

# **Sewer Improvement Program 2020-2040**

Prepared by the Sewer Division of Planning and Public Works September 2019



**Chambers Creek Regional Wastewater Treatment Plant 2019**



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## Executive Summary

The *2020-2040 Sewer Improvement Program* supports the economic development and associated planning programs in the County by providing direction for the development, maintenance, and operation of wastewater treatment plants and collection systems. In total, Pierce County Sewer infrastructure represents an investment in excess of \$1.8 billion.

The Sewer Division manages all activities involved with the collection, transmission, and treatment of wastewater over the 117 square mile sewer service area. This includes:

- Unincorporated areas of the County located in Parkland, Spanaway, Midland, South Hill, Graham, Frederickson, Fife Heights, Brown's, and Dash Points.
- The master planned communities of Sunrise and Tehaleh.
- The incorporated cities of Lakewood, University Place, DuPont, and Milton. The Division also provides contract services to the Town of Steilacoom and portions of the cities of Tacoma, Fife, and Edgewood.

The *Sewer Improvement Program* lays the groundwork for system improvement projects to meet the changing demands of regulatory impacts, planning changes, and population growth and to evaluate the system's ability to meet future needs for capacity expansion projects over a 20-year planning horizon. To meet these needs, the Sewer Division relies upon the tenets of the *2016 Pierce County Comprehensive Plan*, the *State Growth Management Act*, and *Buildable Lands Report*, and the *Puget Sound Regional Council's - Vision 2040 Regional Strategy*.

The *Sewer Improvement Program* addresses Asset Management by tracking the aging of infrastructure, system expansion, updated analytical data, finances, revised forecasting of growth, and recommended improvement and preservation projects. This information serves as a basis for capital improvement planning and forecasts anticipated system needs, based on land use zoning through 2040, by identifying the costs of the improvement projects and providing a financial plan for funding in coordination with the Capital Facilities Six-Year Financing Plan.

Since the founding of the original sewer service area and the start-up of the Chambers Creek Regional Wastewater Treatment Plant in 1984, the Sewer Division has continued to protect water quality and public health and facilitating system growth and expansion, while contributing to the County's economic vitality.

On November 29, 2017, Pierce County was named by Pierce County Superior Court as Receiver of the Kapowsin Water District, which had been deemed a failing water system by Washington State Department of Health. The Sewer Division is currently providing management capacity and up-front financial capital to make corrective actions to the Kapowsin Water District in order to transition this system out of Receivership to a long-term permanent owner. This Sewer Improvement Program identifies two projects related to the Kapowsin Water District Receivership.

## Section 1 - Introduction and Planning Considerations

### Mission Statement

***The mission of the Sewer Division is to provide customers with high quality, cost effective sanitary sewer services by collecting and treating all wastewater generated from County service areas in accordance with applicable Local, State, and Federal permit requirements.***

### Purpose

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With the passage of Ordinance Number 2006-115s the Pierce County Council required the Sewer Division to combine the information found in the annual Pierce County Budget and the Capital Facilities Plan to produce an annual Sewer Improvement Program or SIP.

The document functions as a 20-year central review document for the Sewer Division, County Council, their staff members, and the public to review the scope, cost, funding, and status of planned sewer improvement

projects proposed to be undertaken by the Division. The Sewer Improvement Program is a companion reference to the Capital Facilities Six-Year Financing Plan. Budget proposals continue to be part of the overall financial process, and the Capital Facilities Plan will continue to be a part of the overall County six-year budget projection as compiled by the Finance Department.

The Sewer Division employs an asset management approach of *lowest life cycle cost* and *just in time* forecasting to identify needs and costs for collection and treatment improvements. Projects in the capital program are prioritized based upon commitment and need. Projects that are under contract have highest priority, followed by system needs and other opportunities.

The Sewer Improvement Program is utilized for long-range planning, engineering, and construction of the county sewer collection system and of the Chambers Creek Regional Wastewater Treatment Plant and is instrumental in securing long-term funding and providing a dynamic platform for adjustment and revision to the Capital Facilities Plan to best take advantage of newer technologies and favorable construction opportunities. Together both documents with the Unified Sewer Plan, will continue to provide the direction for ongoing sewer system expansion and preservation.



*Chambers Creek Regional Wastewater Treatment Plant Expansion 2019*

## Service Area Types

The Sewer Division has two types of service areas: **Urban** and **Rural**.

The **Urban Service Area** is the Sewer Division's primary service area consisting of a 117-square mile sewer service basin consisting of 20 individual sub-basins corresponding with the core of urban growth that has occurred around the cities of Tacoma, Lakewood, Fife, Milton, DuPont, Puyallup, and the Town of Steilacoom. The service area also includes unincorporated areas of the County that include Frederickson, Parkland, Spanaway, South Hill, Graham, Brown's and Dash Points, Fife Heights, the planned communities of Sunrise and Tehaleh (Cascadia), and a small area in the City of Edgewood.

The **Rural Service Area** was established prior to the adoption of the *1994 State Growth Management Act* and the *1995 Pierce County Comprehensive Plan*. These areas were once under the designation of predominately General, Suburban Residential, and other less restrictive zoning designations that, prior to 1994/1995, allowed sewer connection. With the approval of the State Growth Management Act in 1994, and the adoption of the County's Comprehensive Plan in 1995, connections in the Rural Service Area were restricted to parcels already served and those parcels and projects that had vested connection rights prior to 1995.

The Tacoma-Pierce County Health Department has the authority to require parcels in the rural zones and rural service area to connect to the public sewer system in the event of public health and welfare issues, or environmental concerns. New connections, not expressly vested through past land use decisions or Tacoma-Pierce County Health Department connection requirements, are prohibited in any rural area.

## Land Use

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Current and future land use within the sewer service area is governed by the *2016 Pierce County Comprehensive Plan* and various city plans within the service area. These land-use regulations are utilized in the preparation of the Sewer Improvement Program. The density of development permitted in each land use designation throughout the entire sewer service area is specified in the zoning ordinances of the County and of those other municipalities in the service area.

## Sole Source Aquifer and Comprehensive Plan Requirements

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All of Pierce County's Urban Growth Area is located above a single sole source aquifer. This aquifer is the primary source for all potable water in urbanized Pierce County. The Sewer Division is under a federal Environmental Protection Agency order to sewer the urban areas of the County within the established sewer service area to protect this valuable resource. The installation of sewers, and the continued decommissioning of community and individual septic systems in the urban zoned areas, assist the County in meeting the requirements of the order. Any new septic system installed in the urban growth area is classed as an interim installation, meaning that once sewer lines are extended to within 300 feet of an existing septic system, that system must be decommissioned, and the property connected to sewer.

The *2016 Pierce County Comprehensive Plan, Section 13 - Utilities Element* outlines goals to provide for the location of utility infrastructure and to insure adequate utility capacity for future growth. Further

goals for the Sewer Division are to continue to promote and provide sanitary sewers within the urban area and to utilize best construction methods and practices together with innovative design and construction techniques.

The Sewer Division actively pursues these goals through the use and extension of sewers within the County's urban growth and urban zoned areas. To this end, collection system expansion is primarily accomplished through:

1. Development paying directly for the construction of new lines and connections to carry wastewater to the Chambers Creek Regional Wastewater Treatment Plant, Tacoma Central Wastewater Treatment Plant, and the Cascadia (Tehaleh) Wastewater Treatment Plant.
2. The Sewer Division targeting specific projects and project areas in the County like the *Centers and Corridors Initiative* that promote compact communities in and around major roadways thereby supporting economic development and to also serve surrounding residential areas. These projects support the *State Growth Management Act*, the *2016 Pierce County Comprehensive Plan*, and the *Buildable Lands Report* thereby assisting in achieving the goals stated in the *Puget Sound Regional Council's - Vision 2040 Regional Strategy* by providing urban services to the County's urban growth area.

## Level of Service - LOS

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The current LOS of 220 gallons per day (gpd) per residential equivalent plus 15% reserve capacity for sewer services meets current requirements as outlined in the *2016 Pierce County Comprehensive Plan*.

The current average daily treatment demand at the Chambers Creek Regional Wastewater Treatment Plant is 21MGD (millions of gallons per day). The Plant's current operational capacity of 38.46MGD and reserves of 6.79MGD combined provide a total available capacity of 45.25MGD.

The current average daily treatment demand at the Cascadia Wastewater Treatment Plant at Tehaleh is .55MGD. The Plant's current operational capacity of .85MGD and reserves of .15MGD combined provide a total available capacity of 1.00MGD.

The Sewer Division also owns 2.54MGD of capacity at the Tacoma Central Wastewater Treatment Plant located at the Port of Tacoma. Flows from the cities of Milton and Edgewood and the unincorporated Brown's and Dash Point and Fife Heights areas are or will be sent to this facility.

Total available capacity from all locations, including reserves within the Pierce County Sewer Service Area, is 48.79MGD. Table 1-1 on page 6, summarizes the current capacities for all Sewer Division treatment locations.

**Table 1-1 - Facilities, Capacities, and Locations**

<b>Facility</b>	<b>Capacity MGD*</b>	<b>Location</b>
Chambers Creek Regional Wastewater Treatment Plant	45.25MGD	City of University Place
Cascadia Wastewater Treatment Plant at Tehaleh**	1.00MGD	East Pierce County
Tacoma Central Wastewater Treatment Plant***	2.54MGD	City of Tacoma
<b>Sub-total</b>	<b>48.79MGD</b>	
<b>Large On-Site Systems (LOSS)</b>	<b>Capacity MGD</b>	<b>Location</b>
Panoramic Views Development - Etloh Large On-Site System	0.001MGD	Fox Island, Pierce County
<b>Total Capacity</b>	<b>48.79MGD</b>	

\*Millions of Gallons per Day \*\*Design Capacity Currently Under Construction \*\*\*Pierce County Owned Capacity

**Panoramic Views Development/ Etloh Large On-Site Septic System** listed in Table 1-1, is a stand-alone closed system that serves a small planned development on the south end of Fox Island. No new connections are anticipated to this system. Should additional connections be proposed, a review of the system for additional capacity would be required and then constructed by the developer.

## Conveyance and Treatment

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All or portions of the following towns and cities wastewater flows are sent to the Chambers Creek Regional Wastewater Treatment Plant:

- Town of Steilacoom
- City of DuPont
- City of University Place
- City of Lakewood including Tillicum and Woodbrook (formerly American Lake Gardens)
- City of Tacoma - Western Slopes Service Area

All or portions of the following cities wastewater flows are sent to the City of Tacoma's Central Wastewater Treatment Plant using Pierce County owned capacity:

- City of Fife
- City of Milton
- City of Edgewood

All flows generated within the Tehaleh Employment Master Planned Community and other areas within the Cascadia service area are sent to the Cascadia Wastewater Treatment Plant at Tehaleh.

The potential for new service for the Cities of Fircrest and Roy will be as requested by the individual cities. Table 1-2 below outlines a summary of the existing and possible service area components for the Chambers Creek facility. Table 1-3 on the following page outlines the service area acreage for the Cascadia Wastewater Treatment Plant at Tehaleh.

[Table 1-2 - Service Area for Chambers Creek Regional Wastewater Treatment Plant](#)

<b>Chambers Creek Regional Wastewater Treatment Plant Sewer Service Area - Existing</b>	
All Basins (117 square miles)	74,880 Acres
<b>City of Fircrest - Possible Future Connection and Service</b>	
Flows currently sent to the Tacoma Central Wastewater Treatment Plant	1,071 Acres
<b>City of Roy - Possible Future Connection and Service</b>	
Flows would be sent to the Chambers Creek Facility	164 Acres
<b>Total Acres</b>	<b>76,115 Acres</b>

Source: 2010/2012 Unified Sewer Plan

Should the City of Fircrest choose to transfer their wastewater flows from the Tacoma Central Wastewater Treatment Plant to the Chambers Creek Facility, infrastructure improvements must be made to Fircrest’s collection system prior to these flows being redirected and accepted. These infrastructure improvements would be permitted and constructed by the City of Fircrest to Pierce County standards.

Service for the City of Roy can be accommodated within the existing collection system. The City would be required to secure funding for connection charges and capital improvements to convey the wastewater to the Pierce County collection system. Connection would also require the City to complete, and have approved, a facility plan and project-specific environmental review prior to applying for connection.

The Cascadia Sub-basin is in eastern unincorporated Pierce County south of the City of Bonney Lake and east of the City of Orting. The entire acreage is zoned Employment Based Planned Community, except for three designated exception parcels. The Tehaleh Employment Based Planned Community is located entirely within this sub-basin. The Cascadia Wastewater Treatment Plant at Tehaleh serves this sub-basin.

[Table 1-3 - Service Area for Cascadia Wastewater Treatment Plant](#)

<b>Cascadia Wastewater Treatment Plant at Tehaleh Sewer Service Area All Construction Phases, Existing, and Planned</b>	
Cascadia Sub-basin	5,113 Acres

Source: Tehaleh Employment Based Planned Community

### [Note: On-site Septic Systems](#)

The Sewer Division does not review, approve, or permit residential, commercial, or industrial septic systems or their installations. Either the Tacoma-Pierce County Health Department or the State Department of Health are the responsible agencies for all septic system reviews, approvals, and permitting depending on the size of the system.

## Section 2a - Sewer Division Capital Projects 2020-2025

Section 2a references and includes the projects for the current Capital Facilities Plan (2020-2025) as a part of the twenty-year Sewer Improvement Program (2020-2040). All projects are referenced on the location maps found on pages 9 and 10 that identify the project's location. This section is followed by more detailed project information including a project specific map and table that lists projected costs for: Preliminary Engineering, Final Engineering, Construction, and Construction Engineering.

## Location Maps and Key - Capital Projects and Programs

Numbered locations for each project can be found on the maps pages 9 and 10. Some projects or programs may not be shown due to their incorporation over a wide area of the collection system.

### **Sewer Division Projects**

1. Chambers Creek Regional Wastewater Treatment Plant - Solids Handling Expansion/2020-2025
2. B Street Interceptor Phase 3/2020-2023
3. Meridian Crossings/2020-2021
4. Woodland Pump Station and Temporary Force Main/2020-2023
5. Fife Heights Trunk/2023-2026
6. Military Road Interceptor/2020-2021
7. 144th Street East Extension/2020-2024
8. 136th Street and 62nd Avenue Extension/2020-2022
9. 208th Street East/Mountain Highway Extension/2020-2023
10. 28th Avenue Pump Station/2020-2021
11. Pacific Commons/Spanaway Airport Extension/2020-2024
12. Parkland/Brookdale Extension Phase 3/2020-2023
13. Parkland/Brookdale Extension Phase 4/2021-2028
14. Hidden Hills Pump Station/2020-2021
15. Sewer Billing System Upgrade/2020-2021
16. Sewer Rehabilitation and Replacement Projects/2020-2025
17. Miscellaneous Sewer Construction/2020-2025
18. Operations and Maintenance Projects/2020-2025
19. Miscellaneous Project and Program Scoping/2020-2025
20. Chambers Creek Regional Wastewater Treatment Plant Expansion Phase 1/2020-2021
21. Brown's Point Generator Replacement/2020
22. Chambers Creek Regional Wastewater Treatment Plant - Perforated Plate Screen Replacement/2020-2021
23. Chambers Creek Regional Wastewater Treatment Plant - Headbox Rehabilitation/2020-2022
24. Chambers Creek Properties Pier Extension/2020-2021 (Partially Grant Funded)
25. Central Meadow Pump Station/2020-2021
26. Manhole 1238 Rehabilitation/2020-2021
27. Taylor Way Force Main Replacement/2020-2021
28. B Street Interceptor Repair/2020-2021
29. Collection System SCADA Replacement/2020-2024

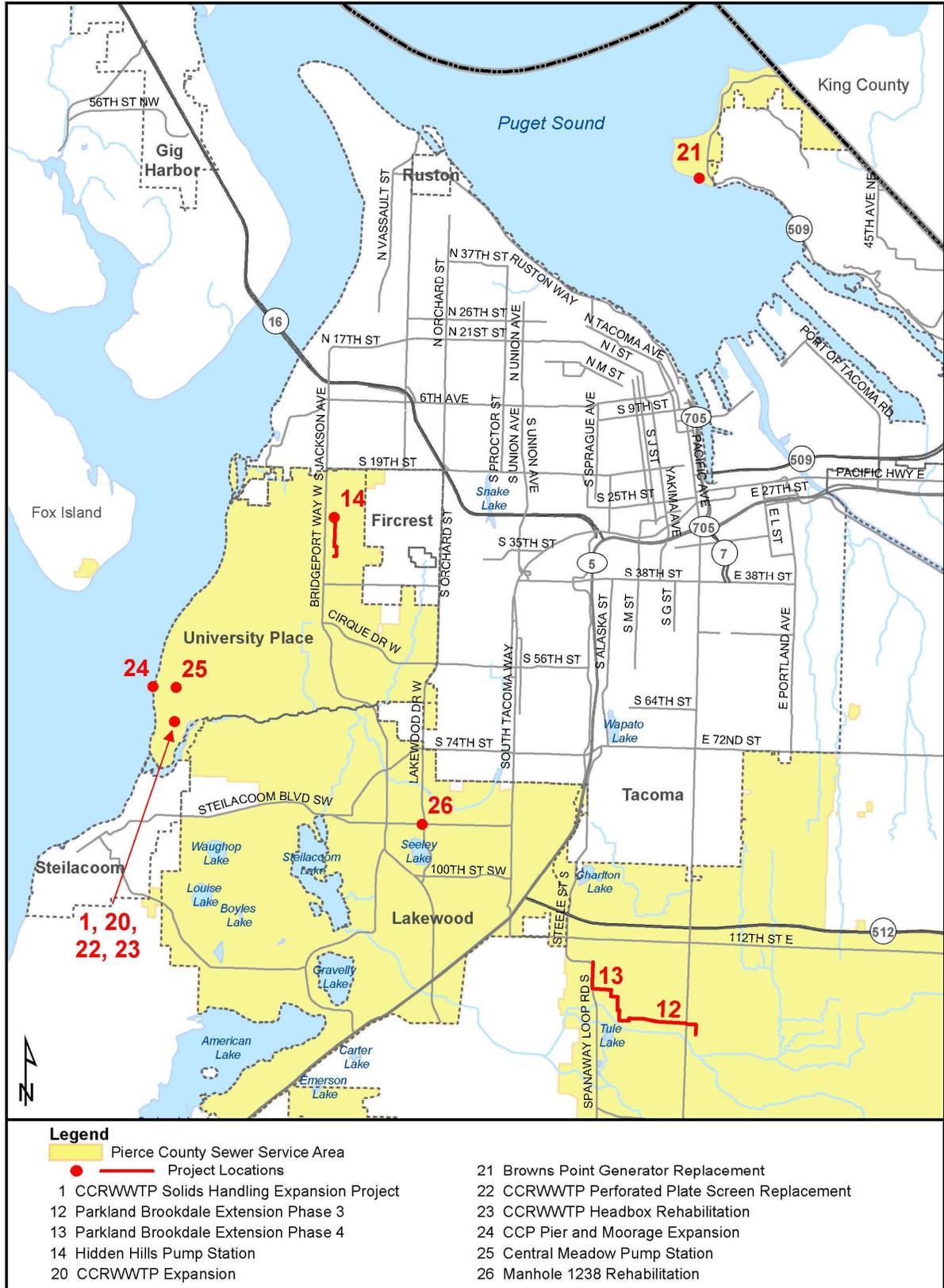
### **Failing Water Systems Projects - Pierce County as Court Appointed Receiver (see pages 39 and 40)**

30. Kapowsin Water District - Well Construction/2020-2021 (Partially Grant Funded)
31. Kapowsin Water District - Receivership Projects/2022-2023 (Partially Grant Funded)

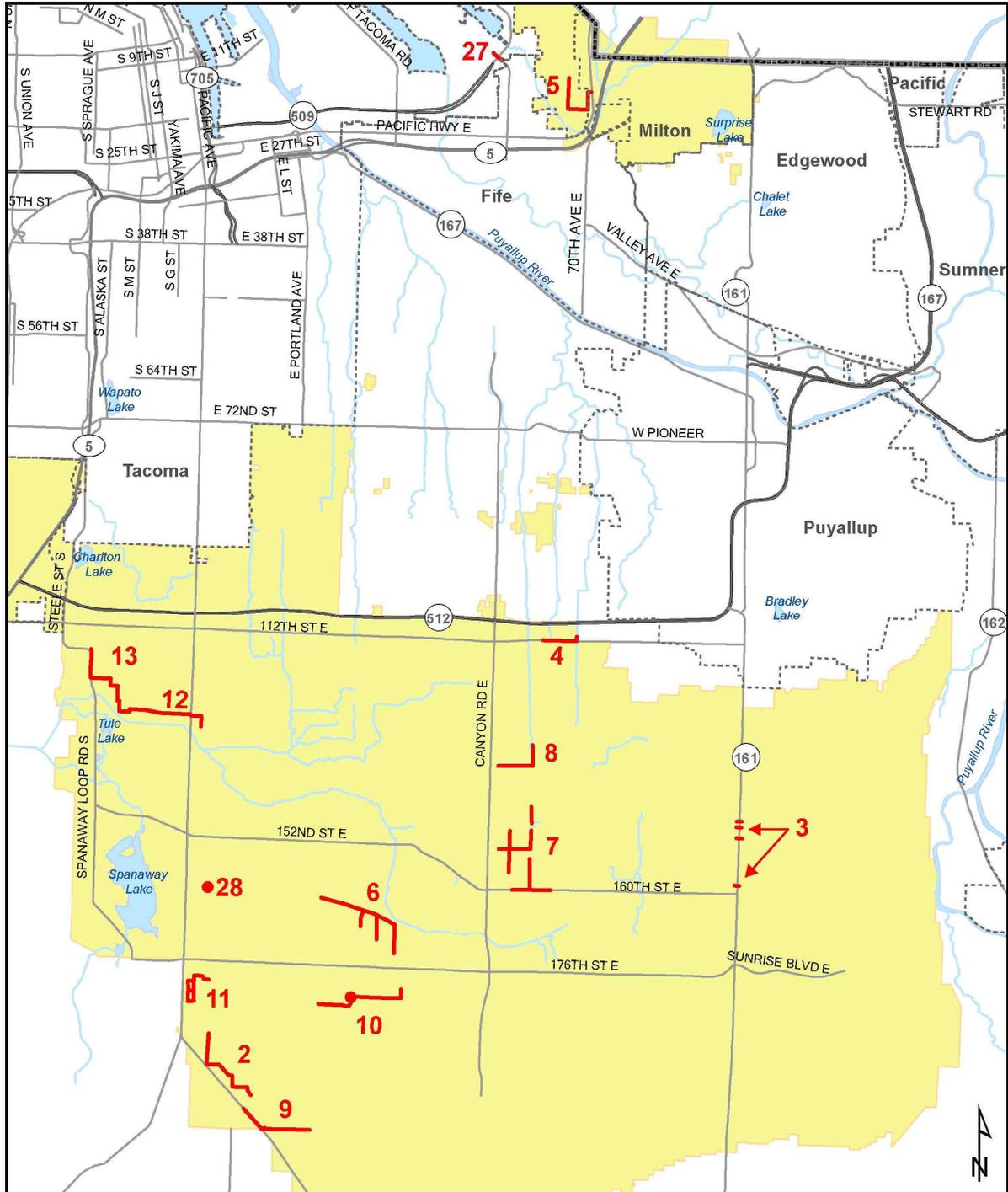
### **Maps Disclaimer:**

The map features are approximate and are intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. Orthophotos and other data may not align. The County assumes no liability for variations ascertained by actual survey. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS.' The County makes no warranty of fitness for a particular purpose.

Sewer Division of Planning and Public Works



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**Legend**

Yellow shaded area: Pierce County Sewer Service Area

Red line: Project Locations

- 2 B Street Interceptor Phase 3
- 3 Meridian Crossings
- 4 Woodland Pump Station and Temporary Force Main
- 5 Fife Heights Trunk
- 6 Military Road Interceptor
- 7 144th Street East Extension
- 8 136th Street East and 62nd Ave Extensions
- 9 208th Street East/Mountain Highway Extension
- 10 28th Ave Pump Station
- 11 Pacific Commons/Spanaway Airport Extension
- 12 Parkland Brookdale Extension Phase 3
- 13 Parkland Brookdale Extension Phase 4
- 27 Taylor Way Force Main Replacement
- 28 B Street Interceptor Repair

## Project Coordination

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The Sewer Division coordinates with all departments of Planning and Public Works and local jurisdictions - cities, towns, and utilities - regarding proposed projects that may have an impact on existing or proposed infrastructure. Coordination comes in the form of developer driven projects within Pierce County's urban growth area processed through the County's Development Center and through projects reviewed and permitted through outside jurisdictions and utilities within Pierce County. The Sewer Division also attends quarterly utility meetings with those cities interested in coordination of utility infrastructure improvements and with the Office of the County Engineer to coordinate with County Road Projects.

## Basis for Cost Estimates

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The cost estimates presented in the project tables reflect the most probable capital costs between the years of 2020 and 2025. The tables do not include past or future spending beyond this 6-year period. Those costs are included in the total estimated project costs identified in each project narrative.

Actual detailed project costs can be expected to vary in the future due to design changes made during preparation of final engineering plans and specifications, and because of changes in the cost of materials, labor, and equipment over time. The capital costs include the estimated construction cost, state and local sales tax, and costs for administrative, engineering, inspection, financial, legal services, and contingencies. These costs are used in the Sewer Division's financial model to generate long-term financial forecasts and capital programming.

Dollar estimates in the project tables past the current year are inflated at a 4% factor compounding over the six-year capital facilities planning cycle.

## Project Funding 2020-2025

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The Sewer Division updates the 20-year Sewer Improvement Program every year. With each update, all proposed capital projects are evaluated against specific criteria and available resources, they are then prioritized, funded, and scheduled or rescheduled. All projects support the development and service goals in the *State Growth Management Act*, *2016 Pierce County Comprehensive Plan*, the *2014 Buildable Lands Report*, and the *Puget Sound Regional Council's - Vision 2040 Regional Strategy* providing sewer services to the County's urban growth area. Table 2-1 on page 12 lists all projects by number and total projected spending for 2020-2025.

**Sewer Division of Planning and Public Works**

Table 2-1 Total Projected Spending All Projects 2020-2025

<b>Project Number</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
1	\$190,000	\$253,000	\$500,000	\$5,000,000	\$5,000,000	\$5,000,000
2	\$515,000	\$442,000	\$6,196,000	\$3,175,000		
3	\$1,771,000	\$1,000				
4	\$1,000	\$208,000	\$433,000	\$4,555,000		
5				\$160,000	\$173,000	\$2,441,000
6	\$3,942,260	\$2,161,400				
7	\$1,000	\$150,000	\$155,000	\$5,230,000	\$2,570,000	
8	\$150,000	\$2,227,000	\$375,000			
9	\$152,000	\$228,000	\$415,000	\$4,182,000		
10	\$5,116,400	\$1,341,490				
11	\$1,000	\$150,000	\$433,000	\$4,505,000	\$2,117,000	
12	\$485,000	\$8,230,000	\$5,720,000	\$60,000		
13		\$1,000	\$1,000,000	\$970,000	\$10,430,000	\$17,560,000
14	\$1,786,000	\$60,000				
15	\$200,000	\$1,000				
16	\$1,363,000	\$930,400	\$1,155,400	\$4,096,600	\$12,145,600	\$13,667,600
17	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
18	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
19	\$100,000	\$100,000	\$120,000	\$120,000	\$140,000	\$140,000
20	\$4,000,000	\$1,000				
21	\$1,000					
22	\$818,200	\$975,800				
23	\$400,000	\$400,000	\$8,100,000			
24	\$1,155,000	\$60,000				
25	\$170,000	\$20,000				
26	\$1,710,000	\$60,000				
27	\$790,000	\$60,000				
28	\$460,000	\$20,000				
29	\$1,505,141	\$2,139,480	\$2,733,052	\$2,733,052	\$1,366,526	
30	\$590,665	\$504,000				
31	\$1,000	\$1,000	\$150,000	\$850,000		
<b>Totals</b>	<b>\$27,824,666</b>	<b>\$21,175,570</b>	<b>\$27,935,452</b>	<b>\$36,086,652</b>	<b>\$34,392,126</b>	<b>\$39,258,600</b>

**Sewer Division of Planning and Public Works**

**Project 1 - Wastewater Treatment Plant Solids Handling Expansion 2020-2025**

**Project Description:** Located at the Chambers Creek Regional Wastewater Treatment Plant and Council District 4, the solids handling system will not have sufficient operating capacity by 2026. This planning/design/construction project will begin looking at options for the next phase of the solids handling process and then implement and construct the design solution.

The project cost is estimated at \$15,962,000, is forecasted for completion in year 2025, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$190,000	\$253,000				
Final Engineering			\$500,000			
Construction				\$4,850,000	\$4,850,000	\$4,850,000
Construction Engineering				\$150,000	\$150,000	\$150,000
<b>Totals</b>	<b>\$190,000</b>	<b>\$253,000</b>	<b>\$500,000</b>	<b>\$5,000,000</b>	<b>\$5,000,000</b>	<b>\$5,000,000</b>



**Project 2 - B Street Interceptor Phase 3 2020-2023**

**Project Description:** Located in the Spanaway Service Basin and Council Districts 5 and 6, this improvement project was created by the split of the B Street Interceptor Phase 2 project as identified in the 2011 Capital Facilities Plan and budget into two phases. The project includes installation of approximately 4,200 linear feet of 30-inch diameter gravity pipeline along B Street East and Mountain Highway from 192<sup>nd</sup> Street East to 204<sup>th</sup> Street East.

The project cost is estimated at \$10,328,000, is forecasted for completion in year 2023, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$515,000					
Final Engineering		\$442,000	\$28,000			
Construction			\$6,000,000	\$3,129,000		
Construction Engineering			\$168,000	\$46,000		
<b>Totals</b>	<b>\$515,000</b>	<b>\$442,000</b>	<b>\$6,196,000</b>	<b>\$3,175,000</b>		



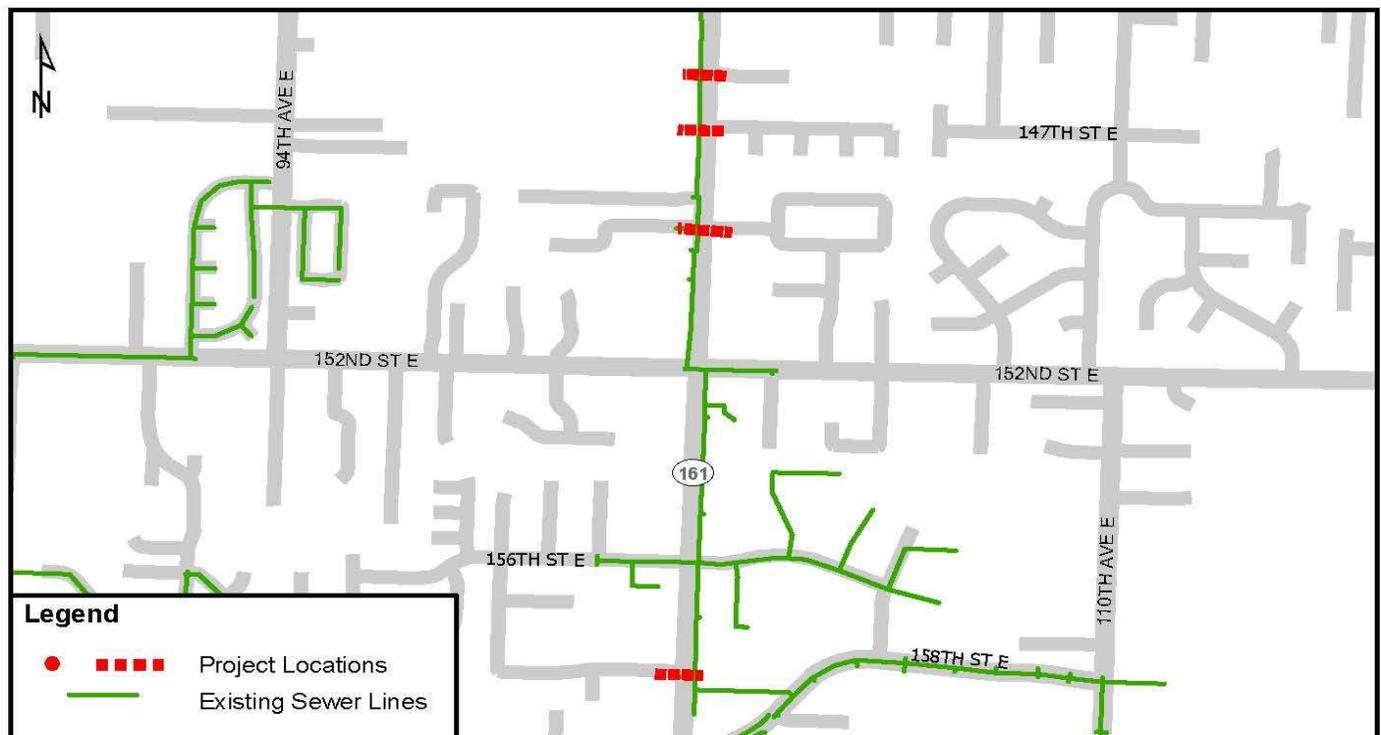
**Sewer Division of Planning and Public Works**

**Project 3 - Meridian Crossings 2020-2021**

**Project Description:** Located in the East Basin and Council District 1, this improvement project includes the installation of four bore/jack crossings of Meridian Avenue between 144<sup>th</sup> Street East and 158<sup>th</sup> Street East and will support economic development in the South Hill Activity Center, Urban Village, and surrounding residential areas. The project includes the installation of 480 linear feet of 8-inch sewer main, 420 linear feet of steel casings, four sewer manholes, and 230 linear feet of 8-inch diameter sewer stubs to provide properties adjacent to SR-161 a point of connection to the public sanitary sewer system.

The project cost is estimated at \$2,524,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$1,691,000					
Construction Engineering	\$80,000	\$1,000				
<b>Totals</b>	<b>\$1,771,000</b>	<b>\$1,000</b>				



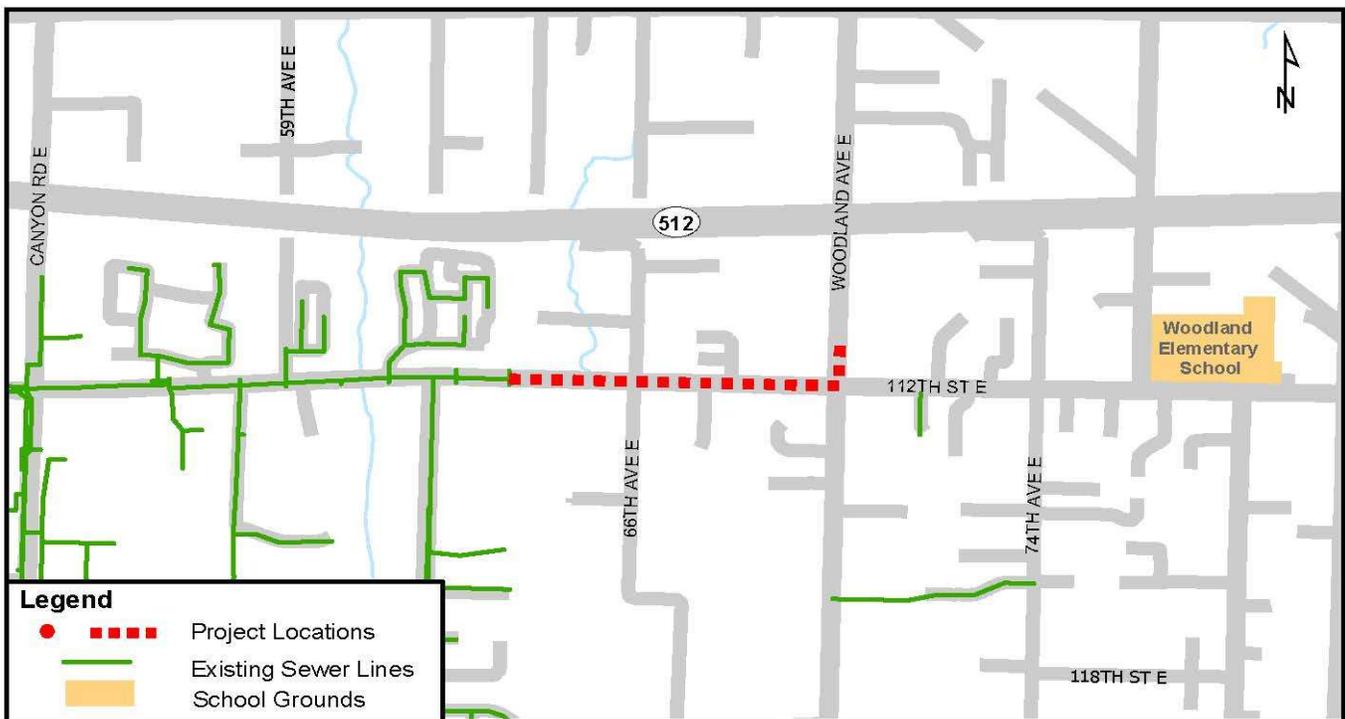
**Sewer Division of Planning and Public Works**

**Project 4 - Woodland Pump Station and Temporary Force Main 2020-2023**

**Project Description:** Located in the East Basin and Council District 1, this project will construct a new regional pump station and temporary force main connecting to the 112<sup>th</sup> Street East sewer line extension. The temporary force main will be replaced in 2030 when the Brookdale Interceptor is installed from Woodland Avenue to Waller Road.

The project cost is estimated at \$5,197,000, is forecasted for completion in year 2023, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$1,000	\$208,000				
Final Engineering			\$433,000			
Construction				\$4,298,000		
Construction Engineering				\$257,000		
<b>Totals</b>	<b>\$1,000</b>	<b>\$208,000</b>	<b>\$433,000</b>	<b>\$4,555,000</b>		

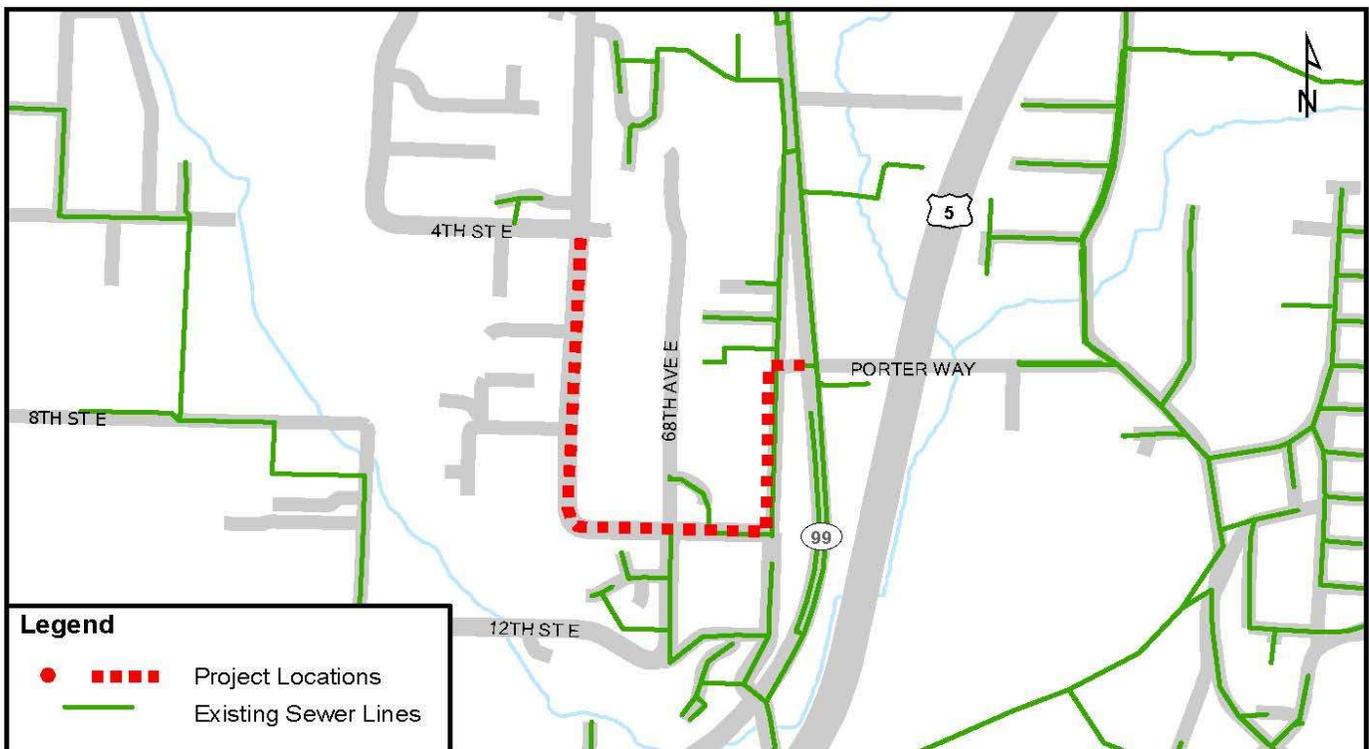


**Project 5 - Fife Heights Trunk 2023-2026**

**Project Description:** Located in the Hylebos Basin and Council District 2, this project will construct a 12-inch 7,255 linear foot extension, beginning at Pacific Highway and Porter Way, turning east to 70<sup>th</sup> Avenue East, South along 70<sup>th</sup> to 10<sup>th</sup> Street East, then west along 10<sup>th</sup> Street East to 66<sup>th</sup> Avenue East and then north to the intersection of 66<sup>th</sup> Avenue East and 4<sup>th</sup> Street East. The extension provides sewer service to the urban area of Fife Heights and will discharge to the existing Interceptor in Pacific Highway/State Route 99.

The project cost is estimated at \$5,074,000, is forecasted for completion in year 2026, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering				\$160,000		
Final Engineering					\$173,000	
Construction						\$2,130,000
Construction Engineering						\$311,000
<b>Totals</b>				<b>\$160,000</b>	<b>\$173,000</b>	<b>\$2,441,000</b>



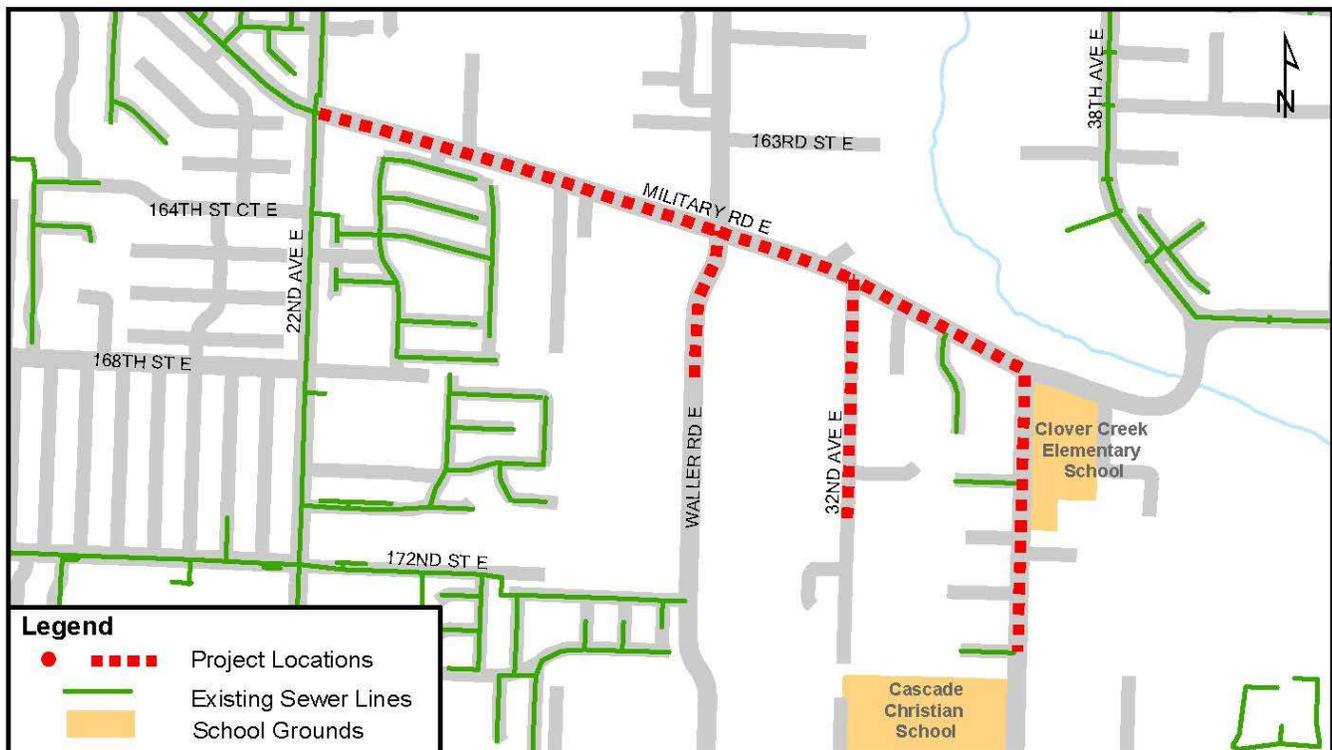
**Sewer Division of Planning and Public Works**

**Project 6 - Military Road Interceptor 2020-2021**

**Project Description:** Located in the Brookdale Basin and Council District 3, this project will construct 9,900 linear feet of sewer infrastructure ranging from 8-inch to 15-inch in size in Military Road from 22<sup>nd</sup> Avenue East to 36<sup>th</sup> Avenue East and extending southward into 32<sup>nd</sup> Avenue East, Waller Road, and 36<sup>th</sup> Avenue East to initially connect three dryline sewer systems and provide support to approximately 340 acres of currently unsewered Urban Growth Area including additional development around the 176th Street East corridor.

The project cost is estimated at \$8,323,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$3,798,260	\$2,041,400				
Construction Engineering	\$144,000	\$120,000				
<b>Totals</b>	<b>\$3,942,260</b>	<b>\$2,161,400</b>				



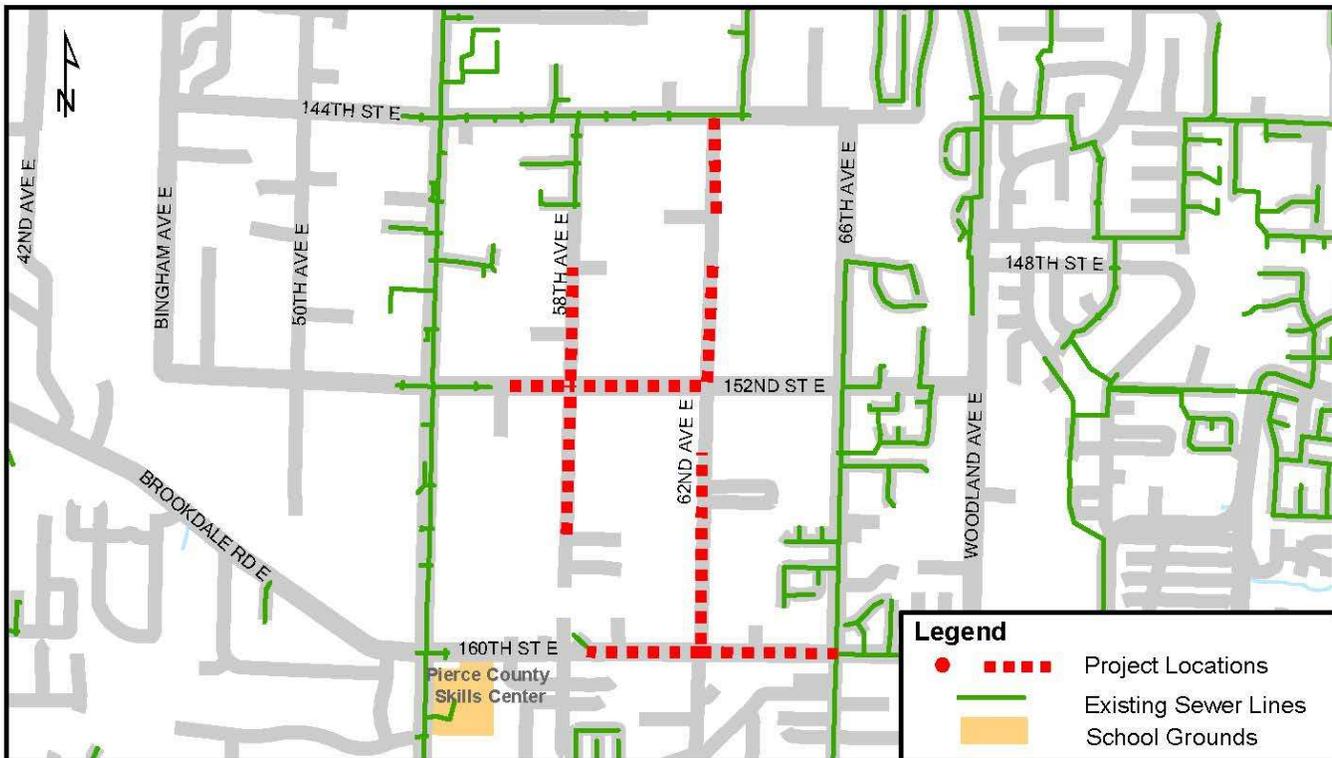
**Sewer Division of Planning and Public Works**

**Project 7 - 144<sup>th</sup> Street East Extension 2020-2024**

**Project Description:** Located in the Canyon Service Basin and Council District 6, this project will construct approximately 13,300 linear feet of 8-inch sewer main to support approximately 290 acres of currently unsewered Urban Growth Area. The project supports the Pierce County *Centers and Corridors Initiative* promoting compact communities around major roadways, supporting economic development, and surrounding residential areas.

The project cost is estimated at \$8,106,000, is forecasted for completion in year 2024, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$1,000	\$150,000	\$20,000			
Final Engineering			\$135,000	\$15,000		
Construction				\$5,000,000	\$2,440,000	
Construction Engineering				\$215,000	\$130,000	
<b>Totals</b>	<b>\$1,000</b>	<b>\$150,000</b>	<b>\$155,000</b>	<b>\$5,230,000</b>	<b>\$2,570,000</b>	



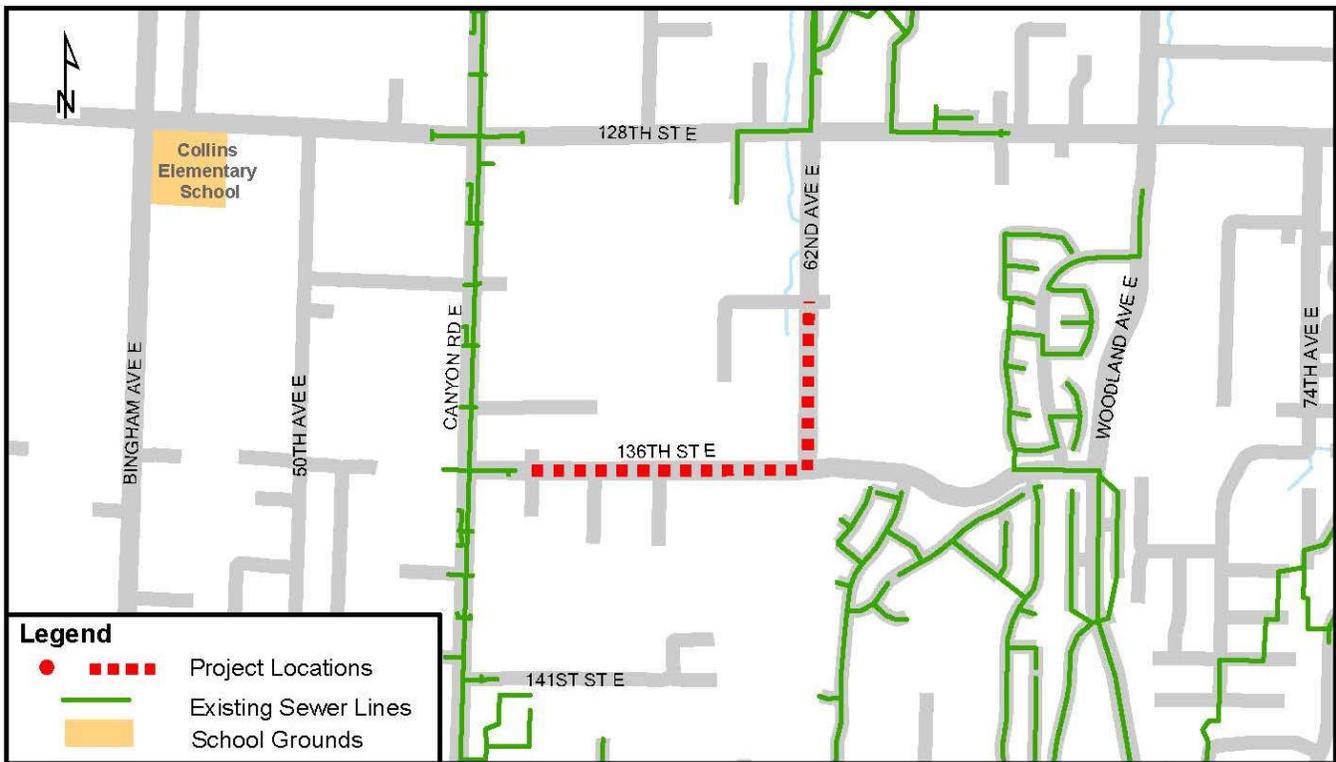
**Sewer Division of Planning and Public Works**

**Project 8 - 136<sup>th</sup> Street East and 62<sup>nd</sup> Avenue East Extensions 2020-2022**

**Project Description:** Located in the Canyon Service Basin and Council District 5, this project will construct approximately 5,000 linear feet of 8-inch sewer main to support approximately 150 acres of currently unsewered Urban Growth Area.

The project cost is estimated at \$2,902,000, is forecasted for completion in year 2022, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering	\$150,000	\$27,000				
Construction		\$2,000,000	\$351,000			
Construction Engineering		\$200,000	\$24,000			
<b>Totals</b>	<b>\$150,000</b>	<b>\$2,227,000</b>	<b>\$375,000</b>			



**Sewer Division of Planning and Public Works**

**Project 9 - 208<sup>th</sup> Street East/Mountain Highway Extension 2020-2023**

**Project Description:** Located in the Spanaway Service Basin in Council District 3, the project will construct approximately 3,900 linear feet of 8-inch sewer main to support approximately 190 acres of currently unsewered Urban Growth Area.

The project cost is estimated at \$4,977,000, is forecasted for completion in year 2023, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$152,000					
Final Engineering		\$228,000	\$84,000			
Construction			\$285,000	\$4,000,000		
Construction Engineering			\$46,000	\$182,000		
<b>Totals</b>	<b>\$152,000</b>	<b>\$228,000</b>	<b>\$415,000</b>	<b>\$4,182,000</b>		



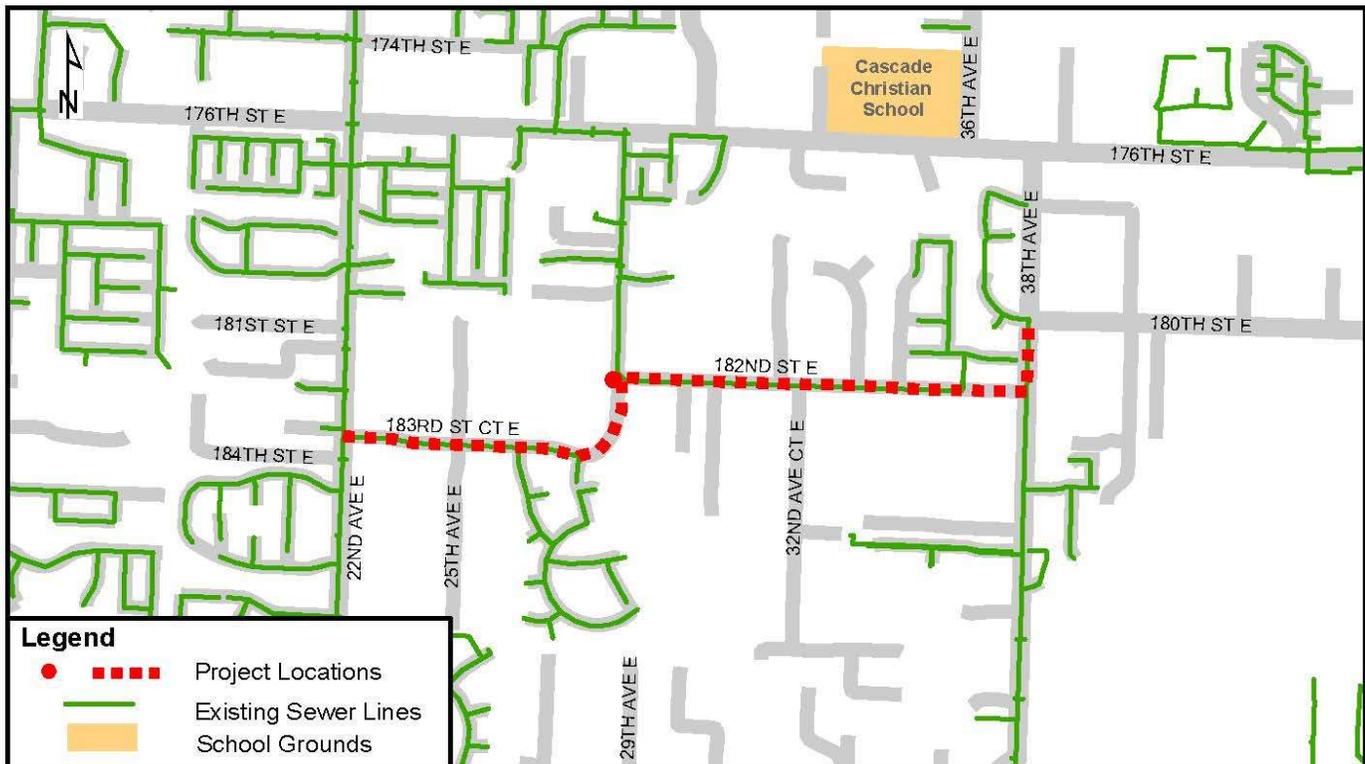
**Sewer Division of Planning and Public Works**

**Project 10 - 28<sup>th</sup> Avenue Pump Station 2020-2021**

**Project Description:** Located in the Brookdale Service Basin and Council District 3, this project will remove a temporary pump station and construct a new pump station at the corner of 28<sup>th</sup> Avenue East and 182<sup>nd</sup> Street East at a property currently owned by Pierce County. Sewer lines will be extended 3,800 linear feet in an easterly direction to 180<sup>th</sup> Street East supporting approximately 370 acres of currently unsewered Urban Growth Area.

The project cost is estimated at \$7,837,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$4,916,400	\$1,141,490				
Construction Engineering	\$200,000	\$200,000				
<b>Totals</b>	<b>\$5,116,400</b>	<b>\$1,341,490</b>				



**Sewer Division of Planning and Public Works**

**Project 11 - Pacific Commons/Spanaway Airport Extension 2020-2024**

**Project Description:** Located in the Spanaway Service Basin and Council District 3, this project will construct approximately 2,150 linear feet of 8-inch and 10-inch line and a new pump station on A Street supporting approximately 115 acres of currently unsewered Urban Growth Area.

The project cost is estimated at \$7,206,000, is forecasted for completion in year 2024, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$1,000	\$150,000				
Final Engineering			\$433,000			
Construction				\$4,281,000	\$2,000,000	
Construction Engineering				\$224,000	\$117,000	
<b>Totals</b>	<b>\$1,000</b>	<b>\$150,000</b>	<b>\$433,000</b>	<b>\$4,505,000</b>	<b>\$2,117,000</b>	



**Sewer Division of Planning and Public Works**

**Project 12 - Parkland/Brookdale Extension - Phase 3 2020-2023**

**Project Description:** Located in the Parkland Service Basin and Council District 5, this project is a 72-inch diameter 3,320 linear foot interceptor that will provide future capacity relief for the interceptor located between the Brookdale Interceptor (Brookdale Basin) and the Spanaway Loop Bypass. The project will follow the existing interceptor in most places but will also utilize other rights-of-way corridors. The improvement will serve the East Basin, Rainier Terrace, Frederickson, Brookdale, and Golden Given Basins, as well as the Parkland Basin.

The project cost is estimated at \$15,030,000, is forecasted for completion in year 2023 and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$350,000					
Final Engineering	\$135,000	\$15,000				
Construction		\$8,000,000	\$5,590,000			
Construction Engineering		\$215,000	\$130,000	\$60,000		
<b>Totals</b>	<b>\$485,000</b>	<b>\$8,230,000</b>	<b>\$5,720,000</b>	<b>\$60,000</b>		

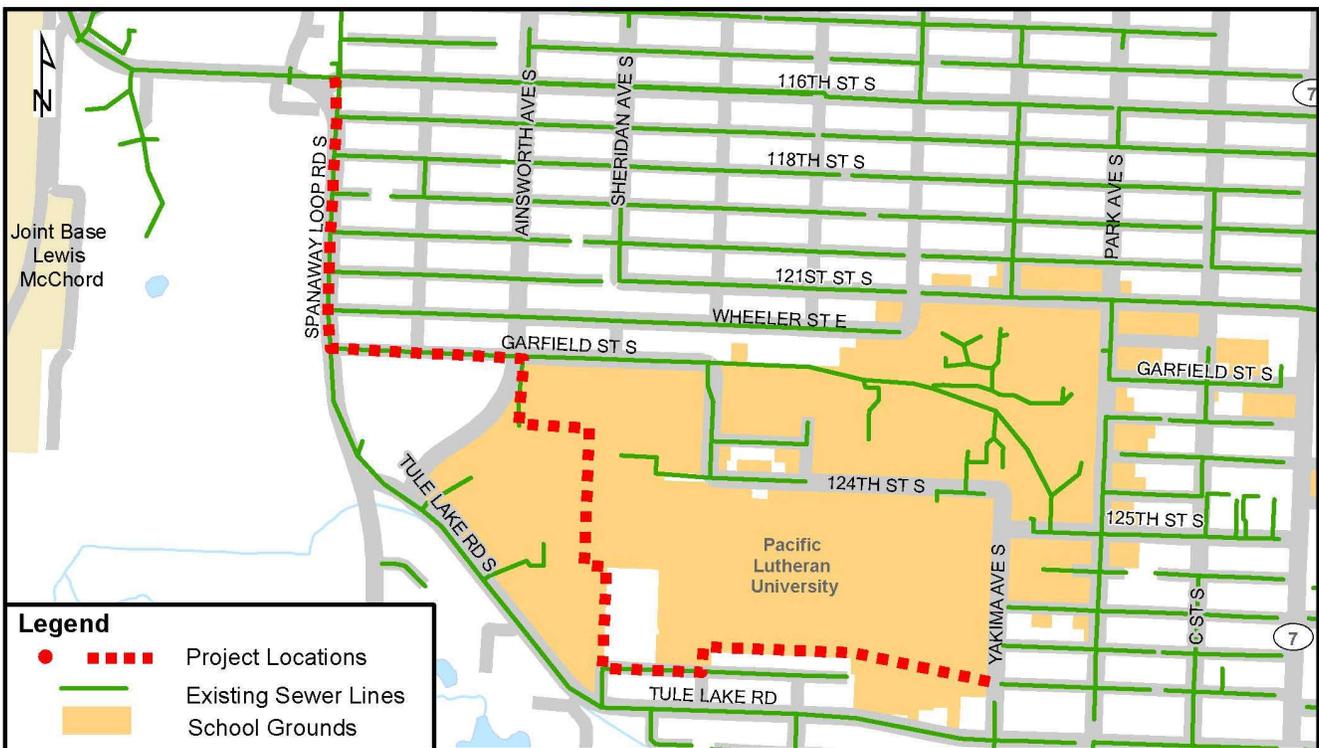


**Project 13 - Parkland/Brookdale Extension - Phase 4 2021-2028**

**Project Description:** Located in the Parkland Service Basin and Council District 6, this project was created by splitting the Parkland/Brookdale Interceptor Phase 3. The split was driven by capacity needs and the greater complexity of Phase 4 as compared to Phase 3. The Phase 4 project is a 72-inch diameter 8,600 linear foot interceptor that will provide future capacity relief for the interceptor located between the Brookdale Interceptor (Brookdale Basin) and the Spanaway Loop Bypass and will follow the existing interceptor in most places but will also utilize other right-of-way corridors. The improvement will serve the East Basin, Rainier Terrace, Frederickson, Brookdale, and Golden Given Basins, as well as the Parkland Sub-basin.

The project cost is estimated at \$29,961,000, is forecasted for completion in year 2028, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering		\$1,000	\$1,000,000	\$700,000		
Final Engineering				\$270,000		
Construction					\$10,000,000	\$17,300,000
Construction Engineering					\$430,000	\$260,000
<b>Totals</b>		<b>\$1,000</b>	<b>\$1,000,000</b>	<b>\$970,000</b>	<b>\$10,430,000</b>	<b>\$17,560,000</b>



**Project 14 - Hidden Hills Pump Station 2020-2021**

**Project Description:** Located in the University Place Service Basin and Council District 4, this is a preservation project to rehabilitate an existing pump station and install 3,100 linear feet of 6-inch force main from the pump station to the existing 10-inch interceptor installed with the University Hills Project in the City of University Place within the County’s service area.

The project cost is estimated at \$2,314,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$1,623,000	\$50,000				
Construction Engineering	\$163,000	\$10,000				
<b>Totals</b>	<b>\$1,786,000</b>	<b>\$60,000</b>				



**Sewer Division of Planning and Public Works**

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**Project 15 - Sewer Billing Upgrade 2020-2021**

**Project Description:** An improvement to the Sewer Billing Software Application that is at end of useful life and will not be supported beyond 2019. This is an in-house software program on an outdated platform. This project will replace the existing system securing the ongoing collection of the \$66 million-dollar revenue stream supporting the Sewer Division.

The project cost is estimated at \$2,000,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 402.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$200,000	\$1,000				
Final Engineering						
Construction						
Construction Engineering						
<b>Totals</b>	<b>\$200,000</b>	<b>\$1,000</b>				

Note: System-wide projects - no mapping provided

**Project 16 - Sewer System Rehabilitation and Replacement Projects 2020-2025**

**Project Description:** This program funds miscellaneous rehabilitation and replacement projects at the County’s treatment plants, sewer-related facilities, and the sewer collection system. The funds allocated to each budget year are first determined through statistical analysis based on the estimated useful life and replacement cost of each of our \$1.8 billion in assets. As assets in need of rehabilitation and/or replacement are identified, individual capital improvement projects are developed, and monies are re-allocated from this program to those individual projects.

These projects are ongoing and funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$1,363,000	\$930,400	\$1,155,400	\$4,096,600	\$12,145,600	\$13,667,600
Final Engineering						
Construction						
Construction Engineering						
<b>Totals</b>	<b>\$1,363,000</b>	<b>\$930,400</b>	<b>\$1,155,400</b>	<b>\$4,096,600</b>	<b>\$12,145,600</b>	<b>\$13,667,600</b>

Note: System-wide projects - no mapping provided

**Sewer Division of Planning and Public Works**

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**Project 17 - Miscellaneous Sewer Construction 2020-2025**

**Project Description:** This ongoing program funds miscellaneous sewer improvement projects associated with franchise requirements throughout the sewer service area in incorporated and unincorporated Pierce County. This also includes sewer improvements in conjunction with other jurisdictional road improvement projects as well as County Road Projects.

These projects are ongoing and funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Final Engineering						
Construction						
Construction Engineering						
<b>Totals</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>	<b>\$250,000</b>

Note: System-wide projects - no mapping provided

**Project 18 - Operations and Maintenance Projects 2020-2025**

**Project Description:** This ongoing project funds miscellaneous operations, maintenance, efficiency and optimization projects throughout the Chambers Creek Regional Wastewater Treatment Plant, Cascadia Wastewater Treatment Plant, and Sewer Collection Systems.

These projects are ongoing and funded through Sewer Division Fund 402.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Final Engineering						
Construction						
Construction Engineering						
<b>Totals</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>

Note: System-wide projects - no mapping provided

**Sewer Division of Planning and Public Works**

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**Project 19 - Miscellaneous Project and Program Scoping 2020-2025**

**Project Description:** This ongoing program funds miscellaneous studies to determine scope and budget for future Sewer Division projects that will be located in various service basins and Council districts throughout the County. Once developed, these projects may be added to the Capital Facilities Plan.

These studies are ongoing and funded through Sewer Division Fund 402.

<b>Project Phase</b>	<b>Projected 2020</b>	<b>Projected 2021</b>	<b>Projected 2022</b>	<b>Projected 2023</b>	<b>Projected 2024</b>	<b>Projected 2025</b>
Preliminary Engineering	\$100,000	\$100,000	\$120,000	\$120,000	\$140,000	\$140,000
Final Engineering						
Construction						
Construction Engineering						
<b>Totals</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$120,000</b>	<b>\$120,000</b>	<b>\$140,000</b>	<b>\$140,000</b>

Note: System-wide projects - no mapping provided

**Project 20 - Wastewater Treatment Plant Expansion Phase 1 2020-2021**

**Project Description:** Located in the Chambers Creek Service Basin and Council District 4, this is an improvement project to expand the capacity of the Chambers Creek Regional Wastewater Plant, modernize the treatment process, and rehabilitate existing systems. It is the first of five phases approved by the City of University Place in February 2010 through Conditional Use Permit 08-0001 later revised to 09-0001. This permit consolidated all previous land use approvals for the wastewater treatment plant into one permit using the City’s *Chambers Creek Overlay* in the Residential 2 (R2) zoning classification. The permit addresses all five phases of expansion with projected completion in 2040.

Phase 1 of this project is estimated at \$348,500,000, is forecasted for completion is 2021, and is funded through Sewer Division Fund 402.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction						
Construction Engineering	\$4,000,000	\$1,000				
<b>Totals</b>	<b>\$4,000,000</b>	<b>\$1,000</b>				



**Sewer Division of Planning and Public Works**

**Project 21 - Brown's Point Generator Replacement 2020**

**Project Description:** This is a preservation project that will replace emergency generators that have come to the end of their useful lives in unincorporated Brown's Point.

The project cost is estimated at \$423,000 is forecasted for completion in year 2020 and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction						
Construction Engineering	\$1,000					
<b>Totals</b>	<b>\$1,000</b>					



**Sewer Division of Planning and Public Works**

**Project 22 - Wastewater Treatment Plant Perforated Plate Screen Replacement 2020-2021**

**Project Description:** Located in the Chambers Creek Service Basin and Council District 4 this project will replace 2 existing perforated plate screen systems at the Headworks of the Chambers Creek Regional Wastewater Treatment Plant. The existing perforated plate screen systems have failed multiple times over the past 2 years requiring costly repairs, unscheduled maintenance, and operational mitigation.

The project cost is estimated at \$1,794,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering	\$150,000	\$120,000				
Construction	\$643,200	\$830,800				
Construction Engineering	\$25,000	\$25,000				
<b>Totals</b>	<b>\$818,200</b>	<b>\$975,800</b>				



**Project 23 - Wastewater Treatment Plant Headbox Rehabilitation 2020-2022**

**Project Description:** Located in the Chambers Creek Service Basin and Council District 4, the project will rehabilitate or replace the existing concrete headbox structure at the Chambers Creek Regional Wastewater Treatment Plant. The reinforced concrete structure is severely corroded and the sluice gates that control the flow entering the plant before it enters the screens are no longer functioning properly.

The project cost is estimated at \$8,900,000, is forecasted for completion in year 2022, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$400,000					
Final Engineering		\$400,000				
Construction			\$8,000,000			
Construction Engineering			\$100,000			
<b>Totals</b>	<b>\$400,000</b>	<b>\$400,000</b>	<b>\$8,100,000</b>			



**Sewer Division of Planning and Public Works**

**Project 24 - Chambers Creek Regional Park Pier Extension 2020-2021**

**Project Description:** Located in the Chambers Creek Service Basin and Council District 4, this is a partially grant-based project/improvement to complete Phase 3 of the Chambers Creek Properties pier extension. The project will extend the pier an additional 155 linear feet from the terminus of the Bridge to the Beach railroad overpass into Puget Sound.

The project cost is estimated at \$1,980,246, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$1,100,000	\$50,000				
Construction Engineering	\$55,000	\$10,000				
<b>Totals</b>	<b>\$1,155,000</b>	<b>\$60,000</b>				



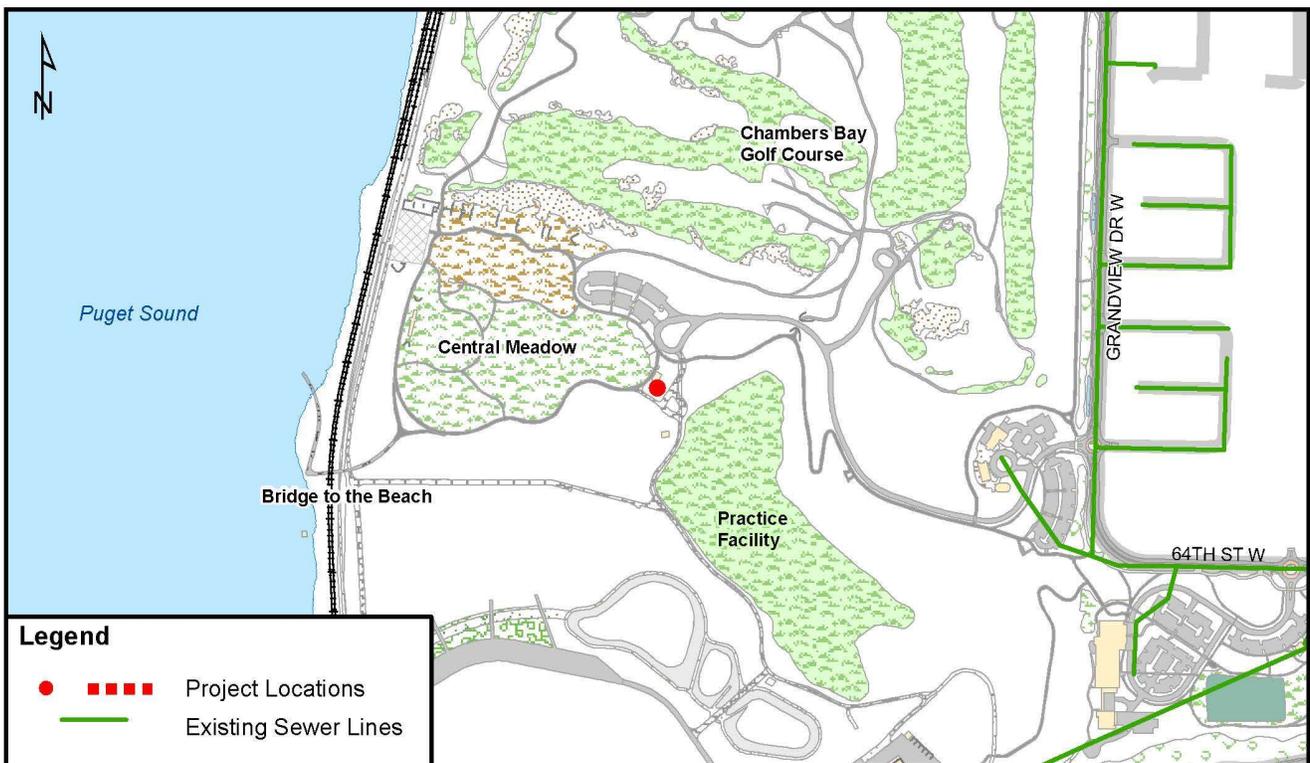
**Sewer Division of Planning and Public Works**

**Project 25 - Central Meadow Pump Station 2020-2021**

**Project Description:** Located in the Chambers Creek Service Basin and Council District 4, the project will install a pump station at Chambers Creek Properties to serve the proposed Chambers Bay Resort as well as the existing starter shack, the Central Meadow public restrooms, and any other future County amenities at the Central Meadow. The project will be designed and constructed by the resort proponents per the Developer Lease Agreement provisions. The County will be responsible to reimburse the resort proponents for up to half the design and construction costs or \$150,000 - whichever is less.

The project cost is estimated at \$190,000 and includes additional County expenditures of \$40,000 for plan and inspection review costs, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$10,000					
Final Engineering	\$10,000					
Construction	\$140,000	\$10,000				
Construction Engineering	\$10,000	\$10,000				
<b>Totals</b>	<b>\$170,000</b>	<b>\$20,000</b>				



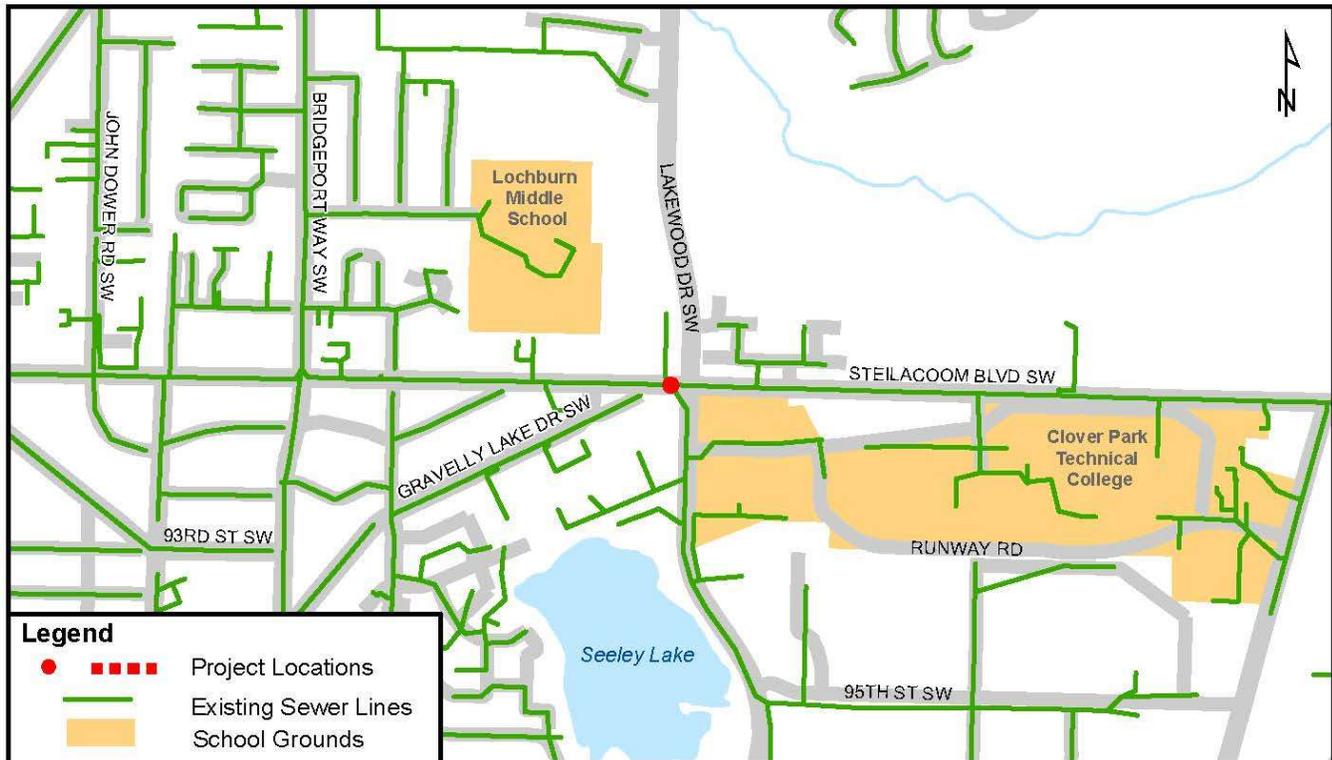
**Sewer Division of Planning and Public Works**

**Project 26 - Manhole 1238 Rehabilitation 2020-2021**

**Project Description:** Located in the University Place East Service Basin and Council District 4, this project will rehabilitate or replace an existing manhole and 36-inch diameter external drop structure that are severely corroded. The project is located just west of the heavily travelled intersection of Lakewood Drive SW and Steilacoom Boulevard SW in the City of Lakewood. The Sewer Division has coordinated with the City for this project on paving and other City planned improvements/repairs outside of the Division’s project.

The project cost is estimated at \$1,770,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering	\$50,000					
Construction	\$1,520,000	\$50,000				
Construction Engineering	\$140,000	\$10,000				
<b>Totals</b>	<b>\$1,710,000</b>	<b>\$60,000</b>				

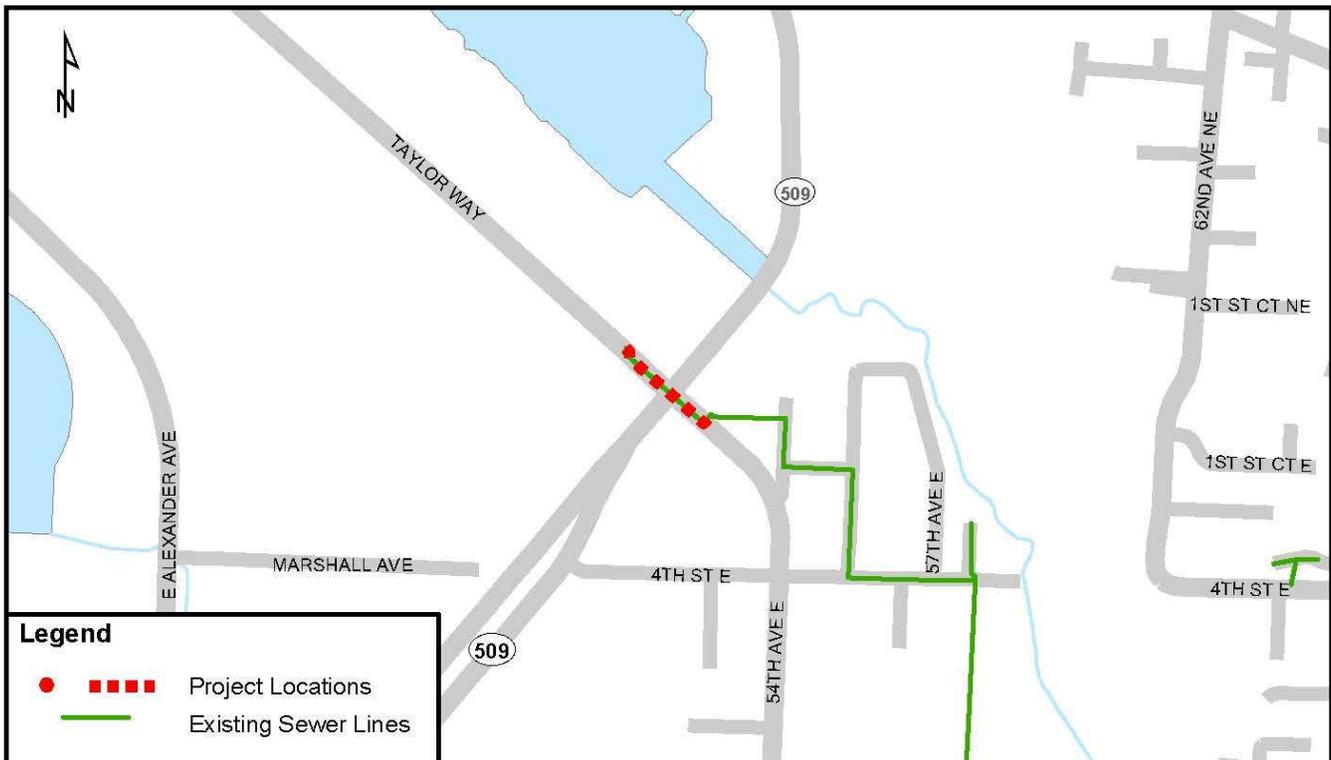


**Project 27 - Taylor Way Force Main Replacement 2020-2021**

**Project Description:** This project will rehabilitate or replace approximately 700 linear feet of an existing 12-inch diameter cast iron sewer force main located at the intersection of Taylor Way and SR 509 that discharges to the City of Tacoma sewer system. The force main was installed in 1973 and is nearing the end of its useful life. This project will be completed as part of the City of Tacoma’s Taylor Way Rehabilitation project through an interlocal agreement that is currently in negotiation between the County and the City.

The project cost is estimated at \$850,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$750,000	\$50,000				
Construction Engineering	\$40,000	\$10,000				
<b>Totals</b>	<b>\$790,000</b>	<b>\$60,000</b>				



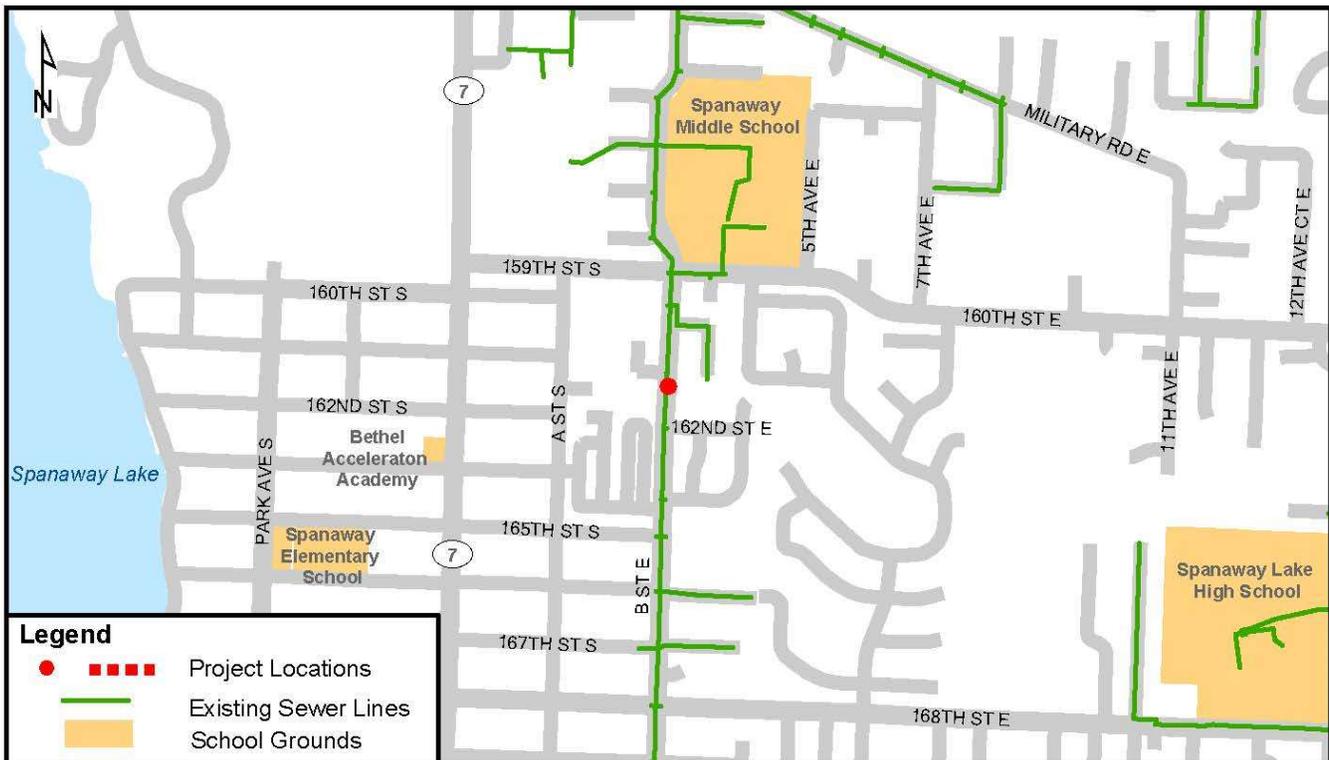
**Sewer Division of Planning and Public Works**

**Project 28 - B Street Interceptor Repair 2020-2021**

**Project Description:** Located in the Spanaway Service Basin and Council Districts 5 and 6, this project will repair or replace approximately 40 linear feet of existing 36-inch diameter high-density polyethylene (HDPE) sewer interceptor approximately 620 feet south of the intersection of B Street East and 159 Street East in Spanaway. The HDPE pipe has partially collapsed and has reduced the capacity of the pipe.

The project cost is estimated at \$480,000, is forecasted for completion in year 2021, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering						
Construction	\$450,000	\$10,000				
Construction Engineering	\$10,000	\$10,000				
<b>Totals</b>	<b>\$460,000</b>	<b>\$20,000</b>				



**Project 29 - Collection System SCADA Replacement 2020-2024**

**Project Description:** Located throughout the sewer collection system, the project will replace the supervisory control and data acquisition (SCADA) systems at approximately 100 sewer pump stations over a period of five years. The existing systems that allow maintenance and operation staff to monitor and control pump stations remotely are obsolete and no longer supported by their manufacturer.

The project cost is estimated at \$10,477,251, is forecasted for completion in year 2024, and is funded through Sewer Division Fund 404.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$732,188					
Final Engineering	\$772,953	\$772,954				
Construction		\$1,051,174	\$2,102,348	\$2,102,348	\$1,051,174	
Construction Engineering		\$315,352	\$630,704	\$630,704	\$315,352	
<b>Totals</b>	<b>\$1,505,141</b>	<b>\$2,139,480</b>	<b>\$2,733,052</b>	<b>\$2,733,052</b>	<b>\$1,366,526</b>	

Note: System-wide projects - no mapping provided

**Section 2b - Water Utility Capital Projects 2020-2023**

On November 29, 2017 Pierce County Superior Court named Pierce County as Receiver for the Kapowsin Water District. The court order mandated that Pierce County take over the day to day activities of the Kapowsin system until a safe and reliable source of water could be established to meet the Health Department’s requirements and to make the system attractive to another provider to transition out of Receivership. Pierce County, acting as Receiver, is currently working on the projects listed on Pages 39 and 40 to bring the system out of receivership.

**Project 30 - Kapowsin Water District - Well Construction 2020-2021**

A project to complete a new ground water well, conveyance and treatment, to provide the mandated safe and reliable water source. The project is located in Council District 3.

The project cost is estimated at \$1,610,400 is forecasted for completion in year 2021, and partially grant funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering						
Final Engineering	\$370,665					
Construction	\$200,000	\$504,000				
Construction Engineering	\$20,000					
<b>Totals</b>	<b>\$590,665</b>	<b>\$504,000</b>				

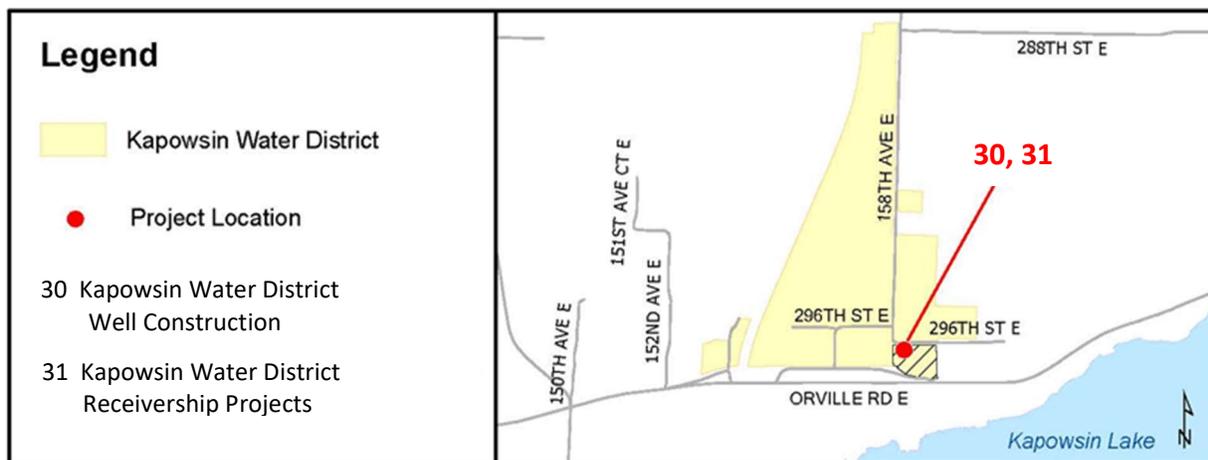
**Sewer Division of Planning and Public Works**

**Project 31 - Kapowsin Water District - Receivership Projects 2022-2023**

A project to complete water system rehabilitation and replacement improvements. Improvements may include a fire flow system, standby power, communications, facility decommissioning, storage tank leak repair, and site security upgrades.

The projects are located in Council District 3. The project cost is estimated at \$1,002,000 is forecasted for completion in year 2023, and partially loan funded through Sewer Division Fund 403.

Project Phase	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024	Projected 2025
Preliminary Engineering	\$1,000	\$1,000	\$50,000			
Final Engineering			\$100,000			
Construction				\$800,000		
Construction Engineering				\$50,000		
<b>Totals</b>	<b>\$1,000</b>	<b>\$1,000</b>	<b>\$150,000</b>	<b>\$850,000</b>		



## Section 3 - Future Sewer Division Capital Projects 2026-2040

Section 3 details those projects not included within the six-year *Capital Facilities Plan* and are listed here as identified improvement projects for the years 2026-2040. Basic information is provided in the form of a Project Number, Name, Type, Size and Length/Size of the improvement (if applicable) and an estimated cost. The projects also support the *State Growth Management Act*, the *2016 Pierce County Comprehensive Plan*, and the associated *Buildable Lands Report*, achieving goals stated in the *Puget Sound Regional Council's - Vision 2040 Regional Strategy* by providing urban services to the County's urban growth area.

All projects listed in this section are programmatic in scope and can also be found in [Section 7 - Future Expansion and Improvements](#) of the [2010/2012 Unified Sewer Plan](#). Additional environmental review of each of these projects for the intended use, and project re-evaluation to determine continued project viability, will be completed prior to inclusion in future capital facilities planning.

## Sewer Basin: Lakewood East 2025-2030

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The City of Lakewood is within Utility Local Improvement District 73-1. This excluded the areas known as Tillicum and Woodbrook (formerly American Lake Gardens) but are still included in the Lakewood East Basin. The total system service area is 11,041 acres.

The Lakewood East Basin includes the following projects listed in Table 3-1. This basin is located in Council District 4 and these projects will be funded through Sewer Division Fund 403.

[Table 3-1 - Lakewood East Basin](#)

Project #	Project Name	Type	Size	Length	Cost*
IS99-54	Bypass Interceptor	New Project	84"	19,000 linear feet	\$80,909,000
IS99-58	Tunnel Expansion Phase 1	Expansion	72"	2,532 linear feet	<u>\$11,527,000</u>
<b>Total*</b>					<b>\$92,436,000</b>

\*Funds calculated in 2020 Dollars

### Bypass Interceptor - Proposed Construction Years 2025-2030

Located in the Lakewood East Basin, this project will provide relief to the southern section of the Bridgeport Interceptor as well as the Steilacoom Boulevard Interceptor and will consist of an expansion of several existing interceptors coupled with new interceptor segments. The 72-inch diameter 19,000 linear foot gravity pipeline will serve the sewer service basins to the east of Interstate-5 as well as the existing portion of the Lakewood East Basin.

The alignment will generally run from the Chambers Creek Tunnel at Bridgeport Way West and 75<sup>th</sup> Street West in a southeasterly direction in 75<sup>th</sup> Street West, Lakewood Drive South West, Steilacoom Boulevard

South West, and Lakeview Drive South West to the existing Spanaway Bypass Interceptor at 111<sup>th</sup> Street South West and Lakeview Drive South West.

**Chambers Creek Regional Wastewater Treatment Plant Tunnel Expansion Phase 1 - Proposed Construction Years 2028-2030**

Located in the Lakewood East Basin, this project will replace or parallel the existing Chambers Creek Tunnel 54-inch line to provide adequate capacity for build out and will consist of an expansion of 2,532 linear feet of existing 54” pipeline with 72-inch pipeline (or the equivalent parallel system to give the combined system the same hydraulic capacity as a 72-inch interceptor. The new line will serve the entire Chambers/Clover Creek sewer service basin, minus the City of University Place and the City of Tacoma’s Western Slope area. The alignment will generally run from the beginning point of the Chambers Creek Tunnel at Bridgeport Way West and Meadow Park Road West, in a southeasterly direction within Bridgeport Way West, to the end of the Bypass Interceptor at Bridgeport Way West and 75<sup>th</sup> Street West.

**Sewer Basin: Parkland 2027-2034**

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The Parkland Basin is in unincorporated Pierce County and consists of approximately 4,197 acres of which 67 acres is designated Rural Service Area. The Parkland Basin has two (2) interceptor pipeline projects proposed for completion in years 2027 through 2034 shown in Table 3-2. No new services are planned within the Rural Service Area.

The Parkland Basin includes the following projects listed in Table 3-2. This basin is located in Council District 5 and these projects will be funded through Sewer Division Fund 403.

**Table 3-2 - Parkland Basin**

<b>Project #</b>	<b>Project Name</b>	<b>Type</b>	<b>Size</b>	<b>Length</b>	<b>Cost*</b>
IS99-52	West Lake Spanaway Interceptor	New	12”-18”	12,274 linear feet	\$8,965,000
IS10-03	Parkland Interceptor Bypass	Bypass	42”	2,600 linear feet	<u>\$2,325,000</u>
<b>Total*</b>					<b>\$11,290,000</b>

\*Funds calculated in 2020 Dollars

**West Lake Spanaway Interceptor - Proposed Construction Years 2027-2030**

Located in the Parkland Basin, this project, a 12-18-inch diameter 12,274 linear foot interceptor, will extend sanitary sewer service to the west side of Lake Spanaway. It will generally follow along Spanaway Loop Road from Tule Lake Road to the south end of Lake Spanaway.

**Parkland Interceptor Bypass - Proposed Construction Years 2033-2034**

Located in the Parkland Basin, this project, a 42-inch diameter 2,600 linear foot interceptor bypass, will provide future capacity relief for the existing interceptor. The bypass will extend from 141<sup>st</sup> Street East and C Street to 133<sup>rd</sup> Street East and will also serve areas within the Parkland and Spanaway Basins.

**Sewer Basins: Brookdale/Golden Given 2027-2031**

The Brookdale and Golden Given Basins are in unincorporated Pierce County and consist of approximately 9,302 acres, of which 3,200 acres are designated as Rural Service Area. The basins have one (1) interceptor pipeline project proposed for construction and completion in years 2027 through 2030 and one (1) force main project proposed for years 2027-2031. No new services are planned within the Rural Service Area.

The Brookdale/Golden Given Basin includes the following projects listed in Table 3-3. This basin is located in Council District 5 and these projects will be funded through Sewer Division Fund 403.

**Table 3-3 - Brookdale and Golden Given Basins**

Project #	Project Name	Type	Size	Length	Cost*
IS99-46	North Fork Trunk	New	12"-18"	9,920 linear feet	\$6,601,000
<b>Total*</b>					<b>\$6,601,000</b>

Project #	Project Name	Type	Size	Length	Cost*
FM10-01	Woodland PS Force Main	New	12"	16,000 linear feet	\$8,303,000
<b>Total*</b>					<b>\$8,303,000</b>

\*Funds calculated in 2020 Dollars

**North Fork Trunk - Proposed Construction Years 2027-2030**

Located in the Brookdale/Golden Given Basin, this project will provide services to a portion of the Parkland service area and will relieve future capacity restrictions in the Midland Trunk. The 12-18-inch diameter 9,920 linear foot trunk will run north and south between Brookdale Road and 112<sup>th</sup> Street East following 30<sup>th</sup> Avenue East to Shady Lane, 14<sup>th</sup> Avenue East to 120<sup>th</sup> Street East and then along Aqueduct Drive East to 112<sup>th</sup> Street East. The North Fork Trunk extends through a part of the rural Brookdale/Golden Given Basins connecting urban growth area in the northern section of the basin. New connections from rural zoned properties would not be permitted except in conformance with the policies of the 2016 *Pierce County Comprehensive Plan* or by direction of the Tacoma-Pierce County Health Department.

**Woodland Pump Station Permanent Force Main - Proposed Construction Years 2029-2031**

Located in the Brookdale/Golden Given Basin, this project, a 12-inch diameter 16,000 linear foot force main, follows Woodland Avenue East north to SR-512, then west along the southern edge of SR-512's right-of-way to Waller Road, then south on Waller Road to 112<sup>th</sup> Avenue East and then west to the future North Trunk. This project will connect the Woodland Pump Station to its permanent discharge point.

## Sewer Basin: Spanaway 2027-2035

The Spanaway Basin consists of approximately 4,859 acres, of which 1,767 acres is designated as Rural Service Area, in unincorporated Pierce County. The Spanaway Basin has four (4) trunk, force main, and interceptor pipeline projects proposed for completion in years 2027 through 2035 and one (1) pump station project proposed for years 2033-2035. No new services are planned within the Rural Service Area.

The Spanaway Basin includes the following projects listed in Table 3-4. This basin is located in Council District 6 and these projects will be funded through Sewer Division Fund 403.

Table 3-4 - Spanaway Basin

Project #	Project Name	Type	Size	Length	Cost*
IS10-06	Spanaway Interceptor Phase 2	New	18"-24"	11,714 linear feet	\$22,142,000
IS99-48	Muck-Kapowsin Trunk	New	15"	2,115 linear feet	\$1,742,000
IS99-49	Elk Plain Trunk	New	12"	3,877 linear feet	\$3,205,000
IS99-49	Elk Plain Force Main	New	8"	1,800 linear feet	\$1,875,000
<b>Total*</b>					<b>\$28,964,000</b>

Project #	Project Name	Type	Peak Capacity	Cost*
PS99-49	Elk Plain Pump Station	New	1.0 million gallons per day	\$1,875,000
<b>Total*</b>				<b>\$1,875,000</b>

\*Funds calculated in 2020 Dollars

### Spanaway Interceptor Phase 2 - Proposed Construction Years 2027-2030

Located in the Spanaway Basin, this project will collect wastewater from the most southerly part of the Spanaway Basin and convey it to the B Street Interceptor via Phase 1 of the Spanaway Interceptor project. This 18-24-inch diameter 11,714 linear foot interceptor will extend southwest down the Mountain Highway to approximately 224<sup>th</sup> Street East.

### Muck - Kapowsin Trunk - Proposed Construction Years 2033-2035

Located in the Spanaway Basin, this project, a 15-inch diameter 2,115 linear foot line, will provide service to a part of the Spanaway Basin that is designated rural. This line would not be constructed until either a sizeable number of on-site sewer system failures occur that threaten water quality (pursuant to policies in the *2016 Pierce County Comprehensive Plan*) or through the direction of the Tacoma-Pierce County Health Department, or if the area is incorporated as part of the County's Urban Growth Area. The trunk would branch from the Spanaway Interceptor at 224<sup>th</sup> Street East and Mountain Highway and follow 224<sup>th</sup> Street East to approximately 35<sup>th</sup> Avenue Court East.

### Elk Plain Force Main - Proposed Construction Years 2033-2035

Located in the Spanaway Basin, this project, an 8-inch diameter, 1,800 linear foot force main, will provide service to the Elk Plain Trunk line and will discharge into the Muck-Kapowsin Trunk. The force main will be

constructed at the same time as the Elk Plain Trunk line. The Elk Plain Force Main is a modification of the Elk Plain Trunk project.

**Elk Plain Trunk - Proposed Construction Years 2033-2035**

Located in the Spanaway Basin, this project, a 12-inch diameter, 3,877 linear foot line, will provide service to the southern portion of the Chambers Creek Regional Wastewater Treatment Plant service area to the Spanaway Basin that is designated rural. The Elk Plain Trunk will drain into the Elk Plain Pump Station. Like the Muck - Kapowsin Trunk, the Elk Plain Trunk would not be constructed until either a sizeable number of on-site sewer system failures occur that threaten water quality pursuant to policies in the *2016 Pierce County Comprehensive Plan* or through the direction of the Tacoma-Pierce County Health Department, or if the area is incorporated as part of the County’s Urban Growth Area.

**Elk Plain Pump Station - Proposed Construction Years 2033-2035**

Located in the Spanaway Basin, this project is a modification of the Elk Plain Trunk project and when completed is expected to receive peak flows of up to one million gallons per day transferring flows from the Elk Plain area through the Elk Plain Force Main to the Muck-Kapowsin Trunk.

**Sewer Basins: Spanaway - City of Roy - 3rd Party Funding**

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Located within the Spanaway Basin, sewer service for the City of Roy can be accommodated within the existing collection system should the City secure funding for connection charges and capital improvements to convey the wastewater to the Pierce County collection system. This would also require the City to complete, and have approved, a facility plan and project-specific environmental review. There are three (3) proposed infrastructure projects in addition to additional planning and environmental work that must be completed prior to connection to the Pierce County sewer system.

Potential future sewer service for the City of Roy includes the following projects listed in Table 3-5. This basin is located in Council District 3 and these projects will be funded through 3<sup>rd</sup> party funding sources.

**Table 3-5 - Spanaway Basin - City of Roy**

Project #	Project Name	Type	Size	Length	Cost*
IS99-07	Roy Interceptor	New	15”-36”	2,331 linear feet	\$1,482,000
FM99-01	Roy Force Main	New	12”	42,663 linear feet	\$15,294,000
<b>Total*</b>					<b>\$16,776,000</b>

Project #	Project Name	Type	Peak Capacity	Cost*
PS99-02	Roy Pump Station	New	0.4 million gallons per day	\$770,000
<b>Total*</b>				<b>\$770,000</b>

\*Funds calculated in 2020 Dollars

**Roy Interceptor - Project dependent on City of Roy Environmental Review and Funding**

The Roy Interceptor is estimated to be 15-36-inch diameter line with a length of 2,454 linear feet connecting to the Roy Force Main to convey wastewater by gravity into the Spanaway Interceptor. The installation would convey wastewater between local collection facilities and the Roy pump station.

**Roy Force Main - Project dependent on City of Roy Environmental Review and Funding**

The Roy Force Main will be a 12-inch diameter line and extend 42,663 linear feet and will be located generally along SR-507. The force main will discharge into the County’s conveyance system in the Spanaway sub-basin.

**Roy Pump Station - Project dependent on City of Roy Environmental Review and Funding**

The Roy Pump Station is expected to receive a peak flow of 0.4 million gallons per day. This station will pump flows from the City of Roy through the Roy Force Main to the County’s conveyance system facilities in the Spanaway Sub-basin.

**Sewer Basin: Hylebos 2027-2030**

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The Hylebos Basin is located within the City of Fife, the City of Milton, and unincorporated Pierce County. Seven parcels of the City of Edgewood are also included in this sub-basin. This Basin consists of approximately 4,824 acres. The Lakehaven Utility District connects to the Pierce County conveyance system at Porter Way within the City of Milton, where it is conveyed to the Tacoma Central Wastewater Treatment Plant for treatment. The Hylebos Basin has one (1) new pump station project, and one (1) force main project proposed for completion in years 2027 through 2030.

Potential future sewer service for the Hylebos Basin includes the following projects listed in Table 3-6. This basin is located in Council District 2 and these projects will be funded through Sewer Division Fund 403.

**Table 3-6 - Hylebos Basin**

Project #	Project Name	Type	Peak Capacity	Cost*
PS99-04	Hylebos 5 Pump Station	Replacement	4.5 million gallons per day	\$5,702,000
<b>Total*</b>				<b>\$5,702,000</b>

Project #	Project Name	Type	Size	Length	Cost*
FM99-03	Hylebos 5 Force Main	New	18"	17,394 linear feet	\$11,576,000
<b>Total*</b>					<b>\$11,576,000</b>

\*Funds calculated in 2020 Dollars

**Hylebos 5 Force Main - Proposed Construction Years 2027-2030**

Located in the Hylebos Basin, the project, an 18-inch diameter force main, will transmit wastewater to the Tacoma Central Wastewater Treatment Plant from Fife Heights, Lakehaven’s East Hylebos Basin, and the

City of Milton. The pressure line is estimated to extend 17,394 linear feet from the Hylebos 5 Pump Station to the Tacoma Central Wastewater Treatment Plant.

**Hylebos 5 Pump Station - Proposed Construction Years 2027-2030**

Located in the Hylebos Basin, this pump station is estimated to receive future peak flows of 4.5 million gallons per day and convey wastewater from the Fife Heights Trunk and Milton - Hylebos Interceptors to the new Hylebos 5 Force Main to the Tacoma Central Wastewater Treatment Plant. This improvement, coupled with the Hylebos 5 Force Main, will relieve capacity in Tacoma’s Lincoln Avenue pump station and force main and provide additional conveyance capacity for future development of the service area.

**Sewer Basin: Chambers Creek 2033-2035**

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The Chambers Creek Basin has two (2) proposed pipeline projects, and one (1) proposed pump station project, scheduled for completion in years 2033 through 2035.

Potential future sewer service for the Chambers Creek Basin includes the following projects listed in Table 3-7. This basin is located in Council District 6 and these projects will be funded through Sewer Division Fund 403.

**Table 3-7 - Chambers Creek Properties Basin**

Project #	Project Name	Type	Size	Length	Cost*
IS99-43	DuPont-Lakewood Bypass	New	42"	4,800 linear feet	\$6,820,000
IS99-43	DuPont-Lakewood Bypass FM	New	36"	3,000 linear feet	\$3,513,000
<b>Total</b>					<b>\$10,333,000</b>

Project #	Project Name	Type	Peak Capacity	Cost*
PS99-13	DuPont-Lakewood Bypass PS	New	7.0 million gallons per day	\$3,488,000
<b>Total*</b>				<b>\$3,488,000</b>

\*Funds calculated in 2020 Dollars

**DuPont-Lakewood Bypass Interceptor - Proposed Construction Years 2033-2035**

Located in the Chambers Creek Basin, this project will be a 42-inch gravity pipeline extending 4,800 linear feet from the corner of Steilacoom Boulevard and Farwest Road to the north edge of the Abitibi property. The Steilacoom force main will discharge into this new Interceptor at Chambers Creek Road. At its terminus, the wastewater will flow into the DuPont-Lakewood Bypass Pump Station.

**DuPont-Lakewood Bypass Force Main Proposed Construction Years 2033-2035**

Located in the Chambers Creek Basin, this project will convey flows from the DuPont-Lakewood Bypass Pump Station to its discharge point in the Chambers Creek Regional Wastewater Treatment Plant energy dissipater. The alignment will approximately follow the existing alignment for the Town of Steilacoom’s force main.

[DuPont-Lakewood Bypass Pump Station - Proposed Construction Years 2033-2035](#)

Located in the Chambers Creek Basin, this bypass pump station will accommodate up to 7.0 million gallons per day and is located to the north of the former Abitibi property.

## Section 4 - Developer Built Infrastructure Projects

### Sewer Basin: DuPont, including Northwest Landing

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The City of DuPont is in the southwest corner of the DuPont Basin. The Historic Village of DuPont was connected, and flows were sent to the Chambers Creek facility beginning in 2008. The City has also contracted with Pierce County to provide sewer service to the Northwest Landing development through Utility Local Improvement District 90-4, and the Northwest Landing Offsite Wastewater Facilities Project executed in October of 2000.

Pierce County provides for collection, transmission, and treatment for flows from the Northwest Landing Development (Villages I, II, III, IV, and V), Industry, Town Center, and the Historic Village of DuPont. The system service area is 3,727 acres. The DuPont Basin has three (3) developer constructed projects proposed for completion as future development requires additional infrastructure. Developer built projects require review, construction, approval, and acceptance by the Sewer Division prior to final connection to the sanitary sewer collection system.

Potential future sewer service for Northwest Landing includes the following projects listed in Table 4-1. This basin is located in Council District 3 and these projects will be funded through 3<sup>rd</sup> party funding sources.

Table 4-1 - DuPont Basin

Project #	Project Name	Type	Size	Length	Cost
-	First Park Northwest Landing Trunk	New	10"-12"	3,440 linear feet	Developer Built
-	First Park Northwest Landing Trunk	New	4"	1,690 linear feet	Developer Built

Project #	Project Name	Type	Peak Capacity	Cost
-	First Park Northwest Landing	New	.05 million gallons per day	Developer Built

#### First Park Northwest Landing Trunk - Project to be completed by Developer

The First Park Northwest Landing Trunk will be a new 10-12-inch trunk line serving a commercial development. It will be constructed by a developer as development occurs in this area.

#### First Park Northwest Landing Force Main - Project to be completed by Developer

The First Park Northwest Landing Force Main will be a new 4-inch force main connecting the First Park Pump Station to the First Park Northwest Landing Trunk line. It will be constructed by a developer as part of the pump station project.

#### First Park Northwest Landing Pump Station - Project to be completed by Developer

The First Park Northwest Landing Pump Station will be a new 0.5 million gallons per day pump station serving a commercial development. It will be constructed by a developer before the area it serves is developed.

## Sewer Basin: Cascadia

Projects within the Cascadia Basin including the Tehaleh Employment Based Planned Community and other developments are provided sewer services by the Cascadia Wastewater Treatment Plant at Tehaleh. Tehaleh’s prime developer Newland Communities will be responsible to build all sewer collection and treatment improvements within the planned community. Those parcels outside the community boundaries are responsible for development of collection systems for connection to the Cascadia Wastewater Treatment Plant. Developer built projects require review, construction, approval, and acceptance by the Planning and Public Works Department prior to final connection to the sanitary sewer collection system.

Potential future sewer service for the Cascadia Basin includes the following projects listed in Table 4-2. This basin is located in Council District 1 and these projects will be funded through 3<sup>rd</sup> party funding sources.

Table 4-2 - Cascadia Basin

Project Name	Type	Size	Length	Cost
Cascadia Interceptor Extension	New	21”/24”	6,020 linear feet	Developer built
Canyon Falls Creek Force Main	New	8”	1,470 linear feet	Developer built
Canyon Falls Creek Trunk	New	10”	2,100 linear feet	Developer built
North Cascadia Force Main	New	4”	1,400 linear feet	Developer built
North Cascadia Trunk	New	8”	1,400 linear feet	Developer built
Cascadia Golf Course Force Main	New	4”	6,440 linear feet	Developer built
Cascadia Exemption Area FM	New	4”	4,270 linear feet	Developer built
Cascadia Phase 3 Force Main	New	8”	4,620 linear feet	Developer built
Cascadia Phase 3 Interceptor	New	21”/24”	8,610 linear feet	Developer built
Cascadia Phase 2 Force Main	New	4”	980 linear feet	Developer built
Cascadia Phase 2 Interceptor	New	24”	7,000 linear feet	Developer built

Project Name	Type	Peak Capacity	Cost
Cascadia Pump Station 1	New	1.4 million gallons per day	Developer built
Cascadia Pump Station 2	New	0.6 million gallons per day	Developer built
Cascadia Pump Station 3	New	0.7 million gallons per day	Developer built
Cascadia Pump Station 4	New	0.4 million gallons per day	Developer built
Cascadia Pump Station 5	New	0.5 million gallons per day	Developer built
Cascadia Pump Station 7	New	3.4 million gallons per day	Developer built

Project Name	Peak Capacity	Cost
Cascadia Wastewater Treatment Plant at Tehaleh	4.3 million gallons per day	Developer Built

## Section 5 - Wastewater Treatment Plants

### Chambers Creek Regional Wastewater Treatment Plant

#### Treatment Type

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The Chambers Creek Regional Wastewater Treatment Plant is a secondary treatment facility using primary sedimentation and anaerobic sludge digestion. The treatment plant is rated at 45.25 million gallons per day with an operational capacity of 38.07 million gallons per day (85% of total capacity) of average dry weather flow with discharge to the Gordon Point zone of South Puget Sound.

#### Permitting/Planning

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A 2010 Conditional Use Permit 08-0001 later revised to 09-0001 issued by the City of University Place replaced an existing Unclassified Use Permit, Public Facilities Permit, and various Major and Minor Amendments and Variance requests previously obtained for the Plant over a 20-year planning/construction cycle. The approved permit and associated Chambers Creek Properties Overlay assigned to the Properties by the City of University Place, allows the expansion of the Chambers Creek Facility to occur in five (5) phases over 30 years.

#### Expansion Project - Phase 1

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Phase 1 began in 2010 with a substantial completion date of December 31, 2018. Project close-out efforts will continue into 2020.

#### Expansion Projects - Phases 2 through 5

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All planned improvements for Phases 2 through 5 of the Expansion Project will be undertaken and completed within the Chambers Creek Properties Basin over the approved 30-year planning and construction cycle as approved in the 2010 Conditional Use Permit. Phases 2 through 5 have 16 proposed major projects with many projects having smaller sub-projects associated with them, but not documented here.

#### Phase 2 - Wastewater Treatment Plant Expansion - Projected Construction Years 2024-2027

- Biological Process Phase 2
- Fermenter
- Centrate Treatment
- Utilidor Development Phase 2
- Electrical Systems Upgrades

#### Reclaimed Water Facility Expansion: Projected Construction Years 2031-2034 (Part of Phase 2)

- 18 million gallons per day reclaimed water production
- Groundwater Recharge Basins

Phase 3 - Wastewater Treatment Plant Expansion - Projected Construction Years 2029-2034

- Primary Sedimentation Expansion
- Solids Thickening Expansion Phase 2
- Disinfection System Expansion Phase 3

Phase 4 - Wastewater Treatment Plant Expansion - Projected Construction Years 2029-2034

- Digester Expansion Phase 2
- Biological Process Phase 3
- Utilidor Development Phase 3

Phase 5 - Wastewater Treatment Plant Expansion - Projected Construction Years 2036-2045

- Electrical Systems Upgrades
- Fertilizer Manufacturing Facility Expansion Phase 2
- Advanced Treatment Implementation

## Cascadia (Tehaleh) Wastewater Treatment Plant

### Treatment Type

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The Cascadia Wastewater Treatment Plant is an activated sludge treatment facility or MBR (Membrane Bio-reactor) with nitrogen removal and disinfection utilizing ultra-violet light. The system discharges to the ground into an engineered sand filter drain field. The treatment plant is currently under construction and has a current design rating of 1.0MGD (millions of gallons per day).

### Planning and Future Upgrades

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Planned and revised upgrades to the Cascadia WWTP will occur as project development moves forward. The first phase was designed to allow for the capacity to be expanded to a design maximum of 4.3MGD as required by development. This number may/could be revised up or down should market forces cause a re-thinking of housing types in the Tehaleh Development.

## Section 6 - Financial

The Sewer Division operates as a business enterprise. This requires the Sewer Division to operate within a budget constrained by rate revenues and connection charges for services, which includes adequate funding reserves.

The Sewer Division financial model is used to establish rates and connection charges to recover utility costs related to operational services and capital facilities projects that provide sewer service. Rates are set at a level to meet current and future identified expenses and maintain reserves consistent with debt service requirements and long-term financial forecasts. The model attempts to minimize the fiscal impact on the customer by assuming only enough debt to meet capital and operational needs.

The Sewer Division strives to change rate levels gradually and uniformly to the extent that costs can be forecast. Local and/or national inflation indices, such as the Consumer Price Index, are used as a basis for evaluating rate increases. Costs for services are passed directly through to sewer customers/ratepayers.

Each connected property bears a share of the cost of the public sewer system through the collection of connection charges and service rates for sewer service. Connection charges are a one-time charge(s) for usage of the public sewer system. However, it should be noted that County Code modifications are currently being reviewed by Council to provide connection charge amortization and rental options, in addition to the one-time payment option for commercial and industrial customers. Implementation of these options are anticipated in early 2020.

Service fees are monthly sewer rates to cover operational costs and are reviewed and approved bi-annually by the County Council. The Division has established classifications of customers using rate charging methods authorized in the Revised Code of Washington.

The financial strategy for developing the annual operating budget, forecasting capital investment, and determining revenue projections includes a detailed analysis of the following factors:

- Utility objectives, policies, and standards for level of service, growth management, and land use constraints.
- Debt service payments and debt service coverage/reserve requirements.
- Operations including labor and services, facilities, utilities, and supplies.
- Capital assets including infrastructure, capital equipment, and resources.

To ensure the Sewer Division continues to maintain a stable financial position, the capital and operating costs are forecasted in the Division's Financial Model through 2039.

## Current Financial Status

The Division has a sound financial base for all recommended capital improvements and has adopted financial policies that guide the stewardship and investment of funds, use of debt, system expansion, connection and cost recovery, customer rates, and reserves for repair and rehabilitation. Table 6-1 provides annual revenues, expenses, and fund balances for 2015 through 2019.

Table 6-1 provides annual revenues, expenses, and fund balances for 2015 through 2019. The \$21,440,000 bond amount and \$60,000,000 loan amount in 2015 was applied to the Chambers Creek Regional Wastewater Treatment Plant Expansion project. The \$1,700,000 grant received in 2019 is for the Chambers Creek Properties Pier Extension project.

**Table 6-1 - Revenues, Expenses, and Reserve Balances by Year 2015-2019**

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Beginning Reserve Balance	\$113,726,000	\$106,174,700	\$63,829,600	\$66,210,800	\$60,217,500

<b>Revenues:</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Sewer Charge	\$54,364,800	\$59,744,000	\$61,713,300	\$64,898,900	\$69,690,400
Other Revenue	\$8,751,600	\$9,810,500	\$9,691,900	\$9,318,600	\$10,964,700
Bond Proceeds	\$21,440,000				
Grants and Loans	\$60,000,000				\$1,700,000
<b>Sub-Total</b>	<b>\$144,556,400</b>	<b>\$69,554,500</b>	<b>\$71,405,200</b>	<b>\$74,217,500</b>	<b>\$82,355,100</b>

<b>Expenses:</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Capital Improvements	\$94,212,400	\$55,835,600	\$11,763,000	\$15,354,300	\$11,532,500
Administration/Engineering	\$20,368,400	\$16,494,400	\$16,741,200	\$17,852,000	\$17,351,100
Maintenance/Operations	\$23,965,300	\$22,180,200	\$22,981,700	\$23,407,700	\$26,105,400
<b>Sub-Total</b>	<b>\$138,546,100</b>	<b>\$94,510,200</b>	<b>\$51,485,900</b>	<b>\$56,614,000</b>	<b>\$54,989,000</b>

<b>Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Debt Service Payment	\$16,895,000	\$18,208,800	\$17,581,000	\$22,383,700	\$22,256,900
<b>Ending Fund Balance</b>	<b>\$102,841,300</b>	<b>\$63,010,200</b>	<b>\$66,167,900</b>	<b>\$61,430,600</b>	<b>\$65,326,700</b>

## Forecasting Revenues, Expenses, and Reserve Balances 2020-2025

Table 6-2 on page 55, provides a six-year projection of annual revenues, expenses, and fund balances through 2025, based on 2019 preliminary forecast amounts and changes expected to occur in various categories over the subsequent six-year period due to new customers, general inflation, and other related factors. The forecast also accounts for a debt coverage ratio of 1.25 as required by Bond Covenant and 90-day operating reserve as required by Council policy. Forecasting of this type is routinely

**Sewer Division of Planning and Public Works**

used by the Sewer Division in developing rate adjustment proposals and assessing the impact of changing budget assumptions on future rate requirements.

Table 6-2 - Forecasted Revenues, Expenses, and Reserve Balances 2020-2025

<b>Fund Balance:</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>Beginning Balance</b>	<b>\$65,326,700</b>	<b>\$51,263,800</b>	<b>\$49,732,800</b>	<b>\$44,787,200</b>	<b>\$37,540,100</b>	<b>\$35,942,000</b>
Target Operating Reserve	\$34,085,300	\$33,588,500	\$33,457,000	\$33,852,200	\$34,270,600	\$34,702,700

<b>Revenues:</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Sewer Charges	\$71,237,800	\$73,163,900	\$75,134,100	\$77,148,900	\$79,209,900	\$81,565,000
Other Revenue	\$3,076,110	\$3,080,300	\$3,084,600	\$3,089,100	\$3,093,800	\$3,098,500
Proposed Rates Revenue	\$2,350,800	\$4,908,500	\$7,686,400	\$10,698,900	\$13,961,100	\$17,542,300
Interest Income	\$240,700	\$206,600	\$193,800	\$179,000	\$178,000	\$174,600
Connection Charges	\$7,913,800	\$8,195,800	\$8,413,800	\$9,249,400	\$9,582,400	\$9,928,100
Bond Proceeds						
Grants/Loans						
<b>Sub-Total</b>	<b>\$84,819,200</b>	<b>\$89,555,100</b>	<b>\$94,512,700</b>	<b>\$100,365,300</b>	<b>\$106,025,200</b>	<b>\$112,308,500</b>

<b>Expenses:</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>2020-2025 Capital Facilities Plan Improvements</b>	<b>\$27,824,666</b>	<b>\$21,175,570</b>	<b>\$27,935,452</b>	<b>\$36,086,652</b>	<b>\$34,392,126</b>	<b>\$39,258,600</b>
Capital Equipment Purchases	\$941,600	\$965,100	\$989,200	\$1,013,900	\$1,039,200	\$1,065,200
Administration/Engineering	\$18,792,134	\$19,675,630	\$18,091,200	\$18,545,048	\$19,069,264	\$19,529,300
Maintenance/Operations	\$27,554,800	\$28,486,400	\$29,530,648	\$30,628,700	\$31,782,710	\$32,997,100
<b>Sub-Total</b>	<b>\$75,113,200</b>	<b>\$70,302,700</b>	<b>\$76,546,500</b>	<b>\$86,274,300</b>	<b>\$86,283,300</b>	<b>\$92,850,200</b>

<b>Year</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Debt Service Payment	\$22,256,900	\$22,295,400	\$21,339,800	\$21,338,100	\$21,340,000	\$21,333,400
<b>Ending Fund Balance</b>	<b>\$52,775,800</b>	<b>\$49,732,800</b>	<b>\$46,359,200</b>	<b>\$39,112,100</b>	<b>\$37,514,000</b>	<b>\$35,638,900</b>

Key assumptions used in forecasting the future annual revenues and expenses are:

- A **3.3%** rate increase for service annually.
- System growth to increase at a rate of **2.5%** annually.
- Connection Charge rates to increase at a rate of **7.5%** in 2020 and then **2.5%** annually.
- Annual Debt Service costs match bond payment tables.
- The Capital Plan being consistent with the Pierce County Capital Facilities Plan.

## Credit Worthiness

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Bond ratings from Moody's Investors Service and Standard and Poor's indicate a high-level of confidence in the ability of the Sewer Division to repay debt obligations. The Sewer Division functions as a part of the overall County organization and can issue revenue bonds separate from County General Obligation bonds, often at more favorable interest rates by presenting its financial resources and revenue-generating capability as related debt security.

Previously issued bonds have earned a positive evaluation of credit worthiness based on factors including financial position, reserve levels, and debt service coverage. The Sewer Division currently enjoys a high-grade bond rating of "Aa3" from Moody's Investors Service and "AA" from Standard & Poor's. Ratings at this level indicate a strong degree of confidence by the rating agency in the ability to repay related debt obligations. The Sewer Division has no immediate plans in the 2020-2025 Capital Facility Plan to issue additional debt. However, if this action becomes necessary, the Sewer Division can expect a proposed bond issue to receive a similarly favorable credit rating and, therefore, to sell at lower interest rates than would otherwise be possible.

## Funding Sources

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The Sewer Division receives income from bi-monthly billing from residential, commercial, and industrial customer accounts, and connection, treatment and other fee-based operations and operates under an Enterprise Fund that is wholly based upon those rates, fees, and charges. No general fund dollars are allocated or provided to the Sewer Division for the operation and maintenance of the system.

### [Sewer Operating Fund 402](#)

Fund 402 is used to pay for ongoing maintenance, operation, and administration of the Division and is funded through the collection of customer rates. This account serves as the Sewer Division's operating and debt service fund.

### [Sewer Facility Restricted Reserve Fund 403](#)

Fund 403 finances improvement/expansion type construction projects that benefit the system's future customers. Revenues for this fund are derived from connection charges. Reserves in this account are for future capital expansion.

### [Sewer Rehabilitation and Replacement Fund 404](#)

Fund 404 is used to account for all rehabilitation and replacement work for projects at the County's wastewater treatment plants and collection system. The construction fund is funded through the Sewer Operating Fund 402.

### [Sewer Division Construction Fund 425](#)

Fund 425 is used to account for all capital construction work and is financed through Sewer Operating Fund 402, the Sewer Facility Restricted Reserve Fund 403, the Sewer Rehabilitation and Replacement Fund 404, and grant and loan monies acquired for individual projects.

## Appendix A - Planning Commission Staff Report

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**TO:** Pierce County Planning Commission  
**SUBJECT:** *2020-2040 Sewer Improvement Program*  
**DATE:** September 24, 2019  
**CONTACT:** Stefan Kamieniecki - Senior Planner  
Pierce County Planning and Public Works - Sewer Division

**PROPOSAL:** The *2020-2040 Sewer Improvement Program* is intended to identify the scope, timing, and funding for maintenance, operation, preservation, improvement, and administrative projects for the wastewater treatment plants and associated collection systems throughout Pierce County's sewer service basin.

**EXHIBIT:** 2020-2040 Sewer Improvement Program.

**NOTICE:** Notice of this request and date of this hearing were advertised in accordance with Pierce County Code by the Long-Range Planning Section of Planning and Public Works and notice of the date and time of today's hearing was published two (2) weeks prior to the hearing in the official County newspaper of record.

**REQUEST:** Staff will not present a formal staff report to the Commission at this hearing, but request from the Commission a recommendation to the Pierce County Council for of approval the *2020-2040 Sewer Improvement Program*.

**BACKGROUND:** The Sewer Division prepares both a six-year *Capital Facilities Plan* and a 20-year *Sewer Improvement Program*, for use by the Division, Pierce County Council, Pierce County Finance Department, and public-at-large to understand the direction for maintenance, operations, preservation, improvement, and administrative projects undertaken by the Division. The *Capital Facilities Plan* is part of the Finance Department's annual budget process.

With the passage of Ordinance No. 2006-115s the Pierce County Council required the Sewer Division to combine the information found in the *Capital Facilities Plan* and extend the document with an additional fourteen-year forecast, to produce an annual 20-year *Sewer Improvement Program*. This program serves as a review document for the County Council, their staff members, and the public to review the scope, cost, funding, and status of near term and future planned sewer improvement projects.

**STAFF RECOMMENDATION:** Staff requests that the Planning Commission forward a recommendation of approval to the Pierce County Council for the 2020-2040 Sewer Improvement Program as presented this day.

Appendix B - Planning Commission Recommendation to Council

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## Appendix C - Adopting Ordinance 2019-xx

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Sponsored by: Councilmember

File No.

Requested by: County Executive/Planning and Public Works Department

### **ORDINANCE NO. 2019-xx**

**An Ordinance of the Pierce County Council Adopting the 2020-2040 Sewer Improvement Program, Pursuant to Pierce County Ordinance 2006-115s, and the Revised Code of Washington (RCW) 36.70A.040 and 36.70.530 Finding that Each Project Contained in the Program is a Public Necessity.**

**Whereas**, the Growth Management Act (GMA) required Pierce County to develop, adopt, and implement a Comprehensive Plan, pursuant to the Revised Code of Washington (RCW) 36.70A.040, and

**Whereas**, pursuant to Chapter 36.70A RCW, on November 29, 1994, the Pierce County Council adopted Ordinance 94-82s which enacted the Pierce County Comprehensive Plan, and

**Whereas**, Ordinance 2006-115s provides that the County legislative authority shall annually adopt a revised and extended comprehensive sewer improvement program for the ensuing twenty (20) calendar years; and

**Whereas**, the County Council finds that the Sewer Division, on behalf of the County Executive, submitted the 2020-2040 Pierce County Sewer Improvement Program for review and approval to the Pierce County Planning Commission on September 10<sup>th</sup>, 2019, and attached a copy of the Executive transmittal letter; and

**Whereas**, pursuant to RCW 36.70.530, the Pierce County Planning Commission, at its September 24<sup>th</sup>, 2019 meeting, reviewed and recommended approval of the 2020-2040 Sewer Improvement Program to the County Council; and

**Whereas**, the County Council, following its consideration of the action of the Planning Commission, and all testimony presented at public hearings, finds that the 2020-2040 Sewer Improvement Program is necessary and required, and should be adopted;

**Now Therefore, BE IT ORDAINED by the Council of Pierce County:**

Section 1. The Pierce County Council hereby adopts the 2020-2040 Sewer Improvement Program attached hereto as Exhibit A and incorporated herein by reference.

Section 2. The Pierce County Council finds that the improvement projects set forth in Exhibit A are a public necessity.

**PASSED this \_\_\_ day of \_\_\_\_\_ 2019.**

**ATTEST:**

**PIERCE COUNTY COUNCIL**  
Pierce County, Washington

\_\_\_\_\_  
**Denise D. Johnson**  
Clerk of the Council

\_\_\_\_\_  
**Douglas Richardson**  
Chair, Pierce County Council

\_\_\_\_\_  
**Bruce Dammeier**  
Pierce County Executive  
Approved \_\_\_\_\_ Vetoed \_\_\_\_\_, this  
\_\_\_\_\_ day of \_\_\_\_\_ 2019.

Date of Publication of  
Notice of Public Hearing: \_\_\_\_\_

Effective Date of Ordinance: \_\_\_\_\_

