

# Exhibit B

## **Portland Water Bureau FY 2013-14 Adopted Budget**

CIP Excerpt



# WATER BUREAU

## FY 2013-14

### Adopted Budget

CIP Excerpt



June 2013

## **Capital Budget**

### **Capital Summary**

#### **CIP Highlights**

The Portland Water Bureau's Five-Year Capital Improvement Plan (CIP) includes \$488.8 million in water system infrastructure needs for the five year period beginning in FY 2013-14 (FY 2013-14 dollars).

City Council has directed the bureau to present its Five-Year Capital Improvement Plan to Council within the first quarter of FY 2013-14. In this report and presentation, the bureau will identify any expected changes to the plan and the impact of deferring or eliminating projects. This presentation will also allow Council to provide preliminary direction on the bureau's capital budget prior to the FY 2014-15 budget process.

The budget program framework structure consists of seven primary budget programs that are the top level organizing elements in the City budget documents, and 22 water programs that further delineate the bureau's work and assets.

Much of the CIP is for continuing improvements to the transmission and terminal storage system to comply with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). No additional surface water treatment improvements are needed as long as Portland is able to continue to meet a list of conditions set forth by Oregon Health Authority (OHA) as part of the Bull Run Treatment Variance. OHA has the authority for enforcing all safe drinking water requirements, including the LT2 rule, in Oregon and is still requiring the covering or replacement of the open reservoirs.

The Transmission and Terminal Storage program is now about 39% of the CIP and the Distribution program is about 50% as it includes the Interstate facility improvement and Willamette River pipe crossing projects. Projects to meet bureau obligations of the Bull Run Habitat Conservation Plan, in the Regulatory Compliance program, constitutes about 5%, while Supply, Customer Service, Treatment and Admin & Support programs make up the remaining 6%.

Notable projects include continuing modifications to the Bull Run Dam 2 outlet tower, rehabilitation of the Interstate maintenance facility, Willamette River crossing pipe, Fulton pump station improvements and completion of the City Emergency Coordination Center.

CIP projects related to compliance with LT2 includes completing construction of a second 50 million gallon water storage tank at Powell Butte, continuing construction of the Kelly Butte replacement tank, beginning design of the Washington Park area storage and piping adjustments needed to disconnect the Mt. Tabor open reservoirs.

#### **Major Issues**

The current FY 2013-18 CIP continues to balance longer term infrastructure replacement and maintenance needs, while addressing short-term water system infrastructure needs to ensure compliance with drinking water regulations.

The CIP priorities for the bureau's budget and capital program include:

- ◆ Supporting other governmental agency capital improvement projects (e.g., light rail, Sellwood Bridge, Columbia River crossing) as directed by City Council.
- ◆ Continuing to expand the utilization of an asset management system plan and the computerized maintenance management system to support planning and implementation of system maintenance activities.
- ◆ Continuing to implement the Bull Run Habitat Conservation Plan, which is a comprehensive multi-decade Clean Water and Endangered Species Act compliance agreement for the Bull Run Watershed.
- ◆ Continuing to implement improvements necessary to assure compliance with current safe drinking water regulations, including LT2.

### Changes from Prior Year

The bureau developed the FY 2013-18 Capital Improvement Plan using the same budget process it has used for the past five years in response to the priorities identified by the City Council and key stakeholders. The CIP is more than \$123.9 million for FY 2013-14 and totals about \$488.8 million (FY 2013-14 dollars) over the entire five years.

The CIP includes several new projects in the Distribution and Supply programs. These projects are visibly marked as "New" in the project descriptions. One of these projects is an interagency project with Bureau of Environmental Services which began in FY 2012-13 as a minor project. The Rose City Sewer project is now over \$500,000 because of recent scope changes and will be a new major project to finish next year.

This CIP also contains three changes in major project total cost estimates. The Bull Run Dam 2 Tower project cost has decreased due to savings during the construction phase. The Washington Park project has increased its cost estimate following the completion of its Basis of Design Report which identified greater design complexity and seismic risks. The third project, Tabor Reservoir Adjustments, has reduced its total cost estimate because part of the original scope has become a separate new major project more consistent within the Distribution program (Division St. Piping).

### Council Goals and Priorities

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 bureaus to implement the Portland Plan Five-Year Action Plan and will evaluate the City's progress using the Portland Plan Measures of Success. The three measures most related to the CIP are listed below.

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

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 capital projects that support the addition and improvement of Portland's public transit infrastructure the reduction in carbon emissions.

### Criteria

The bureau's methodology and criteria for the selection and ranking of capital projects depends on the magnitude of the project and duration of the project's lifecycle. For many projects, a Project Validation Report is developed evaluating possible project alternatives and recommends those which need further capital undertaking. Senior management then approves projects to continue with a larger planning effort. To develop this report, the bureau's Planning section uses industry practices in cost benefit analysis and risk assessment to identify and weigh alternative solutions as well as a comparison with bureau service standards. The bureau selects projects based on these quantitative analyses but also considers the logistics of rate increases, shared cost with interagency partners, revenue opportunities as well as regulatory requirements.

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, provide appropriate redundancy within the supply system, comply with all state and federal water-quality regulations, ensure access to key water-supply facilities, and coordinate with other agency infrastructure projects. Examples of six major new projects that fulfill these criteria include the following:

- ◆ The Bertha Tank Project connects pressure zones to maintain adequate service standards for pressure and to minimize water outages.
- ◆ The Raymond Tank Project reduces operating cost by eliminating a pump station, qualifies for Energy Trust incentives and meets city Conservation and Sustainability service standards.
- ◆ The Division St. Piping Project enables the disconnection of the open reservoir required by LT2.
- ◆ The Carolina Pump Main Project provides supply redundancy and supports customer service standards and allows the bureau to coordinate with the Bureau of Environmental Services projects.
- ◆ Two Bull Run watershed road projects ensure that the bureau meets service levels for roadway conditions to critical facilities.

## Capital Planning and Budgeting

### Capital Planning Process

The bureau engages both City Council and the public in developing its budget and the CIP. All bureau capital projects that affect neighborhoods or that require city, state, and/or federal permit review processes include public involvement elements. The CIP is an annual planning process which allows a review of capital projects and programs.

The Engineering Services Group receives requests and ideas for CIP projects from a number of sources. Internal bureau stakeholders groups including Asset Management, Development Services, Design or Construction, Operations, Maintenance and Construction, and Resource Protection all may articulate the need for a capital project; projects generated from Engineering Services' CIP Planning unit which are listed in master plans or public facility plans; recommendations from the Asset Management Group that include business case studies. In addition,

the bureau receives notifications from other agencies or bureaus planning or producing work that may impact the water system. External requests may also come from citizens, wholesale customers, the City Council, and developer requests for projects administered through Engineering Services Group's Development Services unit.

**City Comprehensive Plan**

The City's Comprehensive Plan recommends that the bureau invests 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. To support business operations and resident comfort, capital projects provide emergency repairs, new services, replacement of aging assets as well as addition of improved or backup services to ensure long term expansion of neighborhoods and business centers.

The bureau supports energy efficiency policies through the industrial water conservation program, and through the planning and construction of capital facilities with sustainability as an important criterion. The bureau also partners with other bureaus to support projects which develop or use alternative power sources to lower carbon emissions.

The bureau's implementation of the Bull Run Habitat Conservation Plan is a multi-decade commitment to compliance with Clean Water and Endangered Species Act requirements for the Bull Run watershed. In addition, all water projects planned for construction that may impact environmentally sensitive locations inside the urban area include studies of the environmental review, recommendations for mitigation, and any necessary City and federal permit processes that apply, including environmental zone reviews and Endangered Species Act consultations.

Further, the bureau's Grounds and Parks program ensures that the grounds and landscaping around water facilities are neat and attractive.

**Financial Forecast Overview**

The CIP is an integral element in the development of the bureau's financial plan because the size of the CIP has a significant effect on water rates. The mix of projects in the CIP is also important. Projects related to supply and transmission enhancements serve both wholesale and retail customers alike, but costs for projects related to the distribution system can only be allocated to retail customers. Finally, the method chosen to finance projects affects rates as well. Specifically, the balance between debt, financed from bonds, and cash, obtained from water sales, affects the amount of money the bureau must have on hand to cover the debt service, and the bond terms and structures.

Bureau staff have calculated the projected water rates for the five year financial forecast based on the CIP, operations and maintenance budgets, and other factors affecting rates. Those factors include projected demand estimates, inflation factors, and other economic factors such as interest rates.

## Retail Rate Impact

The revenue forecasts refer to the costs that are expected to be recovered from water sales, regardless from whom they will be collected. The revenue requirements must be allocated between wholesale and retail customers to determine the specific customer class rate revenue impact. Wholesale customer contract provisions specify the method of allocating costs to wholesale customers. Retail rates are set on a residual cash basis to recover whatever portion of the total cash basis revenue requirements that is not allocable to wholesale customers. After deducting all other revenue sources, including wholesale revenues, the bureau's average effective retail rate increase for FY 2013-14 is 3.6%.

## Water Construction Fund

Capital investments in the water system are funded through the Water Construction Fund. The fund is financed from three major sources: transfers from the Water Fund (primarily water sales revenues), net proceeds from revenue bond sales, and construction fund revenues (e.g., direct capital reimbursements, system development charges, and interest earnings). These monies fund indirect capital costs (overhead and interest) as well as direct project costs. For this CIP, approximately 28% of capital requirements are funded with current resources, and the balance will come from bond proceeds.

**Cash/Water Sales Financing:** The bureau has two debt service coverage planning standards for rate setting. The bureau's target minimum debt service coverage ratio is 1.90 on first lien bonds (1.25 per bond covenant) and the debt service coverage ratio on combined first and second lien bonds is 1.75 stabilized net revenue (1.10 per bond covenant). In managing the second lien-stabilized test, the bureau employs a rate stabilization account that also serves the dual purpose of a rainy day fund. Managing these two ratios together reflects the bureau's desire to optimize its capital financing strategies, thus maximizing its existing resources.

**Debt Financing:** Pursuant to the City Charter, state statutory authority, and City Council approval, the bureau may issue debt in the form of revenue bonds. By City Charter, the Water Construction Fund is the recipient of net proceeds from bond sales to fund capital improvements. Bond reserves are deposited in the Water Sinking Fund. The bureau plans to issue revenue bonds approximately every two years to provide necessary debt financing for the capital program.

**Water Construction Fund Revenues:** The bureau's level of fund revenues is determined mainly by the actions of external parties, with the majority of these revenues coming from service and main installations (\$2.7 million in FY 2013-14), System Development Charges (\$1.5 million in FY 2013-14) and capital revenue from interagency projects (\$1.5 million in FY 2013-14).

## Capital Studies Non-Capital Expenses

The CIP also includes a small portion of project expenditures that cannot be funded through the Water Construction Fund. These expenditures generally fall into the grouping of capital studies, preliminary engineering, and other work that does not meet the capital criteria of a betterment, improvement, or addition to the water system as set forth by city policy or industry practice. The CIP includes about \$3.2 million in FY 2013-14 for work not eligible to be capitalized. The five-year total is \$18.3 million. As an operating cost, these are 100% cash-financed, usually through water sales.

**Asset Management and Replacement Plans**

The replacement value of Portland Water Bureau's assets are estimated close to \$7 billion. The goal of asset management is to recommend the most cost-effective ways to maintain, repair, or replace the bureau's assets to meet the specified level of service.

At the heart of asset management is risk assessment. Risk assessment is an analysis of the likelihood and consequences of asset failure. The likelihood of failure analysis involves estimating the actual useful life of the asset using the designed capacities, operating environment, condition assessments, and other factors. The asset failure analyses takes into account the effects on the bureau's budget, the environment and the community. The asset management plans provide specific strategies for proactively managing asset risk to ensure the longest possible useful life as well as the most practical replacement strategy.

Key improvements that maximize pump station operations were a result of analyses conducted by the Asset Management unit. For example, the bureau designated the most efficient pumps as lead pumps and made other improvements. In the first year, efficiencies realized at the pump stations reduced electricity consumption by approximately 1,000,000 kilowatt hours, which reduced electricity charges by an estimated \$79,000 that year.

Replacement of key system assets is one of the most important areas of the CIP budget. The Asset Management approach uses business case analyses to evaluate the benefits and costs of alternatives before the bureau makes an investment. In addition to the CIP, the operating budget includes a preventive maintenance and repair funding to accomplish immediate and routine maintenance. The bureau's goals are to make decisions based on criteria and data to protect the public's investment in its drinking water system.

**Capital Programs and Projects****Capital Program Descriptions**

The CIP is categorized into seven program areas as described below. The listed amounts in parentheses are for the entire five-year period.

**Customer Service Program**

Capital projects in the Customer Service program, totaling \$3.1 million, address the need to improve security at critical facilities and to make improvements to the bureau's grounds and parks. A major project in this program is the City Emergency Coordination Center.

**Distribution Program**

The Distribution Program, with a budget of \$242.5 million, addresses the reliability and expansion of the piping, pumping and storage network that primarily distributes water from terminal storage reservoirs to retail customers. It addresses the ongoing installation and replacement need for 2,100 miles of distribution mains, including control valves, fire hydrants, and customer service connections, as well as pump stations, storage tanks, large diameter distribution system transmission mains, and pressure regulating stations. The program also provides for relocation

and other adjustments to water pipes and facilities to accommodate transportation and other public infrastructure projects. Rehabilitation and improvement of drinking fountains and the replacement of the Interstate maintenance facility are also included in the program. Vehicle and equipment replacement and improvements to support facilities are also included in the program.

### **Regulatory Compliance and Water Quality Program**

The Regulatory Compliance and Water Quality program, \$25.5 million, includes improvements to the Bull Run water source. The program ensures that water throughout the water system meets federal and State of Oregon drinking water quality standards. This plan continues funding of the federally approved Habitat Conservation Plan.

### **Supply Program**

The Supply Program, \$14.3 million, includes both the watershed areas and groundwater system. Projects in the Bull Run watershed address reliability of the bureau's principal water supply source. The program's objectives include maintaining the reliability of the water supply through effective management of the watershed assets.

The Columbia South Shore Well Field (CSSWF) is Portland's second water source, augmenting Bull Run and serving as the region's backup water supply. The CSSWF enables the bureau to continue to serve customers when there is an interruption of the Bull Run surface supply. The Bull Run supply can be interrupted by major storm events that result in unacceptable levels of turbidity, drought conditions that restrict supply, conduit operation interruption, or other natural or human-caused events. The groundwater supply allows the bureau to continue to operate without constructing and operating a costly surface water filtration plant. The groundwater portion of the program focuses on maintaining the installed capacity and reducing vulnerability of the CSSWF. The work includes maintenance and improvements to wells, pumps, collection mains, and the disinfection treatment of groundwater. This CIP does not include major expansion of the CSSWF beyond the current capacity. This CIP funds projects to reduce the vulnerabilities in the Groundwater Pump Station as well as other projects to repair, replace and upgrade the groundwater supply system.

### **Support Program**

The Support program, \$10 million, addresses non asset specific work such as master planning and other similar support functions. Master planning focuses on identifying the need and timing of infrastructure acquisition or improvements and the most effective asset management strategies to maximize infrastructure investments. The bureau has several studies planned in this CIP related to its tanks, pump stations and mains. These studies guide the selection and design of major capital projects for external construction as well as the many smaller mains constructed by crews to reduce leaks.

### **Transmission and Terminal Storage Program**

The Transmission and Terminal Storage program, \$191.0 million, provides for the rehabilitation, replacement, and expansion of the primary transmission pipelines and terminal storage reservoirs that make up the supply backbone of the water system.

In FY 2009-10, work began on storage projects to achieve compliance with the LT2 rule as written. The rule requires that water systems with uncovered finished water reservoirs, like those at Mt. Tabor and Washington Park, either cover the reservoirs or provide treatment at the outlets of the reservoirs to inactivate *Cryptosporidium*, *Giardia* and viruses. A plan explaining the schedule and manner for bringing Portland into compliance with the covered storage requirements of the rule was approved by the EPA in March, 2009.

The plan describes how the bureau intends to build additional and replacement enclosed drinking water storage and establishes deadlines for the disconnection of the Mt. Tabor (December 31, 2015) and Washington Park (December 31, 2020) uncovered reservoirs.

On February 10, 2012, PWB sent a request to OHA for a schedule extension to delay the disconnection dates to 2024 and 2026. On May 17, 2012, OHA denied the bureau's request for an adjustment. The decision by OHA means that Portland's existing regulatory schedule to end the use of the uncovered reservoirs by December 31, 2020 remains in effect.

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 to OHA in early February and on April 29, 2013, OHA denied the request in a response to Commissioner Novick.

**Treatment Program**

Currently, this program funds only the design and construction of flow meters at Headworks to improve the bureau's ability to comply with primary drinking water standards.

**Funding Sources**

See the Financial Forecast Overview section above for an explanation of funding sources for the CIP.

**Major Projects**

**Customer Service**

The city Emergency Coordination Center is the sole major project in this program. This is a joint project with the Bureau of Internal Business Services - Facilities Division. Security staff will operate from this center with the Portland Bureau of Emergency Management and in the event of an emergency, all city coordination staff will operate from this center.

**Distribution**

There are ten major projects in this program which is about 50% of the CIP. Construction will begin on the \$12 million Fulton pump station replacement and will be completed on the 1.3 million gallon (MG) Forest Low tank. The bureau will continue the pre-design of the Willamette River Pipe crossing.

Construction continues on utility relocation in support of the Portland to Milwaukie Light Rail project, and the Interstate facility improvements. Construction will start on the next phase of the Carolina Pump Main Extension, replacement of the Fulton Pump Station, and Division St Piping.

## Regulatory Compliance

There are two major projects in this program both of which support the Bull Run Watershed Habitat Conservation Plan. The Dam 2 Tower multilevel intake project is scheduled to be operational in FY 2013-14 and will allow the bureau to better control the release of water to enhance downstream conditions for anadromous fish species. Construction is also scheduled to be completed on the Alder Creek project to enhance fish habitat. Other projects include funding for multiple conservation easements and fish habitat improvements.

## Supply

There are three major projects in this program to improve existing facilities in the Bull Run watershed and groundwater basins. Two are continuing road improvements for access to key water supply facilities. The remaining major project in this program reduces the risk of an extended electrical supply outage to the groundwater pump station.

## Support

No major projects are proposed in this program which funds multi-year general engineering planning studies.

## Transmission and Terminal Storage

There are four major projects in this program that respond to the LT2 regulations that require the disconnection of unenclosed water storage facilities from the drinking water distribution system. The bureau will complete construction of the second 50 million gallon water storage tank at Powell Butte, continue construction of the 25 million gallon tank at Kelly Butte, make adjustments at Mt. Tabor Reservoir and begin design of enclosed storage Washington Park.

## Treatment

Work related to adding fluoride to the City's water supply has been halted, so the sole 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.

## Net Operating and Maintenance Costs or Savings

Operating and maintenance costs, when applicable, are estimated as part of the project feasibility studies and preliminary evaluations. The costs generally include labor, electricity or fuel, and chemicals. Changes in the cost of energy and chemical use are normally much easier to identify and estimate than labor or efficiency savings.

Much of the CIP is dedicated to the ongoing renewal and replacement of the backbone water system, the pipes, valves, hydrants and other system appurtenances. These long life passive assets, typically buried and not visible, do not require much routine operations and maintenance. Following initial installation, only occasional specific maintenance is completed, such as pipeline flushing, verifying water control valve operation and fire hydrant flow testing. Furthermore, with 2,100 miles of pipe, more than 45,000 active valves, 14,000 hydrants and thousands of other appurtenances, it is clear that only a very small fraction of the bureau's assets are renewed each year, and therefore there is no apparent change in operations and maintenance expense.

For example, the replacement of pipelines with a high frequency of leaks will result in reduced reactive operations and maintenance costs due to fewer leak repairs. However, the remaining distribution system continues to deteriorate such that the operations and maintenance budget cannot be appreciably reduced. Other infrastructure, such as a new pump station, would increase operations and maintenance costs as a result of energy consumption. Most improvements are to reconstruct existing facilities, so the net change in operations and maintenance expense is not significant.

An example of a new facility is the Emergency Coordination Center where the bureau portion of the annual building expense is estimated to be \$300,000 when occupied, starting in FY 2013-14.

This table summarizes project expenses by capital programs. Only projects that are budgeted within the five-year capital plan are displayed.

Bureau Capital Program Project	Prior Years	Revised	Adopted	Capital Plan				5-Year Total
		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	
<b>Customer Service</b>								
Emergency Coordination Center	1,855,692	4,400,000	1,807,000	0	0	0	0	1,807,000
Security and Emergency Management	1,313,000	0	0	0	250,000	500,000	500,000	1,250,000
<b>Total Customer Service</b>	<b>3,168,692</b>	<b>4,400,000</b>	<b>1,807,000</b>	<b>0</b>	<b>250,000</b>	<b>500,000</b>	<b>500,000</b>	<b>3,057,000</b>
<b>Distribution</b>								
Bertha Service Area Improvements	0	0	430,000	426,000	0	0	0	856,000
Carolina PS Main Extension Phase 2	0	0	690,000	2,494,000	0	0	0	3,184,000
Distribution Mains	39,788,521	7,105,000	11,582,000	13,911,000	15,875,000	16,775,000	17,460,000	75,603,000
Division St Piping	0	0	1,480,000	200,000	0	0	0	1,680,000
Field Support	12,777,143	2,550,000	3,755,600	3,501,500	3,388,900	3,460,138	3,459,338	17,565,476
Forest Park Low Tank	1,197,665	5,305,000	2,210,000	0	0	0	0	2,210,000
Fountains	403,065	130,000	0	0	0	0	0	0
Fulton Pump Station Improvements	1,966,496	575,000	2,220,000	6,740,000	100,000	0	0	9,060,000
Hydrants	2,971,880	1,500,000	1,100,000	1,200,000	1,200,000	1,200,000	1,200,000	5,900,000
Interstate Facility Rehabilitation	4,884,083	7,490,000	12,360,000	16,248,390	6,138,422	560,000	0	35,306,812
Meters	5,359,638	1,300,000	1,000,000	1,590,000	1,800,000	1,800,000	1,800,000	7,990,000
Portland to Milwaukie Light Rail	354,080	1,340,000	1,062,000	0	0	0	0	1,062,000
Pump Stations and Tanks	6,347,090	420,000	500,000	510,000	1,480,000	1,098,000	1,415,000	5,003,000
Raymond Tank Supply Improvements	0	0	125,000	410,000	0	0	0	535,000
Rose City Sewer Rehabilitation Services	0	0	2,000	0	0	0	0	2,000
Services	16,060,341	4,850,000	3,910,000	4,000,000	4,000,000	4,000,000	4,000,000	19,910,000
Willamette River Pipe Crossing	181,988	200,000	460,000	2,600,000	5,000,000	20,000,000	28,540,000	56,600,000
<b>Total Distribution</b>	<b>92,291,990</b>	<b>32,765,000</b>	<b>42,886,600</b>	<b>53,830,890</b>	<b>38,982,322</b>	<b>48,893,138</b>	<b>57,874,338</b>	<b>242,467,288</b>
<b>Regulatory Compliance</b>								
Bull Run Dam 2 Tower	9,919,660	18,830,000	5,975,000	475,000	0	0	0	6,450,000
HCP Alder Creek Fish Passage	35,530	250,000	458,000	0	0	0	0	458,000
Water Quality and Regulatory Compliance	2,346,392	2,270,000	1,304,000	3,642,000	9,300,000	2,350,000	2,000,000	18,596,000
<b>Total Regulatory Compliance</b>	<b>12,301,582</b>	<b>21,350,000</b>	<b>7,737,000</b>	<b>4,117,000</b>	<b>9,300,000</b>	<b>2,350,000</b>	<b>2,000,000</b>	<b>25,504,000</b>
<b>Supply</b>								
Bull Run Watershed	23,567,610	160,000	380,000	780,000	2,500,000	2,750,000	2,000,000	8,410,000
Groundwater	2,380,200	740,000	300,000	450,000	450,000	500,000	500,000	2,200,000
Groundwater Electrical Supply Improvements	51,927	70,000	79,000	1,992,000	0	0	0	2,071,000
Road 10 MP 0.6-1.8	0	0	60,000	840,000	0	0	0	900,000
Road 1008 Paving	0	0	60,000	650,000	0	0	0	710,000
<b>Total Supply</b>	<b>25,999,737</b>	<b>970,000</b>	<b>879,000</b>	<b>4,712,000</b>	<b>2,950,000</b>	<b>3,250,000</b>	<b>2,500,000</b>	<b>14,291,000</b>
<b>Support</b>								

**Public Utilities Service Area**

This table summarizes project expenses by capital programs. Only projects that are budgeted within the five-year capital plan are displayed.

Bureau Capital Program Project	Prior Years	Revised	Adopted	Capital Plan				5-Year Total
		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	
Planning	2,333,768	1,500,000	1,500,000	1,500,000	2,000,000	2,500,000	2,500,000	10,000,000
<b>Total Support</b>	<b>2,333,768</b>	<b>1,500,000</b>	<b>1,500,000</b>	<b>1,500,000</b>	<b>2,000,000</b>	<b>2,500,000</b>	<b>2,500,000</b>	<b>10,000,000</b>
<b>Transmission/Terminal Storage</b>								
Conduits and Transmission Mains	14,887,168	190,000	425,000	8,500,000	12,600,000	5,000,000	7,000,000	33,525,000
Kelly Butte Reservoir	6,275,779	11,950,000	34,910,000	27,000,000	4,970,000	0	0	66,880,000
Powell Butte Reservoir 2	41,667,396	47,500,000	27,460,000	7,700,000	0	0	0	35,160,000
Tabor Reservoir Adjustments	344,838	300,000	225,000	1,140,000	1,990,000	0	0	3,355,000
Washington Park	724,476	150,000	3,580,000	2,300,000	2,900,000	19,300,000	24,000,000	52,080,000
<b>Total Transmission/Terminal Storage</b>	<b>63,899,657</b>	<b>60,090,000</b>	<b>66,600,000</b>	<b>46,640,000</b>	<b>22,460,000</b>	<b>24,300,000</b>	<b>31,000,000</b>	<b>191,000,000</b>
<b>Treatment</b>								
Headworks Flow Meters	0	100,000	2,500,000	0	0	0	0	2,500,000
<b>Total Treatment</b>	<b>0</b>	<b>100,000</b>	<b>2,500,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,500,000</b>
<b>Total Requirements</b>	<b>199,995,426</b>	<b>121,175,000</b>	<b>123,909,600</b>	<b>110,799,890</b>	<b>75,942,322</b>	<b>81,793,138</b>	<b>96,374,338</b>	<b>488,819,288</b>

# Portland Water Bureau

Capital Program	Revised		Adopted		Capital Plan			
Project	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Customer Service</b>								
<b>Emergency Coordination Center</b>								
	<b>Confidence:</b>	Optimal			<b>Total Project Cost:</b>	9,763,000		<b>Area:</b> Southeast
					<b>Original Cost:</b>	9,763,000		<b>Objective:</b> Replacement
<b>Project Description</b>								
<p>A two-year City/County planning effort determined that all emergency management programs should be at one location. This new center will be the hub for emergency services for the Portland Bureau of Emergency Management and the Portland Water Bureau. The Portland Water Bureau's Security and Emergency Management staff will occupy the facility full time. During emergency activation, the City will coordinate response from this new center to manage the event. Construction began in FY2012-13 and will complete in FY2013-14. The bureau is contributing about \$10 million towards the total project cost of \$20 million. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.</p>								
<b>Total Expenditures</b>	1,855,692	4,400,000	1,807,000	0	0	0	0	1,807,000
<b>Net Operations and Maintenance Costs</b>			0	300,000	300,000	300,000	300,000	
<b>Security and Emergency Management</b>								
					<b>Total Project Cost:</b>	Ongoing		<b>Area:</b> Undetermined
	<b>Confidence:</b>	Optimal			<b>Original Cost:</b>	Ongoing		<b>Objective:</b> Maintenance & Repair
<b>Project Description</b>								
<p>The bureau is committed to increasing flexibility and preparedness to meet future security challenges, to enhance security throughout the water system and to modernize security practices and infrastructure. Projects funded by this budget will include physical security improvements to major and smaller facilities as well as improved security in the overall water distribution system and control/communications system. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.</p>								
<b>Total Expenditures</b>	1,313,000	0	0	0	250,000	500,000	500,000	1,250,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	
<b>Distribution</b>								
<b>NEW - Bertha Service Area Improvements</b>								
	<b>Confidence:</b>	Low			<b>Total Project Cost:</b>	1,050,000		<b>Area:</b> Southwest
					<b>Original Cost:</b>	1,050,000		<b>Objective:</b> Efficiency
<b>Project Description</b>								
<p>This project connects the Bertha 962 pressure zone with the 937 pressure zone with a new 8-inch and 4-inch main (~2,600 feet and 400 feet, respectively) and a new regulator. This work will allow for the abandonment of the existing main that passes through steep, unimproved right-of-way while maintaining an adequate level of service to the Bertha Service Area. The Consequence and Likelihood Evaluation Matrix (CLEM) rating for this project is high. The project will allow the bureau to meet service levels for service pressure and limit water outages. In FY 2013-14, the project will complete design and select a contractor. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.</p>								
<b>Total Expenditures</b>	0	0	430,000	426,000	0	0	0	856,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total

<b>NEW - Carolina PS Main Extension Phase 2</b>			<b>Total Project Cost:</b>		3,204,000			<b>Area:</b> Southwest
	<b>Confidence:</b>	High	<b>Original Cost:</b>		3,204,000			<b>Objective:</b> Expansion

**Project Description**

This project will complete the design and construction of a 24" pump main from SW Chestnut St and SW Burlingame Ave to tie into the existing Carolina Pump main at SW Capitol Hwy and SW Terwilliger Boulevard. The project will provide supply redundancy for the entire Burlingame service area. The project schedule has been revised to enable coordination with projects proposed by the Bureau of Environmental Services and the Portland Bureau of Transportation. In FY 2013-14, the project will begin construction. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	0	690,000	2,494,000	0	0	0	3,184,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Distribution Mains</b>			<b>Total Project Cost:</b>		Ongoing			<b>Area:</b> Citywide
	<b>Confidence:</b>	Optimal	<b>Original Cost:</b>		Ongoing			<b>Objective:</b> Replacement

**Project Description**

The bureau is committed to improving maintenance of the water system infrastructure, including repairs, replacements and upgrades. This program supports rehabilitation and replacement of substandard mains; expansion due to private lands development; increasing supply for fire protection; improving water quality; and water system upgrades due to local improvement districts and street improvements. The Portland Water Bureau uses a risk based, reliability centered approach to identify, catalog and prioritize projects to ensure minimal disruption to customers. Distribution main replacements also include appurtenances such as fire hydrants, valves, pressure regulators, service branches, and others facilities. Small projects, under \$125,000, are normally completed by bureau personnel. Projects estimated to cost more than \$125,000 are typically put out for bid. Many projects in this program provide for the relocation and adjustment of water facilities to accommodate storm drainage and sewer pipelines constructed by the Bureau of Environmental Services, roadway configuration changes, pavement overlays, and bridge improvements for Portland Bureau of Transportation and the Oregon Department of Transportation. Other bureaus reimburse a portion of the costs based on the age of the existing water facility. In FY 2013-14, the bureau expects to work on about 50 distribution mains projects. These include the water facilities for SW Naito Parkway, SW Grover St - Moody to Macadam, Ostercraft Meadows Subdivision, NE Grand Avenue Seismic Restraints (construction), and I-205 and NE Airport Way Interchange. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	39,788,521	7,105,000	11,582,000	13,911,000	15,875,000	16,775,000	17,460,000	75,603,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>NEW - Division St Piping</b>			<b>Total Project Cost:</b>		2,000,000			<b>Area:</b> Southeast
	<b>Confidence:</b>	Optimal	<b>Original Cost:</b>		2,000,000			<b>Objective:</b> Efficiency

**Project Description**

This project is needed to increase system reliability and supply between the Tabor 411 and Tabor 302 pressure zones and is one of the LT2 compliance projects to enable the disconnection of the uncovered reservoirs at Mt. Tabor. In FY 2013-14, the project will start construction. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	0	1,480,000	200,000	0	0	0	1,680,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total

<b>Field Support</b>				<b>Total Project Cost:</b>	Ongoing			<b>Area:</b> Citywide Maintenance & Repair
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing			<b>Objective:</b>

**Project Description**

This program funds the supplies, equipment and facilities that the bureau field crews use to maintain and operate the water system. The bureau's fleet of construction equipment and vehicles are managed through this program. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	12,777,143	2,550,000	3,755,600	3,501,500	3,388,900	3,460,138	3,459,338	17,565,476
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Forest Park Low Tank</b>				<b>Total Project Cost:</b>	8,425,000			<b>Area:</b> Southwest
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	7,451,000			<b>Objective:</b> Expansion

**Project Description**

This project will plan, design and construct a single 1.3M gallon AWWA D110 type 1 tank. Tank replacement has been recommended by several studies because additional storage is needed in NW Portland. Space is also available for a future 1.3M gallon and a booster pump station if needed. In FY 2013-14, PWB will continue construction of the first tank. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	1,197,665	5,305,000	2,210,000	0	0	0	0	2,210,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Fulton Pump Station Improvements</b>				<b>Total Project Cost:</b>	11,647,000			<b>Area:</b> Southwest
	<b>Confidence:</b>	High		<b>Original Cost:</b>	11,647,000			<b>Objective:</b> Replacement

**Project Description**

This project will replace the Fulton Pump Station with a new pump station located in Willamette Park. The existing pump station is at high risk of failure. This project's improvements are part of a system to serve approximately 15,000 Portland retail customers plus the City of Tigard and Lake Grove water district who are wholesale customers. The land use decision has been finalized so the bureau will finish design and begin construction in FY 2013-14. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	1,966,496	575,000	2,220,000	6,740,000	100,000	0	0	9,060,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted	Capital Plan				
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Hydrants</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b>	Citywide
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		<b>Objective:</b>	Replacement

**Project Description**

There are approximately 16,000 fire hydrants connected to the Portland water system. These hydrants allow Portland the flexibility and preparedness to meet the challenge of a fire emergency through coordination with the Portland Fire & Rescue Bureau. This subprogram replaces fire hydrants that are nonstandard or no longer repairable to increase efficiency. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	2,971,880	1,500,000	1,100,000	1,200,000	1,200,000	1,200,000	1,200,000	5,900,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Interstate Facility Rehabilitation</b>				<b>Total Project Cost:</b>	49,392,000		<b>Area:</b>	Central City
	<b>Confidence:</b>	High		<b>Original Cost:</b>	49,383,000		<b>Objective:</b>	Replacement

**Project Description**

The project rebuilds the bureau's main maintenance facility. Two new buildings will replace the eighty-five year old Maintenance Building that currently serves as the main office and warehouse. Site improvements to the 11 acre campus will improve vehicle and employee circulation. This project brings the property up to current code requirements for storm water management and landscaping. Deferrals to code-required site improvements had been granted over the last 15 years as small improvements were permitted. Time extensions have been exhausted and the bureau is at risk of being cited for violations. About half of the bureau's employees work at this facility and it is the center for bureau operations throughout the city. In FY 2013-14, the bureau will finish construction of the first building and begin construction of the second facility. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	4,884,083	7,490,000	12,360,000	16,248,390	6,138,422	560,000	0	35,306,812
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Meters</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b>	Citywide
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		<b>Objective:</b>	Replacement

**Project Description**

The bureau has thousands of meters that monitor the quantity of water flowing through the system. The bureau purchases about 8,500 meters annually, some when customers request a new water service. These meters are tools to effectively and efficiently manage the allocation of costs of service to public agencies, commercial enterprises and other non-residential customers. The bureau is also installing automated meter reading devices and non-skid access lids where applicable. The bureau objective is to maintain metering devices to read within 3% of actual values. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	5,359,638	1,300,000	1,000,000	1,590,000	1,800,000	1,800,000	1,800,000	7,990,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Portland to Milwaukie Light Rail</b>				<b>Total Project Cost:</b>	4,499,000		<b>Area:</b>	Southeast
<b>Confidence:</b>		Optimal		<b>Original Cost:</b>	3,184,000		<b>Objective:</b>	Mandated

**Project Description**

As part of the Portland Water Bureau's partnerships with agencies in the region, the bureau is contributing to the planning, design and relocation of over 5,000 feet of main and appurtenances for the Portland-Milwaukie Light Rail Transit. The project will create a light rail alignment that travels 7.3 miles, connecting Portland State University in downtown Portland, inner Southeast Portland, Milwaukie, and north Clackamas County. The bureau will also assist in the production of the design for the SE Corridor Light Rail project. In FY 2013-14, the bureau will continue to contribute construction staff and materials to the project to complete the project. It is scheduled to be operational in 2015. Water improvements in the project cost an estimated \$7.1 million, with the bureau betterment portion at \$3.2 million and TriMet is paying for remaining relocation expenses. The project funding is from a combination of grant funds, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	354,080	1,340,000	1,062,000	0	0	0	0	1,062,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	0

<b>Pump Stations and Tanks</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b>	Citywide
<b>Confidence:</b>		Optimal		<b>Original Cost:</b>	Ongoing		<b>Objective:</b>	Replacement

**Project Description**

This program maintains a large variety of infrastructure consisting of water storage tanks, pumps, and pump and control facilities. The bureau uses a reliability centered maintenance analysis to prioritize projects in these areas. The focus for this program continues to be the replacement of the remote telemetry units at over 140 remote sites. The existing units are over 15 years old, and are becoming obsolete. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	6,347,090	420,000	500,000	510,000	1,480,000	1,098,000	1,415,000	5,003,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	0

<b>NEW - Raymond Tank Supply Improvements</b>				<b>Total Project Cost:</b>	610,000		<b>Area:</b>	Southeast
<b>Confidence:</b>		Low		<b>Original Cost:</b>	610,000		<b>Objective:</b>	Efficiency

**Project Description**

This project will design and construct improvements at Raymond Tank Site and at the intersection of SE Holgate Boulevard and SE 136th Avenue. Project will reduce the pumping costs and operations and maintenance costs for the 138th center pump station as well as reducing the bureau energy demands by a small amount. In FY 2013-14, the project will complete design and select the contractor. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	0	125,000	410,000	0	0	0	535,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	0

Capital Program	Revised		Adopted	Capital Plan				5-Year Total
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	
<b>NEW - Rose City Sewer Rehabilitation</b>				<b>Total Project Cost:</b>	504,000			<b>Area:</b> Northeast
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	504,000			<b>Objective:</b> Mandated

**Project Description**

The project will install 1,207 feet of 8 inch ductile iron main, 2 new hydrants and 39 new water services 2 inches or smaller. BES will be constructing a new sanitary sewer line in NE 57th Ave in the same location as the existing 8-inch cast iron water main, and they will be constructing a 60-inch manhole adjacent to the 8-inch cast iron water main in NE 60th Ave, both of which will require relocating the existing water mains. The original project estimate was under \$300,000. BES has since changed scope and schedule requirements and the project total has increased. PWB will adjust the project amount during the Spring Budget Monitoring Process to add this as a new major project in FY 2012-13. PWB will complete the project in FY 2013-14. The project funding is from water sales revenue.

<b>Total Expenditures</b>	0	0	2,000	0	0	0	0	2,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Services</b>				<b>Total Project Cost:</b>	Ongoing			<b>Area:</b> Citywide Maintenance & Repair
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing			<b>Objective:</b>

**Project Description**

A service is the connection between the water main and any given customer's service meter. Service connections are always performed by bureau crews. This program funds installation and upgrade of about 1,000 water service connections annually. The funds facilitate construction of replacement water services requested by customers for new development as well as redevelopment. A fee is collected for new service requests to partially reimburse the bureau's costs. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	16,060,341	4,850,000	3,910,000	4,000,000	4,000,000	4,000,000	4,000,000	19,910,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Willamette River Pipe Crossing</b>				<b>Total Project Cost:</b>	57,000,000			<b>Area:</b> Central City
	<b>Confidence:</b>	Low		<b>Original Cost:</b>	57,000,000			<b>Objective:</b> Replacement

**Project Description**

The project provides for the replacement of major pipelines to strengthen the transmission link between Powell Butte and the service areas west of the Willamette River, including downtown and the storage reservoirs at Washington Park. The project will include construction of a new seismically strengthened river crossing to replace one or two of the existing Willamette River crossings, and new transmission piping on both sides of the Willamette River. Replacement of these major pipelines will help the bureau meet the effectiveness measure of providing adequate flow and reducing vulnerabilities. In FY 2013-14, the bureau will continue with the design of the project. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	181,988	200,000	460,000	2,600,000	5,000,000	20,000,000	28,540,000	56,600,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total

**Regulatory Compliance**

<b>Bull Run Dam 2 Tower</b>				<b>Total Project Cost:</b> 36,316,000			<b>Area:</b> Citywide	
	<b>Confidence:</b> Optimal			<b>Original Cost:</b> 40,055,000			<b>Objective:</b> Efficiency	

**Project Description**

This project will install steel multi-level intake structures on to one of the existing Dam 2 Towers located in the Bull Run watershed. The modifications to the Dam 2 Tower are required per the approved Bull Run Water Supply Habitat Conservation Plan, the City's 50-year regulatory compliance agreement for Clean Water Act and Endangered Species Act requirements. Dam 2 impounds the reservoir that contains nearly half of the total storage capacity of the Bull Run System. The project is particularly complex due to the remote location of the tower, the installation of the intake structure under 100 feet of water, and the requirement to maintain water quality both for fish and people during the entire project. The project total cost estimate has decreased due to expected contract savings. This project includes fish flow piping which was originally part of the UV treatment facility but has now been incorporated into this project. Construction of the project will complete in FY 2013-14. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	9,919,660	18,830,000	5,975,000	475,000	0	0	0	6,450,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>HCP Alder Creek Fish Passage</b>				<b>Total Project Cost:</b> 710,000			<b>Area:</b> Citywide	
	<b>Confidence:</b> Low			<b>Original Cost:</b> 710,000			<b>Objective:</b> Mandated	

**Project Description**

This project will design and install two fish passage improvement as outlined in the Habitat Conservation Plan. Compliance with the federal Endangered Species Act requires fish passage improvements throughout the Sandy River basin to mitigate the Portland Water Bureau's impacts to the Bull Run River (a tributary of the Sandy River). The project is in Alder Creek which is also a tributary to the Sandy River. The project will complete construction in FY 2013-14. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	35,530	250,000	458,000	0	0	0	0	458,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Water Quality and Regulatory Compliance</b>				<b>Total Project Cost:</b> Ongoing			<b>Area:</b> Undetermined	
	<b>Confidence:</b> Optimal			<b>Original Cost:</b> Ongoing			<b>Objective:</b> Mandated	

**Project Description**

The bureau recognizes the Bull Run watershed as a diverse ecosystem. The bureau is committed to preserving this habitat and complying with federal regulations using practical, locally driven solutions. Many of the projects in this subprogram respond to the Endangered Species Act, including the implementation of the Bull Run Habitat Conservation Plan as adopted by City Council and approved by the National Marine Fisheries Service. Consistent with Habitat Conservation Plan commitments, this program funds easements, purchases land, and also supports projects jointly conducted with other watershed partners. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	2,346,392	2,270,000	1,304,000	3,642,000	9,300,000	2,350,000	2,000,000	18,596,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total

**Supply**

<b>Bull Run Watershed</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b> Undetermined
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		Maintenance & Repair

**Project Description**

The Bull Run watershed is one of the most pristine drinking water sources in the United States. The bureau is committed to updating the Bull Run watershed protection and maintenance procedures and agreements based on the 2007 Bull Run agreement with the Mt Hood National Forest. Funds in this program maintain, improve, and protect the Bull Run watershed roads and facilities. Many of these facilities are between 50-70 years old.

In FY 2013-14, the bureau will continue the formal federal process to enact a land exchange with the US Forest Service. The process is scheduled to be completed by the 3rd quarter of FY 2014-15. The proposed land exchange would convey approximately 2,800 acres of National Forest System land to the City of Portland in exchange for approximately 2,500 acres of City-owned lands within the Bull Run Watershed Management Unit. The purpose of the proposed land exchange is to create a better alignment of land ownership responsibilities with the respective missions of the agencies. The proposed exchange would consolidate City holdings to lands surrounding the two water supply reservoirs and associated infrastructure. The US Department of Agriculture Forest Service would acquire forested uplands that are valuable for natural resource protection and ecosystem management. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	23,567,610	160,000	380,000	780,000	2,500,000	2,750,000	2,000,000	8,410,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Groundwater</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b> Northeast
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		Efficiency

**Project Description**

The Columbia South Shore Wellfield is Portland's alternative supply of water should the Bull Run watershed supply be interrupted for any reason. Projects funded in this program improve the maintenance of this aging infrastructure, including repairs, selective replacements and upgrades. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	2,380,200	740,000	300,000	450,000	450,000	500,000	500,000	2,200,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised	Adopted	Capital Plan					
Project	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Groundwater Electrical Supply Improvements</b>								
				<b>Total Project Cost:</b>	2,200,000			<b>Area:</b> Northeast Maintenance & Repair
	<b>Confidence:</b>	Moderate		<b>Original Cost:</b>	2,200,000			<b>Objective:</b>

**Project Description**

Portland's groundwater system is the bureau's secondary system in case the Bull Run Watershed flows cannot meet flow demands or water standards. The 2000 Portland Water Bureau System Vulnerability Analysis and later reports identified a need to reduce vulnerability of electrical failures. This project designs and constructs a new 115kV/4160V transformer and other components to complete a double-ended electrical substation at the Groundwater Pump Station. It will also design and construct a 5kV main breaker replacement and purchase selected spare components. This project provides an installed spare transformer. Both transformers will carry about half the loads of the pump station. A manual switch will permit rapid transfer of loads from a failed transformer to the other. The bureau will complete the design of the new transformer and other components in FY 2013-14. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	51,927	70,000	79,000	1,992,000	0	0	0	2,071,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>NEW - Road 10 MP 0.6-1.8</b>								
				<b>Total Project Cost:</b>	930,000			<b>Area:</b> Undetermined
	<b>Confidence:</b>	Low		<b>Original Cost:</b>	930,000			<b>Objective:</b> Replacement

**Project Description**

This project consists of the design and construction of walls, widening, culverts and the repaving of a portion of the Bull Run 10 road. The remaining length of this road segment is in poor condition and currently is assigned an extreme business risk. This segment of Road 10 is listed as a Class A arterial that is the primary access to Headworks and Dam 2. This project is integral to meeting the programmatic service level to maintain roadway condition to standard. There was a 2011 project which improved a portion of this road segment, leaving the remaining 1.2 miles in poor condition. In FY 2013-14, this project will complete design. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	0	60,000	840,000	0	0	0	900,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>NEW - Road 1008 Paving</b>								
				<b>Total Project Cost:</b>	720,000			<b>Area:</b> Undetermined
	<b>Confidence:</b>	Low		<b>Original Cost:</b>	720,000			<b>Objective:</b> Replacement

**Project Description**

The project consists of the design and construct of an overlay for the Bull Run 1008 road. The 1008 road was reconstructed in 1998/99. The segment to be improved serves as the bureau's primary backup for access to Headworks and other critical facilities. This road is plowed through the winter to maintain continued access. Addressing this segment before others avoids interference with ongoing construction activities scheduled through early 2014. This roadway section is currently rated as a high business risk. The surface condition has been raised as a concern by the Bull Run Safety Committee. In FY 2013-14, the project will complete design. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	0	60,000	650,000	0	0	0	710,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Support</b>								
<b>Planning</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b>	Undetermined
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		<b>Objective:</b>	Efficiency
<b>Project Description</b>								
This program consists of general planning studies for projects needed to improve the operation of the water system. These include pressure zone adjustments, facility modifications, and system element studies. In FY 2013-14, the Portland Water Bureau will continue working on studies for assets such as the Mayfair tank, Rivergate pump station and tank, groundwater well sites, Council Crest tank, Portland Heights tanks and reviews of smaller mains to reduce leaks. The bureau will also continue studies on topics such as water quality key stations, seismic improvements and water quality corrosion. The project funding is from water sales revenue.								
<b>Total Expenditures</b>	2,333,768	1,500,000	1,500,000	1,500,000	2,000,000	2,500,000	2,500,000	10,000,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	
<b>Transmission/Terminal Storage</b>								
<b>Conduits and Transmission Mains</b>				<b>Total Project Cost:</b>	Ongoing		<b>Area:</b>	Undetermined
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	Ongoing		<b>Objective:</b>	Maintenance & Repair
<b>Project Description</b>								
The conduits that bring water to Portland from the Bull Run watershed are pipes 56 to 72 inches in diameter. This program funds repairs, replacements and upgrades to improve availability and accuracy of data from wholesale meters. Service to the City's wholesale customers is a key reason for the bureau's commitment to improve maintenance of this aging infrastructure. In future years, the bureau plans to line 4-5 miles of conduits each year at an estimated cost of \$4-\$5 million dollars per mile. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.								
<b>Total Expenditures</b>	14,887,168	190,000	425,000	8,500,000	12,600,000	5,000,000	7,000,000	33,525,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	
<b>Kelly Butte Reservoir</b>								
				<b>Total Project Cost:</b>	78,245,060		<b>Area:</b>	Southeast
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	78,245,060		<b>Objective:</b>	Mandated
<b>Project Description</b>								
The purpose of this project is to increase storage capacity from 10MG to 25MG by replacing the existing tank with a buried reservoir. This includes site access, construction access and easements, staging areas, and on-site storage areas. This project establishes Kelly Butte as the water body that will be used for system pressure equalization and in-town terminal storage once the Mt Tabor open reservoirs are disconnected from the water system. Kelly Butte is part of the set of projects to comply with LT2 regulations concerning open reservoirs. In FY 2013-14, the bureau will continue construction. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.								
<b>Total Expenditures</b>	6,275,779	11,950,000	34,910,000	27,000,000	4,970,000	0	0	66,880,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted		Capital Plan			
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Powell Butte Reservoir 2</b>				<b>Total Project Cost:</b>	129,885,000		<b>Area:</b>	East
	<b>Confidence:</b>	Optimal		<b>Original Cost:</b>	129,885,000		<b>Objective:</b>	Mandated

**Project Description**

This project has been organized as two phases and Phase 1 (site preparation) has been completed. The project is currently in its second phase to construct a 50 million gallon buried reservoir at Powell Butte. The project consists of construction of the new reservoir, construction of a maintenance and storage facility, replacing the caretaker's house, construction of an interpretive center and restrooms, reservoir overflow, park improvements and mitigation requirements as part of the City's conditions for approval for the project. In FY 2013-14, construction of the improvements will near completion and close work will begin. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	41,667,396	47,500,000	27,460,000	7,700,000	0	0	0	35,160,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Tabor Reservoir Adjustments</b>				<b>Total Project Cost:</b>	3,700,000		<b>Area:</b>	Southeast
	<b>Confidence:</b>	Low		<b>Original Cost:</b>	6,406,994		<b>Objective:</b>	Mandated

**Project Description**

This project includes adjustments to piping, structures and other features at Mt. Tabor in order to move storage elsewhere and physically disconnect the open reservoirs from the public water system for compliance with LT2. This project does not include disposition of the reservoirs after they have been disconnected from the public water system. Disposition will be determined through a public process. This project's total cost has decreased mainly because the project has been divided into two. The other scope is more consistent with the Distribution program and so PWB has created the new Division St Piping major project (W01632). In FY 2013-14, PWB will continue design of the adjustments. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	344,838	300,000	225,000	1,140,000	1,990,000	0	0	3,355,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

<b>Washington Park</b>				<b>Total Project Cost:</b>	67,125,000		<b>Area:</b>	West
	<b>Confidence:</b>	Low		<b>Original Cost:</b>	61,132,686		<b>Objective:</b>	Mandated

**Project Description**

This project will plan, design and construct a new buried reservoir to replace open Reservoir No. 3. This project is one solution toward compliance with LT2 replacement of the open reservoirs. It is assumed that Reservoir No. 4 will be used as the overflow detention structure. It is envisioned that the buried reservoir would be topped with a reflecting pond and historical features would be protected to retain its visual appeal. In FY 2012-13, the bureau completed planning and revised the total project cost. In FY 2013-14, the bureau will be working on the initial design of the reservoir. Construction is planned to be complete in 2019. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	724,476	150,000	3,580,000	2,300,000	2,900,000	19,300,000	24,000,000	52,080,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

Capital Program	Revised		Adopted	Capital Plan				5-Year Total
	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	

**Treatment**

<b>Headworks Flow Meters</b>				<b>Total Project Cost:</b> 2,600,000			<b>Area:</b> Undetermined
	<b>Confidence:</b> Moderate			<b>Original Cost:</b> 2,600,000			<b>Objective:</b> Replacement

**Project Description**

This project will install new flow meters on the Primary Intake conduits; install new flow meters and flow control valves on the Screenhouse #3 conduits; and also address the sump pump drainage system in the Bailey PRV vault. These improvements will ensure the bureau is in compliance with drinking water rules and allow automated chemical addition. The project will also result in savings and potentially reduce disinfection byproduct formation. Present meters have an error rate up to 30%. Flow meters on both the Primary Intake and Screenhouse #3 will reduce instances of excessive or inadequate chlorine doses which are potential regulatory violations. In FY 2013-14, the bureau will finish construction. The project funding is from a combination of net proceeds from revenue bond sales, water sales revenue and other construction fund revenues such as system development charges and interest earnings.

<b>Total Expenditures</b>	0	100,000	2,500,000	0	0	0	0	2,500,000
<b>Net Operations and Maintenance Costs</b>			0	0	0	0	0	

# Bureau of Development Services

Capital Program	Revised		Adopted	Capital Plan				
Project	Prior Years	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	5-Year Total
<b>Special Projects</b>								
<b>Information Technology Advancement Project</b>			<b>Total Project Cost:</b>		11,246,447		<b>Area:</b> Citywide	
<b>Confidence:</b> High			<b>Original Cost:</b>		9,192,168		<b>Objective:</b> Replacement	
<b>Project Description</b>								
The Information Technology Advancement Project (ITAP) includes replacement of the bureau's permitting and case tracking software (TRACS). The project is anticipated to be funded by a combination of license and permit fee revenues and a line of credit.								
<b>Total Expenditures</b>	0	3,680,172	4,697,127	3,541,147	0	0	0	8,238,274
<b>Net Operations and Maintenance Costs</b>			0	0	186,676	194,852	203,502	

