



Capital Improvement Program

Capital program planning at the Water Bureau is a collaborative effort among CIP Planning, Asset Management, and Engineering teams. The primary drivers of the bureau’s capital work are ensuring the reliable functioning of the drinking water system, replacing assets that are at or near the end of their useful lives, and achieving compliance with federal and state drinking water regulations. The bureau combines asset-management planning with master planning and other types of studies to recommend the most effective mix of capital projects for a five-year budget cycle. Total CIP expenditures for FY 2017-18 was about \$69.4 million, compared to the revised budget of \$74.9 million and \$109.2 million adopted budget.

- PWB MAJOR BUDGET PROGRAMS**
- Customer Service
 - Distribution
 - Regulatory Compliance and Water Quality
 - Supply
 - Support
 - Transmission and Terminal Storage
 - Treatment

Challenges, Risks and Opportunities

- **Construction Inflation:** Since November 2017, the annual change in the Seattle Construction Cost Index published by Engineering News has exceeded 7%, compared to the average of 2.66% since 2005. Skilled labor shortages, uncertainty surrounding tariffs, rising interest rates may be contributing to the sharp increase.
- **Staff turnover:** Over 50 engineering position changes occurred in FY 2017-18, including retirements, promotions, new hires and other personnel actions.
- **The amount of water line relocation work for other bureaus and agencies has become about 30% of the planned work in distribution mains.**

FY 2017-18 Major Accomplishments

In Fiscal Year (FY) 2017-18, the bureau invested almost \$69.4 million to ensure a reliable water system, maintain regulatory compliance, and contribute to Portland’s growth. Over 40 percent of the funds were invested in more than 250 projects in the distribution system—the network of pipes, pumps, valves, and hydrants that deliver water to homes and business throughout the city. Also, construction was completed on over 90 projects. Major accomplishments include:

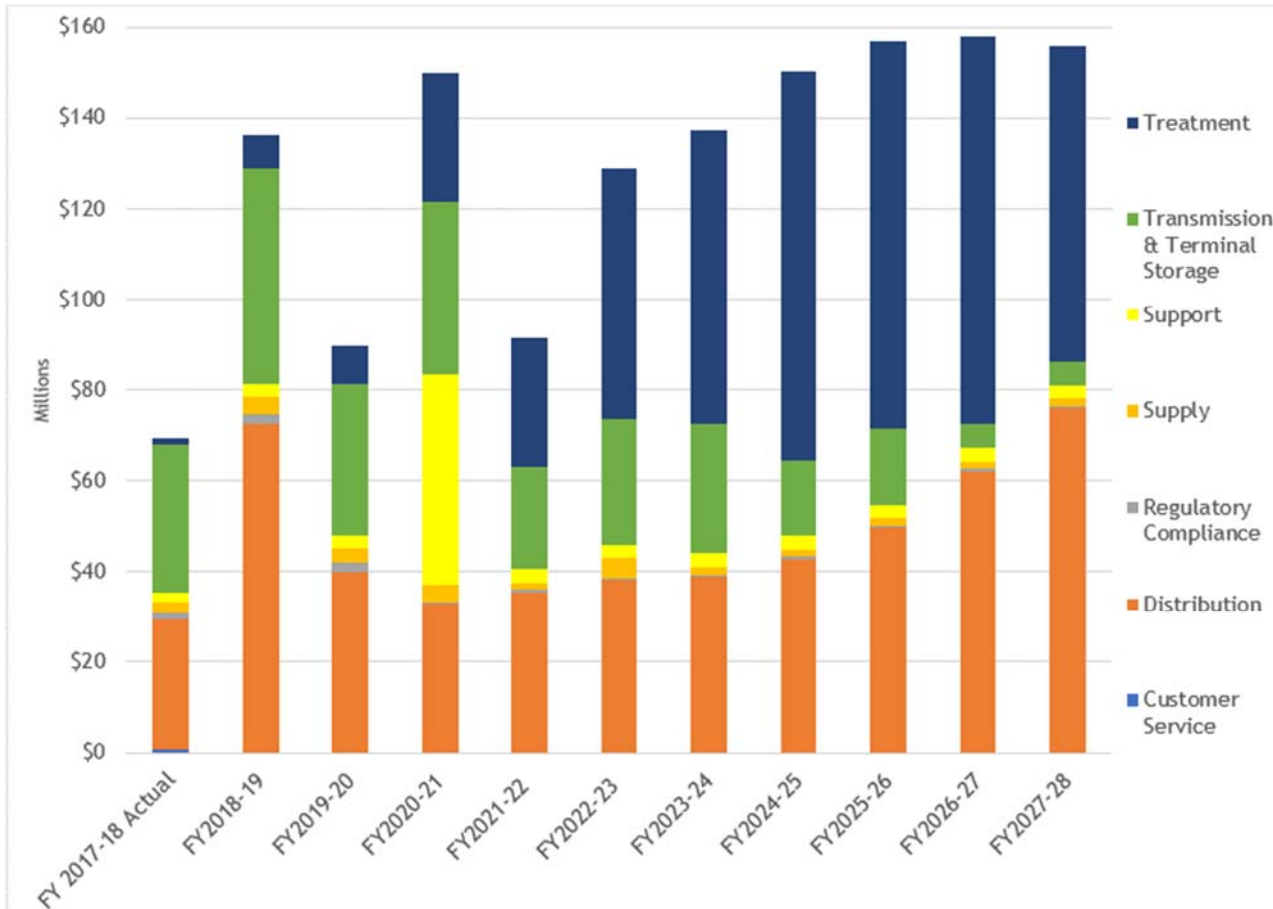
- Hannah Mason Pump Station (\$18.6 million), which replaces the Fulton Pump Station and adds flexibility for west-side water operations was made completely operational.
- SW Vista and Cornell Rd water main improvement projects (\$2.5 million) combined to install about 9,000 ft of water main.
- Inspection was completed on more than 20 miles of Conduit 2 and 3 (\$3.5 million).

- Supporting the economic vitality of Portland through projects for water mains in support of new development, utility relocation work for other bureaus and new service requests. This resulted in about 1,080 new water service installations during the fiscal year.

FY 2017-18 CIP Program Comparison







	FY 2017-18 Actual Spending CIP	FY 2017-18 Revised CIP	FY 2018-19 Adopted CIP
Customer Service	\$0.7 Million	\$0.8 Million	\$0.1 Million
Distribution	\$28.8 Million	\$32.8 Million	\$72.4 Million
Regulatory Compliance	\$1.4 Million	\$1.8 Million	\$2.1 Million-
Supply	\$2.4 Million	\$2.7 Million	\$3.9 Million
Support	\$2.2 Million	\$3.1 Million	\$3.0 Million
Transmission and Terminal Storage	\$32.5 Million	\$32.3 Million	\$47.6 Million
Treatment	\$1.3 Million	\$1.4 Million	\$7.4 Million

2018–28 Adopted 10-Year CIP by Program



FY 2018-19 Updates

- Fall BMP will propose decreasing the overall FY 2018-19 CIP by \$44.7 million based on project spending projections. Two projects account for most of the revision.
- With contract negotiations for the Willamette River Crossing (\$56 million) continuing between PWB and the selected DB team of Fowler/Stantec, significant construction is delayed until FY 2019-20.
- Cash flow for Washington Park Reservoir 3 (\$205 million) has been re-planned to align with a more detailed construction sequence. New estimates for PTE construction services, internal material and personal services, and inspection and material testing for the entire eight-year construction duration (four years was the original) has increased the project total.
- The high level of requested improvements in support of development and utility relocation work continues to impact the resources available for PWB planned projects.
- Bull Run Filtration project (\$500 million): Work to prepare the basis of design report and other planning effort continues, and the program manager PTE agreement has been authorized.
- The Corrosion Improvement Project (\$20 million) work continues to develop the initial design of the improvements at Lusted Hill.
- Over \$11 million in planned new projects started as scheduled on July 1, 2018. Projects include upgrades to the Supervisory control and data acquisition (SCADA) system, improvements to the Powell Butte Reservoir 1 roof and expansion and improvement of the hypochlorite feed system at Washington Park.
- About \$2.3 million in other major projects have started, including replacement of a failed electrical transformer at Washington Park PS 2, roof replacement at the groundwater pump station and repair of a high risk 16" main crossing I-205 at Holgate Blvd. These projects are highlighted in bold in the Major Project Status table.
- Color legend for the Major Project Status table:

Phase	Planned Completion Date	Percent Complete	Initial Estimate	Current Estimate at Completion	Total Cost to Date	Percent EAC Expended
Legend	On Time				EAC/IE < 110%	
	Behind				EAC/IE < 150%	
	Late				EAC/IE > 150%	

Program in city budget	Proj Def	Name	Phase	Planned Completion Date	Percent Complete	Current			Percent EAC Expended
						Initial Estimate	Estimate at Completion	Total Cost to Date	
Customer Service	W02178	Cayenta Upgrade	060 Complete	3/5/18	100%	\$892,000	\$772,890	\$772,885	100.00%
Distribution	W01358	Fulton Pump Station Improvements	055 Closeout W	10/30/17	100%	\$11,647,000	\$18,637,000	\$18,449,406	98.99%
Distribution	W01446	Greenleaf Pump Station	040 Constructic	3/29/19	87%	\$1,710,000	\$2,752,100	\$2,553,422	92.78%
Distribution	W01547	Sellwood Bridge	055 Closeout W	6/29/18	100%	\$410,000	\$814,790	\$814,793	100.00%
Distribution	W01590	Willamette River Pipe Crossing	030 Design	3/4/21	78%	\$57,000,000	\$56,811,000	\$3,349,107	5.90%
Distribution	W01682	Cornell Road Services - Macleay Park	055 Closeout W	5/1/18	100%	\$830,000	\$1,490,300	\$1,490,296	100.00%
Distribution	W01757	Tabor PS Improvements	060 Complete	1/4/18	100%	\$550,000	\$511,290	\$511,292	100.00%
Distribution	W01842	N Jantzen Ave west of Pavilion	030 Design	6/5/20	69%	\$1,283,000	\$1,381,300	\$214,002	15.49%
Distribution	W01848	Council Crest Tank Roof Replacement	040 Constructic	9/5/19	61%	\$700,000	\$2,090,800	\$496,348	23.74%
Distribution	W01880	SW Vista Ave from Spring St to Laurel St	055 Closeout W	9/19/18	100%	\$866,000	\$1,011,900	\$1,011,907	100.00%
Distribution	W01924	Outer Powell Transportation Safety	030 Design	2/5/21	58%	\$1,974,000	\$3,248,100	\$209,161	6.44%
Distribution	W02004	Penridge Mains	030 Design	1/5/21	40%	\$2,530,000	\$2,493,400	\$177,646	7.12%
Distribution	W02005	Willamette Blvd Bridge Main Replacement	030 Design	12/8/21	50%	\$4,500,000	\$4,496,100	\$172,941	3.85%
Distribution	W02073	SW Boones Ferry Rd at SW Arnold St Bridge	030 Design	12/6/19	51%	\$560,000	\$515,490	\$68,724	13.33%
Distribution	W02077	SE 20th Ave Oak St north of SE Pine St	055 Closeout W	5/22/18	100%	\$454,000	\$236,310	\$236,306	100.00%
Distribution	W02100	Humboldt Sewer Repair	055 Closeout W	3/21/18	100%	\$487,000	\$169,970	\$169,972	100.00%
Distribution	W02105	NE 49th and Roselawn Bundle	030 Design	4/5/21	23%	\$916,000	\$892,360	\$50,865	5.70%
Distribution	W02107	Fulton Pump Mains Replacement	030 Design	9/1/22	17%	\$5,079,000	\$5,080,300	\$83,224	1.64%
Distribution	W02115	NE 47th Ave and Columbia Blvd LID	030 Design	12/18/19	63%	\$1,400,000	\$1,396,400	\$79,248	5.68%
Distribution	W02134	Columbia Slough Outfall 104b	040 Constructic	1/7/19	70%	\$936,000	\$392,120	\$391,369	99.81%
Distribution	W02192	NE Wheeler Basin Relocations	040 Constructic	5/17/19	81%	\$832,000	\$348,200	\$323,391	92.88%
Distribution	W02222	SCADA System Upgrade 2017	030 Design	2/28/20	21%	\$1,386,000	\$1,386,000	\$0	0.00%
Distribution	W02237	Sunnyside North Reconstruction	030 Design	2/25/20	25%	\$1,077,000	\$1,069,400	\$142,364	13.31%
Distribution	W02292	IA - SW Capitol Hwy fr Garden Home Rd S	030 Design	8/20/20	11%	\$2,300,000	\$2,311,700	\$45,991	1.99%
Distribution	W02303	SE Holgate Blvd I-205 Bridge Main Rehab	030 Design	1/4/21	11%	\$543,000	\$543,000	\$24,443	4.50%
Distribution	W02318	Wash Park PS 2 Transformer Replacement	030 Design	1/7/20	8%	\$995,960	\$995,960	\$16,224	1.63%
Supply	W01371	Groundwater Electrical Supply Improvements	040 Constructic	2/19/19	75%	\$2,200,000	\$1,418,500	\$1,186,422	83.64%
Supply	W01874	Road 10R MP 28.77 - 31.85	030 Design	11/17/20	57%	\$2,100,000	\$2,109,900	\$252,369	11.96%
Supply	W01875	Road 10H MP 10.95 - 12.56	040 Constructic	1/4/19	84%	\$822,000	\$1,311,400	\$281,136	21.44%
Supply	W02001	Dam 1 Needle Valve Replacement	030 Design	4/29/20	64%	\$3,260,000	\$3,843,900	\$385,708	10.03%
Supply	W02003	Headworks Septic System Replacement	040 Constructic	1/16/19	84%	\$470,000	\$718,630	\$524,243	72.95%
Supply	W02021	Microwave Communications System	040 Constructic	1/29/19	72%	\$2,214,000	\$1,578,300	\$539,026	34.15%
Supply	W02106	Vivian Groundwater Improvements - cancelled	059 Cancelled	2/28/18	100%	\$1,730,000	\$0	\$0	0.00%
Supply	W02110	Road 10E MP 6.2 - 8.2	030 Design	2/4/21	6%	\$1,652,000	\$1,735,000	\$15,004	0.86%
Supply	W02355	Groundwater PS Roof Replacement	010 Initiation	4/2/21	10%	\$728,000	\$728,000	\$0	0.00%
Transmission & Terminal Storage	W01402	Washington Park Reservoir 3	040 Constructic	3/29/24	58%	\$61,132,686	\$205,000,000	\$71,048,513	34.66%
Transmission & Terminal Storage	W01489	Rockwood PUD Meter Vault	030 Design	6/24/19	76%	\$530,000	\$551,960	\$141,961	25.72%
Transmission & Terminal Storage	W02006	Gresham Conduit 2 Trestle Upgrades	030 Design	6/29/20	54%	\$1,150,000	\$1,302,200	\$417,624	32.07%
Transmission & Terminal Storage	W02057	Conduit 3 Internal Inspection	060 Complete	4/24/18	100%	\$1,030,000	\$1,755,600	\$1,710,422	97.43%
Transmission & Terminal Storage	W02104	Sandy River Crossing Outfall - cancelled	059 Cancelled	7/17/17	100%	\$650,000	\$0	\$12,441	0.00%
Transmission & Terminal Storage	W02108	WA Park Hypochlorite	030 Design	4/2/21	5%	\$1,740,000	\$1,740,000	\$7,264	0.42%
Transmission & Terminal Storage	W02111	Powell Butte Reservoir 1 Roof Upgrades	030 Design	4/7/21	4%	\$6,056,000	\$6,056,000	\$1,668	0.03%
Transmission & Terminal Storage	W02209	Conduit 2 Internal Inspection	040 Constructic	12/21/18	79%	\$1,788,000	\$1,787,600	\$1,320,695	73.88%
Treatment	W01860	Headworks Generator Improvements - cancelled	059 Cancelled	6/30/17	100%	\$1,670,000	\$0	\$489,462	0.00%
Treatment	W02002	Chlorine Scrubber Replacement - cancelled	059 Cancelled	12/1/17	100%	\$485,000	\$0	\$70,709	0.00%
Treatment	W02190	Corrosion Control Improvements	030 Design	9/9/22	14%	\$19,916,000	\$19,916,000	\$355,398	1.78%
Treatment	W02229	Water System Filtration	020 Planning	7/25/28	10%	\$500,000,000	\$500,000,000	\$985,834	0.20%