

Water Bureau – Program Descriptions

SUPPLY PROGRAM

Bull Run Watershed Program

The Bull Run Watershed is 149 square miles of watershed and related management unit lands. It is the primary potable water source for the Portland utility water system and its customers. Major facilities include two dams and reservoirs, Bull Run Lake, 121 road miles, monitoring systems and communication systems.

Co-management and coordination of the Bull Run Watershed Management Unit with the US Forest Service preserves and protects the natural resources and ecological conditions supporting drinking water supply and quality. This program includes maintenance, repair and rehabilitation of the water supply facilities and the road system in the Bull Run Watershed. This program also includes the bureau's public education and tour activities, the Bear Creek House, and the cabins at Bull Run Lake.

Groundwater Program

The Columbia South Shore Well Field with 27 active wells and four emergency wells in the Powell Valley area provide an emergency back up and supplemental peak summer season water source for the Portland utility water system and its customers. Major facilities include groundwater collection and transmission pipes, pilot, test and monitoring wells, a two million gallon storage tank, 100 million-gallon per day (MGD) pumping facility, and associated monitoring systems.

This program includes operation, maintenance and repair of the groundwater system, including its wells, pumps and motors, well sites, collection mains, and the groundwater pump station. Also included is a monitoring well network, wellhead protection program and other groundwater quality efforts.

TREATMENT PROGRAM

Treatment Program

Water treatment facilities are located at the Bull Run Headworks, Lusted Hill, and Groundwater Pump Station. The application of chlorine is at Headwork. The application of ammonia and sodium hydroxide are at Lusted Hill.

This program also includes operation, maintenance, and repair of treatment facility systems, and associated regulatory and process control monitoring. The Treatment Program provides for meeting or exceeding the federal and state requirements for a public water system utilizing an unfiltered surface water source as well as a groundwater source.

TRANSMISSION & TERMINAL STORAGE PROGRAM

Conduits/Transmission Program

There are 60.5 miles of conduits and 50 miles of transmission pipe that transport water from Bull Run Watershed and Columbia South Shore Wellfield to Powell Butte, from Powell Butte to Kelly Butte and to Westside customers through the Washington County Supply Line; from Kelly Butte to Washington Park, from Washington Park to Sam Jackson and Mayfair Tanks.

This program includes maintenance and repair of the existing conduits, including the conduit crossings on trestles and bridges, interties between conduits and cathodic protection. The program also includes maintenance, repair, replacement and upgrades of in-town transmission mains and development of a new conduit route.

Terminal Reservoirs Program

There are five terminal reservoirs and tanks that serves as primary storage points of water in town for the distribution system and wholesale customers. The large storage reservoirs are at Powell Butte, Kelly Butte and Washington Park, with terminal storage tanks located at Mayfair and Sam Jackson tank sites.

This program includes maintenance, repair and operation of the five terminal storage reservoirs and tanks. Reservoirs are drained, inspected and cleaned every five years.

DISTRIBUTION PROGRAM

Distribution Mains Program

There are over 2,260 miles distribution main (pipe) that transport water to customers from terminal reservoirs through mains to local storage, and then through mains to customer services and hydrants.

This program includes installation, maintenance and repair of distribution system mains including leak locates and mains flushing. The Bureau experiences an average of 200 main breaks a year.

Meters Program

There are about 178,000 small meters and 9,000 large meters throughout the distribution system used to accurately measure water and sewer customer water use for equity and accurate billing purposes as well as measurement of private fire line water use. This program includes installation, maintenance and repair of large meters.

Hydrants Program

There are 14,375 hydrants that provide fire suppression, alternative customer water sources, and flushing points for the distribution system.

This program includes maintenance and repair of hydrant assemblies. This work includes inspection, testing, parts replacement, and bulk water permitting.

Pump Stations/Tanks Program

Water supply and storage is made available within the water distribution system by pumping water through mains to storage facilities at a higher elevation, and by tanks storing water for delivery directly to customers and/or for transport to a storage facility(s) at a higher elevation.

This program includes operation, maintenance and repair of 42 pump stations and 55 tanks in the distribution system. Also included in this program are the operating, maintenance and replacement requirements of the Supervisory Control and Data Acquisition system (SCADA), which monitors, archives and manages the water system.

Services Program

There are about 179,000 domestic services, 1,700 irrigation services, and 3,900 fire lines that transport water from the distribution main to the customer's meter or private fire line connection.

This program includes maintenance and repair of services lines from the main to the meter. This includes service removals.

Valves/Gates/Regulators Program

The distribution system includes about 1,800 large valves, 60,000 small valves (includes 18,000 valves in regulator stations), and 270 regulator stations. Through the use of valves/gates, segments of the distribution system can be isolated for maintenance and/or adjustments. Through regulator stations, main water pressure can be reduced to ensure adequate and appropriate pressure at the customer meter.

This program includes maintenance and repair of system valves and pressure regulating stations.

Field Support Program

Field crews work on all aspects of the field support includes the field crew preparation time, data input and clean up.

This program also includes scheduling using the Bureau's Computerized Maintenance Management System (Synergen), inventory management, fleet management, utilities locate, engineering maintenance, and geotechnical support.

Fountains Program

The Bureau owns 130 drinking fountains, primarily Benson Bubblers, throughout the city, concentrated downtown.

This program includes operation, maintenance, and repair of those drinking fountains.

WATER QUALITY COMPLIANCE PROGRAM

Regulatory Compliance Program

As a public drinking water utility, the bureau must meet or exceed state and federal regulatory requirements for water quality, mainly through treatment and monitoring.

This program includes water quality monitoring and reporting, proper disposal of dechlorinated water, management of temperature and flow in the lower Bull Run river and implementation of programs and conservation measures involving lead hazard reduction and Endangered Species Act compliance.

CUSTOMER SERVICES PROGRAM

Customer Services Program

This program is responsible for the meter to cash operations of the Water Bureau and Bureau of Environmental Services, from meter reading through billing and collection of outstanding receivables. The program includes management of approximately 192,000 water, sewer, and stormwater accounts, answers over 750 customer calls a day regarding their accounts including complaints (water quality, pressure, grounds, leaks, etc.), assists about 75 walk in customers each day with their payments and/or water service. This program administers the Low Income Discount Program for 6,750 enrolled participants. This program includes the team that manages the Customer Information System, which is used to bill for sewer, stormwater and water services as well as collect from customers.

This program also includes processing about 2,280 water permits annually related to commercial and residential developments.

Conservation /Sustainability Program

The bureau promotes more efficient and sustainable use of water, fuel, electricity, paper and other resources, both for the public and other employees.

The program provides education, technical assistance, and retrofit/replacement programs to help customers of all classes to use water more efficiently. The program also educates employees and improves work processes to achieve sustainability goals.

Grounds Program

The bureau property portfolio includes 175 properties with water facilities. Those facilities include hydroparks, pipes, tanks, etc. There are over 175 bureau properties with water facilities.

The program maintains the grounds and landscaping of those properties.

Security/Emergency Management Program

The Security/Emergency Management Program provides comprehensive Emergency Management plans that prepare for, protect against, respond to, recover from, and mitigate the potential effects of all types of disasters. This includes creating and implementing training and simulation exercises.

The Program includes responsibility for responding to systemwide emergencies, provides leadership before, during and after a systemwide emergency occurrence, and gives clear direction for preparedness, response, mitigation, and recovery.

SUPPORT PROGRAM

Data Management Program

The key systems tools in this program include Records Management, Geographic Information System Mapping, Computer Aided Design and Drafting, and Computerized Maintenance Management System.

Activities include maintaining and developing data management systems that directly support effective and efficient daily field operations. This program includes maintaining and updating 748 quarter section maps in GIS mapping of water facilities; maintaining and reporting from the Bureau's maintenance management system and project management system. Data/Information from these systems is also used to evaluate and monitor the condition and performance of assets, help make decisions regarding investment strategies, improve business processes and customer services.

Employee Investment Program

More than 100 employees are required to have certifications or licenses to operate and/or to perform work on the water system in addition to City mandated trainings.

This program includes licensing and certification, apprenticeship and safety programs; Equity Plan, compliance with affirmative action & EEO programs, including equity in hiring and other HR practices; and organizational development efforts designed to maximize employee efficiency and effectiveness.

Planning Program

Long range and short-term utility strategic planning and direction are essential to directing many aspects of the bureau's work.

This program includes regional water providers coordination on water supply planning, financial planning; CIP development; infrastructure planning including asset management; summer supply planning; wholesale customer coordination, and participation as a member in the region's Regional Water Consortium Planning Group.

Bureau Support Program

This program includes administrative functions in support of bureau-wide initiatives, such as contract administration, budget, accounting, property management, right-of-way and survey, public involvement, and information technology; manager/supervisor time related to performance management and program planning; Interagency Agreements for Technology Services, City Attorney, OMF, Facilities, and Risk. The program also includes administrative expenses such as rent, electricity, water/sewer, postage, operating supplies, garbage, etc.