

CAPITAL IMPROVEMENT PROGRAM

FY 2023-24



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Mission Statement

The Bedford Regional Water Authority exists to provide its customers with high quality water and wastewater services at rates that are reasonable and just. The Authority shall anticipate the needs of the greater community by continually maintaining responsive, reliable service and through systematic expansion whenever economically possible.



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Our History

The Bedford Regional Water Authority ("Authority") was created pursuant to the Water and Sewer Authorities Act Chapter 28, Title 15.1 code of Virginia of 1950, as amended. In accordance with the Reversion Agreement executed in August, 2012, the Authority was created by the Bedford County Board of Supervisors ("Supervisors") by resolution dated November 14, 2012 and the Bedford City Council ("Council") by resolution dated November 27, 2012.

Three of the initial members were appointed by the Supervisors on November 14, 2012, and three of the initial members were appointed by the Council on December 11, 2012. The State Corporation Commission approved the Articles of Incorporation on December 13, 2012. The first board meeting was held on December 18, 2012. The seventh board member was interviewed and recommended to the Supervisors and Council by the initial six board members at the January 22, 2013 board meeting. The seventh board member was approved by the governing bodies and sworn in prior to the February 26, 2013 board meeting.

Vision Statement:

The Authority strives to provide quality, responsive, reliable, and efficient services utilizing the latest technology and highly trained staff. Through leadership, the Authority endeavors to maintain a work environment that attracts and retains professional, highly competent, motivated, and dedicated employees.



Providing quality service to everyone.



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Meet Our Board of Directors



Robert Flynn, Chair Term: 2020-2023



Jay Gray, Vice-Chair & Finance Committee Term: 2021-2024



Donald Barger, Policies and Projects Committee Term: 2023-2027



John Sharp, Personnel Committee Term: 2023-2027









Term: 2020-2023



Rusty Mansel, Policies and Projects Committee

Michael Moldenhauer, Personnel Committee

Term: 2021-2024



Our Water System



In 2021-2022...

- ✤ Had 5 Water Treatment Plants
- Had 15 Water Storage Tanks
- ✤ Had 2 Water Pump Stations
- Produced 1.3 Billion Gallons
- ✤ Had 431 Miles of Water Line
- ✤ Had 14,448 Total Water Connections
- ✤ Added 133 new water connections

Water Distribution Service Areas:

1. Bedford Central: The Authority provides water to the area inside and around the Town of Bedford through the Mountain Water Drive Treatment Plant. The plant uses a surface water reservoir located at the foothills of the Peaks of Otter. The Water Treatment Plant ("WTP") is rated at approximately 3.0 million gallons per day ("MGD"). The Town also receives water from the Smith Mountain Lake Water Treatment Facility.

2. Forest Central: The Authority provides water to the Forest, New London, and Boonsboro areas of the County from the Smith Mountain Lake Water Treatment Facility and through purchasing water from the City of Lynchburg; the Authority then sends this water through the Authority's distribution system. Water is treated by Lynchburg from the James River and the Pedlar Reservoir. While there is a minimum purchase requirement of 1 MGD, there is not currently a contract limit to the capacity of the water purchased from Lynchburg, and the City of Lynchburg WTPs are rated at a capacity of 26 MGD.

3. Lakes: Jointly owned with Western Virginia Water Authority, the Smith Mountain Lake Water Treatment Facility uses membrane technology to treat water that is withdrawn from Smith Mountain Lake (SML). This water provides the majority of the water for the Lakes Central system around the SML area while also providing water for Franklin County, the Town of Bedford, and Forest. The SMLWTF is rated at 4.0 MGD, and it can easily be expanded to 6.0 MGD. The Authority also owns three (3) independent water systems that use wells as the source and are located in the Mountain View Shores, Valley Mills Crossing, and Paradise Point subdivisions.

4. Stewartsville: The Authority owns a water system in the Stewartsville area where water is purchased from the Western Virginia Water Authority ("WVWA") and then distributed by the Authority. There is no contract limit to capacity of water purchased from the WVWA.



Our Wastewater System

Wastewater Collection Service Areas:

1. Bedford Central: The Authority provides sewer service inside and around the Town of Bedford using a Wastewater Treatment Plant ("WWTP") located on Orange Street in Bedford. The Central WWTP is rated at 2.0 million gallons a day ("MGD").

2. Forest Central: The Authority provides sewer service to the Forest and New London areas of the County by collecting the wastewater and transmitting it to the Lynchburg Regional WWTP for treatment. The Authority owns 1.0 MGD capacity in the Lynchburg WWTP.

3. Lakes Central: The Authority owns a WWTP in Moneta which provides sewer service to the Lakes community around the 122 corridor. The WWTP is rated at 0.5 MGD.

4. Montvale: The Montvale WWTP is located behind the Elementary school. It is rated at 0.05 MGD and provides service to the Montvale Elementary School, the Montvale Library, the Montvale Center for Business, and the central Montvale community. In 2021-2022...

- ✤ Had 5 wastewater treatment plants
- ✤ Had 32 sewer pump stations
- ✤ Treated 647 million gallons

- ✤ Had 157 miles of sewer line
- ✤ Had 5,554 total sewer connections
- ✤ Added 137 new sewer connections





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Capital Improvement Program Executive Summary

The Bedford Regional Water Authority's Capital Improvement Program (CIP) is intended to ensure that capital improvements are coordinated, timed to maximize the Authority's financial resources, and promote a measured approach to long range asset planning. The Capital Improvement Program is a planning document intended to provide an analysis of potential long-range funding needs, specifically addressing the upcoming two to three years in combination with fiscal expectations. Actual appropriations for projects occurring under the plan are made on an annual basis, and the CIP is reviewed annually to address changes in priorities and any funding issues or opportunities. Projects projected beyond FY 2023-2024 will be reviewed during the annual budget process for the given fiscal year and may be revised or rescheduled depending on preliminary cost estimates, changing priorities and the availability of funding in any particular year. Priority criteria will be utilized to further identify project and purchase priorities in coming fiscal years as funding becomes available.

The Authority serves more than 15,500 customers, with more than 430 miles of water lines and 160 miles of sewer lines. Water and sewer services require extensive capital investment to maintain and periodically upgrade deteriorating infrastructure to support continued service to customers and allow for system growth. Some of the considerations in determining necessary projects and purchases include:

- Purchasing and upgrades of equipment to achieve efficient and reliable operations
- System improvements to address growing demand, potential operational savings, and other operational efficiencies
- Gravity sewer extension to reduce operational costs and support continued growth in the Forest service area
- General maintenance and aged equipment replacements
- Safety and security of facilities and personnel
- Regulatory requirements

The Bedford Regional Water Authority has identified over \$60 million in capital improvement projects that are needed in its water and sewer systems, not including a large number of water and sewer replacement projects to be managed through separate set-aside funding or larger projects underway with alternate funding sources. Some of these investments are crucial to supporting continued service to customers and allow system growth. Other projects provide for the long-term reduction in operating costs, reduced manpower requirements for repairs, proactive replacements and upgrades, and more dependable and reliable service to the customers.

Proposed projects and purchases for the coming fiscal year are based on expected available capital funds as projected in the Fiscal Year Operating Budget. Future years take into consideration funds to be used for debt service projects and increased replacement set-asides. As debt service will increase in FY 2024-2025 with the completion of the Ivy Creek Interceptor project, funding of the capital projects proposed will require rate increases if outside assistance cannot be obtained.





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Capital Improvement Program Projects Listing FY24-26



Projects by Service Area		ear Ending:						
	2024				2025 20			
Central	\$	245,000.00	\$:	124,000.00	\$ 1	L,145,000.00		
Operational Needs	\$	245,000.00	\$:	124,000.00	\$	895,000.00		
Stoney Creek Reservoir - Ph 2.B (Cleaning/Design)			\$	124,000.00				
Stoney Creek Reservoir - Ph 3 (Rehab Construction)					\$	845,000.00		
Sewer Flow Meter - Bedford Weaving	\$	25,000.00						
Central Pump Station 1 - Replacement Pumps/Motors	\$	110,000.00						
Central Pump Station 2 - Replacement Pumps/Motors	\$	110,000.00						
Central Pump Station 10 - Replacement Pump #1					\$	50,000.00		
System Structures & Tanks					\$	250,000.00		
Helm Street Tank Replacement					\$	250,000.00		
Central WTP	\$	95,000.00	\$	45,000.00	\$	104,000.00		
Operational Needs	\$	95,000.00	\$	45,000.00	\$	104,000.00		
Security Alarms and Fire Alarm System					\$	29,000.00		
Central WTP Filter Control SCADA Interface					\$	75,000.00		
Re-piping Domestic Pump to Hydropneumatic Tank	\$	40,000.00						
Upgrade drainage system from holding ponds to VPDES outfall			\$	45,000.00				
Hoist system for moving pumps - Currently out of service	\$	55,000.00						
Central WWTP			\$	47,000.00	\$	115,000.00		
Operational Needs			\$	47,000.00	\$	115,000.00		
Central WWTP - New RAS Pump #2					\$	55,000.00		
Central WWTP - Replace railings and chains on primary basin #2			\$	20,000.00				
Central WWTP - Replace the air actuator valves to electric valves on sandfilters					\$	60,000.00		
Central WWTP - Replace transfer switch in belt press building			\$	27,000.00				
Forest			\$	45,000.00	\$	120,000.00		
Operational Needs			\$	45,000.00	\$	120,000.00		
Lynchburg Entry Point Control Valve (Graves Mill Rd)					\$	120,000.00		
Big Ben Actuator Gate Valve			\$	45,000.00				
Moneta WWTP			\$	30,000.00				
Operational Needs			\$	30,000.00				
Moneta WWTP - New chains on Train 2 BIOWHEELS			\$	20,000.00				
Moneta WWTP - Replace magnetic ballasts & wiring harness			\$	10,000.00				

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Capital Improvement Program Projects Listing FY24-26



Projects by Service Area		ear Ending:			
		2024	2025		2026
Office	\$	120,000.00		\$	125,000.0
Office Improvements	\$	120,000.00		\$	125,000.0
Bulletproof Glass & Front Desk modifications	\$	120,000.00			
Annex Building Renovations				\$	125,000.0
Purchases	\$	46,000.00	\$ 264,000.00		
Customer Service			\$ 55,000.00		
Operations/Billing/Cartegraph Web Application			\$ 55,000.00		
Maintenance			\$ 163,000.00		
New Resource Durango			\$ 45,000.00		
New Resource Ram 1500			\$ 47,000.00		
4 - 12 Inch Hot Tap Machine / Mueller			\$ 32,000.00		
2DH-2 Concrete Mixer 2 Cubic Yards			\$ 39,000.00		
Personnel	\$	46,000.00	\$ 46,000.00		
Vehicle for Construction Manager			\$ 46,000.00		
Maintenance Coordinator Ram 1500	\$	46,000.00			
SCADA			\$ 36,000.00		
Operational Needs			\$ 36,000.00		
SCADA Hatch Intrusion Switches for Water Tanks			\$ 36,000.00		
SML	\$	200,000.00		\$	15,000.0
SML WTF (shared portion)	\$	200,000.00		\$	15,000.0
SML Tank - Standby generator				\$	15,000.0
GAC Heated Building	\$	200,000.00			
Mariners				\$	68,000.0
Operational Needs				\$	68,000.0
Mariners - Lake Retreat PRV Replacement				\$	68,000.0
Paradise Point				\$	10,000.0
Operational Needs				\$	10,000.0
Paradise Point Electrical upgrade				\$	10,000.0
Mariners WWTP				\$	20,000.0
Operational Needs				\$	20,000.0
Mariners WWTP - Recoat train 1 & 2 influent basins				\$	20,000.0
rand Total	\$	706,000.00	\$ 591,000.00	\$ 1	1,722,000.0

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Projects with Outside Funding



Projects and Funding Sources		Project Costs
Bell Town Road Waterline Extension	\$	500,000.00
ARPA	\$	500,000.00
Helm Street Tank Replacement	\$	3,391,304.00
ARPA Escrow	\$ \$	3,228,388.00 162,916.00
Ivy Creek 5 & 6 Design, Construction & Capacity	\$	15,471,092.00
County Debt Service-DEQ Clean Water Revolving Loan Fund	\$ \$	1,500,000.00 13,971,092.00
Town & Country Subdivision Sewer Replacements	\$	2,494,576.00
ARPA Setasides DEQ SCS Grant	\$ \$ \$	771,612.00 494,576.00 1,228,388.00
Grand Total	\$	21,856,972.00



With the American Rescue Plan Act (ARPA), funding was made available to localities for select improvements that had been previously identified, including those necessary for water and sewer infrastructure. In cooperation with the Town of Bedford, the Authority entered into a Grant Subrecipient Agreement on December 1, 2021 with the Town to utilize ARPA funds in addressing select projects noted below:

Helm Street Tank: The existing 1.22 million-gallon round water storage tank at Helm Street was previously taken out of service due to a failing coating system containing lead and a deteriorating concrete structure. With water storage that is central to the water system of significant importance to limit water age and disinfection byproducts, design is underway by Whitman, Requardt & Associates for a new 1 million-gallon welded steel water tank at this site.

Bell Town Road Waterline Extension: To address concerns regarding the quality of the groundwater within a select area of Bell Town Road and the potential for landfill leachate intrusion, an 1800 foot public waterline extension was designed and pending construction.

Town & Country Subdivision Sewer Replacements: The Authority worked with Hurt & Proffitt, Inc. through design and field investigations necessary for targeted replacements of deteriorating sewer lines within the Town and Country Subdivision. The construction of these replacements were previously intended to span over many years as funding became available through the Authority's Sewer Replacement Setasides. Partial funding approval was received through the Department of Environmental Quality (DEQ) Sewer Collection System (SCS) program in March 2023 to cover a portion of the project. With the funding available, most phases of the sewer replacements in this subdivision will be completed by the end of 2023.



Ivy Creek 5 & 6 Design, Construction & Capacity:

This gravity sewer extension into Lynchburg removes the operational requirements and capacity constraints currently present at the Lake Vista Lift Station. Along with Bedford County providing \$1.5 million over a period of three years, this project is being funded through Clean Water Revolving Loan funds at a minimal interest rate with some principal forgiveness included. This project is underway and anticipated for completion in Fall 2024.

FY 2023-2024 Capital Improvements Listing



Projects by Service Area	Fisca	l Year Ending: 2024	
Central	\$	245,000	
Operational Needs	\$	245,000	
Sewer Flow Meter - Bedford Weaving	\$	25,000	
Central Pump Station 1 - Replacement Pumps/Motors	\$	110,000	
Central Pump Station 2 - Replacement Pumps/Motors	\$	110,000	
Central WTP	\$	95,000	
Operational Needs	\$	95,000	
Re-piping Domestic Pump to Hydro-pneumatic Tank	\$	40,000	
Hoist system for moving pumps - Currently out of service	\$	55,000	
Office	\$	120,000	
Office Improvements	\$	120,000	
Bulletproof Glass & Front Desk modifications	\$	120,000	
Purchases	\$	46,000	
Personnel	\$	46,000	
Maintenance Coordinator Ram 1500	\$	46,000	
SML	\$	200,000	
SML WTF (shared portion)	\$	200,000	
GAC Heated Building	\$	200,000	
Grand Total	\$	706,000	

FY 2023-2024 Capital Improvements



Capital projects and purchases identified for FY 2023-2024 include items to assist with operational and maintenance efficiencies, improved sewer capacities, employee safety, and provide for additional personnel.

Some of the larger projects represent shared costs with other entities.

- The granular activated carbon (GAC) heated building will be shared equally with Western Virginia Water Authority as an improvement at the jointly owned Smith Mountain Lake Water Treatment Facility.
- Replacements at Central Pump Station 1 and 2 will be equally split between the Town of Bedford, County of Bedford, and the Authority, per resolutions adopted by each entity.

ine ID	Service Area	Water or Sewer	Project	Description	Project Costs
28	Central WTP	Water	Hoist system for moving pumps - Currently out of service	Bolts are missing and deemed unsafe by Safety. Needs to be repaired.	\$55,000
29	Central WTP	Water	Re-piping Domestic Pump to Hydropneumatic Tank	Current piping is corroded and has the potential to fail.	\$40,000
44	SML	Water	GAC Heated Building	The building allows to run GAC year round, which is necessary for PFAS protection and assists with organic removal. Costs represent shared portion with WVWA.	\$200,000
52	Central	Sewer	Central Pump Station 1 - Replacement Pumps/Motors	3 pumps are >20 years old. Will reduce overflows. Shared costs with Town & County	\$110,000
53	Central	Sewer	Central Pump Station 2 - Replacement Pumps/Motors	3 pumps are >20 years old. Will reduce overflows. Shared costs with Town & County	\$110,000
62	Central	Sewer	Sewer Flow Meter - Bedford Weaving	Installation of a flow metering station at public connection point to capture all flow for billing. Existing meter is private with accuracy concerns.	\$25,000
87	Office	Other	Bulletproof Glass & Front Desk modifications	Bulletproof modifications for the front desk to address safety and security of employees.	\$120,000
119	Purchases	Other	Maintenance Coordinator Ram 1500	The new maintenance coordinator will need a truck to drive to job sites, flag work areas, follow-up on prior jobs and assist maintenance crews.	\$46,000



FY 2023-2024 Central Water Treatment Plant Projects



• **Replace piping from domestic pump to hydropneumatic tank** *Piping between the domestic pump and plant pressure tank is threaded on each end and secured through flanged connections. Piping is corroding at each of the threaded locations with a high potential for failure. This project will replace approximately 200 feet of threaded pipe with plain end ductile iron pipe.*





Hoist system for moving pumps

The current pump hoist system has bolts missing, is not connected to the walls at either end, and deemed unsafe by Safety. A structural assessment is needed to determine the required repairs or replacements necessary.

FY 2023-2024 Central Sewer Projects





• Bedford Weaving Sewer Flow Meter Sewer billing at this location is based upon the readings from a sewer flow meter that is privately owned and dependent upon private power being provided. Installation of publicly owned flow meter at a public connection point for Authority's use and ownership will enable continued power and improved accuracy for billing.



• Central Pump Stations 1 & 2 - Replacement pumps and motors Capacity in the drainage areas of these two stations is hindered due to large volumes of inflow and infiltration in the system, as well as pumps that are greater than 20 years old that are not performing at their designed flow rates. Replacement of the aged and underperforming pumps along with changing out hard-start motors with variable drive motors will maximize capacity of the stations while lessening the impact to the receiving force mains. Flow meters will also be installed at each station for better accountability of flows and station performance.



FY 2023-2024 Office Improvements Projects



Bulletproof Glass Front Desk Modifications

The Customer Service front desk is the only area readily accessible to the public and the main entrance for all customers and visitors. With increasing concerns of security and safety of our employees, the proposed modifications will provide bullet resistant glass and desk panels, and replacing the swinging door with a solid wall for greater protection.



FY 2023-2024 Lakes Water Projects





• Smith Mountain Lake Water Treatment Facility - GAC Heated Building Granular Activated Carbon (GAC) is utilized for removing organics, as disinfection byproduct precursors, as well as Per- and Polyfluorinated Substances (PFAS), which are man-made chemicals also known as "forever chemicals". The GAC vessels and piping are currently not protected from freezing temperatures and therefore not usable in the coldest months. The building will provide freeze protection, allowing year round use of GAC for water quality which will be required for PFAS protection and upcoming regulations.



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Water Projects

Various water projects have been identified in the Forest, Central, and Lakes service areas to be addressed over the next few years, with some larger projects projected more into future years based upon anticipated funding. Projects identified to assist with water system operation include the following:

- Upgrades to aging booster station serving the Fox Runn subdivision
- An automated bulk filling station
- Improvements at the Stoney Creek reservoir to allow operability of the drain valve, required for permitting and safety
- Upgrades and maintenance of the Central Water Treatment Plant, including:
 - Replacement of obsolete and failing equipment and valves
 - Filter improvements
 - Alarm system to alert of vandalism or fire emergencies when plant is not in operation
 - Installation of a separate booster station for serving customers adjacent to the plant
- Control valve and actuated valve to efficiently coordinate flows between Forest, Central and Lakes systems
- Security measures through SCADA communications, as identified in the 2021 Risk and Resilience Assessment
- Sampling stations to provide best representation of water quality in the system, guarantee operator accessibility, and remove dependency upon quality plumbing within private homes and the homeowners' availability for sample collections
- Valley Mills building addition to allow for chemical addition and pH adjustment
- Upgrades to a system pressure reducing valve serving a portion of Mariners Landing
- Improvements at the Paradise Point water system to ensure continued service

In FY 2023-2024, a replacement set-aside account will be initiated for water facility replacements. This will provide routine funding in the future for items necessary to keep treatment plants and booster stations properly and efficiently functioning.





Water Projects



Vater Projects by Service Area	Fisca	l Year Ending:					
		2024	2025	2026	2027	2028	Future
Boonsboro							\$ 600,000.00
System Structures & Tanks							\$ 600,000.00
Fox Runn Booster Station Upgrade							\$ 600,000.00
Central			\$ 124,000.00	\$ 1,095,000.00	\$ 350,000.00		\$ 40,000.00
Operational Needs			\$ 124,000.00	\$ 845,000.00	\$ 350,000.00		\$ 40,000.00
Central Bulk Fill Station (Central WWTP)							\$ 40,000.00
Connect Bedford Lowe's to Town Distribution System					\$ 350,000.00		
Stoney Creek Reservoir - Ph 2.B (Cleaning/Design)			\$ 124,000.00				
Stoney Creek Reservoir - Ph 3 (Rehab Construction)				\$ 845,000.00	Nell-		
System Structures & Tanks				\$ 250,000.00	1		
Helm Street Tank Replacement				\$ 250,000.00			
Central WTP	\$	95,000.00	\$ 45,000.00	\$ 104,000.00	\$ 202,000.00	\$ 75,000.00	\$ 1,875,000.00
Operational Needs	\$	95,000.00	\$ 45,000.00	\$ 104,000.00	\$ 202,000.00	\$ 75,000.00	\$ 1,875,000.00
Central WTP - Booster station & finished line for customers directly served (Phase 1 Construction - Booster Station)							\$ 700,000.00
Central WTP - Booster station & finished line for customers directly served (Phase 2 Construction - Lines)							\$ 200,000.00
Central WTP - Holding Pond Sewer							\$ 500,000.00
Central WTP - Overhaul of WTP Elevator							\$ 150,000.00
Central WTP - Replace filter media / rebuild filters					\$ 30,000.00		
Central WTP - Upgrade chemical feeders to liquid chemical (others)					\$ 15,000.00		
Security Alarms and Fire Alarm System				\$ 29,000.00			
Central WTP Filter Control SCADA Interface				\$ 75,000.00			
SCADA Head Loss Monitors for finish filters					\$ 150,000.00		
Underdrain air scour system							\$ 325,000.00
Electric pallet jack - Central WTP (2)					\$ 7,000.00		
Re-piping Domestic Pump to Hydropneumatic Tank	\$	40,000.00					
Upgrade drainage system from holding ponds to VPDES outfall			\$ 45,000.00				
Hoist system for moving pumps - Currently out of service	\$	55,000.00					
Central WTP Replace Rewash valves & Waste Valves						\$ 75,000.00	
Countywide							\$ 20,000.00
Neighborhood Line Extensions (NLE)							\$ 20,000.00

Neighborhood Line Extensions (NLE)

Neighborhood Line Extensions (NLE) - Setaside Fund







\$

20,000.00

Water Projects



Water Projects by Service Area	Fiscal Year Ending:						
	2024 2025	2	026	2027	2028		Future
Forest	\$ 45,000.00	\$ 12	0,000.00			\$ 6	,165,000.00
Neighborhood Line Extensions (NLE)						\$	400,000.00
Blackburn Subdivision NLE						\$	400,000.00
Operational Needs	\$ 45,000.00	\$ 12	0,000.00				
Lynchburg Entry Point Control Valve (Graves Mill Rd)		\$ 12	20,000.00				
Big Ben Actuator Gate Valve	\$ 45,000.00						
System Loops for Stability						\$ 5	,700,000.00
Cottontown Road Loop - Riley Run to Autumn Run						\$	900,000.00
Everett Road Loop - Otterview to Walkers Crossing						\$	800,000.00
Goode Waterline Loop - Everett to Ashwood (Rt. 221)						\$ 4	,000,000.00
System Structures & Tanks						\$	65,000.00
Altha Grove Tank Altitude Valve Replacement						\$	40,000.00
Altha Grove/Cottontown Tank - Mixer						\$	25,000.00
Lakes					\$ 45,000.00	\$ 17	,000,000.00
Future System Growth						\$ 12	,500,000.00
Goodview Waterline - SML to Sycamore Ridge						\$ 5	,000,000.00
MVS to Valley Mills Ext (Lochwood, Capewood, Trading Post)						\$	900,000.00
SML Phase 5 to Mountain View Shores						\$ 6	,600,000.00
System Loops for Stability						\$ 4	,500,000.00
Whitehouse Road Loop						\$ 4	,500,000.00
System Structures & Tanks					\$ 45,000.00		
High Point Facility Roof Replacement					\$ 45,000.00		
SCADA	\$ 36,000.00						
Operational Needs	\$ 36,000.00						
SCADA Hatch Intrusion Switches for Water Tanks	\$ 36,000.00						
Stewartsville						\$	400,000.00
System Loops for Stability						\$	400,000.00
Stewartsville West Loop - Drewrys Hill Road						\$	400,000.00
Valley Mills				\$ 20.000.00			
Operational Needs				\$ 20,000.00			
Valley Mills Building addition for chemical addition				\$ 20,000.00			
Various				\$ 22,000.00	\$ 19,000.00		
Operational Needs				\$ 22,000.00	\$ 19,000,00		
Sample Hydrants Phase 2B (8)				\$ 22,000.00	•,		
Sample Water hydrants - Phase 2A (7)					\$ 19.000.00		
Mariners		\$ 6	8,000.00				
Operational Needs		\$ 6	8.000.00				
Mariners - Lake Retreat PRV Replacement		\$ 6	58.000.00				
Paradise Point		\$ 1	0.000.00	\$ 16,000.00	\$ 35,000.00		
Operational Needs		\$ 1	0.000.00	\$ 16,000.00	\$ 35,000.00		
Paradise Point Electrical upgrade		\$ 1	0.000.00				
Paradise Point Generator		Y 1		\$ 16,000,00			
Above-ground pressure tank assessment				20,000.00	\$ 35,000,00		
Grand Total	¢ 05 000 00 \$ 250 000 00	¢ 1 20	7 000 00	\$ 610 000 00	\$ 174,000,00	\$ 26	100 000 00

FY23-24

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Smith Mountain Lake Water Treatment Facility Projects 🞸



Projects and purchases directly related to the operation of the Smith Mountain Lake Water Treatment Facility reflect shared costs with Western Virginia Water Authority as the joint partner of the facility. Projects identified to assist with water system operation include the following:

- Increased pumping capacity at receiving sewer pump station 4 to support a large volume of backwash discharge from the facility
- Standby generators for the raw water intake and water storage tank for improved reliability and communication
- o Heated building for GAC vessels to allow freeze protection for use in winter months



Projects by Service Area	Fiscal Year E	Ending:			
		2024	2026	2027	2028
SML	\$	200,000.00	\$ 15,000.00	\$ 200,000.00	\$ 30,000.00
SML WTF (shared portion)	\$	200,000.00	\$ 15,000.00	\$ 200,000.00	\$ 30,000.00
Sewer Pump Station 4 Upgrades Ph 2 (Pumps)					\$ 30,000.00
SML Tank - Standby generator			\$ 15,000.00		
Raw Water Intake Generator				\$ 200,000.00	
GAC Heated Building	\$	200,000.00			
Grand Total	\$	200,000.00	\$ 15,000.00	\$ 200,000.00	\$ 30,000.00



Sewer Projects



The sewer projects planned for the coming years are primarily within the Central service area, with a few improvements identified in other service areas. Other projects that will utilize capital funding over the next few years include:

- Central Wastewater Pump Station upgrades and replacements
- Central Wastewater Treatment Plant upgrades including:
 - Replacement of older return activated sludge (RAS) pumps
 - o Replacement of railings and chains on basins
 - Upgrade at sandfilters from air actuated valves to electric valves that are not temperature dependent for operation
 - Replacement of aging transfer switch with one that is waterproof
 - Sanding and painting of clarifiers and thickener units that are rusting
- Moneta Wastewater Treatment Plant upgrades, including:
 - Replacing ballasts in the second train should maintenance be needed on first train or flow exceed the capability of a single train
 - o Replacement of Biowheel chains on second train
 - Replacement of trunnions and stub axles on both trains
- Recoating of influent basins at Montvale, Cedar Rock, and Mariners Landing Wastewater Treatment Plants

In FY 2023-2024, a replacement set-aside account will be initiated for sewer facility replacements. This will provide routine funding in the future for items necessary to keep treatment plants and lift stations properly and efficiently functioning.



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Sewer Projects



Sewer Projects by Service Area	Fiscal	Year Ending:						
		2024	2025		2026	2027	2028	Future
Central	\$	245,000.00		\$	50,000.00	\$ 155,000.00	\$ 810,000.00	
Operational Needs	\$	245,000.00		\$	50,000.00	\$ 155,000.00	\$ 810,000.00	
Central Pump Station 1 - Replacement Pumps/Motors	\$	110,000.00						
Central Pump Station 10 - Replacement Pump #1				\$	50,000.00			
Central Pump Station 10 - Replacement Pump #2							\$ 50,000.00	
Central Pump Station 2 - Replacement Pumps/Motors	\$	110,000.00						
Central Pump Station 3 - Replacement Pump #1						\$ 45,000.00		
Central Pump Station 3 - Replacement Pump #2						\$ 45,000.00		
Central Pump Station 3 - Replacement Pump #3						\$ 45,000.00		
Central Pump Station 4 Replacement & SCADA							\$ 290,000.00	
Central Pump Station 6 SCADA						\$ 20,000.00		
Central Pump Station 8 Replacement & SCADA							\$ 470,000.00	
Sewer Flow Meter - Bedford Weaving	\$	25,000.00						
Central WWTP			\$ 47,000.00	\$:	115,000.00	\$ 115,000.00	\$ 70,000.00	\$ 270,000.00
Operational Needs			\$ 47,000.00	\$:	115,000.00	\$ 115,000.00	\$ 70,000.00	\$ 270,000.00
Central WWTP - Digester Access Improvements (SAFETY)								\$ 100,000.00
Central WWTP - Lab & Sludge Building Renovations								\$ 60,000.00
Central WWTP - Move sandfilter controls from basement to control room								\$ 35,000.00
Central WWTP - New RAS Pump #2				\$	55,000.00			
Central WWTP - New RAS Pump #3						\$ 55,000.00		
Central WWTP - Remove old boiler and equipment								\$ 50,000.00
Central WWTP - Replace grit collector #2								\$ 25,000.00
Central WWTP - Replace Monster Auger						\$ 60,000.00		
Central WWTP - Replace railings and chains on primary basin #2			\$ 20,000.00					
Central WWTP - Replace the air actuator valves to electric valves on sandfilters				\$	60,000.00			
Central WWTP - Replace transfer switch in belt press building			\$ 27,000.00					
Central WWTP - Sand and repaint effluent clarifiers							\$ 50,000.00	
Central WWTP - Sand and repaint thickener units							\$ 20,000.00	
Forest								\$ 4,700,000.00
Future Growth - Capacity Purchases								\$ 4,700,000.00
Ivy Creek 1-4 Capacity (1.5 MGD Avg / 3.75 Peak)								\$ 1,900,000.00
Lynchburg WWTP Capacity (2.4 MGD)								\$ 2,800,000.00

Sewer Projects



Sewer Projects by Service Area	Fiscal Y	ear Ending:							
		2024	2025	2026		2027	2028		Future
Moneta WWTP			\$ 30,000.00		\$	10,000.00		\$	920,000.00
Operational Needs			\$ 30,000.00					\$	920,000.00
Moneta WWTP - Composting sludge from Central Sewer & Moneta WWTP								\$	100,000.00
Moneta WWTP - New chains on Train 2 BIOWHEELS			\$ 20,000.00						
Moneta WWTP - New Disk Filter Construction								\$	650,000.00
Moneta WWTP - Replace magnetic ballasts & wiring harness			\$ 10,000.00						
Moneta WWTP - Replace trunnions and stub axles								\$	170,000.00
Purchase					\$	10,000.00			
Moneta WWTP - Electric pallet lift					\$	10,000.00			
Stewartsville								\$ 2	0,000,000.00
Future System Growth								\$ 2	0,000,000.00
Stewartsville Sewer								\$ 2	0,000,000.00
Montvale WWTP					\$	10,000.00			
Operational Needs					\$	10,000.00			
Montvale WWTP - Recoat influent basin at wastewater plant					\$	10,000.00			
Cedar Rock					\$	10,000.00			
Operational Needs					\$	10,000.00			
Recoat influent basin at wastewater plant					\$	10,000.00			
Mariners WWTP				\$ 20,000.00	\$	10,000.00			
Operational Needs				\$ 20,000.00	\$	10,000.00			
Mariners WWTP - Install skimmer on clarifier 1 and 2					\$	10,000.00			
Mariners WWTP - Recoat train 1 & 2 influent basins				\$ 20,000.00					
Grand Total	Ś	245,000.00	\$ 77,000.00	\$ 185,000.00	Ś	310.000.00	\$ 880,000,00	\$ 2	5,890,000.00





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Capital Purchases



Several capital purchases are identified for the coming years that will assist with better efficiency in operation, employee safety, and allow for the additional equipment necessary to maintain an expanding service area. Some of these purchases include:

- Internal improvements and upgrades to assist with efficiencies and security, including:
 - Continued implementation phases of a new key system to provide improved site security options and improve appropriate accessibility
 - Bulletproof glass in the Customer Service area, to protect from the potentials for both physical harm and airborne viruses
 - Integration of multiple data sources for efficiencies in reporting and effective data forecasting
- Equipment for maintenance personnel to assist with work efficiencies and provide cost savings of completing more tasks internally
- Resource vehicle for use by office staff traveling to meetings or visiting project sites
- Resource vehicle for field use when a vehicle is out of service for maintenance



Purchases and Office Improvements		Year Ending:					
		2024	2025	2026	2027	2028	Future
Office	\$	120,000.00		\$ 125,000.00			\$ 3,800,000.00
Office Improvements	\$	120,000.00		\$ 125,000.00			\$ 3,800,000.00
Bulletproof Glass & Front Desk modifications	\$	120,000.00					
New Building - Construction							\$ 2,400,000.00
New Building - Design							\$ 150,000.00
Sewer Extension to Office Building							\$ 600,000.00
Annex Building Renovations				\$ 125,000.00			
Heated Garage - additional bay							\$ 160,000.00
Administration Offices in Conference Room							\$ 250,000.00
Small Pole Barn							\$ 110,000.00
Large Pole Barn							\$ 130,000.00

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Capital Purchases



Purchases and Office Improvements	Fiscal Y	ear Ending:						
		2024	2025	2026	2027	2028		Future
Purchases	\$	46,000.00	\$ 264,000.00	*	\$ 95,200.00	\$ 91,000.00	\$	791,500.00
Administration					\$ 60,000.00	\$ 60,000.00	\$	115,000.00
Key System - Phase 2C (Various sites)					\$ 60,000.00			
Key System - Phase 3A (Various sites)						\$ 60,000.00		
Key System - Phase 3B (Various sites)							\$	60,000.00
Portable Water Station for Community Events							\$	55,000.00
Customer Service			\$ 55,000.00				\$	35,000.00
Operations/Billing/Cartegraph Web Application			\$ 55,000.00					
Gateway Antenna - Stewartsville							\$	35,000.00
Engineering							\$	400,000.00
Central Sewer Survey Phase 1							\$	100,000.00
Central Sewer Survey Phase 2							\$	150,000.00
Water & Sewer Master Plan							\$	150,000.00
Maintenance			\$ 163,000.00		\$ 35,200.00	\$ 31,000.00	\$	194,500.00
Portable Air Compressor for CIP						\$ 31,000.00		
Skid Steer Concrete Saw for CIP							\$	34,000.00
Ductile Pipe Inventory Storage Rack							\$	18,500.00
New Resource Durango			\$ 45,000.00					
New Resource Ram 1500			\$ 47,000.00					
Forward Facing CCTV Camera Head					\$ 7,200.00			
4 Inch Drivable Portable CCTV Camera					\$ 28,000.00			
4 - 12 Inch Hot Tap Machine / Mueller			\$ 32,000.00					
Asphalt Hot Box, Compactor and Roller							\$	77,000.00
Paving of 1/4 Rear Parking Area							\$	12,500.00
Stone and Cold Patch Pad							\$	7,500.00
2DH-2 Concrete Mixer 2 Cubic Yards			\$ 39,000.00					
Electric Gate Lower Entrance							\$	45,000.00
Personnel	\$	46,000.00	\$ 46,000.00				\$	47,000.00
Vehicle for Construction Manager			\$ 46,000.00					
Maintenance Coordinator Ram 1500	\$	46,000.00						
New Ram 1500 - Ground Maintenance							\$	47,000.00
SCADA					\$ 20,000.00			
Operational Needs					\$ 20,000.00			
SCADA Communications Architecture Enhancements					\$ 20,000.00			
Grand Total	\$	166,000.00	\$ 264,000.00	\$ 125,000.00	\$ 115,200.00	\$ 91,000.00	\$ 4	4,591,500.00

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Replacement and Rehabilitation Projects





As the Authority's water and sewer systems age, it is necessary to prepare for replacements of older lines to maintain continued service to customers. The majority of water line and sewer line replacement or rehabilitation projects are currently covered through operational set-asides accounts created for these purposes rather than through the Authority's Capital Improvement Plan. Funding to these set-aside accounts is regularly increased where feasible through the annual operating budget process. The replacement set-aside accounts assist with unexpected emergency replacement projects that may arise, as well as allow for planned replacements through the Authority's Maintenance crews or contractors.

The majority of current line replacement projects are located within the Central service area. The Central water and wastewater systems have many older lines that are past their normal life span and are a source of many repairs. Much of the current water focus is on replacement of small diameter galvanized waterlines with larger and more durable lines that are able to provide dependable, quality service to these areas and support fire suppression. Sewer line replacements are currently focused on older lines in the Central Pump Station 1 drainage area that require regular root treatment to prevent overflows, as well as beginning to address many undersized 6-inch gravity sewer lines within the Town service area.



based on PER provided by W/W dated 12/20/2022.

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Prior	rity Score Col	or Codes
20	<30	
30	30-39	
50	40-59	
65	60+	



	Service Area	Project	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 - Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10-High 7 - Medium 5 - Low 2 - NA	Benefit/ Failure 10-High 5-Medium 2-Low 0-N/A	Effect on O&M Costa: 10 - Reduce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Medium 2 - Low/ None	Total Priority Score
	Countywide	Neighborhood Line Extensions (NLE) - Setaside Fund	Consider funding setaside to support NLE construction costs that exceed sum of Project Fees; allows extension of public waterlines where water quality and/or quanity is an issue and at least 70% of owners participate. Supports projects such as Howard Drive, Audobon, and Smugglers Neck.	\$20,000	2	2	10	2	0	5	10	2	33
	Forest	Blackburn Subdivision NLE	Most of subdivision served with public water through privately maintained booster station. NLE would connect them behind the existing Fox Runn booster station.	\$400,000	5	5	10	2	2	2	10	2	38
	Lakes	Goodview Waterline - SML to Sycamore Ridge	Routine flushing would be necessary until adequate number of connections.	\$5,000,000	2	2	10	2	2	2	10	2	32
	Lakes	MVS to Valley Mills Ext (Lochwood, Capewood, Trading Post)	To provide water service to the Saunders Point Neighborhood from MVS and eliminate Valley Mills well system.	\$900,000	2	5	10	5	5	2	10	2	41
	Lakes	SML Phase 5 to Mountain View Shores	Will reduce operations requirement at MVS and Valley Mills; will increase flushing needs until sufficient number of customers exist.	\$6,600,000	5	2	10	5	5	5	10	2	44
	Forest	Cottontown Road Loop - Riley Run to Autumn Run	Improve turnover / circulation in the area and provide loop.	\$900,000	5	2	10	5	2	5	10	2	41
	Forest	Everett Road Loop - Otterview to Walkers Crossing	Provides Forest loop and better ability to serve part of Forest system from SML Central.	\$800,000	7	5	10	5	2	10	5	2	46
	Forest	Goode Waterline Loop - Everett to Ashwood (Rt. 221)	Provides loop between Goode and Forest along Route 221.	\$4,000,000	5	2	10	5	2	5	10	2	41
	Lakes	Whitehouse Road Loop	Needed when more than 4 MGD is flowing to Town/Forest from SMLWTF.	\$4,500,000	2	2	10	2	2	5	10	2	35
)	Stewartsville	Stewartsville West Loop - Drewrys Hill Road	Provides system loop.	\$400,000	7	5	10	2	0	5	5	2	36
1	Boonsboro	Fox Runn Booster Station Upgrade	Aging station in need of tank replacements and upgraded equipment. If station is upsized, could also serve Blackburn subdivision water system. <i>Contracted costs difficult to justify for</i> <i>number of customers to be served; consider construction in-house</i> <i>upon available staffing.</i> (21 lots served with potential of up to 12 more)	\$600,000	7	5	10	7	5	5	5	2	46
2	Central	Helm Street Tank Replacement	Additional costs to supplement \$2M ARPA and \$160k Escrow funding; WRA's estimate at \$3.6M.	\$250,000	10	10	10	7	10	10	5	5	67
3	Forest	Altha Grove Tank Altitude Valve Replacement	Continued issues with existing G-A altitude valve causing tank overflows.	\$40,000	7	5	7	7	0	5	5	2	38
1	Forest	Altha Grove/Cottontown Tank - Mixer	Mixer needed to destratify water and improve DBPs.	\$25,000	7	10	5	5	10	10	5	5	57
5	Lakes	High Point Facility Roof Replacement	A new roof is needed on the High Point facility. The current roof has aged and is missing shingles in several locations. Damage to the structure is possible if not replaced.	\$45,000	5	10	10	7	0	5	5	2	44
5	Central	Central Bulk Fill Station (Central WWTP)	Add water filling station in Central service area and limit operator time to provide service	\$40,000	5	5	7	5	2	5	10	2	41
7	Central	Connect Bedford Lowe's to Town Distribution System	Enables full use of the 460 Pump Station when pumping from the Forest system; Lowe's at Shiloh Church Road loses pressure and fire protection in the current configuration.	\$350,000	7	10	10	5	5	5	5	2	49
3	Central	Stoney Creek Reservoir - Ph 2.B (Cleaning/Design)	Conduit cleaning and design costs for chemical grouting/filter diaphragm based on PER provided by WIW dated 12/20/2022. (Additional to existing FY22-23 funding)	\$124,000	10	10	10	7	5	5	5	2	54
9	Central	Stoney Creek Reservoir - Ph 3 (Rehab Construction)	Estimated construction cost for Option 1 - Outlet Works Rehab	\$845,000	10	10	10	7	5	5	5	10	62

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Capital Improvement Program Priority Ranking

Priority Score Color Codes 20 <30 30-39 30



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Line ID	Service Area	Project	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 -Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10- High 7 - Medium 5 - Low 2 - N/A	Benefit/ Failure 10- High 5 - Medium 2 - Low 0 - N/A	Effect on O&M Costs: 10 - Resluce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - Increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Medium 2 - Low/ None	Total Priority Score
38	Paradise Point	Above-ground pressure tank assessment	The existing pressure tank is old and corroded - need to look at replacing	\$35,000	7	5	2	5	10	5	5	2	41
39	Paradise Point	Paradise Point Electrical upgrade	Upgrading all the service in the well house.	\$10,000	5	7	7	7	10	5	5	2	48
40	Paradise Point	Paradise Point Generator	Upgrade the generator to run the well house in the event power is lost.	\$16,000	5	7	7	7	10	5	5	2	48
41	Valley Mills	Valley Mills Building addition for chemical addition	Due to age and configuration, the waterworks experiences treatment upsets that require the tank to be dumped for dilution. The pH is very low and no pH adjustment is currently provided. The current building size is not feasible for any treatment additions or reconfigurations.	\$20,000	5	10	7	7	5	10	5	5	54
42	Various	Sample Hydrants Phase 2B (8)	Guarantees accessibility and representative water for compliance samples. (Phased)	\$22,000	5	10	5	5	5	5	5	5	45
43	Various	Sample Water hydrants - Phase 2A (7)	Guarantees accessibility and representative water for compliance samples. (Phased)	\$19,000	10	10	7	2	2	5	5	5	46
44	SML	GAC Heated Building	The building allows to run GAC year round, which is necessary for PFAS protection and assists with organic removal. Costs represent shared portion with WVWA.	\$200,000	10	10	7	2	5	10	5	2	51
45	SML	Raw Water Intake Generator	Stand-alone diesel generator to run the intake facility	\$200,000	5	7	7	7	10	10	5	10	61
46	SML	Sewer Pump Station 4 Upgrades Ph 2 (Pumps)	Increase pump capacity as existing station is only able to support 65 gpm with both pumps running. Limitations on capacity causes the SMLWTF to be shut down to prevent overflows. Unused basin next to pump well could be used to modulate backups.	\$30,000	7	10	5	10	2	10	5	5	54
47	SML	SML Tank - Standby generator	Permanent stand by power generator for the SML Water Tank that will maintain various sensors and network service for the area.	\$15,000	7	10	7	7	5	2	5	2	45
48	Forest	Ivy Creek 1-4 Capacity (1.5 MGD Avg / 3.75 Peak)	Not necessary right away - currently own 1.29 MGD Peak in Ivy 1 & 2, 1.52 MGD Peak in Ivy 3; 1.89 MGD Peak in Ivy 4.	\$1,900,000	2	5	7	5	0	5	10	2	36
49	Forest	Lynchburg WWTP Capacity (2.4 MGD)	Not necessary until more than 1 MGD needed; \$1.4M for 1.68 MGD, \$1.6M for 1.808 MGD, and \$1.9M for 1.9 MGD.	\$2,800,000	2	5	7	5	0	5	10	2	36
50	Stewartsville	Stewartsville Sewer	Minimal water customers currently in this service area. PER completed in 2012 reviewing options, with cheapest capital option as a new WWTP estimated at \$8.5M at time of report.	\$20,000,000	2	2	10	2	0	2	10	2	30
51	Cedar Rock	Recoat influent basin at wastewater plant	The basins need to be recoated, starting to rust.	\$10,000	5	5	7	7	5	5	5	10	49
52	Central	Central Pump Station 1 - Replacement Pumps/Motors	3 pumps are >20 years old. Will reduce overflows. Shared costs with Town & County	\$110,000	5	10	5	5	10	5	5	10	55
53	Central	Central Pump Station 2 - Replacement Pumps/Motors	3 pumps are >20 years old. Will reduce overflows. Shared costs with Town & County	\$110,000	5	10	5	5	10	5	5	10	55
54	Central	Central Pump Station 3 - Replacement Pump #1	3 pumps are >20 years old; 3rd phase for replacement. Will reduce overflows.	\$45,000	5	10	5	5	10	5	5	10	55
55	Central	Central Pump Station 3 - Replacement Pump #2	3 pumps are >20 years old; 2nd phase for replacement. Will reduce overflows.	\$45,000	5	10	5	5	10	5	5	10	55
56	Central	Central Pump Station 3 - Replacement Pump #3	3 pumps are >20 years old; 3rd phase for replacement. Will reduce overflows.	\$45,000	5	10	5	5	10	5	5	10	55
57	Central	Central Pump Station 4 Replacement & SCADA	Bring station above ground; water often present in the bottom of the station, presenting concern of safety hazard due to electrical presence.	\$290,000	10	5	7	5	5	5	5	5	47
58	Central	Central Pump Station 6 SCADA	Allow remote view and ability to trend station performance.	\$20,000	10	10	7	5	5	5	5	5	52

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Line ID	Service Area	Project	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 -Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10- High 7 - Medium 5 - Low 2 - N/A	Benefit/ Failure 10-High 5 - Medium 2 - Low 0 - N/A	Effect on O&M Coeta: 10 - Resluce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - Increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Medium 2 - Low/ None	Total Priority Score
59	Central	Central Pump Station 8 Replacement & SCADA	Smith & Loveless pump station with failing steel wet well.	\$470,000	10	5	10	7	5	5	5	10	57
60	Central	Central Pump Station 10 - Replacement Pump #2	Replace pump #2 at pump station 10; pumps are older and were rebuilt in 2023.	\$50,000	5	5	7	7	5	5	5	10	49
61	Central	Central Pump Station 10 - Replacement Pump #1	Replace pump #1 at pump station 10; pumps are older and were rebuilt in 2023.	\$50,000	5	5	7	5	5	5	5	10	47
62	Central	Sewer Flow Meter - Bedford Weaving	Installation of a flow metering station at public connection point to capture all flow for billing. Existing meter is private with accuracy concerns.	\$25,000	7	7	7	7	2	5	10	2	47
63	Central WWTP	Central WWTP - Digester Access Improvements (SAFETY)	Need ladder with harness system for personnel access; need alternate solution for cleaning; costs unknown.	\$100,000	10	7	7	7	0	5	5	2	43
64	Central WWTP	Central WWTP - Lab & Sludge Building Renovations	To upgrade very old facilities. Removes cabinets to provide more space for operators by converting lab to office space & a breakroom; move lab to existing breakroom.	\$60,000	5	7	10	2	0	5	5	2	36
65	Central WWTP	Central WWTP - Move sandfilter controls from basement to control room	Remove from basement to prevent future water damage	\$35,000	10	7	7	5	0	2	5	2	38
66	Central WWTP	Central WWTP - New RAS Pump #2	Existing pumps are 20+ years old.	\$55,000	5	10	5	5	10	5	5	2	47
67	Central WWTP	Central WWTP - New RAS Pump #3	Existing pumps are 20+ years old.	\$55,000	5	7	5	5	10	5	5	2	44
68	Central WWTP	Central WWTP - Replace railings and chains on primary basin #2	This basin is operating and starting to show wear on railings.	\$20,000	7	7	7	5	5	5	5	5	46
69	Central WWTP	Central WWTP - Replace the air actuator valves to electric valves on sandfilters	Electric valves will allow backwashing filters below freezing temperatures as air lines currently freeze in the winter and prevent the ability to backwash.	\$60,000	7	7	7	5	5	5	5	5	46
70	Central WWTP	Central WWTP - Sand and repaint effluent clarifiers	Paint is chipping and rusting	\$50,000	10	7	7	5	0	2	5	2	38
71	Central WWTP	Central WWTP - Sand and repaint thickener units	Paint is chipping and rusting	\$20,000	10	7	7	5	0	2	5	2	38
72	Central WWTP	Central WWTP - Remove old boiler and equipment	Remove old boiler equipment in digester building.	\$50,000	5	2	10	2	0	5	5	2	31
73	Central WWTP	Central WWTP - Replace grit collector #2	Install new grit collector.	\$25,000	5	5	7	10	10	5	5	5	52
74	Central WWTP	Central WWTP - Replace Monster Auger	Install new Monster Auger (trash removal)	\$60,000	5	5	7	7	10	5	5	5	49
75	Central WWTP	Central WWTP - Replace transfer switch in belt press building	Install new transfer switch in belt press building. We had the old switch worked on and the contractor stated that the old switch is not waterproof and will need to be replaced in the next 2 years.	\$27,000	7	7	7	7	5	5	5	5	48
76	Mariners WWTP	Mariners WWTP - Install skimmer on clarifier 1 and 2	The clarifiers were not designed for skimmers. The skimmers would improve the life on the drainfields by skimming all the solids from both clarifiers and returning back to the anoxic zones for treatment.	\$10,000	5	5	7	5	5	5	5	2	39
77	Mariners WWTP	Mariners WWTP - Recoat train 1 & 2 influent basins	The basins need to be recoated, starting to rust.	\$20,000	5	5	7	7	5	5	5	10	49
78	Moneta WWTP	Moneta WWTP - Composting sludge from Central Sewer & Moneta WWTP	Low priority; costs unknown	\$100,000	5	7	7	2	0	10	5	2	38
79	Moneta WWTP	Moneta WWTP - New chains on Train 2 BIOWHEELS	Chains life is 5 years	\$20,000	7	7	5	5	2	5	5	2	38
80	Moneta WWTP	Moneta WWTP - New Disk Filter Construction	Equipment quoted in 2017 at \$155k; per Wiley Wilson, budget \$500k. Needed if septage is accepted at the plant.	\$650,000	5	2	7	5	0	5	5	5	34
81	Moneta WWTP	Moneta WWTP - Replace magnetic ballasts & wiring harness	Replace with electronic ballasts; magnetic ballasts are no longer available per EPA. If flow increases, will be needed immediately.	\$10,000	10	7	7	10	0	2	5	2	43
82	Moneta WWTP	Moneta WWTP - Replace trunnions and stub axles	Replace trunnions and stub axles on train 1 and train 2	\$170,000	5	5	7	2	5	5	5	5	39
83	Moneta WWTP	Electric pallet lift - Moneta WWTP	Electric pallet lift needed for unloading chemicals, equipment, and distilled water for the lab.	\$10,000	5	5	7	2	0	5	5	2	31
84	Montvale WWTP	Montvale WWTP - Recoat influent basin at wastewater plant	The basin will need to be recoated before it starts rusting.	\$10,000	5	5	7	7	5	5	5	10	49

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Line ID	Service Area	Project	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 -Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10-High 7 - Medium 5 - Low 2 - N/A	Benefit/ Failure 10-High 5 - Medium 2 - Low 0 - N/A	Effect on O&M Costa: 10 - Resluce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Medium 2 - Low/ None	Total Priority Score
85	Office	Administration Offices in Conference Room	Buildout of Customer Service offices and cubicles in Conference Room; includes HVAC and lighting modifications, new office cubicle, and desk.	\$250,000	10	10	10	2	2	5	5	2	46
86	Office	Annex Building Renovations	Flooring and painting as performed in Admin Building in 2019, as well as soundproofing offices and rear Board Room wall.	\$125,000	7	5	7	5	0	5	5	2	36
87	Office	Bulletproof Glass & Front Desk modifications	Bulletproof modifications for the front desk to address safety and security of employees.	\$120,000	10	10	10	10	10	5	5	10	70
88	Office	Heated Garage - additional bay	Additional longer fifth bay added to the lower heated shop for the new Vac Con, The additional bay will better accommodate the new Vac Cons length and allow more room in the lower building for compressors, pumps, hydro equipment, Pipe Hunters and other temperature sensitive equipment.	\$160,000	5	7	10	2	0	5	5	2	36
89	Office	Large Pole Barn	Additional storage for equipment, trucks and growing inventory. Additional space will allow for storage as we outgrow our inventory building. The space will allow for storage of equipment attachments, Eone pumps, tractors, and bays teams can work out of.	\$130,000	5	5	10	2	0	5	5	2	34
90	Office	New Building - Construction	New two story building behind Annex building.	\$2,400,000	2	2	10	2	0	2	5	2	25
91	Office	New Building - Design	Design of new building to address expanding personnel needs.	\$150,000	2	2	10	2	0	2	5	2	25
92	Office	Sewer Extension to Office Building	Pressure sewer extension, 6000' from gravity line.	\$600,000	7	5	10	7	2	2	5	5	43
93	Office	Small Pole Barn	Additional storage for equipment, trucks and growing inventory. Additional space will allow for storage as we outgrow our inventory building. The space will allow for storage of equipment attachments, Eone pumps, tractors, and bays teams can work out of.	\$110,000	5	7	10	2	0	5	5	2	36
94	SCADA	SCADA Communications Architecture Enhancements	Change primary communication at 10 critical water sites from B2X to Verizon VPN Digi Modems for better reliability, particularly during adverse weather events.	\$20,000	7	10	7	7	10	5	5	2	53
95	SCADA	SCADA Hatch Intrusion Switches for Water Tanks	For water system security, as identified in the 2021 Risk and Resilience Assessment for 7 BRWA tanks and 3 SML tanks.	\$36,000	10	10	7	2	10	5	5	2	51
96	Purchases	Key System - Phase 2B - SMLWTF	Fob setup for SMLWTF front door	\$6,000	5	10	7	10	10	10	5	2	59
97	Purchases	Key System - Phase 2C (Various sites)		\$60,000	5	10	7	10	10	10	5	2	59
98	Purchases	Key System - Phase 3A (Various sites)		\$60,000	5	10	7	10	10	10	5	2	59
99	Purchases	Key System - Phase 3B (Various sites)		\$60,000	5	10	7	10	10	10	5	2	59
100	Purchases	Portable Water Station for Community Events	Water buggy trailer for marketing and public service. Could be used with line breaks.	\$55,000	2	2	10	5	10	5	5	2	41
101	Purchases	Gateway Antenna - Stewartsville	Gateway antenna to install in Stewartsville to reduce driving time for meter readers.	\$35,000	7	10	10	7	5	10	5	2	56







-ine ID	Service A <u>rea</u>	Proiect	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 - Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10-High 7 - Medium 5 - Low 2 - N/A	Benefit/ Failure 10-High 5 - Medium 2 - Low 0 - N/A	Effect on O&M Costa: 10 - Resluce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Nedium 2 - Low/ None	Total Priority Score
102	Purchases	Operations/Billing/Cartegraph Web Application	Integration of Operations data, Billing data, and Cartegraph data. Eliminates individual spreadsheets and allows multi-year analysis with data security and validation. May assist with statistical information and revenue forecasting. Integrates all data needed for the monthly Accountability Report.	\$55,000	5	10	10	7	5	10	5	2	54
103	Purchases	Central Sewer Survey Phase 1	Engineering Term Consultant to perform field survey of Central Sewer to be used for Central Sewer Mapping and Modeling. Will assist in identifying appropriate pumps for replacement at Central pump stations,	\$100,000	5	5	10	7	5	5	5	5	47
104	Purchases	Central Sewer Survey Phase 2	Engineering Term Consultant to perform field survey of Central Sewer to be used for Central Sewer Mapping and Modeling. Will assist in identifying appropriate pumps for replacement at Central pump stations.	\$150,000	5	5	10	7	5	5	5	5	47
105	Purchases	Water & Sewer Master Plan	Comprehensive master planning document has not been created since Consolidation; plan would need to coordinate with the Town and County's Comprehensive Plans and zoning.	\$150,000	5	5	7	5	2	5	5	2	36
106	Purchases	2DH-2 Concrete Mixer 2 Cubic Yards	Concrete mixer will be used to replace sidewalks for CIP projects and line crews or water service or main repairs. The purchase of this unit will save time and money by eliminating the need for contractors.	\$39,000	5	7	7	2	0	10	5	2	38
107	Purchases	4 - 12 Inch Hot Tap Machine / Mueller	This Mueller machine will allow us to make hot taps which range from 4 inch to 12 inch without disrupting water service or spending full days cutting and sleeving sections of pipe together. This unit is safer and more efficient that traditional cut and building valve assemblies. This will allow for short if no water outages while making new and larger taps.	\$32,000	5	7	7	2	2	10	5	2	40
108	Purchases	4 Inch Drivable Portable CCTV Camera	Portable CCTV crawler will allow PM to crawl lines as small as 4 inches in the town. The towns old system has a lot of 4 inch clay pipe which can be inspected with this small portable crawler. This unit can crawl 100 foot lengths and is packed into a suitcase size container for easy use and inspections.	\$28,000	5	5	7	2	0	5	5	2	31
109	Purchases	Asphalt Hot Box, Compactor and Roller	This equipment will allow the BRWA to begin making our own asphalt repairs when time permits. Currently Patterson Brothers performs our repairs however charges a mobilization fee for their work. This equipment will allow us to BEGIN making some of the asphalt repairs inhouse saving considerable money when time permits.	\$77,000	5	5	7	2	0	10	5	2	36
110	Purchases	Ductile Pipe Inventory Storage Rack	Storage for multiple sizes of ductile pipe keeping inventory off of the ground and easier to access. Racks will make pulling and cutting pipe safer and more efficient	\$18,500	5	5	5	2	0	5	5	2	29
111	Purchases	Electric Gate Lower Entrance	This gate will be added to the new lower parking allowing easier access to obtain equipment and better access for delivery of stone, pipe and equipment.	\$45,000	5	2	10	2	0	5	5	2	31





Line ID	Service Area	Project	Description	Project Costs	Priority Classification 10 - Mandatory 7 - Maintenance 5 - Efficiency 2 - New Service	Priority Ranking 10 - Very High 7 - High 5 - Medium 2 - Low	Expectful Useful Life 10 - 20+ yrs 7 - 10-19 yrs 5 - 5-9 yrs 2 - < 5yrs	Failure Potential 10-High 7 - Medium 5 - Low 2 - N/A	Benefit/ Failure 10- High 5 - Medium 2 - Low 0 - N/A	Effect on O&M Costa: 10 - Reduce 5 - Unchanged 2 - Increased	Effect on Revenue 10 - Increase 5 - Unchanged 2 - Decrease	Environmental Impact 10 - High 5 - Medium 2 - Low/ None	Total Priority Score
112	Purchases	Forward Facing CCTV Camera Head	Straight facing CCTV camera head for CCTV push camera. This additional camera head will allow the PM team to interchange camera heads from straight facing to the delicate pan and tilt camera. It will prevent the team from needing to take two cameras to each job and will serve as a backup if the primary camera is in the shop.	\$7,200	5	5	7	2	0	5	5	2	31
113	Purchases	New Resource Durango	New resource vehicle to replace Jeep #27 which is being used by maintenance assistant manager	\$45,000	5	10	7	2	0	5	5	2	36
114	Purchases	New Resource Ram 1500	New resource truck will be used for field work preventing the resource SUVs from being damaged. This will allow the SUV's to be used for travel, not work vehicles.	\$47,000	5	10	7	2	0	5	5	2	36
115	Purchases	Paving of 1/4 Rear Parking Area	The rear parking lot is have paved and half gravel. During heavy rain events the stone washes to the rear parking lot creating holes and erosion making travel and walking difficult. Paving the sloped portion of the rear lot will allow for easier parking lot maintained and safer walking areas.	\$12,500	5	5	7	2	0	5	5	2	31
116	Purchases	Portable Air Compressor for CIP	Air compressor unit for Capital crew to use with Hole Hawg for service installations, as well as concrete and asphalt removal.	\$31,000	5	10	7	2	0	5	5	2	36
117	Purchases	Skid Steer Concrete Saw for CIP	Saw attachment for cutting asphalt and concrete to provide better efficiencies, accuracy, and longer cuts.	\$34,000	5	7	5	2	0	5	5	2	31
118	Purchases	Stone and Cold Patch Pad	A larger storage area for stone, soil, cold patch and A-1 rip rap is needed. The funds would allow a concreate pad to be poured making soil, cold patch and other materials we use easier to scoop and allows us to store them in larger quantities. The funds will be used to build more longer and wider bins along with a solid floor.	\$7,500	5	5	7	2	0	5	5	2	31
119	Purchases	Maintenance Coordinator Ram 1500	The new maintenance coordinator will need a truck to drive to job sites, flag work areas, follow-up on prior jobs and assist maintenance crews.	\$46,000	5	10	7	2	0	5	5	2	36
120	Purchases	New Ram 1500 - Ground Maintenance	The new grounds position will require a truck to perform work. This will be a new truck purchase for this position.	\$47,000	5	10	7	2	0	5	5	2	36
121	Purchases	Vehicle for Construction Manager	Currently using P/T Locator's vehicle and resource vehicle. With regular use, will need assigned vehicle.	\$46,000	10	7	7	2	2	5	5	2	40

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Central WTP Booster Station & Service Line Replacement

Project Description:

The purpose of this project is to provide improved water service to the area surrounding the Central Water Treatment Plant (WTP). This WTP serves approximately 10 residential connections in the immediate vicinity of the treatment plant through a hydro pneumatic tank located inside of the WTP. Keeping the hydro tank charged for the residential connections greatly restricts or eliminates the available downtime for the water treatment plant. Design has been completed for a small booster station that can serve the existing residential customers from the existing 18" line at the treatment plant. Existing 1-inch and 2-inch service lines to the existing meters will also be replaced with larger diameter lines and connected to the new booster pump station.

Estimated Cost: \$900,000

Estimated Length/Size: Booster Pump Station & ~1,500 LF of 4"

Status: Designed, awaiting funding for construction





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Everett Road Waterline Loop

Project Description:

Connection of waterlines along Everett Road between Walkers Crossing Drive and Otterview Drive.

Waterlines have been extended from each direction, leaving a gap in this area along Everett Road. This project finishes a needed waterline loop for the system for greater stability. Currently there are only two water main feeds to this area, and if one must be closed for repair, additional loops are necessary to keep the system stable.

Estimated Cost: \$800,000 Estimated Length/Size: <4,000 LF of 12-inch Status: Not yet funded





Goode Waterline Loop

Project Description:

Looping waterlines at Everett Road and Canary Street to Ashwood Drive along Everett Road, Gladden Circle, and Forest Road (Route 221).

Waterlines have been extended from each direction, leaving a gap in this area along Everett Road. This project finishes a needed waterline loop for the system for greater stability. Currently there are only two water main feeds to this area, and if one must be closed for repair, additional loops are necessary to keep the system stable.

Estimated Cost: \$4,000,000 Estimated Length/Size: >3 miles of 12" - 16" Status: Not yet funded





Cottontown Road Waterline Loop

Project Description:

This project will include a waterline extension along Cottontown Road from Riley Run Road to Autumn Run Drive. This water extension will consist of over 4,800 LF looping the existing 12-inch waterline providing more stable pressures, flow, and fire suppression for the surrounding community. This loop will provide water service availability to approximately 15 existing parcels, many with the potential to develop resulting in additional customers.

Estimated Cost: \$900,000

Estimated Length/Size: >4,800 LF of 12-inch

Status: Not yet funded





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Stewartsville-West Waterline Loop

Project Description:

Waterline extension along Drewrys Hill Road from Pulpit Lane to Route 24 – Stewartsville Road.

This project will provide a system loop for the Waywood Hills waterline extensions. With a limited number of customers currently connected to the Stewartsville Consecutive water system, the loop is needed to assist with turnover in the lines and fresh water to the homes.

Estimated Cost: \$400,000

Estimated Length/Size: <2,400 LF of 6-inch

Status: Not yet funded





White House Road Waterline Loop

Project Description:

This project will complete the waterline loop from the SMLWTP along Radford Church Road and White House Road to the Moneta WWTP near Moneta Road (Route 122). This waterline loop will provide water service availability to over 100 existing parcels. This loop will also allow for further looping south along White House Road to Smith Mountain Lake State Parkway.

Estimated Cost: \$4,500,000

Estimated Length/Size: >3.5 miles of 8-inch

Status: Not yet funded





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Goodview Waterline -SML to Sycamore Ridge

Project Description:

This project will extend waterline from Moneta Road along Diamond Hill Road to Eagles Nest Drive at the Sycamore Ridge subdivision off of Goodview Road. Multiple requests have been made for the waterline extension by current well system owners in the Goodview area. This extension would provide public water to the area and make connections more feasible.

Estimated Cost: \$5,000,000

Estimated Length/Size: >5 miles of 12-inch

Status: Not yet funded





Stewartsville Sewer

Project Description:

This project would help promote growth of water and sewer customers in the Stewartsville and Goodview areas by providing sewer availability to rural areas currently on septic systems, including residential and commercial customers.

Estimated Cost: \$20,000,000

Estimated Length/Size: TBD

Status: Not yet funded



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Smith Mountain Lake Waterline - Phase 5

Project Description:

Waterline extension from Smith Mountain Lake Parkway along Tolers Ferry Road and Trading Post Road to Saunders Point Road.

The BRWA currently operates well systems in the Mountain View Shores and Valley Mills subdivisions that are located in a remote location in comparison to other facilities. Serving these subdivisions through the Mountain View Shores water system would create more cost efficiencies in the Authority's operations, eliminating two well systems and connecting them to the Lakes Central Water System. This area of the County has seen the most growth over the last year, and providing water to the area can increase the growth and tax revenue to the County, making future development around the southeastern portion of Smith Mountain Lake Parkway more feasible.

Estimated Cost: \$6,600,000

Estimated Length/Size: >6.5 miles of 8"-12"

Status: Not yet funded





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