



Section 9

Section 9

Capital Improvement Program

9.1 Introduction

This section of the WCSMP summarizes the City's CIP which consists of a list of prioritized wastewater collection system projects and estimated costs in 2019 dollars. The CIP is a blueprint for forecasting capital expenditures and is one of the most important means of meeting the City's obligation towards community development and financial planning.

The CIP is a direct result of the capacity and seismic resilience improvement analyses described in detail in **Section 6**, **Section 7**, and **Section 8**. All projects are analyzed at a planning level of accuracy based on population and land use assumptions described in **Section 2** and **Section 5**. Prior to implementation, each project should undergo standard engineering design phases to finalize improvement sizing and location.

9.2 Collection System Capital Improvement Program

The City's CIP is organized into categories based on project type and is prioritized based on timing and development potential. The major improvement categories are described below.

9.2.1 Project Type

The major project types for the WCSMP include gravity pipeline capacity improvements, gravity sewer extensions to serve new development, and seismic resilience improvements to the existing gravity collection system.

9.2.1.1 Gravity Pipe Capacity Improvements

Capacity improvements include upgrades to existing trunk sewers to increase capacity for existing and future services. The major improvement projects in this category are listed below and presented in **Figure 9-1**. Project timing and cost estimates are provided in **Table 9-1**.

- Upper Kelly Creek Basin Trunk Improvement
- East Basin Trunk Improvement
- Lower Kelly Creek Basin Trunk Improvement
- Lower Johnson Creek Trunk Improvement

9.2.1.2 Gravity Sewer Extensions

New gravity sewer mains 10 inches and larger in diameter are recommended to serve the Springwater, Pleasant Valley, and Kelley Creek Headwaters Plan Areas. The extension of the collection system network for each plan area is broken up into several projects which will incrementally expand service to eventually serve the entirety of each plan area. Timing of each project will be based on knowledge of planned development, estimated likelihood of development timing, and necessity of project to provide connections downstream. Projects are listed with estimated timing and cost in **Table 9-1** and shown on **Figure 9-1**.

In the Pleasant Valley Plan Area, gravity sewer extension projects include the following.

- PV Lower Kelley Creek Trunk
- PV Upper Kelley Creek Trunk
- Lower Giese Road Trunk
- Foster Road Trunk

In the Springwater Plan Area, gravity sewer extension projects include the following.

- Telford Road Trunk
- Telford Road Trunk Creek Crossings
- Jeanette Road Trunk
- Jeanette Road Trunk Bore
- Village Center Trunk
- Village Center Trunk North Creek Crossing
- Village Center Trunk South Creek Crossing
- Rugg Road Trunk
- Orient Trunk
- Orient Trunk Bore
- Upper Johnson Creek Trunk Improvement
- Hogan Road Trunk – replaced and not included in CIP

Kelley Creek Headwaters Plan Area includes one proposed sewer service extension: The Upper Regner Road Trunk.

Stark Basin also includes one proposed sewer service extension: The Stark Basin Improvement.

9.2.1.3 Seismic Resilience Improvements

Seismic resilience improvements incorporated into the CIP were recommended in the *Wastewater Seismic Resilience Plan* (2019) and summarized in **Section 7**. The projects are listed with estimated timing and cost in **Table 9-1** and shown on **Figure 9-1**. As discussed in **Section 8**, some of the pipes recommended for seismic resilience improvements are also recommended for capacity improvements. For these projects with both capacity and seismic resilience elements, a total estimated cost of the upsized pipe with welded HDPE is provided and the estimated cost of

reinforced CIPP is provided as a means to allocate project cost to seismic resilience improvement versus capacity.

In addition to resilience improvements, large diameter pipes (greater than 18-inch diameter) will all be cleaned, inspected using closed-circuit television (CCTV), and measured using sonar to determine the degree of internal wear. This cleaning and inspection process will provide the City with information to determine which pipes are in most need of structural rehabilitation.

9.2.2 Project Drivers and Prioritization

The CIP includes project drivers to help determine order and prioritization of improvements, including the following.

- Timing of capacity deficiency (existing, 2040, and build-out)
- Development in plan areas
- Improving seismic resilience

Capital improvements are prioritized into three timeframes: Near-term (0-10 years), Medium-term (10-20 years), and Long-term (beyond 20 years). Project priorities are based on the following guidelines.

- Near-term: 0-10 Year Timeframe
 - Capacity improvements needed to alleviate deficiencies predicted during the existing flow condition 5-year design storm
 - Seismic resilience projects recommended by 2030
- Medium-term: 10-20 Year Timeframe
 - Capacity improvements needed to alleviate deficiencies predicted with projected 2040 flow condition during the 5-year design storm
 - Seismic resilience projects recommended by 2040
- Long-term: Beyond 20-Year Timeframe
 - Seismic resilience improvements recommended after 2040
 - Re-evaluate need for RDII reduction treatment, balancing investments between transporting, and treating flows versus reducing RDII.
 - No specific capacity improvements are recommended beyond the 20-year timeframe. The need for these improvements is contingent on further evaluation. Factors that will influence future need for capacity improvements or RDII reduction treatment include the system's degradation and increase in RDII over time as determined with continued

flow monitoring efforts, population growth and development patterns, regulatory drivers, the cost and effectiveness of RDII reduction measures as technologies advance, wastewater treatment plant capacity, and the City's willingness to adopt more effective flow reduction measures as standard practice.

9.2.3 Cost Estimation

Costs presented in the CIP are estimated using an approach outlined in the *Basis of Opinion of Probable Cost* included in **Appendix C**. This document contains the assumptions used in developing project costs, addressing such items as unit costs for materials, labor, and construction; contingency factors; and the City's administrative costs.

All project descriptions and cost estimates in this document represent a Class 5 budget estimate in 2019 dollars, as established by the Association for the Advancement of Cost Engineering (AACEI). This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate.

The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035 which define "rough cost estimates" for facility plans as "approximate costs expressed in current-year dollars." These estimates are intended to "provide an estimate of the fiscal requirements to support the land use designation" and "for use by the facility provider in reviewing the provider's existing funding mechanisms." They are intended to be used as guidance in establishing funding requirements based on information available at the time of the estimate. The CIP cost estimates should be reevaluated periodically to account for changes in inflation.

9.2.4 Capital Improvement Program Funding

Capital improvements within the City are primarily funded through the following mechanisms.

- The City funds capital improvements impacting existing customers through utility revenues generated from sewer rates. These costs are allocated to the City's Sanitary Fund.
- Capital improvements for future development, or growth are funded through system development charges (SDCs) as allowed under Oregon Revised Statute 223.297 through 223.314. These costs are allocated to the City's SDC Fund.

An SDC review is being conducted by the City to supplement this plan.

9.3 Summary

This section presents a proposed CIP for the sanitary sewer system over a 20-year planning period, between 2020 and 2040. **Table 9-1** summarizes the estimated cost of proposed CIP for different

project types and planning timeframes. See **Appendix D** for individual project maps and summaries.

Table 9-1
CIP Summary Table

Project Type	Estimated Cost (2019\$) ^{1, 2}			Total Cost (2019\$) ^{1, 2}
	Near-term	Medium-term	Long-term	
Plan Area Extensions	\$12,064,000	\$11,673,000	\$2,738,000	\$26,475,000
Capacity Improvements	\$4,009,000	\$2,937,000	\$0	\$6,946,000
Seismic Resilience	\$9,744,000	\$16,397,000	\$80,393,000	\$106,534,000

Notes

- 1 Cost estimates represent a Class 5 budget estimate, as established by the Association for the Advancement of Cost Engineering in 2019 dollars. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. They are intended to be used as guidance in establishing funding requirements based on information available at the time of the estimate.
- 2 Cost estimates for existing system upgrades and new infrastructure improvements assume unit costs for new materials and construction and exclude the cost of laterals. All cost estimates include markups for construction contingency, owner administrative costs, and contract costs.

Improvements are defined to address capacity limitations and improve seismic resilience. The projects are listed in **Table 9-2**, including project descriptions, timeframe, prioritization, drivers, and cost estimates. **Figure 9-1** shows the proposed improvements.

Table 9-2
CIP Table

Project ID No.	Project Information				Estimated Cost (2019\$) ^{1,2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
0 - 10 Year (Near-term) Timeframe								
E1	East Basin Trunk Improvement	Gravity Pipe Capacity Improvement	1,500 LF Burst Upsize to 15" Ø	From South of SE Anderson Ave to SE Palmquist Rd	\$666,638	Existing system deficiency Infiltration and Inflow		0%
KC1	Upper Kelly Creek Basin Trunk Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	350 LF Burst Upsize to 21" Ø	From North of SE El Camino Dr to NE 8th St	\$208,613	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	35%
KC2	Lower Kelly Creek Basin Trunk Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	2,220 LF Burst Upsize to 18" to 21" Ø 3,640 LF Open Trench Upsize to 27" Ø	From NE 17th St to NE 18th St	\$4,024,793	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-15 Tier 1 Upgrades" seismic resiliency project	32%
JC4	Upper Johnson Creek Trunk Improvement	Replacement	2480 LF Open Trench Replacement of 21" Ø	Two Pipe Segments North to Springwater Corridor and SE 252nd Ave	\$2,726,325	Invert requirement for service extension		18%
PV4	PV Lower Kelley Creek Trunk	Gravity Pipe Service Extension	7,000 LF from 12" to 24" Ø Includes 1970 LF Boring	From SE 182nd Ave to SE Foster Rd and SE Jenne Rd	\$7,119,143	Growth		0%
PV6	PV Upper Kelley Creek Trunk	Gravity Pipe Service Extension, decommissioning Brookside Pump Station	3,560 LF from 10" to 12" Ø	From SE 190th Ave to SE 182nd Ave	\$2,149,519	Growth		0%
SB1	Stark Basin Improvement	Gravity Pipe Service Extension	2,030 LF 12" Ø	Private property south of NE Glisan to Glisan near NE 238th Pl	\$694,196	Growth		0%
C-08	Jenne Road Siphon Project	Seismic Resilience		Stream crossing 880 ft west of Highland Dr on Springwater Corridor Trail	\$470,000	Critical Backbone Seismic Resilience		100%
C-09	Johnson Creek Flyovers	Seismic Resilience		Between SW Highland Dr and SW Pleasant View Dr	\$1,527,000	Critical Backbone Seismic Resilience		100%
C-10	Outfall replacement	Seismic Resilience	Improvements to Existing 48-inch HDPE Piping (installing restrained joints at structures if needed)		\$184,000	Critical Backbone Seismic Resilience		100%
C-13	Bridge Crossing at NE 185th	Seismic Resilience		Stream crossing Between NE Portal Way and Sandy Blvd	\$197,492	Critical Backbone Seismic Resilience		100%
C-15	Tier 1 Upgrades	Seismic Resilience			\$7,727,856	Critical Backbone Seismic Resilience	Partially overlaps with "KC2 Lower Kelly Creek" capacity project	100%
M-01	Large Diameter Inspection and Cleaning	Gravity Pipe Service and Reliability	Clean, CCTV and sonar 130,300 LF pipe > 18" Ø	City-wide	\$2,000,000			
Subtotal 0 - 10 Year (Near-term) Timeframe					\$29,695,575			

Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
11-20 Year (Medium-term) Timeframe								
E1	East Basin Improvement	Gravity Pipe Capacity Improvement	1,860 LF Burst Upsize to 18" 1,420 LF Open Trench Upsize to 18" Ø	From South of SE Anderson Ave to SE Palmquist Rd	\$1,535,830	Existing system deficiency Infiltration and Inflow	Project extent includes pipes in the East Basin Improvement Phase 2 CIP Project (CIP319100) yet to be implemented. Note different size recommendations.	0%
KC1	Upper Kelly Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	490 LF Burst Upsize to 21" 1510 LF Open Trench Upsize to 27"	From North of SE El Camino Dr to NE 8th St	\$1,534,500	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	27%
KC2	Lower Kelly Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	170 LF Burst Upsize to 18" Ø	From NE 17th St to NE 18th St	\$85,763	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-15 Tier 1 Upgrades" seismic resiliency project	30%
JC1	Lower Johnson Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	2110 LF Burst Upsize to 21" Ø	SE Ambleside Dr from SE Hogan Rd to north of SE Liberty Ave	\$1,160,938	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	35%
PV3	Lower Giese Rd Trunk	Gravity Pipe Service Extension	2,040 LF from 10" to 24" Ø	From SE 182nd SE Foster Rd	\$634,026	Growth		0%
PV7	Foster Road Trunk	Gravity Pipe Service Extension	2,100 LF from 10" to 12" Ø	SE Foster Rd from SE Richey Rd to SE Dahlquist Rd	\$752,108	Growth		0%
SW1	Telford Road Trunk	Gravity Pipe Service Extension	5,260 LF from 12" to 21" Ø	Between SE 252nd Ave and SE 267th Ave	\$1,948,082	Growth		0%
SW2	Jeanette Road Trunk	Gravity Pipe Service Extension	1,970 LF 10" to 12" Ø	From SE Jeanette St to SE Telford Rd	\$552,495	Growth		0%
SW3	Orient Trunk	Gravity Pipe Service Extension	4,020 LF from 10" to 12" Ø	From SE Orient Dr 800 ft north of SE Carl St to SE Callister Rd and SE Telford Rd	\$1,666,010	Growth		0%
SW4	Village Center Trunk	Gravity Pipe Service Extension	720 LF 10" Ø	SE 252nd Ave and SE Telford Rd	\$361,377	Growth		0%
SW6	Rugg Road Trunk	Gravity Pipe Service Extension	4,270 LF 10" Ø	From SE Hogan Rd to SE Telford Rd	\$1,534,352	Growth		0%
SW8	Orient Trunk Bore	Gravity Pipe Service Extension	370 LF Boring 12" Ø	Mount Hood Highway crossing 700 ft north of SE Callister Rd	\$1,140,160	Growth		0%
SW9	Jeanette Road Trunk Bores	Gravity Pipe Service Extension	370 LF Boring 10" Ø	Mount Hood Highway crossing 900 ft south of SE 267th Ave	\$1,155,430	Growth		0%
SW11	Village Center Trunk North Creek Crossing	Gravity Pipe Service Extension	80 LF Boring 10" Ø	Stream crossing 300 ft east of SE 252nd Ave and Springwater Corridor	\$254,500	Growth		0%
SW12	Village Center Trunk South Creek Crossing	Gravity Pipe Service Extension	220 LF Boring 10" Ø	Stream crossing 300 ft south of SE 252nd Ave and SE Telford Rd	\$690,204	Growth		0%
SW13	Telford Road Trunk Bore	Gravity Pipe Service Extension	100 LF Boring 10" Ø	Stream crossings between SE Jeanette Rd and SE Orient St	\$311,508	Growth		0%

Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
C-12	Johnson Creek Large Diameter Mains Replacement	Seismic Resilience	HDPE replacement or lining (Trenchless Installation)		\$12,820,692	Critical Backbone Seismic Resilience		100%
C-15	Tier 1 Upgrades	Seismic Resilience			\$3,973,693	Critical Backbone Seismic Resilience	Partially overlaps with "KC2 Lower Kelly Creek" capacity project	100%
Subtotal 10 – 20 Year (Medium-term) Timeframe					\$32,111,676			
Beyond 20-Year (Long-term) Timeframe								
JC3	Upper Regner Road Trunk	Gravity Pipe Service Extension	7,000 LF from 12" to 24" Ø Includes 1970 LF Boring	SE Regner Rd from south of SE 48th Terrace to SE 45th Terrace	\$2,535,938	Growth		0%
C-11	Jenne Road Replacement	Seismic Resilience	Jenne Road Sewer Improvements – Lining with HDPE (Trenchless Installation)	SE Jenne Rd between SE McKinley and SE Jenne Ln	\$6,221,000	Critical Backbone Seismic Resilience		100%
C-14	Tier 2 Upgrades	Seismic Resilience	Columbia Basin, Wilkes Basin, Rockwood Basin, Birdsdales Trunk, Butler Creek Trunk and East Basin Trunk Upgrades		\$60,697,324	Critical Backbone Seismic Resilience	Partially overlaps with "KC1 Upper Kelly Creek" capacity project	100%
C-15	Tier 1 Upgrades	Seismic Resilience	Lower Kelly Creek Trunk, Burnside Trunk and NE 201st Trunk Upgrades		\$13,435,978	Critical Backbone Seismic Resilience	Partially overlaps with "KC2 Lower Kelly Creek" capacity project	100%
Subtotal, Beyond 20 Year (Long-term) Timeframe					\$82,890,240			
Total					\$144,697,411			
Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
0 - 10 Year (Near-term) Timeframe								
E1	East Basin Trunk Improvement	Gravity Pipe Capacity Improvement	1,500 LF Burst Upsize to 15" Ø	From South of SE Anderson Ave to SE Palmquist Rd	\$441,000	Existing system deficiency Infiltration and Inflow		0%
KC1	Upper Kelly Creek Basin Trunk Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	350 LF Burst Upsize to 21" Ø	From North of SE El Camino Dr to NE 8th St	\$139,000	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	35%
KC2	Lower Kelly Creek Basin Trunk Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	2,220 LF Burst Upsize to 18" to 21" Ø 3,640 LF Open Trench Upsize to 27" Ø	From NE 17th St to NE 18th St	\$2,675,000	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-15 Tier 1 Upgrades" seismic resiliency project	32%
JC4	Upper Johnson Creek Trunk Improvement	Replacement	2480 LF Open Trench Replacement of 21" Ø	Two Pipe Segments North to Springwater Corridor and SE 252nd Ave	\$1,811,000	Invert requirement for service extension		18%
PV4	PV Lower Kelley Creek Trunk	Gravity Pipe Service Extension	7,000 LF from 12" to 24" Ø Includes 1970 LF Boring	From SE 182nd Ave to SE Foster Rd and SE Jenne Rd	\$8,936,000	Growth		0%

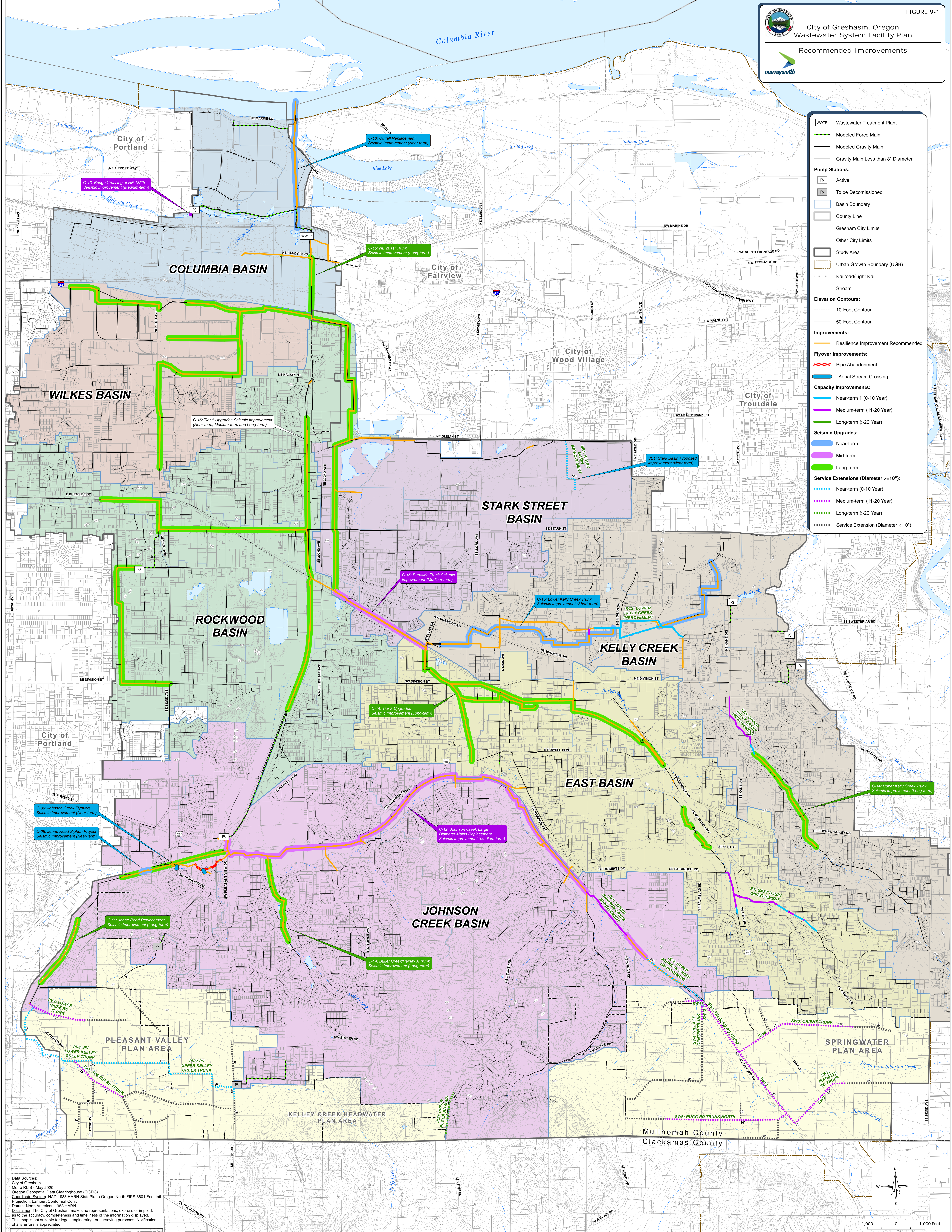
Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
PV6	PV Upper Kelley Creek Trunk	Gravity Pipe Service Extension, decommissioning Brookside Pump Station	3,560 LF from 10" to 12" Ø	From SE 190th Ave to SE 182nd Ave	\$1,317,000	Growth		0%
SB1	Stark Basin Improvement	Gravity Pipe Service Extension	2,030 LF 12" Ø	Private property south of NE Glisan to Glisan near NE 238th Pl	\$754,000	Growth		0%
C-08	Jenne Road Siphon Project	Seismic Resilience		Stream crossing 880 ft west of Highland Dr on Springwater Corridor Trail	\$470,000	Critical Backbone Seismic Resilience		100%
C-09	Johnson Creek Flyovers	Seismic Resilience		Between SW Highland Dr and SW Pleasant View Dr	\$1,500,000	Critical Backbone Seismic Resilience		100%
C-10	Outfall replacement	Seismic Resilience	Improvements to Existing 48-inch HDPE Piping (installing restrained joints at structures if needed)		\$184,000	Critical Backbone Seismic Resilience		100%
C-13	Bridge Crossing at NE 185th	Seismic Resilience		Stream crossing Between NE Portal Way and Sandy Blvd	\$194,000	Critical Backbone Seismic Resilience		100%
C-15	Tier 1 Upgrades	Seismic Resilience			\$7,396,000	Critical Backbone Seismic Resilience	Partially overlaps with "KC2 Lower Kelly Creek" capacity project	100%
M-01	Large Diameter Inspection and Cleaning	Gravity Pipe Service and Reliability	Clean, CCTV and sonar 130,300 LF pipe > 18" Ø	City-wide	\$2,000,000			
Subtotal 0 - 10 Year (Near-term) Timeframe					\$25,817,000			
11-20 Year (Medium-term) Timeframe								
E1	East Basin Improvement	Gravity Pipe Capacity Improvement	1,860 LF Burst Upsize to 18" 1,420 LF Open Trench Upsize to 18" Ø	From South of SE Anderson Ave to SE Palmquist Rd	\$1,016,000	Existing system deficiency Infiltration and Inflow	Project extent includes pipes in the East Basin Improvement Phase 2 CIP Project (CIP319100) yet to be implemented. Note different size recommendations.	0%
KC1	Upper Kelly Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	490 LF Burst Upsize to 21" 1510 LF Open Trench Upsize to 27"	From North of SE El Camino Dr to NE 8th St	\$1,023,000	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	27%
KC2	Lower Kelly Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	170 LF Burst Upsize to 18" Ø	From NE 17th St to NE 18th St	\$57,000	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-15 Tier 1 Upgrades" seismic resiliency project	30%
JC1	Lower Johnson Creek Improvement	Gravity Pipe Capacity Improvement/Seismic Resilience	2110 LF Burst Upsize to 21" Ø	SE Ambleside Dr from SE Hogan Rd to north of SE Liberty Ave	\$841,000	Existing system deficiency Infiltration and Inflow	Partially overlaps with "C-14 Tier 2 Upgrades" seismic resiliency project	35%
PV3	Lower Giese Rd Trunk	Gravity Pipe Service Extension	2,040 LF from 10" to 24" Ø	From SE 182nd SE Foster Rd	\$688,000	Growth		0%

Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
PV7	Foster Road Trunk	Gravity Pipe Service Extension	2,100 LF from 10" to 12" Ø	SE Foster Rd from SE Richey Rd to SE Dahlquist Rd	\$815,000	Growth		0%
SW1	Telford Road Trunk	Gravity Pipe Service Extension	5,260 LF from 12" to 21" Ø	Between SE 252nd Ave and SE 267th Ave	\$2,121,000	Growth		0%
SW2	Jeanette Road Trunk	Gravity Pipe Service Extension	1,970 LF 10" to 12" Ø	From SE Jeannette St to SE Telford Rd	\$646,000	Growth		0%
SW3	Orient Trunk	Gravity Pipe Service Extension	4,020 LF from 10" to 12" Ø	From SE Orient Dr 800 ft north of SE Carl St to SE Callister Rd and SE Telford Rd	\$1,907,000	Growth		0%
SW4	Village Center Trunk	Gravity Pipe Service Extension	720 LF 10" Ø	SE 252 nd Ave and SE Telford Rd	\$355,000	Growth		0%
SW6	Rugg Road Trunk	Gravity Pipe Service Extension	4,270 LF 10" Ø	From SE Hogan Rd to SE Telford Rd	\$1,665,000	Growth		0%
SW8	Orient Trunk Bore	Gravity Pipe Service Extension	370 LF Boring 12" Ø	Mount Hood Highway crossing 700 ft north of SE Callister Rd	\$1,120,000	Growth		0%
SW9	Jeanette Road Trunk Bores	Gravity Pipe Service Extension	370 LF Boring 10" Ø	Mount Hood Highway crossing 900 ft south of SE 267th Ave	\$1,135,000	Growth		0%
SW11	Village Center Trunk North Creek Crossing	Gravity Pipe Service Extension	80 LF Boring 10" Ø	Stream crossing 300 ft east of SE 252nd Ave and Springwater Corridor	\$239,000	Growth		0%
SW12	Village Center Trunk South Creek Crossing	Gravity Pipe Service Extension	220 LF Boring 10" Ø	Stream crossing 300 ft south of SE 252nd Ave and SE Telford Rd	\$676,000	Growth		0%
SW13	Telford Road Trunk Bore	Gravity Pipe Service Extension	100 LF Boring 10" Ø	Stream crossings between SE Jeanette Rd and SE Orient St	\$306,000	Growth		0%
C-12	Johnson Creek Large Diameter Mains Replacement	Seismic Resilience	HDPE replacement or lining (Trenchless Installation)		\$12,594,000	Critical Backbone Seismic Resilience		100%
C-15	Tier 1 Upgrades	Seismic Resilience			\$3,803,000	Critical Backbone Seismic Resilience	Partially overlaps with "KC2 Lower Kelly Creek" capacity project	100%
Subtotal 10 – 20 Year (Medium-term) Timeframe					\$31,007,000			

Project ID No.	Project Information				Estimated Cost (2019\$) ^{1, 2}	Driver	Associated Projects & Coordination Notes	Percent Related to Resilience ³
	Name	Type	Description	Project Limits				
Beyond 20-Year (Long-term) Timeframe								
JC3	Upper Regner Road Trunk	Gravity Pipe Service Extension	7,000 LF from 12" to 24" Ø Includes 1970 LF Boring	SE Regner Rd from south of SE 48 th Terrace to SE 45 th Terrace	\$2,738,000	Growth		0%
C-11	Jenne Road Replacement	Seismic Resilience	Jenne Road Sewer Improvements – Lining with HDPE (Trenchless Installation)	SE Jenne Rd between SE McKinley and SE Jenne Ln	\$6,221,000	Critical Backbone Seismic Resilience		100%
C-14	Tier 2 Upgrades	Seismic Resilience	Columbia Basin, Wilkes Basin, Rockwood Basin, Birdsdales Trunk, Butler Creek Trunk and East Basin Trunk Upgrades		\$61,313,000	Critical Backbone Seismic Resilience	Partially overlaps with “KC1 Upper Kelly Creek” capacity project	100%
C-15	Tier 1 Upgrades	Seismic Resilience	Lower Kelly Creek Trunk, Burnside Trunk and NE 201 st Trunk Upgrades		\$12,859,000	Critical Backbone Seismic Resilience	Partially overlaps with “KC2 Lower Kelly Creek” capacity project	100%
Subtotal, Beyond 20 Year (Long-term) Timeframe					\$83,131,000			
Total					\$139,955,000			

Notes

- 1 Cost estimates represent a Class 5 budget estimate, as established by the Association for the Advancement of Cost Engineering in 2019 dollars. This preliminary estimate class is used for conceptual screening and assumes project definition maturity level below two percent. The expected accuracy range is -20 to -50 percent on the low end, and +30 to +100 percent on the high end, meaning the actual cost should fall in the range of 50 percent below the estimate to 100 percent above the estimate. The cost estimates are consistent with the definition of OAR 660-011-0005(2) and OAR 660-011-035. They are intended to be used as guidance in establishing funding requirements based on information available at the time of the estimate.
- 2 Cost estimates for existing system upgrades and new infrastructure improvements assume unit costs for new materials and construction and exclude the cost of laterals. All cost estimates include markups for construction contingency, owner administrative costs, and contract costs.
- 3 The percentage assigned to seismic resilience is as follows: For the pipes needing both capacity and seismic resilience improvements, the resilience portion is the ratio of the cost for CIPP lining the existing pipe to the cost of upsizing with fused HDPE. If there are no seismic resilience improvements needed, the value will be 0 percent, and where there is only seismic improvement, the value is 100 percent. Service extensions are considered 0 percent seismic resilience.



- WWTTP** Wastewater Treatment Plant
- Modeled Force Main**
- Modeled Gravity Main**
- Gravity Main Less than 8" Diameter**
- Pump Stations:**
 - PS Active
 - PS To be Decommissioned
- Basin Boundary**
- County Line**
- Gresham City Limits**
- Other City Limits**
- Study Area**
- Urban Growth Boundary (UGB)**
- Railroad/Light Rail**
- Stream**
- Elevation Contours:**
 - 10-Foot Contour
 - 50-Foot Contour
- Improvements:**
 - Resilience Improvement Recommended
- Flyover Improvements:**
 - Pipe Abandonment
 - Aerial Stream Crossing
- Capacity Improvements:**
 - Near-term 1 (0-10 Year)
 - Medium-term (11-20 Year)
 - Long-term (>20 Year)
- Seismic Upgrades:**
 - Near-term
 - Mid-term
 - Long-term
- Service Extensions (Diameter >=10"):**
 - Near-term (0-10 Year)
 - Medium-term (11-20 Year)
 - Long-term (>20 Year)
 - Service Extension (Diameter < 10")

Data Sources:
City of Gresham
Metro RLS - May 2020
Oregon Geospatial Data Clearinghouse (OGDC)
Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Projection: Lambert Conformal Conic
Datum: North American 1983 HARN
Disclaimer: The City of Gresham makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

