

**BELLEVUE UTILITIES**  
**2023-2029 PROPOSED CAPITAL INVESTMENT**  
**PROGRAM PLAN (CIP)**

**Environmental Services Commission (ESC)**  
**BUDGET BOOK**

**March 2, 2022**



## 2023-2029 Proposed CIP Budget

(March 1, 2022)

### Water Utility CIP

CIP PLAN	DESCRIPTION	2023	2024	2025	2026	2027	2028	2029	2023-2029
W-16	Water Main Replacement	15,677,000	16,193,000	18,223,000	14,934,000	16,127,000	15,105,000	16,542,000	112,801,000
W-67	Press Reduc Valve	1,000,000	1,028,000	1,012,000	1,267,000	3,043,000	867,000	715,000	8,932,000
W-69	Minor Capital Improvement Proj	80,000	201,000	62,000	17,000	327,000	102,000	420,000	1,209,000
W-85	Reservoir Rehab	2,938,000	4,360,000	197,000	1,086,000	794,000	3,633,000	710,000	13,718,000
W-91	Pump Station Rehab	5,578,000	3,352,000	-	410,000	422,000	-	418,000	10,180,000
W-98	Large Commercial Meter Vault Replacement	629,000	486,000	318,000	1,311,000	45,000	417,000	-	3,206,000
W-99	Service Lines & Saddle Replcmt	690,000	995,000	-	-	-	19,000	153,000	1,857,000
W-103	West Op Area Storage	-	-	400,000	1,099,000	1,755,000	962,000	-	4,216,000
W-110	Water Supply Inlet Rehabilitation	175,000	129,000	-	-	-	-	-	304,000
W-111	Maintenance and Operations Yard	-	-	2,466,000	1,401,000	-	-	-	3,867,000
W-112	Water System Capital Planning	-	286,000	404,000	200,000	-	-	-	890,000
W-115	SCADA System Upgrade	767,000	395,000	-	-	-	-	-	1,162,000
W-117	170th Pl SE Pressure Improvements	771,000	596,000	-	-	-	-	-	1,367,000
W-118	Somerset Highlands Capacity Improvements	440,000	906,000	4,435,000	-	-	-	-	5,781,000
W-119	Groundwater Well Improvements	-	-	360,000	1,919,000	923,000	1,734,000	7,899,000	12,835,000
<b>Total Water CIP</b>		<b>28,745,000</b>	<b>28,927,000</b>	<b>27,877,000</b>	<b>23,644,000</b>	<b>23,436,000</b>	<b>22,839,000</b>	<b>26,857,000</b>	<b>182,325,000</b>

Description	2023	2024	2025	2026	2027	2028	2029	2023-2029
R&R Aging Infrastructure	28,305,000	27,735,000	19,812,000	19,025,000	20,758,000	20,143,000	18,958,000	154,736,000
Capacity for Growth	-	286,000	804,000	1,299,000	1,755,000	962,000	-	5,106,000
Environmental Preservation	-	-	-	-	-	-	-	-
Mandated	-	-	-	-	-	-	-	-
Service Enhancement	440,000	906,000	7,261,000	3,320,000	923,000	1,734,000	7,899,000	22,483,000
<b>Water CIP Total</b>	<b>28,745,000</b>	<b>28,927,000</b>	<b>27,877,000</b>	<b>23,644,000</b>	<b>23,436,000</b>	<b>22,839,000</b>	<b>26,857,000</b>	<b>182,325,000</b>

#### Program/Project Key:

R&R Aging Infrastructure
Capacity for Growth
Environmental Preservation
Mandated
Service Enhancement

## 2023-2029 Proposed CIP Budget

(March 1, 2022)

### Sewer Utility CIP

CIP PLAN	DESCRIPTION	2023	2024	2025	2026	2027	2028	2029	2023-2029
S-16	Sewage Pump Station Improv	1,847,000	7,423,000	3,206,000	2,661,000	5,160,000	1,354,000	1,646,000	23,297,000
S-24	Sewer System Trunk Rehab	4,489,000	3,500,000	5,883,000	4,958,000	4,512,000	3,042,000	2,381,000	28,765,000
S-32	Minor Capital Improvement Proj	258,000	-	-	-	-	-	-	258,000
S-58	Sewer Lake Line Replcemt Progm	675,000	41,000	119,000	219,000	945,000	1,159,000	1,146,000	4,304,000
S-66	Sewer System Pipeline Repl Pgm	698,000	89,000	112,000	839,000	216,000	-	-	1,954,000
S-111	Operations and Maintenance Land Acquisition - Se	-	-	3,315,000	2,779,000	-	-	-	6,094,000
S-112	Sewer Planning Program	-	-	1,366,000	397,000	-	-	-	1,763,000
S-115	SCADA System Upgrade	1,400,000	-	1,910,000	1,257,000	-	-	-	4,567,000
S-116	Permit Compliance Monitoring	51,000	37,000	38,000	39,000	41,000	42,000	43,000	291,000
S-117	Septic Systems Sewer Extensions	-	1,211,000	3,917,000	1,918,000	359,000	292,000	292,000	7,989,000
<b>Total Sewer CIP</b>		<b>9,418,000</b>	<b>12,301,000</b>	<b>19,866,000</b>	<b>15,067,000</b>	<b>11,233,000</b>	<b>5,889,000</b>	<b>5,508,000</b>	<b>79,282,000</b>

Description	2023	2024	2025	2026	2027	2028	2029	2023-2029
R&R Aging Infrastructure	9,367,000	11,053,000	11,230,000	9,934,000	10,833,000	5,555,000	5,173,000	63,145,000
Capacity for Growth	-	-	1,366,000	397,000	-	-	-	1,763,000
Environmental Preservation	-	-	-	-	-	-	-	-
Mandated	51,000	37,000	38,000	39,000	41,000	42,000	43,000	291,000
Service Enhancement	-	1,211,000	7,232,000	4,697,000	359,000	292,000	292,000	14,083,000
<b>Sewer CIP Total</b>	<b>9,418,000</b>	<b>12,301,000</b>	<b>19,866,000</b>	<b>15,067,000</b>	<b>11,233,000</b>	<b>5,889,000</b>	<b>5,508,000</b>	<b>79,282,000</b>

#### Program/Project Key:

R&R Aging Infrastructure
Capacity for Growth
Environmental Preservation
Mandated
Service Enhancement

## 2023-2029 Proposed CIP Budget

(March 1, 2022)

### Stormwater Utility CIP

CIP PLAN	DESCRIPTION	2023	2024	2025	2026	2027	2028	2029	2023-2029
D-64	Infrastructure Rehab Program	4,777,000	2,300,000	2,489,000	2,560,000	2,626,000	2,377,000	2,663,000	19,792,000
D-81	Fish Passage Improvement Proj	361,000	370,000	1,883,000	82,000	28,000	-	-	2,724,000
D-86	Stream Channel Modific Prog	19,000	5,912,000	3,121,000	983,000	145,000	346,000	400,000	10,926,000
D-94	Flood Control Program	-	3,218,000	2,283,000	1,299,000	4,260,000	580,000	36,000	11,676,000
D-104	Stream Restoration for M&I	-	258,000	-	-	-	-	-	258,000
D-104-B	Stream Restoration for M&I - BANK	-	-	-	-	-	-	-	-
D-109	Strm Wtr Qlty Retrofit Program	65,000	342,000	1,473,000	260,000	1,406,000	1,224,000	348,000	5,118,000
D-112	Storm & Surface Water Planning Program	25,000	645,000	451,000	300,000	-	-	-	1,421,000
D-114	Factoria Blvd Conveyance Improvement	900,000	5,362,000	146,000	500,000	388,000	-	-	7,296,000
D-115	SCADA System Upgrade	100,000	-	-	765,000	-	-	-	865,000
D-116	Post Construction Compliance Monitoring & Maint	372,000	263,000	175,000	197,000	216,000	147,000	86,000	1,456,000
<b>Total Stormwater CIP</b>		<b>6,619,000</b>	<b>18,670,000</b>	<b>12,021,000</b>	<b>6,946,000</b>	<b>9,069,000</b>	<b>4,674,000</b>	<b>3,533,000</b>	<b>61,532,000</b>

Description	2023	2024	2025	2026	2027	2028	2029	2023-2029
R&R Aging Infrastructure	4,877,000	2,300,000	2,489,000	3,325,000	2,626,000	2,377,000	2,663,000	20,657,000
Capacity for Growth	-	-	-	-	-	-	-	-
Environmental Preservation	1,370,000	16,107,000	9,357,000	3,424,000	6,227,000	2,150,000	784,000	39,419,000
Mandated	372,000	263,000	175,000	197,000	216,000	147,000	86,000	1,456,000
Service Enhancement	-	-	-	-	-	-	-	-
<b>Storm CIP Total</b>	<b>6,619,000</b>	<b>18,670,000</b>	<b>12,021,000</b>	<b>6,946,000</b>	<b>9,069,000</b>	<b>4,674,000</b>	<b>3,533,000</b>	<b>61,532,000</b>

#### Program/Project Key:

R&R Aging Infrastructure
Capacity for Growth
Environmental Preservation
Mandated
Service Enhancement

## 2023-2029 Proposed CIP Budget

(March 1, 2022)

### All Funds

Description	2021	2022	2023	2024	2025	2026	2027	2021-2027
R&R Aging Infrastructure	42,549,000	41,088,000	33,531,000	32,284,000	34,217,000	28,075,000	26,794,000	238,538,000
Capacity for Growth	-	286,000	2,170,000	1,696,000	1,755,000	962,000	-	6,869,000
Environmental Preservation	1,370,000	16,107,000	9,357,000	3,424,000	6,227,000	2,150,000	784,000	39,419,000
Mandated	423,000	300,000	213,000	236,000	257,000	189,000	129,000	1,747,000
Service Enhancement	440,000	2,117,000	14,493,000	8,017,000	1,282,000	2,026,000	8,191,000	36,566,000
<b>All Funds CIP Total</b>	<b>44,782,000</b>	<b>59,898,000</b>	<b>59,764,000</b>	<b>45,657,000</b>	<b>43,738,000</b>	<b>33,402,000</b>	<b>35,898,000</b>	<b>323,139,000</b>

### Program/Project Key:

R&R Aging Infrastructure
Capacity for Growth
Environmental Preservation
Mandated
Service Enhancement

**BELLEVUE UTILITIES**

**2023-2029 CAPITAL INVESTMENT PROGRAM PLAN (CIP)**

**WATER FUND**

**PROPOSED BUDGET BY PROGRAM**



## WATER FUND 2023-2029 CIP Proposed Changes

(Updated March 2, 2022)

### Program Summary

Program Number	Description	Continued Program	2023-2029 Budget Request	New Proposed Program
W-16	Water Main Replacement	Yes	Yes	
W-67	PRV Rehabilitation	Yes	Yes	
W-69	Minor CIP	Yes	Yes	
W-85	Reservoir Rehabilitation	Yes	Yes	
W-91	Pump Station Rehabilitation	Yes	Yes	
W-98	Commercial Meter Vaults	Yes	Yes	
W-99	Service Saddles	Yes	Yes	
W-103	West Operating Storage Area	Yes	Yes	
W-110	Water Supply Inlet Rehabilitation	Yes	Yes	
W-111	Operations and Maintenance Yard	Yes	Yes	
W-112	Water System Capital Planning		Yes	Yes
W-115	SCADA Upgrades	Yes	No	
W-117	170 <sup>th</sup> PI SE Pressure Improvements	Yes	Yes	
W-118	Somerset Highlands Capacity Improvements		Yes	Yes
W-119	Groundwater Well Improvements		Yes	Yes

## W-16 Water Main Replacement

### Adopted Description and Scope

This program focuses on replacing water mains that have reached their useful life, with the goal of reducing risk. Additional benefits include increasing the firefighting flow available to neighborhoods, improve reliability with additional valves (to limit service shutdowns), and improving earthquake resiliency with more robust pipe. This investment funds pipeline replacement at a rate of 5 miles/year, adjusted with inflation. At that rate, water pipe will need to last on average 100-125 years to sustainably maintain the entire 608 mile water distribution system. Pipes are prioritized for replacement based on risk of failure (likelihood and consequence), break history, potential for cost savings or reduced neighborhood impacts by coordinating with other construction projects (e.g., planned street overlays), and opportunities to address level of service deficiencies (low flow or pressure) or vulnerable pipes in poor soils.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes inflation)

W-16	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Miles	5.0	5.0	5.1	4.7	5.3	4.9	5.0	5.0	5.0	45
Adopted (\$M)	\$6.320	\$12.820	\$9.860	\$12.680	\$12.730	\$12.770	\$14.110	–	–	\$81.290
Proposed (\$M)	–	–	\$15.677	\$16.193	\$18.223	\$14.934	\$16.127	\$15.105	\$16.542	\$112.801
Difference (\$M)	\$(6.320)	\$(12.820)	\$5.817	\$3.513	\$5.493	\$2.164	\$2.017	\$15.105	\$16.542	\$31.511

### Proposed Changes

#### Cost

- The primary change is recent cost spikes caused by labor shortages and supply chain problems. The typical cost per foot to install water mains in Bellevue has increased roughly 40% from pre-COVID to early 2022.

#### Scope

- The overall target of 5 miles per year has not changed. Locations are identified based on the criteria above. Other, externally-driven projects proposed for 2023-2029 (as part of the overall 5 miles/year) include:
  - WSDOT Renton-to-Bellevue Express Lanes: Water main relocation invoicing will continue through 2026.
  - WSDOT Sunset Creek: Water main relocation is required in SE 36th St due to WSDOT's stream project.
  - Vasa Creek Mitigation: Relocation of impacted water mains is required for this stormwater project.

#### Schedule

- Kelsey Creek at Lake Hills Blvd "Ballfield" Project: This project was included in the 2021-2027 budget but has been accelerated due to a large recent main break, and combined with a culvert replacement.



## W-67 Pressure Reducing Valve (PRV) Station Rehabilitation

### **Adopted Description and Scope**

This ongoing program rehabilitates or replaces aging, obsolete pressure reducing valve (PRV) stations throughout the water service area. It will also add remote flow and pressure sensors to monitor these stations. The number of PRV stations 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 to sustainably rehabilitate over 150 stations on a roughly 25-year cycle. Prioritization criteria include access requirements, safety, maintenance history, age, and efficiencies gained with overlapping or adjacent projects.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

W-67	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$ .430	\$ .240	\$ .350	\$ .790	\$1.000	\$1.790	\$1.400	–	–	\$6.000
Proposed (\$M)	–	–	\$1.000	\$1.028	\$1.012	\$1.267	\$3.043	\$ .867	\$ .715	\$8.932
Difference (\$M)	\$(.430)	\$(.240)	\$ .650	\$ .238K	\$ .012	\$(.523)	\$1.643	\$ .867	\$ .715	\$2.932

### **Proposed Changes**

#### Cost:

- Construction labor shortages and supply chain problems have increased cost estimates by roughly 30%.

#### Scope:

- Funding levels continue to include a sustained rate of three PRV replacements per year

#### Schedule:

- Two PRV stations impacted by the Horizon View 2 Pump Station replacement project have been accelerated to 2023.
- Implementation of new system-wide “Smart Water” remote flow and pressure sensors has been shifted from 2025-2026 to 2027. This allows time for emerging technologies and available options to improve.

## 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

### **Proposed Budget (includes inflation)**

W-69	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$ .700	\$ .270	\$ .130	–	–	–	\$ .190	–	–	\$1.290
Proposed (\$M)	–	–	\$ .080	\$ .201	\$ .062	\$ .017	\$ .327	\$ .102	\$ .420	\$1.209
Difference (\$M)	\$ (.700)	\$ (.270)	\$ (.050)	\$ .201	\$ .062	\$ .017	\$ .137	\$ .102	\$ .420	\$ (.081)

### **Proposed Changes**

#### Cost

- Recent inflation has been incorporated into project estimates.

#### Scope

- Two projects funded in 2021-2022 have been completed.
- The proposed installation of individual PRVs to increase pressure along West Lake Sammamish Pkwy per agreement with the City of Issaquah has been deferred indefinitely. Issaquah is proposing an alternative solution to address low fire flows that will be evaluated during 2022.
- Two leaking check valve stations in the Woodridge area are proposed to be replaced, concurrent with adjacent water main replacement already scheduled. This will address an operational problem and optimize efficiency with overlapping work.
- A project to install bypass piping around a PRV station in the Cougar Mountain area is proposed to improve operational flexibility, redundancy, and resiliency following a major earthquake.

#### Schedule

- Two projects proposed in 2021-2027 have been re-scheduled to fit available staffing resources:
  - Replacement of leaking check valve in the Somerset neighborhood.
  - New PRV station proposed to improve fire flow in the Pikes Peak neighborhood.

## W-85      Reservoir Rehabilitation or Replacement

### **Adopted Description and Scope**

This program funds recoating, rehabilitation, seismic retrofits and/or replacement of drinking water reservoirs to maintain these facilities for reliable operation. Bellevue operates and maintains 24 active drinking water reservoirs and shares partial ownership (and access to water) in 4 other reservoirs maintained and operated by neighboring utilities.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (Includes inflation)**

W-85	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$7.680	\$3.250	\$2.570	\$ .890	\$ .600	\$2.880	\$5.510	–	–	\$23.380
Proposed (\$M)	–	–	\$2.938	\$4.360	\$ .197	\$1.086	\$ .794	\$3.633	\$ .710	\$13.718
Difference (\$M)	\$(7.680)	\$(3.250)	\$ .368	\$3.470	\$(.403)	\$(1.794)	\$(4.716)	\$3.633	\$ .710	\$(9.662)

### **Proposed Changes**

#### Cost

- A portion (\$1.0M) of increased cost estimate for Horizon View 2 Reservoir replacement reflects recent inflation.
- Seismic retrofit and re-coating of the 11 million gallon South Reservoir in Kirkland was delayed to 2023, while Bellevue's share of estimated costs are reduced by \$0.5M. This reservoir is jointly owned with Redmond and Kirkland (Bellevue share 13.4%) per 1997 agreement dividing Rose Hill Water District into 3 municipalities.

#### Scope

- Pikes Peak reservoir construction is scheduled for completion in 2022. However, post-construction monitoring activities through 2026 are required by permits.
- A portion (\$1.6M) of increased costs for Horizon View 2 Reservoir is due to scope changes:
  - Larger reservoir size will optimize available land and improve operational flexibility
  - Change in reservoir material from steel to concrete provides lower long-term costs, with higher initial capital investment.
- To maximize efficiency of a 100-ft crane, the scope of Clyde Hill 465 reservoir vent repairs has been expanded to include other elevated work on the roof, including corrosion-protection system and coating repairs.
- Full decommissioning is proposed for Somerset 3 Reservoir, which is no longer in service. This will address nuisance and safety concerns since the site is no longer actively used by the City.
- A new study evaluating reservoir vulnerability, recent Code modifications and emerging earthquake science completed in 2020 identified new deficiencies. Two related projects are proposed in 2023-2029:
  - Clyde Hill 390 Reservoir Seismic Upgrades
  - NE 40th Reservoir Safety & Sanitary Improvements
  - Clyde Hill 340 Reservoirs Replacement

- Reservoir emergency response improvements are now re-prioritized to be addressed case-by-case during work at each reservoir, and not as one system-wide project. Recently completed seismic assessment found that these improvements do not provide as much benefit as water main and pump station replacement.

#### Schedule

- Interior inspections of Cougar Mountain 3, Factoria, and Crossroads South reservoirs in late 2021 showed better-than-expected coating condition in all three reservoirs, due to the performance of corrosion-protection systems. This allows for extended life and deferral of these re-coating projects until after 2030.
- Parksite Reservoir interior coating condition was found to be worse than anticipated, so re-coating has been accelerated to occur in 2023.
- Proactive coating of the concrete Cherry Crest Reservoir roof is proposed for long-term maintenance. This project has been deferred due to higher-priority and more urgent work.

## W-91 Water Pump Station Rehabilitation or Replacement

### **Adopted Description and Scope**

This program was established in 2005 to rehabilitate or replace drinking water pump stations. Bellevue operates and maintains 21 pump stations and shares partial ownership in a separate pump station operated by Coal Creek Utility District. Based on a needs assessment of each pump station, investments can range from basic improvements to complete reconstruction. The rehabilitation work may include capacity, safety and reliability improvements, new mechanical and electrical equipment, on-site emergency power generation, and seismic retrofits.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (Includes inflation)**

W-91	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	\$1.460	\$2.780	\$ .980	\$ .790	\$1.030	–	–	\$7.040
Proposed (\$M)	–	–	\$5.578	\$3.352	–	\$ .410	\$ .422	–	\$ .418	\$10.180
Difference (\$M)	–	–	\$4.118M	\$ .572	\$ (.980)	\$ (.380)	\$ (.608)	–	\$ .418	\$3.140

### **Proposed Changes**

#### Cost

- Anticipated construction costs to replace Horizon View 2 Pump Station in 2023-2024 have increased substantially from \$2.4M to \$5.5M. This is primarily due to recent economic conditions, but also incorporates some added scope to improve post-earthquake resiliency and enhance operations and water quality.

#### Scope

- Scope has been reduced from rehabilitation of one pump station per year to an average of one pump station every other year..
- Cherry Crest Pump Station replacement and Pikes Peak Pump Station demolition are complete.
- A pump station condition assessment is added in 2026-2027 to assess and prioritize future needs.

#### Schedule

- Rehabilitation of Cougar Mountain 1 Pump Station has been accelerated due to re-prioritization. This station was identified as being critical to post-earthquake service recovery.
- Cougar Mountain 2 rehabilitation and Parksite Pump Station replacement are deferred beyond 2029.

## W-98 Replacement of Large Commercial Water Meter Vaults

### **Adopted Description and Scope**

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

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

W-98	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$.040	\$.340	\$.570	\$.430	\$.700	\$.690	\$.580	–	–	\$3.350
Proposed (\$M)	–	–	\$.629	\$.486	\$.318	\$1.311	\$.045	\$.417	–	\$3.206
Difference (\$M)	\$(-.040)	\$(-.340)	\$.059	\$.056	\$(-.382)	\$.621	\$(-.535)	\$.417	–	\$(-.144)

### **Proposed Changes**

#### Cost

- Budget assumes future replacement contracts are bundled into fewer, larger contracts to reduce risk and improve cost efficiency. This change mitigates recent inflationary impacts.

#### Scope

- Current backlog of deficiencies are primarily meters that could not be replaced during the Advanced Metering Infrastructure program (CIP W-108), because excavation was required or due to safety concerns.
- At Bellefield Office Park, replacement of 13 individual building meters with two master meters is proposed. This will consolidate metering and improve water auditing due to leakage in private water mains, which is currently unmetered (lost revenue for the City).

## 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 service line to the water main), and water service lines (the City-owned pipe between the main and the meter), in response to known deficiencies and/or 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.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

W-99	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$.240	\$.280	\$.120	–	–	–	–	–	–	\$.640
Proposed (\$M)	–	–	\$.690	\$.995	–	–	–	\$.019	\$.153	\$1.857
Difference (\$M)	\$(-.240)	\$(-.280)	\$.570	\$.995	–	–	–	\$.019	\$.153	\$1.217

### **Proposed Changes**

#### Scope

- Current budget did not propose work beyond 2023 due a lack of identified locations. Four sites with excessive saddle and/or service line failures have since been identified and evaluated for the proposed budget:
  - Amherst neighborhood service line replacement is proposed for 2023-2024.
  - Inglebrook Condominiums service line replacement is proposed for 2030 (design in 2028-2029)
  - Yarrowood Condominiums service line replacement is proposed to occur after 2030.
  - Crossroads Condominiums is currently being evaluated. Due to pipe age and material, it is assumed that full replacement of all infrastructure (including water mains) will have lower life-cycle costs compared to service line replacement alone. Therefore it is proposed under CIP W-16 for construction in 2023-2024.

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

### **Adopted Description and Scope**

This CIP Plan increases the drinking water storage available for planned population growth in Downtown, Bel-Red, and Wilburton areas. System improvements in 2021 accommodated near-term growth, while upcoming projects will plan and design a new reservoir to provide for long-term growth. New reservoir completion is accelerated from 2034 to 2030 due to recent growth and pending rezones that will increase density further.

PROJECT NEED: Capacity for Growth

### **Proposed Budget (Includes inflation)**

W-103	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$1.100	\$.190	–	–	–	\$1.170	\$1.620	–	–	\$4.080
Proposed (\$M)	–	–	–	–	\$.400	\$1.099	\$1.755	\$.962	–	\$4.216
Difference (\$M)	\$(1.100)	\$(.190)	–	–	\$.400	\$(.071)	\$.135	\$.962	–	\$.136

### **Proposed Changes**

#### Cost

- Costs shown for 2025-2028 are design only, for the future West Operating Area Reservoir. Land acquisition and construction costs for the new reservoir (tentatively scheduled for completion in 2030) are not yet proposed, due to cost uncertainties prior to site selection. The reservoir siting study being conducted in 2022 will identify a site and allow for estimated construction costs in the 2025-2031 budget.

#### Scope

- The NE 8th St transmission main to access surplus reservoir volume in Lake Hills has been completed.
- West Operating Area Reservoir Siting Study is currently underway (no additional budget requested).

#### Schedule

- The start of new reservoir design has been accelerated to 2025.



## W-110

## Water Supply Inlet Rehabilitation

### Description and Scope

This program is for the renewal and replacement of water supply Inlet stations, where Bellevue draws water from the regional water transmission system. Bellevue manages 14 inlet stations, and shares ownership in 3 other inlet stations operated by adjacent utilities. Projects are proposed to maintain reliability, improve safety, reduce risk, and renew aging infrastructure.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes inflation)

W-110	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	–	–	–	–	–	–	–	–
Proposed (\$M)	–	–	\$ .175	\$ .129	–	–	–	–	–	\$ .304
Difference (\$M)	–	–	\$ .175	\$ .129	–	–	–	–	–	\$ .304

### Proposed Changes

#### Scope

- Replacement of Enatai Inlet Station was completed in 2021, using delayed funds from 2019-2020.
- At NE 40th Inlet, the City's operations staff replaced the failing master meter in the westbound lanes of NE 40th Street with a new insertion mag meter at the NE 40th Reservoir site. However, removal of the old meter and full abandonment of the existing meter vault in the NE 40th roadway is still necessary to reduce risk. This project is proposed for 2023-2024 and is being coordinated with the City of Redmond.
- Future rehabilitation at Eastgate Inlet was identified as a new project for CIP W-110, but scheduled after 2030 to correspond with the adjacent Parksite Pump Station replacement (CIP W-91)

**W-111****Maintenance and Operations Yard****Adopted Description and Scope**

As the City of Bellevue continues to grow, there is a critical need for long range operational facilities planning to ensure that the Utilities Department (Utilities) can meet the community's current and future needs in an efficient and timely manner. The current service locations are functioning at or near capacity, and there is significant risk that they will not be sufficient to meet Utilities' growing operational needs. To address this, Utilities developed a long range Operations and Maintenance (O&M) Facilities Plan.

Based on the recommendation of the O&M Facilities Plan, property acquisition, design, and construction were funded through the Council adopted 2019-2025 and 2021-2027 CIP budgets, with \$16M of funding split between the water and sewer funds (\$8M each).

PROJECT NEED: Operations & Maintenance/Service Enhancement

**Proposed Budget (includes inflation)**

W-111	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	\$1.334	\$1.334	–	–	–	–	–	\$2.668
Proposed (\$M)	–	–	–	–	\$2.466	\$1.401	–	–	–	\$3.867
Difference (\$M)	–	–	\$(1.334)	\$(1.334)	\$2.466	\$1.401	–	–	–	\$1.199

**Proposed Changes**

Due to delay in selecting a site, the construction funding has moved to 2025 and 2026. Additional funding is proposed to account for inflationary increases for the design/construction and original land acquisition.

## W-112 (NEW)      Water System Capital Planning

### **Proposed Description and Scope**

This program funds early capital project planning, which is applicable to both existing CIP programs and future capital projects yet to be identified. The proposed budget includes a new Water System Plan, which is required every ten years by the Washington State Department of Health and Bellevue City Code. Also included is assistance preparing applications for Federal Emergency Management Agency grants for seismic mitigation projects.

PROPOSED SCHEDULE: 2024-2025

PROJECT NEED: Capacity for Growth

### **Proposed Budget (includes inflation)**

W-112 (NEW)	2023	2024	2025	2026	2027	2028	2029	Total
Proposed (\$M)	–	\$.286	\$.404	\$.200	–	–	–	\$.890

## W-115 (NEW) SCADA Upgrades

### **Proposed Description and Scope**

The City of Bellevue Utilities Department utilizes a supervisory control and data acquisition (SCADA) system to control and monitor the potable water, wastewater and storm water systems. Since the initial installation in the 1970s, this system has utilized leased copper telephone lines as the SCADA communications media. With age, the copper phone lines used for communicating vital control logic and retrieving precious data have become increasingly unreliable. As the telecommunication providers transition their core business away from copper telephone lines towards fiber-optic cable and cellular networks, the City faces increasing communications outages. Any break in communications within our SCADA network increases the risk and cost of providing essential Utility services to our customers. More than ever, it is incumbent upon the Utility to modernize our SCADA communications network to a more reliable medium.

The family of projects under the SCADA Infrastructure Upgrades program will improve the reliability and security of the SCADA system across 32 potable water sites, 48 wastewater sites and 11 storm water sites. These projects will install a private, secure cellular and fiber-optic communications network and optimize the operation of the cities three utilities. Additionally, these upgrades will allow SCADA operators to leverage cutting-edge technology to improve the quality of service and reduce risks to the environment.

PROPOSED SCHEDULE: 2022-2024

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

W-111	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	\$.080	\$1.000	\$.330	–	–	–	–	–	\$1.410
Proposed (\$M)	–	–	\$.767	\$.395	–	–	–	–	–	\$1.162
Difference (\$M)	–	\$(.080)	\$(.233)	\$.065	–	–	–	–	–	\$(.248)

### **Proposed Changes**

#### Cost

- Costs have been reduced due to savings gained from a more efficient contracting method.

#### Schedule

- Due to global supply chain shortages in the microprocessor industry, the SCADA projects have experienced schedule delays.

## W-117 170th PI SE Pressure Improvements

### **Proposed Description and Scope**

This project is the final phase of improvements to address low pressure deficiencies in the Sammamish 270 pressure zone (SA270), and specifically on 170th PI SE, as identified in the 2016 Water System Plan (p. 4-21). Water mains installed on 170th PI SE circa 1980 have never provided the minimum 30 psi pressure established by the City and required by the WA State Department of Health, due to high elevation relative to West Lake Sammamish Pkwy and SA270. As a solution, this project includes installation of water main and a pressure-reducing valve (PRV) station in an existing driveway across Weowna Park, to provide higher-pressure water on 170th PI SE.

PROPOSED SCHEDULE: 2021-2023

PROJECT NEED: Level of Service Deficiency/ System Renewal and Replacement

### **Proposed Budget (includes inflation)**

W-117	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$.220	\$.530	\$.330	–	–	–	–	–	–	\$1.080
Proposed (\$M)	–	–	\$.771	\$.596	–	–	–	–	–	\$1.367
Difference (\$M)	\$(-.220)	\$(-.530)	\$.441	\$.596	–	–	–	–	–	\$.287

### **Proposed Changes**

#### Cost

- Costs have increased due to labor shortages and supply chain challenges.

#### Scope

- Pipeline size through Weowna Park is increased from 4" (domestic-only) to 8", to also supply fire flow. This change, combined with other actions, allowed the City to cancel a much costlier project to add flow by increasing pressure along West Lake Sammamish Pkwy (net decrease in cost to the City).
- Replacement and abandonment of pipe in 170th PI SE is added to optimize efficiency, avoid future impacts to the neighborhood, and reduce the risk of pipeline failure in steep slopes.

## W-118 (NEW) Somerset Highlands Pressure & Flow Improvements

### **Proposed Description and Scope**

This program is proposed to address level of service deficiencies identified in the 2016 Water System Plan. During a fire event in Somerset Highlands, when high flows are drawn from local hydrants, customers at high elevations are likely to lose water service due to capacity bottlenecks. This loss of pressure would also create water quality risks, which may require boil water orders over a larger area to avoid contamination. Existing capacity was acceptable during original construction (late 1960s), but the flow available is inadequate based on City policy and current Washington State Department of Health minimum requirements. The proposed improvements will add capacity to meet the minimum level of service and resolve these deficiencies.

PROPOSED SCHEDULE: 2023-2025

PROJECT NEED: Service Enhancement

### **Proposed Budget (includes inflation)**

W-118 (NEW)	2023	2024	2025	2026	2027	2028	2029	Total
Proposed (\$M)	\$ .440	\$ .906	\$4.435	–	–	–	–	\$5.781

## W-119 (NEW) Groundwater Well Improvements

### **Proposed Description and Scope**

Bellevue Utilities maintains four groundwater wells for municipal water purposes, including non-potable or potable uses, and emergency water supplies. These wells were the sole supply of water to the Lake Hills and Crossroads neighborhoods in the 1950s and 1960s, before purchasing water from Seattle. This program is proposed to fund projects that maintain readiness, protect water quality, and optimize use of groundwater. Well assessment and rehabilitation work will restore and maintain well condition and yield. Improvements at the Crossroads site will increase access to groundwater for irrigation and tanker truck filling, improve well head protection measures, and improve response time and capacity to augment normal supplies in an emergency. An emergency well siting study will evaluate option to install additional, emergency-only wells throughout the service area, as recommended by the City's Water Distribution System Seismic Vulnerability Assessment.

PROPOSED SCHEDULE: 2025-2029

PROJECT NEED: Service Enhancement

### **Proposed Budget (includes inflation)**

W-119 (NEW)	2023	2024	2025	2026	2027	2028	2029	Total
Proposed (\$M)	–	–	\$.360	\$1.919	\$.923	\$1.734	\$7.899	\$12.835

**BELLEVUE UTILITIES**  
**2023-2029 CAPITAL INVESTMENT PROGRAM PLAN (CIP)**  
**SEWER FUND**  
**PROPOSED BUDGET BY PROGRAM**





**SEWER FUND**  
**2023-2029 CIP Proposed Changes**  
 (Updated March 2, 2022)

<b>Program Number</b>	<b>Description</b>	<b>Continued Program</b>	<b>2023-2029 Budget Request</b>	<b>New Proposed Program</b>
S-16	Sewer Pump Station & Force Main Improvements	Yes	Yes	
S-24	Sewer System Pipeline Repair & Replacement	Yes	Yes	
S-32	Minor CIP (Small) Sewer Capital Improvement Projects	Yes	Yes	
S-58	Lake Washington Sewer Lake Line Program	Yes	Yes	
S-66	Sewer System Pipeline Replacement	Yes	Yes	
S-111	Maintenance and Operations Yard	Yes	Yes	
S-112	Sewer Planning Program	Yes	Yes	
S-115	SCADA System Upgrade	Yes	Yes	
S-116	Permit Compliance Monitoring		Yes	Yes
S-117	Septic Systems Sewer Extensions		Yes	Yes

## S- 16 Sewer Pump Station & Force Main Improvements

### Description and Scope

This ongoing program funds rehabilitation of the 36 pump and 10 flush stations and associated force mains in Bellevue's wastewater system. Stations are prioritized based on the risk and consequence of failure, maintenance and operations experience, age of pump station, and coordination with other projects.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes inflation)

S-16	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$5.260	\$2.010	\$.600	\$1.800	\$3.340	\$1.230	\$1.060	–	–	\$15.300
Proposed (\$M)	–	–	\$1.847	\$7.423	\$3.206	\$2.661	\$5.160	\$1.354	\$1.646	\$23.297
Difference (\$M)	\$(5.260)	\$(2.010)	\$1.247	\$5.623	\$(.134)	\$1.431	\$4.100	\$1.354	\$1.646	\$7.997

### Proposed Changes

The total proposed budget for the 7 years includes the rehabilitation and/or replacement of 10 wastewater pressure system (pump station and force main) projects and a pump station condition assessment project. The proposed budget is an increase over the adopted budget, due to both the additional of force mains with the pump station projects, and the addition of two of Bellevue's largest and most complex pump and force main systems projects: Pump Station #12 & Force Main and Newport Pump Station & Force Main.

### Scope

- 5 new pump and force main system projects are proposed to start in the 7 years.
- One proposed pump and force main system project is Newport Pump Station & Forcemain. This is a highly complex project proposed to start in 2024. Newport pump station is one of Bellevue's highest capacity stations and is anticipated to be completely replaced. Newport Pump Station's force main is one of Bellevue's largest diameter and longest wastewater force mains at 8" diameter and approximately 4,600 Feet long. The force main currently runs under I-405. A study will need to be performed to analyze the best option and location for replacement of this system.
- Pump Station #12 is an existing project that was newly scoped and added to the CIP in 2019 due to 2 emergencies in the system, that identified a need to prioritize the rehabilitation of the pump station and replacement of the force main. This project is anticipated to be in construction in 2024-2025.
- Evergreen East Lift Station was previously included in the 2019-2027 budget to perform a Business Case Analysis to determine the recommendation for the rehabilitation/replacement of the lift station. Additional Scope has been added to include the BCA of two associated pump stations and force mains that are linked into the Evergreen East system: Fairweather and Evergreen West systems. The design and construction of the Evergreen East lift station has also been added to the scope.
- The Pump Station Condition Assessment Update is proposing a more comprehensive assessment to include Failure Modes, Effects, and Criticality Analyses (FEMCA) and Wet Well Assessments of the pump stations selected, in addition to updating the information on the 2015 Murray Smith Pump Station Assessment.

### Schedule

- 5 projects are current Pump Station and/or FM projects that are continuing the 2023-2029 CIP from prior years. 3 projects had a delayed start and are anticipated to finish in the 2023-2029 years. (Evergreen East Lift Station, South Ridge Pump Station & Force Main and Cozy Cove Pump Station & Force Main).

## S-24 Sewer System Pipeline Repair and Replacement

### Description and Scope

This program funds repairs or replacements to sewer pipes. Wastewater main defects are identified from the Utility's infrastructure condition assessment (video) program and problem areas identified from operations and maintenance efforts. Projects are also added to address utilities needing replacement or relocation driven by projects being done by groups outside of Bellevue Utilities. These groups include WSDOT, Sound transit, Developers, etc... Pipes are prioritized for repair based on risk of failure (likelihood and consequence), failure history, and to coordinate with other construction such as planned street overlays, which reduces restoration costs.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes Inflation)

S-24	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$2.720	\$3.310	\$3.480	\$3.310	\$3.180	\$4.540	\$5.170	–	–	\$25.710
Proposed (\$M)	–	–	\$ 4.489	\$3.500	\$5.883	\$4.958	\$4.512	\$3.042	\$2.381	\$28.765
Difference (\$M)	\$(2.720)	\$(3.310)	\$1.009	\$0.190	\$2.703	\$4.418	\$(.658)	\$3.042	\$2.381	\$3.055

### Proposed Changes

#### Scope

- Additional annual program years for 2024-2030 have been added for the Annual Sanitary Sewer Defect Repair and Utility Overlay Annual Programs.
- Six new projects have been added:
  - Four new projects have been added to address utilities needing replacement or relocation driven by projects being done by groups outside of Bellevue Utilities: WSDOT, Bellevue Storm Fund Project and Bellevue Transportation projects: Bellevue Way HOV, WSDOT Sunset Creek Sewer Relocation, Vasa Creek Mitigation Sewer Main Relocation, Transportation 120<sup>th</sup> Avenue Stage 4 Relocation and Sandpiper East. These projects are anticipated to be in construction between 2025-2027.
  - Two projects added to address and resolve operational needs.

#### Schedule

- Three projects previously identified in the CIP to address defects identified by the Operations staff as projects to meet level of service and operational need will continue: Bellefield office Sewer Siphon Alternatives Analysis and Sewer Lateral Replacement on 152<sup>nd</sup> and Aqua Vista. All three are anticipated to go into construction in 2023-2024.

## S-32 Minor (Small) Sewer Capital Improvement Projects

### **Description and Scope**

This ongoing program pays for minor improvements to Bellevue's sewer system to resolve deficiencies, improve efficiencies, or resolve maintenance problems, often in conjunction with other programs such as the Transportation overlay program. The program also investigates the feasibility of possible sewer extensions. 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

### **Proposed Budget (includes inflation)**

S-32	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$.040	–	–	–	–	–	\$.020	–	–	\$.060
Proposed (\$M)	–	–	\$.258	–	–	–	–	–	–	\$.258
Difference (\$M)	\$(.040)	–	\$.258	–	–	–	\$(.020)	–	–	\$.198

### **Proposed Changes**

#### Schedule

- 2 Enatai was included in the 2021-2027 CIP Budget. This project has been delayed due to real property issues and is anticipated to complete construction in 2023.

## S-58 Lake Washington Sewer Lake Line Program

### **Description and Scope**

This program is for the development of the Lake Line Management Plan that will analyze the condition assessment and other available data on the Lake Washington lake lines, to develop a strategy for the rehabilitation, replacement, or continued condition assessment of the Lake Washington Lake Lines. This management plan will also perform alternatives analysis and evaluation of projects for the 14.5 miles of sewer pipe along Lake Washington Shoreline and in future years, design, and construction for portions of the lake line.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

S-58	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$ .250	–	–	–	–	–	–	–	–	\$ .250
Proposed (\$M)	–	–	\$ .675	\$ .041	\$ .119	\$ .219	\$ .945	\$ 1.159	\$ 1.146	\$ 4.304
Difference (\$M)	\$ (.250)	–	\$ .675	\$ .041	\$ .119	\$ .219	\$ .945	\$ 1.159	\$ 1.146	\$ 4.054

### **Proposed Changes**

#### Scope

- Initiation of 5 new Lake Line Projects to study and prepare a business case analysis and determine the methodology for Lake Line Replacement for the 5 highest priority Lake Line reaches.
- A program Wide Environment Impact Statement will be prepared for the Lake Line Management Plan. This is anticipated to be complete in 2021.

## S-66 Sewer System Pipeline Repair and Replacement

### Description and Scope

This program replaces poor condition sewer pipe throughout the service area. Pipes are replaced when life cycle cost analysis indicates replacement is more economical than continuing to make point repairs. Replacement methods may include trenchless rehabilitation techniques such as cured-in-place pipe, and pipe bursting, and/or open trench replacement. Sewer System Pipeline Repair, which repairs pipes to extend their service life. This program implements Bellevue's asset management program strategy to meet expected and required customer service levels at the lowest life cycle cost.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes Inflation)

S-66	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$2.920	\$.650	\$1.030	\$1.120	–	–	–	–	–	\$5.720
Proposed (\$M)	–	–	\$.698	\$.089	\$.112	\$.839	\$.216	–	–	\$1.954
Difference (\$M)	\$(2.920)	\$(.650)	\$(.332)	\$(1.031)	\$.112	\$.839	\$.216	–	–	\$(3.766)

### Proposed Changes

#### Scope

- The Ballfield-Outfield Sewer Replacement project is anticipated to go into construction in 2026.

#### Schedule

- Newport Capacity Improvement project and the Ballpark Outfield Sewer Replacement projects have had schedule delays and are anticipated to finish in the 2023-2029 years.

## S-111 Maintenance and Operations Yard

### **Description and Scope**

As the City of Bellevue continues to grow, there is a critical need for long range operational facilities planning to ensure that the Utilities Department (Utilities) can meet the community's current and future needs in an efficient and timely manner. The current service locations are functioning at or near capacity, and there is significant risk that they will not be sufficient to meet Utilities' growing operational needs. To address this, Utilities developed a long range Operations and Maintenance (O&M) Facilities Plan.

Based on the recommendation of the O&M Facilities Plan, property acquisition, design, and construction were funded through the Council adopted 2019-2025 and 2021-2027 CIP budgets, with \$16M of funding split between the water and sewer funds (\$8M each).

PROJECT NEED: Operations & Maintenance/Service Enhancement

### **Proposed Budget (includes inflation)**

S-111	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	\$2.667	\$2.667	–	–	–	–	–	\$5.334
Proposed (\$M)	–	–	–	–	\$3.315	\$2.779	–	–	–	\$6.094
Difference (\$M)	–	–	\$(2.667)	\$(2.667)	\$3.315	\$2.779	–	–	–	\$.760

### **Proposed Changes**

Due to delay in selecting a site, the construction funding has moved to 2025 and 2026. Additional funding is proposed to account for inflationary increases for the design/construction and original land acquisition.



## S-112 Sewer Planning Program

### **Description and Scope**

This program is for sewer planning projects, condition assessments of the sewer facilities and systems, alternatives analyses and programmatic capital planning for the wastewater sewer system.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

S-112	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	\$.360	\$.370	–	–	–	–	–	\$0.730
Proposed (\$M)	–	–	–	–	\$1.366	\$.397	–	–	–	\$1.763
Difference (\$M)	–	–	\$(.360)	\$(.370)	\$1.366	\$.397	–	–	–	\$1.033

### **Proposed Changes**

#### Scope

- Two new projects have been added to this program: Sewer System Plan Update and WSDOT I-90 Franchise Consolidation.

#### Schedule

- The Collection System Seismic Vulnerability Assessment was approved in the 2019-2027 budget and is now scheduled to start in 2025. This project will perform an assessment of wastewater collection system seismic vulnerabilities, develop post-event level of service goals, and recommend mitigation actions.

## S-115 SCADA System Upgrade

### **Description and Scope**

The City of Bellevue Utilities Department utilizes a supervisory control and data acquisition (SCADA) system to control and monitor the potable water, wastewater and storm water systems. Since the initial installation in the 1970s, this system has utilized leased copper telephone lines as the SCADA communications media. With age, the copper phone lines used for communicating vital control logic and retrieving precious data have become increasingly unreliable. As the telecommunication providers transition their core business away from copper telephone lines towards fiber-optic cable and cellular networks, the City faces increasing communications outages. Any break in communications within our SCADA network increases the risk and cost of providing essential Utility services to our customers. More than ever, it is incumbent upon the Utility to modernize our SCADA communications network to a more reliable medium.

The family of projects under the SCADA Infrastructure Upgrades program will improve the reliability and security of the SCADA system across 32 potable water sites, 48 wastewater sites and 11 storm water sites. These projects will install a private, secure cellular and fiber-optic communications network and optimize the operation of the cities three utilities. Additionally, these upgrades will allow SCADA operators to leverage cutting-edge technology to improve the quality of service and reduce risks to the environment.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

S-115	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$1.500	\$.210	\$1.000	–	\$1.200	\$.950	–	–	–	\$4.860
Proposed (\$M)	–	–	\$1.400	–	\$1.910	\$1.257	–	–	–	\$4.567
Difference (\$M)	\$(1.500)	\$(.210)	\$.400	–	\$.710	\$.307	–	–	–	\$(0.293)

### **Proposed Changes**

Due to global supply chain shortages in the microprocessor industry, the SCADA projects have experienced schedule delays and cost increases.

## S-116 (NEW) Permit Compliance Monitoring

### **Proposed Description and Scope**

This program is for projects that are constructed in or near critical areas (streams, wetlands, steep slopes or floodplains) or critical area buffers. The projects require, by permit from a variety of natural resource agencies, re-planting and monitoring of native vegetation after construction of capital projects

PROJECT NEED: Regulatory Compliance/Mandate

### **Proposed Budget (includes inflation)**

S-116 (NEW)	2023	2024	2025	2026	2027	2028	2029	Total
Proposed (\$M)	\$ .051	\$ .037	\$ .038	\$ .039	\$ .041	\$ .042	\$ .043	\$0.291

### **Scope**

- Three new project sites are added to this program over the next seven years for the following completed to near-completed construction.
  - Cedar Terrace Pump Station Rehabilitation
  - Woodridge Sewer
  - Bogline Sanitary Sewer Rehabilitation

## S-117 (NEW)      Septic Systems Sewer Extensions

### **Description and Scope**

This program is to evaluate, design and construct wastewater sewer extensions in locations in the Bellevue Utilities service area, where customers are still on septic systems. This program is driven by customer requests for future sewer service in certain neighborhoods.

PROJECT NEED: Environmental, Health and Safety, Service Enhancement

### **Proposed Budget (includes inflation)**

S-117 (NEW)	2023	2024	2025	2026	2027	2028	2029	Total
Proposed (\$M)	–	\$1.211	\$3.917	\$1.918	\$ .359	\$ .292	\$ .292	\$7.989

### **Scope**

- Four new project sites are added to this program over the next seven years.
  - SE 42nd Street & 120th Ave NE
  - Mockingbird Hill
  - 161st Ave Sewer Extension
  - Eastgate SE 42nd Street

**BELLEVUE UTILITIES  
2023-2029 CAPITAL INVESTMENT PROGRAM PLAN (CIP)  
STORM AND SURFACE WATER FUND  
PROPOSED BUDGET BY PROGRAM**



## STORM AND SURFACE WATER FUND

### 2023-2029 CIP Proposed Changes

(Updated March 2, 2022)

Program Number	Description	Continued Program	2023-2029 Budget Request	New Proposed Program
D-59	Minor Storm CIP	No	No	
D-64	Storm and Surface Water System Infrastructure Rehabilitation	Yes	Yes	
D-81	Fish Passage Improvement Project	Yes	Yes	
D-86	Stream Channel Modification	Yes	Yes	
D-94	Flood Control Program	Yes	Yes	
D-104	Stream Restoration for M&I	Yes	Yes	
D-106	Lower Coal Creek Flood Hazard Reduction	Yes	No	
D-109	Water Quality Retrofit	Yes	Yes	
D-112	Storm and Surface Water Planning	Yes	Yes	
D-114	Factoria/Richards Creek Flood Reduction	Yes	Yes	
D-115	SCADA Upgrades	Yes	Yes	
D-116	Post-Construction Monitoring and Maintenance	Yes	Yes	



## D-64 Storm Water System Conveyance Infrastructure Rehabilitation

### Adopted Description and Scope

This ongoing program repairs defective storm drainage pipelines, culverts and ditches identified as part of the Utility's condition assessment program or other means. Most of the projects involve lining or replacing pipes with repairable defects. Projects are prioritized based on the severity of deterioration, the risk and consequence of failure, and coordination with planned street improvement projects.

It also includes replacement and upgrading of current stormwater assets that are beyond repair. As the system ages, costs are expected to increase. The Utilities' Asset Management Program is evaluating when system replacement will require significant increases to the budget.

PROJECT NEED: System Renewal and Replacement

### Proposed Budget (includes inflation)

D-64	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$2.360	\$1.420	\$1.530	\$1.640	\$2.010	\$2.050	\$2.090	–	–	\$13.100
Proposed (\$M)	–	–	\$4.780	\$2.300	\$2.489	\$2.560	\$2.626	\$2.377	\$2.663	\$19.792
Difference (\$M)	\$(2.360)	\$(1.420)	\$3.250	\$.660	\$.479	\$.510	\$.536	\$2.377	\$2.663	\$6.692

### Proposed Changes

#### Scope

- The base budget of the annual dig & repair/trenchless program was increased by 1/3 to expand the scope (approx. \$0.5 M annually) in response to finding more defects from an increased level of video work.
- Two emergency projects were added to the program budget program budget (approx. \$2.7M). These projects, the West Lake Sammamish Parkway pipe replacement and the Vasa Creek culvert repair at Newport Way, were not in the current CIP (projects to be completed by end of 2022).
- Three new projects were added including a *Watershed Management Plan Early Action* project (Smart Control Pilot II- Stand-alone detention pond) to start in 2023.



## D-81 Fish Passage Improvement Program

### Adopted Description and Scope

This ongoing program provides funding to remove fish passage barriers such as impassable culverts, debris jams, or accumulated sediment, allowing access to critical spawning and rearing habitat for salmon populations. Typical projects include culvert replacement or modification, debris removal, or installation of logs and boulders to improve access at low stream flows. Grant money is pursued to supplement Bellevue's investment whenever possible.

PROJECT NEED: Environmental Preservation

### Proposed Budget (includes Inflation)

D-81	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	\$.350	\$.100	\$.190	\$.610	\$.500	\$.050	–	–	\$1.800
Proposed (\$M)	–	–	\$.361	\$.370	\$1.883	\$.082	\$.028	–	–	\$2.724
Difference (\$M)	–	\$(.350)	\$.261	\$.180	\$1.273	\$(.418)	\$(.022)	–	–	\$.924

### Proposed Changes

#### Scope

- Two new projects (one each on Vasa & Coal Creeks) were added. The Vasa Creek project is a permit-required mitigation project for the emergency culvert repair project on Vasa Creek at Newport Way.
- The “Future Culvert project” in the current CIP was renamed “Kelsey Creek Lake Hills Connector Culvert Replacement.” The scope has been reduced from a full project to only a business case analysis (BCA), a reduction approx. \$1.1 M. This grant funded project will look at removing a fish passage barrier on lower Kelsey Creek and is a *Watershed Management Plan Early Action*.
- Two projects moved outside of the 7-year CIP window due their lower priority (Kelsey Creek at 140<sup>th</sup> Ave NW Low Flow Barrier and Coal Creek I-405 Weirs, Fish Passage Removal – Approx. \$500 k reduction).
- A culvert condition assessment project currently underway under CIP plan D-112 will provide information to increase the number of culvert replacement in future CIP budgets.

## D-86 Stream Channel Modification Program

### **Adopted Description and Scope**

This ongoing program resolves unstable stream sections that reduce salmon spawning or rearing habitat or increase Bellevue Utilities maintenance requirements. Stream stability problems include stream sections with excessive erosion or sediment deposition. Stabilizing the stream channel consists primarily of placing large woody debris and boulders in the stream channel, and re-vegetating stream banks, commonly called bioengineering.

PROJECT NEED: Environmental Preservation

### **Proposed Budget (includes Inflation)**

D-86	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$1.390	\$.160	\$.180	–	\$.080	\$.440	\$.990	–	–	\$3.240
Proposed (\$M)	–	–	\$.019	\$5.912	\$3.121	\$.983	\$.145	\$.346	\$.400	\$10.926
Difference (\$M)	\$(1.390)	\$(.160)	\$(.161)	\$5.912	\$3.041	\$.543	\$(.845)	\$.346	\$.400	\$7.686

### **Proposed Changes**

#### Scope

- The Kelsey Creek Glendale project has cost increases due to a change in project scope, a schedule delay (completion being moved from the 2021-2022 time frame to 2023-2024), and an increase in cost for materials and labor.
- One project has a scope increase (Ardmore stability), from a business case analysis (BCA) to full project.
- One new project added to improve channel condition on Coal Creek beginning in 2025.
- Tyee Middle School culvert project renamed Sunset Creek Culvert Project and the design phase is added to the scope.
- Two projects (Coal Creek Reach 3 Sediment Control & Habitat Improvement Preliminary Engineering and Future Bank Stabilization) were moved outside of the 7-year CIP window due their lower priority

#### Schedule

- Construction of the Coal Creek Off-Channel Sediment Pond Improvement- a *Watershed Management Plan Early Action*, is delayed until 2024.

## D-94 Flood Control Program

### **Adopted Description and Scope**

This ongoing program constructs improvements to reduce or eliminate flooding caused by insufficient public drainage system capacity. Projects involve enlarging pipes or culverts to convey more stormwater, re-routing drainage to pipes with more capacity, adding detention or infiltration facilities, or other runoff control strategies.

This program is funded in part by King County Flood Control District sub-regional opportunity fund dollars at approximately \$650,000 per year.

PROJECT NEED: Environmental Preservation/ Flood Hazard Reduction

### **Proposed Budget (includes Inflation)**

D-94	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$2.950	\$2.450	\$2.070	\$1.520	\$1.500	\$1.500	\$1.500	–	–	\$9.490
Proposed (\$M)	–	–	–	\$3.218	\$2.283	\$1.299	\$4.260	\$1.580	\$1.036	\$11.676
Difference (\$M)	\$(2.950)	\$(2.450)	\$(2.070)	\$2.698	\$1.783	\$1.799	\$3.76	\$1.580	\$1.036	\$2.186

### **Proposed Changes**

#### Schedule

- Several projects have schedule delays due to permitting, and property access issues. These include the Valley Cr/21st St Flood Control, North Sammamish Flood Improvements, and Upper Kelsey Cr - Phase 2 - Culvert/Bridge Replacement @ Lake Hills Blvd.

#### Scope

- The Upper Kelsey Cr - Phase 2 - Culvert/Bridge Replacement @ Lake Hills Blvd project also has significant scope changes due to a change in assumed site conditions and the complexity of integrating emergent water and sewer replacement projects at the same location (estimated \$3 M increase).
- One new project added (Valley Creek Culvert Under NE 20th St). This is to supplement the flood projection gained by the Valley Cr/NE 21<sup>st</sup> project) -Approx. \$5 M (2024-2027).

## D-104 Stream Restoration for Mobility and Infrastructure Initiative

### **Adopted Description and Scope**

This ongoing program is for stormwater improvements associated with the Mobility and Infrastructure Initiative (which seeks to address high priority mobility and infrastructure needs in Downtown Bellevue and in the Bel-Red Corridor). These funds are to restore streams for recreation and environmental health through the Bel-Red corridor, and to encourage redevelopment of the area. These funds will be allocated to specific stormwater-related projects pending further Council direction.

PROJECT NEED: Environmental Preservation

### **Proposed Budget (includes inflation)**

D-104	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	–	–	–	–	–	–	–	–	–
Proposed (\$M)	–	–	–	\$.258	–	–	–	–	–	\$.258
Difference (\$M)	–	–	–	\$.258	–	–	–	–	–	\$.258

### **Proposed Changes**

#### Scope

- One new project is proposed for this program: a feasibility study of potentially daylighting West Tributary Creek through old Safeway site (purchased with Utilities Dept. funds).
- The study will assess if there is a feasible project at this location that will benefit Utility customers: either daylighting (full or partial), use as a regional water quality, flow control facility or another use.

## D-109 Stormwater Quality Retrofit Program

### Adopted Description and Scope

This program focuses on improving water quality in the storm system and ultimately Bellevue's streams and lakes. Early information from the Watershed Management Plan indicates water quality issues are a major limiting factor in Bellevue's streams.. This Program will expand once more projects are identified in the City's on-going Watershed Management Plan effort (expect to be completed in late 2022 or early 2023).

Three projects address runoff from WSDOT freeways, some of the most contaminated in the city

PROJECT NEED: Environmental Preservation

### Proposed Budget (includes Inflation)

D-109	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	–	\$ .750	–	–	–	–	–	–	–	\$ .750
Proposed (\$M)	–	–	\$ .065	\$ .342	\$ 1.473	\$ .260	\$ 1.406	\$ 1.224	\$ .348	\$ 5.118
Difference (\$M)	–	\$ (.750)	\$ .065	\$ .342	\$ 1.473	\$ .260	\$ 1.406	\$ 1.224	\$ .348	\$ 4.368

### Proposed Changes

#### Scope

- Two new projects address contaminated WSDOT runoff. These projects are largely funded by fees WSDOT pays into the Stormwater fund and are *Watershed Management Plan Early Actions*.
- One of the WSDOT projects, Sturtevant Creek, has a scope change based on additional information from WSDOT (approx. \$1.1 M). This project also has a **schedule change**, delaying the project. WSDOT needs to complete their design work on this stretch of I-405 before this project can move ahead. This project also has approximately 10% **cost increase** from increased material and labor costs from when it was first estimated in 2019.
- The Pond A Oil/Water Separator Replacement has a scope change from BCA to full project (it needs to be replaced sooner-schedule change as well, approximate increase \$1.6 M).

## D-112 Storm and Surface Water Planning Program

### **Adopted Description and Scope**

This new program funds essential studies that will identify capital investments to improve watershed health and asset renewal/replacement.

PROJECT NEED: Environmental Preservation/System Renewal and Replacement

### **Proposed Budget (includes inflation)**

D-112	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$.590	\$.600	\$.240	–	–	\$.280	\$.290	–	–	\$2.00
Proposed (\$M)	–	–	\$.025	\$.645	\$.451	\$.300	–	–	–	\$1.421
Difference (\$M)	\$(.590)	\$(.600)	\$(.215)	\$.645	\$.451	\$.021	\$(.290)	–	–	\$(.579)

### **Program Information**

#### Scope

- Three new projects have been added totaling an estimated \$750 K.

#### Schedule

- Now a *Watershed Management Plan Early Action*, a structural and operational study of the six regional detention facilities on Kelsey Creek has had a schedule change from 2026 start to a 2024 start. These facilities were constructed in the mid-1980s. Their condition needs to be comprehensively evaluated as well as a review of their current operation practices. The results of this study will likely lead to capital projects that upgrade/modify facilities to improve the health of Kelsey Creek.
- The schedule of the Watershed Management Plan has been accelerated to finish in the 4th quarter 2022 or 1st quarter of 2023 rather than the 4th quarter of 2023 (schedule change).

## D-114 Richards/Fact Blvd Conveyance Improvements

### Adopted Description and Scope

This large flood reduction project is designed to reduce the frequency of flood on Factoria Blvd between I-90 and SE 38<sup>th</sup> St. Much of the funding for this project is through an agreement from the King County Flood Control District (in process).

PROJECT NEED: Environmental Preservation/Flood Hazard Reduction

### Proposed Budget (includes inflation)

D-114	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$5.220	\$4.100	–	–	–	–	–	–	–	\$9.320
Proposed (\$M)	–	–	\$ .900	\$5.362	\$ .146	\$ .500	\$ .388	–	–	\$7.296
Difference (\$M)	\$(5.220)	\$(4.100)	\$ .900	\$5.362	\$ .146	\$ .500	\$ .388	–	–	\$(2.024)

### Project Changes:

#### Scope

- Stream mitigation project (\$1.1M) added to scope for potential permit requirement

#### Schedule

- Construction schedule delay due to environmental permitting challenges and utility coordination (Seattle Water & Olympic Pipeline). Construction estimated at 2023-2024.

#### Cost

- Construction cost estimate increased due to complex shoring, complex construction sequencing, & extensive traffic control/signal modification

## D-115 Stormwater SCADA Upgrades

### **Adopted Description and Scope**

The City of Bellevue Utilities Department utilizes a supervisory control and data acquisition (SCADA) system to control and monitor the potable water, wastewater and storm water systems. Since the initial installation in the 1970s, this system has utilized leased copper telephone lines as the SCADA communications media. With age, the copper phone lines used for communicating vital control logic and retrieving precious data have become increasingly unreliable. As the telecommunication providers transition their core business away from copper telephone lines towards fiber-optic cable and cellular networks, the City faces increasing communications outages. Any break in communications within our SCADA network increases the risk and cost of providing essential Utility services to our customers. More than ever, it is incumbent upon the Utility to modernize our SCADA communications network to a more reliable medium.

The family of projects under the SCADA Infrastructure Upgrades program will improve the reliability and security of the SCADA system across 32 potable water sites, 48 wastewater sites and 11 storm water sites. These projects will install a private, secure cellular and fiber-optic communications network and optimize the operation of the cities three utilities. Additionally, these upgrades will allow SCADA operators to leverage cutting-edge technology to improve the quality of service and reduce risks to the environment.

PROJECT NEED: System Renewal and Replacement

### **Proposed Budget (includes inflation)**

D-115	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)		\$ .600	\$ .200	\$ .020	–	\$ .630	–	–	–	\$1.450
Proposed (\$M)	–	–	\$ .100	–	–	\$ .765	–	–	–	\$0.865
Difference (\$M)	\$(5.220)	\$(4.100)	\$ .100	–	–	\$ .765	–	–	–	\$(.585)

### **Proposed Changes**

#### Cost

- Costs have been reduced due to savings gained from a more efficient contracting method.

#### Schedule

- Due to global supply chain shortages in the microprocessor industry, the SCADA projects have experienced schedule delays.



## D-116 Post-Construction Monitoring and Maintenance Program

### **Adopted Description and Scope**

This program is for projects that are constructed in critical areas (streams, wetland, steep slopes or floodplains) or critical area buffers. The projects require, by permit from a variety of natural resource agencies, re-planting of native vegetation after construction and monitoring of capital projects to ensure the vegetation survives. Some stream projects require monitoring of the streambed after construction. This program helps the City build relationships with environmental permitting agencies that can benefit future projects.

The adopted CIP funds the current monitoring and maintenance activities on 17 separate sites throughout the City.

PROJECT NEED: Regulatory Compliance

### **Proposed Budget (includes inflation)**

D-116	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Adopted (\$M)	\$ .220	\$ .210	\$ .270	\$ .160	\$ .110	\$ .040	\$ .040	–	–	\$1.050
Proposed (\$M)	–	–	\$ .372	\$ .263	\$ .175	\$ .197	\$ .216	\$ .147	\$ .086	\$1.456
Difference (\$M)	\$ (.220)	\$ (.210)	\$ .102	\$ .103	\$ .065	\$ .157	\$ .176	\$ .147	\$ .086	\$ .406

### **Proposed Changes**

#### Scope

- Six new project sites are added to this program over the next seven years, while two are anticipated to be completed.

#### Cost

- The average annual cost to monitor and maintain a site has increased from \$17,000 to an estimated \$17,500.