

Glasgow Water Company

Capital Improvement Plan

Waste Water Treatment Plant (WWTP)

<u>Target Period</u>	<u>Estimated Amount</u>	<u>Project / Item</u>	<u>Description</u>
Immediate	\$500,000	Glasgow WWTP Improvement – Blower Rehab	rehab existing blowers, and install VFDs to improve operation power efficiency and lower peak demand charges. Existing blowers are original to 1977 plant upgrade and are obsolete.
Immediate	\$20,000	Update Lab	Update lab and equipment to comply with state certified lab requirements (BOD incubator, Auto-Clave, PH & NH3 Meter, Microscope, Muffle Furnace, and other equipment).
1-5 Years	\$425,000	New Chemical Building	Demo existing recirculation building and construct state of the art chemical (chlorine & sulfur Dioxide) building to comply with EPA regulations and current safety features. PLEASE NOTE: THE STATUS OF THE PROJECT COULD CHANGE TO IMMEDIATE DEPENDENT UPON FUTURE EPA/DOW REGULATIONS.
1-5 Years	\$175,000	Control Building Rehab	Replace old windows and doors with energy efficient units, rehab building structure, and replace roof.
6-10 Years	\$13,860,000	Glasgow WWTP Improvement – Upgrade Plant from 4 MGD to 6 MGD	Upgrade WWTP from 4 MGD to 6 MGD using Integrated Fixed-film Activated Sludge (IFAS) process; install baffle walls and screens in aeration tanks; install IFAS media; reconfigure plant piping; construct nutrient removal and tertiary treatment process, upgrade chlorine contact chamber, reconfigure aeration basin gates and valves, and, install new process SCADA. PLEASE NOTE: THE STATUS OF THE PROJECT COULD CHANGE TO IMMEDIATE DEPENDENT UPON FUTURE EPA/DOW REGULATIONS AND/OR DEMANDS PLACED ON THE SYSTEM BY NEW INDUSTRY.
\$14,980,000		Total	

Waste Water Collection System

Immediate	\$3,364,860	Peak Storage Equalization Basin for Hydraulic Overflow Protection (7 MG)	This project consists of design and construction of a flow equalization basin at the WWTP which would reduce/eliminate SSO's throughout the collection system.
Immediate	\$115,000	Implementation of EPA Collection System's Management, Operation, and Maintenance (CMOM) program as mandated by KY DOW effective 2015 (This program will require the addition of 2 new maintenance employees and 1 system operations team member)	CMOM is a flexible, dynamic framework required for municipalities to identify and incorporate widely accepted wastewater industry practices to better manage, operate, and maintain collection systems, investigate capacity constrained areas of the collection system, and to respond to sanitary sewer overflow (SSO) events.
Immediate (Next 20 Years)	\$13,655,000	Rehab 2% of Collection System Annually - 10,924 feet at \$546,200 per year to comply with CMOM requirements	This project consists of rehabilitating 2% of the collection system annually, approximately 10,924 feet of existing gravity sewer line, to eliminate inflow/infiltration/maintenance problems and increase the system capacity in the affected area. Total cost based on rehab of 50% of the existing system, 546,200 feet of gravity sewer, over 25 year period at estimated cost of \$50/ft.
Immediate	\$5,500,000	Glasgow Southside Interceptor Phase 3	This project consists of relaying and upgrading a large portion of the Southside interceptor to eliminate historical SSO's and provide additional capacity for future growth. This project will consist of upgrading 5,200 feet of existing 24 inch gravity line to 42 inch line from SSO #8 (Old WWTP) to the existing WWTP and upgrading 9,100 feet of existing 24 inch gravity line to 36 inch line from SSO #13 (500' east of KY Hwy 249) to SSO #8 (Old WWTP).
Immediate	\$331,500	SSO # 6 Remediation	This project consists of relaying and upgrading a large portion of the Southside interceptor to eliminate historical SSO's and provide additional capacity for future growth. This project consists of upgrading 1,800 feet of existing 8 inch gravity line to 12 inch gravity line from SSO #6 to the previously completed Phase 2 southside interceptor project (200' north of KY Hwy 68-80).
\$22,966,360		Total	

Water Distribution System

Immediate	\$4,800,000	Redundant 20 Inch Transmission Line to Glasgow (40,000 L.F. +/-)
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This project will construct approximately 40,000 feet of 24 Inch water transmission line from the end of the existing Phase 2 transmission line project located at Old Scottsville Loop #2 Road to the City of Glasgow. This project will increase delivery (transmission) capacity from the Barren River Water Treatment Plant.

Immediate	\$125,000	Pritchardsville Tank Control Valve	Replace aging and leaking control valve to isolate Pritchardsville tank for distribution system operations and reduce system water loss.
1-5 Years	\$2,000,000	West Glasgow Water Tank – 1 Million Gallons	This project will construct a new 1 MG tank. The increased storage capacity will service approximately 25 industrial customers while increasing high demand capacity, fire protection in the 920 pressure zone area, and system storage capacity. Further, the project will provide additional delivery capacity to the interconnections with 4 wholesale water utility companies. PLEASE NOTE: THE STATUS OF THE PROJECT COULD CHANGE TO IMMEDIATE DEPENDENT UPON FUTURE DEMANDS PLACED ON THE SYSTEM BY NEW INDUSTRY.
1-5 Years	\$825,000	Water line Replacements - City	This project will replace aging water line infrastructure to eliminate water quality issues and provide fire protection and increased capacity.
1-5 Years	\$300,000	Water line Replacements - County	This project will replace aging water line infrastructure to eliminate water quality issues and provide fire protection and increased capacity.
6-10 Years	\$3,200,000	Automatic Meter Reader (AMR) - City	Replace 7,000 aging city area meters with automatic meter reading technology to improve meter accuracy and water loss(revenue loss) and eliminate manual meter reads.
6-10 Years	\$3,000,000	16 Inch Transmission Line around Outer Loop and New Pump Station	This project will construct a new pump station and 16 Inch water transmission line around the Glasgow Outer Loop Highway to serve the northern pressure zone and wholesale customers to the east and west.
\$14,250,000		Total	

Beaver Creek Water Treatment Plant (WTP)

Immediate	\$10,000	SCADA addition	Place new H2O2 feed system on SCADA
Immediate	\$7,000	New Coagulant feed pumps	Existing pumps are 20 years old and parts are no longer available and supply of spare parts has nearly been exhausted.
Immediate	\$6,000	Turbidity units	Replace the remaining turbidity units that are out of date and parts not available. Certification and calibration of units are required by State DOW.
1-5 Years	\$7,000	Replace tube settler media	Existing media has reached its anticipated useful life.
1-5 Years	\$30,000	High Service Pump Motor Variable Frequency Drive (VFD)	VFD on high service motors to optimize treatment process and electrical peak demand.
1-5 Years	\$50,000	Building / Control Room Rehab	Repair structural deficiencies, replace old windows and doors with energy efficient units and insulate front of WTP.
1-5 Years	\$150,000	Chlorine / Sludge Press Building	Construct chlorine building to convert from 150 lb cylinders to 1 ton cylinders to reduce bulk chemical cost and improve safety of chlorine feed system. Building would have storage and electric quick connects for use of mobile sludge press for WTP lagoons. PLEASE NOTE: THE STATUS OF THE PROJECT COULD CHANGE TO IMMEDIATE DEPENDENT UPON FUTURE EPA/DOW REGULATIONS.
6-10 Years	\$450,000	Electrical Upgrade	Upgrade WTP's MCC's to current technology with proper grounding of plants electrical system as recommended in EPB/TVA Power Quality Study.
\$710,000		Total	

Barren River Lake Water Treatment Plant (WTP)

Immediate	\$150,000	Intake Traveling Screens	Repair existing traveling screens at intake structure for pump protection and treatment optimization.
Immediate	\$12,000	Lime feed system	Replace aging lime feed system.

Immediate	\$50,000	Valve Replacement	Replace old valves that are leaking in filter gallery.
Immediate	\$90,000	New Freight Elevator	Replace obsolete freight elevator to conform with safety requirements.
Immediate	\$10,000	SCADA addition	Place new H2O2 feed system on SCADA
Immediate	\$7,000	New Coagulant feed pumps	Existing pumps are 20 years old and parts are no longer available and supply of spare parts has nearly been exhausted.
Immediate	\$6,000	Turbidity units	Replace the remaining turbidity units that are out of date and parts not available. Certification and calibration of units are required by State DOW.
1-5 Years	\$10,000	Replace tube settler media	Existing media has reached its anticipated useful life.
1-5 Years	\$65,000	Building Rehab	Replace old windows and doors with energy efficient units and replace old tube settlers w/ support structure.
1-5 Years	\$20,000	Replace Venturi Meter	Replace meter installed in 1965 to more measure more accurate flow.
10+ Years	\$225,000	High Service Pump Motor and Variable Frequency Drive (VFD)	Add a 5,000 gpm VFD drive, motor, and pump to meet future water system demands and redundant maximum capacity.
	\$645,000	Total	

Maintenance Operations

1-5 Years	\$200,000	Trackhoe	Utilize new equipment for sewer rehab/point repair work, new construction, and LPS installation.
1-5 Years	\$250,000	Vac-Truck Replacement	Replace 2004 model Vac-Truck (6,480 hrs) with multi-engine setup for truck and pump/vacuum. Current truck would be utilized for backup, LPS maintenance and valve work, and hydro-excavation. CMOM will require detailed cleaning/maintenance log (approximately 10% of system cleaned and inventoried per year).
1-5 Years	\$90,000	Replace Maintenance Heavy Equipment	Backhoe replacement
1-5 Years	\$75,000	4WD Tractor and bushog	Utilize new equipment for right-of-way mowing and maintenance.
1-5 Years	\$25,000	Replace Sewer Camera System	Replace camera, cables and control system. This equipment is used daily for sewer inventory, investigation, and assessment. CMOM will institute additional camera requirements.
1-5 Years	\$20,000	Skid-steer Loader	Replace 2003 skid-steer loader with new equipment and reallocate old equipment to WWTP for use in the sludge handling process.
	\$660,000	Total	

Equipment / Software

Immediate	\$10,000	Automatic Customer Notification System	Automated notification system to be used in emergencies, boil water advisories, and other state mandated notifications. System will include phone, text, and email customer notifications.
Immediate	\$20,000	Document Management System	Document management system software to scan, archive, and retrieve a digital back-up of all GWC documents. The system will utilize the existing terabyte server.

Immediate	\$45,000	Leak Detection Equipment	Implement new water leak detection equipment, acoustic water leak detection device, correlators, and portable leak detection flow meters in an effort to find existing water leaks and reduce system water loss. Equipment would pinpoint leak location and reduce unnecessary digging/blacktop repair/cleanup.
1-5 Years	\$45,000	GIS Package	Update GIS software to improve mapping capabilities and functionality. GIS would be used to meet CMOM Requirements.
1-5 Years	\$12,000	i Water InfrMap or equivalent	Update system mapping software to integrate GIS software and billing/work-order system.
1-5 Years	\$12,000	Water / Wastewater Modeling Software	Utilize software to create a detailed model of the sewer collection system to evaluate hydraulic flows, capacity, and overflows. Software would be used to meet CMOM Requirements and create a detailed model of the water distribution system to evaluate hydraulic flows, capacity, and demands.
1-5 Years	\$25,000	Meter Testing Equipment	Implement new meter testing program to increase accuracy and reduce revenue and system water loss.
1-5 Years	\$15,000	Large Format Printer / Scanner	Large format document station to enable staff to create plans in-house with scanning capabilities to allow archive plans to be backed-up digitally.
1-5 Years	\$50,000	Portable Emergency Electric Generator	Purchase portable emergency electric generator to be used at water pump stations and sewer lift stations in the event of an extended power outage or emergency.
1-5 Years	\$100,000	Portable Emergency Water Pump	Purchase portable emergency water pump to be used in the distribution system in the event of a pump station failure or water shortage to pump across system pressure zones.
	\$334,000	Total	

\$54,545,360 Total Utility Infrastructure and Equipment Needs List

\$15,179,360 Total Needs Identified as Immediate (FY 2014-15)