

CITY OF BEAVERTON

BUDGET TREND ANALYSIS - FY 09-10 TO FY 12-13

With Explanations on Significant Changes Between Estimated 11-12 and Recommended 12-13

Fund: **WATER**

Department: **Funding of Water Projects**

<i>Class</i>	<i>Actual 09-10</i>	<i>Actual 10-11</i>	<i>Budgeted 11-12</i>	<i>Estimated 11-12</i>	<i>Recommended 12-13</i>	<i>% Change Budgeted vs. Recommended</i>
Capital outlay	\$1,948,270	\$572,188	\$1,788,518	\$1,324,346	\$2,102,580	17.6%

Explanation of item(s) that are significant (10% or \$10,000):

<i>Project No.</i>		<i>Budgeted 11-12</i>	<i>12-13</i>
3611	Joint Water Commission projects	\$377,290	\$436,795
3700	Maintenance & replacement program	25,000	100,000
3701	Water system improvements	1,306,228	1,485,785
3705	Fire hydrant replacement program	80,000	80,000
		\$1,788,518	\$2,102,580

CITY OF BEAVERTON, OREGON
FISCAL YEAR 2012-13 BUDGET

FUND: 501 WATER	DEPARTMENT: PUBLIC WORKS
PROGRAM: 3XXX WATER REPLACEMENT PROJECTS	DEPARTMENT HEAD: DAVID WINSHIP

DRINKING WATER PROGRAM

Progress on FY 2011-12 Action Plan:

New Water Supply and Joint Water Commission Projects

The Joint Water Commission (JWC) water treatment plant can produce up to 75 million gallons per day (mgd) of treated drinking water. The City of Beaverton owns a 25 percent share of the JWC water treatment plant capacity, equivalent to 18.75 mgd of drinking water. The city also owns the equivalent of 14 mgd-capacity in the JWC South Transmission Line

Since 2001, the City of Beaverton has been a partner in the Tualatin Basin Water Supply Project (TBWSP) with Clean Water Services, the Tualatin Valley Water District, and City of Hillsboro. Beaverton has participated financially in the TBWSP feasibility work since signing an agreement in 2001 with the other project partners.

This billion-dollar project in Washington County is a generational investment to build a 50-year water supply source. The project consists of expansion of Scoggins Dam (Hagg Lake) south of Forest Grove to double the amount of stored water. The existing dam and lake are owned by the U.S. Bureau of Reclamation and operated by the Tualatin Valley Irrigation District. Approximately one half of Beaverton's summer water supply originates from Hagg Lake. The water is treated to meet drinking water standards at a nearby water treatment plant.

The TBWSP is a collaborative effort among local water resources agencies. Besides providing additional supply for municipal water needs, the project will provide environmental benefits and a stable supply for agricultural uses. Clean Water Services is the lead agency for the project, providing project management and public involvement. Primary project stakeholders are:

- Clean Water Services
- Tualatin Valley Water District (TVWD)
- City of Hillsboro
- City of Forest Grove
- City of Beaverton
- Tualatin Valley Irrigation District (TVID)
- U.S. Bureau of Reclamation (USBR)
- Washington County
- Lake Oswego Corporation

These projects represent the highest achievement of *Community Vision Action #90: Work with Regional Partners on Priorities and #98: Water Conservation*. The TBWSP involves raising the height of Scoggins Dam (which forms Hagg Lake); construction of a large pipeline from the dam to the JWC water treatment plant; a large pumping station to pump water from the Tualatin River into Hagg Lake during the winter; and expansion of the JWC water treatment plant south of Forest Grove. Scoggins Dam and Hagg Lake are owned by the USBR, which built the facility in 1970. The TBWSP will add approximately 53,000 acre-feet of water to Scoggins Reservoir (Hagg Lake) per year (1 acre-foot is the amount of water it takes to fill an acre of area with 1 foot of water). The City of Beaverton is a partner and has a 3.8 percent interest in the project to eventually own an additional 2,000 acre-feet (0.65 billion gallons). Since 1973 the City has had a repayment contract with the USBR that gives the city a right to use up to 4,000 acre-feet each year (1.3 billion gallons of water).

A comprehensive seismic evaluation of the current dam was completed by USBR to determine its stability and suitability for the dam raise project under a potential Cascadia Subduction earthquake. The results of that seismic analysis justify a significant and expedited modification to the existing dam prior to any expansion project that would raise the height of the

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dam. During FY 2012-13, the TBWSP partners will work with USBR to refine the scope and cost estimate to complete a seismic retrofit of the Scoggins Dam in the USBR Corrective Action Study under the USBR Safety of Dams Program. The result of the Corrective Action Study, expected by October 2012, will be a plan for modification of the dam to mitigate seismic risk.

Increased-Capacity Projects

The city's 2009 water master plan identifies needed increased capacity improvements to provide safe, dependable water service to the city's water customers in conjunction with the build-out of vacant land. The plan recommended improvements in the water distribution system, storage and transmission system, and the water treatment system. Over the last several years the city has allocated considerable funding to Aquifer Storage and Recovery (ASR). ASR Well Nos. 1 and 2 located at the Sorrento Water Works Facility produce up to 3 mgd. The current estimated single-day summertime peak demand for the city is near 17 million gallons. The completion of ASR Well No. 4 in 2007 added 3 mgd more in ASR production for a total of 6 mgd. The city's ASR system stored approximately 160 MG of drinking water in underground aquifers over the winter and spring of 2010-2011, with a total of 701 MG available (injected water plus carry-over storage from the previous year) for recovery. From June through October 2011, 144 MG of stored water and native groundwater were recovered (pumped into the water system) from the ASR wells to help meet summer customer demand. Stored water pumped out of the city's three ASR wells made up nearly 6 percent of the city's total annual drinking water distributed to customers in 2011. These ASR wells act as underground water storage reservoirs to supply water during the summer season. Water supplied by the city's ASR wells helps smooth out the summer's water demand spikes through the 20-mile long transmission mains and from the JWC treatment plant. The city owns a fourth undeveloped ASR well site (future ASR Well No. 3), located in southwest Beaverton.

The JWC's 2009 master plan preliminarily evaluated and recommended utilization of Aquifer Storage and Recovery. The JWC ASR program was found to provide multiple benefits to the JWC including: 1) providing emergency storage capacity; 2) helping to solidify valuable surface water rights; 3) providing economic benefits by delaying the need of a new transmission pipeline and delaying water treatment plant expansions; 4) economic benefit by reducing the required size of a future new transmission pipeline from a 66-inch diameter to 60-inch; and 5) allowing excess water treatment plant capacity to be used during low demand periods for ASR recharge, providing full utilization of this joint asset.

A proposed phased JWC ASR program with an estimated total capacity approximately 18 mgd, utilizing up to 14 wells was submitted to the Oregon Water Resources Department in 2011. The State reviewed the application and approved a Limited License to allow the JWC's ASR program to proceed. The JWC limited license specifically lists the Cities of Beaverton and Hillsboro, and the Tualatin Valley Water District as the permitted users of the ASR technology on the upper elevations of Cooper Mountain. In FY 2011-12, the JWC ASR partners successfully drilled and pump tested two exploratory 1,000-foot deep test wells in the designated Cooper Mountain area. One test well will be located on Beaverton's Cooper Mountain Reservoir site. The objective of this initial phase of the JWC ASR program is to identify optimum test well locations, conduct well testing, and prepare facilities plans.

FY 2012-13 Action Plan:

One of the most significant City of Beaverton infrastructure planning projects of the last two decades will continue and likely be completed in FY 2012-2013. The Metro-designated South Cooper Mountain area (Area 3, 540 acres), which is largely undeveloped, was added to the Urban Growth Boundary (UGB) in 2011 and is anticipated to be annexed to the City of Beaverton following the State ratification of the UGB addition. As an element of the Metro action to add the South Cooper Mountain area to the UGB, the city is required to prepare a comprehensive and land use plan, including public infrastructure, for the entire 6B Urban Reserve (1,776 acres), which includes the 540-acre South Cooper Mountain area.

An infrastructure study (CIP No. 6083) for the entire 6B Urban Reserve (including the South Cooper Mountain area) requires extensive evaluation of potable water supply and service needs and projected costs to ensure provision of water service and fire protection for a fully developed area.

CITY OF BEAVERTON, OREGON
FISCAL YEAR 2012-13 BUDGET

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In FY 2012-13, the city will continue preliminary planning for a future ASR Well No. 5 to replace ASR Well No. 1.

Increased capacity distribution system improvements will occur on 1) 5th St from Alger Ave to east of Hwy 217, 2) Belaire from Baker to Denney Rd, 3) Hall Blvd from Allen Blvd to 12th St, 4) 155th Ave from Sexton Mountain Drive to Flagstone Dr, 5) Dawson Way Extension at Hocken Ave, 6) Wonderland Park, and 7) Rose Biggi Ave. from Hall Blvd. to Crescent.

Replacement Projects

In 1991, the city identified approximately 162,240 lineal feet of water lines ranging in size from 2 to 18 inches and 2,265 fire hydrants that required replacement over the next 35 years. To date, the city has replaced approximately 75,000 lineal feet of the previously identified waterlines that need to be replaced because they were at the end of their useful life. In FY 2012-13 waterline replacement projects are planned on 1) Normandy Pl. near Sherwood Place, 2) Main Avenue from Allen Blvd to 12th Street, 3) 3rd and 4th Street from Stott to Watson, and 4) Scholls Ferry Road from Allen Blvd to Denney Rod.

Additional maintenance projects include the continuation of an upgrade to the Sexton Mountain pump station, and maintenance to the 1.75 million gallon Sexton Mountain Standpipe.

The Drinking Water Program is funded by 1) the Water Construction Fund (505) that obtains revenue from Water System Development Charges (SDCs), 2) the Water Debt Service Fund (funded by the proceeds of the water revenue bonds), and 3) the Water Fund (501) that obtains revenue from water sales, water connection permits, and fees.

A comprehensive seismic evaluation of the current dam was completed by USBR to determine its stability and suitability for the dam raise project under a potential Cascadia Subduction earthquake. The results of that seismic analysis justify a significant and expedited modification to the existing dam prior to any expansion project that would raise the height of the dam. During FY 2012-13, the TBWSP partners will work with USBR to refine the scope and cost estimate to complete a seismic retrofit of the Scoggins Dam in the USBR Corrective Action Study under the USBR Safety of Dams Program. The result of the Corrective Action Study, expected by October 2012, will be a plan for modification of the dam to mitigate seismic risk.

**City of Beaverton
CIP Financial Plan - Water
Maintenance & Replacement Projects Detail
FY 11/12 with Changes after Budget Adoption**

Projects	Project Cost	Total for FY
<u>CIP#</u> <u>Proj #</u>		
3611 Joint Water Commission Projects		
Water Rights Consultant of Record (JWC-01)	25,000	
Standby Power Generation (JWC-02)	125,000	
Transmission Line Corridor Control (Veg. Mgt., JWC-03)	36,900	
Fern Hill Res. Prelim. CL2 Resid. Maint. Study. (JWC-05)	38,750	
Quonset Hut Reconditioning & Security (JWC-06)	22,140	
Seismic Mitigation Exist WTP Package 1, 2a (JWC-08)	67,500	
Asset Management System	62,000	377,290
3700 Annual Water Line Maintenance & Replacement Projects		
Water System Hydraulic Modeling, Mapping, etc.	15,000	
Small Works - Misc. Maintenance & Replacement	<u>10,000</u>	
Program Total - 3700		25,000
3701 Water System Improvements		
4078C Sexton Mountain 5 MG Reservoir Mixing Improvements	60,000	
4078B Sexton Mountain Pump Station Upgrade, Ph 2	300,000	
4078B Sexton Mountain Pump Station Upgrade, Ph 3	-300,000	
SW Jenkins Waterline Construction	300,000	
4103 Normandy Place/Sherwood Place 250 LF of 6" Water System Security Upgrades	35,000 20,000	
Small Works - Misc. Maintenance & Replacement	50,000	
4102 Hyland Way - Hanson to cul-de-sac Waterline Imp.	40,000	
6069 Main Avenue Improvements (Allen Blvd. to 12th Street)	175,000	
Solar Retrofit & Energy Recovery Hydro Projects (Energy Trust)	5,000	
6067 5th Street Waterline Improvement, Alger to 217 (South Central H)	58,000	
Program Total - 3701		743,000
3705 Fire Hydrant Replacement Program	80,000	80,000

City of Beaverton
CIP Financial Plan - Water
Maintenance & Replacement Projects Detail
FY 11/12 Estimated

Projects	Project Cost	Total for Fiscal Year
CIP# Proj #		
3611 Joint Water Commission Projects		
3611 Water Rights Consultant of Record (JWC-0, #10410)	17,500	
3611 Standby Power Generation (JWC-02, #10414)	62,500	
3611 Transm. Line Corridor Control (Veg. Mgt., JWC-03, #10590)	18,450	
3611 Fern Hill Res. Prelim. CL2 Resid. Maint. Stdy. (JWC-05)	38,750	
3611 Quonset Hut Reconditioning & Security (JWC-06)	22,140	
3611 Seismic Mitigation Exist WTP Package 1, 2a (JWC-08)	67,500	
3611 JWC Electrical Assessment (#10523)	247	
3611 Evergreen Rd. Widening (Transm. Line Reloc., #10588)	2,630	
3611 JWC Asset Management (#10570)	55,000	
		284,717
3700 Annual Water Line Maintenance & Replacement Projects		
4017 Water System Hydraulic Modeling, Mapping, etc.	20,000	
4017 Small Works - Misc. Maintenance & Replacement	<u>10,000</u>	
Program Total - 3700		30,000
3701 Water System Improvements		
4078C Sexton Mountain 5 MG Reservoir Mixing Improvements	10,000	
4078B Sexton Mountain Pump Station Upgrade	221,000	
4060 Water System Security Upgrades	20,000	
4013 Normnandy Place/Sherwood Place 250 LF of 6"		
4031K Small Works - Misc. Maintenance & Replacement	50,000	
4102 Hyland Way - Hanson to cul-de-sac Waterline Impr.		
6069 Main Avenue Improvements (Allen Blvd. to 12th Street) 1,200 LF of 8"	105,000	
6067 5th Street Waterline Improvement (Alger to 217, South Central H)	30,953	
6072 SW 3th & 4th Street Waterline Improvements, Main Ave Ph 2	20,000	
4088 Solar Retrofit & Energy Recovery Hydro Projects (Energy Trust)	5,000	
4105 Scholls Ferry Road-Fanno Creek Bridge - Waterline Relocation	131,000	
4099 Jenkins Road - 153rd Ave. to Briggs Rd., 4,300 LF of 16" (Murray Village SDC offset)	336,676	
Program Total - 3701		929,629
3705 Fire Hydrant Replacement Program	80,000	80,000

**City of Beaverton
CIP Financial Plan - Water
Maintenance & Replacement Projects Detail
FY 12/13 Recommended**

Projects	Project Cost	Total for FY
CIP# Proj #		
3611 Joint Water Commission Projects		
3611 Water Rights Consultant of Record (JWC-0, #10410)	17,500	
3611 Panel Upgrades (Electrical, JWC-02)	145,000	
3611 JWC Filtration Pilot Study (JWC-05)	26,320	
3611 Transm. Line Corridor Control (Veg. Mgt., JWC-03, #10590)	9,225	
3611 Fern Hill Rechlorination System (JWC-07)	62,500	
3611 Source Water Protection	13,750	
3611 Pump Station #1 Valve Replacement	62,500	
3611 Replace Hydropneumatic Actuators on Filters	50,000	
3611 Filter 9-14 Influent Valve Replacement	<u>50,000</u>	
		436,795
3700 Annual Water Line Maintenance & Replacement Projects		
4017 Water System Hydraulic Modeling, Mapping, etc.	50,000	
4031 Small Works - Misc. Maintenance & Replacement	<u>50,000</u>	
Program Total - 3700		100,000
3701 Water System Improvements		
4097 Sexton Mountain 5 MG Reservoir Mixing Improvements	60,000	
4078B Sexton Mountain Pump Station Upgrade	50,000	
4079 Sorrento Pump Station & Meridian PS Upgrades	190,000	
4103 Normandy Place/Sherwood Place 250 LF of 6"	35,000	
4060 Water System Security Upgrades	20,000	
4031 Small Works - Misc. Maintenance & Replacement	50,000	
6069 Main Avenue Improvements (Allen Blvd. to 12th Street) 1,200 LF of 8"	<u>175,000</u>	
6067 5th Street Waterline Improvement (Alger to 217, South Central H)	30,953	
6072 SW 3th & 4th Street Waterline Improvements (Stott to Watson) 1,160 LF of 6"	<u>330,000</u>	
4021 ASR Consultant Support	40,000	
4095 Standpipe (1.75 MG) Maintenance	250,000	
4105 Scholls Ferry Road-Fanno Creek Bridge - Waterline Relocation	<u>254,832</u>	
Program Total - 3701		1,485,785
3705 4001 Fire Hydrant Replacement Program	80,000	80,000

BUDGET PREPARATION WORKSHEET SUMMARY

FUND: 501 WATER FUND

DEPT: 75 INFRASTRUCTURE PROJECTS

OBJ	2010 - ACTUAL		2011 - ACTUAL		2012 BUDGETED		2012 YTD	2012	2013 - RECOMD		2013 ADOPTED	
	AMOUNT	FTE	AMOUNT	FTE	AMOUNT	FTE	ACT AMT	EST AMT	AMOUNT	FTE	AMOUNT	FTE

CLASS: 15 CAPITAL OUTLAY

682 CONSTRUCTION

	1,385,948		381,254		1,411,516		667,158	964,849	1,736,010			
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683 CONST DESIGN & ENGR INSPECTION

	542,537		190,934		377,002		273,011	359,497	366,570			
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TOTAL CLASS: 15 CAPITAL OUTLAY

	1,928,485		572,188		1,788,518		940,169	1,324,346	2,102,580			
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TOTAL DEPARTMENT: 75 INFRASTRUCTURE PROJECTS

	1,928,485		572,188		1,788,518		940,169	1,324,346	2,102,580			
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1134