The Bureau is currently working with the University of Idaho and UW to develop a hydrologic model for the Watershed that will be capable of interacting with downscaled global climate model data. The Bureau is developing the model with the intent of evaluating various climate change scenarios and updating the preliminary conclusions provided in the earlier UW study.

STORAGE AND DISTRIBUTION

Bull Run water is supplied by gravity from the Watershed's primary intake structure located at the Headworks facility. Water is conveyed from Headworks to Portland through three large-diameter pipelines to the 50 MG terminal storage reservoir on Powell Butte. Over the last two miles, the three pipelines are combined with the groundwater system intertie pipeline. Conduit vulnerability to natural and man-made hazards has been reduced along the 20-mile pipeline route to the Powell Butte Reservoir by strengthening bridges or burying exposed sections. The interties significantly reduce the quantity of water between shutdown locations and provide the capability of remotely redirecting flows in case of an emergency such as a pipe breaking or leaking. The interties are located in the Watershed at Larson's Intertie, and just before the ammoniation/corrosion treatment facility at Hudson's Intertie and along 162nd Avenue in Portland. A recently completed project mitigated potential flood and landslide damage for conduits 2 and 4 at the Sandy River crossing. These two conduits are now buried deep below the river bed and can produce enough Bull Run supplied water for current summer demands even if conduit 3 were lost in an event. Conduit operations are modified seasonally to produce the best water quality for given demand scenarios.

The Bureau's in-town Water System storage consists of six large terminal storage reservoirs and 58 in-service smaller standpipes and tanks, with a total storage capacity of over 300 MG. Water flows from the Powell Butte Reservoir to the other five terminal reservoirs or directly to west side wholesale customers through the Washington County Supply Line. Secondary disinfection treatment facilities are located at the Mt. Tabor Park and Washington Park terminal reservoirs. These facilities are designed to add chlorine to ensure that an accurate chloramination ratio is maintained. The LT2 Rule requires the City to change how its open finished drinking water reservoirs are utilized, managed, and operated. (See "REGULATORY ENVIRONMENT—CURRENT AND EMERGING REGULATORY ISSUES" herein.)

There are six active Willamette River crossings (including the Washington County Supply Line) that supply the Bureau's west side customers. Pumping facilities supply all areas higher in elevation than the terminal storage reservoirs. The transmission and distribution system is constructed of cast iron, ductile iron, steel, and copper piping and is in good condition with an expected future life of 50 to 200 years. Valves are located in the transmission and distribution piping to allow control during repairs, maintenance, or improvements. Fire hydrants are located on the distribution piping network to provide fire protection to Water System customers. All customers are metered. The distribution system also includes drinking and decorative fountains for use by the public.

The Bureau's supply and distribution system is constantly monitored and controlled via the Water Control Center located at the Bureau's Interstate facility. The original computer-based Supervisory Control and Data Acquisition System was completed in 1991, providing monitoring and control for most of the Bureau's facilities from a central location. A third-generation system upgrade is now complete and provides advanced, cyber-secure control of the system.

SUMMARY OF KEY FEATURES

The following table summarizes key features of the Water System.

Table 6
CITY OF PORTLAND, OREGON
Water Bureau
Water System Statistics (December 31, 2012) (1)

Watershed Managed Storage Capacity	16.9 billion gallons
Normal Useable Capacity	9.9 billion gallons
No. of CSS Groundwater Wells	27
Initial CSS Well Field Capacity	102 MGD
No. of Transmission Conduits	3
Miles of Conduit Pipe	75
Miles of Intertie Conduit Pipe	4
Maximum Watershed Transmission Capacity	212 MGD
No. of In-Town Terminal Storage Reservoirs	6
No. of Standpipes and Tanks	58
Total In-Town Storage Capacity	300 million gallons
Miles of Transmission and Distribution Pipe	2,200
No. of Pump Stations	39
No. of Pumps	130
No. of Accounts (2)	180,910
- Single Family Residential	150,930
- Multi-Family Residential	10,510
- Commercial and Industrial	19,450
- Wholesale	19
No. of Fire Hydrants	14,300
No. of Valves (excl. hydrant valves)	49,700
No. of Drinking and Decorative Fountains	149

Notes:

(1) Numbers are approximate.

(2) The statistic has been changed to number of accounts. In prior reports, the statistic presented was the number of services or meters.

Source: City of Portland.

BULL RUN WATERSHED HYDROELECTRIC POWER GENERATION

The City owns two hydroelectric powerhouses in the Watershed which are a part of the Portland Hydroelectric Project (the "Hydroelectric Project"). The Hydroelectric Project's facilities were constructed from 1979 to 1982 and consist of a powerhouse with a 24-megawatt (36,000 horsepower) turbine/generator below Dam 1, a powerhouse with a 12 megawatt (16,000 horsepower) turbine generator below Dam 2 and ten miles of power transmission lines required to connect the Hydroelectric Project's powerhouses with the Portland General Electric ("PGE") power system grid. The Hydroelectric Project's powerhouses are physically operated and maintained by PGE personnel as a condition of the Hydroelectric Project's power sales agreement between the City and PGE. The total annual power generation from these facilities averaged about 86,200 megawatt-hours over the last 31 years of operation but varies from year to year based on the actual amount and distribution of rainfall falling over the Watershed in those years.

The Hydroelectric Project's powerhouses were constructed and are now operated under a license from the FERC as well as permits from the USFS and certain other State of Oregon agencies. Both the FERC license and the USFS permit clearly place the power generation aspect of the Hydroelectric Project in a secondary role to that of municipal water supply. These documents further restrict the Hydroelectric Project from varying the City's two major water supply reservoirs any more than two feet below their respective dam spillway crests solely for hydropower generation purposes with certain exceptions. The FERC license and associated USFS special use permit for hydropower facilities expire in 2029.

The Hydroelectric Project's FERC license boundary encompasses the facilities described above plus Dam 1 and Dam 2 and their respective reservoirs. The Hydroelectric Project's hydroelectric power staff applies the requirements of the FERC's dam safety program to those dams and reservoirs. As a part of that work, updated dam safety inspections and dam stability analyses are periodically performed for the Hydroelectric Project's dams and emergency action plans are prepared and exercised for the river channel downstream of the Hydroelectric Project.

The Hydroelectric Project's facilities and its associated revenues and expenses are accounted for under its own City Fund structure and are excluded from the Water System and its associated accounting under the First Lien Bond Ordinance and the Master Second Lien Bond Declaration.

WATER SYSTEM OPERATIONS

Water Supply Operations

Under normal conditions the Bureau can supply 100 percent of customer water needs entirely from the Watershed and under emergency conditions, the CSS Well Field can be used to supply base (fall, winter and spring) demands or to supplement the Bull Run supply to meet summer peak demands. The Bureau has established an annual summer supply planning process to coordinate and communicate yearly supply operations. Since 1992, the Summer Supply Plan has been updated annually. The plan provides a pre-agreed list of supply augmentations and demand reduction options that the Bureau can implement as needed, and contains trigger and implementation criteria under different forecast scenarios.

The Bureau is equipped to continue normal uninterrupted water service during a widespread power outage. Water delivered from the Watershed to Powell Butte is gravity fed, and backup generators are in place to maintain current treatment processes. Within the distribution system, the Bureau maintains demand adjusted storage that enables it to meet domestic use, fire, and emergency needs. Local pumping requirements (mainly for the hills of Portland's west side) and the Water Control Center are backed up with both permanent or mobile power generators or water pumpers.

To help ensure a timely and proper response to a severe or catastrophic event, the Bureau has an Emergency Management Program with an Emergency Operations Center ("EOC"). From the EOC, the Bureau's Emergency Manager can assist the Incident Command System personnel in planning and coordinating the Bureau's actions during emergencies. The Bureau has certified many of its employees in the National Incident Management System ("NIMS") to enhance its capabilities to effectively respond to a local emergency. The Bureau is currently updating its EOC and communication equipment to better prepare for a severe or catastrophic event with additional funding from federal grants. The Supervisory Control and Data Acquisition system, which monitors and manages the Water System's in-town storage, has undergone an upgrade that includes disaster mitigation by creating a fully redundant off-site water control center at the Lusted Treatment Facility.

Treatment Operations

Overview

Because of the high quality of the Watershed source and its SWTR filtration exemption, current treatment requirements for Portland are significantly reduced when compared to other systems utilizing surface water sources. (See "REGULATORY ENVIRONMENT—CURRENT AND EMERGING REGULATORY ISSUES" herein.) Current Watershed treatment facilities include only chlorine disinfection. The Headworks (primary) treatment facilities are located immediately below Bull Run Dam 2 in the Watershed. At the Headworks, chlorine is added for primary disinfection of the raw water. Water leaving the Headworks is continuously monitored to determine the free chlorine residual. Aqueous Ammonia ("Ammonia") is added to the water to form chloramines at the Lusted Hill Treatment Facility located approximately 10 miles downstream from the Headworks. Corrosion treatment is also located at the Lusted Hill Facility. Corrosion treatment began January 1, 1997, to comply with the EPA's Lead and Copper Rule.

Fluoride

On September 12, 2012, the City Council authorized and directed the Bureau to add fluoride to the City's water supply. The Bureau immediately began work on the planning, land use review and permitting needed to construct the fluoridation facility. At the same time, opponents of fluoridation filed a petition to refer the decision to Portland voters. City Code specifies that a referendum measure should be placed on the ballot at the next biennial primary or general election unless Council finds that public interest in a prompt resolution of the question outweighs the costs associated with a special election. In November 2012, election officials determined that sufficient valid signatures were collected within 30 days of City Council authorization to qualify the referendum to be placed on the ballot at the next biennial primary or general election, which is the May 2014 primary election. All fluoride-related activities of the Bureau were immediately stopped. In December 2012, the City Council passed a resolution to place the referendum petition regarding fluoridation of Portland's drinking water supply on a Special Election ballot scheduled for May 21, 2013.

The cost to construct the fluoridation facility is estimated at $5 million with annual operating cost of about $0.5 million. The plan is to only fluoridate the primary source of water, the Watershed, with the assumption that the groundwater supply continue to be used as an emergency back-up supply or to augment supply. These costs are not currently in the Five-Year Capital Improvement Plan nor in the Five-Year Preliminary Financial Plan. Pending the results of the May 2013 Special Election and City Council's direction, the Bureau may need to reprioritize the Five-Year Capital Improvement Plan to provide funding in FY 2013-14 to begin work on the fluoridation facility. The capital and operating costs would be included in subsequent updates of the capital and financial plans.

There is also an initiative petition that has been filed that would amend the City Charter to prohibit fluoridation of Portland's drinking water in the future. The deadline is January 17, 2014 to submit 29,786 valid signatures to place the ballot measure on the May 20, 2014 Primary Election ballot.

Systemwide Plans and Strategies

Asset Management

The Bureau's Asset Management Program guides the strategic management of physical assets to best support the delivery of identified services. It helps the Bureau to better manage existing assets, and plan for future needs. This process is guiding decisions as to the effective mix of maintenance, repair, renewal or replacement of the water system components, and has improved the Bureau's ability to focus on critical assets. A risk analysis methodology has been applied to assess the relative risks of asset failure; those assets with the highest risks are then identified for follow-up actions. Asset condition assessments have been completed or are underway for many asset classes. Business case methodology is being used to ensure that investment decisions deliver good value by comparing the cost of an investment to the benefits it provides. Benchmarking with best practices is giving the Bureau an opportunity to understand process improvement opportunities. Asset Management Plans have been prepared for almost all asset classes, capturing current information on service levels, inventory, condition, failure modes, risks of asset failure, and asset strategies.

Distribution System Master Plan and Capital System Plan

Last updated in 2007, a Distribution System Master Plan was developed to address the rehabilitation and capital expansion needs of the retail water supply system. The Bureau is also participating in the City's capital system plan process that will lead to an updated Citywide systems plan. The City is updating its Comprehensive Plan, a long-range 20-year plan that sets the framework for the physical development of Portland. Both the Distribution System Master Plan and the Citywide systems plan will be part of the Comprehensive Plan.

Regional Coordination and Wholesale Agreements

Background

The Bureau provides water to over 50 percent of the population in the Portland metropolitan area across Multnomah, Washington, and Clackamas counties. The Bureau currently sells about 40 percent of its water on a wholesale basis to 19 cities, special districts, and private water companies.

Regional Water Providers Consortium

The region's water providers have formed a Regional Water Providers Consortium (the "Consortium"), which operates with an elected officials Board and Executive Committee, one Technical Advisory Committee, as well as a Conservation Committee and an Emergency Preparedness Committee. The current size of the Consortium is 21 water providers and Metro and is jointly financed and operates through an annually approved work plan and budget administered by the City through a staffing intergovernmental agreement. The Consortium works together on water supply planning, water conservation media messaging, and emergency preparedness.

Wholesale Water Sales Agreements

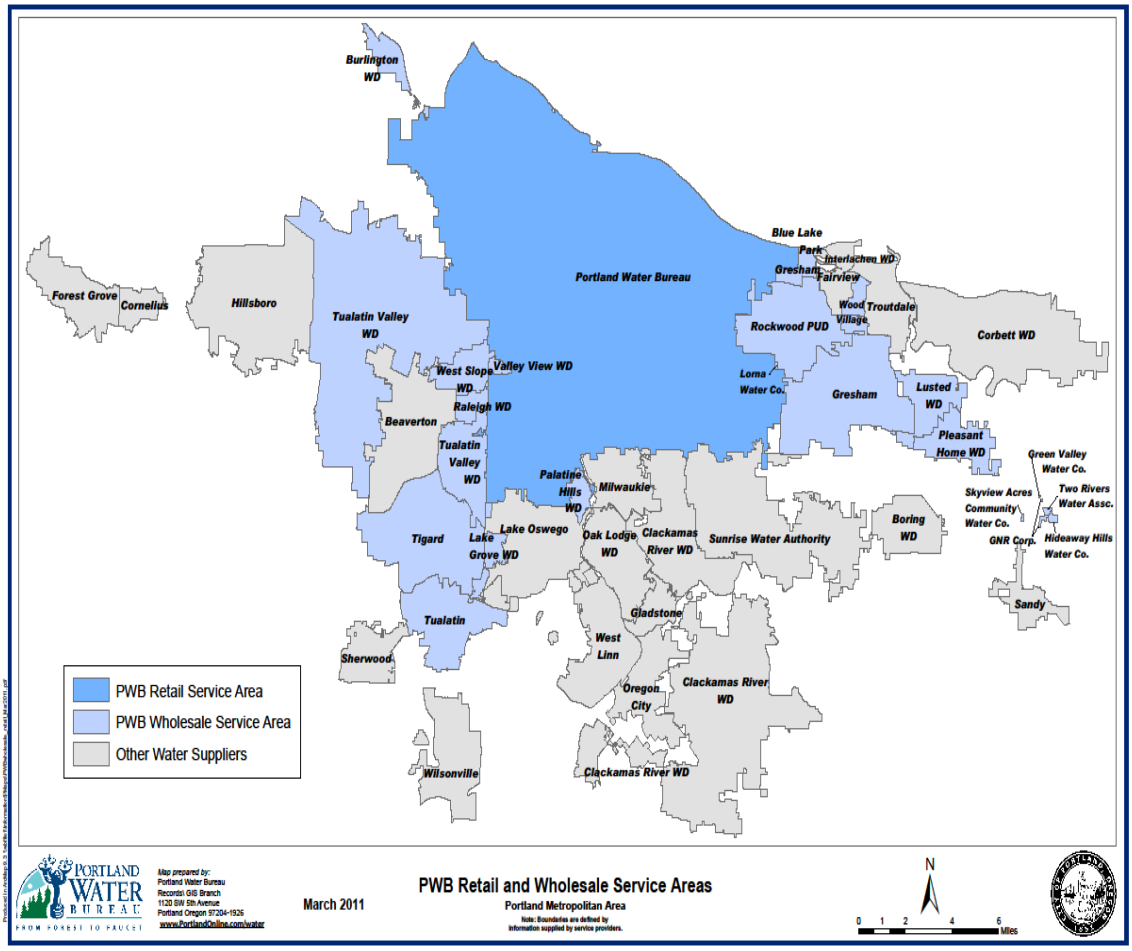
The City sells water on a long-term wholesale basis to 13 cities and public water districts. In 2006 and 2007, five of the 13 cities and public water companies signed 10-year agreements and eight signed 20-year agreements. In addition, the Bureau sells water to six small private water companies with similar agreements, whose contracts renew every five years. In 2009, the City signed a contract with a 20th wholesale customer, the City of Sandy, for water to be delivered beginning no later than November 2013.

A significant feature of the agreements is the guaranteed supply and payment provisions. In exchange for the Bureau guaranteeing a predetermined water supply to each wholesale customer based on their respective needs, the wholesale customers will pay the Bureau for those annual quantities on a take-or-pay basis during the contract period. This provision means that the Bureau's wholesale revenues are considerably more stable and not subject to adverse demand fluctuations due to weather, economic downturns, or other factors for the duration of the contracts. The only variation in revenues would occur from mutually agreed-upon sales beyond the take-or-pay quantities or from changes in the ratio of peak-to-average demands of the users. The City currently has ample water supply to meet all obligations to deliver water as required by these agreements and to its retail customers.

Wholesale customers must give five years notice of non-renewal and can do so at any time during the last five years of their respective contracts. If such notice is issued, the contract will terminate on the next June 30 at least five years but not more than six years from the date of the notice. The agreements are virtually identical except that the 10-year agreement customers pay a higher rate of return to the City in exchange for the ability to elect not to renew their contracts at an earlier date. When some of the 10-year agreements expire, those customers that have access to alternate sources of water supply could opt to utilize those sources and reduce or even eliminate purchases from the City. The major westside wholesale customers who signed 10-year contracts are considering alternative sources of supply. Other 10-year customers without alternate sources may choose to renew their water supply contracts.

The City of Tigard has given notice that it does not intend to renew its water sales agreement with the City. The agreement will terminate effective June 30, 2016. However, the City of Tigard has indicated that it wishes to enter into negotiations with the City to provide a backup source of water in case it needs additional water in the future. Such negotiations have not begun yet. The remaining 10-year agreement wholesale customers have not provided notification of non-renewal of their agreements. Therefore, these customers are obligated to continue to purchase water through at least June 2018. Excluding the City of Tigard which has already given notice, if the remaining 10-year agreement customers that have available alternative supplies left the City's system, the resulting estimated retail rate increase in 2013 dollars for one year would be as much as 4.0 to 5.5 percent to ensure that revenues are sufficient to meet debt service coverage planning standards. However, the likely rate impact is less because some or

all of the relevant wholesale customers are expected to continue to purchase some water from the City in a desire to maintain a diversity in their water sources. A map of the Bureau's retail and wholesale service area is shown below.



REGULATORY ENVIRONMENT

Operation of the Water System is regulated under the Safe Drinking Water Act ("SDWA") through the United States Environmental Protection Agency, (EPA). In Oregon, administration of this Act is delegated to the Oregon Health Authority Drinking Water Program (OHA) as the "primacy" agency. OHA also establishes and enforces its own regulations for public water systems (OAR Chapter 333). The City's primary water source, the Bull Run Watershed, is located on National Forest System land that is co-managed by the USFS and the City under Public Law, P.L. 95-200 and other relevant laws and regulations applicable to federal lands.

The City is also subject to environmental regulations and statutes administered by the DEQ, which has been delegated enforcement authority by EPA for Clean Water Act issues, and the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) for Endangered Species Act, (ESA) issues.

REGULATORY DEVELOPMENT

In 1974, Congress initially adopted comprehensive legislation for drinking water supplies in the Safe Drinking Water Act (SDWA). Since then, the original legislation has been significantly revised and expanded twice, first in 1986 and again in 1996. Regulations arising from this legislation address a range of health concerns and issues including chemical and microbial contaminants, operator certification, disinfection and treatment practices, source water protection, and consumer information requirements. The first wave of new regulations resulting from the 1996 Amendments to the SDWA are largely in place at this time, but EPA anticipates an ongoing process through much of the early part of this century to fully realize Congress' intent in the recent revisions. The Water System is currently in compliance with all currently enacted regulations under the SDWA as well as those imposed by OHA.

ENVIRONMENTAL REGULATIONS AND COMPLIANCE PLANS

The City is also subject to environmental regulations and statutes administered by a variety of state and federal agencies. The 2009 Habitat Conservation Plan (HCP) is the most significant of the environmental regulatory compliance plans currently in place. In response to federal listings of salmon and steelhead in the lower Columbia River region, the Bureau took a lead role in establishing a partnership of public and private organizations, now called the Sandy River Basin Partners, with a common objective of fish habitat conservation and restoration in the Sandy River Basin. In coordination with the Partners, the City prepared a comprehensive HCP as provided for in Section 10 of the federal Endangered Species Act (ESA) to meet the City's obligations for the Bull Run system. The HCP also includes measures to address the City's obligations to manage water temperature under related Clean Water Act (CWA) requirements administered by DEQ. The HCP was approved and an Incidental Take Permit was issued by the NMFS in April 2009. The DEQ subsequently approved a Temperature Management Plan. This package of regulatory commitments provides reasonable certainty for the Bureau to operate its water supply facilities in the Bull Run Watershed in compliance with the federal ESA and CWA for the next 50 years. A recent court decision may have an effect on future implementation of the Temperature Management Plan. (See "LITIGATION" herein.) Implementation of the 49 measures included in the Bull Run HCP has begun, and progress is reported by the Bureau annually to NMFS and to DEQ. The Bureau continues to operate in compliance with the HCP and Temperature Management Plan requirements.

CURRENT AND EMERGING REGULATORY ISSUES

Water utilities strive to deliver to customers an adequate and reliable supply of high quality water at a reasonable price. Regulations can be significant drivers that influence this effort. The Bureau's current focus of attention is compliance with the Long Term 2 Enhanced Surface Water Treatment Rule (the "LT2 Rule").

Water Quality

In January 2006, the EPA issued the LT2 Rule. According to the EPA, "The purpose of the LT2 Rule is to reduce illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water." Compliance with the LT2 Rule impacts two separate parts of the City's Water System.

First, the rule requires that by April 1, 2014, the City provide additional treatment to its Bull Run supply to either remove or inactivate *Cryptosporidium*. The treatment options available to the City for this include filtration (either traditional or newer micro-membrane technology to remove the parasites), ozonation (the introduction of ozone to water to destroy the *Cryptosporidium* oocysts), chlorine dioxide (a chemical disinfectant) or ultraviolet radiation (ultraviolet lights irradiate the *Cryptosporidium* oocysts to prevent them from reproducing which is commonly referred to as inactivation). Another compliance

option for the surface water treatment requirements of the LT2 Rule under the federal SDWA is to obtain a variance, which would enable water utilities to avoid the installation of additional treatment in return for meeting other specified conditions.

Second, the LT2 Rule requires changes to how uncovered finished drinking water reservoirs are utilized, managed and/or operated. The rule requires that water systems with uncovered finished water reservoirs, like those at Mt. Tabor and Washington Parks, either cover the reservoirs or provide treatment at the outlets of the reservoirs to inactivate *Cryptosporidium, Giardia* and other pathogens. The EPA and the OHA have each separately indicated that there is no variance option for compliance with the uncovered drinking water requirement of the LT2 Rule.

Compliance with LT2 Rule Requirements for Treatment

During the last two decades, *Cryptosporidium* has emerged as a public health issue, especially for those with suppressed immune systems. *Cryptosporidium* is a micro-organism (protozoan) that can be transmitted through the fecal material of animals and humans and is therefore naturally present in bodies of surface water throughout the world. Surface water sources that are exposed to intensive human activities, pollution and animal wastes are likely to contain the parasite. *Cryptosporidiosis*, the disease caused by *Cryptosporidium*, is not treatable with antibiotics.

The Watershed is far removed from the types of human activities and pollution that are associated with the presence of *Cryptosporidium*. There is no human sewage or cattle exposure to Portland's source water in the federally protected Watershed. The wildlife that inhabits the Watershed poses the only potentially significant source of *Cryptosporidium.* Because of this, the City only rarely detects *Cryptosporidium* in the Bull Run when it conducts regular water quality monitoring. The City has been able to maintain the Watershed as one of only a half a dozen large unfiltered surface water supplies in the United States. The 1989 SWTR included filtration avoidance criteria that were based upon the premise that chlorine disinfection of a very high quality water source is adequate to protect public health.

On March 14, 2012, OHA issued a Final Order granting the City a variance to the treatment requirements of the LT2 Rule. The variance went into effect on April 1, 2012, and will be in effect for ten years as long as the City is able to meet a set of important conditions designed to protect the health of Portland drinking water customers. These conditions require the Bureau to continue to monitor Bull Run source water for *Cryptosporidium*, maintain all legal protections in the Bull Run, and monitor and manage any potential sources for *Cryptosporidium* contamination in the Watershed. In the event of a first detection of *Cryptosporidium*, the Bureau is required to increase its monitoring efforts, coordinate with health officials to determine what, if any, impacts the detection may have, and communicate this information to its customers. The communications requirement in the variance conditions requires, at minimum, a press release to Portland-metro media outlets and posting of the information on the Bureau website if *Cryptosporidium* is detected at the intake. If one or more detections occur during this one-year period of increased monitoring, it is likely that OHA will revoke the variance. Annual operations and maintenance costs to conduct the treatment variance program are projected to be $1.3 million.

Compliance with LT2 Rule Requirements for Uncovered Finished Drinking Water Reservoirs

A plan by the City explaining the schedule and manner for bringing Portland into compliance with the uncovered storage requirements of the LT2 Rule was due to the EPA by April 1, 2009. The City submitted a plan to the EPA by this deadline and received approval. The plan includes constructing an enclosed 50 million gallon storage reservoir at Powell Butte, increasing the storage capacity at Kelly Butte to 25 million gallons, replacing Washington Park Reservoir 3 with a 15 million gallon buried tank and constructing transmission pipes and other system improvements. The deadlines in the plan to disconnect Mt. Tabor and Washington Park uncovered reservoirs from the drinking water system are December 31, 2015, and December 31, 2020, respectively. The Capital Improvement Plan includes costs of these projects to meet the current approved schedule deadlines.

In August 2011, in response to United States Senator Charles Schumer on behalf of the City of New York, the EPA agreed to review the LT2 regulation as part of its standard regulatory review and also in response to a presidential executive order. In February 2012, the City asked for an opportunity to extend the Bureau's compliance schedule to disconnect the City's uncovered reservoirs for a period that would extend beyond the EPA's review of the LT2 Rule. The compliance schedule extension would have resulted in the Mt. Tabor and Washington Park reservoirs being disconnected from the drinking water system as of June 30, 2023, and June 30, 2025, respectively. On May 17, 2012, the OHA denied the City's request for an extension. The existing regulatory schedule to replace all uncovered storage by December 31, 2020, is therefore in effect and the Bureau is moving forward to complete the necessary projects to comply with this schedule. In early January 2013, Commissioner Novick placed the design contracts for the Washington Park Reservoir #3 improvements on hold pending a response from OHA to a second request by the Portland City Council for an extension of the LT2 reservoir compliance schedule. The request was sent in early February, and a response is expected from OHA in sufficient time for the Bureau to meet its compliance obligations if the second request is

denied. Despite the pending request, costs of the Washington Park Reservoir #3 improvements continue to be included in the current Capital Improvement Program. (See also "CAPITAL IMPROVEMENT PROGRAM – Capital Programs and Projects.")

Portland Harbor Sediments

In December 2000, Portland Harbor was listed as a federal Superfund site. Because the Bureau owns land and operates facilities within the Portland Harbor Investigation area, the Bureau may be liable for a portion of the cleanup and restoration activities, as well as costs for restoration of natural resources. The City believes that an estimate of maximum City exposure of the Portland Harbor cleanup cannot be made but could be material to the period in which it is realized. The Bureau's exposure would only be a small part of any final City-wide obligations. (See "LITIGATION" herein.)

ORGANIZATION AND STAFF OF THE PORTLAND WATER BUREAU

BUREAU ORGANIZATION

The Bureau's Adopted FY 2012-13 budgeted work force of 611 full-time positions, along with three limited-term, full-time positions and five part-time positions, is managed by a ten person Management Team led by the Administrator. The Bureau's Management Team is composed of the Administrator, six Work Group Directors, Security Manager, Public Information Manager, and Water Administrative Manager. The Bureau's internal management structure combines the efforts of the Administrator's Office and six Work Groups including Finance and Support Services, Customer Services, Maintenance and Construction, Engineering, Resource Protection and Planning, and Operations. At times, consultants are used for specific projects that require expertise or staffing beyond the Bureau's capability. Certain administrative and support functions are provided by other City departments and bureaus on a reimbursable basis.

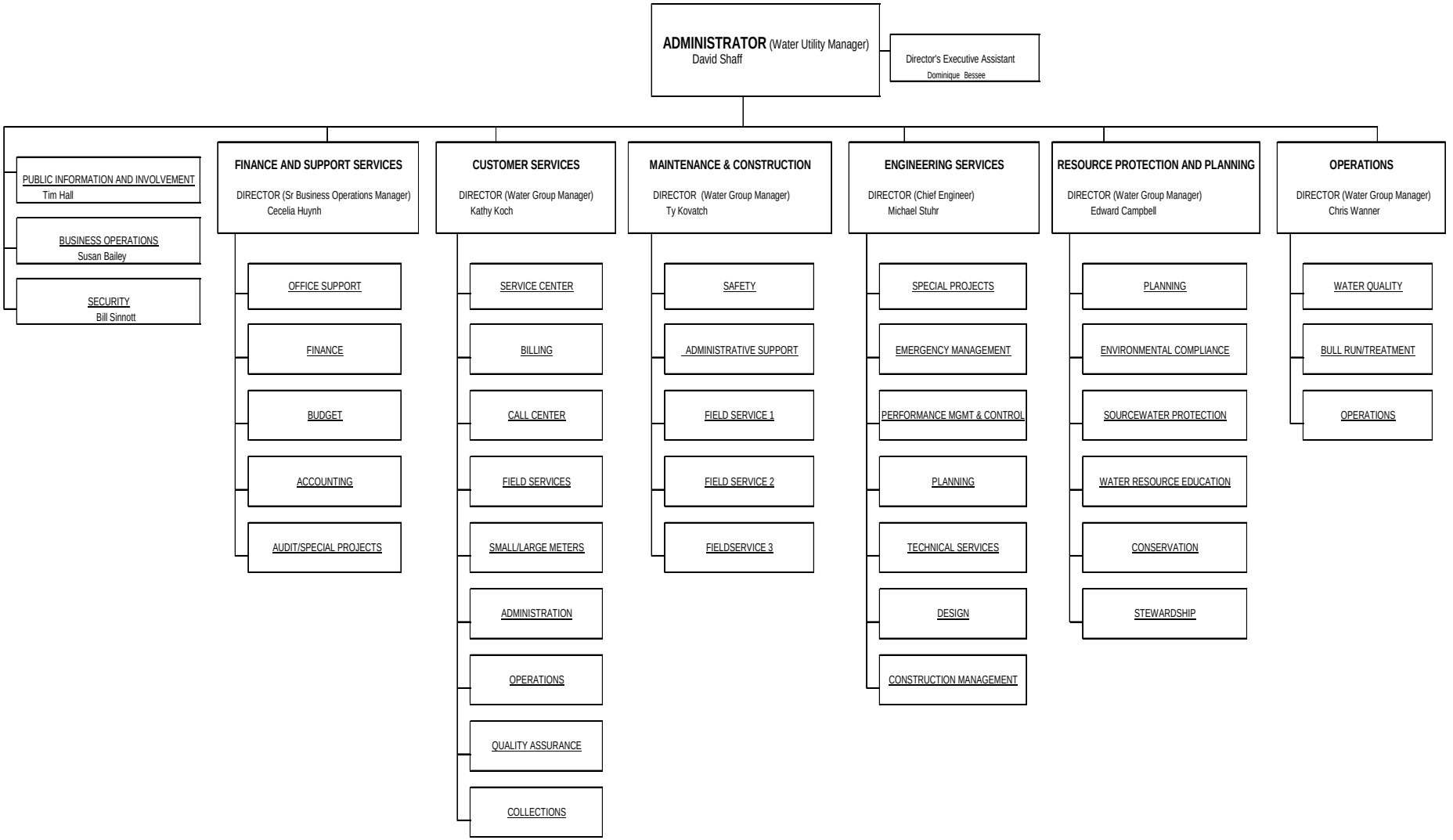
The 611 full-time positions (and 8 limited-term or part-time positions) of the Bureau are distributed as follows:

- Administrator's Office – 46 positions, 1 part-time
- Finance and Support Services – 21 positions, 1 part-time
- Customer Services – 108 positions, 2 part-time, 2 limited-term
- Maintenance and Construction – 169 positions
- Engineering – 133 positions, 1 part-time, 1 limited-term
- Resource Protection and Planning – 28 positions
- Operations – 106 positions

The chart on the following page shows the Bureau's organization for the FY 2013-14 Requested Budget.

PORTLAND WATER BUREAU

FY 2013-14 Requested Budget



Source: City of Portland.

ADMINISTRATOR'S OFFICE AND WORK GROUPS

The Administrator's Office is responsible for policy planning, leadership, direction, and operation of the Bureau. The Administrator's Office also manages security for the distribution system, property management, organization development, human resources management, public information/involvement, long-range planning, community relations, legislative activities, and liaison with the Commissioner-in-Charge and City Council. Property management responsibilities also include grounds maintenance and operation and maintenance of the drinking fountains.

The Finance and Support Services Group provides financial planning, rate setting, budgeting, accounting, payroll, auditing, financial analyses, and fiscal monitoring functions for the Bureau. It also provides clerical support for Bureau staff in the Portland Building. This group manages the interfaces to City financial and personnel systems, and other Bureau-specific software systems.

The Customer Services Group is responsible for managing billing, customer accounts, answering customer inquiries, processing customer payments, reading meters and providing water service inspections. This group is also responsible for the repair, maintenance and replacement of meters. It also includes a quality assurance group.

The Maintenance and Construction Group is responsible for repair, operation, and maintenance of the distribution system. Installation, operation, and maintenance functions related to mains, services, valves, hydrants, and leak detection are performed by this group. This work includes direct services and related support for control valves, carpentry, purchasing and stores operation, and loss control programs. This group manages the Bureau's two apprentice programs. The emergency crew provides response for outside normal work hour requirements, including main breaks and other emergency responses.

The Engineering Group is responsible for planning, design, and construction of the Water System. In addition, this group serves as customer liaison for new service installation, drafting (including geographic information system), surveying, inspecting, and maintaining records on distribution system improvements. This group manages the Bureau's emergency management program. This group also has responsibility for developing facility standards, asset management, contract management, and developing and managing the Bureau's CIP. Administrative oversight of the Hydroelectric Power function is conducted within this group.

The Resource Protection and Planning Group is responsible for coordination with federal, state and local partners to protect the quality of both of Portland's drinking water sources, invasive species mitigation and environmental compliance. Responsibilities include addressing legislative and regulatory issues and performing research, comprehensive planning on major issues, supply and demand analysis, and coordination of the Regional Water Providers Consortium. This Bureau work group is also responsible for the Bureau's business, residential and multifamily water efficiency programs, water resource education programs, Bureau sustainability efforts, and government relations.

The Operations Group is responsible for the operation and maintenance of water storage and supply, treatment and transmission from the Watershed and the Columbia South Shore and Powell Valley Well Fields. This group operates and maintains the conduits, terminal storage reservoirs, tanks, pump stations, water treatment facilities, pressure regulators, an accredited Laboratory, and the Water Control Center. Work responsibilities include water quality protection, regulatory compliance, laboratory services, system analysis, and addressing water quality customer complaints.

MANAGEMENT PERSONNEL

The following are brief biographies of key management personnel.

Edward Campbell, Director of Resource Protection and Planning, is responsible for resource protection and planning, including coordination with federal, state and local partners on source protection efforts for both of the Bureau's drinking water sources, long-term planning and policy development work, compliance with environmental regulations, and leading the Bureau's regulatory compliance efforts for the surface water treatment requirements of the LT2 Rule and the federal Endangered Species Act. He joined the Bureau in 2004 as an assistant to the Administrator and was selected to lead the Resource Protection and Planning Group in August 2005. Prior to coming to the Bureau, Mr. Campbell served as a senior policy advisor, sustainability coordinator and chief of staff to City Commissioner Dan Saltzman and before that as communications director for Multnomah County Chair Beverly Stein. Mr. Campbell holds a Bachelor of Arts degree in English Literature from the University of Southern California and a Master of Arts degree in English Literature from the University of Virginia.

Cecelia Huynh, Director of Finance and Support Services, is responsible for overall management of financial planning, budgeting, rate setting, accounting, and support services. Ms. Huynh has been working in the Bureau since 1990. She joined the Finance and Support Services Group in 2002 as the budget manager, then served as the finance manager beginning in 2008, and

was appointed as Director of Finance and Support Services in 2012. Ms. Huynh has a Bachelor of Science degree in Finance and Management from Portland State University, Oregon.

Kathryn Koch, Director of Customer Services, is responsible for the overall management of customer services including account services, billing and collection, quality assurance, meter reading, meter maintenance and repair, and data processing. Ms. Koch joined the Bureau in 1990. She serves as a member of the National American Water Works Association Customer Service Committee, the Pacific Northwest Customer Services Committee, and is the founding member and board member of the nationwide Water Customer Care Forum. Ms. Koch holds a Bachelor of Arts degree in English Literature from Pacific University in Forest Grove, Oregon.

Ty Kovatch, Director of Maintenance and Construction, is responsible for overall management of maintenance, construction and support functions, including repair and maintenance of the distribution system, maintenance management system, purchasing and stores operation, fleet, and apprentice programs. Mr. Kovatch joined the City in 2002 where he served as Chief of Staff to Commissioner Randy Leonard, who was Commissioner-in-Charge of the Portland Water Bureau from July 2005 through December 2012. Mr. Kovatch also served as Interim Director of Portland's construction and land use permitting for the Bureau of Development Services, and joined the Portland Water Bureau in 2012. He has a Bachelor of Arts degree in Political Science from Pacific University.

David G. Shaff, Administrator, is responsible for the ongoing operation of the Bureau, as well as security, long-range planning, organization development, facilitation of regional partnerships, and coordination with governments and regulators. Mr. Shaff began working for the City in 1978. He worked for the first 25 years in the Bureau of Human Resources, primarily in Labor Relations. While working in Labor Relations, Mr. Shaff was responsible for negotiating each of the City's collective bargaining agreements multiple times and ended his tenure there as the City's Labor Relations Manager in 2003. He joined Commissioner Leonard's staff in 2004 until he was appointed Interim Administrator of the Bureau in July 2005 and was permanently appointed in July 2006. Mr. Shaff has a Bachelor of Arts degree in Political Science and German from Lewis and Clark College. He received his J.D. from Lewis and Clark Law School in 1983.

Michael Stuhr, Director of Engineering, is responsible for overall management of engineering, its support functions, and administration of the CIP including planning, design, and construction as well as emergency management. Mr. Stuhr joined the Bureau in 2003 and was the Director of Maintenance and Construction during his first two years. Mr. Stuhr has over 30 years experience leading and managing a wide variety of engineering activities and more than 10 years as a senior executive with state, federal, and international experience managing multimillion dollar environmental, water resource, and facilities engineering programs. He is a registered professional Civil Engineer. Mr. Stuhr has a Bachelor of Science degree in Engineering from the United States Military Academy, a Master of Science degree in Geotechnical Engineering from Stanford University, and a Master of Business Administration degree from the University of California, Davis.

Chris Wanner, Director of Operations, is responsible for management of operations and maintenance of surface and groundwater supplies, including treatment, transmission and terminal storage, regulatory compliance, distribution pump stations and tanks, system analysis, and the SCADA system. Mr. Wanner was appointed Director of Operations in 2005. He has State of Oregon certifications at the highest levels for both Water Distribution (WD4) and Water Treatment (WT4) and is a veteran of the United States Army. He has Associate degrees in Computer Technologies and Electronic Engineering from Portland Community College and maintains a State of Oregon electrical license.

BUREAU PROGRAMS

The Bureau's work is organized within seven Bureau Programs. The seven Bureau Programs are as follows.

- The Supply Program is responsible for providing the water that all customers use in the Portland service area, including retail and wholesale customers. The provision of water in the quantities desired by customers is a key portion of the mission of the Bureau. This program includes the activities related to the City's primary Watershed supply, as well as the secondary water supply, the CSS Well Field and Powell Valley wells.

- The Treatment Program is responsible for the ongoing water treatment operations required to meet or exceed federal and state water quality standards. This program currently includes the treatment processes at Headworks, Lusted Hill, and the CSS Well Field facilities.

- The Transmission and Terminal Storage Program is responsible for the conveyance of finished water from the supply sources to the City's retail distribution system or to the service delivery points for wholesale customers. This program also includes the major storage reservoirs, including terminal storage at Powell Butte, Mt. Tabor and Washington Park.

- The Distribution Program is primarily for the conveyance of finished water through the distribution mains from the terminal storage reservoirs to the retail customers. This work includes maintenance of the distribution mains, pump stations and tanks, meters, services, hydrants, valves, gates, fountains, and field support. These various segments of the program cover a wide variety of purposes, such as tanks to store water and maintain system pressures, meters to accurately record usage for billing, hydrants for fire protection and for line flushing, and valves to alter or stop water flows under various circumstances such as line breaks or fire suppression.

- The Regulatory Compliance Program is responsible for meeting or surpassing all federal and state regulatory requirements for drinking water and environmental quality. Regulatory requirements include compliance with ESA, CWA, and various monitoring requirements. Laboratory services are included within this program.

- The Customer Service Program provides services for customers other than the direct supply of water. It includes customer billing, collection, call center, meter reading and inspection. This program also includes water efficiency, security, permits, and maintenance of decorative fountains and grounds for Bureau properties.

- The Administration and Support Program supports other Bureau programs including planning, financial support, data management, and human resource functions. The purpose of this program is to help ensure that the needs of the other programs are met and that City-wide information and services are provided as needed for the direct-service programs to operate effectively.

CAPITAL IMPROVEMENT PLAN

Proceeds of the 2013 Series A Bonds will be used to fund a portion of the costs of the capital improvement plan ("CIP") of the Water System, including additions, improvements, and capital equipment that facilitate supply, treatment, transmission, storage, pumping, distribution, regulatory compliance, customer service and support.

Funding for the CIP is through a combination of cash flow from rates, proceeds from borrowings, project reimbursements, System Development Charges ("SDC"), and interest earnings. The size and timing of future bond issues is determined through analysis of projected capital requirements and Water System financial resources.

THE CAPITAL PLANNING PROCESS

The Bureau focuses its efforts on regulatory compliance elements, improving the condition of its aging infrastructure, and addressing operations and maintenance needs. The CIP addresses longer term infrastructure replacement and maintenance needs, while addressing short-term water system infrastructure needs to ensure compliance with drinking water regulations.

The CIP is the implementation plan for water system improvements. It is updated annually and is the budget and policy tool for the bureau and City Council to direct capital work. The CIP identifies in detail specific projects, their budgets, phasing of components, and the relationship among capital projects.

The CIP process is a bureau-wide collaborative effort of engineers, operations and maintenance managers, financial analysts, and policy staff. Together they bring to bear planning analysis, engineering standards, operational, technical, regulatory and fiscal expertise, and an understanding of external factors affecting bureau operations. The criteria used to select projects for inclusion in the budget include fulfilling service levels, such as those for maintaining pressure and limiting customer outages, operating assets at the most efficient and cost-effective levels, contributing to local and regional sustainability and energy-conservation goals, providing appropriate redundancy within the supply system, complying with all state and federal water-quality regulations, ensuring access to key water-supply facilities, and coordinating with other agency infrastructure projects.

The CIP is reviewed by the Budget Advisory Committee as part of the Bureau's budget request. The Budget Advisory Committee is comprised of Bureau management and staff, citizen volunteers, and specific stakeholder group representatives. The CIP budget priorities focus on water improvements that support other governmental agency capital improvement projects as directed by City Council, continuing to expand the utilization of an asset management plan and computerized maintenance management system to support system maintenance activities, implement the Bull Run HCP, and implement improvements necessary to assure compliance with current safe drinking water regulations, including the LT2 Rule.

In April 2012, City Council adopted the Portland Plan which declared that "we cannot make Portland prosperous, educated, healthy and equitable without providing reliable and quality basic services like public safety, clean water and clean sewer services." City Council has directed all City Bureaus to implement the Portland Plan Five-Year Action Plan and will evaluate the City's progress using twelve Portland Plan Measures of Success. The three Measures most related to the CIP are listed below:

- By 2035, 70 percent of Portlanders take active transportation, transit or carpool to work or work from home.
- By 2035 80 percent of Portlanders live in walkable, complete neighborhoods.
- By 2035, carbon emission levels are 50 percent below 1990 levels.

All Bureau projects complete permit and planning processes which are integrated with the City's vision of strong and vibrant neighborhoods. The Bureau has participated in several CIP projects that support the addition and improvement of Portland's public transit infrastructure and the reduction in carbon emissions.

The Bureau's capital planning process is also guided by the City's Comprehensive Plan which recommends that the Bureau invest in maintaining and developing water system resources. The CIP supports the Comprehensive Public Facilities Plan by maintaining the City's water infrastructure and developing new infrastructure in a responsive and efficient manner.

CAPITAL PROGRAMS AND PROJECTS

The CIP is summarized within the following six Bureau programs with key projects identified:

- **Customer Service:** The Bureau's participation in the City Emergency Coordination Center is the primary project included within this program. Bureau security staff will operate from this location with the Portland Bureau of Emergency Management. In the event of an emergency, all City coordination staff will operate from this center.

- **Distribution:** Approximately $244 million of the CIP is for improvements to the distribution system. Of the total, about $83 million is to be used for direct water line replacement projects, including work initiated by other bureaus and agencies, as well as replacement of the oldest or most deteriorated portions of the distribution system. About $35 million is to continue rehabilitation of the Interstate maintenance building. There is $57 million for the Willamette River Pipe Crossing Project. Almost $16 million is for pump stations and tanks. Other improvements include services, meters, hydrants, fountains, and vehicle and equipment replacement.

- **Regulatory Compliance:** More than $25 million has been planned for improvements to the water supply from the Watershed, principally the Dam 2 Tower Improvements. Construction continues on the HCP Alder Creek project to enhance fish habitat.

- **Supply:** This program includes projects to improve existing facilities and roads in the Watershed and improvements to the groundwater basins. A groundwater system project will reduce the risk of an extended electrical supply outage to the groundwater pump station.

- **Transmission and Terminal Storage:** The major projects in this program includes $35 million to continue construction of the 50 million gallon water storage tank at Powell Butte and $119 million for other enclosed storage including Kelly Butte reservoir and Washington Park reservoir. (See "REGULATORY ENVIRONMENT—CURRENT AND EMERGING REGULATORY ISSUES—Water Quality—Uncovered Finished Drinking Water Reservoirs" herein.) Also included is $33 million for other conduit and transmission main projects.

- **Treatment:** The only project in this program is the Headworks Flow Meters to accurately record treated water flow and regulate chemical additions to the system in compliance with drinking water regulations.

CAPITAL IMPROVEMENT PLAN RESOURCES AND REQUIREMENTS

Capital costs during the forecast period are contained within six programs in the CIP. Summary costs for six of the Bureau Programs are shown in Table 7. Table 8 shows Water Construction Fund Sources and Uses of Funds for the forecast period from FY 2013-14 through FY 2017-18. The Bureau's direct capital requirement forecast for the Water System totals $480.7 million during the five-year period FY 2013-14 through FY 2017-18. During the same period, resources supporting all related capital construction include cash-financed capital funding from rate revenues of $167.8 million, capital charges of $35.6 million, interest income of $1.9 million, and proceeds from borrowings of $293.9 million (net of debt service reserves and not including proceeds of the 2013 Series A Bonds). Bond proceeds (net of debt service reserves) totaling approximately $293.9 million are anticipated in FYs 2014-15 and 2016-17.

As discussed above, the CIP is revised and updated annually. Spending plans are subject to change as the CIP is updated.

Table 7
CITY OF PORTLAND, OREGON
Water Bureau
Forecast Direct Capital Requirements (1)

Fiscal Year Ending June 30	2013-14	2014-15	2015-16	2016-17	2017-18	Total
(In thousands of dollars)						
BUREAU PROGRAM (2)						
Customer Service	$1,807	$0	$250	$500	$500	$3,057
Distribution	44,017	53,981	39,132	49,043	58,024	244,197
Regulatory Compliance	7,737	4,117	9,300	2,350	2,000	25,504
Supply	879	4,712	2,950	3,250	2,500	14,291
Transmission and Terminal Storage	66,770	46,640	22,460	24,300	31,000	191,170
Treatment	2,500	0	0	0	0	2,500
TOTAL BY BUREAU PROGRAM	$123,710	$109,450	$74,092	$79,443	$94,024	$480,719

Notes:

(1) In current dollars based on FY 2013-14 Requested Budget.
(2) Forecast capital costs do not include expensed capital studies or Engineering Operating and Maintenance costs.

Source: City of Portland. Totals may not add due to rounding.

Table 8
CITY OF PORTLAND, OREGON
Water Bureau
Water Construction Fund
Forecast Sources and Uses of Funds (1)

Fiscal Year Ending June 30	2013-14	2014-15	2015-16	2016-17	2017-18
(In thousands of dollars)					
BEGINNING BALANCE (cash)	$116,300	$15,259	$71,226	$12,589	$92,030
RECEIPTS					
Capital Charges	$5,956	$6,545	$7,182	$7,683	$8,215
Bond Proceeds	0	151,249	0	142,640	0
Transfer from Water Fund	32,785	29,370	31,325	36,095	38,265
Interest Income	285	501	249	542	299
TOTAL RECEIPTS	39,026	187,665	38,756	186,960	46,779
TOTAL SOURCES OF FUNDS	$155,326	$202,924	$109,982	$199,548	$138,810
EXPENDITURES					
Capital Reimbursement to Water Fund	$139,802	$131,222	$97,169	$107,001	$126,369
Transfer to Water Bond Sinking Fund	265	476	224	517	274
TOTAL EXPENDITURES	140,067	131,698	97,393	107,518	126,643
ENDING BALANCE	15,259	71,226	12,589	92,030	12,167
TOTAL USES OF FUNDS	$155,326	$202,924	$109,982	$199,548	$138,810

Notes:

(1) Based on FY 2013-14 Requested Budget.

Source: City of Portland. Totals may not add due to rounding.

FINANCIAL POLICIES AND PLANNING STANDARDS

FIVE-YEAR FINANCIAL PLAN

The Bureau annually prepares a five-year financial plan. The financial plan includes both operating and capital expenditures and expected rates for each year of the five-year forecast period. The financial plan reflects the financial implications of the Bureau's priorities and service levels.

Key policy objectives in developing the Bureau's financial plan include:

- Providing for sufficient annual funding of operating, maintenance, and capital programs approved by City Council;
- Providing for rates and charges to customers that are equitably based on generally accepted cost-of-service principles and as directed by City Council;
- Achieving a balance between financial health, operational effectiveness, infrastructure condition, effective management, rate affordability, and a skilled and experienced workforce;
- Optimizing capital financing strategies; and
- Ensuring the maintenance of appropriate and adequate cash balances (operating fund, construction fund, and rate stabilization account) consistent with City policies, bond covenants, and industry standards.

FINANCIAL OPERATIONS POLICIES

Operating and Construction Cash Reserves

The Bureau plans for a minimum fiscal year-end operating cash reserve of $15.0 million. The Bureau also plans for a construction cash reserve of $5.0 million or one-half of annual debt-financed capital expenditures, whichever is less. Bond sales are scheduled every one or two years when the balance in the Construction Fund approaches this level.

Rate Stabilization Account

In 2006, the Bureau established a Rate Stabilization Account within the Water Operating Fund to smooth rate increases over the financial planning period and beyond. This smoothing is one of the Bureau's key financial planning objectives and is aimed at maintaining financial stability and predictability. It also helps ensure that debt service coverage meets planning standards. (See "POLICIES AND PLANS GOVERNING BOND ISSUES" below.) The Bureau began funding the Rate Stabilization Account beginning in FY 2006-07, and plans to maintain a minimum balance of $2.0 million as defined in the Master Second Lien Water System Revenue Bond Declaration. This minimum Rate Stabilization Account balance also serves as an available useable reserve for unforeseen requirements. The FY 2011-12 ending balance in the Rate Stabilization Account is $20.0 million. (See "FINANCIAL PROJECTIONS-USE OF RATE STABILIZATION ACCOUNT-Table 18" herein.)

POLICIES AND PLANS GOVERNING BOND ISSUES

Since 1993, the Bureau has regularly funded a portion of its CIP through the issuance of revenue bonds. Though not required by bond covenants, the Bureau's planning standard is to set rates such that Net Revenues provide at least 1.90 times debt service coverage on First Lien Bonds. Additionally, the Bureau will maintain a planning standard that results in Stabilized Net Revenues providing at least 1.75 times coverage on the Combined Annual Debt Service (as defined in the Master Second Lien Water Revenue Bond Declaration) for both First and Second Lien Bonds. These standards exceed the debt service coverage required by the bond covenants.

WATER SYSTEM OPERATING AND FINANCIAL INFORMATION

OVERVIEW

This section provides operating and financial information specifically related to the Water System. Operating and Financial information for the City as a whole is found in Appendix D, "CITY OPERATING AND FINANCIAL INFORMATION."

FUND ACCOUNTING SYSTEM

The Bureau's financial reporting system is organized into three separate funds. The funds and their financial reporting purpose are described as follows:

> **Water Operating Fund.** This fund serves as the operating fund of the Bureau and, with the exception of debt service, all expenditures are made from this fund for operation, maintenance and capital assets. Receipts from the sale of water are the primary source of revenue for the Water Operating Fund. The cash flow in this fund determines the need for rate increases. The Rate Stabilization Account is within the Operating Fund.
>
> **Water Construction Fund.** By City Charter stipulation, this fund is the recipient of proceeds from bond sales. Other sources of revenue include reimbursements for capital expenditures, such as main extensions and service installations, system development charges and sale of assets. Also, a portion of the water sales revenues is transferred to this fund to finance routine system repair and replacement. The Water Construction Fund reimburses the Water Operating Fund for capital asset requirements including capitalized overhead, capitalized interest, and the cost of issuing bonds.
>
> **Water Bond Sinking Fund.** This fund provides for the repayment of bonded debt and interest. The revenue bond reserve accounts are also maintained in the Sinking Fund. The source of revenue for this fund is a transfer from the Water Operating Fund, reduced by interest earnings on fund balances and a transfer from the Water Construction Fund of interest earnings on bond proceeds.

These three funds enable the Bureau to segregate resources for specific uses and ensure that reserves are not used to supplement daily operating needs. Maintenance of the fiscal integrity of each fund is a key objective of the Bureau's financial planning and analysis efforts. The Bureau's fund structure provides for the accounting and control of expenditures and differs from the account structure described in the First Lien Bond Ordinance and the Master Second Lien Water System Revenue Bond Declaration. The accounts described in the First Lien Bond Ordinance and the Master Second Lien Water System Revenue Bond Declaration have been established to identify priority claims on Water System revenues and are accounted for separately.

The Water Growth Impact Trust Fund was closed at the end of FY 2008-09. This fund was used to accumulate resources earmarked for future requirements resulting from growth in demand by wholesale customers. Since 1995, wholesale contributions were suspended with the deletion of the growth section in the 1980 25-year wholesale agreements. In FY 2007-08, the Bureau Operating Fund refunded to the respective wholesale customers the amounts paid into this fund, including interest. On July 1, 2008, the Bureau transferred to the Operating Fund the remaining fund balance of about $1.9 million.

AUDITS

Moss Adams LLP conducted audits of the financial statements for the City of Portland and related entities from FY 2002-03 through FY 2011-12. Appendix C, "EXCERPTS OF AUDITED FINANCIAL STATEMENTS," contains audited financial statements of the Water Fund. A complete copy of the City's FY 2011-12 audit is available on the City's web site at: http://www.portlandoregon.gov/bfs/60673. The City's web site is listed for reference only, and is not part of this Official Statement.

HISTORICAL OPERATING RESULTS

The Bureau has collected Water System revenues sufficient to provide for all operating expenses, to pay debt service, and to meet debt service coverage requirements on its outstanding Water System revenue bonds and general obligation water bonds. In addition to meeting these requirements, the Bureau provides cash financing of its capital program by setting current rates and charges at a level sufficient to meet planned debt service coverage targets.

The Bureau continues to maintain a target minimum debt service coverage ratio of 1.90 times on First Lien Bonds (higher than the 1.25 times coverage required by the First Lien Bond Ordinance). In September 2006, a new minimum debt service coverage ratio

target was implemented for combined first and second lien bond debt service of 1.75 times using Stabilized Net Revenues as defined in the Master Second Lien Water System Revenue Bond Declaration. The Master Second Lien Water System Revenue Bond Declaration requires 1.10 times debt service coverage using Stabilized Net Revenues.

Historical operating results of the Bureau's financial operations are shown in the following table. Between FY 2007-08 and FY 2011-12, Gross Revenues grew at a compound annual rate of 6.4 percent. Gross revenues in FY 2009-10, FY 2010-11, and FY 2011-12 increased primarily due to the rate change for water sales and increased delinquency receipts. Operating Expenses during the five-year period averaged $65.4 million.

Over the last five years, Net Revenues have provided from 2.39 times to 3.17 times debt service coverage on First Lien Bonds. Debt service coverage fell to its lowest level in FY 2011-12 due to higher debt service requirements. The Bureau transferred $1.56 million to the Rate Stabilization Account in FY 2011-12. Stabilized Net Revenues provided 2.00 times coverage on the combined annual debt service for both First and Second Lien Bonds in FY 2011-12.

Audited statements of revenues, expenses, and changes in fund net assets, the statement of net assets, and the statement of cash flows for the Water Fund are presented in Appendix C.

Table 9
CITY OF PORTLAND, OREGON
Water Bureau
Historical Operating Results

Fiscal Year Ending June 30	2007-08	2008-09	2009-10	2010-11	2011-12
(in thousands of dollars)					
GROSS REVENUES (1)					
Operating Revenues	$89,261	$94,163	$107,333	$112,191	$124,114
Interest Earnings	2,786	2,620	950	650	719
Capital Charges	11,214	8,650	5,405	5,859	7,523
Total Gross Revenues	$103,261	$105,433	$113,688	$118,700	$132,356
OPERATING EXPENSES (1) (2)					
Operating Expenses	$64,430	$64,275	$66,159	$64,373	$67,670
NET REVENUES	$38,831	$41,158	$47,529	$54,327	$64,686
DEBT SERVICE					
First Lien Bonds	$12,267	$14,993	$17,667	$22,143	$27,026
Second Lien Bonds	$4,550	$4,547	$4,551	$4,546	$4,550
G.O. Bonds (3)	$1,620	$1,621	$1,624	$1,617	$0
DEBT SERVICE COVERAGE (x)					
First Lien Bonds	3.17	2.75	2.69	2.45	2.39
First and Second Lien Bonds	2.31	2.11	2.14	2.04	2.05
All Debt	2.11	1.94	1.99	1.92	2.05
COVERAGE BASED ON STABILIZED NET REVENUES					
NET REVENUES					
Less: Transfers to Rate Stabilization Account	($3,500)	($2,250)	($7,400)	($3,290)	($1,560)
Plus: Transfers from Rate Stabilization Account	0	0	0	0	0
STABILIZED NET REVENUES	$35,331	$38,908	$40,129	$51,037	$63,126
DEBT SERVICE COVERAGE (x)					
First and Second Lien Bonds	2.10	1.99	1.81	1.91	2.00

Notes:

(1) As defined in First Lien Bond Ordinance and does not reflect adjustments to second lien calculations as defined in the new Master Second Lien Declaration.
(2) Operating expenses include the Bureau's share of the City's Post-Employment Retirement Benefits (OPEB) starting in FY 2007-08.
(3) There are no outstanding General Obligation Bonds subsequent to the final principal payment on October 1, 2010.

Source: City of Portland. Totals may not add due to rounding.

WATER SYSTEM CUSTOMERS AND DEMAND

The Bureau has both retail and wholesale water customers. Wholesale customers pay based on their use of the system in accordance with their contracts. Retail customers pay for the residual requirements.

The Bureau currently provides water on a wholesale contract basis to 19 water purveyors, which include cities, water districts, and private water companies. Annual water sales to these customers account for about 10% to 15% percent of annual water sale revenues, and about 40 percent of annual water demand. In 2006 and 2007, the City entered into new wholesale contracts with 13 cities and public water districts. These contracts account for over 99 percent of wholesale water sales. Five of the 13 wholesale contracts have a 10-year term and eight wholesale contracts have a 20-year term. The remaining wholesale contracts are with six small private water companies, whose contracts renew every five years. In 2009, the City signed a contract with a 20th wholesale customer, the City of Sandy, for water to be delivered beginning no later than November 2013. (See "THE WATER SYSTEM – WATER SYSTEM OPERATIONS-Wholesale Water Sales Agreements" herein.)

Under the wholesale water sales agreements, wholesale rates are determined according to a complex set of variables and methodologies. Each wholesale customer's rate is determined based on some variables that are specific to that customer, as well as some variables that apply to all the wholesale customers. Each wholesale customer has an annual guaranteed purchase quantity (i.e., "take or pay" quantity) that equals or may exceed the prior year's guaranteed quantity, but may not be less than the prior quantity without permission of the Bureau. Each customer also selects its seasonal and maximum day peak demand quantities. Costs are allocated to each wholesale customer based on these various demand amounts and on the specific water system assets that the respective wholesale customers use. Other variables impacting all wholesale customers are the Bureau's budget and an index of municipal bond rates. The rates are then calculated for each wholesale customer on an annual basis.

The amount of revenue to be generated from wholesale customers under these contracts is guaranteed to be about $17.7 million in FY 2012-13 based on the take-or-pay provisions in the contracts, and the guaranteed water quantities requested by each wholesale customer.

The table below shows the guaranteed purchase quantities, percent of sales, rates, and guaranteed revenues from each wholesale customer for FY 2012-13.

Table 10
CITY OF PORTLAND, OREGON
Water Bureau
Wholesale Customers' Demand and Sales

Wholesale Customer	Earliest Date for Contract Termination	FY 2012-13 Guaranteed Purchase Quantities (million ccf)	FY 2012-13 Rate (1)	Guaranteed Revenue	% of Total Wholesale Sales
Tualatin Valley Water District (2)	06/30/18	6.4	$0.951	$6,106,998	34%
Rockwood Water PUD	06/30/26	3.8	$0.598	$2,276,078	13%
Gresham, City of	06/30/26	3.7	$0.612	$2,239,771	13%
Tualatin, City of (2)	06/30/18	2.1	$0.859	$1,844,326	10%
Tigard, City of (3)	06/30/16	2.0	$1.557	$3,039,062	17%
West Slope Water District	06/30/26	0.7	$1.459	$996,724	6%
Raleigh Water District	06/30/26	0.3	$0.772	$263,698	1%
Palatine Hill Water District	06/30/27	0.2	$1.812	$380,208	2%
Lake Grove Water District (2)	06/30/18	0.1	$1.281	$187,523	1%
Valley View Water District	06/30/26	0.1	$1.895	$149,804	1%
Pleasant Home Water District (2)	06/30/18	0.1	$0.864	$84,322	<1%
Lusted Water District	06/30/26	0.1	$0.979	$85,987	<1%
Burlington Water District	06/30/26	< 0.1	$1.447	$30,782	<1%
Six private water companies (4)	10/26/16	< 0.1	$0.606	$20,696	<1%
TOTAL		19.7		$17,705,980	100%

Notes:

(1) Wholesale rates are calculated using methodologies that differ from inside-city retail rates, and generally do not include distribution system costs.
(2) These customers with 10-year agreements are obligated to continue to purchase water through at least June 2018.
(3) The City of Tigard has given notice that it does not intend to renew its water sales agreement with City but has indicated it would like to negotiate with the City to provide a backup source of water.
(4) Six private water companies include GNR Corporation, Green Valley Water Company, Hideaway Hills Water Company, Lorna Water Company, Skyview Acres Water Company, and Two Rivers Water Association.

Source: City of Portland. Totals may not add due to rounding.

The following tables present information for the past five fiscal years on the number of accounts by wholesale and retail customers, consumption amounts in hundreds of cubic feet ("ccf"), and a list of major users of the Water System.

Table 11
CITY OF PORTLAND, OREGON
Water Bureau
Historical Number of Accounts

Fiscal Year Ending June 30	2007-08	2008-09	2009-10	2010-11	2011-12
TOTAL RETAIL CUSTOMERS (1)	182,000	183,400	181,100	181,200	180,600
WHOLESALE CUSTOMERS					
Tualatin Valley Water District	57,019	57,395	57,711	58,117	58,598
Rockwood Water PUD	13,189	13,025	13,218	13,204	13,234
Gresham, City of	16,758	16,233	16,304	16,291	16,866
Tualatin, City of	6,642	6,658	6,631	6,653	6,650
Tigard, City of	18,018	17,848	17,988	18,129	18,265
West Slope Water District	3,356	3,312	3,212	3,316	3,236
Raleigh Water District	993	998	1,000	1,003	1,006
Palatine Hill Water District	605	609	613	604	604
Lake Grove Water District	1,233	1,233	1,248	1,271	1,270
Valley View Water District	375	376	376	379	379
Pleasant Home Water District	531	532	533	541	545
Lusted Water District	410	410	410	408	410
Burlington Water District	118	118	118	118	118
Six private water companies (2)	217	217	213	212	213
Total Wholesale Customers	119,464	118,964	119,575	120,246	121,394
Grand Total	301,464	302,364	300,675	301,446	301,994

Note:

(1) In FY 2011-12, the number of retail customers has changed to number of accounts. In the prior years, the number of services or meters was reported.
(2) Six private water companies include GNR Corporation, Green Valley Water Company, Hideaway Hills Water Company, Lorna Water Company, Skyview Acres Water Company, and Two Rivers Water Association.

Source: City of Portland. Totals may not add due to rounding.

Table 12
CITY OF PORTLAND, OREGON
Water Bureau
Historical Consumption (ccf)

Fiscal Year Ending June 30	2007-08	2008-09	2009-10	2010-11	2011-12
TOTAL RETAIL CUSTOMERS	27,900,000	27,700,000	27,200,000	25,500,000	25,400,000
WHOLESALE CUSTOMERS					
Tualatin Valley Water District	6,552,747	6,491,709	6,339,320	6,589,619	6,536,389
Rockwood Water PUD	2,949,288	3,146,955	3,104,794	3,002,205	2,993,525
Gresham, City of	3,188,393	2,844,941	2,954,078	2,798,389	2,888,362
Tualatin, City of	2,808,598	2,772,672	2,308,092	2,257,048	2,493,131
Tigard, City of	2,520,796	2,517,159	2,550,541	2,542,052	2,383,738
West Slope Water District	616,787	618,975	537,173	515,508	506,309
Raleigh Water District	269,936	262,403	251,703	228,480	237,637
Palatine Hill Water District	194,072	210,651	165,945	144,926	142,337
Lake Grove Water District	178,660	168,365	147,040	144,940	146,325
Valley View Water District	68,607	79,487	62,805	53,520	56,390
Pleasant Home Water District	87,979	85,836	70,529	66,122	66,842
Lusted Water District	71,985	77,076	65,673	67,420	63,103
Burlington Water District	20,591	23,378	28,318	23,624	20,306
Six private water companies (1)	26,699	29,439	31,483	27,603	24,388
Total Wholesale Customers	19,555,138	19,329,046	18,617,494	18,461,456	18,558,782
Grand Total	47,455,138	47,029,046	45,817,494	43,961,456	43,958,782

Note:

(1) Six private water companies include GNR Corporation, Green Valley Water Company, Hideaway Hills Water Company, Lorna Water Company, Skyview Acres Water Company, and Two Rivers Water Association.

Source: City of Portland. Totals may not add due to rounding.

Table 13
CITY OF PORTLAND, OREGON
Water Bureau
Major Users for Fiscal Year 2011-12

Retail Commercial Users	Annual Usage (ccf)	% of Annual Usage (ccf) to Total Retail Customers	Revenue
Siltronic Corp.	727,582	2.9%	$2,226,981
City of Portland, Bureau of Parks	237,367	0.9%	794,377
Oregon Health and Sciences University	227,499	0.9%	719,400
Precision Castparts	210,013	0.8%	650,003
Port of Portland	170,375	0.7%	559,106
Portland Public Schools	168,047	0.7%	612,451
Darigold, Inc.	136,329	0.5%	419,604
Portland State University	115,837	0.5%	391,278
Vigor Industrial, LLC	108,681	0.4%	336,718
Multnomah County, Facilities & Property Management	106,404	0.4%	365,764
Largest Wholesale Users			
Tualatin Valley Water District	6,536,389		$5,959,386
Tigard, City of	2,383,738		2,906,335
Gresham, City of	2,888,362		1,997,540
Rockwood Water PUD	2,993,525		1,996,609
Tualatin, City of	2,493,131		1,853,713
West Slope Water District	506,309		881,224

Note:

(1) Siltronic stopped producing 150 millimeter-sized silicon wafers at its Portland, Oregon location in the fall of 2012 but will continue to produce 200 millimeter-sized wafers at this site. If Siltronic closes the Portland, Oregon factory, the estimated retail rate impact to ensure that revenues are sufficient to pay debt service and meet debt service coverage planning standards could be as much as two percent.

Source: City of Portland.

RATES AND RATE SETTING

Section 11-105 of the City Charter authorizes the City Council to fix fees and charges for connection to and use of the Water System. Water user fees and connection charges are formally reviewed every year by the Bureau. Rates required to support proposed activities for the next year are submitted by the Bureau Administrator to the City Council for review and approval.

Rates and charges for water services are established annually based, in part, upon cost of service principles and methodologies recommended by the American Water Works Association (the "AWWA"). The process used by the Bureau follows the Commodity Demand method promulgated by the AWWA. Under this approach, developed for the Bureau by Raftelis Financial Consultants, Inc in 2006, Water System costs are allocated to customers based on their average and peak water demand characteristics and use of the system. Retail rates are then established based on the residual financial requirements of the system.

The Bureau received approval from the State of Oregon Water Resources Department for the City's Water Management and Conservation Plan (the "WMCP"). The WMCP final order states that the Bureau will perform a comprehensive study of conservation rate structure options within the next five years and determine if a change in rate structure is desirable or necessary. The conservation rate structure study is underway and will be completed by Spring 2013. Once the rate study and any action taken by the City have been completed, the information will be submitted to the Oregon Water Resources Department as part of the required progress report under OAR 086-0120(4) by May 25, 2015. Any change in the rate structure that might be implemented by the City is not expected to affect total revenues that would be collected to fund operations, and the earliest any action would be implemented would be FY 2014-15. Additionally, the Bureau will continue to maintain a planning standard that results in Stabilized Net Revenues providing at least 1.75 times coverage on the Combined Annual Debt Service (as defined in the Master Second Lien Water Revenue Bond Declaration) for both First and Second Lien Bonds.

The following tables summarize the Bureau's historical rates and water monthly bills for various customers as well as a comparison of residential monthly water bills for various systems within the State of Oregon and the nation.

Table 14
CITY OF PORTLAND, OREGON
Water Bureau
Historical Water Rates

Fiscal Year Ending June 30	2007-08	2008-09	2009-10	2010-11	2011-12
WATER USAGE RATES					
Retail Volume Rate (per ccf) (1)	$1.86	$2.07	$2.44	$2.733	$3.086
BASE CHARGE (2)					
Total Base Charge per Bill	$19.66	$18.51	$22.13	$24.79	$27.99
Water Quarterly Billed Customer per month (2)	$6.55	$6.17	$7.38	$8.26	$9.33
Water Monthly Billed Customer (2)	$19.66	$18.51	$22.13	$24.79	$27.99
MONTHLY WATER BILLS (2)					
Residential (5 ccf) (3)	$15.85	$16.52	$19.58	$21.93	$24.76
Medium Commercial (100 ccf) (4)	$205.66	$225.51	$266.13	$298.09	$336.59
Large Commercial (20,000 ccf)	$37,220	$41,419	$48,822	$54,685	$61,748
Low Income Residential (5 ccf) (5)	$9.50	$9.92	$9.79	$10.96	$12.38

Notes:

(1) Applies to substantially all retail customers.
(2) Beginning in FY 2007-08, the Bureau is responsible for the total base charge. In prior years, the base charge for FY 2007-08 reflected only the Bureau's share of the base charge rather than the total base charge.
(3) Current usage by a typical single family residential customer has dropped from 6 ccf to 5 ccf.
(4) Current usage by a medium commercial customer has dropped from 200 ccf to 100 ccf.
(5) Bills for low income residential customers include a discount on water usage and the base charge. In the prior years, the FY 2007-08 low income monthly bill reflected only the Bureau's share of the base charge rather than the total base charge. Beginning in FY 2009-10 the low income discount increased from 40% to 50% of a 5ccf bill.

Source: City of Portland.

Table 15
CITY OF PORTLAND, OREGON
Water Bureau
Comparison of Residential Monthly Water Bills

WATER UTILITY (Effective Date) (1)	Residential Monthly Bill For 5 ccf	Residential Monthly Bill For 10 ccf
Local:		
Rockwood Water PUD (2012)	$16.82	$26.84
Milwaukie, City of (2012)	17.22	29.17
Tualatin, City of (2008)	18.35	29.80
Tualatin Valley Water District (2012)	20.89	34.14
Beaverton, City of (2012)	23.35	36.70
PORTLAND, CITY OF (2012)	26.65	43.25
Lake Oswego, City of (2012)	30.58	42.95
Gresham, City of (2012)	31.06	42.01
Tigard, City of (2013)	33.76	51.89
West Slope Water District (2013)	34.60	56.15
National :		
Charlotte (2012)		25.57
Denver (2013)		25.73
Cincinnati (2013)		27.40
Sacramento (unmetered) (2012)		37.79
Kansas City (2012)		49.19
Seattle (winter) (2013)		58.50

Notes:

(1) Calculations are based on rates in effect as noted, and the City's rates are effective July 1, 2012 through June 30, 2013.

Source: City of Portland, Portland Water Bureau.

BILLINGS AND COLLECTIONS

The City implemented the Cayenta Utilities billing system in April 2006 to serve the Bureau and the City's Bureau of Environmental Services. The City's Revenue Bureau operates the billing system with costs paid by the Bureau.

As of fiscal year ending June 30, 2012, residential accounts make up the majority of the 180,600 water services with commercial accounts totaling approximately 19,400 (including 3,500 fire line) water services. In addition to water service accounts, there are over 6,600 sewer-only accounts, most of which are billed bi-monthly.

Billing for most retail water customers (about 173,400) is on a quarterly cycle. A monthly pay option is available for qualified customers billed on a quarterly basis. Approximately 7,200 large retail commercial accounts, multi-family users, and wholesale purveyors are billed on a monthly basis.

A financial assistance program for water and sewer services is available to single family residential retail in-city customers with gross monthly household incomes at or below 60 percent of the average State of Oregon median family income. For FY 2012-13, assistance included a flat quarterly bill discount for water customers of $40.00, crisis assistance vouchers (maximum of $150 per year, including $75 for water and $75 for sewer), in-home plumbing repair assistance for owner-occupied properties up to $2,600, and free conservation devices. In addition, a Utility Safety Net Program is available to ratepayers as a last resort to prevent shut off of service if they experience a significant change in household income due to employment, medical, or other emergencies.

Most water bills are collected along with the payment for sewer service. When a bill for water or wastewater service becomes delinquent (21 days after billing) a reminder notice is sent on day 35. Additional notices are sent up to termination of service at eight weeks. Even though the customer is still in arrears at the termination date, the City will set up special payment arrangements rather than shut off water service if it is in the best interest of both the City and the customer to continue water service. In recent years, a number of efficiencies have been added to the Bureau's billing and collection system, including the ability for customers to make payments electronically.

The Bureau currently bills most of its customers on a quarterly basis. The FY 2011-12 Adopted Budget included a budget note directing the Bureau to adjust its billing system and business processes so that the majority of the water and wastewater customers are billed monthly. City Council has revised their initial direction to provide a monthly statement to those who sign up for electronic billing. The Bureau is working to implement a voluntary electronic monthly statement program. Customers may request an electronic monthly statement, but the meter reading frequencies would not change.

SYSTEM DEVELOPMENT CHARGES

An SDC is levied by the Bureau for each new water service connected to the Water System inside the City boundaries. The Bureau's SDC is in accordance with ORS 223.297-314, and is a reimbursement fee based on the estimated replacement cost of existing water facilities, less depreciation. The amount charged is dependent on the size of the service with larger services paying a greater amount based on the capacity of the meter. Services dedicated to fire flow and temporary construction services do not pay an SDC. FY 2011-12 SDC revenues were $1.7 million.

Table 16
CITY OF PORTLAND, OREGON
Water Bureau
FY 2012-13 SDC Charge by Meter/Service Size

Size of Meter/Service	Charge
5/8”	$1,817
¾”	2,727
1”	4,544
1-1/2”	9,087
2”	14,360
3”	26,925
4”	44,875
6”	89,750
8”	143,600
10”	258,121

Source: City of Portland.

Beginning with the FY 1999-00 rate ordinance, City Council approved an “Affordable Housing SDC Fee Waiver.” For any new qualified residential construction that meets certain affordability requirements, the entire SDC can be waived for a 5/8” metered service. If a 3/4” metered service is requested, only the SDC dollar amount for the 5/8” metered service is waived. Multi-family housing SDC waivers are also available if certain affordability requirements are met. FY 2011-12 fee waivers (including accessory dwelling units waivers) totaled $133,570. Loss of these revenues is made up through general water retail rates and charges. City Council extended the suspension of system development charges for construction of accessory dwelling units or the conversion of structures to accessory dwelling units until July 31, 2016. FY 2011-12 accessory dwelling unit SDC waivers were $55,414.

OTHER FINANCIAL INFORMATION

Outstanding Water System Debt

Upon the issuance of the 2013 Series A Bonds, the City will have an estimated total of $588,095,000 of Water System revenue bonds outstanding. The following table shows outstanding Water System revenue bonds as of the delivery of the 2013 Series A Bonds.

Table 17
CITY OF PORTLAND, OREGON
Water Bureau
Outstanding Water System Revenue Bonds
As of the Delivery of the 2013 Series A Bonds

Issue	Dated	Final Maturity	Original Par Amount	Amount Outstanding
First Lien Water System Revenue Bonds (1)				
2004 Series B (1)	5/6/04	10/1/13	$61,900,000	$2,900,000
2006 Series B	9/21/06	10/1/20	44,000,000	37,455,000
2008 Series A	8/7/08	11/1/33	79,680,000	72,245,000
2010 Series A	2/11/10	5/1/35	73,440,000	68,710,000
2011 Series A	3/22/11	5/1/36	82,835,000	79,360,000
2012 Series A	8/2/12	4/1/37	76,510,000	73,790,000
Subtotal			$418,365,000	$334,460,000
Second Lien Water System Revenue Bonds (2)				
2013 Series A	5/2/13	10/1/37	$253,635,000	$253,635,000
TOTAL			$672,000,000	$588,095,000

Notes:

(1) All Water System Revenue Bonds, 2004 Series A are refunded with proceeds of the 2013 Series A Bonds. Excludes 2014 through 2023 maturities of the Water System Revenue Bonds, 2004 Series B, which are refunded with proceeds of the 2013 Series A Bonds.

(2) All Second Lien Water System Revenue Bonds, 2006 Series A are refunded with proceeds of the 2013 Series A Bonds.

Source: City of Portland.

FINANCIAL PROJECTIONS

KEY FORECAST ASSUMPTIONS

Financial projections for the Water System through FY 2017-18 are shown in the following three tables.

Key assumptions underlying the expenditure forecast include:

- Annual inflation for operating requirements for FY 2013-14 of 5.1 percent, and 3.0 to 3.9 percent for the remaining forecast period.

- The Bureau's cost related to the City's outstanding pension obligation bonds rises from $3.1 million in FY 2013-14 to $4.4 million in FY 2017-18, for a total of $19.0 million over the forecast period.

- Pension system contribution rates average 17.5 percent of salary for FY 2013-14 and rise to 22.0 percent by FY 2017-18. (See "CITY OPERATING AND FINANCIAL INFORMATION—PENSION PLANS" in Appendix D.)

- All costs related to compliance with the LT2 Rule including regular monitoring and capital projects, but excluding construction of a UV treatment plant due to the Bureau's success in achieving the treatment variance.

- No capital or operating costs have been included to fluoridate Portland drinking water supply.

Key assumptions underlying the revenue forecast include:

- Retail water demand is projected to decline 0.5 million ccf in FY 2013-14 and FY 2014-15, 0.25 million ccf in FY 2015-16 and then remain at 25.75 million ccf for the remainder of the forecast period.

- Wholesale water sales across the forecast period are based on the 5-, 10- and 20-year contract terms. Wholesale revenues are forecast at $16.1 million in FY 2013-14, or an average of about $17.9 million per year over the five-year planning period. Increasing annual revenues over this period are due to modest inflationary increases and new capital investments that serve wholesale customers.

- City of Tigard wholesale contract terminates on June 30, 2016. The remaining customers with 10-year agreements continue to purchase water through the forecast period. The City of Sandy will pay for water beginning November 2013.

- User charges are projected to increase, as described below. (See "FINANCIAL PROJECTIONS—FORECAST RATES AND CHARGES.")

- In developing the five year projections, it has been assumed that additional First Lien Bonds or Second Lien Bonds will be issued to fund capital program requirements. Assumptions underlying the debt service forecast include:

    - An assumed true interest cost of 4.00 percent for the 2013 Series A Bonds.

    - The First Subaccount of the Second Lien Bond Reserve Account for the 2013 Series A Bonds will be cash funded with bond proceeds.

    - Additional revenue bonds are anticipated in FY 2014-15 and FY 2016-17 within the five-year period through FY 2017-18 totaling $318.8 million. A six percent true interest cost is assumed for all additional First Lien or Second Lien Bonds. The subaccount of the Revenue Bond Reserve Account for each issue is anticipated to be funded with bond proceeds at 100 percent of maximum annual debt service for each series of bonds.

USE OF RATE STABILIZATION ACCOUNT

In 2006, the Bureau established a Rate Stabilization Account to smooth rate increases while ensuring that coverage meets planning standards. (See "PROVISIONS OF THE 2013 SERIES A BONDS – RATE STABILIZATION ACCOUNT" and "FINANCIAL POLICIES AND PLANNING STANDARDS – Rate Stabilization Account.") The following table shows projected ending balances in the Rate Stabilization Account.

Table 18
CITY OF PORTLAND, OREGON
Water Bureau
Projected Rate Stabilization Account
Ending Balance (1)

Fiscal Year	Ending Balance
2012-13 (2)	$22,600,000
2013-14	14,500,000
2014-15	5,700,000
2015-16	4,600,000
2016-17	2,800,000
2017-18	4,700,000

Notes:

(1) The Rate Stabilization Account serves as a contingency for unforeseen expenditures, and to build account balance for the purpose of smoothing rate increases.
(2) Fiscal Year 2012-13 Rate Stabilization Account balance reflects efforts by the Bureau to build fund balance for use in future years as shown.

Source: City of Portland.

FORECAST REVENUES AND EXPENDITURES

Forecast sources and uses of the Water Operating Fund for FY 2013-14 through FY 2017-18 are shown in Table 19. Table 20 shows historical, projected, and forecast results of the Water System's financial operations for FY 2007-08 through FY 2017-18, including trends in revenues, expenses, and debt service coverage.

The principal resources available to the Water Operating Fund are service charges and fees. FY 2012-13 water rates and charges were adopted by City Council on May 30, 2012, representing an average effective retail rate increase of 7.6 percent from FY 2011-12 amounts. The average effective retail rate increase planned for FY 2013-14 is 7.8 percent, 14.4 percent in FY 2014-15 and FY 2015-16, 9.0 percent in FY 2016-17, 8.0 percent in FY 2017-18. All future rate increases are subject to City Council approval. As shown in the following table, receipts increase from $282.8 million to $334.3 million over the period FY 2013-14 to FY 2017-18 and represent an average annual increase of 4.3 percent. This increase is primarily the combination of projected increases in water rates (see "FORECAST RATES AND CHARGES" below) offset with decreases in the reimbursement of capital expenditures from the Construction Fund. No change in the number of retail customer accounts served by the Water System is expected. Overall retail water demand is projected to decline 0.5 million ccf in FY 2013-14 and FY 2014-15, 0.25 million ccf in FY 2015-16 and then remain at 25.75 million ccf for the remainder of the forecast period. The other major revenue source for the Water Operating Fund is the reimbursement of all capital expenditures by the Water Construction Fund. This amount averages $120.3 million per year over the forecast period.

The Bureau projects Water Operating Fund expenditures to increase over the forecast period of FY 2013-14 through FY 2017-18 from $299.2 million to $332.4 million. Total operation and maintenance expenses are projected to increase from $83.9 million to $97.7 million over the same interval, representing an average annual increase of 3.9 percent. In addition to operation and maintenance expenses, Water Operating Fund requirements include capital outlays (reimbursed by the Water Construction Fund), debt service payments (transfers to the Water Bond Sinking Fund), cash transfers (rate-financed capital) to the Water Construction Fund, General Fund overhead, and Utility License Fee cash transfers to the General Fund, and Pension Obligation Bond Debt.

As is shown in Table 20, sufficient Net Revenues are projected to meet and pay debt service on revenue bonds, including planned future issues. Net Revenues provide from 2.22 to 2.36 times debt service coverage for First Lien Bonds, which exceeds the Bureau's 1.90 planning standard for First Lien Bond debt service coverage. Net Revenues also provide from 1.58 to 1.78 times coverage on Combined Annual Debt Service for both First and Second Lien Bonds. Stabilized Net Revenues provide not less than 1.75 times coverage on Combined Annual Debt Service for First and Second Lien Bonds.

Table 19
CITY OF PORTLAND, OREGON
Water Bureau
Water Operating Fund
Forecast Sources and Uses of Funds (1)

Fiscal Year Ending June 30	2013-14	2014-15	2015-16	2016-17	2017-18
(In thousands of dollars)					
BEGINNING BALANCE (Cash)	$23,295	$15,004	$15,002	$15,001	$15,004
RECEIPTS:					
Water Sales	$138,972	$155,026	$174,158	$189,754	$203,605
Interagency Receipts	1,719	1,747	1,815	1,869	1,933
Transfers from Construction Fund	139,802	131,222	97,169	107,001	126,369
Interest Income	150	125	101	93	94
Other Miscellaneous Receipts	2,131	2,117	2,199	2,265	2,342
TOTAL RECEIPTS	282,775	290,236	275,441	300,982	334,342
Transfer from Rate Stabilization Account	8,100	8,800	1,100	1,800	0
TOTAL SOURCES OF FUNDS	$314,170	$314,040	$291,543	$317,783	$349,346
EXPENDITURES					
Operation and Maintenance	$83,913	$87,133	$91,190	$94,573	$97,712
Transfers to Construction Fund	32,785	29,370	31,325	36,095	38,265
Direct Capital Costs	122,060	112,823	78,052	87,311	106,009
General Fund Overhead	4,560	4,729	4,913	5,061	5,233
Utility License Fee	5,990	6,717	7,636	8,366	9,046
Pension Obligation Bond Debt	3,092	3,533	3,871	4,125	4,367
Transfer to Water Bond Sinking Fund	46,766	54,734	59,555	67,248	71,813
TOTAL EXPENDITURES	299,166	299,039	276,542	302,779	332,445
Transfer to Rate Stabilization Account	0	0	0	0	1,900
ENDING BALANCE	15,004	15,002	15,001	15,004	15,001
TOTAL USES OF FUNDS	$314,170	$314,040	$291,543	$317,783	$349,346

Notes:

(1) Based on FY 2013-14 Requested Budget.

Source: City of Portland. Totals may not add due to rounding.

Table 20
CITY OF PORTLAND, OREGON
Water Bureau
Historical, Projected and Forecast Operating Results (1)

	Historical					Projected	Forecast				
Fiscal Year Ending June 30	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**
(in thousands of dollars)											
GROSS REVENUES (2)											
Operating Revenues	$89,261	$94,163	$107,333	$112,191	$124,114	$131,607	$142,822	$158,889	$178,171	$193,888	$207,879
Interest Earnings	2,786	2,620	950	650	719	469	554	784	560	857	664
Capital Charges	11,214	8,650	5,405	5,859	7,523	7,596	5,747	6,329	6,957	7,451	7,976
Total Gross Revenues	$103,261	$105,433	$113,688	$118,700	$132,356	$139,672	$149,123	$166,001	$185,689	$202,195	$216,519
OPERATING EXPENSES (2) (3)											
Operating Expenses	$64,430	$64,275	$66,159	$64,373	$67,670	$73,962	$74,636	$77,839	$81,734	$84,972	$87,886
NET REVENUES	$38,831	$41,158	$47,529	$54,327	$64,686	$65,710	$74,486	$88,162	$103,955	$117,223	$128,633
DEBT SERVICE (4)											
First Lien Bonds	$12,267	$14,993	$17,667	$22,143	$27,026	$31,511	$31,495	$39,717	$44,337	$52,336	$56,706
Second Lien Bonds	$4,550	$4,547	$4,551	$4,546	$4,550	$4,550	$15,654	$15,651	$15,653	$15,650	$15,653
G.O. Bonds **(5)**	$1,620	$1,621	$1,624	$1,617	$0	$0	0	0	0	0	0
Total Debt Service	$18,438	$21,161	$23,842	$28,306	$31,576	$36,061	$47,149	$55,368	$59,990	$67,987	$72,359
DEBT SERVICE COVERAGE (x)											
First Lien Bonds	3.17	2.75	2.69	2.45	2.39	2.09	2.36	2.22	2.34	2.24	2.27
First and Second Lien Bonds	2.31	2.11	2.14	2.04	2.05	1.82	1.58	1.59	1.73	1.72	1.78
All Debt	2.11	1.94	1.99	1.92	2.05	1.82	1.58	1.59	1.73	1.72	1.78
COVERAGE BASED ON STABILIZED NET REVENUES (6)											
NET REVENUES	$38,831	$41,158	$47,529	$54,327	$64,686	$65,710	$74,486	$88,162	$103,955	$117,223	$128,633
Less: Transfers to Rate Stabilization Account	($3,500)	($2,250)	($7,400)	($3,290)	($1,560)	($2,600)	$0	$0	$0	$0	($1,900)
Plus: Transfers from Rate Stabilization Account	-	-	-	-		-	$8,100	$8,800	$1,100	$1,800	$0
STABILIZED NET REVENUES	$35,331	$38,908	$40,129	$51,037	$63,126	$63,110	$82,586	$96,962	$105,055	$119,023	$126,733
DEBT SERVICE COVERAGE (x)											
First and Second Lien Bonds	2.10	1.99	1.81	1.91	2.00	1.75	1.75	1.75	1.75	1.75	1.75

Notes:

(1) Forecast based on FY 2013-14 Requested Budget.

(2) As defined in the First Lien Bond Ordinance.

(3) Operating expenses include the Bureau's share of the City's Post-Employment Retirement Benefits (OPEB) starting in FY 2007-08. There are no OPEB reporting requirements under Government Accounting Standards Board (GASB) rules prior to FY 2007-08. Beginning FY 2012-13, OPEB is excluded as a non-cash item in conformance with the Master Second Lien Bond Declaration.

(4) Includes projected issuance of First Lien Bonds in FY 2014-15 and FY 2016-17 and projected issuance of 2013 Series A Bonds.

(5) There are no outstanding General Obligations Bonds subsequent to the final principal payment on October 1, 2010.

(6) The Second Lien Rate Stabilization Account was created with the issuance of the 2006 Series A Bonds. There were no Second Lien Bonds prior to FY 2006-07.

Source: City of Portland. Totals may not add due to rounding.

FORECAST RATES AND CHARGES

To generate the operating revenues in the Bureau's financial forecast, the Bureau will need to increase its user charges. The following table presents the approved rates for FY 2012-13 and projected rates for FY 2013-14 through FY 2017-18 that generate the required revenues. These rates are based on the revenue requirements from the Bureau's financial plan and the cost allocation methodology of its cost-of-service rate model.

The Bureau assesses both a volumetric usage charge and a fixed monthly base charge. The average volumetric charge for retail users is forecast to increase from $3.321 per ccf in FY 2012-13 to $5.517 per ccf by FY 2017-18. This increase corresponds to an average annual increase of 10.7 percent. A monthly base charge is imposed on water services connected directly to the Water System. Such base charge is in addition to the rates charged for water usage. The fixed monthly base charge accounts for approximately 24 percent of the Bureau's user charge revenues. The total fixed monthly base charge for quarterly billed customers is projected to increase from $10.04 per month in FY 2012-13 to $16.68 per month by FY 2017-18. The typical 5 ccf single residential family monthly water bill is projected to increase from $26.65 in FY 2012-13 to $44.27 in FY 2017-18.

Table 21
CITY OF PORTLAND, OREGON
Water Bureau
Current and Forecast Water Rates and Water Bills

Fiscal Year Ending June 30	2012-13	2013-14 (1)	2014-15	2015-16	2016-17	2017-18
WATER USAGE RATES						
Retail Volume Rate (per ccf) (2)	$3.321	$3.580	$4.096	$4.686	$5.108	$5.517
BASE CHARGE						
Total Base Charge per Bill	$30.12	$32.47	$37.15	$42.50	$46.33	$50.04
Quarterly Billed Customer per Month	$10.04	$10.82	$12.38	$14.17	$15.44	$16.68
Monthly Billed Customer	$30.12	$32.47	$37.15	$42.50	$46.33	$50.04
MONTHLY WATER BILLS						
Residential (5 ccf)	$26.65	$28.72	$32.86	$37.60	$40.98	$44.27
Medium Commercial (100 ccf)	$362.22	$390.47	$446.75	$511.10	$557.13	$601.74
Large Commercial (20,000 ccf)	$66,450	$71,632	$81,957	$93,763	$102,206	$110,390
Low Income Residential (5 ccf) (3)	$13.33	$14.36	$16.43	$18.80	$20.49	$22.14
Retail Effective Rate Changes	7.6%	7.8%	14.4%	14.4%	9.0%	8.0%

Notes:

(1) Reflects rate schedule submitted for the FY 2013-14 Requested Budget. and is subject to City Council approval. Rates shown for future years are based on projections which may be updated or revised. Future year rates are subject to City Council review and approval.

(2) Applies to substantially all in-city retail customers.

(3) Bills for low income residential customers include a discount on water usage and the base charge.

Source: City of Portland.