

# Bureau Support

## Program Description & Goals

The Bureau Support Program encompasses work across all sections of the Water Bureau. The program meets administrative, financial, communications, and equity needs.

The program includes promoting equity across all bureau programs and services; engaging the public in bureau work; making sure ratepayer money is used appropriately; and making sure the bureau works as efficiently as possible and is accountable to the public.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

- Support for bureau-wide work: This program includes contract administration and facilities work, as well as administrative expenses such as rent, utilities, postage, operating supplies, and the Utility License Fee.
- Budget and accounting: Staff in this program manage the bureau’s finances, including developing and monitoring the bureau’s budget, managing its accounting, and ensuring that funds are spent as designated.
- Communications: Communications staff coordinate outreach and engagement work, including social media, communication about construction projects, media and public records requests, and emergency communications.
- Equity: Like other City bureaus, the Water Bureau is implementing a five-year Racial Equity Plan. The plan focuses on improving outcomes for communities of color and removing internal and external barriers to equitable work.
- Program planning and performance management: This program includes the time managers and supervisors spend planning programs and evaluating performance.
- Interagency work: This program includes support from other City of Portland agencies, such as the Bureau of Technology Services, the City Attorney, and the Office of Management and Finance.
- Advisory groups: The Water Bureau works with two main utility advisory groups: the Portland Utility Board and the Citizens’ Utility Board. Staff in this program work with these advisory groups.
- Managing and maintaining bureau-owned property: The bureau owns 175 properties, including around its reservoirs, tanks, and pump stations. This program has included the Mount Tabor Preservation Project, which is led by the Water Bureau but funded by the City’s General Fund.

## Equity Impacts

Bureau Support contains the bulk of the bureau's equity management. The program includes the Equity Manager position, who will be hired in early 2019 and will work toward embedding equity across all bureau programs and services. This program also includes the Communications group, which has had an equity focus in recent years.

Staff in this program help fulfill translation, interpretation, and accommodations requests, and have rolled out an equity lens for communications materials. This group is also focusing on attending more events for communities of color, working with media that support underserved communities, and holding outreach events at facilities with greater access for communities of color.

This year's budget changes have the potential to promote more equitable community engagement.

## Changes to Program

This budget adds two limited-term positions to the Communications group; one is new, and the other is converted from part time to full time. This budget also adds \$50,000 to help with Citywide website migration.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	200,811	-1,089,999	100,000	36,772,000
External Materials and Services	7,955,189	13,024,201	10,866,523	12,697,403
Internal Materials and Services	6,508,642	5,788,193	6,837,904	6,902,971
Personnel	6,980,353	6,566,497	7,247,755	8,202,085
<b>Fund Expense</b>				
Contingency	0	0	162,345,483	107,390,274
Debt Service	152,943,666	59,322,067	61,929,077	66,805,600
Fund Transfers - Expense	156,355,890	184,516,609	240,838,079	299,079,865
Ending Fund Balance	0	0	36,218,013	39,957,011
Ending Fund Balance	0	229,469,254	64,422,368	21,185,605
<b>Sum:</b>	<b>330,944,551</b>	<b>497,596,822</b>	<b>590,805,202</b>	<b>598,992,814</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	98.85	109.28	119.9	120
<b>Sum:</b>	<b>98.85</b>	<b>109.28</b>	<b>119.9</b>	<b>120</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$26.6 million and the capital budget totals \$39.1 million. The operating budget's main expenses are staffing, supplies, the Utility License Fee, the Mount Tabor Preservation Project, facilities, communications, technology support, and insurance. The major capital project is the Portland Building restoration.

**Staffing:** Fifty-eight full-time equivalent (FTE) positions support this program. These positions include administrative specialists, accountants, and communications staff, among others.

**Assets and Liabilities:** The bureau owns 175 properties, including a share of the Portland Building. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Data Management

## Program Description & Goals

The Data Management Program is responsible for managing information about water system infrastructure. This includes 748 quarter-section maps of water facilities; project plans and reports; water use data; conditions of facilities, infrastructure, and equipment; and records of customer interactions. The Water Bureau uses multiple data management systems, including Records Management, Geographic Information System (GIS) mapping, Computer-Aided Design and Drafting (CADD), and Computerized Maintenance Management System (CMMS). Data from these systems are used to evaluate and monitor the condition and performance of assets, help make decisions about investment strategies, and improve business processes and customer services.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Activities include developing, operating, and maintaining data management systems that directly support effective and efficient daily field operations and management of the water system. This program includes maintaining and updating quarter-section maps in GIS; maintaining and reporting from the bureau’s maintenance management and project management systems; and maintaining a database for capital improvement projects to monitor planning, design, and construction for status, scope, schedule, and budget. The program also includes the maintenance of a management system for construction contract administration.

## Equity Impacts

This program manages asset, customer interaction, and internal process information. As the bureau embeds equity in all programs and processes, staff in this program will have the opportunity to create equity lenses for the information they manage.

Staff in this program do not work directly with the public and do not receive requests for accommodations.

## Changes to Program

No program changes are planned for next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	366,201	99,324	13,900	13,900
Internal Materials and Services	906,546	929,558	1,049,284	1,099,275
Personnel	2,327,074	2,332,145	2,759,614	2,905,620
<b>Sum:</b>	<b>3,599,821</b>	<b>3,361,027</b>	<b>3,822,798</b>	<b>4,018,795</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	18	18	18	18
<b>Sum:</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$4 million. The operating budget's main expenses are staffing and application maintenance.

**Staffing:** Twenty-two full-time equivalent (FTE) positions support this program. These positions include GIS (Geographic Information System) technicians, data analysts, and engineers, among others.

**Assets and Liabilities:** Assets within this program include data management systems and 748 quarter-section maps of water facilities. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Employee Investment

## Program Description & Goals

The State of Oregon requires employees engaged in the operation of the water system for both distribution and treatment (nearly 200 employees in the Water Bureau) to be certified by the Oregon Health Authority. Certified employees are required to complete regular continuing education to maintain those certifications. Water Bureau engineers and electricians also must be licensed and complete ongoing education to maintain their certifications. Employees who operate specialty equipment, such as cranes, also require state and national certifications.

The Water Bureau operates two unique apprenticeship programs sanctioned by the Bureau of Labor and Industries. Many field employees are required to obtain and maintain a Commercial Driver's License, following federal Department of Transportation requirements.

The City requires a variety of mandatory trainings, such as defensive driving, Equity 101, HR Administrative Rule 2.02 training, emergency management trainings, and the Occupational Safety and Health Administration requires safety-sensitive trainings for Work Zone Traffic Control, Confined Space Entry, Rigging and Slings, Excavation Safety, Hazardous Chemicals, and Asbestos Handling, among many other trainings provided by the Water Bureau. Finally, the Water Bureau augments required certifications with training that supports employee development.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Program activities include providing employee training; tracking, monitoring, and ensuring all required certifications and license are maintained; and making sure all City-required training requirements are met. The program also includes administering and evaluating the ongoing apprenticeship programs. Activities also include managing workplace safety program for high-hazard environments, such as electrical arc-flash, confined spaces, and fall hazards.

Staff in this program also create employee enrichment programs and equity-focused trainings designed to instill an equity mindset in all bureau staff.

## Equity Impacts

This program includes the bureau's Training and Development Officer, who has an equity focus in employee enrichment and programming. Among other programs, the Training and Development Officer runs a job shadow program and informal lunchtime sessions that address issues of race, gender, and age in the workplace.

Staff in this program do not work directly with the public and do not receive accommodation requests from the public. The bureau does not currently track employees' requests for accommodations.

## Changes to Program

There are no budget changes for the next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	317,932	440,077	733,103	730,533
Internal Materials and Services	9,890	12,716	122,498	110,956
Personnel	1,652,237	2,138,827	2,051,079	2,424,947
<b>Sum:</b>	<b>1,980,059</b>	<b>2,591,620</b>	<b>2,906,680</b>	<b>3,266,436</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	40	30	44	43
<b>Sum:</b>	<b>40</b>	<b>30</b>	<b>44</b>	<b>43</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$3.3 million. The operating budget's main expenses are staffing, training, certifications, and vehicle fleet.

**Staffing:** Seventeen full-time equivalent (FTE) positions support this program. These positions include risk specialists, water operations mechanics, and automotive and construction equipment operators, among others.

**Assets and Liabilities:** This program does not contain assets.

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Planning

## Program Description & Goals

The Planning Program includes short- and long-term strategic planning and direction; regional water providers coordination on water supply planning; financial planning; capital improvement development; infrastructure planning, including asset management; summer supply planning; and wholesale customer coordination.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
Maintain water revenue bond AAA credit rating	100%	100%	100%	100%	100%
Debt service coverage at 1.90 on first lien bonds	3.02	3.22	0	1.90	1.90
Debt service coverage at 1.75 on both first and second lien bonds	1.91	1.99	0	1.75	1.75

## Explanation of Services

- **Asset management:** Staff in this program assess water system asset conditions, risks of failure, and risk mitigation strategies, and document alternatives and recommended solutions for maintenance and replacement of supply and distribution infrastructure.
- **Capital Improvement Project (CIP) planning:** This program develops and administers a multi-year capital improvement program to address system needs, manage spending, and meet financial bond requirements.
- **Financial planning:** This program adheres to prudent financial practices, enabling ongoing cost-effective access to bond financing for capital improvements, and ensures that water rates are at a good value and fair price to finance system operation and improvement.
- **Climate change planning:** The bureau's climate change expert works to build resilience to climate-related risks through risk assessment, analysis, and adaptation strategies.
- **Summer supply planning:** Many bureau staff work together, and with wholesale customers, to ensure reliable summer season water supply.
- **Strategic planning:** The bureau's Strategic Business Plan aims to maintain continuous organizational improvement through strategic planning, risk identification, and implementation of management strategies.
- **Participation in the Regional Water Providers Consortium:** The Water Bureau works with the Consortium to maintain cooperative relationships with regional water providers to plan for long-term supply, implement regional water conservation programs, and build emergency preparedness and response capability.
- **Water rights:** Staff in this program manage and maintain water rights and water rights permits.



## Equity Impacts

The Planning program recognizes equity impacts in many areas:

- Asset management works to prevent deferred maintenance that could burden future generations.
- The bureau recognizes that climate impacts to the water system could disproportionately affect vulnerable populations, and is assessing how to incorporate equity into its climate change planning efforts.
- The bureau's strategic plan development has centered equity throughout its process, identifying both equity-focused issues within the bureau and equity impacts of every potential plan strategy. The strategic planning process has encouraged and enabled bureau staff and leadership to talk meaningfully about how equity fits in with all bureau work.

This budget change does not have clear equity impacts.

## Changes to Program

This budget adds \$200,000 for consultant services to help with wholesale contract review.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	-2,359,540	-2,588,536	0	0
External Materials and Services	925,761	1,303,647	1,588,205	1,825,431
Internal Materials and Services	-14,033,749	-15,103,861	386,493	277,348
Personnel	4,091,096	4,057,811	4,994,684	5,551,428
<b>Fund Expense</b>				
Debt Service	200	0	600,080	0
Fund Transfers - Expense	9,655,227	0	0	0
<b>Sum:</b>	<b>-1,721,004</b>	<b>-12,330,939</b>	<b>7,569,462</b>	<b>7,654,207</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	24.5	25.9	20.9	21.5
<b>Sum:</b>	<b>24.5</b>	<b>25.9</b>	<b>20.9</b>	<b>21.5</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$4.6 million and \$3.1 million for planning studies. The operating budget's main expenses are staffing, consultant services, Portland Utility Board support, and debt management.

**Staffing:** Thirty-one full-time equivalent (FTE) positions support this program. These positions include engineers, analysts, and financial analysts, among others.

**Assets and Liabilities:** This program does not contain assets.

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Water Efficiency

## Program Description & Goals

The Water Efficiency program contains the Water Bureau’s efforts to sustain long-term availability of water resources through efficient water use by the bureau and the communities it serves. Program efforts are focused on demonstrating efficient use of state-regulated water resources to ensure ongoing long-term access to undeveloped water rights, encouraging and supporting efficient water use by customers (including focused efforts to assist low-income and small business customers in reducing water costs through efficiency), and systematic assessment and improvement of water system loss and leakage rates.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

- Promoting efficiency in the community: Staff members in this program support community members by distributing water efficiency devices, rebates, and information. The program focuses on helping low-income and commercial customers control their water use.
- Reducing water loss: All water systems lose some water to leaks. Water Efficiency program staff are currently planning and implementing a water loss control plan for Portland’s system.
- Complying with state and City requirements: This group manages efficiency-related compliance with the bureau’s state-mandated Water Management and Conservation Plan and the City’s water sustainability goals.

## Equity Impacts

This group attends many community events, prioritizing those that engage communities of color. Staff in this group are working to reduce barriers to program access, including to the fixture repair and replacement program. Staff prioritize school programs for schools with Title 1 status.

This program routinely translates materials into Spanish, Vietnamese, and Chinese. When staff in this group attend events, they often employ Community Engagement Liaisons for engagement and language interpretation.

There are no changes to this budget, and there are no clear equity implications to the unchanged budget.

## Changes to Program

There are no changes to this budget.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	138,210	168,886	311,300	222,300
Internal Materials and Services	42,568	51,276	41,300	41,939
Personnel	442,892	446,792	590,246	695,190
<b>Sum:</b>	<b>623,671</b>	<b>666,954</b>	<b>942,846</b>	<b>959,429</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$1.0 million. The operating budget's main expenses are staffing, parts, and fleet vehicles.

**Staffing:** Four full-time equivalent (FTE) positions support this program. These positions include engineers and program coordinators, among others.

**Assets and Liabilities:** This program does not contain assets.

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Customer Service

## Program Description & Goals

This program is responsible for utility sales operations from the meter to the collection of cash for the Water Bureau and Bureau of Environmental Services (BES). This includes meter reading, managing account and customer data, and billing, collection, and payment processing of 192,000 water, sewer, and stormwater accounts billed monthly, bi-monthly, or quarterly. This program includes providing financial assistance to qualifying low-income customers.

This program also supports development by performing reviews of water-related building permit application intakes, reviews, and purchases. All developments are reviewed to ensure that they comply with standards for water service.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
Percentage of calls answered within 60 seconds	51%	83%	88%	80%	100%

## Explanation of Services

Each working day, Customer Service staff answer more than 750 customer calls and field 75 online inquiries about customer accounts and other bureau work. The program also assists 75 walk-in customers each day with their payments and/or water service, and administers the Financial Assistance Program, including a bill discount 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; collect money from customers; and assist customers with account inquiries.

The Customer Service Program processes about 2,280 water permits annually for commercial and residential developments. The activities cover land use reviews, development reviews, sale of new domestic services, fire services, and petition mains needed to support new construction by private parties seeking water service.

## Equity Impacts

Staff in the Customer Service program work directly with community members and have made major changes in recent years to do this work more equitably.

The bureau's Financial Assistance Program has recently expanded and now offers more help to more people. Staff members working in this program have studied participant demographics and are working to increase program representation among traditionally underserved communities.

Staff in this program regularly use interpretation services, and program managers aim to increase the number of staff who fluently speak multiple languages. Some phone services and brochures are available in multiple languages. For people with disabilities, staff in this program can enlarge bills, convert bills to braille, and communicate via writing.

This year's budget changes are unlikely to have equity impacts.

## Changes to Program

The Water Bureau installed a Customer Self-Service (CSS) portal that allows customers to request move-ins and move-outs, payment arrangements, and address changes online. This has helped reduce call volume, allowing for two Customer Services Representative positions to be reallocated to the Meters Program. In addition, two limited-term Customer Services Representative positions will be eliminated.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	569	324,628	0	0
External Materials and Services	2,071,046	2,306,703	4,328,673	4,553,015
Internal Materials and Services	4,954,512	6,064,797	4,234,097	4,160,131
Personnel	8,351,187	8,412,252	10,873,547	11,416,366
<b>Sum:</b>	<b>15,377,315</b>	<b>17,108,380</b>	<b>19,436,317</b>	<b>20,129,512</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	93	98	103.7	104
<b>Sum:</b>	<b>93</b>	<b>98</b>	<b>103.7</b>	<b>104</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$20.1 million. Main operating costs include bill generation (reading meters, printing, and mailing), payment processing (bank fees and payment vendor fees), and the Financial Assistance Program (discounted bills, money sent to Home Forward, and management of the program).

**Staffing:** One hundred and three full-time equivalent (FTE) positions support this program. These positions include customer accounts specialists, business analysts (who support the billing system), meter readers, water service inspectors, and engineering technicians, among others.

**Assets and Liabilities:** The major asset of the Customer Service group is the Cayenta billing system. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Grounds

## Program Description & Goals

The Water Bureau portfolio includes more than 175 properties. These properties include HydroParks, pump stations, tank sites, reservoir sites, and conduit sites, among others. This program maintains the grounds and landscaping around these assets. The activities of this program make it possible for bureau staff to safely access Water Bureau facilities and for community members to use bureau properties that are open to the public.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

The bureau maintains grounds and landscaping in and around water facilities to meet Water Bureau and community expectations. Staff in this program manage visitor and grounds facilities at Powell Butte, where the Water Bureau has two large reservoirs. Staff also manage camping and restroom facilities at Dodge Park, which the Water Bureau owns because of its location along a conduit route. Dodge Park work is reimbursed by the General Fund.

## Equity Impacts

Grounds work occurs all over the city. One of the goals of the HydroParks program was to open public space in areas underserved by neighborhood parks. The bureau could start to examine the equity impacts of the Grounds program by overlaying work areas with demographic data.

## Changes to Program

There are no budget changes for the next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	177,330	184,915	225,100	222,100
Internal Materials and Services	305,893	363,856	248,468	266,054
Personnel	361,242	396,987	285,559	338,095
<b>Sum:</b>	<b>844,465</b>	<b>945,759</b>	<b>759,127</b>	<b>826,249</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	9	9	9	9
<b>Sum:</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>



**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$0.8 million. The operating budget's main expenses are staffing, supplies, and fleet vehicles.

**Staffing:** Three full-time equivalent (FTE) positions support this program. These positions include a maintenance supervisor, a parks technician, and a horticulturist.

**Assets and** Assets in this program include the bureau's 175 properties.

**Liabilities:** The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Security/Emergency Management

## Program Description & Goals

The Security/Emergency Management Program includes protecting and safeguarding the water system and preparing for and responding to systemwide emergencies. This program provides comprehensive Emergency Management plans to prevent, mitigate, respond to, and recover from the potential effects of all types of disasters. This includes providing preparedness information and creating and implementing training and simulation exercises.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Security includes Bull Run Watershed surveillance and in-town field monitoring of pump stations, tanks, the Interstate buildings, and other facilities. Security also provides continuous dispatch and video surveillance of numerous locations, and serves as first responder to intrusions and water emergencies.

Emergency Management activities include operating the bureau’s Emergency Operations Center in a state of readiness; coordinating with Portland Bureau of Emergency Management (PBEM), Oregon Emergency Management (OEM), and the Federal Emergency Management Agency (FEMA); facilitating, planning, and coordinating emergency management trainings and exercises; updating bureau emergency management plans; and developing and maintaining continuity plans.

## Equity Impacts

A natural disaster that disrupts water service could have disproportionate impacts on communities of color and people from immigrant communities, and the bureau’s Emergency Management group prepares for this potential.

The bureau has created preparedness videos and other materials in multiple languages.

This year’s budget change has no clear equity impact.

## Changes to Program

This budget adds one limited-term security position for the Interstate facility.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	0	0	0	0
External Materials and Services	231,478	174,124	293,338	291,338
Internal Materials and Services	785,729	565,760	571,496	642,077
Personnel	1,500,154	1,611,971	1,583,158	1,819,568
<b>Sum:</b>	<b>2,517,361</b>	<b>2,351,855</b>	<b>2,447,992</b>	<b>2,752,983</b>

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	13	13	14	14
<b>Sum:</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>14</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$2.7 million and the capital budget totals \$0.1 million. The operating budget's main expenses are staffing, supplies, communications, and fleet vehicles. Capital expenses include replacement of surveillance equipment.

**Staffing:** Fifteen full-time equivalent (FTE) positions support this program. These positions include water security specialists and program coordinators, among others.

**Assets and Liabilities:** Assets in this program include the Emergency Operations Center and surveillance equipment at bureau-owned facilities. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Distribution Mains

## Program Description & Goals

About 2,260 miles of distribution and distribution-transport main (pipe) transport drinking water from terminal reservoirs through mains to local storage, and then through mains to hydrants and services. Portland’s water system includes active mains that were installed as early as 1894. Pipe sizes in the distribution system range from 1.5 inches to 36 inches in diameter. Distribution system mains include a variety of material types, such as cast iron, steel, and ductile iron. This program ensures the continuity of drinking water, minimizes potential damage to public and private property, ensures fire suppression capabilities, minimizes water loss, and ensures compliance with water quality regulations.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program includes capital infrastructure planning, design, installation, operations, maintenance, and repair of distribution system mains and appurtenances, including leak locates and mains flushing. Design and replacement of aging cast iron and steel distribution mains (constructed by both city crews and private contractors) are the core investments of the program, while main repair, leak locating, and flushing support maintenance of the existing system. In addition, this program manages the design and installation or relocation of water mains to support interagency projects (such as light rail tracks). The bureau installs approximately 30,000 feet of main each year and repairs an average of 200 main breaks each year. The 30,000 feet of main installation includes a significant allocation of resources to support interagency and development work.

## Equity Impacts

The Water Bureau has data about the condition of mains in the city; it has not overlaid this information onto demographic data that could suggest whether main condition varies by community.

Staff in this program have access to interpretation services.

## Changes to Program

There are no budget changes for the next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	3,297,525	2,824,167	8,674,267	49,597,800
External Materials and Services	2,722,748	2,408,557	2,904,638	3,820,248
Internal Materials and Services	7,098,838	7,634,144	3,151,824	3,063,756
Personnel	6,848,372	7,277,122	11,322,199	12,116,025
Ending Fund Balance	0	-664,428	0	0
<b>Sum:</b>	<b>19,967,483</b>	<b>19,479,562</b>	<b>26,052,928</b>	<b>68,597,829</b>

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	13	11	11	11
<b>Sum:</b>	<b>13</b>	<b>11</b>	<b>11</b>	<b>11</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$6.1 million and the capital budget totals \$62.5 million. The operating budget's main expenses are staffing, pipes and fittings, and vehicle fleet. Major capital projects include Willamette River Crossing, ongoing replacements of mains, and mains projects in support of the Bureau of Environmental Services and the Portland Bureau of Transportation.

**Staffing:** Eighty-two full-time equivalent (FTE) positions support this program. These positions include automotive and construction equipment operators, water operations mechanics, utility workers, and utility locators, among others.

**Assets and Liabilities:** This program's assets are the bureau's 2,260 miles of distribution mains. The replacement value of mains total \$3.2 billion. About 88% are in very good or good condition, 10% are in fair condition, and 2% are in poor or very poor condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Fountains

## Program Description & Goals

The Water Bureau owns 129 drinking fountains, primarily four-bowl Benson Bubblers, throughout the city. This program includes operation, maintenance, cleaning, repair, and replacement of those drinking fountains. The first Benson Bubblers date from 1912.

This program also includes work by Portland Parks & Recreation to operate and maintain decorative (landscape feature) fountains.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Water Bureau crews clean each drinking fountain every two weeks. Staff in this program maintain, inspect, repair, and replace the fountains as necessary.

## Equity Impacts

Drinking fountains and decorative fountains mainly serve downtown Portland.

Staff in this program who work with the public have access to interpretation services.

## Changes to Program

There are no budget changes for the next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	3,644	2,600	2,500	102,500
Internal Materials and Services	6,044	5,587	637,191	638,111
Personnel	58,304	76,099	88,163	97,122
<b>Sum:</b>	<b>67,992</b>	<b>84,286</b>	<b>727,854</b>	<b>837,733</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$0.7 million and the capital budget totals \$0.1 million. The operating budget's main expenses are staffing, supplies, vehicle fleet, and operation and maintenance of decorative fountains. Capital costs include major rehabilitation of both types of fountains.

**Staffing:** One full-time equivalent (FTE) position supports this program. This position includes utility workers' and parks technicians' time.

**Assets and Liabilities:** This program's assets are the city's 129 drinking fountains and 19 decorative fountains. The replacement value of the drinking fountains totals \$2.0 million. Of these, 50% are in very good or good condition, 45% are in fair condition, and 5% are in poor condition. The replacement value of the decorative fountains totals \$22.4 million. Of these, 80% are in very good, good, or fair condition and 20% are in poor or very poor condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Field Support

## Program Description & Goals

Field Support is a broad group of support functions that enable field crews to complete system maintenance. This program includes the bureau staff who manage work flow, scheduling, and data through the bureau’s computerized maintenance management system (CMMS). This program also includes the bureau’s inventory of materials and the staff who manage acquisition, storage, delivery, and contract management in support of field crews. Other functions in this program include utility location, maintenance engineering, surveying, geotechnical support, and management of the bureau’s more than 450 vehicles.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program supports field crews by providing the tools, equipment, materials, and information necessary to complete system maintenance.

## Equity Impacts

As the bureau embeds equity into asset management, staff in this program will have the opportunity to examine how they can support equitable approaches to system maintenance.

Staff in this program who work with the public have access to interpretation services.

## Changes to Program

There are no budget changes for the next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	2,064,805	3,683,776	3,830,000	4,174,550
External Materials and Services	1,270,860	1,618,991	1,241,401	1,086,401
Internal Materials and Services	-1,449,291	-1,108,068	-1,058,857	-1,021,066
Personnel	4,423,736	4,347,404	4,005,128	3,930,735
<b>Sum:</b>	<b>6,310,109</b>	<b>8,542,103</b>	<b>8,017,672</b>	<b>8,170,620</b>
	<b>2016-17 Actuals</b>	<b>2017-18 Actuals</b>	<b>2019 Revised Budget</b>	<b>2019-20 Request - V52 -No DP</b>
FTE	120	129	116	117
<b>Sum:</b>	<b>120</b>	<b>129</b>	<b>116</b>	<b>117</b>



- Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.
- Expenses:** The operating budget totals \$3.9 million and the capital budget totals \$4.3 million. The operating budget's main expenses are staffing, supplies, and fleet vehicle maintenance. Major capital expenses include replacement of fleet vehicles and equipment.
- Staffing:** Thirty-two full-time equivalent (FTE) positions support this program. These positions include maintenance supervisors, storekeepers, utility workers, and service dispatchers, among others.
- Assets and Liabilities:** This program's assets include the bureau's 450 vehicles. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Hydrants

## Program Description & Goals

The Water Bureau maintains 14,375 hydrants, some installed in the early 1900s, to provide fire suppression, flushing points for water quality, system maintenance, and alternative customer water sources. The Hydrants program ensures the constant availability of fire suppression supply throughout the city, providing essential support for life safety and minimizing damage caused by fire to property.

The provision of fire hydrants every 250 to 500 feet (depending on zoning) within the right of way, alongside redundant fire hydrant availability near key facilities such as hospitals and schools, ensures constant support of Portland Fire & Rescue's fire suppression efforts.

Hydrants enable crews and customers to access alternative sources of water, which may mitigate service outages or provide needed water supplies for functions like street sweeping, landscaping, and construction projects. In addition, hydrants provide key points for flushing the water system following the completion of maintenance tasks, and for maintaining water quality in areas of the system prone to water quality issues.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

The activities of this program include installation, inspection, maintenance, repair, and replacement of hydrants, and maintaining the inventory of hydrants in CADD (Computer-Aided Design and Drafting) and records management systems.

## Equity Impacts

City code regulates hydrant placement. The Water Bureau does not yet analyze data to see whether hydrant condition varies geographically.

Some staff in this program work in the field and occasionally talk with community members. They have access to interpretation services.

There are no likely equity impacts to the increase in this program's budget.

## Changes to Program

The program budget has increased to reflect actual costs of hydrant replacement.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	1,102	191	0	0
External Materials and Services	784,399	872,407	821,830	655,490
Internal Materials and Services	1,281,354	1,353,061	365,035	540,776
Personnel	1,263,110	1,192,136	1,397,953	1,881,442
<b>Sum:</b>	<b>3,329,964</b>	<b>3,417,795</b>	<b>2,584,818</b>	<b>3,077,708</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$1.3 million and the capital budget totals \$1.8 million. The operating budget's main expenses are staffing, hydrant parts, supplies, and vehicle fleet. The capital budget covers hydrant replacement.

**Staffing:** Seventeen full-time equivalent (FTE) positions support this program. These positions include utility workers, automotive equipment operators, and water operations mechanics, among others.

**Assets and Liabilities:** The 14,375 hydrants have a replacement value of \$231 million. Of these, 80% are in very good, good, or fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Meters

## Program Description & Goals

Portland’s distribution system includes 178,000 small meters and 9,000 large meters. Meters allow for accurate measurement of residential, commercial, and fire line water use, which allows for accurate billing. Water meters also enable customers to track their water use.

Inventory of all meter sizes is maintained by the meters program.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program includes capital infrastructure planning, installation, operations, maintenance, testing, and repair of both small and large meters. The Water Bureau uses a state-certified test bench, calibrated twice each year, to measure meter accuracy. Other water providers, private entities, and other bureaus can use the test bench as needed. All meters 1½ inches and larger are tested before being installed.

Small meters are often replaced when they are not measuring accurately or are highly used, as replacement is more cost effective than repair.

The bureau routinely tests large meters, given the high consequence of their failure. Meters for recording usage on wholesale customer accounts are tested twice each year, and meters for other users of large amounts of water are tested once each year. Additional testing on large meters is conducted based on the amount of water usage through the meter.

The program has installed and currently maintains about 2,000 automated metering devices, which allow meter readers to collect reads more efficiently and avoid dangerous reading situations.

## Equity Impacts

The bureau continues to explore how automated metering infrastructure (sometimes called smart meters) could enable more equitable customer access to water use data.

Staff working in the field have access to interpretation services.

This year’s budget changes have no clear equity impacts.

## Changes to Program

Two Customer Service Representative positions will be reallocated from the Customer Service Program and reclassified as Water Meter Technician positions. These positions will perform meter repair and maintenance, backflow work, and other meter tasks.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	382,671	415,863	70,000	300,000
External Materials and Services	345,737	348,879	655,557	478,337
Internal Materials and Services	308,127	410,275	260,373	258,477
Personnel	1,382,961	1,530,216	1,776,707	2,004,187
<b>Sum:</b>	<b>2,419,496</b>	<b>2,705,233</b>	<b>2,762,637</b>	<b>3,041,001</b>

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	17	17	17	17
<b>Sum:</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$2.0 million and the capital budget totals \$1.1 million. The operating budget's main expenses are staffing, meter parts, and vehicle fleet. The capital budget covers meter replacement.

**Staffing:** Eighteen full-time equivalent (FTE) positions support this program. These positions include water meter technicians, water operations mechanics, and construction equipment operators, among others.

**Assets and Liabilities:** This program's major assets are the bureau's 178,000 small meters and 9,000 large meters. The total replacement value of meters is \$110 million. About 77% of the meters are in very good, good, or fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Pump Stations/Tanks

## Program Description & Goals

Portland’s water distribution system includes 36 pump stations and 58 tanks. Most of Portland’s water is delivered by gravity, and storage tanks both store water and help maintain system pressure. For parts of the city at higher elevations, the Water Bureau pumps water through pump mains to storage facilities at higher elevations.

Tanks provide needed storage for daily demand fluctuations and for short-term demand spikes such as fire flow. Pump stations and tanks are distributed throughout the system to lift water to higher elevations.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program includes capital infrastructure planning, design, construction, operation, maintenance, and repair of pump stations and tanks. Also included in this program are the operation, maintenance, and replacement requirements of the Supervisory Control and Data Acquisition (SCADA) system, which monitors, archives, and manages information about the water system.

This program includes the seismic upgrade and protection of pump stations and tanks, as well as regular cleaning that protects public health.

## Equity Impacts

Tanks are critical for emergency water supply; natural disasters that cause water outages can have greater impacts on communities of color. Pump stations tend to benefit higher-elevation areas of the city, which have lower than average percentages of people of color and people with low English proficiency.

Staff in this program do not work directly with the public and do not receive requests for accommodations.

This year’s budget change does not have any clear equity impacts.

## Changes to Program

This budget adds one-time funding of \$230,000 to disconnect Fulton Pump Station, now that the Hannah Mason Pump Station is complete.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	4,342,760	1,508,648	2,808,300	281,000
External Materials and Services	2,457,726	1,944,514	4,189,563	3,173,261
Internal Materials and Services	2,284,265	1,519,085	678,632	733,939
Personnel	5,085,811	4,872,893	4,927,483	5,295,131
<b>Sum:</b>	<b>14,170,562</b>	<b>9,845,141</b>	<b>12,603,978</b>	<b>9,483,331</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	51.5	44.5	52.9	51.5
<b>Sum:</b>	<b>51.5</b>	<b>44.5</b>	<b>52.9</b>	<b>51.5</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$7.9 million and the capital budget totals \$1.6 million. The operating budget's main expenses are staffing, utilities, repair and maintenance services, supplies, communication services, and vehicle fleet. The capital budget covers major maintenance of pump stations and tanks.

**Staffing:** Thirty-seven full-time equivalent (FTE) positions support this program. These positions include engineers, operating engineers (staff who operate the water system in the field), and applications analysts (who run the SCADA system), among others.

**Assets and Liabilities:** This program's assets include 36 pump stations and 58 tanks, with a replacement value of \$543 million. Of the assets, 77% are in very good or good condition and 20% are in fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Services

## Program Description & Goals

Portland’s water system includes about 179,000 domestic services, 1,700 irrigation services, and 3,900 fire lines, all of which transport water from the distribution or supply main to the customer’s meter or private fire line connection. The provision of water is an essential need that is delivered by the Distribution Services Program, as no building without water may be occupied. Service lines connect the water system to homes, businesses, and institutions such as hospitals and schools. Many larger buildings require built-in fire suppression systems, which are served by larger-diameter fire services that protect life safety and property of high-intensity use structures.

Larger services include the installation of underground meter vaults in the right of way for ongoing access and maintenance of meters, which is particularly challenging in the utility-dense areas of the central city.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program includes capital infrastructure planning, design and construction, operations, maintenance, and repair of services from the distribution or supply main to the meter. This includes service installations, removals, repairs, and replacements. Maintenance of the system of services prevents leaks that can cause damage and waste water. Some of Portland’s service lines are made of older copper, galvanized steel, or plastic, and these require replacement due to the high failure rate of those material types.

Asset Management analysis suggests that in the coming decades, the bureau will face increasing service failures as large sections of the system reach the end of their expected useful life. The bureau’s goal is to strategically replace these service lines as soon as possible.

## Equity Impacts

The Water Bureau has data about the condition of services in the city; it has not overlaid this information onto demographic data that could suggest whether service condition varies by community.

Staff in this program have access to interpretation services.

There are no changes to this budget, and there is no likely equity impact of the unchanged budget.

## Changes to Program

There are no program changes planned for next fiscal year.

## Program Budget



	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	21,334	16,774	0	0
External Materials and Services	2,453,916	3,143,566	1,202,709	1,197,257
Internal Materials and Services	5,206,811	6,353,132	2,292,371	2,284,773
Personnel	4,030,210	4,603,611	4,859,371	5,362,183
<b>Sum:</b>	<b>11,712,271</b>	<b>14,117,083</b>	<b>8,354,451</b>	<b>8,844,213</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$2.4 million and the capital budget totals \$6.4 million. The operating budget's main expenses are staffing, materials, and vehicle fleet. The capital budget covers service line installation and replacement.

**Staffing:** Forty-eight full-time equivalent (FTE) positions support this program. These positions include utility workers, mechanics, automotive and construction equipment operators, and surveyors, among others.

**Assets and Liabilities:** The 179,000 domestic services, 1,700 irrigation services, and 3,900 fire lines have a total replacement value of \$1.2 billion. Of the assets, 91% are in very good, good, or fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Valves/Gates/Regulators

## Program Description & Goals

The Water Bureau uses valves to isolate segments of the distribution system for maintenance; the availability of valves enables isolation of limited sections of the system to minimize the number of customers affected when isolation is necessary. Portland’s water distribution system includes 1,800 large valves, 60,000 small valves, and 600 pressure-regulating valves.

Regulator valves allow the Water Bureau to maintain appropriate system pressure. Valves also perform a key safety function for crews by providing isolation that is a sufficient distance from where crews are working underground, protecting them from the potential force of water.

Large valves are critical to controlling the flow of water in large-diameter pipes, where breaks can generate significant damage to surrounding areas. Of the approximately 1,800 large valves in the system, approximately 1,200 are deemed critical because their failure could result in significant consequences (for example, critical valves include valves near hospitals).

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program includes capital infrastructure planning, design, construction, operation, maintenance, and repair of system valves and pressure-regulating valves and stations. Maintenance of these valves is essential to ensure their proper operation. The bureau operates each of its critical 1,200 valves once every two years to make sure they are functional and do not seize up due to lack of use. Bureau staff also inspect and exercise valves at 75 critical crossings at least once every seven years and rebuild regulator valves on a seven- or ten-year cycle based on criticality.

## Equity Impacts

The Water Bureau maintains data about valve condition; it does not currently overlay those data onto demographic data to understand whether valve condition correlates with demography.

Staff in this program have access to interpretation services.

There are no changes to this budget, and there is no likely equity impact of the unchanged budget.

## Changes to Program

There are no program changes planned for next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	286,794	380,260	408,300	400,300
Internal Materials and Services	161,099	167,969	228,711	228,074
Personnel	468,210	465,028	786,846	807,300
<b>Sum:</b>	<b>916,103</b>	<b>1,013,257</b>	<b>1,423,857</b>	<b>1,435,674</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$1.4 million. The operating budget's main expenses are staffing, repair and maintenance services, supplies, and vehicle fleet.

**Staffing:** Six full-time equivalent (FTE) positions support this program. These positions include utility workers, water operations mechanics, and construction equipment operators, among others.

**Assets and Liabilities:** Program assets include 1,800 large valves, 60,000 small valves (including regulator valves), and 600 pressure-regulating valves. The total replacement value of vales and regulators is \$802 million. Of the assets, 81% are in very good or good condition, and 13% are in fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Hydroelectric Power

## Program Description & Goals

The Hydroelectric Power Program provides for administrative, operational, and regulatory oversight for the Portland Hydroelectric Project (PHP).

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
Amount of power sold to Portland General Electric in megawatt hours	103,750	81,512	13,091	66,000	84,800

## Explanation of Services

Program staff provide day-to-day oversight and coordination for the operation of PHP, which includes the control of the levels in the City's Bull Run reservoirs, the withdrawal of water from the reservoirs, and release of water downstream for compliance with in-stream regulatory targets. Staff also coordinate all issues associated with the operation of PHP; the sales of generated power from PHP to Portland General Electric; all state and federal dam safety requirements associated with PHP; the Vernon Station Hydroelectric Project; and the Washington Park and Mt. Tabor dams.

## Equity Impacts

The Hydroelectric Program does not have any clear equity implications.

Staff in this program do not work with the public and do not receive requests for accommodations.

There are no changes to this budget, and there is no likely equity impact of the unchanged budget.

## Changes to Program

No Program changes are planned for next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
External Materials and Services	284,721	10,652,917	2,055,549	2,088,650
Internal Materials and Services	110,028	240,042	206,722	211,055
Personnel	347,541	306,848	355,780	367,694
<b>Fund Expense</b>				
Contingency	0	0	2,585,108	1,666,115
Debt Service	23,932	26,240	28,543	30,276
Fund Transfers - Expense	25,507	2,446,175	35,427	54,269
Ending Fund Balance	0	2,841,495	0	0
<b>Sum:</b>	<b>791,729</b>	<b>16,513,717</b>	<b>5,267,129</b>	<b>4,418,059</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	2.25	2.25	3	2.25
<b>Sum:</b>	<b>2.25</b>	<b>2.25</b>	<b>3</b>	<b>2.25</b>

**Resources:** Resources come from power sales to Portland General Electric. There are also interagency revenues for work performed by Hydroelectric staff for the Water Bureau, and interest earnings on cash balances.

**Expenses:** The operating budget is \$2.7 million and includes, staffing, operations and maintenance, licenses and fees, and other miscellaneous costs associated with the Portland Hydroelectric Project.

**Staffing:** Two full-time equivalent (FTE) and one quarter FTE position support this program. All positions are engineering staff.

**Assets and Liabilities:** The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Water Quality & Regulatory Compliance

## Program Description & Goals

The Water Bureau’s Water Quality and Regulatory Compliance Program encompasses the bureau’s efforts to ensure ongoing compliance with public health and environmental requirements of state and federal laws, principally regulations issued under the federal Safe Drinking Water, Clean Water, and Endangered Species Acts. As a public drinking water utility, the bureau must meet or exceed state and federal regulatory requirements for water quality. The bureau must also ensure compliance with water quality and endangered species mitigation requirements throughout the drinking water system, most notably to address the impacts of the water supply system on federally listed anadromous fish species.

Relevant federal regulations include the Surface Water Treatment Rule, Stages 1 and 2 Disinfectants and Disinfection Byproducts Rules, Total Coliform Rule, Long Term 2 Enhanced Surface Water Treatment Rule, Lead and Copper Rule, Clean Water Act, and Endangered Species Act.

The bureau is also required to monitor water quality for a variety of regulated and unregulated contaminants and report results to the Oregon Health Authority and other agencies.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
Number of violations of state and federal drinking water quality regulations	0	0	0	0	0
Number of violations of state and federal environmental regulations	0	0	0	0	0

## Explanation of Services

This program includes water quality monitoring, reporting and management; communication and response to water quality complaints and questions; communications and administration of proper installation and function of backflow prevention devices; proper disposal of dechlorinated water; implementation of community lead hazard reduction programs; protection of aquatic habitat and sensitive fish species; management of temperature and flow in the lower Bull Run River; and conservation measures to support threatened and endangered species.

The goals of this program are to:

- **Maintain water quality:** Collect and test more than 11,000 water samples each year and ensure residents use backflow devices as needed to prevent contamination.
- **Reduce exposure to lead:** Work with community partners to reduce lead exposure from all sources and provide free lead testing.
- **Meet Cryptosporidium requirements:** The bureau is planning to build a filtration plant to remove Cryptosporidium (a microbe that can cause illness) from Bull Run water. Until the plant is built, the bureau continues to monitor Cryptosporidium.
- **Meet environmental obligations:** Continue to achieve and maintain the mitigation measures described in the Bull Run Watershed Habitat Conservation Plan to maintain the bureau's federally issued incidental take permit; mitigate the impacts of the drinking water supply system on anadromous fish species and contribute to salmonid restoration efforts throughout the Sandy River Basin.
- **Evaluate future regulations:** Review and evaluate potential and upcoming regulations that could affect water quality monitoring and operation of the water system.

## Equity Impacts

Water quality issues have the potential to disproportionately affect people of color and people from immigrant communities, and water quality staff work to mitigate these potential impacts.

Staff in this program translate all critical public health materials into nine other languages. If a water quality notice needs to be issued to a specific area of the city, staff use census data to translate into the most relevant languages. Water quality information staff extensively use phone and in-person language interpretation for phone inquiries and at community events.

This year's budget changes have no clear equity impacts.

## Changes to Program

The budget will increase by \$91,000 for increased drinking water fees to the Oregon Health Authority and support for work related to the Habitat Conservation Plan.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	1,143,212	1,202,156	1,500,000	1,650,000
External Materials and Services	1,859,535	1,536,246	2,213,482	1,996,477
Internal Materials and Services	967,572	847,862	554,640	657,028
Personnel	4,790,752	4,933,188	6,347,104	6,592,606
<b>Sum:</b>	<b>8,761,070</b>	<b>8,519,452</b>	<b>10,615,226</b>	<b>10,896,111</b>

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	61.75	63	67	67
<b>Sum:</b>	<b>61.75</b>	<b>63</b>	<b>67</b>	<b>67</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$8.9 million and the capital budget totals \$2.0 million. The operating budget's main expenses are staffing, lab supplies, water analysis, lead kit supplies, a contract with Multnomah County for the Lead Hazard Reduction Program, and vehicle fleet. Major capital projects include Habitat Conservation Plan mitigation.

**Staffing:** Forty-eight full-time equivalent (FTE) positions support this program. These positions include lab specialists, environmental specialists, and water quality inspectors, among others.

**Assets and Liabilities:** This program does not contain assets.

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653



# Bull Run Watershed

## Program Description & Goals

The Bull Run Watershed Program encompasses the efforts of the Water Bureau to protect and maintain the natural resources and infrastructure that enable Portland to use the federally designated Bull Run Watershed Management Unit (BRWMU) as the region’s primary drinking water source.

The BRWMU is 147 square miles of densely forested land within the Mount Hood National Forest, closed to public entry, that contains the water supply infrastructure necessary to provide water to nearly one million Oregonians. Federal, state, and City laws regulate activity in the watershed; watershed protection dates from 1892.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
Percentage of city's water supply provided by Bull Run watershed under normal operating conditions	92%	98%	80%	95%	100%

## Explanation of Services

Program efforts are focused on:

- Infrastructure work: This program includes capital infrastructure planning, design, construction, operations, maintenance, repair, and rehabilitation of the water supply facilities and road system in the BRWMU.
- Collaboration with the U.S. Forest Service: 95% of the BRWMU is National Forest land. The City of Portland and the Forest Service work together to manage the watershed.
- Monitoring of water supply and weather conditions: Weather conditions affect water quality and supply. The Water Bureau closely monitors and responds to relevant conditions.
- Compliance with requirements: The Water Bureau complies with federal land management, historic properties, and cultural resources requirements.
- Providing appropriate public access: The Water Bureau leads supervised tours of the watershed for members of the public and other stakeholders.

## Equity Impacts

The Bull Run Watershed program has equity impacts in three main areas:

- Protecting water quality: The Water Bureau recognizes that water quality problems could disproportionately affect communities of color and people with medical disabilities. Robust protection of water sources protects public health.
- Protecting cultural resources: The Bull Run Watershed program contains the bureau's cultural resource protection work in Bull Run. This program will include work with Native American tribes and communities.
- Education program: The bureau’s education program offers free programs to qualifying groups. Transportation subsidies are available to reduce financial barriers for participating schools, with full transportation reimbursement options available to schools with Title 1 status. The education program meets accommodation requests, from wheelchair-accessible transit to translated materials. Staff offer programming in Spanish.

This year's budget changes are unlikely to have equity impacts.

## Changes to Program

The program budget will increase for:

- \$170,000 to perform scour analysis at Dam 1 and upgrade reporting tools used at Dam 1.
- \$150,000 for right of way maintenance around power lines, focused on fire prevention, near the watershed dams.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	2,029,511	833,832	2,470,600	3,630,000
External Materials and Services	725,792	627,198	1,121,569	1,373,472
Internal Materials and Services	1,155,918	1,236,484	502,402	534,134
Personnel	2,493,563	2,543,012	2,582,226	2,696,445
<b>Sum:</b>	<b>6,404,784</b>	<b>5,240,526</b>	<b>6,676,797</b>	<b>8,234,051</b>
	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	19	19	18	18
<b>Sum:</b>	<b>19</b>	<b>19</b>	<b>18</b>	<b>18</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$3.8 million and the capital budget totals \$4.4 million. The operating budget's main expenses are staffing, repair and maintenance, and water supply monitoring conducted by the Water Bureau and the U.S. Geological Survey. Major capital projects include road maintenance and Dam 1 valve replacement.

**Staffing:** Nineteen full-time equivalent (FTE) positions support this program. These positions include engineers, planners, and watershed maintenance staff, among others.

**Assets and Liabilities:** Major assets include two dams and reservoirs, a smaller dam and dike at Bull Run Lake, 164 miles of paved and gravel roads, water monitoring systems, and communication systems. The two major reservoirs store 16.9 billion gallons of water. The replacement value of Bull Run Watershed infrastructure totals \$1.1 billion. 89% of the assets are in very good, good, or fair condition. The roads tend to be the assets in poor or very poor condition.

The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Groundwater

## Program Description & Goals

The Groundwater Program contains the Water Bureau’s efforts to protect and maintain the infrastructure and natural resources that enable Portland to reliably draw water from the Columbia South Shore Well Field (CSSWF) as a supplemental and emergency backup supply source. The City has supplied drinking water from the CSSWF since 1984. The well field is used as a supplemental supply during dry periods and as an emergency backup supply when the Bull Run supply is temporarily unavailable (due to major storms, wildfire, or landslides, for example).

Wells in the CSSWF draw from three regional aquifers along the south shore of the Columbia River in Portland, Fairview, and Gresham. The City has an Oregon Department of Environmental Quality-certified Wellhead Protection Program for the groundwater resource to prevent chemical spills that could seep into the ground and adversely affect groundwater quality.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Program efforts are focused on:

- Infrastructure: This program contains capital infrastructure planning, design, construction, operation, maintenance, repair, and rehabilitation of the water supply facilities within the CSSWF, including the system’s production wells, monitoring wells, pumps, motors, well sites, collection mains, and pump station.
- Maintenance of wells, pipes, pump station, and monitoring wells.
- Avoiding or minimizing groundwater contamination from human activities; identifying and managing naturally occurring groundwater contaminants.
- Monitoring aquifer resources and water quality conditions; performing spatial analysis of groundwater conditions and risks.
- Collaboration with area businesses to protect water quality and prevent contamination of groundwater resources.
- Administration of City code that regulates and requires inspections of chemical storage and drainage systems on public and private property. The Water Bureau works with Portland Fire & Rescue inspectors to make sure businesses comply with groundwater protection rules.
- Providing technical help for regulated businesses and educational events for the community.

## Equity Impacts

Water quality problems can disproportionately affect communities of color and people with medical disabilities, and a major goal of the Groundwater program is to protect water quality. This program also includes a significant education component for business owners and residents in or near the well field. In recent years, program staff have worked to expand education outreach in communities of color.

The program's education events increasingly draw more diverse participants. Staff have created translated event materials and employ event staff who speak Spanish, Russian, and Vietnamese.

This year's budget changes are unlikely to have equity impacts.

## Changes to Program

The budget will increase by \$140,000 for repair and maintenance of groundwater equipment.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	478,605	837,430	1,075,600	350,000
External Materials and Services	1,383,727	852,559	999,384	1,268,473
Internal Materials and Services	426,531	558,024	151,017	160,562
Personnel	929,649	1,220,985	1,058,035	1,134,836
<b>Sum:</b>	<b>3,218,512</b>	<b>3,468,998</b>	<b>3,284,036</b>	<b>2,913,871</b>

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
FTE	4	4	3	3
<b>Sum:</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>3</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$2.2 million and the capital budget totals \$0.7 million. Main operating costs include staffing, electricity for groundwater pumping, and repair and maintenance of infrastructure. Capital improvements include the rehabilitation of well field infrastructure.

**Staffing:** Eight full-time equivalent (FTE) positions support this program. These positions include engineers, operating engineers (employees who operate the water system in the field), program managers, and outreach staff, among others.

**Assets and Liabilities:** Facilities include 25 active production wells and pumps; collection and transmission pipes; 18 inactive production wells; 168 non-supply wells used for monitoring and resource management; a 2-million-gallon storage tank and 2 inactive tanks; a 100-million-gallon per day (MGD) pumping facility and an inactive 2.5 MGD facility; and associated treatment and monitoring systems. The total replacement value of the groundwater supply system is \$240 million. 80% of the assets are in very good, good, or fair condition. The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Treatment

## Program Description & Goals

The Treatment Program encompasses the bureau's efforts to make sure drinking water is potable across the bureau's service area. Water treatment facilities for the Bull Run supply are currently located at Headworks (in the Bull Run Watershed) and Lusted Hill (between the watershed and the city). The Headworks facility adds chlorine for primary disinfection. The Lusted Hill facility adds sodium hydroxide for pH adjustment and ammonia to create chloramines. For the groundwater supply, treatment with sodium hypochlorite, ammonia, and sodium hydroxide occur at the groundwater pump station.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

This program provides the resources to treat water from Portland's sources in the Bull Run Watershed and Columbia South Shore Well Field to meet or exceed all state and federal regulations for drinking water. This includes continuous monitoring and optimization of treatment processes. This program also includes capital infrastructure planning, design and construction, operation, maintenance, and repair of treatment facility systems, and associated regulatory and process control monitoring.

This program will include operating and maintaining the new facilities and infrastructure built as part of the Corrosion Control Improvement and Bull Run Filtration Treatment Projects (to be operational by 2022 and 2027, respectively).

## Equity Impacts

The goal of water treatment is to keep water safe to drink. Drinking water quality problems can have a greater impact on communities of color and people with medical disabilities (those with compromised immune systems). This program is also responsible for reducing the potential for lead to leach into water; nationally, lead poisoning disproportionately affects children of color.

Staff in this program do not work directly with the public and do not receive requests for accommodations.

This year's budget changes are unlikely to have equity impacts. As this program grows to include new water treatment processes, the bureau will have the opportunity to explore how equity can be brought into construction and hiring processes.

## Changes to Program

The budget will increase by \$85,000 for chemical supplies. Because permanent positions were added in the 2018–2019 budget, two limited-term Treatment Operator positions are no longer necessary and will be eliminated in this budget.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	458,919	199,212	599,682	9,920,000
External Materials and Services	1,054,413	1,775,274	6,349,214	3,841,722
Internal Materials and Services	327,822	689,772	110,139	153,731
Personnel	1,425,724	1,877,316	3,111,719	3,405,838
<b>Sum:</b>	<b>3,266,878</b>	<b>4,541,574</b>	<b>10,170,754</b>	<b>17,321,291</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$2.9 million and the capital budget totals \$14.5 million. Main expenses in the operating budget include staffing, utilities, chemicals, supplies, and vehicle fleet. Major capital projects include Filtration and Corrosion Control Improvement treatment facilities.

**Staffing:** Twenty-three full-time equivalent (FTE) positions support this program. These positions include water treatment operators, laboratory staff, and engineers, among others.

**Assets and Liabilities:** Assets include the treatment facilities at Headworks and Lusted Hill. The replacement value of the facilities and equipment is \$58 million. 90% of the infrastructure is in very good, good, or fair condition.

### Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653



# Conduits/Transmission Mains

## Program Description & Goals

The Conduits/Transmission Mains Program is responsible for bringing water from the city's two water sources, the Bull Run Watershed and Columbia South Shore Well Field, to reservoirs at Powell Butte, then to other in-town reservoirs and tanks at Kelly Butte, Washington Park, Sam Jackson, and Mayfair.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Program efforts are focused on the capital infrastructure planning, design and construction, operations, maintenance, repair, and rehabilitation of the assets in this program, as well as improving operability, reducing risk, and hardening the supply to meet seismic resilience goals. This program also makes sure the conduits and transmission mains are regularly inspected and are protected from corrosive soil. Staff in this program protect the bureau's right of way where conduits cross non-bureau property, and have laid out a protected path for a potential future conduit.

## Equity Impacts

The Conduits and Transmission Mains program does not have any clear equity implications.

Staff in this program do not work with the public and do not receive requests for accommodations.

There are no changes to this budget, and there is no likely equity impact of the unchanged budget.

## Changes to Program

There are no program changes planned for next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	144,336	208,756	624,600	2,284,453
External Materials and Services	1,121,493	2,149,021	842,005	305,525
Internal Materials and Services	655,553	875,472	207,919	205,891
Personnel	1,260,367	1,211,655	1,119,168	1,328,257
<b>Sum:</b>	<b>3,181,749</b>	<b>4,444,903</b>	<b>2,793,692</b>	<b>4,124,126</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$1.2 million and the capital budget totals \$2.9 million. The operating budget's main expenses are staffing, repair and maintenance services, supplies, and vehicle fleet. The capital budget covers conduit assessments.

**Staffing:** Nine full-time equivalent (FTE) positions support this program. These positions include engineers, watershed specialists, and operating engineers (staff who operate the water system in the field), among others.

**Assets and Liabilities:** Major assets in the program include 60.5 miles of conduit (in three conduits) and 50 miles of transmission pipe, as well as supporting trestles and bridges, cathodic protection, Willamette River crossings, and intertie facilities. Conduits 2, 3, and 4 were built in 1911, 1925, and 1953, respectively. The conduits and transmission mains have a total replacement value of \$1.7 billion. 50% of the assets are in very good or good condition, with 40% in fair condition and 10% in poor or very poor condition.

The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

**Bureau:** Portland Water Bureau

**Program Contact:** Tony Andersen

**Website:**

**Contact Phone** 503-823-8653

# Terminal Reservoirs

## Program Description & Goals

Five in-town reservoirs and tanks serve as primary water storage points for distribution to retail and wholesale customers. These terminal storage facilities are at Powell Butte (outer Southeast Portland), Kelly Butte (also outer Southeast), Washington Park (Southwest), Mayfair (Northwest), and Sam Jackson (Southwest). Portland’s terminal storage facilities are managed to maintain the gravity-based delivery of water and water availability for firefighting and emergencies.

Measure Title	PM 2016-17 Actuals	PM 2017-18 Actuals	PM 2018-19 YTD Actual	PM 2019-20 Target	Strategic Target
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## Explanation of Services

Activities of this program include the capital infrastructure planning, design and construction, operation, and maintenance of the terminal storage facilities. Maintenance includes draining, inspecting, and cleaning these facilities as well as repairing and replacing their equipment.

## Equity Impacts

Natural disasters that cause water outages can disproportionately affect communities of color, and terminal storage reservoirs are critical to the City’s emergency preparedness. The Terminal Reservoirs program also includes the bureau’s funding of visitor facilities at Powell Butte, which is in an area of the city with higher than average percentages of people of color and people with low English proficiency.

Most staff in this program do not work directly with the public and do not receive requests for accommodations.

There are no changes to this budget, and there is no likely equity impact of the unchanged budget.

## Changes to Program

No program changes are planned for next fiscal year.

## Program Budget

	2016-17 Actuals	2017-18 Actuals	2019 Revised Budget	2019-20 Request - V52 -No DP
<b>Bureau Expense</b>				
Capital Outlay	21,338,968	28,805,402	30,749,376	34,434,000
External Materials and Services	532,208	864,535	1,201,926	832,101
Internal Materials and Services	2,195,469	2,118,365	472,215	563,449
Personnel	2,175,277	1,924,466	2,360,552	2,363,772
<b>Sum:</b>	<b>26,241,921</b>	<b>33,712,767</b>	<b>34,784,069</b>	<b>38,193,322</b>

**Resources:** Resources come from ratepayer charges for water and water-related services. Capital investments in water system infrastructure may also be funded with proceeds from issuance of Water Revenue Bonds and capital revenues. Capital revenues include sales of assets and System Development Charges from installations of new mains and services.

**Expenses:** The operating budget totals \$0.9 million and the capital budget totals \$37.3 million. The operating budget's main expenses are staffing, supplies, and vehicle fleet. The major capital project is the Washington Park Reservoir.

**Staffing:** Sixteen full-time equivalent (FTE) positions support this program. These positions include engineers, operating engineers (employees who operate the water system in the field), and CADD (Computer-Aided Design and Drafting) technicians, among others.

**Assets and Liabilities:** Powell Butte has two 50-million-gallon buried reservoirs, one completed in 1981 and the second completed in 2014. Kelly Butte Reservoir was built in 2015 with buried storage of 25 million gallons, replacing an older tank on the site. Washington Park Reservoir is scheduled for completion in 2020 and will have 12.6 million gallons of buried storage, replacing two open reservoirs on the site. Sam Jackson and Mayfair, built in 1964 and 1967 respectively, have total storage of 8.5 million gallons. Each terminal storage facility includes piping, mechanical control buildings, vaults, pumps, and electrical infrastructure. The total replacement value of terminal storage is \$460 million. 93% percent of terminal storage is in very good, good, or fair condition.

The Water Bureau has a robust Asset Management Program, with asset life-cycle strategies detailed in twenty-three asset management plans by asset type. These plans contain specific strategies for repair, renewal, and replacement of each asset type. While current condition of any asset type is an important factor, asset condition alone does not drive where and when PWB decides to invest in any given budget program. To learn more about Water Bureau asset management, visit [portlandoregon.gov/water/assets](http://portlandoregon.gov/water/assets).

## Program Information

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