



# Prince George County, Virginia

## DEPARTMENT of ENGINEERING and UTILITIES

### 2021 Annual Report



*Richard Bland Pump Station (#7) – a complete replacement and upgrade of the pump station.*

## I. Introduction & Overview

Prince George County Utilities (PGCU) provides water and wastewater services to residential and non-residential customers in the Prince George County. The people and businesses served by this critical resource rely on the services provided by Prince George County Utilities for safe and uninterrupted drinking water and wastewater services every day. Prince George County Utilities strives to be stewards of the community they serve by offering fair rates and connection fees for the continuous administration, maintenance, improvement and expansion of the utilities. Prince George County Utilities is a self-supporting enterprise fund, whereby the operation and capital expenditures of the Department are funded with revenues generated from customer user fees and one-time connection fees, paid for capacity at the time of connection. General Fund tax dollars are typically not used to fund the annual operating expenses of the department.

The Department funds 15 full time employees to operate and maintain the County's public water and wastewater systems. These systems include the central water system supplied by the Appomattox River Water Authority (ARWA), six rural water well systems, and 25 wastewater pumping stations. The Department also plans and constructs major water and sewer improvements in support of and in compliance with the County's Comprehensive Plan. Water service lines and sewer laterals extensions outside public easements or rights-of-way to serve individual properties or developments are constructed by property owners. New developments located within the Prince George County Planning Area are required by County ordinance to connect to the County's public water.



*Richard Bland Pump Station (#7) – new pumps, pipes, SCADA and control panel- completed December 2021.*

## II. Department Highlights of 2021

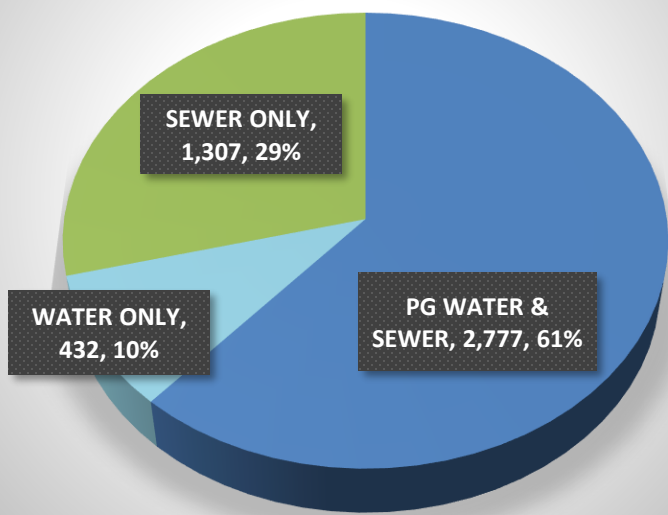
### A. Customers Served

In 2021, PGCU added 18 new residential accounts and 8 new commercial accounts during the year, growing the total served to 4,516 customer accounts. These include 4,139 residential customers and 377 non-residential customers. As seen in the table below, residential use makes up 58.5% of the annual consumption. The multi-family customers have the greatest use per customer. These 45 customers are the apartment buildings, mobile home parks and duplexes throughout the county, for which one customer can represent up to hundreds of people served. The top water user is the Riverside Regional Jail. As seen in the table below, the Jail represents 12.3% of the water consumption.

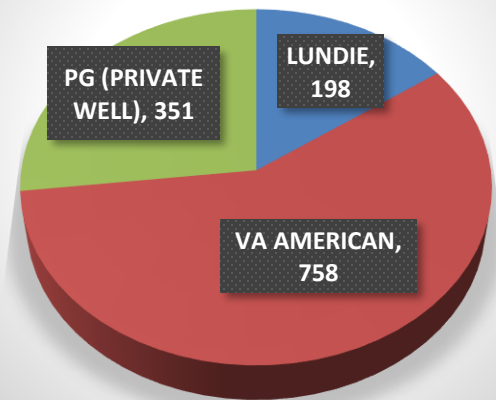
USE	Annual Use (Gal.)	% of Total Annual Use	Total Number of Customers	% of Total Customers
<b>RESIDENTIAL</b>	<b>232,767,356</b>	<b>58.5</b>	<b>4,139</b>	<b>91.7</b>
SINGLE FAMILY	150,358,163	37.8	4094	90.7
MULTI FAMILY	82,409,193	20.7	45	1.0
<b>NON-RESIDENTIAL</b>	<b>165,333,319</b>	<b>41.5</b>	<b>377</b>	<b>8.3</b>
COMMERCIAL	67,769,012	17.0	326	7.2
GOVERNMENT	2,886,007	0.7	31	0.7
INDUSTRIAL	35,485,175	8.9	5	0.1
SCHOOL	10,173,023	2.6	14	0.3
RVRSIDE REG JAIL	49,020,102	12.3	1	0.0
<b>TOTAL WATER USED</b>	<b>398,100,675</b>	<b>100</b>	<b>4,516</b>	<b>100</b>

PGCU provides combined water and sewer services to 2,777 customers, water-only service to 432 customers, and sewer-only service to 1,307 customers. As seen in the chart below, the sewer only customers receive water from other sources. The sewer-only customers on private wells predominantly exist in the Disputanta area. These customers have private lift stations that connect to a manifold force main that was installed as a community development project due to the failing septic systems in the area.

### 4516 Total Utility Accounts

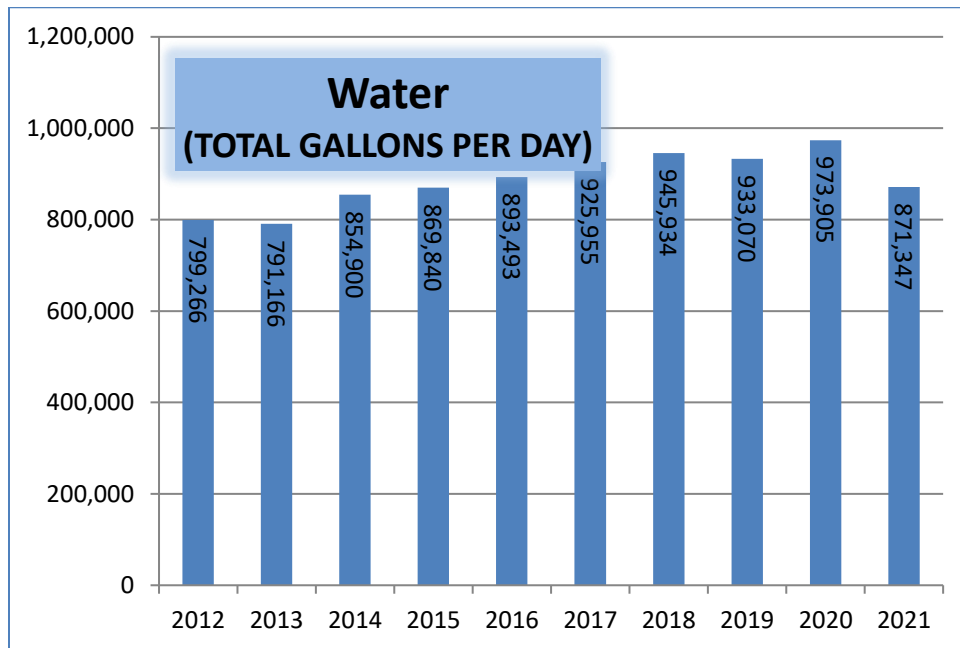


### Water Source for Sewer Only Accounts



## B. Water & Wastewater Services

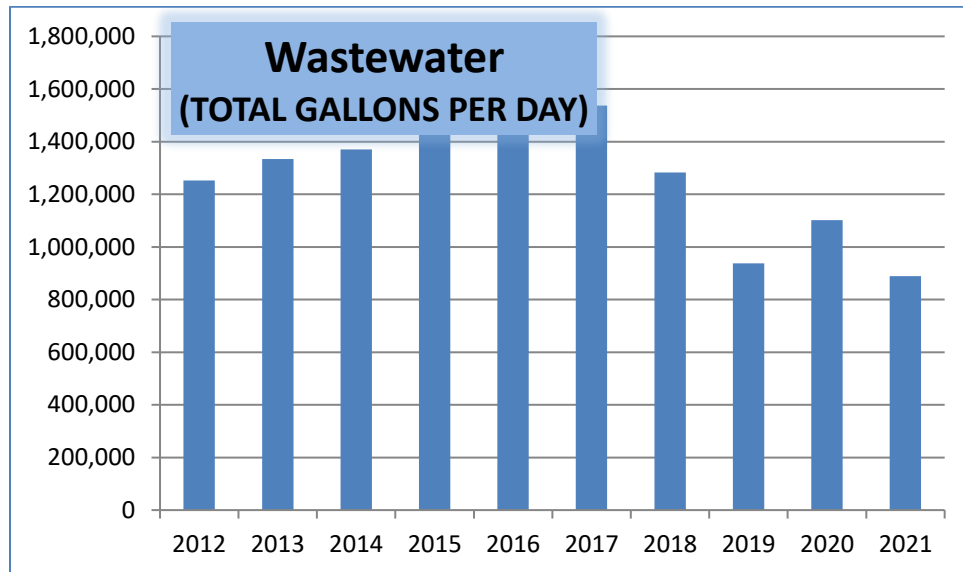
After a year of record annual water consumption in 2020, the average annual water usage reduce to just over 871,000 gallons per day (gpd) in 2021. This decrease is likely, in part, due to Rolls Royce significantly reducing water consumption. The Riverside Regional Jail continues to be the largest single user in the County. Service Center Metals has now climbed to the second largest user as they continue to increase their water consumption each year.



2021 TOP 10 WATER USERS Jan 1 - Dec 31, 2021	
CUSTOMER	TOTAL (GAL)
RIVERSIDE REGIONAL JAIL	49,020,102
SERVICE CENTER METALS C/O CHIP DOLLINS	27,109,668
PINE RIDGE TRAILER PK SUN COMMUNITIES IN	19,436,286
INDEPENDENCE PL JEFFERSON PK LLC	11,981,580
FOOD LION LLC SITE #70210 C/O ENGIE INS	10,354,875
BPP JEFFERSON POINTE LLC	10,244,865
PUDDLEDOCK PLACE APTS LLC	9,988,550
BPP BAILEY'S RIDGE LLC	8,538,714
ROLLS-ROYCE NAFSC AP	8,375,507
MATRIX RESIDENTIAL (Branchester Lakes Apts)	5,176,951

Wastewater flows are highly weather dependent, especially as wastewater collection systems age. Inflow and infiltration, also known as I&I, can significantly impact an aged collection system by reducing the amount of capacity of the conveyance pipes. Prince George County did not experience a large amount of rainfall in 2021 as it did in previous

years. This resulted in less I&I conveyed to the treatment plants at Hopewell and South Central Wastewater Authority (SCWWA).

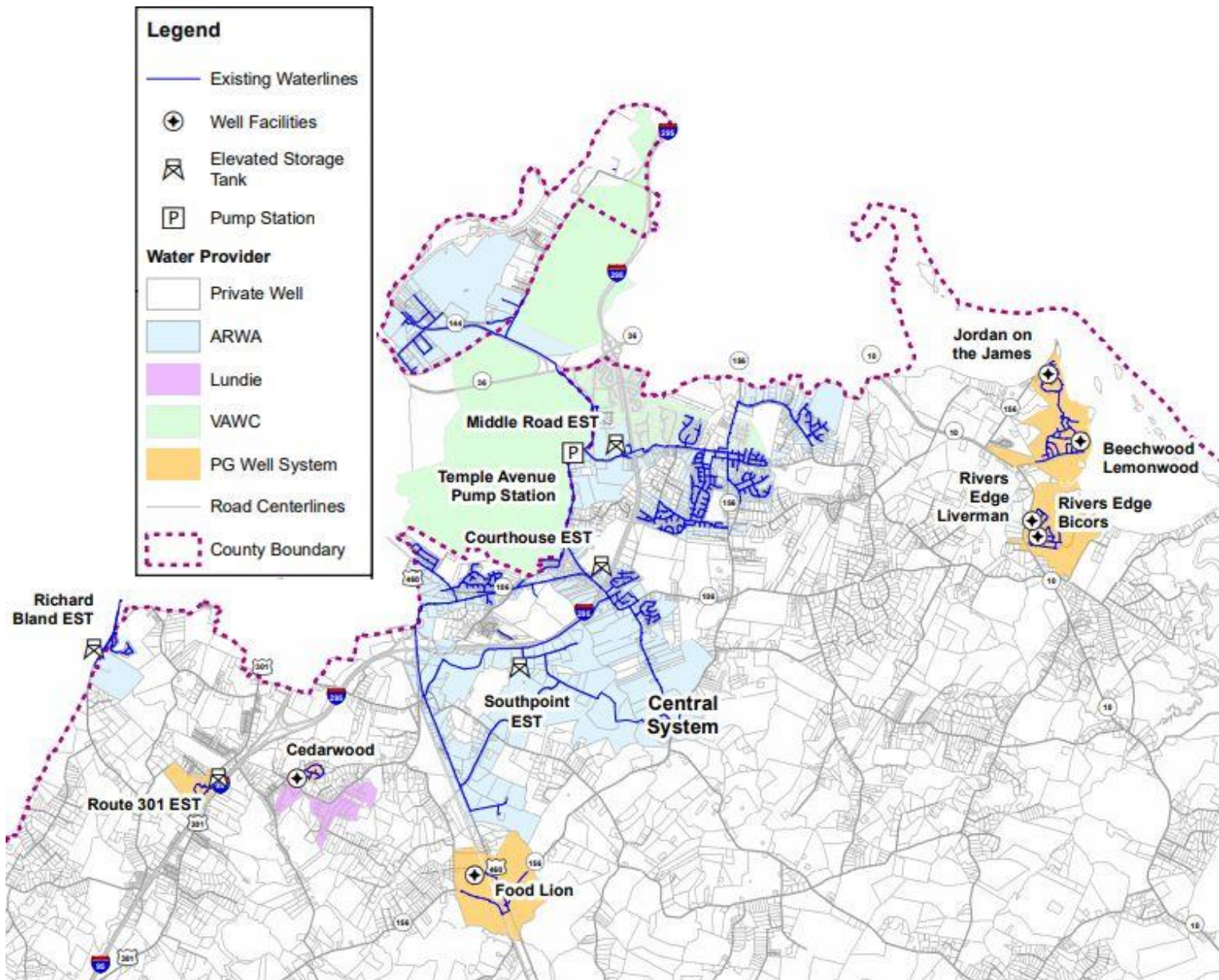


The Department has taken some measures to help reduce I&I issues at several lift station wet wells and manholes throughout the County's sewer collection system by applying a corrosion resistant coating that also seals cracks in the structures. The Department has also repaired sewer lines and manholes to significantly reduce the ability of rain from entering the collection system.

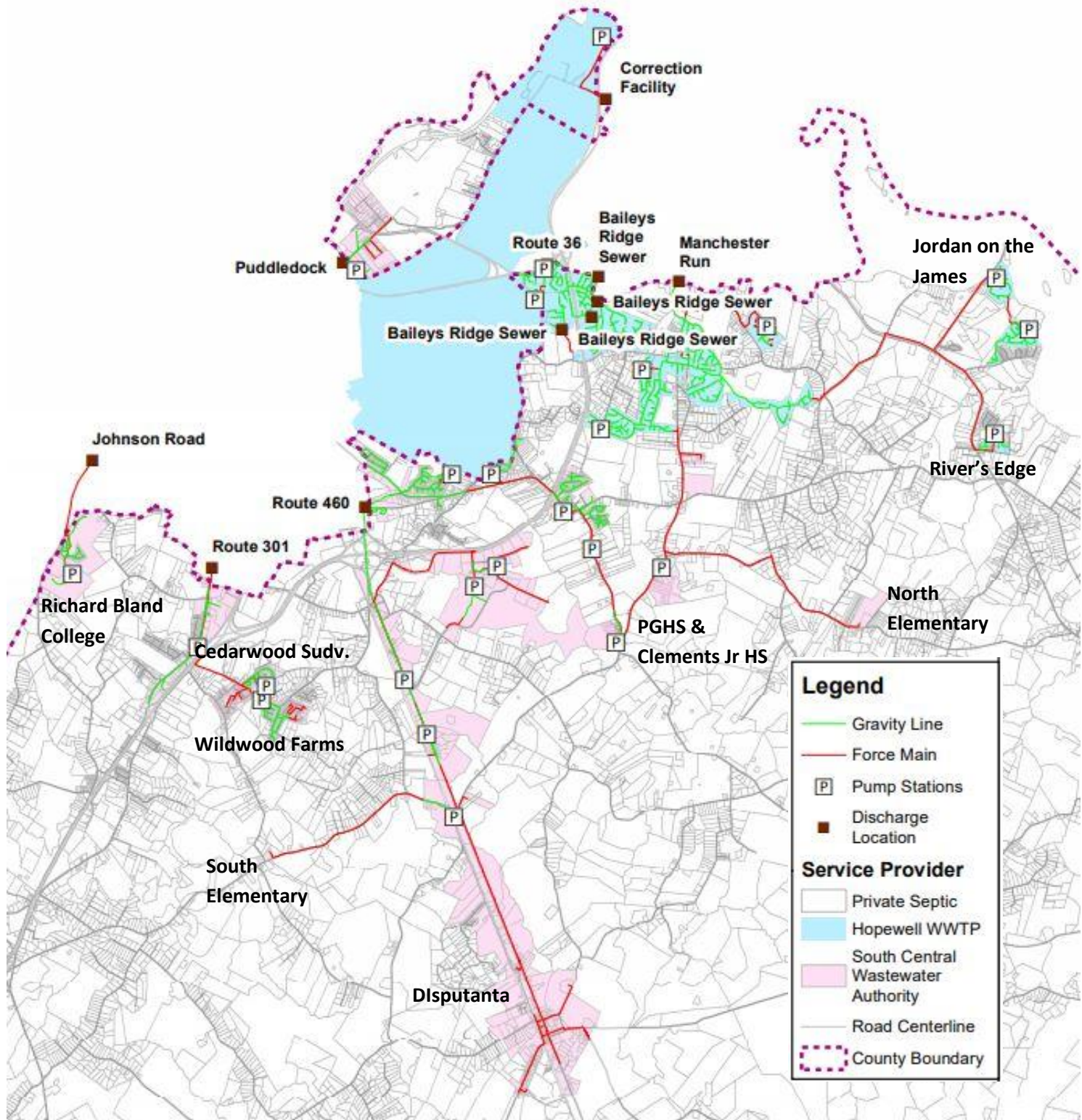
From an overall system perspective Prince George has 3.575 million gallons per day (MGD) of wastewater capacity and utilized 0.888 MGD on average; and 1.89 MGD of water capacity and utilized 0.871 MGD on average in 2021.



## WATER SYSTEMS



## WASTEWATER SYSTEMS





## C. Financials

The Utilities Enterprise Fund's cash position has remained steady with adequate reserves. The fund ended fiscal year 2021 with a \$28,790,827 net position, up \$1,097,572 from the previous fiscal year. The increase in net position is attributed partially to an increase in revenues, however, the majority is due to not having the expenditures that were expected throughout the year.

The Department completed payments of the debt service on the \$2.6 million in debt from 2015 to pay for significant capital improvements needed for the gravity section of the Upper Blackwater trunk sewer, which was completed in 2016. The Department's only other current debt service is being reimbursed from the County's Tourism Fund for the Route 301 Water System improvements.

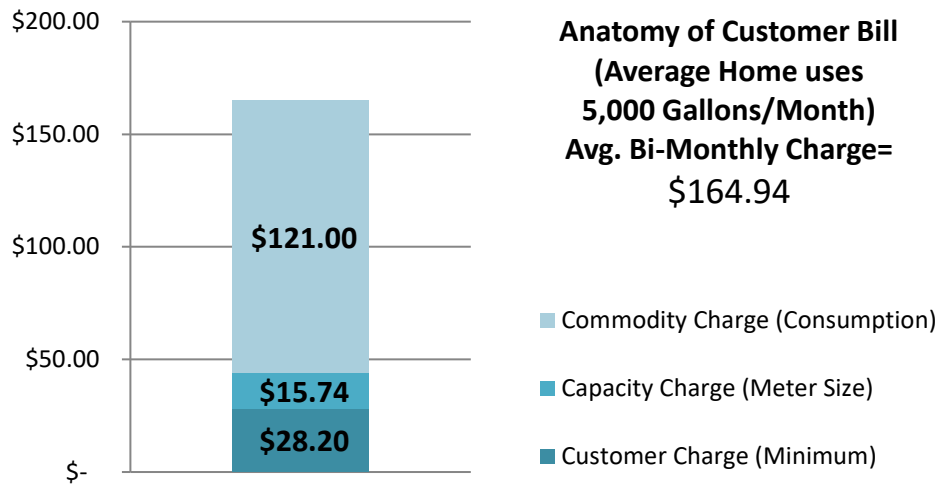
Leveraging the Enterprise Fund's strong financial position and stable revenues should enable the Department to balance cash and debt funding to reinvest in infrastructure to ensure that capital assets are renewed appropriately to protect the long-term viability of providing water and wastewater services to the community.

A rise in operating cost due to inflationary pressures is expected during the next year. period, however, there was a rise in the costs of Purchased Services simply due to the increased water consumption of Prince George County Utility customers. Purchased Services typically make up about 60% to 65% of the Department's total operating expenses. These expenses include costs for wholesale treated water purchases from the Appomattox River Water Authority and the Virginia American Water Company; and costs for wastewater conveyance and treatment by the City of Petersburg, the South Central Wastewater Authority, and the Hopewell Regional Wastewater Treatment Facility.

### **Service Charges (Rates)**

Service charges to customers are billed to customers every other month (bimonthly) and are comprised of three components: customer, capacity, and commodity. The customer and capacity components together make up the minimum charge. The customer charge is the same for every customer and is used to cover expenses that are the same to all customers (for example, the cost of preparing and mailing the bill). The capacity charge is based on the meter size of the customer's service connection. The commodity charge is based on the actual amount of water consumed by the customer and/or the wastewater collected from the customer. The last change in customer rates took effect in July of 2018.

The chart below depicts the breakdown of the combined water and wastewater service charges for a residential customer using 5,000 gallons per month.



A typical industry benchmark for average single family home monthly water use is 5,000 gallons (10,000 gallons bi-monthly). The average for Prince George residential customers is just slightly less than this. Since the adopted increase in rates effective July 1, 2018, the average customer water bill is \$51.82 and the average sewer bill is \$113.12, for a total water and sewer bill of \$164.94.

Prince George has been able to keep its rates relatively low by deferring reinvestment in capital infrastructure. Aging infrastructure eventually requires rehabilitation and renewal, which is costly and will present significant pressures to increase service charge rates in future years. Costly infrastructure improvements are also being mandated for the region's wastewater treatment facilities to meet Chesapeake Bay water quality improvements.

### III. Highlights of 2021

- Utility Billing – No utility rate increase in FY 2020 or FY 2021. The last rate increase of 15.5% water and 29.1% sewer was adopted in April 2018, effective July 1, 2018 (beginning of FY 2019).
- Introduced a proposed rate increase of 30% water and 3% sewer as recommended by the 2020 Utility Rate Analysis for fiscal year 2022.
- Completed 2 preliminary engineering reports to consider options to address the future wastewater capacity needs at the Southpoint Business Park.
- Submitted groundwater withdrawal permit application for Route 301 water system.
- Distributed \$108,469.39 of Federal CARES Municipal Utility Relief Funds to Utility customers with eligible arrearages.
- Applied, received and distributed \$76,552.52 of Federal ARPA Municipal Utility Relief Funds to Utility customers with eligible arrearages.
- Completed the construction of Route 460 water line, a 1-mile extension to connect the Food Lion (Industrial Park) well system.
- Completed the replacement of the Richard Bland sewer pump station (#7).
- Completed a renovation of sewer pump station (#5) located at Oak Lawn Blvd and Jefferson Park Road intersection.
- Operations:
  - Replaced pump #1 at Middle Road booster station.
  - Completed the condition assessment of all above ground assets utilizing the new work system.
  - Installed new carport for utility equipment at Sawmill tank location.
  - Middle Road elevated water storage tank repairs and resealing. Sandblasted, resealed and painted entire interior of tank and power washed the exterior.
  - Food Lion aboveground water storage tank repairs and resealing. Sandblasted, resealed and painted entire interior of tank and power washed the exterior.
  - Southpoint elevated water storage tank repairs and resealing. Sandblasted, resealed and painted entire interior of tank and power washed the exterior.
  - Installed magnetic flow meter at PS #5.
  - Installed new hydropneumatic tank to replace failing tank at Bicors well site.

## **IV. Looking Forward - Goals for 2022 and Beyond**

The 2016 Water and Wastewater Master Plan provides a roadmap for water and sewer services to support continuous operation of current systems and for system expansions to support future development within the County. In addition, the Southpoint Business Park (SBP) Utility Study provides additional guidance and recommendations to provide the needed water and sewer capacities to serve future prospects in the park.

The County plans to complete the design of two future water storage tanks and booster stations to increase the water supply from the Appomattox River Water Authority (ARWA) and add a connection to Virginia American Water (VAW)

The County has started the engineering design to install a 24" water line under the Appomattox River at the Temple Avenue Bridge. This project will provide better protection of the sole water supply line from ARWA and allow for an increase in water supply upon completion of the tank and booster station project.

The County is also working to increase the wastewater capacity to serve the Southpoint Business Park. As a short-term solution, the County will realign the 8" force main that currently serves SBP to allow additional connections within the Park. The engineering design will begin for a new sewer pump station and force main to convey wastewater to the Hopewell Water Renewal Facility. This project will serve the future needs of the Park.

Construction work will continue to complete the extension of a new water line on Prince George Drive from the Pine Ridge MHC to Mount Sinai Road to loop the water system to provide better fire protection and redundancy in the system in case of a water main break.

The Department will continue the rehabilitation of the wastewater infrastructure to include the replacement of PS #9 and PS #10. The Department will also continue to work towards replacement of water meters with new radio read models that will facilitate safer, efficient and more accurate meter data collection for Utility Billing.