

**CAPITAL IMPROVEMENT PROGRAM**  
**Projects Listing**

Service Area	LINE ID	Project	Fiscal Year Ending	Project Costs	CARRYOVER				Notes
					Residual Funds	2020	2021	2022	
	1	<b>PROJECTS WITH DEBT SERVICE</b>							
Central	2	<b>Energy Saving Project - Central WWTP</b>							Majority of the costs is in the blowers; also includes modifying the plant DO and level controls.
	3	Central Wastewater Treatment Upgrades (VRA)	2022	\$4,243,599			66,930	318,335	
	4	Central Wastewater Treatment Upgrades (Addtl)		\$1,038,000	1,038,000				Additional capital from residual funds to subsidize VRA loan.
Forest	5	<b>Ivy Creek 5 &amp; 6 Design, Construction &amp; Capacity</b>	2023	\$12,520,000					Payments begin 6 months after construction is complete.
	8	<b>WATER PROJECTS</b>							
	27	<b>Operational Needs</b>							
Central	28	Forest to Lakes Permanent Booster Station		\$2,000,000	2,000,000				Needed for transferring water from Forest to Central or Lakes, or if serving all of Forest from the Lakes. Provides backup source upon failures on Route 122 water main, and removes need for temporary pump station setup and maintenance.
	31	Sample Hydrants Phase 1 (5)	2022	\$5,000				5,000	Guarantees accessibility and representative water for compliance samples. (Phased)
Central	35	Central Water Upgrades							
	36	Replace control valves (influent, bw, rewash) CARRYOVER	2020	\$80,000		80,000			Valves are original 1972 hydraulic valves that are leaking and will not close without water supply - no hand option; no replacement parts are available. Replace with electronic controllers and hand wheel backup. Cannot operate due to concerns of further problems and inability to repair.
	37	Replace control valves (waste)	2022	\$30,000				30,000	16" waste valves are plunger type; replacement will require fabricated knife gates with transitions.
	39	Upgrade chemical feeders to liquid chemical (Delpac/PaCl)	2022	\$10,000				10,000	Changing coagulant to liquid PACI (DELPAC) will extend filter runs, reduce waste, delay media replacement, reduce lime use by 75% and improve water quality. With no dry chemicals added to the water, less sediment would need to be cleaned and hauled.
Central	43	Stoney Creek Reservoir Telemetry	2022	\$10,000				10,000	New broadband tower enables ability to provide telemetry upon equipment being installed.
Central	44	Reservoir Drain Valve Analysis & Contingency Plan	2022	\$15,000				15,000	Drain valve should be operated annually; DCR recommended contingency plan from consultant prior to operation. May analyze use of siphon system to allow access for valve operation without use of boat.
Stewartsville	45	Stewartsville GAC & Rechlorination PER	2022	\$30,000				30,000	Review feasibility of repurposing GAC units from Highpoint to remove DBPs and boost chlorination for adequate residual.
Lakes	46	Bridgewater Bay Pressure Reducing Valve (PRV)	2022	\$65,000				65,000	System pressures of 130-170psi. Piping materials rated to 200 psi, while meters rated at 150 psi. Customers' standard residential PRVs insufficient for pressure and regularly failing.
Lakes	48	Mountain View Shores Filter Replacement	2022	\$150,000				150,000	The filters are in danger of failure due to serious corrosion. Price is for full replacement.
	49	Paradise Point SCADA	2022	\$15,000				15,000	Provide remote monitoring of well system; included in rate evaluation for Paradise Point.
Lakes	50	SML WTF (Costs represent shared portion with WVWA)							
	51	SCADA Upgrades to tie in existing equipment	2022	\$10,000				10,000	Any monitor or chemical additions must be added to SCADA; however, all input blocks are full. New rail cabinet and I/O equipment along with programming is needed. Already have equipment waiting to be added.
	53	PACI System Completion	2022	\$5,000				5,000	PACI has been determined to be beneficial for organics removal. The system needs to be finalized per VDH requirements including plans, specs and additional equipment.
	55	<b>SEWER PROJECTS</b>							
	61	<b>Operational Needs</b>							
Central	66	Central WWTP							
	67	Concrete repairs on anoxic and pre-air tanks	2022	\$20,000				20,000	Repair cracks
Central	74	Central Sewer Pump Stations							
	75	Pump Stations 1, 2, 3 - Security Cameras	2022	\$5,000				5,000	Allow operators to view station remotely for overflow concerns or security issues.
	76	Pump Station 1 - Soft starts and new control panel	2022	\$50,000				50,000	Reduce water hammer effect on receiving force main.
	77	Pump Station 1 - Replacement Pump #1	2022	\$45,000				45,000	3 pumps are >20 years old; 1st phase for replacement. Will reduce overflows.
	80	Pump Station 2 - Replacement Pump #1	2022	\$45,000				45,000	3 pumps are >20 years old; 1st phase for replacement. Will reduce overflows.
	83	Pump Station 3 - Replacement Pump #1	2022	\$45,000				45,000	3 pumps are >20 years old; 1st phase for replacement. Will reduce overflows.
	93	Pump Station 5 Replacement	2021	\$186,000			186,000		Smith & Loveless pump station with failed steel wet well, plug and check valve. Replacing in 20-21 as part of emergency repair of complete failure.
	94	Pump Station 7 Replacement	2022	\$186,000				186,000	Smith & Loveless pump station with failing steel wet well.
Lakes	96	Mariners Landing Sewer Upgrades							
	97	WWTP Upgrades		\$103,000	103,000				Various upgrades identified with system transfer.
	98	WWTP Upgrades (Additional)	2022	\$40,000				40,000	Additional funding needed to complete the rebuild of both BIOWHEELS and new BIOWHEEL gearbox.
	99	Pump Stations 1 & 2 SCADA	2022	\$40,000	40,000				Allow remote view and ability to trend station performance.
	100	Pump Station 3 SCADA	2022	\$10,000				10,000	Allow remote view and ability to trend station performance.
	101	Pump Station 4 SCADA	2022	\$10,000				10,000	Allow remote view and ability to trend station performance.
	102	<b>OFFICE IMPROVEMENTS</b>							
	103	Admin Parking Lot [CARRYOVER]	2020	\$300,000		300,000			Parking lot redesigned to north side of facilities; changes during design related to property lines & layout increased parking area potential and overall costs.
	105	Administration Offices - New Gate	2022	\$28,000				28,000	The gate is not functioning properly due to being too heavy for the current set-up, creating accessibility and security concerns.
	106	Administration Offices - Surface coat rear parking lot	2022	\$10,000				10,000	Need to have the cracks filled, surface treated, and new lines painted on the rear parking lot behind the Annex Building to prevent complete pavement failure.
	113	South Mobile Roof Replacement/Repair	2022	\$6,000				6,000	Mobile near heated garage. Roof was not replaced upon moving the mobile and moisture is causing damage to files stored inside. If roof determined in adequate shape, may build diversion above mobile to divert stormwater runoff away from base of mobile. Addressing source of water will provide protection to files currently stored and allow file cabinets from Board Room to be moved upon files being scanned.
	116	<b>PURCHASES</b>							
	117	Admin							
	118	Key System - Phase 1a (Admin & Annex-ext/pub)	2022	\$50,000				50,000	Replacement key system for all exterior and public area doors on site. Adds security.
	119	Key System - Phase 1b (Admin & Annex-interior)	2022	\$50,000				50,000	Replacement key system for all interior doors on site.
	122	Website Redesign	2022	\$65,000				65,000	BRWA website currently on an outdated platform that limits and prohibits some functionality of the site. Site will no longer be supported after April 2021.
	124	Customer Service							
	125	Billing Software - InHance Impresse	2022	\$79,600				79,600	BillMaster no longer supported. InHance Impresse part of same parent company for smooth transition.
	127	Bill Pay Kiosk	2022	\$33,275				33,275	To allow customers to pay their bill when the office is closed (whether through pandemic, after-hours, or weekends). The kiosk will allow the customer to pay with cash, by check or credit/debit card and receive a receipt.
	128	<b>Water Operations</b>							
	129	Leak Detection Equipment (linked to new position)	2022	\$30,000				30,000	To be used by new Water Operations distribution position.
	130	Vehicle for New Water Operations Position	2022	\$26,050				26,050	Associated with personnel request.
	131	<b>Maintenance</b>							
	132	Aluminum Trench Boxes (2)	2022	\$18,000				18,000	Wider and lighter trench boxes with 4 sides instead of 2. Beneficial where sloping not required. Better protection for employees and within VOSH standards. Rental costs to obtain necessary trench boxes until these are purchased.
	133	Mini Excavator	2022	\$50,000				50,000	Currently have 4 line crews and only 3 excavators, including one that should be sold since it was replaced; includes John Deere 35G w/ thumb & angle blade.
	134	Mini Excavator - Trailer	2022	\$7,000				7,000	Hooper trailer to carry requested mini-excavator.
	135	Mini Excavator - Rock hammer	2022	\$9,000				9,000	Rock hammer to fit new excavator; each excavator has its own.
	136	Plate compactor - excavator attachment	2022	\$8,000				8,000	Plate compactor will help compaction, especially around roadways. Can be used with existing equipment. To be used where handheld jumping-jack compactor cannot be used.
	137	Skid Steer Attachment-Bush Hog	2022	\$15,000				15,000	Reduces time and labor necessary for compacting backfill.
	138	Skid Steer Attachment-Power Rake	2022	\$14,000				14,000	Assists with easement clearing; provides access into smaller areas than tractor.
	139	Skid Steer Attachment - Sewer Clearing Easement Machine	2022	\$20,000				20,000	More efficient and smoother cleanup than manual rakes.
	140	Dump Truck (single Axle)	2022	\$120,000				120,000	Larger dump truck to dedicate to CIP crew construction; crew typically requires use of 2 dump trucks of the 4 currently owned.
	141	New FM Employee-Dodge RAM 2500 w\ utility body	2022	\$52,000				52,000	Vehicle required for additional employee allotted for Facilities Maintenance.
	142	New FM Employee - Tools for new vehicle	2022	\$15,000				15,000	Tools to outfit new Facilities Maintenance vehicle.
	143	Utility Body & Ladder Rack for Supervisor Truck	2022	\$16,000				16,000	2014 RAM 2500 converted to supervisor vehicle and needs associated utility body installed.
	144	<b>Preventative Maintenance</b>							
	145	Push Camera Tilt/Pan Head for existing unit	2022	\$13,000				13,000	This will replace the existing camera head, providing pan/tilt capabilities required for inspecting laterals.
	146	Diamond blade can root cutters	2022	\$13,000				13,000	These cutters will allow root removal, reducing back-ups. Will inflict less damage to aging sewer system.
		<b>Total Purchases Maintenance:</b>						370,000	
		<b>TOTALS:</b>		<b>\$8,187,925</b>	<b>3,181,000</b>	<b>380,000</b>	<b>186,000</b>	<b>1,548,925</b>	