$4,025	C			\$5,982	2014
Harrisonburg, City of	12,935	2,893	\$11.88	\$18.12	\$15.20	\$23.49	\$18.50	\$28.86	2018	\$3,095	S	\$2,500	1998		
Henrico County	92,422	5,998	\$21.13		\$24.55		\$29.68		2018	\$4,703	S	\$4,635	2017		
Henry County Public Service Authority	12,496	919	\$30.00		\$30.00		\$34.70		2013	\$7,017	C	\$1,750	2013		
Herndon, Town of	7,973	473	\$12.23		\$15.19		\$18.25		2018	\$9,401	C	\$3,120	2010	\$7,800	2018
Hillsville, Town of	1,130	170	\$29.84	\$37.86	\$34.34	\$46.59	\$38.84	\$55.32	2018	\$8,014	S	\$690	2011		
Ivor, Town of	220	30	\$32.50	\$34.00	\$32.50	\$34.00	\$35.50	\$37.00	2016	\$4,017	G	\$100	2010	\$1,500	2010
James City Service Authority	21,571	969	\$14.35		\$17.96		\$21.60		2018	\$5,418	G	\$500/Fixture	2007	\$1,300	1987
Kenbridge, Town of	490	90	\$15.15	\$28.11	\$20.15	\$36.15	\$26.15	\$44.19	2012		G	\$500			
Keysville, Town of	400	5	\$27.00		\$32.00		\$37.00		2012		S	\$75	2012		
Kilmarnock, Town of	791	263	\$15.15	\$22.73	\$17.95	\$26.93	\$20.75	\$31.13	2008	\$5,627	G	\$2,055	2006		
King George County Service Authority	4,049		\$30.92		\$35.45		\$44.51		2017		G				
Lawrenceville, Town of	989	177	\$14.44	\$25.26	\$18.38	\$32.14	\$22.32	\$39.02	2018	\$3,947	S	Cost + \$400			
Leesburg, Town of	15,000	4,300	\$26.25	\$52.55	\$32.14		\$38.03	\$49.17	2018	\$6,536	S	\$4,683			
Lexington, City of	2,420	591	\$17.92	\$24.22	\$23.91	\$32.31	\$29.95	\$40.47	2017	\$13,394	S	\$1,625	2017	\$600	
Loudoun Water	73,708	2,402	\$36.02		\$56.42		\$76.82		2018	\$3,440	C			\$6,776	2017
Louisa County Water Authority - NorthEast Creek	97	72	\$22.00		\$22.00		\$27.50		2012	\$5,500	C	\$3,750	2004		
Louisa County Water Authority - Zion Crossroads	649	53	\$22.00		\$22.00		\$27.50		2012	\$5,500	C	\$3,750	2004		
Louisa, Town of	763	157	\$34.88	\$39.17	\$34.88	\$39.17	\$41.11	\$46.69	2017	\$6,240	S	\$4,780			
Luray, Town of	1,919	129	\$35.67	\$53.51	\$40.87	\$61.31	\$46.07	\$69.11	2017	\$5,569	G	\$1,200	2007	\$3,320	2018
Lynchburg, City of	22,000	2,000	\$13.92		\$17.50		\$21.09		2017	\$3,633	S	\$1,150	2016	\$1,220	2000
Martinsville, City of	7,000	500	\$25.31	\$31.50	\$25.31	\$31.50	\$28.50	\$35.68	2016	\$2,675	S	\$900	2014		
McDowell Water System	56	21	\$35.00		\$35.00		\$42.50		2006		G	\$200	1999		
Middletown, Town of	542	42	\$34.30	\$62.35	\$43.65	\$81.05	\$53.00	\$99.75	2018	\$10,470	S	\$4,500	2006		
Monterey, Town of	220	59	\$16.50		\$16.50		\$21.04		2015		G	\$1,125	2015		
Montgomery County Public Service Authority	2,526	224	\$33.66		\$42.63		\$51.60		2018	\$8,977	C	\$925	2017	\$2,500	
Montross, Town of	228	78	\$18.00	\$27.00	\$18.00	\$27.00	\$18.00	\$27.00	2018		G	\$500			



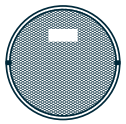
# Water Data

	# Residential Water Units	# Non-Residential Water Units	Residential Water Rate Inside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Outside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Inside (4,000 gal./mo.)	Residential Water Rate Outside (4,000 gal./mo.)	Residential Water Rate Inside (5,000 gal./mo.)	Residential Water Rate Outside (5,000 gal./mo.)	Last Water Rate Change	Water Rate - Business Inside (1 million gal./mo.)	Water Source <sup>2</sup>	Residential Connection Fee <sup>3</sup>	Last Water Connection Rate Change	Residential Capital Recovery Change <sup>3</sup>	Last Water CRC Rate Change
Mt. Crawford, Town of	183		\$37.50		\$44.60		\$51.70				G	\$2,650			
Narrows, Town of	1,025	15	\$31.80	\$42.02	\$45.15	\$59.59	\$58.50	\$77.16	2018	\$5,227	G	\$200	2013	\$1,500	2017
Nelson County	87	14	\$29.90		\$29.90		\$36.00		2013		C	\$2,000	2006		
New Kent County			\$24.29		\$31.58		\$38.87		2017	\$8,552	G				
New Market, Town of	1,041	118	\$16.34	\$28.56	\$20.92	\$36.57	\$25.50	\$44.58	2018	\$4,583	G	\$2,000	2018		
Newport News Waterworks	125,000	5,000	\$26.84		\$31.78		\$36.69	\$36.69	2016	\$5,141	S	\$1,200	2016	\$2,520	2015
Norton, City of	1,838	349	\$28.20	\$42.70	\$34.00	\$54.30	\$42.30	\$68.40	2018	\$5,818	S	\$240	1988		
Phenix, Town of	127	3	\$34.00		\$38.00		\$42.00		2017		G	\$600	2017		
Pittsylvania County Service Authority / Danville SA	3,823	230	\$23.00		\$23.00		\$30.00		2013	\$6,995	C	\$955	2010		
Portsmouth, City of	30,277	2,474	\$20.72		\$25.95		\$31.21		2018	\$5,316	C	\$200	2013		
Pound, Town of	1,015	70	\$36.82	\$50.72	\$44.55	\$62.31	\$52.28	\$73.90	2018	\$7,735	C	\$800	2017		
Powhatan County	6	98	\$31.01		\$37.74		\$44.47		2018	\$7,000	C	\$4,100			
Prince William County Service Authority	116,806	3,604	\$15.50		\$18.85		\$22.20		2015	\$3,836	S	\$4,600	2012		
Pulaski County Public Service Authority	4,485	315	\$26.15		\$31.25		\$36.35		2018	\$4,636	S	\$700	2016		
Purcellville, Town of	2,581	312	\$27.99	\$55.98	\$36.62	\$73.24	\$45.25	\$90.50	2018	\$7,839	S	\$25,754			
Quantico, Town of	136	39	\$46.48		\$58.64		\$70.80		2012	\$1,226	G	\$1,000	2010		
Radford, City of	4,915	456	\$16.32		\$16.32		\$20.40		2014	\$3,680	S	\$1,000	2014	\$800	2014
Rapidan Service Authority	7,522	498	\$15.66		\$19.88		\$24.10		2018		S	\$10,000			
Richlands, Town of	2,277	278	\$17.50	\$23.50	\$21.50	\$29.00	\$25.50	\$34.50	2009	\$3,769	S	\$400	1986		
Richmond, City of	47,473	9,621	\$30.72		\$36.17		\$41.59		2017	\$2,684	S	\$5,650			
Rockbridge County Public Service Authority	2,546	380	\$26.53		\$31.63		\$36.73		2018	\$5,236	G	\$1,025	2007	\$4,000	2007
Rockbridge County Public Service Authority (Long Hollow, Riveria, Ridgemont)			\$35.53		\$43.63		\$51.73		2018		G				
Rockingham County	4,103	330	\$12.50		\$16.30		\$20.10		2017	\$3,799	G	\$625	2009	\$2,650	2009
Rocky Mount, Town of	2,449	472	\$17.01	\$34.02	\$20.36	\$40.72	\$23.71	\$47.42	2016	\$3,217	S	\$1,000	2016		
Rural Retreat, Town of			\$23.60	\$41.10	\$28.90	\$50.20	\$34.20	\$59.30	2017	\$7,045	G	\$1,000	2017		
Scott County Public Service Authority	4,900	500	\$35.47		\$44.60		\$53.73		2018	\$9,178	C	\$1,500	2015		
Shenandoah, Town of	941	76	\$22.65	\$35.50	\$27.15	\$43.00	\$31.65	\$50.50	2018	\$4,510	G	\$4,000	2008		
Smithfield, Town of	3,189	475	\$24.16	\$28.78	\$30.30	\$36.46	\$36.44	\$44.14	2018	\$6,146	G	\$660	1999	\$2,720	2007
Smyth County	2,526	35	\$40.01		\$49.30		\$58.59		2016	\$11,376	C	\$850	2016		
South Hill, Town of	2,900	900	\$17.50	\$35.00	\$24.00	\$48.00	\$28.00	\$52.00	2016	\$8,800	S	\$1,000	2012		
Southampton County	817	26	\$28.00		\$28.00		\$34.00		2017		G	\$1,000	2009	\$4,000	2009
Spotsylvania County	29,213	1,869	\$18.32		\$24.83		\$31.34		2018	\$10,549	S	\$1,290	2008	\$4,920	2008
St. Paul, Town of	638	83	\$23.92	\$41.37	\$30.37	\$51.62	\$36.82	\$61.52	2017	\$6,455	S	\$750	2012		
Stafford County	35,230	1,561	\$21.70		\$25.38		\$30.43		2018	\$5,386	S	\$1,450	2005		



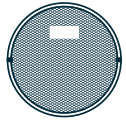
## Water Data

	# Residential Water Units	# Non-residential Water Units	Residential Water Rate Inside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Outside (3,000 gal./mo.) <sup>1</sup>	Residential Water Rate Inside (4,000 gal./mo.)	Residential Water Rate Outside (4,000 gal./mo.)	Residential Water Rate Inside (5,000 gal./mo.)	Residential Water Rate Outside (5,000 gal./mo.)	Last Water Rate Change	Water Rate - Business Inside (1 million gal./mo.)	Water Source <sup>2</sup>	Residential Connection Fee <sup>3</sup>	Last Water Connection Rate Change	Residential Capital Recovery Change <sup>3</sup>	Last Water CRC Rate Change
Stanley, Town of	1,513	91	\$20.50	\$25.10	\$22.00	\$27.40	\$23.50	\$29.70	2018		G	\$2,700	2018	\$1,125	2018
Staunton, City of	8,297	1,192	\$14.00	\$21.00	\$17.50	\$26.25	\$22.75	\$34.13	2016	\$467	S	\$2,100	2018	\$3,500	2016
Strasburg, Town of	2,525	159	\$37.61	\$52.65	\$50.15	\$70.21	\$62.69	\$87.77	2018	\$17,675	S	\$6,500	2010		
Tazewell County Public Service Authority	6,184	334	\$41.13		\$49.58		\$58.03		2018	\$8,104	S	\$1,100	2016		
Tazewell, Town of	1,735	250	\$27.31	\$46.81	\$40.62	\$55.97	\$47.93	\$65.13	2017	\$7,321	S	\$540			
Town of Lovettsville	880	44	\$32.17	\$48.25	\$41.13	\$61.69	\$50.09	\$75.13	2017		G	\$2,000	2018	\$10,125	2018
Town of Mineral	256	51	\$26.50	\$30.00	\$34.50	\$39.00	\$42.50	\$48.00	2013	\$8,003	C	\$4,000	2007		
Wakefield, Town of	522	89	\$17.00	\$34.00	\$19.00	\$38.00	\$21.00	\$42.00	2012		G	\$1,400	2009		
Warrenton, Town of	4,238	623	\$10.63	\$15.95	\$15.94	\$23.92	\$21.25	\$31.89	2017	\$5,467	C	\$1,500	2017	\$4,950	2017
Waynesboro, City of	7,800	873	\$24.05	\$25.58	\$29.18	\$31.22	\$34.31	\$36.86	2018	\$5,285	G	\$800	1999	\$2,725	1999
West Point, Town of	1,114	195	\$22.45		\$22.45		\$22.45		2018	\$5,694	G	\$500	2007	\$3,500	2007
Western Virginia Water Authority (Botetourt Co.)	1,477	265	\$26.50		\$31.25		\$36.00			\$6,430	G	\$2,000		\$3,000	
Western Virginia Water Authority (Franklin Co.)	1,823	163	\$31.00		\$36.00		\$41.00			\$5,900	C	\$2,000		\$3,000	
Western Virginia Water Authority (Roanoke City/County)	52,489	8,241	\$21.25		\$24.25		\$27.25			\$4,493	C	\$2,000		\$3,000	
Windsor, Town of	1,135	5	\$22.50	\$24.00	\$30.00	\$32.00	\$37.50	\$40.00	2018	\$7,500	G	\$1,030	2006	\$5,000	2005
Wise County Public Service Authority	4,370	180	\$41.13		\$53.88					\$10,511	S	\$1,000			
Wythe County	3,073	184	\$37.80		\$47.25					\$9,459	S	\$1,000			2009
Wytheville, Town of	4,071	688	\$22.11	\$44.22	\$30.46			\$77.62		\$3,686	S	\$1,500/Meter			



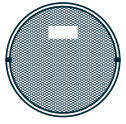
## Wastewater Data<sup>4</sup>

	# Residential Wastewater Units	# Non-residential Wastewater Units	Residential WW Rate Inside (3,000 gal./mo.)	Residential WW Rate Outside (3,000 gal./mo.)	Residential WW Rate Inside (4,000 gal./mo.)	Residential WW Rate Outside (4,000 gal./mo.)	Residential WW Rate Inside (5,000 gal./mo.)	Residential WW Rate Outside (5,000 gal./mo.)	Last WW Rate Change	WW Rate Business Inside (1 million gal./mo.)	Residential Connection Fee	Last WW Connection Rate Change	Residential Capital Recovery Charge	Last WW CRC Rate Change
Albemarle County Service Authority	26,316	1,123	\$26.79		\$35.72		\$44.65		2018	\$8,930	Cost	2013	\$6,820	2017
Alexandria Renew Enterprises	23,060	3,551	\$29.92		\$36.69		\$43.46		2017	\$7,491				
Alexandria, City of	41,822	2,965	\$6.84		\$9.12		\$11.40		2018	\$2,280	\$8,859	2018		
Alleghany County	1,952		\$44.00		\$44.00		\$44.00		2018					
Altavista, Town of	1,276	54	\$7.83	\$15.66	\$10.44	\$20.80	\$13.05	\$26.10	2015	\$2,669	\$500		\$600	
Amelia County	239	119	\$25.00		\$30.00		\$35.00		2017	\$5,250			\$4,000	2013
Amherst County Service Authority	927	249	\$28.73		\$37.80		\$46.89		2018	\$9,080	\$1,400	2015	\$3,810	2015
Amherst, Town of	678	143	\$47.90	\$95.80	\$54.75	\$109.50	\$61.60	\$123.20	2017	\$15,265	\$3,500			
Appomattox, Town of	754	188	\$45.85		\$62.10		\$78.35		2015	\$16,247	\$2,200	2013	\$2,200	2013



# Wastewater Data<sup>4</sup>

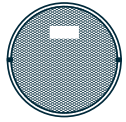
	# Residential Wastewater Units	# Non-residential Wastewater Units	Residential WW Rate Inside (3,000 gal./mo.)	Residential WW Rate Outside (3,000 gal./mo.)	Residential WW Rate Inside (4,000 gal./mo.)	Residential WW Rate Outside (4,000 gal./mo.)	Residential WW Rate Inside (5,000 gal./mo.)	Residential WW Rate Outside (5,000 gal./mo.)	Last WW Rate Change	WW Rate Business Inside (1 million gal./mo.)	Residential Connection Fee	Last WW Connection Rate Change	Residential Capital Recovery Charge	Last WW CRC Rate Change
Arlington County	35,105	1,660	\$27.27		\$36.36		\$45.45		2017	\$9,090		2008		2013
Augusta County Service Authority	8,685	388	\$39.72		\$49.07		\$58.42		2018	\$9,644	\$1,250	2016	\$4,900	2008
Bedford Regional Water Authority (Forest, Lakes, Stewartsville, Montvale)	5,131	803	\$42.00	\$45.20	\$48.50	\$52.90	\$55.00	\$60.60	2018	\$6,194	\$1,500		\$5,000	
Berryville, Town of	1,466	207	\$51.00		\$68.00		\$85.00		2013	\$17,000	\$22,750	2008		
Big Stone Gap, Town of	2,327	258	\$31.27	\$51.96	\$37.13	\$61.31	\$42.99	\$70.66	2018	\$5,874				
Blacksburg, Town of	8,680	310	\$20.36	\$35.63	\$26.16	\$45.78	\$31.96	\$55.93	2018	\$5,803	\$958	2018	\$2,500	2018
Bowling Green, Town of	400	100	\$45.46	\$51.39	\$49.86	\$56.35	\$54.25	\$61.32	2018	\$9,983	\$750	2007	\$6,000	2017
Bridgewater, Town of	1,993	125	\$28.40		\$35.46		\$42.52		2018		\$6,917	2018		
Buckingham County	178	42	\$40.85		\$40.85		\$54.05		2018	\$13,586	\$2,500	1994		
Buena Vista, Town of	2,430		\$22.32		\$29.76		\$37.20		2014	\$7,440				
Campbell County Utilities and Service Authority	3,044	297	\$25.65		\$32.22		\$38.76		2012	\$6,556	\$1,900	2010	\$2,200	2010
Cape Charles, Town of	1,143	102	\$67.18		\$71.29		\$75.40		2017	\$7,807	\$875	2012	\$6,600	2012
Caroline County	889	120	\$52.12		\$61.67		\$71.52		2014	\$10,588	\$1,000	2018	\$6,000	2018
Carroll County PSA	851	79	\$36.00		\$43.00		\$52.00		2016	\$7,589	\$1,250	2009		
Charlottesville, City of	13,055	1,473	\$31.61		\$42.17		\$52.66		2018	\$10,538	\$5,350	2018		
Chase City, Town of	1,200	50	\$23.90	\$30.59	\$30.10	\$38.53	\$36.30	\$46.46	2013	\$3,544				
Chesapeake, City of	65,221	3,263	\$37.12		\$47.29		\$57.46		2016	\$7,506	\$2,702	2007		
Chesterfield County	110,357	3,989	\$25.68		\$28.68		\$31.67		2018	\$3,351		2018	\$5,400	2018
Chilhowie, Town of	1,015	121	\$22.35	\$52.16	\$26.82	\$62.62	\$31.29	\$73.08	2017	\$6,159	\$900	2017		
Christiansburg, Town of	8,900	355	\$30.50	\$45.76	\$40.75	\$61.14	\$51.00	\$76.52	2018	\$10,250	\$3,000	2015		
Clarke County Sanitary Authority	298	41	\$54.17		\$54.17		\$61.07		2017	\$13,906			\$16,200	2006
Clarksville, Town of	730	151	\$43.33	\$98.18	\$43.33	\$98.18	\$43.33	\$98.18	2016	\$12,978	\$800	2009	\$800	2009
Clifton Forge, Town of	1,800	160	\$74.20		\$74.20		\$74.20		2017	\$9,653	\$300	2000		
Coeburn, Town of	995	130	\$33.46	\$55.53	\$41.18	\$68.85	\$48.91	\$82.17	2015		Cost + \$50			
Colonial Beach, Town of	2,400	111	\$54.23	\$81.35	\$54.23	\$81.35	\$54.23	\$81.35			\$3,750	2009		
Craig New Castle Public Service Authority	383	68	\$35.95		\$42.23		\$48.48		2017	\$6,274	\$2,000	2005		
Craigsville, Town of	475	29	\$34.00		\$34.00		\$34.00		2018		\$3,000	2008		
Culpeper, Town of	6,387	650	\$24.46		\$32.28		\$40.10		2018	\$7,062	\$281	2012	\$10,000	2009
Danville, City of	16,195	2,281	\$24.32		\$27.76		\$31.29		2016	\$3,802	\$1,543	2018		
Dayton, Town of			\$14.65		\$19.50		\$24.35		2013	\$4,461				
Dinwiddie County Water Authority	3,425	137	\$20.82		\$26.82		\$32.82		2017	\$5,805	\$3,910	2015		
Dublin, Town of	1,158	130	\$15.66	\$18.43	\$19.91	\$23.48	\$24.16	\$28.53	2018		\$1,200	2018		
Dungannon, Town of	237	4	\$24.50	\$28.50	\$29.50	\$33.50	\$34.50	\$38.50	2016	\$5,010	\$175	2016	\$750	2016



# Wastewater Data<sup>4</sup>

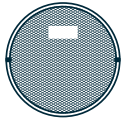
	# Residential Wastewater Units	# Non-residential Wastewater Units	Residential WW Rate Inside (3,000 gal./mo.)	Residential WW Rate Outside (3,000 gal./mo.)	Residential WW Rate Inside (4,000 gal./mo.)	Residential WW Rate Outside (4,000 gal./mo.)	Residential WW Rate Inside (5,000 gal./mo.)	Residential WW Rate Outside (5,000 gal./mo.)	Last WW Rate Change	WW Rate Business Inside (1 million gal./mo.)	Residential Connection Fee	Last WW Connection Rate Change	Residential Capital Recovery Charge	Last WW CRC Rate Change
Edinburg, Town of	520	43	\$31.00	\$46.50	\$37.00	\$52.50	\$43.00	\$58.50	2018	\$6,013	\$10,000	2009		
Emporia, City of	2,118		\$29.06	\$29.06	\$38.27	\$38.27	\$47.48	\$47.48	2015		\$4,000	2015		
Exmore, Town of	300	50	\$39.50		\$39.50		\$39.50		2017		\$6,500	2017		
Fairfax County Wastewater	339,708	28,243	\$31.13		\$38.13		\$45.13				\$4,150	2017	\$8,100	2017
Farmville, Town of	3,168	631	\$20.17	\$30.26	\$24.58	\$36.88	\$29.00	\$43.51	2018	\$6,288	\$4,000	2013		
Fauquier County Water and Sanitation Authority	3,952	244	\$56.52		\$65.86		\$75.20		2018	\$10,195	\$14,000	2016		
Ferrum Water and Sewage Authority	148	30	\$31.50		\$39.00		\$46.50		2017	\$7,620	Cost + \$500	2014	\$2,500	2017
Fincastle, Town of	200	50	\$38.50		\$45.19		\$51.88		2017	\$7,234	\$2,000	2012	\$2,500	2012
Franklin, City of	4,500	252	\$32.30	\$39.95	\$36.73	\$45.62	\$41.16	\$51.29	2016	\$4,449	\$4,500	2005		
Frederick Water	14,556	714	\$16.79		\$19.38		\$21.96		2018	\$6,857	\$3,076	2018		
Fredericksburg, City of	6,200	1,847	\$24.46		\$29.38		\$34.30		2017	\$5,324	\$5,100	2012	\$5,000	2012
Front Royal, Town of	5,782		\$16.17	\$32.34	\$30.08	\$60.16	\$43.99	\$87.98	2014	\$13,884	\$9,750	2011		
Galax, City of	3,200	500	\$14.50	\$29.00	\$19.00	\$38.00	\$23.50	\$47.00	2017	\$4,501	\$1,000	2010		
Gate City, Town of			\$38.25		\$47.65		\$57.05		2013	\$10,958				
Glasgow, Town of	520	12	\$30.00	\$37.00	\$30.00	\$38.00	\$30.00	\$39.00	2017	\$1,029	\$2,500	2015		
Gloucester County	1,463	687	\$37.62		\$49.74		\$61.56		2013	\$10,532	\$5,195	2008	\$3,095	2008
Goochland County	1,370	175	\$37.73		\$44.60		\$51.47		2018	\$13,405	\$6,000	2012		
Greensville County	1,564	92	\$33.16		\$33.16		\$39.79			\$7,730	\$1,320		\$835	
Gretna, Town of			\$16.55	\$33.10	\$20.09	\$40.19	\$23.63	\$47.28	2018	\$7,102	\$400			
Halifax County Service Authority - UPA	4,040	425	\$35.60		\$41.30		\$47.00		2018	\$5,237			\$1,500	2007
Hamilton, Town of	547	28	\$21.75	\$28.05	\$29.00	\$29.40	\$46.50	\$49.90	2014	\$20,455	\$5,000	2006	\$12,400	2006
Hampton, City of	32,561	12,800	\$30.12		\$40.16		\$50.20		2013	\$10,039				
Hanover County	19,117	1,644	\$29.95		\$37.32		\$44.69		2018	\$5,548			\$6,149	2014
Harrisonburg, City of	11,702	2,373	\$16.06	\$23.39	\$22.18	\$32.59	\$28.30	\$41.81	2018	\$5,492	\$4,500	1998		
Henrico County	90,206	5,098	\$29.55		\$33.18		\$38.62		2018	\$4,992	\$5,605	2017		
Henry County Public Service Authority	7,128		\$60.00		\$60.00		\$69.40		2013	\$14,034	\$1,750	2013		
Herndon, Town of	7,973	472	\$17.51		\$23.29		\$29.07		2018	\$5,780	\$600	2010	\$10,800	2018
Hillsville, Town of	1,050	185	\$26.87	\$40.69	\$33.05	\$48.54	\$39.23	\$56.39	2018	\$7,352	\$683	2011		
James City Service Authority	23,207	1,078	\$32.76		\$43.02		\$53.28		2018	\$10,310	\$400/Fixture	2007	\$1,050	1989
Kenbridge, Town of	433	81	\$52.28	\$75.53	\$60.37	\$86.70	\$68.46	\$97.87	2012		\$500			
Keysville, Town of	400	5	\$22.00		\$26.00		\$30.00		2012		\$50	2012		
Kilmarnock, Town of	786	260	\$26.88	\$40.32	\$33.13	\$49.69	\$39.38	\$59.07	2008	\$12,533	\$8,040	2006		
King George County Service Authority	1,935	165	\$59.37		\$69.94		\$91.08		2018					





# Wastewater Data<sup>4</sup>

	# Residential Wastewater Units	# Non-residential Wastewater Units	Residential WW Rate Inside (3,000 gal./mo.)	Residential WW Rate Outside (3,000 gal./mo.)	Residential WW Rate Inside (4,000 gal./mo.)	Residential WW Rate Outside (4,000 gal./mo.)	Residential WW Rate Inside (5,000 gal./mo.)	Residential WW Rate Outside (5,000 gal./mo.)	Last WW Rate Change	WW Rate Business Inside (1 million gal./mo.)	Residential Connection Fee	Last WW Connection Rate Change	Residential Capital Recovery Charge	Last WW CRC Rate Change
Lawrenceville, Town of	825	143	\$14.44	\$25.26	\$18.38	\$32.14	\$22.32	\$39.02	2018	\$3,947	Cost + \$400			
Leesburg, Town of	15,000	4,300	\$27.06	\$36.87	\$33.35	\$46.43	\$39.64	\$55.99	2018	\$6,494	\$7,292			
Lexington, City of	2,331	533	\$35.73	\$45.24	\$47.67	\$64.36	\$59.70	\$80.60	2017	\$26,698	\$1,575	2017	\$375	
Loudoun Water	73,708	2,402	\$51.14		\$51.14		\$51.14				\$8,209	2017		
Louisa County Water Authority - NorthEast Creek	37	47	\$33.16		\$33.16		\$41.45		2012	\$8,290	\$5,250	2004		
Louisa County Water Authority - Zion Crossroads	649	42	\$33.16		\$33.16		\$41.45		2012	\$8,290	\$5,250	2004		
Louisa, Town of	739	157	\$32.09	\$49.36	\$32.09	\$49.36	\$38.81	\$56.50	2017	\$6,725	\$7,720			
Luray, Town of	1,869	258	\$47.24	\$70.86	\$54.21	\$81.32	\$61.18	\$91.77	2017	\$8,443	\$1,200	2007	\$5,940	2018
Lynchburg, City of	18,500	2,000	\$28.67		\$36.72		\$44.75		2017	\$8,148	\$1,330	2016	\$1,950	2000
Martinsville, City of	7,000	500	\$23.64		\$23.64		\$26.37		2016	\$2,743	\$850	2014		
Middletown, Town of	542	42	\$34.30	\$58.60	\$42.40	\$74.80	\$50.50	\$91.00	2018	\$10,766	\$6,500	2006		
Monterey, Town of	180	53	\$34.50		\$34.50		\$38.15		2015		\$1,125	2015		
Montgomery County Public Service Authority	1,324	220	\$30.71		\$38.78		\$46.85		2018	\$8,077	\$950	2017	\$3,000	
Mt. Crawford, Town of	183	12	\$37.50		\$44.60		\$51.70				\$5,300			
Narrows, Town of	933	13	\$32.77	\$38.24	\$41.14	\$45.20	\$49.51	\$52.16	2018	\$2,900		2013	\$1,500	2017
Nelson County	178	18	\$38.60		\$38.60		\$45.45		2013		\$2,000	2006		
New Kent County			\$33.75		\$43.86		\$53.97		2017	\$12,047				
New Market, Town of	947	111	\$52.14	\$91.27	\$67.68	\$118.48	\$83.22	\$145.69	2018	\$15,546	\$3,000	2018		
Norton, City of	1,551	389	\$40.60	\$75.40	\$50.75	\$98.60	\$60.90	\$121.80	2018	\$10,160	\$175	1988		
Pittsylvania County Service Authority / Danville SA	1,407	185	\$25.00		\$25.00		\$25.00		2013	\$5,995	\$1,555	2010		
Portsmouth, City of	29,768	2,458	\$31.97		\$41.02		\$51.95		2018	\$10,684	\$150	2013		
Pound, Town of	443	55	\$31.93	\$47.90	\$40.17	\$60.26	\$48.41	\$72.62	2018	\$8,859	\$800	2017		
Powhatan County	94	98	\$33.46		\$40.07		\$46.68		2018	\$6,951	\$8,100			
Prince William County Service Authority	115,826	3,280	\$29.25		\$35.80		\$42.35		2015	\$7,390	\$10,800	2012		
Pulaski County Public Service Authority	1,170	140	\$34.76		\$42.09		\$49.42		2018	\$6,930	\$700	2016		
Purcellville, Town of	2,581	312	\$53.97	\$107.94	\$69.46	\$138.92	\$84.95	\$169.90	2018	\$15,677	\$21,600			
Radford, City of	4,915	456	\$18.36		\$24.48		\$30.60		2014	\$4,455	\$1,500	2014	\$1,500	2014
Rapidan Service Authority	6,256	289	\$34.40		\$43.18		\$51.96		2018		\$10,000			
Rappahannock County WSA	163	46	\$40.00		\$40.00		\$40.00				\$7,500	2009		
Richlands, Town of	2,193	261	\$17.50	\$23.50	\$21.50	\$29.00	\$25.50	\$34.50	2009	\$3,769	\$300	1986		
Richmond, City of	48,791	7,797	\$45.57		\$55.03		\$64.50		2017	\$9,395	\$1,450			
Rockbridge County Public Service Authority	1,373	287	\$42.76		\$51.26		\$59.76		2018		\$850	2007	\$4,500	2007
Rockingham County	4,177	270	\$16.30		\$21.45		\$26.60		2017	\$5,151	\$625	2009	\$5,300	2009



# Wastewater Data<sup>4</sup>

	# Residential Wastewater Units	# Non-Residential Wastewater Units	Residential WW Rate Inside (3,000 gal./mo.)	Residential WW Rate Outside (3,000 gal./mo.)	Residential WW Rate Inside (4,000 gal./mo.)	Residential WW Rate Outside (4,000 gal./mo.)	Residential WW Rate Inside (5,000 gal./mo.)	Residential WW Rate Outside (5,000 gal./mo.)	Last WW Rate Change	WW Rate Business Inside (1 million gal./mo.)	Residential Connection Fee	Last WW Connection Rate Change	Residential Capital Recovery Charge	Last WW CRC Rate Change
Rocky Mount, Town of	1,752	330	\$17.01	\$34.02	\$20.31	\$40.62	\$23.61	\$47.22	2016	\$3,172	\$1,000	2016		
Rural Retreat, Town of			\$24.15		\$28.95		\$33.75		2017	\$6,458	\$400			
Scott County Public Service Authority	1,000	50	\$39.73		\$51.77		\$63.81		2018	\$12,073	\$2,000	2015		
Shenandoah, Town of	849	68	\$22.65	\$35.50	\$27.15	\$43.00	\$31.65	\$50.50	2018	\$4,510	\$5,000	2008		
Smithfield, Town of	3,102	466	\$41.35	\$43.99	\$52.03	\$55.55	\$62.71	\$67.11	2018	\$10,688	\$1,580	1999	\$4,120	2007
Smyth County	1,167	10	\$40.01	\$40.01	\$49.30	\$49.30	\$58.59	\$58.59	2016	\$11,467	\$850	2016		
South Hill, Town of	2,500		\$19.25	\$38.50	\$26.40	\$52.80	\$30.80	\$57.20	2016		\$1,500	2012		
Southampton County	1,399	80	\$36.00		\$36.00		\$44.00		2017		\$1,800	2009	\$6,000	2009
Spotsylvania County	28,342	1,739	\$19.59		\$25.15		\$30.71		2018	\$6,102	\$2,220	2008	\$4,920	2008
St. Paul, Town of	356	62	\$25.12	\$43.44	\$31.36	\$54.20	\$37.93	\$64.96	2017	\$6,568	\$350	2012		
Stafford County	32,335	1,453	\$34.69		\$40.96		\$47.23		2018	\$6,602	\$2,100	2005		
Stanley, Town of	923	64	\$29.40		\$30.70		\$32.00		2018		\$3,000		\$1,625	
Staunton, City of	7,992	1,108	\$19.52	\$29.28	\$24.40	\$36.60	\$31.72	\$47.58	2016	\$651	\$2,100	2018	\$6,850	2016
Strasburg, Town of	2,479	152	\$32.87	\$46.02	\$45.16	\$63.22	\$57.45	\$80.43	2018	\$12,286	\$6,500	2010		
Tazewell County Public Service Authority	2,285	227	\$41.13		\$49.58		\$58.03		2018	\$8,110	\$900	2016		
Tazewell, Town of	1,648	231	\$35.35	\$51.00	\$43.20	\$61.00	\$51.05	\$71.00	2017	\$10,021	\$540			
Town of Lovettsville	838	39	\$37.44	\$56.16	\$51.67	\$77.50	\$65.90	\$98.85	2018		\$2,000	2018	\$14,875	2018
Town of Mineral	111	34	\$35.40		\$44.25		\$53.10		2013	\$8,859			\$4,500	2007
Warrenton, Town of	3,833	591	\$20.71	\$31.07	\$29.43	\$44.15	\$38.15	\$57.23	2017	\$9,080	\$2,000	2017	\$10,800	2017
Waynesboro, City of	7,305	776	\$40.19	\$42.80	\$48.89	\$52.37	\$57.59	\$61.94	2018	\$8,851	\$800 +	1999	\$4,250	1999
Western Virginia Water Authority (Botetourt Co.)	1,039	274	\$26.75		\$30.50		\$34.25			\$4,065	\$2,000		\$3,000	
Western Virginia Water Authority (Franklin Co.)	32	47	\$33.50		\$39.50		\$45.50			\$6,465	\$2,000		\$3,000	
Western Virginia Water Authority (Roanoke City/County)	49,218	8,687	\$26.75		\$30.50		\$34.25			\$4,066	\$2,000		\$3,000	
Wise County Public Service Authority	900	25	53.5		\$66.50		\$79.50		2018	\$13,015	\$1,100	2015		
Wythe County	639	91	22		\$28.90		\$35.80		2015	\$8,870	\$500	2009	\$500	2009
Wytheville, Town of	3853	688	16.93	\$33.86	\$23.06	\$46.12	\$29.19	\$58.38	2013	\$6,450	\$1,500	2005		

<sup>4</sup> Participants provided wastewater treatment services by the Hampton Roads Sanitation District (HRSD): City of Chesapeake, City of Hampton, City of Portsmouth, Town of Smithfield, Gloucester County and James City County included the HRSD wastewater treatment charges in their responses. As a result, the data listed in the wastewater section of this report includes the HRSD wastewater treatment charges as follows: 3,000 gallons per month (or 401 cubic feet) - \$21.53; 4,000 gallons per month (or 535 cubic feet) - \$28.73; 5,000 gallons per month (or 668 cubic feet) - \$35.87 and 1,000,000 gallons per month (or 133,681 cubic feet) - \$7,178.67. In addition, the HRSD facility charge of \$1,895 for a 5/8-inch meter is included in the capital recovery charges included in this section of the report.

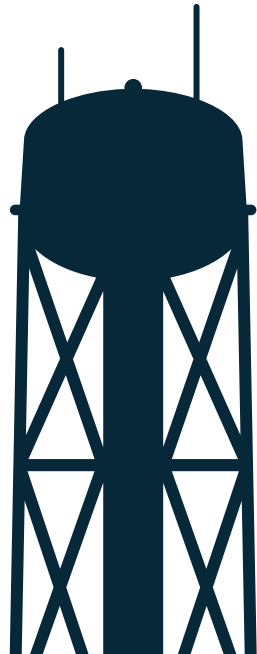


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**APPENDIX C:  
FY2019-2020  
PAY SCALE**

Grade	Position	Step	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
8	Chief WTP Operator	Annual	\$65,062.40	\$66,684.80	\$68,348.80	\$70,054.40	\$71,801.60	\$73,590.40	\$75,420.80	\$77,313.60	\$79,248.00	\$81,224.00	\$83,262.40	\$85,342.40	\$87,484.80	\$89,668.80	\$91,915.20	\$94,203.20	\$96,553.60	\$98,966.40	\$101,441.60	\$103,979.20	\$106,579.20	\$109,241.60	\$111,966.40	\$114,774.40
		Monthly	\$5,421.87	\$5,557.07	\$5,695.73	\$5,837.87	\$5,983.47	\$6,132.53	\$6,285.07	\$6,442.80	\$6,604.00	\$6,768.67	\$6,938.53	\$7,111.87	\$7,290.40	\$7,472.40	\$7,659.60	\$7,850.27	\$8,046.13	\$8,247.20	\$8,453.47	\$8,664.93	\$8,881.60	\$9,103.47	\$9,330.53	\$9,564.53
		Bi-Weekly	\$2,502.40	\$2,564.80	\$2,628.80	\$2,694.40	\$2,761.60	\$2,830.40	\$2,900.80	\$2,973.60	\$3,048.00	\$3,124.00	\$3,202.40	\$3,282.40	\$3,364.80	\$3,448.80	\$3,535.20	\$3,623.20	\$3,713.60	\$3,806.40	\$3,901.60	\$3,999.20	\$4,099.20	\$4,201.60	\$4,306.40	\$4,414.40
		Weekly	\$1,251.20	\$1,282.40	\$1,314.40	\$1,347.20	\$1,380.80	\$1,415.20	\$1,450.40	\$1,486.80	\$1,524.00	\$1,562.00	\$1,601.20	\$1,641.20	\$1,682.40	\$1,724.40	\$1,767.60	\$1,811.60	\$1,856.80	\$1,903.20	\$1,950.80	\$1,999.60	\$2,049.60	\$2,100.80	\$2,153.20	\$2,207.20
		Hourly	\$31.28	\$32.06	\$32.86	\$33.68	\$34.52	\$35.38	\$36.26	\$37.17	\$38.10	\$39.05	\$40.03	\$41.03	\$42.06	\$43.11	\$44.19	\$45.29	\$46.42	\$47.58	\$48.77	\$49.99	\$51.24	\$52.52	\$53.83	\$55.18
7	Utility Mechanic Supervisor	Annual	\$61,900.80	\$63,440.00	\$65,020.80	\$66,643.20	\$68,307.20	\$70,012.80	\$71,760.00	\$73,548.80	\$75,379.20	\$77,272.00	\$79,206.40	\$81,182.40	\$83,220.80	\$85,300.80	\$87,443.20	\$89,627.20	\$91,873.60	\$94,161.60	\$96,512.00	\$98,924.80	\$101,400.00	\$103,937.60	\$106,537.60	\$109,200.00
		Monthly	\$5,158.40	\$5,286.67	\$5,418.40	\$5,553.60	\$5,692.27	\$5,834.40	\$5,980.00	\$6,129.07	\$6,281.60	\$6,439.33	\$6,600.53	\$6,765.20	\$6,935.07	\$7,108.40	\$7,286.93	\$7,468.93	\$7,656.13	\$7,846.80	\$8,042.67	\$8,243.73	\$8,450.00	\$8,661.47	\$8,878.13	\$9,100.00
		Bi-Weekly	\$2,380.80	\$2,440.00	\$2,500.80	\$2,563.20	\$2,627.20	\$2,692.80	\$2,760.00	\$2,828.80	\$2,899.20	\$2,972.00	\$3,046.40	\$3,122.40	\$3,200.80	\$3,280.80	\$3,363.20	\$3,447.20	\$3,533.60	\$3,621.60	\$3,712.00	\$3,804.80	\$3,900.00	\$3,997.60	\$4,097.60	\$4,200.00
		Weekly	\$1,190.40	\$1,220.00	\$1,250.40	\$1,281.60	\$1,313.60	\$1,346.40	\$1,380.00	\$1,414.40	\$1,449.60	\$1,486.00	\$1,523.20	\$1,561.20	\$1,600.40	\$1,640.40	\$1,681.60	\$1,723.60	\$1,766.80	\$1,810.80	\$1,856.00	\$1,902.40	\$1,950.00	\$1,998.80	\$2,048.80	\$2,100.00
		Hourly	\$29.76	\$30.50	\$31.26	\$32.04	\$32.84	\$33.66	\$34.50	\$35.36	\$36.24	\$37.15	\$38.08	\$39.03	\$40.01	\$41.01	\$42.04	\$43.09	\$44.17	\$45.27	\$46.40	\$47.56	\$48.75	\$49.97	\$51.22	\$52.50
6	Laboratory Manager	Annual	\$58,926.40	\$60,403.20	\$61,921.60	\$63,460.80	\$65,041.60	\$66,664.00	\$68,328.00	\$70,033.60	\$71,780.80	\$73,569.60	\$75,400.00	\$77,292.80	\$79,227.20	\$81,203.20	\$83,241.60	\$85,321.60	\$87,464.00	\$89,648.00	\$91,894.40	\$94,182.40	\$96,532.80	\$98,945.60	\$101,420.80	\$103,958.40
		Monthly	\$4,910.53	\$5,033.60	\$5,160.13	\$5,288.40	\$5,420.13	\$5,555.33	\$5,694.00	\$5,836.13	\$5,981.73	\$6,130.80	\$6,283.33	\$6,441.07	\$6,602.27	\$6,766.93	\$6,936.80	\$7,110.13	\$7,288.67	\$7,470.67	\$7,657.87	\$7,848.53	\$8,044.40	\$8,245.47	\$8,451.73	\$8,663.20
		Bi-Weekly	\$2,266.40	\$2,323.20	\$2,381.60	\$2,440.80	\$2,501.60	\$2,564.00	\$2,628.00	\$2,693.60	\$2,760.80	\$2,829.60	\$2,900.00	\$2,972.80	\$3,047.20	\$3,123.20	\$3,201.60	\$3,281.60	\$3,364.00	\$3,448.00	\$3,534.40	\$3,622.40	\$3,712.80	\$3,805.60	\$3,900.80	\$3,998.40
		Weekly	\$1,133.20	\$1,161.60	\$1,190.80	\$1,220.40	\$1,250.80	\$1,282.00	\$1,314.00	\$1,346.80	\$1,380.40	\$1,414.80	\$1,450.00	\$1,486.40	\$1,523.60	\$1,561.60	\$1,600.80	\$1,640.80	\$1,682.00	\$1,724.00	\$1,767.20	\$1,811.20	\$1,856.40	\$1,902.80	\$1,950.40	\$1,999.20
		Hourly	\$28.33	\$29.04	\$29.77	\$30.51	\$31.27	\$32.05	\$32.85	\$33.67	\$34.51	\$35.37	\$36.25	\$37.16	\$38.09	\$39.04	\$40.02	\$41.02	\$42.05	\$43.10	\$44.18	\$45.28	\$46.41	\$47.57	\$48.76	\$49.98
5	Senior WTP Operator	Annual	\$50,814.40	\$52,083.20	\$53,393.60	\$54,724.80	\$56,097.60	\$57,491.20	\$58,926.40	\$60,403.20	\$61,921.60	\$63,460.80	\$65,041.60	\$66,664.00	\$68,328.00	\$70,033.60	\$71,780.80	\$73,569.60	\$75,400.00	\$77,292.80	\$79,227.20	\$81,203.20	\$83,241.60	\$85,321.60	\$87,464.00	\$89,648.00
		Monthly	\$4,234.53	\$4,340.27	\$4,449.47	\$4,560.40	\$4,674.80	\$4,790.93	\$4,910.53	\$5,033.60	\$5,160.13	\$5,288.40	\$5,420.13	\$5,555.33	\$5,694.00	\$5,836.13	\$5,981.73	\$6,130.80	\$6,283.33	\$6,441.07	\$6,602.27	\$6,766.93	\$6,936.80	\$7,110.13	\$7,288.67	\$7,470.67
		Bi-Weekly	\$1,954.40	\$2,003.20	\$2,053.60	\$2,104.80	\$2,157.60	\$2,211.20	\$2,266.40	\$2,323.20	\$2,381.60	\$2,440.80	\$2,501.60	\$2,564.00	\$2,628.00	\$2,693.60	\$2,760.80	\$2,829.60	\$2,900.00	\$2,972.80	\$3,047.20	\$3,123.20	\$3,201.60	\$3,281.60	\$3,364.00	\$3,448.00
		Weekly	\$977.20	\$1,001.60	\$1,026.80	\$1,052.40	\$1,078.80	\$1,105.60	\$1,133.20	\$1,161.60	\$1,190.80	\$1,220.40	\$1,250.80	\$1,282.00	\$1,314.00	\$1,346.80	\$1,380.40	\$1,414.80	\$1,450.00	\$1,486.40	\$1,523.60	\$1,561.60	\$1,600.80	\$1,640.80	\$1,682.00	\$1,724.00
		Hourly	\$24.43	\$25.04	\$25.67	\$26.31	\$26.97	\$27.64	\$28.33	\$29.04	\$29.77	\$30.51	\$31.27	\$32.05	\$32.85	\$33.67	\$34.51	\$35.37	\$36.25	\$37.16	\$38.09	\$39.04	\$40.02	\$41.02	\$42.05	\$43.10
4	WTP Operator Class I Utility Mechanic I	Annual	\$46,030.40	\$47,174.40	\$48,360.00	\$49,566.40	\$50,814.40	\$52,083.20	\$53,393.60	\$54,724.80	\$56,097.60	\$57,491.20	\$58,926.40	\$60,403.20	\$61,921.60	\$63,460.80	\$65,041.60	\$66,664.00	\$68,328.00	\$70,033.60	\$71,780.80	\$73,569.60	\$75,400.00	\$77,292.80	\$79,227.20	\$81,203.20
		Monthly	\$3,835.87	\$3,931.20	\$4,030.00	\$4,130.53	\$4,234.53	\$4,340.27	\$4,449.47	\$4,560.40	\$4,674.80	\$4,790.93	\$4,910.53	\$5,033.60	\$5,160.13	\$5,288.40	\$5,420.13	\$5,555.33	\$5,694.00	\$5,836.13	\$5,981.73	\$6,130.80	\$6,283.33	\$6,441.07	\$6,602.27	\$6,766.93
		Bi-Weekly	\$1,770.40	\$1,814.40	\$1,860.00	\$1,906.40	\$1,954.40	\$2,003.20	\$2,053.60	\$2,104.80	\$2,157.60	\$2,211.20	\$2,266.40	\$2,323.20	\$2,381.60	\$2,440.80	\$2,501.60	\$2,564.00	\$2,628.00	\$2,693.60	\$2,760.80	\$2,829.60	\$2,900.00	\$2,972.80	\$3,047.20	\$3,123.20
		Weekly	\$885.20	\$907.20	\$930.00	\$953.20	\$977.20	\$1,001.60	\$1,026.80	\$1,052.40	\$1,078.80	\$1,105.60	\$1,133.20	\$1,161.60	\$1,190.80	\$1,220.40	\$1,250.80	\$1,282.00	\$1,314.00	\$1,346.80	\$1,380.40	\$1,414.80	\$1,450.00	\$1,486.40	\$1,523.60	\$1,561.60
		Hourly	\$22.13	\$22.68	\$23.25	\$23.83	\$24.43	\$25.04	\$25.67	\$26.31	\$26.97	\$27.64	\$28.33	\$29.04	\$29.77	\$30.51	\$31.27	\$32.05	\$32.85	\$33.67	\$34.51	\$35.37	\$36.25	\$37.16	\$38.09	\$39.04
3	WTP Operator Class II Utility Mechanic II Executive Assistant	Annual	\$41,704.00	\$42,744.00	\$43,804.80	\$44,907.20	\$46,030.40	\$47,174.40	\$48,360.00	\$49,566.40	\$50,814.40	\$52,083.20	\$53,393.60	\$54,724.80	\$56,097.60	\$57,491.20	\$58,926.40	\$60,403.20	\$61,921.60	\$63,460.80	\$65,041.60	\$66,664.00	\$68,328.00	\$70,033.60	\$71,780.80	\$73,569.60
		Monthly	\$3,475.33	\$3,562.00	\$3,650.40	\$3,742.27	\$3,835.87	\$3,931.20	\$4,030.00	\$4,130.53	\$4,234.53	\$4,340.27	\$4,449.47	\$4,560.40	\$4,674.80	\$4,790.93	\$4,910.53	\$5,033.60	\$5,160.13	\$5,288.40	\$5,420.13	\$5,555.33	\$5,694.00	\$5,836.13	\$5,981.73	\$6,130.80
		Bi-Weekly	\$1,604.00	\$1,644.00	\$1,684.80	\$1,727.20	\$1,770.40	\$1,814.40	\$1,860.00	\$1,906.40	\$1,954.40	\$2,003.20	\$2,053.60	\$2,104.80	\$2,157.60	\$2,211.20	\$2,266.40	\$2,323.20	\$2,381.60	\$2,440.80	\$2,501.60	\$2,564.00	\$2,628.00	\$2,693.60	\$2,760.80	\$2,829.60
		Weekly	\$802.00	\$822.00	\$842.40	\$863.60	\$885.20	\$907.20	\$930.00	\$953.20	\$977.20	\$1,001.60	\$1,026.80	\$1,052.40	\$1,078.80	\$1,105.60	\$1,133.20	\$1,161.60	\$1,190.80	\$1,220.40	\$1,250.80	\$1,282.00	\$1,314.00	\$1,346.80	\$1,380.40	\$1,414.80
		Hourly	\$20.05	\$20.55	\$21.06	\$21.59	\$22.13	\$22.68	\$23.25	\$23.83	\$24.43	\$25.04	\$25.67	\$26.31	\$26.97	\$27.64	\$28.33	\$29.04	\$29.77	\$30.51	\$31.27	\$32.05	\$32.85	\$33.67	\$34.51	\$35.37
2	WTP Operator Class III	Annual	\$37,793.60	\$38,729.60	\$39,707.20	\$40,705.60	\$41,724.80	\$42,764.80	\$43,825.60	\$44,928.00	\$46,051.20	\$47,195.20	\$48,380.80	\$49,587.20	\$50,835.20	\$52,104.00	\$53,414.40	\$54,745.60	\$56,118.40	\$57,512.00	\$58,947.20	\$60,424.00	\$61,942.40	\$63,481.60	\$65,062.40	\$66,684.80
		Monthly	\$3,149.47	\$3,227.47	\$3,308.93	\$3,392.13	\$3,477.07	\$3,563.73	\$3,652.13	\$3,744.00	\$3,837.60	\$3,932.93	\$4,031.73	\$4,132.27	\$4,236.27	\$4,342.00	\$4,451.20	\$4,562.13	\$4,676.53	\$4,792.67	\$4,912.27	\$5,035.33	\$5,161.87	\$5,290.13	\$5,421.87	\$5,557.07
		Bi-Weekly	\$1,453.60	\$1,489.60	\$1,527.20	\$1,565.60	\$1,604.80	\$1,644.80	\$1,685.60	\$1,728.00	\$1,771.20	\$1,815.20	\$1,860.80	\$1,907.20	\$1,955.20	\$2,004.00	\$2,054.40	\$2,105.60	\$2,158.40	\$2,212.00	\$2,267.20	\$2,324.00	\$2,382.40	\$2,441.60	\$2,502.40	\$2,564.80
		Weekly	\$726.80	\$744.80	\$763.60	\$782.80	\$802.40	\$822.40	\$842.80	\$864.00	\$885.60	\$907.60	\$930.40	\$953.60	\$977.60	\$1,002.00	\$1,027.20	\$1,052.80	\$1,079.20	\$1,106.00	\$1,133.60	\$1,162.00	\$1,191.20	\$1,220.80	\$1,251.20	\$1,282.40
		Hourly	\$18.17	\$18.62	\$19.09	\$19.57	\$20.06	\$20.56	\$21.07	\$21.60	\$22.14	\$22.69	\$23.26	\$23.84	\$24.44	\$25.05	\$25.68	\$26.32	\$26.98	\$27.65	\$28.34	\$29.05	\$29.78	\$30.52	\$31.28	\$32.06
1	WTP Operator Trainee	Annual	\$34,216.00	\$3																						