W-16 Small Diameter Water Main Replacement

Adopted Description and Scope

This program focuses primarily on replacing small diameter asbestos cement (AC) pipe that has reached its useful life. A secondary benefit is increasing the emergency fireflow available to neighborhoods. This investment will ramp up water pipeline replacement to 5 miles/year by 2018, and then be adjusted with inflation to maintain the 5 miles per year replacement rate. At that rate, water pipe will need to last on average 100-125 years. Pipes are selected for replacement based on risk of failure (likelihood and consequence), failure history, and coordination with other construction, such as planned street overlays (which reduce restoration costs).

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-16	2015	2016	2017	2018	2019	2020	2021
Miles	3.5	4.3	4.6	5	5	5	5
Adopted	$6,119,000	$7,888,000	$8,503,000	$9,326,000	$9,513,000	$9,703,000	$9,897,000

Note: Adopted 2016 budget was $7,708,000. Budget increased by 180K on 4/20/2015, to reflect payment from Sound Transit for AC watermain replacement at the South Bellevue light rail station.

Historical Expenditures

W-16	2009	2010	2011	2012	2013	2014	2015
Expenditures	$2,511,000	$2,416,000	$4,153,000	$4,789,000	$5,228,000	$4,318,000	$7,305,000
Miles Replaced	1.59	1.87	3.47	3.29	3.26	3.02	3.32

Proposed Changes

Scope: No change to program intent of ramping up to a sustainable 5 miles of pipe replacement/year. Staff will continue to monitor pipe failures and claims to ensure that is appropriate rate of replacement.

Schedule: No changes proposed. Continue funding as an annual program, plateauing at sustainable rate of replacement of 5 miles/pipe/year in 2018.

Cost: The proposed budget reflects a 2.8% increase in the projected cost to replace pipe based on $338/LF cost (2015$) from recent actual bid experience, beginning in 2017. The prior budget was based on $329/LF, based on bid experience during the economic downturn.

Proposed Budget *(includes inflation)*

W-16	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miles	3.5	4.3	4.6	5	5	5	5	5	5
Adopted	$6,119,000	$7,888,000	$8,503,000	$9,326,000	$9,513,000	$9,703,000	$9,897,000	$0	$0
Proposed	$6,119,000	$7,888,000	$8,741,000	$9,587,000	$9,779,000	$9,975,000	$10,174,000	$10,337,000	$10,585,000
Difference	$0	$0	$238,000	$261,000	$266,000	$272,000	$277,000	$10,337,000	$10,585,000

Policy Input Requested:

Should the program budget be increased as proposed?

W-67 Pressure Reducing Valve (PRV) Rehabilitation

Adopted Description and Scope

This ongoing program is to rehabilitate or replace old and deteriorating pressure reducing valves (PRVs) throughout the water service area. The number of pressure reducing valves that are rehabilitated varies from year to year based on the annual program budget and the rehabilitation costs, but over the long term should average about 3 PRVs per year. Replacement criteria include service requirements, safety, maintenance history, age, and availability of replacement parts.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-67	2015	2016	2017	2018	2019	2020	2021
# PRVs	*	**3**	**3**	**3**	**3**	**3**	**3**
	$433,000	$384,000	$392,000	$399,000	$407,000	$416,000	$424,000

Historical Expenditures

W-67	2009	2010	2011	2012	2013	2014	2015
	$499,000	$1,243,000	$885,000	$415,000	$57,000	$576,000	$445,000

Average expenditures per year (2009-2015) = $ 589,000

Proposed Changes

Scope: No change to the scope of this program.

Schedule: No change to the schedule, which will replace three PRVs per year, on average.

Cost: Maintain budget at the rate adopted last time, to accomplish 3 PRVs per year on average.

Expenditures through 2015 were higher in order to replace stations that were more than 30 years old and at high risk of failure. The condition of the remaining older stations should allow a sustainable replacement rate of an average of three PRVs per year beginning in 2016.

Proposed Budget *(includes inflation)*

W-67	2015	2016	2017	2018	2019	2020	2021	2022	2023
# PRVs	*	**3**	**3**	**3**	**3**	**3**	**3**	3	**3**
Total	$433,000	$384,000	$392,000	$399,000	$407,000	$416,000	$424,000	$432,000	$441,000

*2015 expenditures reflect 2 PRVs plus 2 costly lid replacements, and design of 3 PRV projects.
2016 and beyond reflect 3 PRV designs and 3 installations per year.

Policy Input Requested:

None

W-69 Minor (Small) Water Capital Improvement Projects

Adopted Description and Scope

This ongoing program pays for small improvements to Bellevue's water system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other programs such as the Transportation overlay program. Projects are prioritized based on criteria including public safety/property damage, maintenance frequency, operator safety, environmental risk, reliability and efficiency gains, coordination with other city projects or development activity, and level of service impact.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-69	2015	2016	2017	2018	2019	2020	2021
	$269,000	$212,000	$216,000	$220,000	$225,000	$229,000	$234,000

Historical Expenditures

W-69	2009	2010	2011	2012	2013	2014	2015
	$226,000	$152,000	$166,000	$372,000	$100,000	$255,000	$637,000

Average expenditures per year (2009-2015) = $ 273,000

Proposed Changes

Scope: No changes are proposed.

Schedule: No changes are proposed.

Cost: Maintain annual budget near historical average need.

Proposed Budget *(includes inflation)*

W-69	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	$269,000	$212,000	$216,000	$220,000	$225,000	$229,000	$234,000	$239,000	$244,000

Policy Input Requested:

None

W-82 Fire Hydrant Standardization

Adopted Description and Scope

This program replaces non-standard hydrants that have outdated two-port connections, thereby improving the rate of water flow and reducing response time in the event of a fire. Twenty two two-port hydrants are still in service. Based on the proposed budget, these will all be replaced by 2019.

PROJECT NEED: System Renewal & Replacement; Improved Level of Service

Adopted Budget *(includes inflation)*

W-82	2015	2016	2017	2018	2019	2020	2021
	-	$58,000	$309,000	$254,000	-	-	-

Historical Expenditures

W-82	2009	2010	2011	2012	2013	2014	2015
	$3,000	$27,000	$4,000	$0K	$0K	$0	$0

Proposed Changes

Scope: No changes except to update the statistics. 22 two-port hydrants remain in service. This program will replace all of those hydrants that would not otherwise be replaced in concert with adjacent water main replacement within this CIP window.

Schedule: No change

Cost: No change. The cost for engineering, inspection and construction is estimated at ~$28,000 per hydrant ($2015).

Proposed Budget *(includes inflation)*

W-82	2015	2016	2017	2018	2019	2020	2021	2022	2023
# Hydrants	**0**	**0**	**11**	**11**	**0**	**0**	**0**	**0**	**0**
Total	$0	$58,000	$309,000	$254,000	$0	$0	$0	$0	$0

Policy Input Requested:

None

W-85 Reservoir Rehabilitation or Replacement

Adopted Description and Scope

This program funds retrofit or replacement of drinking water reservoirs to avoid or mitigate earthquake damage, and reservoir rehabilitation for age or use related deterioration. Bellevue operates and maintains 25 drinking water reservoirs in the system with a combined capacity of 40.6 million gallons. A 1993 reservoir study evaluated the seismic vulnerability of 21 of the reservoirs and recommended further evaluation and/or upgrade for 12 of these reservoirs. Remaining work at Horizon View #1, Somerset #1, Pikes Peak Reservoir, and Horizon View #2 reservoirs will be completed during this CIP window. A new study of the other reservoirs will determine upcoming needs and priorities for asset rehabilitation and replacement.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-85	2015	2016	2017	2018	2019	2020	2021
	$1,045,000	$1,639,000	$1,057,000	$1,093,000	$140,000	$229,000	$746,000

Historical Expenditures

W-85	2009	2010	2011	2012	2013	2014	2015
	$33,000	$54,000	$45,000	$71,000	$87,000	$210,000	$338,000

Proposed Changes

Scope: We are nearing completion of rehabilitation work at the 12 reservoirs identified in the 1993 study. A new study of the remaining reservoirs will be conducted in 2016-17 to determine upcoming needs and priorities for asset rehabilitation and replacement.

Schedule: The schedule reflects planned design and construction of one reservoir rehabilitation project per year through the CIP window. In order to achieve efficiencies and minimize disruptions to neighboring properties, the schedule of some of the reservoirs is set to coincide with pump station replacements located at the reservoir property. Horizon View No. 1 reservoir was rescheduled to incorporate findings from the new Water System Plan. Pikes Peak Reservoir was rescheduled to allow public outreach and preliminary design.

Cost: Horizon View No. 1 will cost ~$100,000 more than anticipated, due to greater volume recommended in the Water System Plan.

Placeholder budget was added in the new program years to achieve asset management target of one reservoir per year. Specific projects will be identified based on updated reservoir study in 2016-17. "Generic" costs for three potential new projects resulting from that study have been added to the later years of the budget.

Proposed Budget *(Includes inflation)*

W-85	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	$1,045,000	$1,639,000	$1,057,000	$1,093,000	$140,000	$229,000	$746,000	$0	$0
Proposed	$1,045,000	$1,639,000	$838,000	$1,047,000	$954,000	$222,000	$777,000	$1,382,000	$2,011,000
Difference	$0	$0	($219,000)	($46,000)	$814,000	($7,000)	$31,000	$1,382,000	$2,011,000

Detailed Budget Development: *(inflation included in totals; project costs in 2015$)*

W-85	2015	2016	2017	2018	2019	2020	2021	2022	2023
Misc. Reservoir Structural Projects	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Somerset #1 Res. Abandon.	$33,000	$580,000							
Somerset #2 Structural Seismic Retrofit	$213,000								
NE 40th St Res. Roof	$67,000								
Horizon View #1 Res. Replace	$277,000	$1,040,000	$525,000						
Clyde Hill 390 Seismic Stability	$10,000								
Pikes Peak 550 Res. Structural Seismic Ret.	$8,000	$100,000	$150,000	$975,000	$870,000				
Evaluate Future prog-ram needs		$120,000	$120,000						
Horizon View #2 Res Replace.						$195,000	$680,000	$590,000	
Reservoir Rehab #1								$300,000	$700,000
Reservoir Rehab #2								$300,000	$700,000
Reservoir Rehab #3									$300,000
Total 2015$	$613,000	$1,845,000	$800,000	$980,000	$875,000	$200,000	$685,000	$1,195,000	$1,705,000
Proposed Budget (inflated)	**$1,045,000**	**$1,639,000**	**$838,000**	**$1,047,000**	**$954,000**	**$222,000**	**$777,000**	**$1,382,000**	**$2,011,000**

Policy Input Requested: Should the program budget be increased as proposed?

W-91 Water Pump Station Rehabilitation or Replacement

Adopted Description and Scope

This program was established in 2005 to rehabilitate Bellevue's twenty-one water pump stations. Based on a needs assessment of each pump station, improvements can range from basic improvements to complete reconstruction. The rehabilitation work always includes replacing the mechanical and electrical equipment, adds on-site emergency power generation as needed, and resolves structural deficiencies and life/safety issues as needed. In 2015-21 these pump stations will be rehabilitated or replaced: Horizon View #3, Horizon View #1, Cougar Mtn. #3, Pikes Peak, Cougar Mtn. #2, Clyde Hill P.S., Cougar Mtn. #1, and Horizon View #2.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-91	2015	2016	2017	2018	2019	2020	2021
	$2,477,000	$2,188,000	$2,186,000	$2,010,000	$634,000	$1,274,000	$2,902,000

Historical Expenditures

W-91	2009	2010	2011	2012	2013	2014	2015
	$425,000	$42,000	$14,000	$238,000	$930,000	$397,000	$1,247,000

A comprehensive study of all of Bellevue's water pump stations was performed between 2007 and 2010 to determine the needs for this program and develop a prioritized schedule for pump station rehabilitation and replacement.

Proposed Changes

Scope: The scope remains to rehabilitate one pump station, on average, each year, which is a sustainable approach in the long term. A study to refine future needs for Pump Station evaluation in 2016 will inform future CIP updates.

Schedule: The schedule reflects planned design and construction of one pump station project per year through the CIP window. Where possible, reservoir and pump stations that are located adjacent to each other are rehabilitated concurrently, for efficiency of design and construction, and to minimize construction disruption. Horizon View 1 and Pikes Peak PS were rescheduled for this purpose. Pump station rehabilitation will need to continue indefinitely.

Cost: Costs through 2021 increased $2.5Million. Pre-design work in 2015 at CM3 identified a substantial amount of additional needed work, including replacement of pumps, new generator, and site improvements, which tripled that project cost to $1.8million.

Projects and costs were identified for 2022 and 2023. The estimated cost for each station is based on 2010 consultant study of 25 stations, escalated to current costs, except where more refined estimates were available. Pump station rehabilitation costs vary widely (from under $300,000 to over $4,000,000) depending on the type of pump station and the scope of needed retrofits, which can range from simply changing out mechanical and electrical components, up to complete station demolition and replacement.

Proposed Budget *(Includes inflation)*

W-91	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	$2,477,000	$2,188,000	$2,186,000	$2,010,000	$634,000	$1,274,000	$2,902,000	$0	$0
Proposed	$2,477,000	$2,188,000	$2,933,000	$2,287,000	$2,123,000	$1,306,000	$2,800,000	$2,782,000	$2,312,000
Difference	$0	$0	$747,000	$277,000	$1,489,000	$32,000	($102,000)	$2,782,000	$2,312,000

Detailed Budget Development *(inflation included in totals; project costs in 2015$)*

W-91	2015	2016	2017	2018	2019	2020	2021	2022	2023
Horizon View No. 3 PS Rehab.	$1,270,000								
Horizon View No. 1 PS Replace.	$465,000	$1,740,000	$885,000						
Cougar Mt. No. 3 PS Rehab.	$87,000	$355,000	$1,425,000						
Pikes Peak PS Replace.		$100,000	$390,000	$1,710,000	$1,355,000				
Evaluation of Water PS		$200,000							
Cougar Mt. No. 2 PS Rehab.			$100,000	$390,000	$335,000				
Clyde Hill PS Rehab.				$40,000	$135,000	$115,000			
Cougar Mt. No. 1 PS Rehab.					$115,000	$450,000	$380,000		
Horizon View No. 2 PS Replace.						$610,000	$2,160,000	$1,840,000	
Cherry Crest PS Replace.								$565,000	$1,380,000
Parksite PS Replace.									$580,000
Total (2015$)	$1,822,000	$2,395,000	$2,800,000	$2,140,000	$1,940,000	$1,175,000	$2,540,000	$2,405,000	$1,960,000
Proposed Budget (inflated)	**$2,477,000**	**$2,188,000**	**$2,933,000**	**$2,287,000**	**$2,123,000**	**$1,306,000**	**$2,800,000**	**$2,782,000**	**$2,312,000**

Policy Input Requested:

Should the program budget be increased as proposed?

W-98 Replacement of Large Commercial Water Meters

Adopted Description and Scope

This program systematically replaces older, obsolete high-volume commercial water meters (3" and larger) as they wear out. Due to their location and condition, these meters pose safety and access concerns and are generally beyond the ability of O&M crews to change out. Improved performance accuracy is a secondary benefit of the program. This ongoing program replaces approximately 4 commercial meters (and meter vaults, if required) each year.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-98	2015	2016	2017	2018	2019	2020	2021
# Meters	5+	4	4	4	4	4	4
	$581,000	$516,000	$527,000	$537,000	$548,000	$559,000	$570,000

Historical Expenditures

W-98	2009	2010	2011	2012	2013	2014	2015
	$0K	$4,000	$33,000	$43,000	$253,000	$394,000	$471,000

Average expenditures per year (2009-2015) = $171,000

Proposed Changes

Scope: No change proposed.

Schedule: No change is proposed. This is an ongoing program intended to replace approximately 4 commercial meters / year

Cost: No change except to add new program years.

Proposed Budget *(includes inflation)*

W-98	2015	2016	2017	2018	2019	2020	2021	2022	2023
# Meters	**5+***	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
Total	$581,000	$516,000	$527,000	$537,000	$548,000	$559,000	$570,000	$581,000	$593,000

*Work in 2014 and 2015 included costly lid replacements in addition to replacement of meters and design for following year's projects

Policy Input Requested:

None

W-99 Water Service Line and Saddle Replacement Program

Adopted Description and Scope

This program replaces aging and deteriorating water service saddles (the component connecting the customer's water service line to the city-owned water line), and deteriorating water service lines (the pipes between the city's water main to the customer's water meter), most commonly in advance of planned street improvements. Annual expenditures can vary widely depending on the condition of saddles and service lines where street improvement projects are planned. Due to these uncertainties, level funding based on replacement of 100 service/saddles is proposed for each year in the CIP window, recognizing that some years will be over or under spent.

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-99	2015	2016	2017	2018	2019	2020	2021
	$237,000	$243,000	$248,000	$253,000	$258,000	$263,000	$269,000

Historical Expenditures

W-99	2009	2010	2011	2012	2013	2014	2015
	$420,000	$481,000	$52,000	$360,000	$0K	$205,000	$140,000

Average expenditures per year (2009-2015) = $237,000

Proposed Changes

Scope: No change proposed.

Schedule: The schedule for this project is driven by planned Transportation improvements, and the condition of saddles and service lines under proposed street improvements.

Cost: No change is proposed.

Annual expenditures vary widely depending on the condition of saddles and service lines where Transportation projects are planned. Because of those uncertainties, level funding is proposed for each year in the CIP window, recognizing that some years will be over- and under-spent. Estimated annual cost is based on 100 service/saddle replacements per year @ $2000, plus design costs.

Proposed Budget *(includes inflation)*

W-99	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	$237,000	$243,000	$248,000	$253,000	$258,000	$263,000	$ 269,000	$274,000	$279,000

Policy Input Requested:

None

W-103 Increase Drinking Water Storage Availability for West Operating Area

Adopted Description and Scope

This project is for design and construction of facilities to increase the drinking water storage available for anticipated population growth in Downtown, Bel-Red, and Wilburton areas. System improvements will be made in this CIP window to allow transfer of surplus water stored in East Bellevue to the growth areas, assuring emergency storage is available for near-term growth. These improvements include upgrades to transmission mains in NE 8th Street and at SE 7th and 140th Ave SE, and upgrades to system Pressure Reducing Valves.

The project also includes analysis of emergency well capacity to supplement regional supply in case of an outage, which may offset or reduce the need for added storage. The 2015 Water System Plan update will analyze required timing and volume as well as siting considerations for storage to meet the needs of planned growth. Since construction of storage has been deferred until beyond this CIP window, costs shown are significantly reduced from the last CIP budget.

PROJECT NEED: System Expansion

Adopted Budget *(includes inflation)*

W-103	2015	2016	2017	2018	2019	2020	2021
	$134,000	$317,000	$755,000	$440,000	$1,347,000	-	-

Proposed Changes

Scope: Updated per WSP: This project is for design and construction of facilities to increase the drinking water storage available for anticipated population growth in Downtown, Bel-Red, and Wilburton areas. System improvements will be made to allow transfer of surplus water stored in East Bellevue to the growth areas, and to access currently unavailable dead storage in Clyde Hill, assuring emergency storage will be available for near-term growth. These improvements include upgrades to transmission mains in NE 8th Street, at SE 7th and 140th Ave SE, and improvements at the Clyde Hill 465 standpipe. System analysis revealed approximately 0.4 million gallons can be accessed in Clyde Hill 465 standpipe for immediate emergency use in the west operating area. This project also will improve water quality and increase fire flows.

The 2015 Water System Plan update also identified the need for additional storage beyond the current CIP window, to meet the needs of planned growth. Future CIP updates will address long-term storage needs as appropriate.

Schedule: Proposed schedule reflects adjustment of projects within the CIP window, including adding storage optimization at Clyde Hill 465 standpipe first due to multiple benefits and straightforward implementation. Implementation of the east-to-west transmission project, which was delayed while the WSP and revised storage analysis were completed, is now scheduled. Work in NE 8th will be coordinated with construction of a major storm culvert in 2018-19.

Cost: Costs have been revised to add CH 465 work and to reflect revised scheduling; overall increase $

Proposed Budget *(Includes inflation)*

W-103	2015	2016	2017	2018	2019	2020	2021	2022	2023
Adopted	$134,000	$317,000	$755,000	$440,000	$1,347,000	$0	$0	$0	$0
Proposed	$134,000	$317,000	$1,410,000	$641,000	$654,000	$0	$0	$0	$0
Difference	$0	$0	$655,000	$201,000	($603,000)	$0	$0	$0	$0

Detailed Project Budget *(Project costs in 2015$; Inflation included in total)*

W-103	2015	2016	2017	2018	2019	2020	2021	2022	2023
Emergency Well Evaluation	$2,000								
SE 7th and 140th Ave SE Trans. Main Imp.		$300,000	$700,000						
NE 8th Street Trans. Main Imp.			$400,000	$600,000	$600,000				
Clyde Hill 465 Standpipe optimization.	$25,000	$95,000	$246,000						
Total (2015$)	$25,000	$395,000	$1,346,000	$600,000	$600,000				
Proposed Budget (with inflation)	**$134,000**	**$317,000**	**$1,410,000**	**$641,000**	**$654,000**	**$0**	**$0**	**$0**	**$0**

Policy Input Requested:

Should the program budget be increased as proposed?

W-104 New Water Inlet Station

Adopted Description and Scope

This project will construct a new inlet station from the regional water supply system to provide sufficient drinking water for growth in downtown, Bel-Red, and Wilburton areas. It will also improve drinking water supply reliability (redundancy) to the 200,000 people who will ultimately live and work in these areas. The transmission main improvements of W-103 will improve reliability of water supply in the near term, deferring the need to add inlet station capacity until ~2019-20.

PROJECT NEED: Improved Level of Service

Adopted Budget *(includes inflation)*

W-104	2015	2016	2017	2018	2019	2020	2021
	-	-	-	$637,000	$2,273,000	$2,319,000	-

Proposed Changes

Scope: Updated based on WSP: This project will construct a new inlet station from the regional water supply system to provide sufficient drinking water for growth in downtown, Bel-Red, and Wilburton areas. It will also improve drinking water supply reliability (redundancy) to the 200,000 people who will ultimately live and work in these areas.

Bellevue's drinking water comes from regional water supply lines that run through Bellevue. Water can be accessed only through inlet stations which house the pipes, valves and meters that feed drinking water into Bellevue's water system. The 2015 Water System Plan confirmed the need for additional supply inlet capacity, and recommended accelerating the project to be complete by 2020 based on revised water demand trends and development projections. (The transmission main improvements of W-103 will improve reliability and redundancy of water supply to the West Operating Area in the near-term, but do not eliminate the need to add inlet station capacity.) The inlet will improve drinking water supply reliability by adding a third major water supply path to ensure adequate water supply in the event that one station is out of service. The inlet location was previously assumed to be near NE 20th. However, that would involve tapping SPU's 48" concrete pipe, adding risk and cost. Pre-existing turnouts at NE 8th (west side of pipe) and at Main Street (east side of pipe) would simplify connection and may be adequate locations.

Schedule: Proposed schedule is accelerated by one year to anticipate construction completion by 2020.

Cost: No change proposed.

Proposed Budget *(includes Inflation)*

W-104	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total			**$637,000**	**$2,273,000**	**$2,319,000**	**$0**	**$0**	**$0**	**$0**

Policy Input Requested: none

W-105 Water Facilities for NE Spring Blvd. Multi-Modal Corridor

Adopted Description and Scope

This project provides funds for the design and construction of new water facilities concurrent with the design and construction of the NE 15th Multi-Modal corridor. The corridor will consist of a new street, bikeways, pathways, and the new East Link light rail. This project will eventually design and construct approximately 2 miles of 12 and 16 inch water main. Absent better data, costs are shown spread throughout the CIP window, and are presumed to extend well beyond 2030. The project schedule will be revised when better information is available about road improvement schedules.

PROJECT NEED: System Expansion

Adopted Budget *(includes inflation)*

W-105	2015	2016	2017	2018	2019	2020	2021
	$220,000	$226,000	$231,000	$236,000	$240,000	$245,000	$250,000

Proposed Changes

Scope: No change.

Schedule: Project construction timing is beginning to be better known, and expenditures are anticipated in this CIP window. Construction of water lines under this new boulevard is dependent on COB Transportation and Sound Transit design and construction schedules. Some expenditures will occur in 2015 and 2016, which was not anticipated when the current budget was adopted.

Cost: This project began collecting revenue in 2011 and will continue for several years toward the total estimated cost of this project. Total project cost estimate essentially unchanged at $4.4M (2015$). (The total project cost was previously estimated at $2.3 million through 2023; $2.0M between 2023 and 2050.) The total project cost that Bellevue is responsible for excludes Sound Transit, Spring District Developer, and Transportation costs.

Proposed Budget *(includes inflation)*

W-105	2015	2016	2017	2018	2019	2020	2021	2022	2023
Revenue toward project	$220,000	$226,000	$231,000	$236,000	$240,000	$245,000	$250,000	$255,000	$260,000
Estimated Expend. by year	$3,000	$330,000	$430,000	$0	$362,000	$0	$0	$0	$0

Expenditures anticipated beyond 2023: $3.325Million

Policy Input Requested: None

W-106 Water Facilities for NE 4th Street Extension (project is complete)

Adopted Description and Scope

This project paid for design and construction of approximately 1,400 feet of new 12 inch or 16 inch water main within the new NE 4th Street right-of-way.

PROJECT NEED: Improved Level of Service

Adopted Budget *(includes inflation)*

W-106	2015	2016	2017	2018	2019	2020	2021
	$206,000	$89,000	-	-	-	-	-

Project was completed ahead of schedule in 2015, approximately on budget

Policy Input Requested:

None

W-107 Sound Transit East Link Corridor within Bellevue City Limits

Adopted Description and Scope

PROJECT NEED: System Renewal and Replacement

Adopted Budget *(includes inflation)*

W-107	2015	2016	2017	2018	2019	2020	2021
	$3,024,000	-	-	-	-	-	-

Note: Adopted 2015 budget was $2,630,000. Budget increased by $394,000 to reflect agreement (inflation).

Proposed Changes

Scope: No change.

Schedule: No change.

Cost: No change proposed. The total cost of this project is $3,024,000.

W-NEW-2-M Advanced Metering Infrastructure Implementation

Proposed Description and Scope

This program is to implement Advanced Metering Infrastructure (AMI) throughout Bellevue. Implementation is the third phase of this project (following Business Case development in 2014, Phase 1 Feasibility Study in 2015-16, and Phase 2 Vendor Selection).

Bellevue's current water meters cannot provide real-time data, meaning leaks can go on for long periods before they are identified, resulting in high customer bills and unhappy customers. (Meters are read on a 2-month cycle; significant labor costs would be involved with modifying billing frequency). Customers cannot self-monitor water use except bi-monthly via MyUtilityBill.

The AMI project will provide the following benefits:
1. Financial Benefits (improved billing and meter accuracy, reduced labor for meter reading, reduced time between meter read and bill production, reduce capital for meter reader vehicles and inventory, reduced manual processing, improved system planning due to availability of local water flow data for modeling, etc.)
2. Social Benefits (increased responsiveness to customers, accurate and timely billing, reduce turnaround time related to off-cycle reads, master data management for data mining, leak detection and reporting, staff and customer alarms/notifications, etc.)
3. Environmental Benefits (water conservation through leakage detection, prevent contamination of the public water supply through detection of negative and flow pressure, backflow detection, reduce meter vehicle emissions, etc.)

Based on preliminary evaluations, the initial capital cost to install an AMI system is approximately $22,845,000, which would be split between water and sewer utilities (50/50).

There will be ongoing operating costs associated with this program.

PROPOSED SCHEDULE: Full implementation by 2020

PROJECT NEED: System Renewal and Replacement; Improved efficiency and functionality

Proposed Budget *(includes inflation)*

W-NEW-2-M	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	$150,000	$4,032,000	$8,064,000	$0	$0	$0	$0

Cost beyond 2023: There will be ongoing operations and maintenance costs associated with this project.

Total Project Cost: The initial capital cost, including installation of new meters, replacement of meter boxes and lids, installation of meter interface units (MIUs), integration costs, and project management costs is estimated at $22,845,000, spread equally between water and sewer funds.

Policy Input Requested: Should this project be added to the Water (and Sewer) Capital Investment Program?

W-NEW-3 West Lake Sammamish AC Main Replacement from SE 18th to NE 8th

Proposed Description and Scope

This project would accelerate replacement of 11,000LF of AC water main in W. Lake Sammamish Parkway from approximately SE 18th Street to NE 8th Street, based on a 2015 analysis of risk. (This significant length is recommended in addition to the already-programmed water main replacement in W-16.)

A 2012 landslide and watermain break involving AC pipe on the 500 block of W Lake Sammamish Pkwy. SE forced closure of the road for a period of several months. This event resulted in re-assessment of water main failure consequence along this busy commuting corridor. Replacement of the existing 6" AC would also allow the City to raise water pressure, improving fireflow and water pressure for customers in an area.

PROPOSED SCHEDULE: The Transportation Department is planning improvements along the Parkway as part of PW-R-183, with design beginning in 2018 and construction planned for 2020-2021. Improvements will include a shoulder on the east side, travel lane adjustments, a new signal, pedestrian crossings, storm drainage improvements, and other work. Scheduling of this project, and restoration costs if appropriate, would be coordinated with that project. Design is planned in 2017 to inform improved project costs in the next CIP update. The Parkway is a concrete road; traffic control will be a significant concern and cost.

PROJECT NEED: System Renewal and Replacement

Proposed Budget *(includes inflation)*

W-NEW-3	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	$720,000	0	$2,113,000	$2,156,000	0	0	0

Cost beyond 2023: $0

Total Project Cost: Total project cost is estimated at $4,600,000 if built today (2015$).

Policy Input Requested:

If condition assessment points to near term replacement of these pipes, should this project be added to the Water Capital Investment Program?

W-NEW-5-M Land Acquisition for North End Yard

Proposed Description and Scope

This project provides budget to acquire land in the north end of Bellevue for siting of a municipal maintenance facility (North End Yard site). Site acquisition would be based on the results of analysis done under separate CIP proposal (W-NEW-4-M). Funding for development of this yard is not included in this project.

Currently, Utilities and other operating departments based at the BSC spend an estimated 20-25% of their day traveling to and from work sites and the Eastgate Yard (address) to haul debris and spoils, to decant, and to access supplies such as crushed rock. A maintenance yard in the north end would reduce travel times and improve productivity by improving the proximity of materials and to decant facilities and a location to dump spoils. The goal is to increase productivity through reduced travel times and efficiencies.

PROPOSED SCHEDULE: Site acquisition is anticipated in 2019-20

PROJECT NEED: Capacity for Growth

Proposed Budget *(includes inflation)*

W-NEW-5-M	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	0	0	$3,333,000	$3,333,000	0	0	0

Cost beyond 2023: None. Property development costs are not included in this project.

Total Project Cost: Estimated cost is $20,000,000. Cost would be spread equally across three utility funds (Water, Sewer, and Storm)

Policy Input Requested:

Should this project be added to the Water Capital Investment Program? (And Sewer and Storm)

W-NEW-7 Richards Road Inlet Supply Station Improvements

Proposed Description and Scope

Richard's Road Inlet Station is a critical facility constructed in 1975 to deliver water from Seattle's regional system to Bellevue. It supplies water directly to the RV300, WD400, WD450, WD340 water pressure zones, and is the source of water to fill the Woodridge Reservoir. The associated pressure reducing valve (PRV) reduces pressure to water that is supplied to the RV300 zone, and also controls flow to the Woodridge reservoir. This critical facility has old components that require increasingly frequent maintenance; the existing mechanical and electrical components are outdated and in need of replacement. Due to the risk and consequence of failure, station replacement is required.

This project will include constructing a new inlet meter installation and pressure reducing valve station, and upgrading telemetry equipment at the site. Enhanced telemetry will record rate and volume of water that is supplied from the station, will provide pressure information both of the CESSL side and 300 zone; and will provide power to the vault for the meter, flood alarm, and intrusion. Because the existing inlet station is located on Richards Road, a very busy arterial which makes it access difficult and creates safety hazards for workers, the new station will be located on the eastern side of Richards Road, along a grassy area just east of the existing sidewalk, and the existing station will be abandoned.

This project was initiated in W-69 (Minor Water CIP), however alternatives analysis resulted in the recommendation to replace the entire station rather than just internal components. The increase in scope and cost warranted the creation of a separate CIP project.

PROPOSED SCHEDULE: Predesign is complete (in W-69). Construction is proposed for 2017 based on the increasingly frequent required maintenance as well as the high risk and consequence of failure.

PROJECT NEED: System Renewal and Replacement

Proposed Budget *(includes inflation)*

W-NEW-7	2015	2016	2017	2018	2019	2020	2021	2022	2023
Proposed Budget (with Inflation)	**0**	**0**	**$500,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Cost beyond 2023: None

Total Project Cost: $500,000 (in 2017$)

Policy Input Requested:

Should this project be added to the Water Capital Investment Program?

W-NEW-8 NE 40th and Enatai Water Supply Inlet Station Improvements

Proposed Description and Scope

This project is for an alternatives analysis and predesign for improvements at the Enatai and NE 40th Water Supply Inlet stations to improve safety, reduce risk, and renew aging infrastructure. The pre-design work will inform future CIP schedule and budgets. It will allow coordination with the City of Redmond, which benefits from and shares costs for the NE 40th Inlet Supply Station. Design and construction costs are not included in proposed budget.

The Water System Plan identified deficiencies including safety standards, poor HVAC controls, and deteriorating electrical components. The NE 40th Inlet meter vault has visible joint deflection; there may be perceived increased risk of a transmission main break.

PROPOSED SCHEDULE: King County is upgrading their Enatai Sewer Interceptor and may add a sewer line through the Enatai Beach Park, near the Enatai Water Supply inlet. If that work occurs (proposed 2019-22), it would provide an opportunity to collaborate construction to minimize neighborhood disruption.

PROJECT NEED: System Renewal and Replacement

Proposed Budget *(includes inflation)*

W-NEW-8	2015	2016	2017	2018	2019	2020	2021	2022	2023
	0	0	$200,000	0	0	0	0	0	0

Cost beyond 2023: This project is for alternatives analysis and predesign. The outcome will result in project implementation costs to be budgeted during the next CIP update. The project will also allow for input and time for budgeting for improvements by the City of Redmond.

Total Project Cost: Unknown beyond pre-design costs. Water System Plan planning-level estimated costs ~$2,000,000 for improvements at both locations, including Redmond's share of NE 40th.

Policy Input Requested:

Should this project be added to the Water Capital Investment Program?