



Office of the Town Manager

Frank Cassidy

STAFF REPORT

Warrenton Town Council

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Heather Sutphin, Ward 1

William Semple, Ward 2

Brett Hamby, Ward 3

James Hartman, Ward 4 Vice Mayor

Jay Heroux, Ward 5

Paul Mooney, At Large

David McGuire, At Large

Council Meeting Date:	October 14 th , 2025
Agenda Title:	Public Utilities Update for Plants – CIP & Projects
Requested Action:	Information and Discussion Only
Department / Agency Lead:	Public Utilities
Staff Lead:	Steven Friend, Director of Public Utilities / Michael Wharton, Project Coordinator

EXECUTIVE SUMMARY

Over the last four years, Utilities have continued working with third-party engineers and consultants, have developed a six-year CIP plan to map out and successfully upgrade the aging treatment facilities. This is a multi-year approach focused on addressing ongoing repairs while replacing aging, end-of-life equipment. The fundamental focus and identifying the scheduling has been an ongoing effort since 2015, and prior. We refer to the 2022 Water and Sewer Availability Study report done by WRA, through engineering process recommendations from RK&K, and our own in-house assessment confirming our plan is based on facts and current conditions of the plants. The challenge moving forward is adjusting repairs while keeping the major construction projects on target. Most of the money spent over the years has been directed to emergency repairs. This multi-year plan is designed to modernize the equipment to today's standards and functions. This will increase reliability, redundancy, efficiency, and effectiveness especially when dealing with a critical service infrastructure like water and sewer.

The Town owns and operates a water plant and wastewater treatment plant delivering water and processing wastewater. These plants serve an essential service to all who live, visit, and enjoy the Town. Without a well-operating water and wastewater system, the Town would not be thriving.

As the Town grows and explores additional options for growth and development, it is essential that both of these plants operate within levels mandated by regulations and laws, as well as the expectations of customers. As these plants age additional demands are expected from them, we need to encourage a healthy discussion on their capacities while acknowledging their limitations.

Both plants are currently going through improvements and maintenance operations to ensure the consistent and proper operational aspects required by regulations and laws and to ensure water resources' quality. While the WWTP is manifesting the equipment age slightly worse than the WTP's equipment both facilities continually need extensive time, creative ways, workarounds, manufacturing of systems to be repaired as the equipment is aging and outdated. Plans for modernization and replacement have been previously presented through the CIP and CARP. Given the continued need to offset budget costs by pushing out CIP expenditures, these repairs and temporary fixes are becoming failure points.

The purpose of this presentation is to provide an update on ongoing projects and the progression of the CIP. This is part of our ongoing efforts to present progress on major projects in Town and address questions and concerns as these projects move forward. We cannot stress enough the continued importance of maintaining and moving forward with this plan. Additionally, the plant is currently under a DEQ Consent Order. This requires the plant to complete the necessary repairs and upgrades that will satisfy the rectification of the facilities permit deficiencies during a timeframe that is approved by DEQ. Failure to do so will result in DEQ violations which can include daily fines, immediate repair orders, or other actions. At the time of writing this Staff Report staff are negotiating these timeframes with DEQ in which corrections need to be completed by.

BACKGROUND

The Town's Public Utilities Department owns and operates an advanced wastewater treatment plant, 8 wastewater pump stations, almost 69 miles of sanitary sewer mains, one freshwater reservoir, maintains one freshwater reservoir, 3 active wells, a water treatment and filtration plant, approximately 89 miles of water distribution system including 743 fire hydrants, two water storage tanks, a pumping station, a water booster station, and a booster / re-chlorination station.

Utilities also provide oversight and control of the Town's Water and Wastewater Treatment facilities, Storm Water department, GIS division, Meter Department, Transmission and Distribution, and maintenance of the systems. A high-level breakdown of Water, Sewer and Transmission and Distribution services is included later in this document.

STORMWATER ADMINISTRATION & GEOGRAPHIC INFORMATION SYSTEM (GIS):

The division is responsible for the overall maintenance, monitoring and reporting for the required Commonwealth and Federal regulations regarding storm water runoff and control. This includes the management of the Town's Municipal Separate Storm Sewer (MS4) General Construction Permit provisions. This includes plan reviews, site plan reviews, site inspections, annual reports, and active participation in outreach and educational programs including stream clean ups, arbor day events, litter campaigns, and presentations.

CIP UPDATE:

- **SM-003** Stream Retrofit Rady Park engineering phase (This project has received grant funding)
- **SM-004** Master Drainage Plan is in the beginning engineering collection phases. (This project has received grant funding)
- **SM-005** BMP & Filterra Facilities is in the later end of engineering phases and is expected to be placed out to bid in the next few months. (This project has received grant funding)

TRANSMISSION & DISTRIBUTION:

The Transmission and Distribution division is responsible for the overall maintenance, repair, and servicing of over 89 miles of water lines and 69 miles of sewer. Activities include repairing main breaks, replacing old and deteriorated water/sewer lines, maintaining water and sewer line right of ways, and unstopping clogged sewage lines. They also include collecting data with flow meters to identify high areas of infiltration/inflow

in the gravity sewage system, maintenance of over 734 fire hydrants, and responding to over 2,527 calls annually for Miss Utility field locations of water and sewage lines as mandated by law.

The Meter Division works under T&D and is responsible for reading 5,171 water meters and providing the data to the Finance Department for billing and revenue collection. In addition, the section provides routine maintenance to all customer meters, including the thawing of frozen meters due to extremely cold weather, the inspections required under the State's cross connection and backflow prevention programs, periodic calibration, and replacement of unserviceable meters. The meter calibration testing frequency depends upon their annual usage, wear and tear, and potential for revenue loss or generation. Staff also responds to customer concerns relative to unusually high or low water bills and often assists customers in identifying leaks in their service lines, homes, and businesses. Unaccounted water loss has averaged less than 10% for the past several years, below the American Waterworks Standard of 13%.

CIP UPDATE:

- Lancaster Water line Replacement Completed
- **W-019** Hunton St Waterline Replacement is at 90% percent design
- **W-021** Industrial Blvd in engineering phase (this was moved forward to the engineering phase due to continued breaks along the line. Engineering phase is being funded by Lancaster Waterline replacement, Lancaster came in, and finished, under its initial allocation).
- **S-018** Frost Ave. Sewer Line is in the engineering phase
- **S-002** I&I Reduction is an ongoing project

WATER PLANT OPERATIONS:

The Source of Supply Section is responsible for the safe and efficient operation of the Town's municipal water supply assets. These assets consist of the water treatment plant, three remote wells, two surface water reservoirs, a booster station, a booster / re-chlorination station, two water storage tanks, and the collection of all State and federally regulated water samples. The operation strives to provide safe, aesthetically pleasing, and pleasant-tasting water and to meet the demands of the Town's over 5,172 residential and commercial customers.

The treatment plant on Blackwell Road is permitted to treat 3.2 million gallons per day but is restricted by the safe yield of the reservoirs, which is a combined 2.27 million gallons per day. Currently, the plant produces an average of 1.3 million gallons of water daily.

CIP UPDATE:

- Filter control valve project has been completed. (Pictures provided)
- Raw Water Pumps and priming system project is ongoing, awaiting engineering and mechanical and electrical components. (Pictures provided)
- **W-010** Sedimentation and Flocculation Basin Project is currently under engineering evaluation before being placed out to bid, approximately April.
- **W-001** Clearwell project is in the final stages of the engineering process.
- **W-005** Warrenton Reservoir Dam is in the geotechnical, structural, capacity and bathymetric

- survey phase. (This project has received grant funding)
- **W-008** Mt. Tank Line Power, contact has been made with Dominion Power.

WASTEWATER PLANT OPERATIONS:

The wastewater plant operates and maintains the Town's 2.5 million gallons per day (mgd) sewage treatment facility and 8 sewage pump stations. The plant treats, on average, 1.6-1.8 mgd, with the primary operational responsibility being the environmental protection of downstream waters by plant operations and monitoring for compliance with state and federal regulations.

Treatment begins at the headworks with screening and grit removal, followed by primary sedimentation. The second process involves biological treatment with the newly constructed Moving Bed Biofilm Reactor (MBBR). The third phase employs chemical coagulation and flocculation, followed by secondary sedimentation. The final stage of treatment includes nutrient removal via deep bed filtration, disinfection with ultraviolet lamps, and post aeration before discharge into the unnamed tributary to Great Run. Sludge generated by the treatment process is anaerobically digested, dewatered by a 2-meter belt press, then hauled away by an outside contractor, and land applied. Annual nutrient limits for nitrogen and phosphorus are in effect to comply with actions to clean up the Chesapeake Bay.

CIP UPDATE:

- Primary Clarifier project is ongoing. (Pictures provided)
- **S-003** Primary Digester is in the beginning engineering and evaluation phase.
- **S-005** Cedar Run Pump Station is currently getting its three (3) pumps replaced due to failure. (Pictures provided)
- **S-007** Wastewater Treatment Plant PS, backwash pumps are being replaced.

STAFF RECOMMENDATION

WRA completed a Capacity Study in November of 2022. This study paired with continued staff recommendation is the most recent study providing an overall assessment of water and wastewater operations moving forward taking into consideration all existing service requirements and factoring planned growth. With this study, staff's own assessment and report, and the enlistment of an engineering company, we put together a multi-year plan to address the necessary replacements, maintenance, repairs and modernization to ensure our plants function properly and within all Federal and State regulations.

Our plan is also based on a cost-effective planning of financial resources and the need to increase rates to properly fund the continued progression of the CIP. Working with Finance and their consultant, Davenport, we have incorporated a funding plan with rate adjustments into the overall CIP plan. This year Utilities Department with direction from the Project Coordinator continues to work through the CIP and CARP as previously approved, as was the previous past yearly goals.

Staff recommend continuing to move forward with the outlined projects for maintenance and modernization as discussed and identified in the CIP. We want to make the Council aware the order of the projects may change as we continue to move forward because of unexpected maintenance issues or other

challenges. We highly encourage the Council to stay the course with the future improvements and maintenance of both these plants to ensure proper functioning while keeping in mind the challenges of adding more accounts to these systems.

Service Level / Policy Impact

These projects are in line with the Plan Warrenton 2040, Goals as follows:

- **CF-4: Ensure healthy, safe, and adequate water and wastewater services.**
 - **CF-4.1:** Maintain a reliable and sufficient quantity of wastewater treatment capacity and an adequate quantity and quality of public water supply to meet the needs of expected long-term residential and commercial growth.
 - **CF-4.2:** Meet the future infrastructure needs through careful planning and acquisition of required permits.
 - **CF-4.3:** Reduce Infiltration and Inflow (I&I) and promote sustainability within the wastewater infrastructure system.
 - **CF-4.5:** Evaluate and update the Town of Warrenton – Fauquier County Master Water and Sewer Plan's Tri-Party Agreement as needed, creating a regional strategy for future needs and reevaluating the Town boundaries in relationship to its service areas.
 - **CF-4.8:** Explore resources to help property owners and promote connection to the public.
- **CF-5: To provide a fiscally responsible infrastructure that maintains a high quality of life for residents, supports current businesses, and attracts new employers with a stable tax structure.**
 - **CF-5.1:** Implement robust maintenance schedules on community facilities to extend the life of investments.

CF-5.2: Support the Town's current and future population by providing timely and comprehensive community facilities.

Fiscal Impact

Budgeted CIP

Legal Impact

N/A

ATTACHMENTS

1. Updated Project Report
2. Broken / Repaired List for both the Water and Wastewater Treatment Facilities
3. Supporting Pictures

WWTP Primary Clarifier Progress



Filter Control Valve Project, Before and After



Raw Water Pumps Progress

