

Proposed 2024 Sewer Rate and Capacity Charge and 2024-2033 Financial Forecast

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Executive Summary

Wastewater Treatment Division (WTD) Goals

- Respond to **regulatory requirements**
- Advance the most critical **asset management** projects
- Respond to **growth-related demand** on the sewer system
- Increase **reliability** at off-site locations and the West Point Treatment Plant
- Protect **water quality** and habitat consistent with the Clean Water/Healthy Habitat Strategic Plan¹
- Respond to and prepare for **climate change** consistent with the Strategic Climate Action Plan²
- Address disparities in service delivery in alignment with the **Equity and Social Justice** Strategic Plan³

Adopted 2023 Sewer Rate and 2023-2032 Financial Forecast

Figure 1 - Adopted 2023 Sewer Rate and Projected Sewer Rate from 2023-2032 Financial Forecast

2023-2032 Rate Forecast										
Adopted	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	5.75%	5.75%	5.75%	5.75%	9.00%	9.00%	9.00%	9.00%	9.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.19	\$71.06	\$77.46	\$84.44	\$92.04	\$100.33
Rate Increase \$	\$2.84	\$3.00	\$3.17	\$3.36	\$3.55	\$5.87	\$6.40	\$6.98	\$7.60	\$8.29
All-In Debt Service Coverage	1.59x	1.63x	1.64x	1.65x	1.67x	1.69x	1.72x	1.70x	1.70x	1.71x
Projected CIP Spend (\$m)	\$307	\$326	\$381	\$429	\$503	\$633	\$752	\$849	\$928	\$908

Sewer Rate Development and Interested Parties Engagement

WTD engaged the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) Rates and Finance Subcommittee throughout 2022 on topics related to the sewer rate, including financial policy and rate-setting methodology. WTD engaged with full MWPAAC and its Rates and Finance Subcommittee beginning in January 2023 to share findings from early policy direction that informs the preliminary sewer rate projection for 2024-2033. Details under consideration for the updated sewer rate projection were shared in these forums, including costs and timing of capital investments.

Proposed 2024 Sewer Rate and Capacity Charge and 2024-2033 Financial Forecast

The 2024-2033 financial forecast, **Figure 2**, is the basis for creating the proposed 2024 sewer rate, **Figure 3**, and the proposed 2024 capacity charge, **Figure 4**. The proposed 2024 sewer rate is \$55.11, or a 5.75 percent increase over the 2023 rate of \$52.11. The proposed capacity charge is \$74.23, or a 2.4 percent increase over the 2023 rate of \$72.50. The 2024-2033 sewer rate projection shown in Figure 3 includes smoothed annual increases rising from 5.75 percent annually through 2026, to 6.5 percent between 2027 and 2029, and seven percent beginning in 2030⁴. A smoothed sewer rate projection allows for the collection of revenues that exceed expenditures in a given year and less than expenditures in subsequent years to fully fund the utility over the forecast period. These rate increases enable WTD to fund the projected Capital Improvement Program (CIP) and perform operations and maintenance.

¹ More information on Clean Water Healthy Habitat is [here](#).

² More information on the Strategic Climate Action Plan is [here](#).

³ The Equity and Social Justice Strategic Plan is available [here](#).

⁴ In this context “smoothed annual increases” refers to avoidance of year-to-year volatility in the sewer rate.

Figure 2 - Financial Forecast 2024-2033

Financial Forecast 2024 - 2033	Rate Proposal	Projected								
Wastewater Treatment Division	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operating Revenue	\$ 650,337	\$ 684,774	\$ 725,862	\$ 773,521	\$ 825,086	\$ 880,206	\$ 942,891	\$ 1,009,922	\$ 1,082,166	\$ 1,159,550
Operating Expenditures & Transfers	\$ (460,243)	\$ (486,120)	\$ (525,110)	\$ (554,736)	\$ (596,125)	\$ (644,033)	\$ (710,442)	\$ (768,625)	\$ (829,922)	\$ (872,119)
Cash Flow Year End Transfers to Capital	\$ 190,094	\$ 198,654	\$ 200,752	\$ 218,785	\$ 228,961	\$ 236,173	\$ 232,449	\$ 241,297	\$ 252,244	\$ 287,430
Capital Beginning Cash Balance	\$ 247,331	\$ 190,094	\$ 198,654	\$ 200,752	\$ 218,785	\$ 228,961	\$ 236,173	\$ 232,449	\$ 241,297	\$ 252,244
Debt Proceeds	\$ 80,341	\$ 216,255	\$ 270,323	\$ 333,178	\$ 437,261	\$ 576,312	\$ 675,544	\$ 691,331	\$ 612,910	\$ 603,670
Capital Expenditures	\$(327,671.94)	\$(406,349.62)	\$(468,977.10)	\$(533,929.95)	\$(656,045.72)	\$(805,273.19)	\$(911,717.01)	\$(923,779.66)	\$(854,207.56)	\$(855,914.42)
Cash Balance	\$ -									
Debt Service Coverage										
Parity Bonds	3.07x	3.16x	2.84x	2.75x	2.55x	2.62x	2.29x	2.12x	2.03x	2.01x
All-In Debt Service	1.73x	1.73x	1.67x	1.68x	1.65x	1.61x	1.53x	1.50x	1.47x	1.51x

Figure 3 - Proposed 2024 Sewer Rate and Projected 2025-2033 Sewer Rate

2024-2033 Rate Forecast	Adopted	Proposed									
Proposed	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	5.75%	5.75%	5.75%	6.50%	6.50%	6.50%	7.00%	7.00%	7.00%	7.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.65	\$69.92	\$74.47	\$79.69	\$85.27	\$91.24	\$97.63
All-In Debt Service Coverage	1.56x	1.73x	1.73x	1.67x	1.68x	1.65x	1.61x	1.53x	1.50x	1.47x	1.51x
Projected CIP Spend (\$m)	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856
Annual Cash Funding	60%	58%	49%	43%	41%	35%	29%	25%	26%	30%	34%
Average Cash Funding					6-Year Average		39.8%		10-Year Average		33.9%

Figure 4 - Proposed 2024 Capacity Charge and Projected 2025-2030 Capacity Charge

Capacity Charge	2022	2023	2024	2025	2026	2027	2028	2029	2030
Rate	\$70.39	\$72.50	\$74.23	\$76.09	\$77.99	\$79.94	\$81.94	\$83.99	\$86.09
Total Revenue	\$93,360	\$92,998	\$94,877	\$94,919	\$95,999	\$97,045	\$97,460	\$97,407	\$97,505
Increase %	3.0%	3.0%	2.4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Increase \$	\$2.05	\$2.11	\$1.73	\$1.86	\$1.90	\$1.95	\$2.00	\$2.05	\$2.10
Annual Total	\$845	\$870	\$891	\$913	\$936	\$959	\$983	\$1,008	\$1,033
Total Payment (15 years)	\$12,670	\$13,050	\$13,362	\$13,696	\$14,038	\$14,389	\$14,749	\$15,117	\$15,495

Key Assumptions for the Proposed 2024-2033 Financial Forecast

- WTD revised accomplishment rate estimates lower to reflect the size of CIP increases and economic conditions.
- WTD deferred Conveyance System Improvement (CSI) Inflow and Infiltration (I/I) projects if they had both no impact on regional growth and no capacity-related overflows in the last 10 years. These projects will still be reviewed for asset management, to maintain system health.
- WTD is recommending a new cash funding policy for its CIP. The new policy would reduce revenue requirements and increase debt financing while maintaining a healthy financial position. The effect is lower rate increases.

Financial Capability Assessment and Household Affordability

The Environmental Protection Agency (EPA) allows financial capability and household affordability information to be considered as part of negotiating a modification of a Combined Sewer Overflow (CSO) Consent Decree.⁵ WTD engaged Raftelis Financial Consultants to perform a sewer rate affordability study and prepare the financial capability assessment to support King County's request for a modification of its CSO consent decree.⁶ The study also produced an affordability assessment tool that will be applied to differentiate between Clean Water Plan alternatives when the plan is in process again.

Introduction

King County Wastewater Treatment Division

Part of the King County Department of Natural Resources and Parks (DNRP), the Wastewater Treatment Division (WTD) is a utility providing wholesale wastewater treatment in the Puget Sound region. Distributed over a 424-square-mile service area, the King County (County) sewer system collects and treats an average of 175 million gallons of sewage a day from approximately two million residents. WTD's service area map is on page 7, **Figure 5**.

WTD is responsible for the construction, operation, and maintenance of the County's regional wastewater conveyance and treatment system. The system includes three major secondary treatment plants (West Point in Seattle, South Plant in Renton, and Brightwater in southern Snohomish County); 397 miles of conveyance lines; 48 pump stations; and 25 regulator stations.⁷ Other WTD facilities include five combined sewer overflow (CSO) treatment plants, four CSO storage facilities, 39 CSO outfall locations, two secondary treatment plants (Vashon Island and Carnation) and one community septic system on Vashon Island.⁸

Local Sewer Agencies (LSAs)

WTD's service area is comprised of Local Sewer Agencies (LSAs) which include 18 cities and 15 sewer districts in King County, southern Snohomish County, northern Pierce County, and the Muckleshoot Tribe.

LSAs contract directly with WTD for wholesale wastewater treatment services. WTD does not have a direct relationship with individual sewer ratepayers except for Capacity Charge, High-Strength Surcharge, and Industrial Waste customers.⁹

⁵ In 2013, King County signed a Consent Decree with EPA and Ecology that is available [here](#)

⁶ More information on Raftelis can be found on their website [here](#)

⁷ Secondary treatment includes aeration, settling, disinfection, and discharge through an outfall. Secondary treatment in conjunction with primary treatment removes about 85 to 90 percent of suspended solids in wastewater.

⁸ Combined sewer overflows (CSOs) are relief points in sewer systems that carry sewage and stormwater in the same pipe. When heavy rains fill the pipes, CSOs release sewage and stormwater into rivers, lakes, or Puget Sound. They prevent sewage backups into homes and businesses but can harm people and animals living in the water because they carry chemicals and germs.

⁹ "High-strength" refers to more concentrated waste. The surcharge covers the additional cost of treating this waste at the treatment plant.

¹⁰ Engagement with the LSAs is accomplished through the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and the County Council’s Regional Water Quality Committee (RWQC). The sewage disposal contracts with the LSAs specify that the following year’s sewer rate must be determined before July 1 of the current year. This provides time for the LSAs to include the WTD rate in preparing budgets and proposing local sewer collection rates for the following year.

The LSA contracts define two customer classes for billing the sewer rate: single-family residential (SFR) and residential customer equivalents (RCEs); RCEs include all other customers (commercial, multi-family, and industrial) and one RCE equals one SFR.¹¹ WTD uses a factor of seven hundred fifty cubic feet per month to convert water consumption of volume-based customers to RCEs. In addition to sewer fees, LSAs are charged for their customers high-strength surcharge and industrial waste compliance and administration fees. A list of the LSAs and their year-end 2022 reported RCEs is provided in **Figure 6**.

Financial Forecast

Utilities, such as WTD, are considered enterprise funds which are self-supporting and therefore must set fees to recover the cost of providing services¹². Utility costs include operations, maintenance, debt service, and building new capital infrastructure. Utilities must also account for cash requirements from financial policies, such as reserves and how capital projects are financed. The total revenue that must be generated by a utility, in any given year, to cover costs and meet financial policies is referred to as a utility’s revenue requirement.

WTD’s sewer rate and capacity charge are adopted annually and include the development of a 10-year financial forecast (currently 2024-2033). The proposed 2024 sewer rate and capacity charge are prepared in the context of the utility’s revenue requirements over the 10-year financial forecast. This document will cover each element of the financial forecast (Operating Expenditures, Capital Expenditures, Reserves Management, and Revenue).

¹⁰ The sewage treatment [capacity charge](#) is billed to customers who connected to the sanitary sewage system on or after February 1, 1990. The charge is assessed monthly for a term of 15 years from the date the new service is established and is based on the cost of system capacity necessary to serve a new connection.

¹¹ “RCE based Customers” include multifamily, commercial, and industrial customers and are customer units based on water consumption averaged over a four-quarter period (here Q1 through Q4 2022). Single Family Residential are reported Q4 values.

¹² More information on enterprise funds can be found [here](#).

Figure 5 - System Map

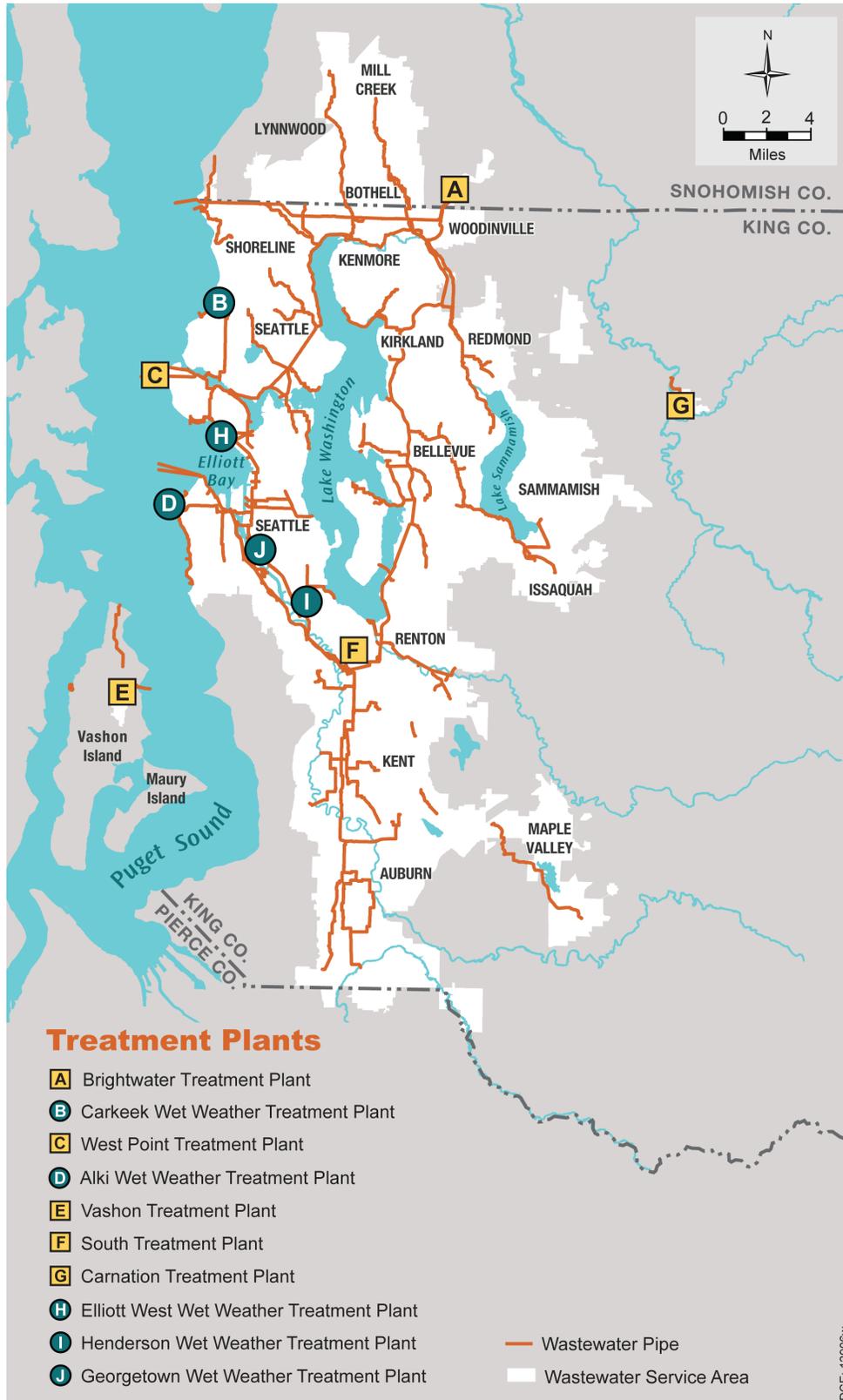


Figure 6 - 2022 Reported Customers by Local Sewer Agency

	Single Family Customers	RCE Based Customers	Total Customers	Percentage of Total (%)
Local Sewer Agencies - Cities				
Algona	1,015	341	1,356	0.18%
Auburn	13,375	18,196	31,571	4.16%
Bellevue	32,550	29,256	61,806	8.14%
Black Diamond	2,125	76	2,201	0.29%
Bothell	4,911	3,894	8,805	1.16%
Brier	1,564	236	1,800	0.24%
Carnation	905	288	1,193	0.16%
Issaquah	7,048	6,547	13,595	1.79%
Kent	13,390	24,361	37,751	4.97%
Kirkland	10,154	5,438	15,592	2.05%
Lake Forest Park	3,619	511	4,130	0.54%
Mercer Island	7,193	1,460	8,653	1.14%
Pacific	1,548	1,158	2,706	0.36%
Redmond	15,345	16,429	31,774	4.18%
Renton	16,367	15,410	31,777	4.19%
Seattle	155,802	134,900	290,702	38.29%
Shoreline	15,332	4,617	19,949	2.63%
Tukwila	1,058	6,302	7,360	0.97%
Subtotal	303,301	269,420	572,721	75.43%
Local Sewer Agencies - Sewer Districts and Tribes				
Alderwood Water & Wastewater District	35,867	15,666	51,533	6.79%
Cedar River Water & Sewer District	4,125	1,343	5,468	0.72%
Coal Creek Utility District	3,257	1,373	4,630	0.61%
Cross Valley Water District	-	379	379	0.05%
Highlands Sewer District	106	1	107	0.01%
Lakehaven Utility District	1,098	6	1,104	0.15%
Muckleshoot Indian Tribe	337	117	454	0.06%
NE Sammamish Sewer & Water District	4,731	120	4,851	0.64%
Northshore Utility District	20,574	8,817	29,391	3.87%
Olympic View Water & Sewer District	213	1	214	0.03%
Sammamish Plateau Water & Sewer District	11,901	5,004	16,905	2.23%
Skyway Water & Sewer District	3,954	1,604	5,558	0.73%
Soos Creek Water & Sewer District	32,781	5,703	38,484	5.07%
Valley View Sewer District	7,138	9,192	16,330	2.15%
Vashon Sewer District	431	473	904	0.12%
Woodinville Water District	2,884	3,320	6,204	0.82%
Subtotal	129,397	53,119	182,516	24.04%
Non-Municipal Participants and Other				
Customers	-	4,062	4,062	0.53%
Grand Total	432,698	326,601	759,299	100.00%

Operating Expenditures

The utility's 2023-2024 operating budget is the basis for forecasting operating costs for future years. The 2023 financial forecast included budgeted operating expenditures at \$194 million in 2023 and \$189 million in 2024, plus incremental costs to account for the potential effects of unprecedented inflation and supply-change disruptions.

Figure 7 shows the 2022 preliminary actuals compared to the adopted budget, along with the 2023 budget with percent change, year over year.

Figure 7 - 2022-2023 Operating Expenses

Expenditure Category	2022 Revised Budget	2022 Preliminary Actuals	2022 Budget to Actuals Variance	2022 % Budget Spent	2023 Adopted Budget	% Change 2022 to 2023
Salaries & Benefits	\$63,965	\$63,906	\$59	99.9%	\$73,101	14.4%
Supplies	22,270	23,891	(1,621)	107.3%	23,741	-0.6%
Services	44,704	42,511	2,193	95.1%	50,396	18.5%
Intra-governmental	44,012	41,826	2,186	95.0%	46,675	11.6%
Other	0	8	(8)	n/a	0	-100.0%
Total	\$174,950	\$172,142	\$2,808	98.4%	\$193,913	12.6%

Operating Forecast

Historically, annual growth in operating expenditures has averaged over four percent as a composite of inflation and maintaining an aging and growing system. **Figure 8** shows the annual growth in operating expenditures going back to 2011.

Figure 8 - Historical Annual Increase in Operating Expenditures

(Inflation plus new and growing system costs)

Year	Operating Expenses	Annual Growth
2011	103,995	
2012	114,939	10.5%
2013	117,183	2.0%
2014	124,201	6.0%
2015	128,926	3.8%
2016	136,321	5.7%
2017	148,199	8.7%
2018	152,589	3.0%
2019	155,785	2.1%
2020	158,660	1.8%
2021	158,628	0.0%
2022	172,142	8.5%
	Average	4.7%

Forecasted Expenditures

In August 2022, a new Coalition Labor Agreement between the County and its labor partners through the Coalition of Unions went into effect. The agreement provided for a series of general wage increases, including a four percent increase for 2023 and a four percent increase for 2024.

Central service costs are impacted by costs generated by internal service fund agencies and general fund central agencies that provide those services.¹³ The general wage increase impacted most, if not all, of these agencies. Agencies may also be susceptible to industry-specific cost pressures.

Last year's rate forecast included \$9.2 million for new operating investments that have been further refined in the sewer rate proposal for 2024. These investments are aimed at helping WTD achieve its goals and deliver on priorities, such as system reliability, regulatory compliance, managing growth-related demands, and asset management. Examples include response to per- and polyfluoroalkyl substances (PFAS) and other contaminants of emerging concern, further expansion of the capital program and community engagement and outreach program, and equipment to improve reliability at offsite locations.¹⁴ A total of 73 new full-time employees (FTEs) is reflected in these cost increases.¹⁵

Incremental operating costs are forecasted based on general cost inflation at three percent and labor cost inflation at four percent in years beyond those covered by the labor agreement through 2024, before applying forecasted growth in operating costs per **Figure 32**, page 37.

Capital Improvement Program (CIP)

Portfolio Management

Beginning in 2017, WTD focused on developing a more comprehensive and structured approach to managing its capital program. This work included the goal of aligning the mix of projects in WTD's CIP with its strategic initiatives and overall mission. A pilot of this prioritization approach informed the 2019 sewer rate development and since then has been used to inform rate and budget-setting processes.

Projects are organized and prioritized within the following categories on

Figure 98 - **Capital Portfolio Category Descriptions**

Category	Description
Asset Management Plants and Conveyance	Maintain level of service through the rehabilitation or replacement of critical assets.
Capacity Improvement	Increase capacity in WTD facilities to accommodate future growth.
Operational Enhancements	Reduce/improve operating costs at treatment plants through the delivery of projects that create efficiencies.

¹³ Central services are services received from other County agencies that are considered "central" agencies, such as King County Information Technology, Facilities Management, and County Human Resources

¹⁴ More information on PFAS can be found [here](#).

¹⁵ A majority of WTD's FTEs have an operating and capital personnel cost allocation. For example, an FTE could be allocated 90 percent to capital and 10 percent to operating.

Category	Description
Regulatory	Deliver projects and programs that respond to permit, regulation, and/or consent decree legal deadlines.
Resiliency	Improve the survivability and operability of core assets against natural disasters through the delivery of projects that address known deficiencies.
Resource Recovery	Support the King County Strategic Climate Action Plan (SCAP) initiative through the delivery of projects that reduce energy use or recover valuable resources from wastewater.
Planning and Administration	Incorporate programs and projects that facilitate execution of the overall capital portfolio through a series of planning- and administration-related efforts.

2022 Performance and Accomplishment Rate

The capital accomplishment rate is the amount of actual or forecasted capital spending that occurs in the year compared with the amount of capital spending planned. WTD’s capital program accomplishment rate target of 85 percent is evaluated against the actual spending in recent years to ensure it remains a valid assumption. Using an accomplishment rate in the 10-year financial forecast allows WTD to adjust the capital program’s funding projection to reflect the impact of delays more accurately in the execution of capital projects that, in turn, delay spending. The 85 percent accomplishment rate is applied to the cash flow forecast for all projects, except the Georgetown Wet Weather Treatment Station and the Joint Ship Canal CSO project¹⁶. Based on the progress of these two projects and the remaining costs being primarily for contracted construction, the projection assumes Georgetown will achieve the remaining \$17 million planned spending and that the Joint Ship Canal will achieve its \$97 million planned spending within the six-years, based on a 100 percent accomplishment rate.

The accomplishment rate projected for 2022 was 75 percent. The 2022 actual spend of \$259 million resulted in an accomplishment rate of 69 percent, a six percent lower accomplishment rate, and a cost difference of approximately \$24 million less in capital spending than forecast in 2022.

Drivers for this low accomplishment rate include:

- **Large Construction Projects Underspent:** The Joint Ship Canal and West Point Power Quality Improvements projects achieved a 73 percent and 54 percent accomplishment rate, respectively. The accomplishment rate was low for these two projects due to COVID-related challenges, including travel restrictions for key personnel, contractor labor issues related to vaccine mandates, and supply chain and equipment delivery delays. The forecasts for these two projects comprised 31 percent of the total 2022 CIP forecast.
- **Resources:** New projects and subprojects were delayed while onboarding new staff necessary to deliver these projects. Shifting staff resources to newly prioritized projects has also resulted in delays to existing projects. This resulted in underspending for the projects affected.

¹⁶ More information on the Georgetown and Joint Ship Canal project can be found [here](#).

Figure 10 presents the historical accomplishment rate performance from 2017 through 2022.

Figure 109 - Historical Accomplishment Rates for the Capital Program (\$ in millions)

Accomplishment Rate (AR)	2017	2018	2019	2020	2021	2022
Capital Improvement Program	\$211	\$246	\$262	\$247	\$291	\$376
Actual Annual CIP Spend	\$188	\$231	\$211	\$199	\$201	\$259
Actual AR	89%	94%	81%	81%	69%	69%

Estimated CIP Spending for 2024-2033 Financial Forecast

To update the financial forecast, WTD estimates spending for active projects and develops conceptual forecasts for future projects and programs annually. Project and program spending estimates consider changes in scope, risk, and/or schedule.

The following five projects are the largest individual components of WTD’s forecasted six-year CIP:

West Point Power Quality Improvements

The West Point Power Quality project includes construction of an uninterruptible power supply system using large battery storage and a replacement building to house the system that will limit or eliminate overflows to Puget Sound due to power quality problems (voltage sags)¹⁷. Administrative Order #19477, issued by the Washington state Department of Ecology (Ecology), requires King County to address power reliability issues at the West Point treatment plant¹⁸. The Executive issued a Declaration of Emergency on February 25, 2021, to accelerate this work. WTD project delivery staff resources began work on this coordinated effort with Seattle City Light in 2021.

North Mercer Island/Enatai Sewer Upgrade

This project will increase the reliability and capacity of the existing North Mercer Island Interceptor and Enatai Interceptor components of the regional wastewater system to convey the 20-year peak wastewater flows projected through the year 2060.¹⁹ Project construction will include approximately 17,210 linear feet of new sewer pipeline and related features and will upgrade the County’s North Mercer Pump Station on Mercer Island. This project started construction in 2022 with an anticipated completion date of 2026.

Coal Creek Sewer Upgrade

The County will upgrade a regional sewer line that serves Bellevue and Newcastle²⁰. The existing pipeline was built between 1966 and 1991. The pipeline is nearing its maximum capacity and needs to be upgraded to carry more wastewater and meet the growing needs of the community. The existing Coal Creek Trunk is approximately 2.5 miles long and primarily follows the banks of Coal Creek in the Coal Creek Natural Area between Newcastle and I-405. The new pipeline alignment will move the active pipeline away from Coal Creek, offering better protection to this sensitive

¹⁷ More information on the West Point Power Quality project can be found [here](#).

¹⁸ Administrative Order #19477 can be found [here](#).

¹⁹ A “peak” flow is a sudden and/or sustained increase in the flow. More information on the North Mercer/Enatai Upgrade can be found [here](#).

²⁰ More information on the Coal Creek Sewer Upgrade can be found [here](#).

environmental area. The selected pipeline alignment also aims to decrease impacts to both the Natural Area and Coal Creek Parkway SE during construction. Construction is anticipated to begin in late 2023 and extend through 2028.

West Point Treatment Plant Raw Sewage Pump Replacement

The existing Raw Sewage Pump system was built in 1966 with a capacity of 440 million gallons of wastewater and stormwater per day. While the capacity remained at 440 million gallons per day, pumping untreated combined sewage over a long time has resulted in significant wear on the pumps²¹. The purpose of this project is to replace the Raw Sewage Pump (RSP) system and make seismic upgrades to meet National Fire Protection Association (NFPA 820) standards.²² In addition, the project will also replace the existing boiler system prior to completion of the RSP replacement to provide heat necessary to maintain a stable treatment process. Construction is anticipated to begin in late 2024 and extend through 2030.

Lake Hills and NW Lake Sammamish Interceptor Upgrade

This project will increase the capacity of the Lake Hills Trunk and NW Lake Sammamish Interceptor sewers to convey 20-year storm peak-flow capacity through 2060²³. The project is located in the City of Redmond and unincorporated King County. The sewer includes 4.5 miles of gravity pipe and two siphon sections. As a Washington State Department Fish and Wildlife (WDFW) permit requirement, a fish-passable culvert will be designed and constructed at Country Creek in Redmond. Construction is anticipated to begin in late 2024 and extend through 2028.

Other Capital Projects

New projects and updated spending forecasts, and schedules, for the existing capital program form the basis from which the CIP forecast is developed. Capital program forecasts also integrate policy direction on key issues and build assumptions driving a ten-year forecast. As part of the 2024 rate cycle update WTD deferred CSI I/I projects with no population growth driver that also had no overflows within the last 5 years. This decision was made to accommodate other capital project costs.

Figure 11 summarizes the investment strategy behind the CIP included in the proposed sewer rate forecast and is followed by a descriptive summary of sewer rate drivers and key issues for the proposed sewer rate forecast.

Figure 1110 - WTD 2024-2033 Financial Forecast CIP Investment Strategy

CIP Policy Topic	Basis for Investment Strategy
CSO Consent Decree Cost & Schedule	Moves forward project costs related to the CSO Consent Decree.
Nutrient Removal - Ecology Permit	Includes Nitrogen Reduction Planning, Nutrient Reduction Evaluation Study, and Near-Term Optimization Capital Investments.
2020 SCAP Targets	Includes \$257 million through 2033 for projects that contribute toward Strategic Climate Action Plan (SCAP) Target goals.
Asset Management Tier 1 Critical Inventory Projects	Includes conceptual forecasts necessary to complete Tier 1 projects by 2033.

²¹ More information on the WPTP Raw Sewage Pump system can be found [here](#).

²² More information on the National Fire Protection Association is available on their [website](#).

²³ More information on the Lake Hills Trunk and NW Lake Sammamish Interceptor project can be found [here](#).

CIP Policy Topic	Basis for Investment Strategy
Capacity Category	Includes conceptual forecasts for projects identified by the Treatment Planning Program and Conveyance System Improvements Program to address plant and conveyance system capacity limitations.
Co-Digestion	Includes \$10 million total 2023-2025. Does not include a forecast for delivering a full Co-Digestion system, preliminarily estimated at \$70 million (2020\$). Cost sharing with Solid Waste Division to be determined.
Capital Program Staffing	Assumes that a ramp-up of capital delivery begins in 2025 to allow for additional staff to be budgeted, hired, onboarded, and trained.

Sewer Rate Drivers

The financial forecast incorporates investments that make progress on each of the sewer rate development goals. Sewer rate drivers are noted as either significant in financial impact or critical policy context.

Economic Conditions

Inflation rates reached historically high levels in Q4 2022 and Q1 2023. Potential impacts to capital budgets are dependent on the duration of currently high-cost inflation. The annual sewer rate-setting process limits risk around this unknown factor since it allows the County to integrate more data and updated forecasts one year from now in setting the 2025 rate.

Labor market constraints have slowed efforts to increase staffing to deliver a growing CIP. The forecasted substantial increase to the CIP relies on project delivery staff and implement delivery models. The 2023 CIP forecast is set at \$316 million, after application of a 71 percent effective accomplishment rate. The anticipated increase from recent annual capital expenditures (about \$259 million) is based on awarded construction contracts that are not limited by delivery staff constraints. Supply chain challenges and other external project delivery risks could also impact the CIP forecast.

Reliability Investments

The West Point Treatment Plant Power Quality Improvement Project includes construction of an uninterruptible power supply system. This includes using large battery storage and a replacement building to house the system that will limit or eliminate overflows to Puget Sound due to power quality problems (voltage sags). Administrative Order #19477 issued by the Washington State Department of Ecology (Ecology), requires King County to address power reliability issues at West Point treatment plant. The Executive issued a Declaration of Emergency on February 25, 2021, to accelerate this work. WTD project delivery staff resources began work on this coordinated effort with Seattle City Light in 2021.

The 2023-2032 financial forecast included completion of an inventory of critical-risk asset management Tier 1 projects (e.g., repair or replacement of aging infrastructure) by the end of the plan in 2032. The 2024-2033 financial forecast includes \$2 billion in Tier 1 priority projects to be completed by 2033.

Responding to Regulations

The Consent Decree for Combined Sewer Overflow (CSO) projects maintains the timeline of 2040 as a completion date assumed in the 2022 sewer rate forecast, while it moves forward some project costs in recognition of approaching milestones. In a 2019 letter to the U.S. Environmental Protection Agency, King County requested schedule relief and opened negotiations on the CSO Consent Decree. The potentially updated timeline and project sequencing will be determined following completion of the Consent Decree negotiations. The financial forecast includes 58 percent of the

total CSO costs (\$2.5 billion), with the remaining \$1.8 billion of costs assumed to be incurred after 2033, and eventually in a future rate forecast. This results in an increase of \$1.1 billion, through 2033, from the \$1.4 billion currently in the 2023 sewer rate forecast.

Ecology issued the **Puget Sound Nutrient General Permit** in December 2021. The 2023 sewer rate forecast did not include sewer system improvements related to nutrient removal since conditions of the permit were not yet defined at the time of the 2023 sewer rate forecast. The County negotiated a partial stay of certain permit requirements to help limit near-term costs. The proposed sewer rate forecast incorporates initial investments related to permit conditions that include nitrogen reduction planning, evaluation, monitoring, and near-term optimization of plant operations, totaling \$50 million.

Capacity Increasing Investments

The Flows and Loadings Study and Treatment Planning Program have identified capacity improvement needs at the three regional treatment plants. These possible future CIP projects will require adequate time for alternatives analyses, design, and construction. Some of these critical projects are past the indicated start dates identified in the study and have been prioritized in the forecasted CIP to ensure adequate treatment capacity and compliance with the National Pollutant Discharge Elimination System (NPDES) permits and the West Point settlement agreement.

Conveyance System Improvement (CSI) Plan identifies high-priority conveyance system projects. The basis for this forecast includes the 2017 CSI Program Update, updated modeling analysis of high-priority projects, and CSI Program staff input. All project locations currently identified have less than a five-year level of service and some have less than a one-year level of service. Project locations include both conveyance pipelines and pump stations. Sanitary sewer overflows occurred at several project locations. Conveyance system improvement projects tend to have a long duration due to permitting and property issues. To address the highest capacity needs, these project needs have been prioritized in the forecasted CIP.

The Clean Water Plan

The Clean Water Plan was paused in November 2021 to allow for regulatory clarity and to consider feedback received from partner agencies, interested parties, and others. DNRP is considering adjustments to the plan and process based on this feedback. The process will resume after adjustments or enhancements to the process have been identified and discussed with interested parties.

Climate Change

Progress on County Strategic Climate Action Plan (SCAP) goals will be made through \$257 million in capital investments reflected in the proposed 2024 sewer rate forecast period. Projects include the South Plant Biogas and Heat Systems Improvements Project, West Point Digester Gas Optimization Project, and Digester Circulation Pump Replacement Projects at the three regional treatment plants. These projects will reduce fugitive greenhouse gas emissions, increase the capture and beneficial use of biogas, and increase energy efficiency. Projects such as the Brightwater Reclaimed Water Storage Project and the Class A Loop Biosolids Facility Project will increase the reliability of recycled water delivery to customers in the Sammamish Valley and help build the market for compost.

Co-digestion project coordination with the Solid Waste Division began in 2022, and \$10 million of initial investments are included in the proposed sewer rate forecast. The process of co-digestion makes more-efficient use of food waste and gas produced during the wastewater treatment process. The estimated cost to fully develop and implement co-digestion, and cost sharing across funding sources, is in development.

Capital Expenditure Delivery Capacity Analysis

WTD conducted an analysis of historical capital output in relation to the number of WTD FTEs dedicated to the capital program to estimate a capital spending target that would not unreasonably exceed the staff's capacity to deliver. The FTEs dedicated to the capital program includes both FTEs that are fully allocated to capital program, such as those in the

Project Planning and Delivery Section, and FTEs with a partial allocation to the capital program, such as Environmental and Community Services, Operations and Maintenance, and Finance and Administration.

FTE counts since 2012 were graphed against capital expenditures for the same period to generate a general relationship between the number of capital FTEs and total dollars delivered in a given year. The analysis relied on several assumptions, including:

- New FTEs take two years to fully onboard and carry a project load equivalent to existing staff.
- Project staffing would maintain the historical in-house-to-consultant ratio (for every \$1 spent on in-house direct labor, \$1.30 is spent on consultant contracts).
- The FTE count would grow at the same rate as outsourcing to the consultant community.

An approach that targets growing in-house staff at the same time as reliance on consultants seeks to:

- Meet equitable workforce development goals by deliberately recruiting and hiring a diverse workforce
- Build a strong bench of internal expertise that understands the wastewater system, with the ability to learn and adapt as the challenges and complexities grow, reduce the learning curve, and quickly respond to emergent issues.
- Increase broad understanding and experience of the wastewater system and improve staff retention by providing a variety of project assignments.

The forecast includes recognition of approaching milestones, which includes CSO costs. For this analysis, it was assumed that these expenditures would be delivered by project teams that have an FTE-to-consultant ratio comparable to the distribution used by WTD in delivering the Brightwater Treatment Plant and Conveyance megaproject.²⁴

Based on this approach and the assumptions described above, a delivery capacity adjusted forecast was developed by multiplying the historical average expenditure per FTE by the projected total productive FTEs each year. Annual FTE additions were capped at 50 per year, as the basis for a reasonably realistic recruiting and hiring assumption. The capacity adjusted forecast was combined with the traditional aggregate CIP (all individual projects combined, with no timing adjustment) to develop the financial forecast CIP. For each year, the lowest value between forecasts was determined to be that year's target CIP spending for the financial forecast. The resulting forecast is then reduced using an 85 percent accomplishment rate, as shown in **Figure 12**. The difference between the aggregate CIP and the financial forecast CIP is the adjusted accomplishment rates described in **Figure 13**. This was done to produce conservative estimates on CIP growth due to future uncertainty.

²⁴ The history of the construction of the Brightwater Treatment Plant and Conveyance Megaproject is [here](#).

Figure 1211 - CIP Components for the 2024-2033 Financial Forecast

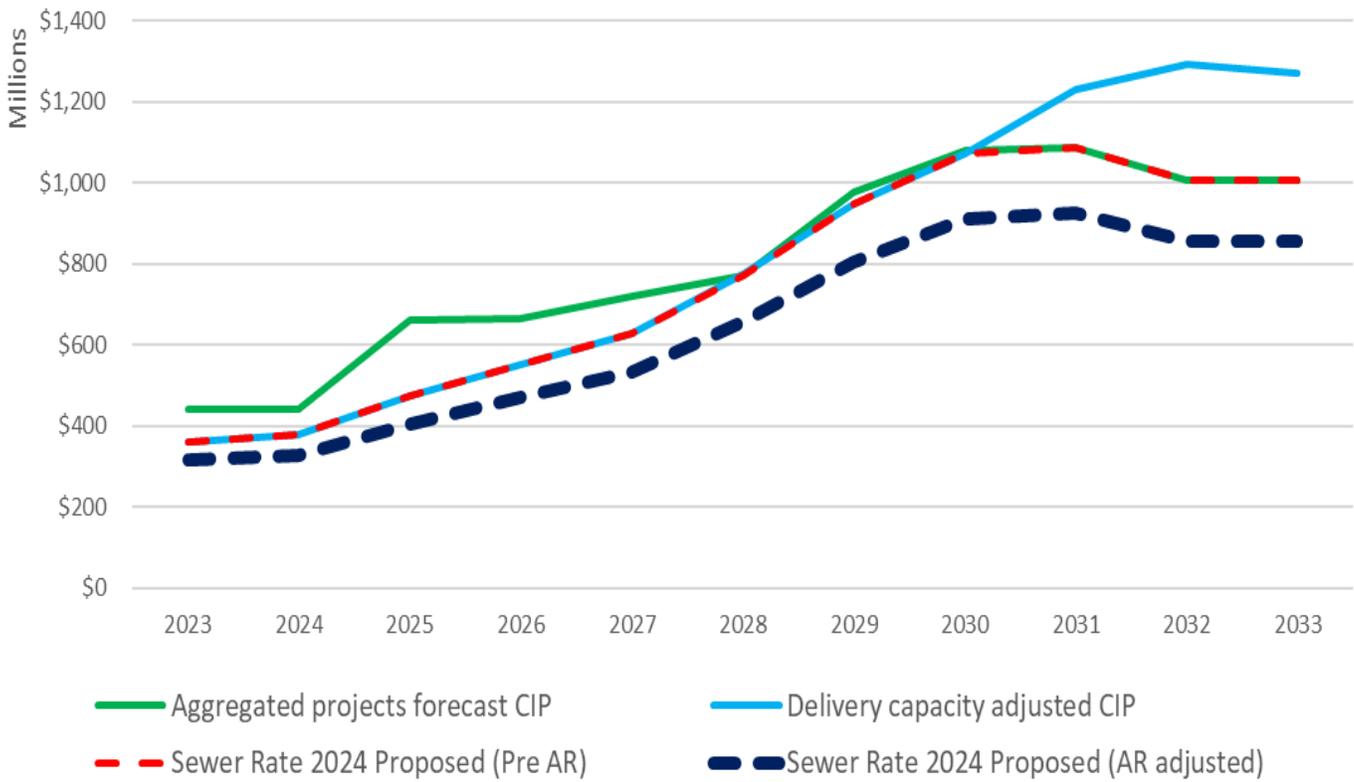


Figure 12 - CIP Accomplishment Rate Forecast

2024 Proposed Sewer Rate	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2023-2033
Aggregated CIP Project Forecasts	\$443	\$440	\$663	\$666	\$721	\$772	\$975	\$1,079	\$1,087	\$1,005	\$1,007	\$8,858
Accomplishment Rate (AR)	71%	74%	61%	70%	74%	85%	83%	84%	85%	85%	85%	80%
Capital Spending after AR	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856	\$7,060

Figure 14 compares the 2024 Proposed and 2023 Adopted 2023-2028 CIP projected spending.

Figure 13 - 2024 Proposed and 2023 Adopted 2023-2028 Projected Spending (2023 adopted only through 2032)

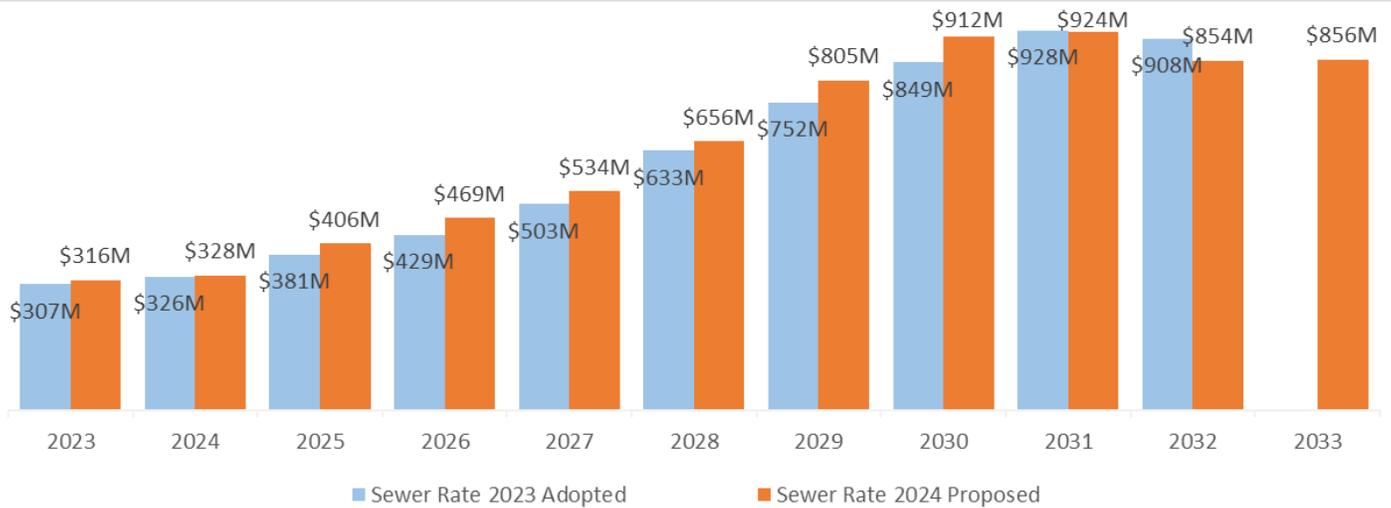
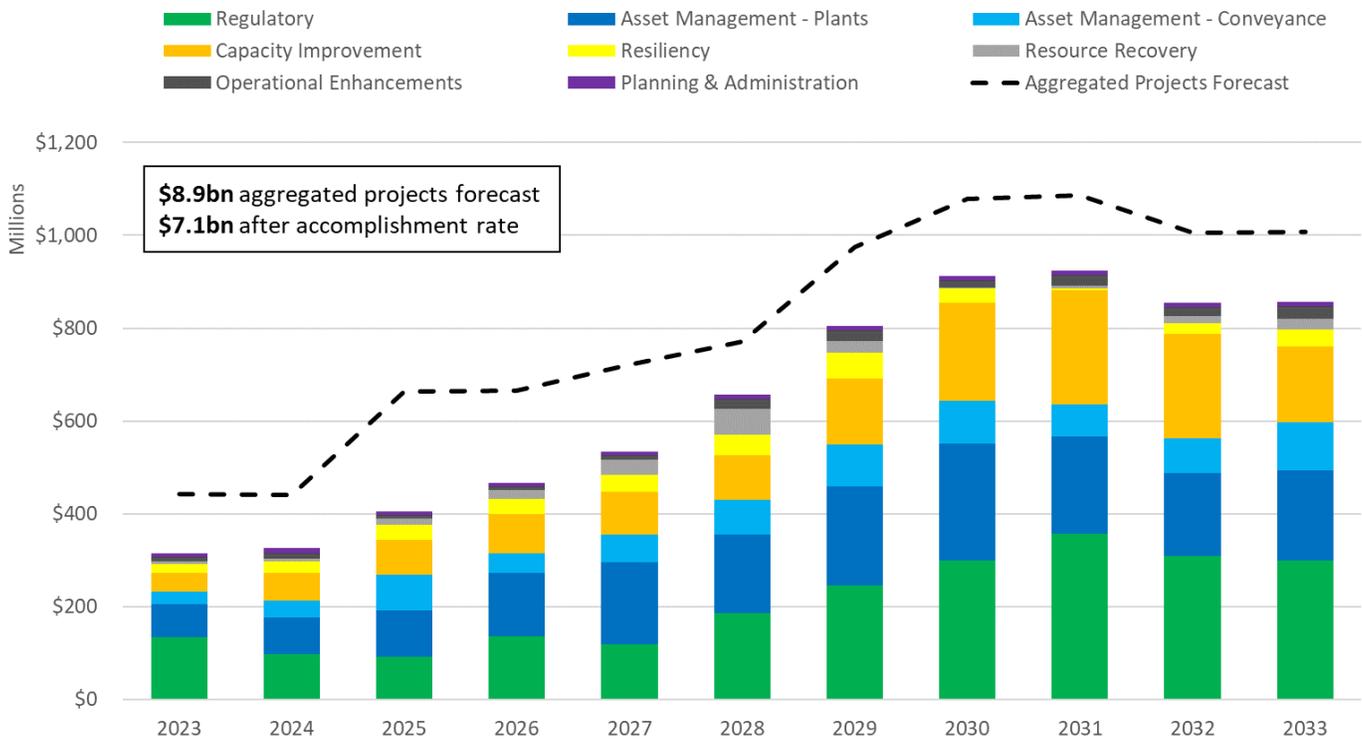


Figure 15 shows the annual capital investments included in the proposed sewer rate and financial forecast in their respective Portfolio categories.

Figure 1514 - Proposed Capital Investments by Portfolio Category for Ten-Year Forecast



Capital Improvement Program Funding

The capital program is funded by two primary sources: 1) cash generated from the sewer rate and capacity charge revenues; and 2) debt financing from revenue bonds or low-interest state and federal loan programs.

Cash Funding

Since 2017, the sewer rate has been set at a level to ensure that 40 percent of the capital spending forecast funding is generated from revenues. This funding practice has helped to strengthen WTD's financial capability and limit growth in debt balances. Due to conservative forecasting assumptions and timely use of refunding opportunities, WTD has effectively cash-funded 55 percent of its CIP in the last six years and reduced the growth of debt balances more than originally expected. This has created room for additional borrowing in the coming years without putting WTD's long-term financial health at risk.

After evaluating different cash-funding policy alternatives in 2022, WTD is proposing an original cost depreciation method for setting cash funding targets for its capital program²⁵. This method consists of targeting a cash amount equivalent to WTD's annual depreciation, including estimated future depreciation. Under the current CIP, the total forecasted depreciation of the next 10 years translates into approximately 34 percent of the total CIP. As a result, this method produces slightly lower rate increases in the 10-year financial forecast, compensated by additional borrowing. Cash-funding requirements are averaged over the forecast period, allowing WTD to smooth rate increases and produce a more stable rate path.

Since the target cash funding is accumulated over the course of the year, a single, year-end transfer to the construction fund from the operating fund makes the cash available for funding capital projects in the following year.

Debt Financing

Debt financing is used when there is a state or federal loan secured for a project, or when revenue bonds are issued to balance the total annual funding needs after the use of cash and secured loans.²⁶

While bonds typically are issued annually, WTD was able to avoid issuing new bonds in 2021 and 2022 and has no planned issuances for 2023. This beneficial timing has been possible thanks to a large bond issuance in 2020 at record-low interest rates and the availability of state and federal loans at below-market interest rates.

Figure 16 shows the capital funding forecast and the use of various debt instruments secured to fund the capital program. Most of the debt proceeds expected in 2023 and 2024 come from State Revolving Fund loans and federal Water Infrastructure Finance and Innovation Act (WIFIA) loans.²⁷ The large availability of these loans in 2023 allows WTD to carry forward some of the cash funding from that year into 2024. WTD is planning to partially draw from its WIFIA loan for the Georgetown Wet Weather Treatment Station in 2023, the final year possible.

²⁵ Depreciation is an accounting concept that divides an asset's cost by its estimated useful life. Depreciation acts as a proxy for the investments needed to maintain current levels of service, through asset replacement. Cash funding policy was discussed with MWPAAC Rates and Finance subcommittee on October 6th, 2022. Meeting materials can be found here <https://kingcounty.gov/services/environment/wastewater/mwpaac/finance.aspx>

²⁶ Debt financing occurs when money is raised by selling debt.

²⁷ In 2023 - \$96.3 million Georgetown SRF loan at 1.4%; \$43 million Georgetown SRF loan at 1.6%; remaining \$15.8 million under the \$66 million Joint Ship Canal SRF loan at 1.6%; \$44.6 million of the \$134.5 million WIFIA loan at 3.06%. In 2024 – Joint Ship Canal \$26 million SRF loan at 1.4%; remaining \$8.7 million under the \$66 million Joint Ship Canal SRF loan at 1.6%.

Figure 16 15 - Capital Funding Sources

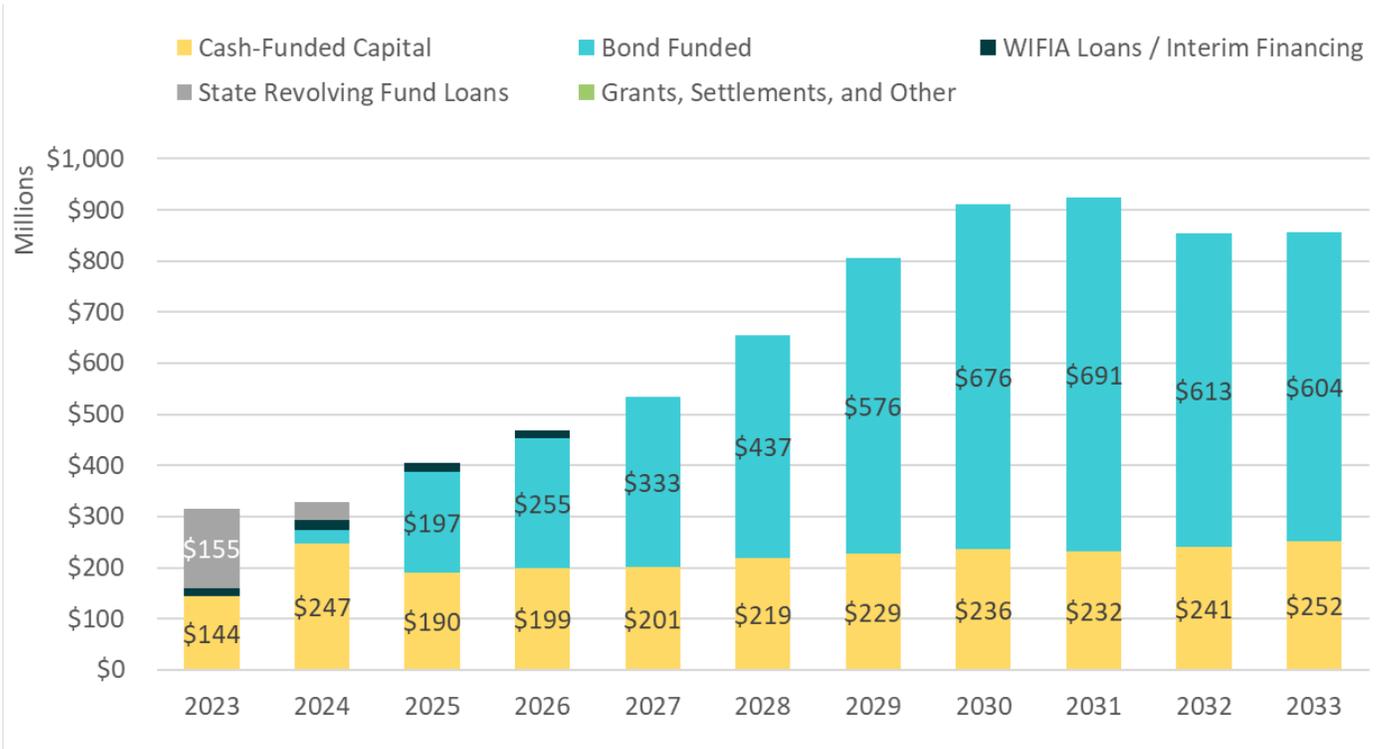
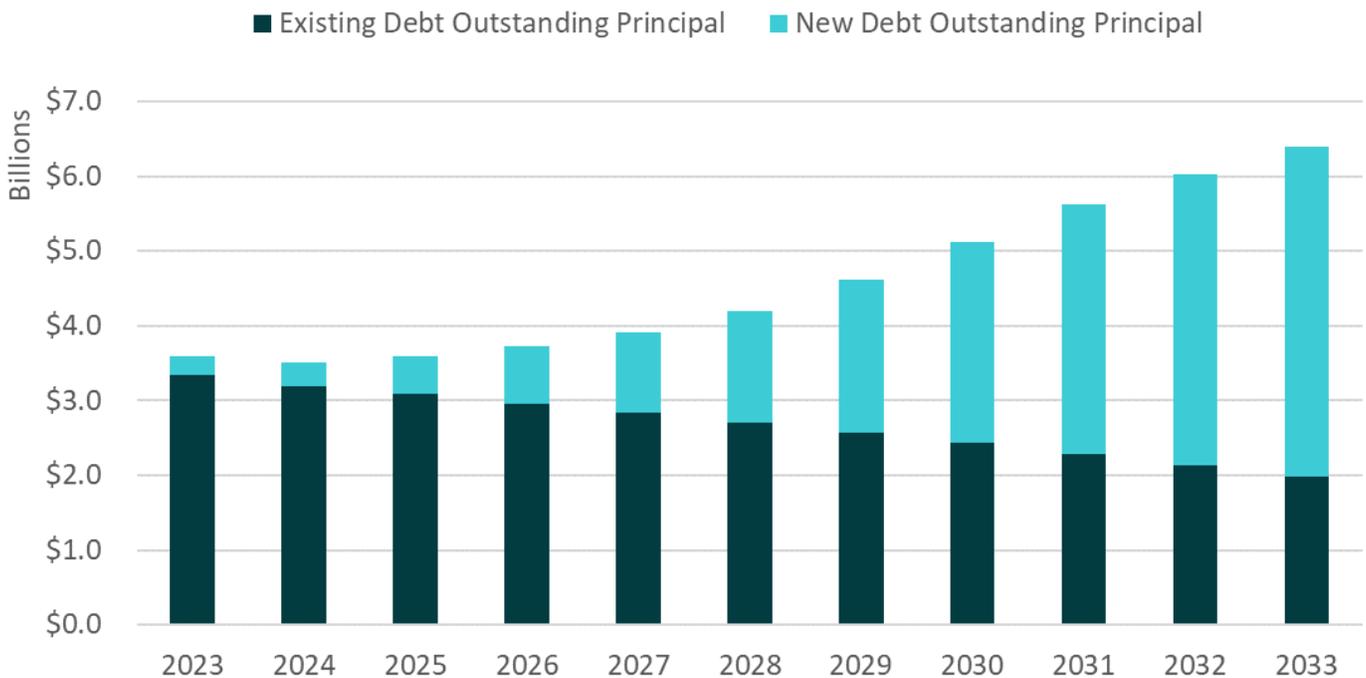


Figure 17 illustrates how existing debt is replaced by new debt through financing activities and debt service repayment.

Figure 1617 - Existing and New Debt Balances



2023 Planned Financing Activity and Strategies

State Revolving Fund Loans

Georgetown Wet Weather Treatment Station. WTD was awarded \$43 million in SRF loans at 1.6 percent for the Georgetown project in December 2021 and was awarded an additional \$47.4 million at 1.4 percent in January 2022. Ecology informed WTD that the 2022 loan agreement could be modified to include pre-construction and change-order costs. This modification increased the allowable amount WTD could request by \$48.8 million – on top of the \$47.4 million awarded in January 2022 – to \$96.3 million. The \$96.3 million loan amendment was approved by Council under Ordinance 19576 in February 2023, which will reduce the amount of the WIFIA loan required for funding from \$134.5 million to \$44.6 million at an interest rate of 3.06 percent.²⁸ The additional SRF funding will produce \$49.6 million in total savings at a present value of \$33.5 million over the life of the loan.

Joint Ship Canal Water Quality Project. Under the modified SRF loan terms, the Joint Ship Canal project was awarded a further \$3 million on top of the \$23 million awarded in January 2022 for a total of \$26 million at 1.4 percent. The \$26 million loan amendment was approved by Council under Ordinance 19575 in February 2023, which will provide \$12.5 million in total savings at a present value of \$9.4 million over the life of the loan.²⁹

Proposed Legislation to Restore Tax-Exempt Advanced Refunding

Tax-exempt bonds are issued by state and local governments for public infrastructure and WTD uses tax-exempt bond financing as its primary source of long-term financing for the capital program. Investors who purchase these bonds are exempt from paying federal income tax on interest earnings, so they are willing to buy the bonds at a lower interest rate than conventional bonds, which translates as lower-cost debt to the borrower. Prior to the 2017 Tax Cuts and Jobs Act (TCJA), tax-exempt advanced refunding bonds could be issued to refund outstanding tax-exempt debt with higher-than-current-market interest rates.³⁰ The TCJA eliminated tax-exempt refunding bonds.

In March 2021, proposed federal legislation H.R. 2288 Investing in Our Communities Act was introduced in the U.S. House of Representatives that would amend the federal tax code to restore state and local governments' ability to use advanced refunding to manage bond debt and reduce borrowing costs for public projects³¹. A bipartisan effort to re-introduce a similar House Bill is currently underway. WTD is closely monitoring the viability of this effort and has prepared a list of potential projects for advanced refunding should the legislation be enacted.

The current restriction resulting from the TCJA on issuing tax-exempt refunding bonds does not limit the use of cash for advanced refunding. In comparison with issuing tax-exempt advanced refunding bonds, the ability to take high-interest-rate debt off the books through defeasance is limited by the utility's ability to generate cash from ongoing revenue sources.³²

The Financial Data Transparency Act of 2022

President Biden signed the Financial Data Transparency Act of 2022 ("FDTA") into law in December 2022³³. The FDTA sets forth a sequence of regulatory steps to implement structured data requirements for the securities markets, including the municipal bond market, with the goal of providing machine-readable, searchable, comparable (e.g., standardized), structured financial data to investors and others. Along with other federal financial regulatory agencies, the Securities and Exchange Commission (SEC) is required to adopt data standards, including municipal market data

²⁸ Ordinance 19576 can be found [here](#).

²⁹ Ordinance 19575 can be found [here](#).

³⁰ The Tax Cuts and Jobs Act can be found [here](#).

³¹ The Investing in Our Communities Act can be found [here](#).

³² Defeasance is the process of setting aside funds or assets to repay a debt or obligation, thereby releasing the debtor from further liability.

³³ The Financial Data Transparency Act can be found [here](#).

standards for information submitted to the Municipal Securities Rulemaking Board (MSRB). The SEC is required to consult with municipal market participants and may consider the burden on smaller issuers, in developing these standards.

The sequence of regulatory steps is expected to take place over the next four years, with municipal market data standards adopted in 2026. As the proposed scope and content of these standards becomes clearer, including rulemaking through SEC and MSRB, state and municipal issuers will have an opportunity to comment directly and through industry groups, and to take steps to be ready to comply with the final standards. WTD is following this development closely with Bond Counsel and the County's Financial Advisor.

Defeasance

Cash generated from the funding policy can be used to directly fund capital spending or to pay down higher-interest outstanding debt. This accomplishes the same debt-balance outcome as directly cash-funding the CIP, while replacing high-interest-rate debt with lower-interest-rate new debt in the current market. A defeasance transaction usually occurs when interest rates are favorable to achieve maximum savings and meet the County's minimum savings threshold of 5 percent of the par amount of the refunded bond.³⁴

Figure 18 demonstrates how the use of the cash collected from sewer rate revenue for CIP funding can be used for defeasance and accomplish the same debt-balance management goal.

In the no defeasance scenario, new bonds are issued and added to the debt balance at 60 percent of the annual CIP, while the remaining 40 percent is cash-funded. The sample ending debt balance in this scenario is \$800.

In the defeasance scenario, additional debt is issued to cover the full CIP (rather than 60 percent), which frees the cash from rates to pay down outstanding higher-interest-rate debt. There is an effective exchange of higher-interest-rate debt on the books for lower-interest-rate debt available at current market conditions. The sample ending debt balance in this scenario is also \$800.

³⁴ Par value is the amount that the issuer agrees to pay the bondholder upon maturity of the bond. It is also used to calculate the interest payments on the bond.

Figure 17 18 - Sample Defeasance

Capital Funding No Defeasance					
CIP	100	100	100	100	100
Cash from Sewer Rate Revenue	40	40	40	40	40
New Debt Proceeds	60	60	60	60	60
Total Funding	100	100	100	100	100
Beginning Debt Balance	500	560	620	680	740
Plus New Issuance	60	60	60	60	60
less: Defeasance	-	-	-	-	-
Outstanding Debt Balance Y-E	560	620	680	740	800
Capital Funding 100% Use of Cash for Defeasance					
CIP	100	100	100	100	100
Cash from Sewer Rate Revenue	40	40	40	40	40
New Debt Proceeds	100	100	100	100	100
Total Funding	140	140	140	140	140
Beginning Debt Balance	500	560	620	680	740
Plus New Issuance	100	100	100	100	100
less: Defeasance	(40)	(40)	(40)	(40)	(40)
Outstanding Debt Balance Y-E	560	620	680	740	800

Reserves Management

WTD maintains financial reserves that address minimums required by debt covenants (contracts), working capital targets, management of loan proceeds and other capital resources, rate increase smoothing, and mitigation of revenue risk. This section describes the reserves and the reserve levels targeted in the financial forecast.

Figure 1918 - Summary of WTD Reserves³⁵

Reserve Name	Policy Goal or Purpose	Establishment	American Water Works Assoc. Description
Liquidity Reserve	10% of operating expenses (equivalent to 36 "days" of cash) plus \$5 million of ending cash balance in the capital fund	In 2012 by Motion 13798	Maintaining adequate operating reserves enhance a system's ability to manage potential risks, provides the ability to manage fluctuations in revenue, and the ability to meet working capital needs
Capital Emergency Reserve	\$15 million for "unanticipated system repairs or equipment replacement in the event of a natural disaster or some unforeseen system failure"	In 2012 by Motion 13798	Even with the most diligent capital planning efforts, utilities must be prepared for unplanned or accelerated capital projects
Rate Stabilization Reserve	Allow WTD to "adopt a multiyear sewer rate to provide stable costs to sewer customers" and "ensure that adequate funds are available to sustain the rate through completion of the rate cycle"	In 1999 by the RWSP adopted by Ordinance 13680	When specifically included in a utility's bond indenture, rate stabilization reserves can be used to help meet debt service coverage requirements during times of revenue shortfalls
Parity Bonds Debt Service Reserve	Amount equivalent to the maximum annual debt service on outstanding senior lien debt (revenue bonds and WIFIA loans)	Bond covenants adopted by Bond Ordinances (most recent 19112)*	Most often, a debt service reserve fund (DSRF) is established as a legal covenant of a debt issuance and is used in whole or in part to pay debt service in the event of a revenue shortfall
SRF Loans Debt Service Reserve	Amount equivalent to the average annual debt service of each loan	Loan agreements adopted by individual ordinances	

*Springing amendment from Ordinance 18588 (2017) established that when bonds issued post amendment represent 51% of the total the reserve can be reduced or eliminated

Water Quality Operating Fund 4611

Liquidity Reserve

The Liquidity Reserve is targeted to provide sufficient cash balances for variance of revenue and expenditures cycles throughout the year. The working capital target is established as 10 percent of operating expenditures in any given year.

³⁵ The following legislation is available on the King County Council website: [Motion 13798](#), [Ordinance 13680](#), and [Ordinance 19112](#).

As a result, a reserve increase must be funded each year as operating expenditures increase. The proposed 2024-2033 financial forecast includes \$19.8 million in Operating Liquidity Reserve and \$5 million in Capital Liquidity Reserve for 2024.

Rate Stabilization Reserve

A Rate Stabilization Reserve (RSR) is unique in that bond covenants are written to allow that, in any given year, use of this reserve can be recognized as revenue eligible for inclusion in the bond coverage calculation. In years that WTD contributes to this reserve from Water Quality Fund revenues, that portion of revenue is deducted from the revenue basis for calculating bond coverage. This allows WTD to use reserves to manage rate levels without compromising the ability to meet annual bond coverage targets. Funds in the RSR also enhance the liquidity metrics used by the rating agencies when they evaluate WTD's credit quality.³⁶

WTD considers the use of reserve balances in the context of Ordinance 12353, which states that the RSR is for the purpose of smoothing rates between years.³⁷ Use of reserves represents a one-time resource, and excess reserves should be applied to one-time expenditures. There is no planned use of the RSR (\$46.25 million) in the proposed 2024-2033 sewer rate forecast.

Unrestricted Operating Balances

Funds exceeding minimum reserve levels in the Operating Fund at year-end are unrestricted and evaluated for optimal use. Some uses for unrestricted funds include potential transfer to the Construction Fund or contribution to defeasance transactions.

Water Quality Construction Fund 3611

Unrestricted Construction Fund Balances

WTD's Water Quality Construction Fund is where capital project costs are charged, loan proceeds are reserved and spent, transfers are received for cash-funded capital from the Operating Fund, and capital reserves, such as the Asset Management Reserve, are maintained. Accumulated reserves above the policy minimum are used to fund projects.

The Construction Fund balance is projected to end at the \$5 million liquidity reserve target in each year of the financial forecast, beginning in 2024, after the balance of the WIFIA and SRF loans from 2023 draws have been fully expended.

Asset Management Reserve

The Asset Management Reserve is maintained as an emergency reserve and as such, is not forecast to deviate from the \$15 million balance. This reserve could be an important resource if an asset failure should occur during a period of significant revenue constraint.

Debt Reserves 8921 and 8922

WTD Debt Reserve minimums are established as a requirement in bond covenants or by the loan-granting agency. The County's bond ordinance requires that a reserve be maintained in an amount equal to maximum annual debt service on outstanding parity bonds.³⁸ The Debt Service Reserve Fund meets this minimum requirement by maintaining a balance of \$158.3 million in the reserve fund. The balance is comprised of \$128.8 million in cash and investments and \$29.5 million in surety bonds. Ecology had a similar requirement, although the agency eliminated this provision for loans

³⁶ Liquidity Metrics measure the agency's ability to meeting financial obligations.

³⁷ [Ordinance 12353](#) is available on the King County website.

³⁸ Parity Bonds are based on sewer revenue.

awarded after 2018. Reserves for pre-2018 Ecology loans decreased from \$13.5 million to just \$981,000 after the refunding of a group of loans in 2021 and further repayments.

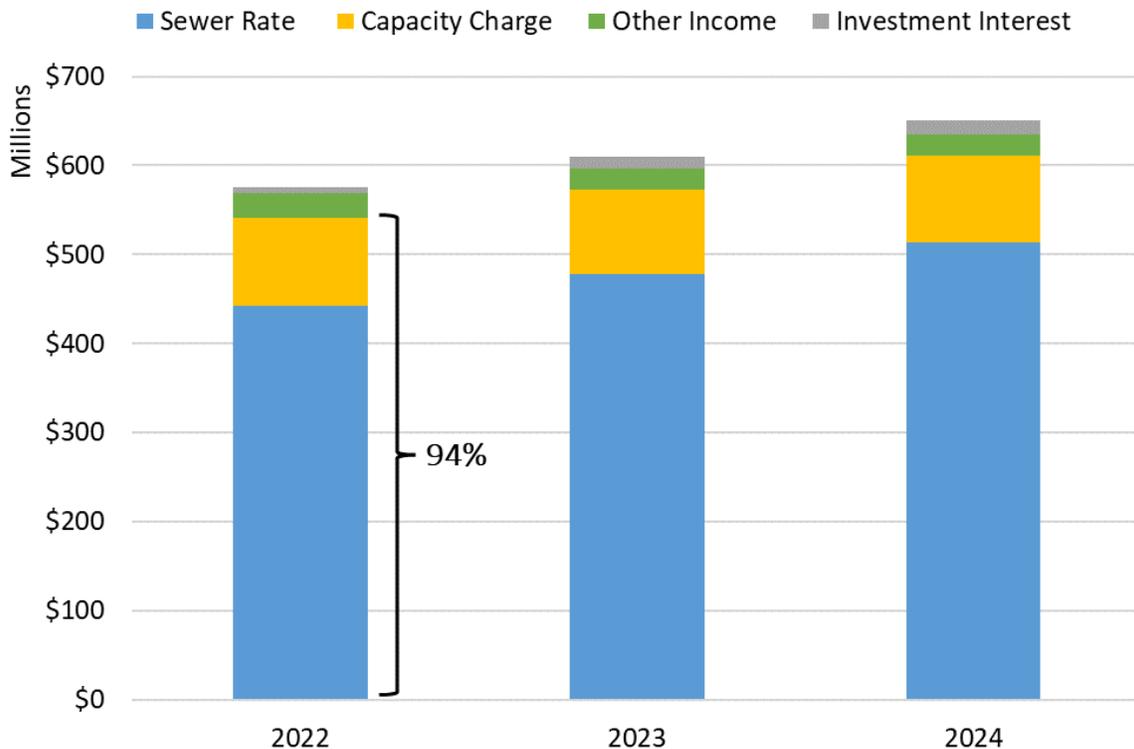
Figure 1920 - Surety Bond Summary

	Provider	Amount	Moody's/S&P	
			Rating	Expiration
Surety Bonds	National Public Finance Guaranty Corp.	\$ 5,010,273	A3/A	2035
	Assured Guaranty Municipal Corp.	\$ 4,880,916	A3/AA	2036
	Assured Guaranty Municipal Corp.	\$ 7,189,850	A3/AA	2036
	Assured Guaranty Municipal Corp.	\$ 12,500,001	A3/AA	2047
	Subtotal	\$ 29,581,040		
Cash and Investments		\$ 128,763,597		
Total		\$ 158,344,637		

Revenue

The sewer rate and capacity charge, together, made up 94 percent of total operating revenues for 2022. **Figure 21** shows WTD's 2022 revenue and projected 2023 and 2024 revenue by source.

Figure 2120 - Operating Revenue Components Sorted by Size



Revenue Requirement

Two tests guide rate setting and determine a utility's annual revenue requirement: the cash test and the debt service coverage test.

Cash Test

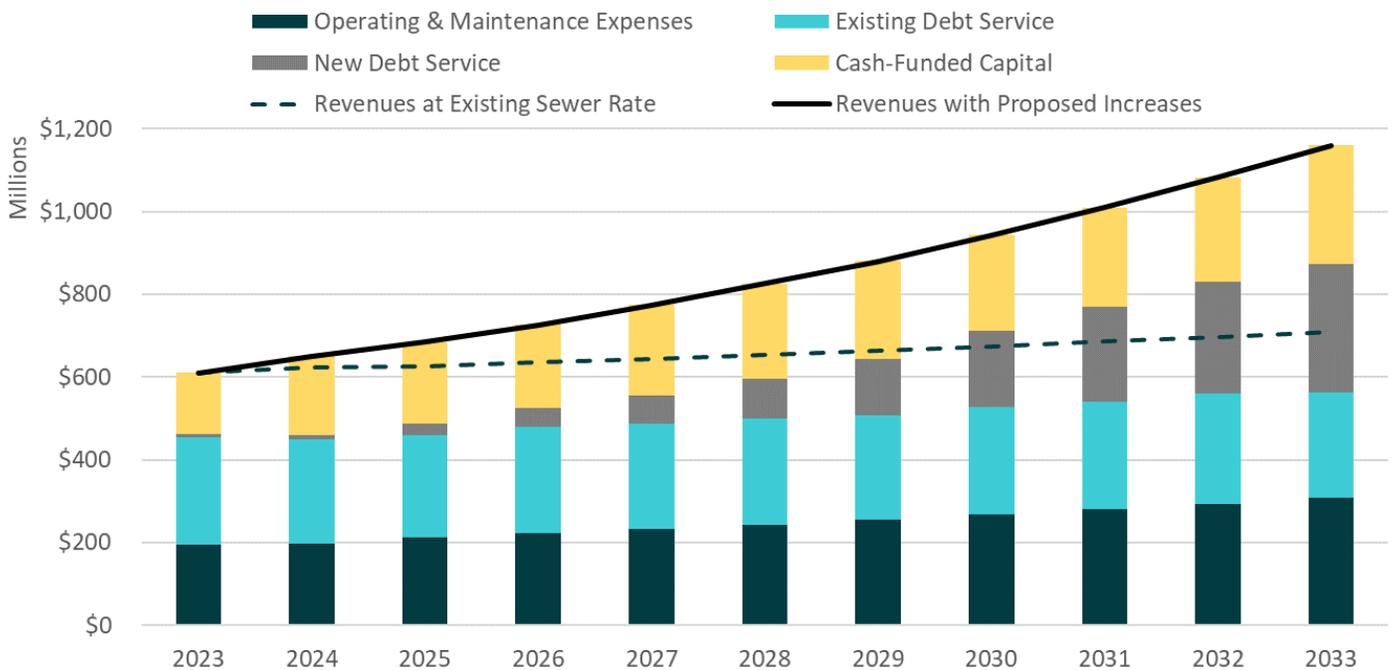
The utility must ensure first that it can support its cash obligations, including operating expenditures, debt service repayment, and any financial policy targets, such as cash to fund the capital program.

King County Code 28.86.160 Financial Policies state:

King County shall charge its customers sewer rates and capacity charges sufficient to cover the costs of constructing and operating its wastewater system. Revenues shall be sufficient to maintain capital assets in sound working condition, providing for maintenance and rehabilitation of facilities so that total system costs are minimized while continuing to provide reliable, high-quality service and maintaining high water quality standards.³⁹

Figure 22 shows the components that build to the total annual revenue requirement, compared with revenue under the existing sewer rate.

Figure 2221 - 2024 - 2033 Sewer Rate Forecast Revenue Requirement



Beginning from the bottom of **Figure 22**, the first stack (dark blue) in the bar represents the annual operating and maintenance (O&M) expenses with projected inflation and growth. The second stack (teal) shows the debt service obligations for existing outstanding WTD debt. The third stack (gray) represents new debt service repayments generated by funding the capital program in this forecast. The top stack (yellow) represents the policy to cash-fund approximately 34 percent of the capital program from revenue, based on original cost depreciation.

The dashed line shows the forecasted level of revenue generated if the sewer rate were to remain at the current 2023 rate of \$52.11 for all years of the forecast, to demonstrate the utilities funding gap at the current rate. The solid line at

³⁹ The King County Code Title 28 can be found [here](#).

the top of the bars shows the revenue meeting the annual requirement in each year based on the proposed rate forecast.

Figure 2322 - Proposed 2024 Sewer Rate and Projected 2025-2033 Sewer Rate [also available on page 2]

2024-2033 Rate Forecast	Adopted	Proposed									
Proposed	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	5.75%	5.75%	5.75%	6.50%	6.50%	6.50%	7.00%	7.00%	7.00%	7.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.65	\$69.92	\$74.47	\$79.69	\$85.27	\$91.24	\$97.63
All-In Debt Service Coverage	1.56x	1.73x	1.73x	1.67x	1.68x	1.65x	1.61x	1.53x	1.50x	1.47x	1.51x
Projected CIP Spend (\$m)	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856
Annual Cash Funding	60%	58%	49%	43%	41%	35%	29%	25%	26%	30%	34%
Average Cash Funding					6-Year Average			39.8%	10-Year Average		33.9%

Debt Service Coverage Ratio Test

The second revenue requirement test is the debt service coverage ratio (DSC) test. DSC is a financial metric used to assess an entity's ability to generate enough cash to cover its debt service obligations. DSC is calculated by taking free cash flow, cash available after paying for operation and maintenance, and dividing it by current debt obligations. DSC is broadly used in the industry and is of particular interest to rating agencies. MWPAAC recommended WTD maintain a DSC above 1.4 in 2017 and WTD must maintain a DSC above 1.15 per bond ordinance. The sewer rate proposal and financial forecast produce DSC ranging from 1.47x to 1.73x. As shown in **Figure 24**, WTD's historical coverage performance has increased steadily since 2016 and preliminary numbers signal to a record-high DSC in 2022.

Figure 2423 - History of WTD DSC and Ratings

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WTD All-in DSC Ratio	1.24x	1.33x	1.30x	1.32x	1.28x	1.33x	1.33x	1.36x	1.41x	1.51x	1.49x	1.58x	1.56x	1.57x	1.62x
S&P Rating	AA+														
Moody's Rating	Aa3	Aa3	Aa2	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1						

Sewer Rate

Sewer rate revenue is the largest component of WTD operating revenues at 77 percent. SFR customers make up 57 percent of the sewer rate customer base and are billed at one unit per household, regardless of water use. The remaining 43 percent of RCEs are comprised of commercial and multi-family customers in a combined rate class. An RCE is a unit used for billing purposes that converts reported water use (as a proxy for sewage flows) to the approximate equivalent of one SFR. As defined in the LSA contracts and King County Code 28.86.160, Financial Policy 15, one RCE is equal to 750 cubic feet of water usage.

Billing Structure

In contrast to the retail agencies that read meters and bill customers, either monthly or bimonthly, RCE reporting and billing are performed on a quarterly cycle. As shown in **Figure 25**, billings for the SFR class in a given quarter are based on RCEs reported in the quarter before the previous one (e.g., Q2 billing is based on Q4 reported).

The commercial and multi-family billing structure includes additional delay because these billings are based on a four-quarter rolling average of RCEs, with the intent to minimize variability of billings to the agencies.

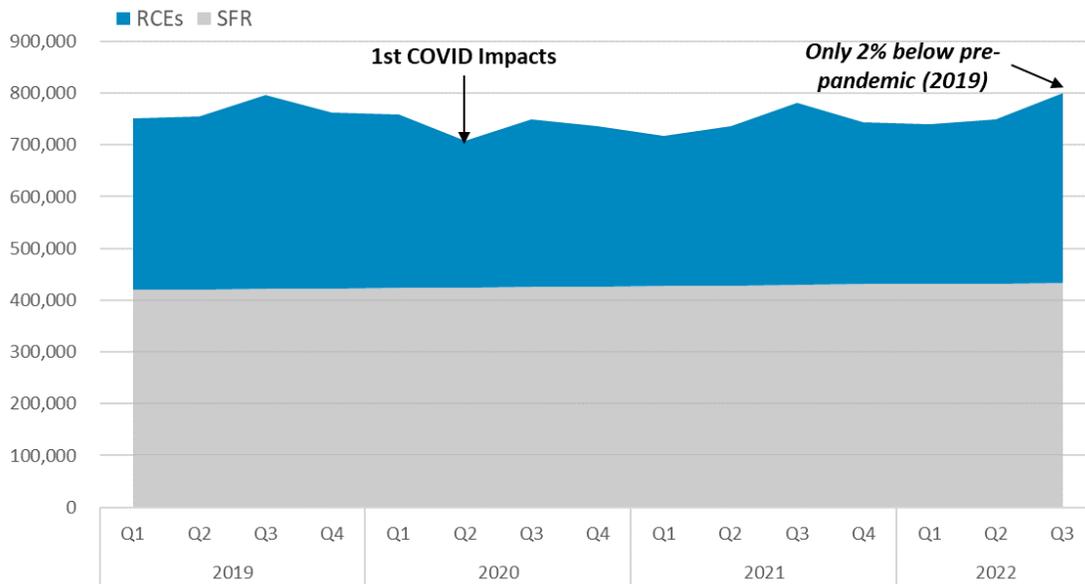
Figure 2524 - RCE Reporting to Sewer Rate Billing Lag

	2022				2023	
	Q1-22	Q2-22	Q3-22	Q4-22	Q1-23	Q2-23
Single Family Residential				Reported		Billed
Commercial / Multi-Family	Four quarter average					Billed

Reported metered water use is the basis for billing the sewer rate to commercial and multi-family customers. SFR billings are fixed per unit and are not subject to changes in water demand.

During the COVID-19 global pandemic, reported commercial water use dropped significantly beginning with Q2 2020. This drop slowly reversed in successive quarters as the economy reopened and more workers returned to offices, with water use trending toward pre-pandemic levels. **Figure 26** shows the recovery in commercial and multi-family RCEs since 2019, which has occurred slightly faster than initially forecasted.

Figure 2625 - Commercial & Multi-Family RCE Actuals by Quarter (2019-2022)



Historical Sewer Rate Increases

To provide context for the historical rate of growth to the revenue needs of the utility, rate increases going back to 1990 are provided in **Figure 27**. The average annual rate increase is 4.6 percent going back to 1990.

Figure 2726 - Historical Sewer Rate Increases (1990-2023)

Year	Sewer Rate	Percent Change	Year	Sewer Rate	Percent Change
1990	\$11.90		2007	\$27.95	9.2%
1991	\$13.20	10.9%	2008	\$27.95	0.0%
1992	\$13.80	4.5%	2009	\$31.90	14.1%
1993	\$13.62	-1.3%	2010	\$31.90	0.0%
1994	\$15.90	16.7%	2011	\$36.10	13.2%
1995	\$17.95	12.9%	2012	\$36.10	0.0%
1996	\$19.10	6.4%	2013	\$39.79	10.2%
1997	\$19.10	0.0%	2014	\$39.79	0.0%
1998	\$19.10	0.0%	2015	\$42.03	5.6%
1999	\$19.10	0.0%	2016	\$42.03	0.0%
2000	\$19.50	2.1%	2017	\$44.22	5.2%
2001	\$19.75	1.3%	2018	\$44.22	0.0%
2002	\$23.40	18.5%	2019	\$45.33	2.5%
2003	\$23.40	0.0%	2020	\$45.33	0.0%
2004	\$23.40	0.0%	2021	\$47.37	4.5%
2005	\$25.60	9.4%	2022	\$49.27	4.0%
2006	\$25.60	0.0%	2023	\$52.11	5.8%
				Annual Average	4.6%
				Biennial Average	9.4%

2024 Sewer Rate Proposal and Forecast

The sewer rate is WTD’s primary funding source. After determining revenue requirements, and revenue generated from other sources, the sewer rate proposal is developed to meet both the cash test and the DSC test for the utility described above. For 2024, the proposed ordinance would increase the monthly sewer rate to \$55.11, a 5.75% increase. In developing the proposed rate and forecast, WTD made several adjustments compared to previous forecasts in order to balance growing costs and demand for investments in the system with the keeping sewer rates affordable for residents.

Figure 2827 - **Adopted 2023 Sewer Rate and Projected Sewer Rate from 2023-2032 Financial Forecast**

2023-2032 Rate Forecast										
Adopted	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	5.75%	5.75%	5.75%	5.75%	9.00%	9.00%	9.00%	9.00%	9.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.19	\$71.06	\$77.46	\$84.44	\$92.04	\$100.33
Rate Increase \$	\$2.84	\$3.00	\$3.17	\$3.36	\$3.55	\$5.87	\$6.40	\$6.98	\$7.60	\$8.29
All-In Debt Service Coverage	1.59x	1.63x	1.64x	1.65x	1.67x	1.69x	1.72x	1.70x	1.70x	1.71x
Projected CIP Spend (\$m)	\$307	\$326	\$381	\$429	\$503	\$633	\$752	\$849	\$928	\$908

Figure 2928 - **Proposed 2024 Sewer Rate and Projected 2025-2033 Sewer Rate**

2024-2033 Rate Forecast											
Proposed	Adopted 2023	Proposed 2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	5.75%	5.75%	5.75%	6.50%	6.50%	6.50%	7.00%	7.00%	7.00%	7.00%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.65	\$69.92	\$74.47	\$79.69	\$85.27	\$91.24	\$97.63
All-In Debt Service Coverage	1.56x	1.73x	1.73x	1.67x	1.68x	1.65x	1.61x	1.53x	1.50x	1.47x	1.51x
Projected CIP Spend (\$m)	\$316	\$328	\$406	\$469	\$534	\$656	\$805	\$912	\$924	\$854	\$856
Annual Cash Funding	60%	58%	49%	43%	41%	35%	29%	25%	26%	30%	34%
Average Cash Funding					6-Year Average			39.8%	10-Year Average		33.9%

These changes include

- Changing the cash funding strategy for the capital improvement program from a 40% average over the forecast to an original cost depreciation approach. This reduced the total cash funding percentage for the CIP from 40% over the 10-year forecast to 34% and results in a decrease in the revenue requirement. This change is discussed in more detail on page nineteen.
- Lowering accomplishment rate estimates lower to reflect the size of CIP increases and economic conditions. This change is discussed in more detail on pages sixteen and seventeen.
- Updated CIP. This change is discussed in more detail on pages 12 through 15 (Estimated CIP Spending for 2024-2033 Financial Forecast).
- Adding a third inflection point in the rate smoothing approach in order to achieve a more gradual increase in rates.

The net impact of these changes and the annual cost evaluation that accompanies the rate forecast development process is a 2032 rate projection that is \$9.09 lower per month than the previous projection provided with the 2023 rate proposal.

Capacity Charge

Since 1990, King County has levied a capacity charge on structures with new connections to the sanitary sewer system.⁴⁰ This charge is paid in addition to the monthly sewer bill assessed by the LSA. Newly connecting customers are directly

⁴⁰ More information on the King County Capacity Charge can be found [here](#).

billed by King County for the capacity charge. The capacity charge rate is set annually by the County Council and is \$72.50 per month for properties connecting in 2023.

In 1992, voters approved an amendment to the County's charter that authorized the merger of King County with the Municipality of Metropolitan Seattle (Metro), with the phased merger effective in 1994.⁴¹ As successor to Metro, the County assumed Metro's rights and obligations, including authority to impose the capacity charge.⁴²

The Revised Code of Washington (RCW) 35.58.570 authorizing the capacity charge states:

(1) A metropolitan municipal corporation that is engaged in the transmission, treatment, and disposal of sewage may impose a capacity charge on users of the metropolitan municipal corporation's sewage facilities when the user connects, reconnects, or establishes a new service to sewer facilities of a city, county, or special district that discharges into the metropolitan facilities. The capacity charge shall be based upon the cost of the sewage facilities' excess capacity that is necessary to provide sewerage treatment for new users to the system.

(2) The capacity charge is a *monthly charge* reviewed and approved annually by the metropolitan council.⁴³

Currently, RCW does not allow the County to require up-front payment of the capacity charge, which is the most common industry approach to new development charges, such as impact fees and utility connection charges.⁴⁴ The monthly charge reference is unique to the authorizing language for metropolitan municipal corporations and is not included in RCW authority for city and special purpose district connection charges that share much of the same language.⁴⁵

King County Code 28.86.160 Financial Policies state, "The capacity charge may be paid by new customers in a single payment or as a monthly charge at the rate established by the council..."

Customers may elect to pay the capacity charge in one lump sum or be billed quarterly based on the monthly rate for 15 years. The charge is linked to the property, meaning that the charge transfers between owners of the property until the capacity charge is paid-off.

Capacity Charge Rate Structure

In 2020, the County approved updates to the rate structure of the capacity charge⁴⁶. As of January 1, 2021, the County began using average persons per household as the new basis of the capacity charge for single-family residential structures.

The RCEs assigned to single-family homes is based on size: small (<1,500 sq. ft. = 0.81 RCE), medium (1,500 – 2,999 sq. ft. = 1 RCE), and large (>3,000 sq. ft. = 1.16 RCE).

⁴¹ [More information on the merger is available here.](#)

⁴² Revised Code of Washington [35.58.360](#)

⁴³ Revised Code of Washington [35.58.570](#)

⁴⁴ A 2015 internal WTD survey of utility connection charges for 18 comparable agencies nationwide included data on when the charge is assessed to new connections for 13 of the 18 agencies. Of the 13, 100 percent required payment at the time of permitting or service application. Only WTD did not require payment as a condition of development through the permitting/service application process.

⁴⁵ <https://app.leg.wa.gov/RCW/default.aspx?cite=35.92.025> Cities and Towns
<https://app.leg.wa.gov/RCW/default.aspx?cite=57.08.005> Districts

⁴⁶ More information on the capacity charge review study can be found [here](#).

Using persons-per-household data also resulted in an update to RCEs assigned to multi-family units. The Council established a permanent classification for accessory dwelling units, such as backyard cottages and basement apartments, set at 0.59 RCE per unit.⁴⁷

Multi-family structures are billed by unit at .81 RCEs for 2 to 4 units and .64 RCEs for 5 or more units.

Commercial structures are billed based on fixture counts and/or flows.

A list of historical capacity charge rates, going back to 2003, is provided in **Figure 30** below.

Figure 3029 - **Historical Capacity Charge Increases (2003-2023)**

Year	Capacity Charge	Percent Change
2003	\$17.60	
2004	\$18.00	2.3%
2005	\$34.05	89.2%
2006	\$34.05	0.0%
2007	\$42.00	23.3%
2008	\$46.25	10.1%
2009	\$47.64	3.0%
2010	\$49.07	3.0%
2011	\$50.45	2.8%
2012	\$51.95	3.0%
2013	\$53.50	3.0%
2014	\$55.35	3.5%
2015	\$57.00	3.0%
2016	\$58.70	3.0%
2017	\$60.80	3.6%
2018	\$62.60	3.0%
2019	\$64.50	3.0%
2020	\$66.35	2.9%
2021	\$68.34	3.0%
2022	\$70.39	3.0%
2023	\$72.50	3.0%

Capacity Charge Updates

Regular updates to the underlying assumptions are guided by the King County Code 28.86.160, Financial Policy 15, which states, “Customer growth and projected costs, including inflation, shall be updated every three years beginning in 2003. The county should periodically review the capacity charge to ensure that the actual costs of system expansion to serve new customers are reflected in the charge.”

The 2023 capacity charge update was planned to be a transition from the County’s Regional Wastewater Service Plan (RWSP) to an updated comprehensive plan, the Clean Water Plan. The comprehensive plan for the utility serves as the basis for projecting the number of customers, capital projects needed for capacity, and financial assumptions.⁴⁸ The timing of this transition depended on Clean Water Plan progress, which is currently paused.

⁴⁷ [King County Code 28.84.050 O.3.](#)

⁴⁸ Information on the RWSP is available [here](#).

Ordinance 19403 passed on March 8, 2022, and provided time to incorporate both the Clean Water Plan inputs and develop the policy updates for the capacity charge methodology work that is in progress⁴⁹. It deferred the update of customer growth and projected costs scheduled to be updated in 2021 for transmittal to the Council with the proposed 2023 sewer rate in 2022. The update was deferred until the next annual sewer and capacity charge rate proposal following Council approval of the Clean Water Plan as an update to the RWSP or 2024, whichever came first.

As the Clean Water Plan has not been approved since Ordinance 19403’s passage, the proposed 2024 capacity charge rate has been updated using the existing methodology established in 2003.

The capacity charge update resulted in an increase in the capacity charge of 2.4 percent. **Figure 31** shows the 2024 proposed capacity charge, of \$74.23, and projects the charge and related lump-sum elective payment option for the forecast period. WTD also proposes decreasing the annual adjustment to the capacity charge for inflation from three percent to 2.5 percent, based on slower connection growth following the COVID-19 pandemic.

Figure 3130 - **Proposed 2024 Capacity Charge and Projected 2025-2030 Capacity Charge [also available on page 2]**

Capacity Charge	2022	2023	2024	2025	2026	2027	2028	2029	2030
Rate	\$70.39	\$72.50	\$74.23	\$76.09	\$77.99	\$79.94	\$81.94	\$83.99	\$86.09
Total Revenue	\$93,360	\$92,998	\$94,877	\$94,919	\$95,999	\$97,045	\$97,460	\$97,407	\$97,505
Increase %	3.0%	3.0%	2.4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Increase \$	\$2.05	\$2.11	\$1.73	\$1.86	\$1.90	\$1.95	\$2.00	\$2.05	\$2.10
Annual Total	\$845	\$870	\$891	\$913	\$936	\$959	\$983	\$1,008	\$1,033
Total Payment (15 years)	\$12,670	\$13,050	\$13,362	\$13,696	\$14,038	\$14,389	\$14,749	\$15,117	\$15,495

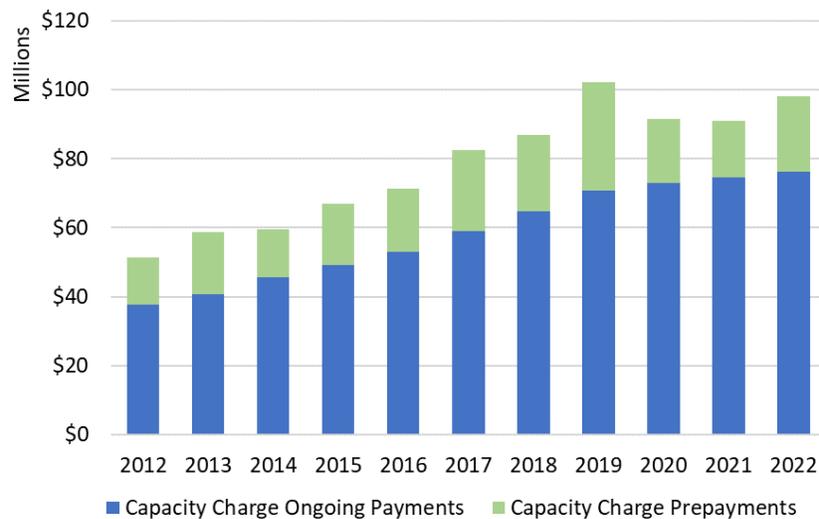
Capacity Charge Revenue Forecast

The majority of capacity charge revenue comes from regular capacity charge customer billings, with the rest coming from elective pre-payments. Ongoing payments are stable, while pre-payments vary significantly from year to year and are difficult to forecast.

Figure 32 shows the historical split between ongoing payments and elective pre-payments for the last 11 years. Until 2019, ongoing payments grew at an average annual rate of more than nine percent, driven by a regional construction boom that added large numbers of new connections every year. In contrast, the growth rate slowed to three, two, and two percent for 2020, 2021, and 2022, respectively. Pre-payments have ranged between 18 to 31 percent of total capacity charge revenues, without a clear discernible pattern from one year to the next. Pre-payments in the pandemic-impacted years of 2020 and 2021 decreased to levels close to the averages seen before the record-high years of 2017, 2018, and 2019.

⁴⁹ King County Ordinance 19403 can be found [here](#).

Figure 3231 - Historical Capacity Charge Ongoing Payments⁵⁰ and Prepayments (2012-2022)



Capacity charge revenue forecasts have historically used a conservative six percent year-over-year growth. More recently, this long-term growth assumption was reduced to five percent to reflect a reduction in new commercial connections. For 2023 and 2024, this assumption was reduced further to three percent to reflect reduced growth in capacity charge customers during the pandemic. Pre-payments are forecasted to grow at the same rate as ongoing payments, using the relatively low 2021 actuals as a conservative baseline. **Figure 31** reflects these updated assumptions, including the five percent long-term growth rate after 2024.

Other Revenue

Interest earnings

Interest earnings, also known as investment income, is revenue obtained by the County’s Water Quality Fund through investments of its cash balances in the King County Investment Pool (pool). The pool pursues a low-risk investment strategy that prioritizes the availability of funds for its participating agencies to meet daily cash-flow requirements. In 2022, WTD cash balances averaged approximately \$610 million throughout the year, which included cash balances for all WTD reserve accounts.

Interest-rate forecasts for the pool come from King County’s Office of Economic and Financial Analysis. The 2023 interest rate is estimated to be 2.4 percent.⁵¹ The economic impacts from COVID-19 resulted in a sharp decrease in interest rates and an initial commitment from the Federal Reserve (Fed) to maintain low interest rates to sustain the economic recovery. However, elevated and persistent inflation led the Fed to accelerate its rate-hike schedule and markets to expect considerably higher short-term rates throughout 2023.⁵² Lower interest rates have a limited impact on WTD revenues, representing less than one percent of total revenue. Any reduction of interest earnings is significantly offset by savings from a lower cost of debt.

High-Strength Surcharge, Septage, Resource Recovery

Other WTD income is generated from more than 25 separate revenue sources. The largest of these sources come from the high-strength surcharge, Resource Recovery activities (methane sales with renewable identification numbers, or

⁵⁰ Ongoing payments include penalty fees that have ranged between \$0.4 million and \$1.3 million a year

⁵¹ The March 2023 forecast is available [here](#).

⁵² Information on interest rates is available [here](#).

RINs) and septic hauler fees.⁵³ WTD conservatively assumes that RINs will stop generating revenue after 2024, due to the risk of changes to existing regulatory framework under a new federal administration. Most of the other revenue components are forecast at three percent annual growth.

Reference

Supplemental WTD Debt Information

Figure 3332 - 2022 Year-End Outstanding Debt Balances⁵⁴

Sewer System Obligations	Amount Outstanding	Final Maturity	Ratings
Parity Bonds (Senior Lien)	\$ 2,076,965,000	2052	Aa1/AA+
Parity Lien Obligations (LTGO)	658,530,000	2039	Aaa/AAA
Junior Lien Obligations	340,590,000	2042	Aa2/AA
Multi-Modal LTGO/Sewer Revenue Bonds	299,295,000	2050	Aaa/AAA
SRF Loans and PWTF Loans	140,726,000	2055	
Total Sewer System Obligations Outstanding	\$ 3,516,106,000		

Types of WTD Financing

Bonds

Sewer Revenue bonds are secured by a pledge of revenue of the sewer system, subject to payment of all operating and maintenance expenses of the sewer system. When revenue bonds are additionally backed by a pledge of the full faith and credit of the issuer (meaning the County's General Fund revenue and taxing power) the bonds are referred to as limited tax general obligation (LTGO) bonds.

State loans

WTD received loans from Ecology under the Water Pollution Control SRF Loan Program and the Washington Public Works Trust Fund administered by the Washington State Department of Commerce⁵⁵. The loans require either semi-annual or annual payments of principal and interest from 2023 through 2055, and bear interest at stated rates from 0.0 percent to 3.1 percent. As of December 31, 2022, the balance due on all state loans is \$140.7 million. State loans are secured by a subordinate lien on the net revenues of the system.⁵⁶

WIFIA Loans

WIFIA is an established federal credit program administered by the EPA for eligible water and wastewater infrastructure projects. The WIFIA program accelerates investment in the nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects at below-market rates. The WIFIA loans, after draws are made, are secured by a pledge of revenue from the sewer system subject to payment of all operating and maintenance expenses of the sewer system. WTD has successfully qualified for and received two federal WIFIA loans to date, totaling \$231.3 million. WTD is currently negotiating the County's first WIFIA Master Agreement, which would result in an additional \$467.7 million in federal funding for 12 separate projects. Instead of issuing a single loan agreement under the Master Agreement, the EPA will split the \$467.7 million into three separate loan tranches with 35-

⁵³ A RIN is a serial number assigned to a batch of [biofuel](#) for the purpose of tracking its production, use, and trading.

⁵⁴ Excludes principal payments from January 1, 2023, that had already been transferred to the debt service fund in December 2022

⁵⁵ More information on the Public Works Trust Fund can be found [here](#).

⁵⁶ "Subordinate" liens are those that can only be paid after more senior liens are released.

year terms each. The EPA and WTD anticipate finalizing the Master Agreement and issuing the first loan tranche of \$179.6 million in early summer 2023. The remaining two loan tranches are expected to be issued in 2024.

Commercial Paper

The Commercial Paper (CP) program provides low-cost, flexible, short-term financing for WTD capital projects.⁵⁷ CP can be used to provide interim financing to pay for capital projects pending permanent financing from state and federal loans and from long-term fixed or variable-rate debt.

The initial purpose of the CP program is to pay for the Georgetown Wet Weather Treatment Station and Ship Canal Water Quality project costs prior to receiving reimbursement and permanent fixed-rate financing from the SRF and WIFIA loans secured for these projects. CP costs are expected to be lower than WIFIA and SRF loan rates. By issuing CP and delaying WIFIA and SRF draws, WTD will incur lower-interest costs over the extended construction periods for these projects. CP can also be issued to provide interim financing for the cash-funded portion of WTD’s CIP, refund high-interest outstanding debt, and serve as a permanent element of WTD’s variable-rate debt portfolio.

Variable-Rate Debt

WTD’s debt policy limits the utility’s variable-rate debt exposure to a maximum amount equal to 20 percent of all outstanding debt and currently, a target of 15 percent is used in the financial forecast. WTD’s initial variable-rate issuance was its \$100 million commercial paper program in 1996. Over the next 25 years, WTD expanded its variable-rate portfolio to a total of approximately \$530 million. Variable-rate debt allows WTD to achieve a borrowing cost that historically has been much lower than traditional fixed-rate debt. Typically, an investor can sell variable-rate bonds back with just a week’s notice. This type of investment warrants the lowest borrowing cost in any given interest rate environment.

Forecast Assumptions

Figure 34 summarizes the assumptions used to forecast revenues and expenditures in the 10-year financial forecast (2024-2033).

Figure 3433 - Forecast Assumptions Used in Financial Forecast

Assumptions: 2024-2033 Rate Forecast	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Single-Family Residences RCE Growth	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Multi-Family & Commercial RCE Growth	2.7%	2.0%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Capacity Charge Regular Payments	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Capacity Charge Prepayments	3.0%	3.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
General Cost Inflation	Biennial Budget		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Labor Cost Inflation	+ 2024 Decision		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Expenditure Growth	Packages		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Capital Cost Escalation	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
CIP Effective Accomplishment Rate	71.4%	74.5%	61.3%	70.4%	74.0%	85.0%	82.6%	84.5%	85.0%	85.0%	85.0%
Revenue Bond Rate (30 Year Term)	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Blended Variable Rate	2.54%	3.04%	3.04%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Investment Pool Earnings Rate	2.40%	2.70%	2.90%	2.88%	2.81%	2.77%	2.76%	2.75%	2.75%	2.75%	2.75%

⁵⁷ Commercial Paper is a commonly used type of unsecured, short-term debt typically used for short-term liabilities. Maturities on commercial paper typically last several days, and rarely range longer than 270 days. It is usually issued [at a discount](#) from face value and reflects prevailing market interest rates.

Asset Management Risk Profile Tier Descriptions

Asset management projects are ranked into Tiers 1 and 2 and prioritized based on assessment of their condition within the definitions of the tiers described as follows:

Tier 1

Equipment or pipeline that is currently in poor condition, unserviceable, or for which spare parts cannot be found. Consequences of failure include sewage overflows, other operating permit violations, or operational disruptions for which there would be no easy workarounds. Because wear and tear and corrosion are progressive, every year of delay means that the risk of failure increases.

Tier 2

Equipment or pipeline that is old, showing wear, or has corrosion that indicates it will fail in the future. In the case of Tier 2, the equipment is currently doing its job, but due to its age will likely perform poorly or fail in the near future. Tier 2 failure has the same consequences as Tier 1 but is less likely to occur now. Tier 2 also includes equipment that may be in worse condition but is not located in a critical process — i.e., equipment may be more likely to fail, but the consequences would not be as severe. The risk of delay is the same as Tier 1.

2022 Wastewater Treatment Division Financial Performance⁵⁸

Figure 3534 - Wastewater Treatment 2022 Forecast vs. Preliminary 2022 Actuals

Wastewater Treatment Division 2022 Financial Performance ('000s)	Forecast 2022	Preliminary 2022	Variance	
Monthly Sewer Rate	\$49.27	\$49.27	\$0.00	0.0%
Rate Increase	4.00%	4.00%	0.00%	0.0%
Residential Customer Equivalent (RCEs)	747,046	748,808	1,762	0.2%
Revenue				
Sewer Rate*	\$ 441,683	\$ 442,908	\$ 1,224	0.3%
Capacity Charge	93,600	98,208	4,608	4.9%
Industrial Waste Program	10,285	10,485	201	2.0%
Resource Recovery	8,784	11,743	2,959	33.7%
Other Income	4,356	5,659	1,303	29.9%
Investment Income	5,109	6,542	1,433	28.0%
Use (Transfer to) Rate Stabilization Reserve	-	-	-	n.a.
Total - Revenue	\$ 563,817	\$ 575,545	\$ 11,728	2.1%
Expenditures & Transfers				
O&M Expenses	\$ (174,950)	\$ (172,142)	\$ 2,808	-1.6%
Debt Service on Parity Bonds	(144,914)	(141,421)	3,493	-2.4%
Debt Service on Parity Lien Obligations	(60,107)	(60,123)	(16)	0.0%
Debt Service on Subordinate Lien	(33,753)	(34,308)	(555)	1.6%
Debt Retirement/ Defeasance Use of Cash	(11,536)	(12,160)	(624)	5.4%
Minimum Operating Reserve Contribution	(1,977)	(1,841)	136	-6.9%
Total - Expenditures & Transfers	\$ (427,238)	\$ (421,995)	\$ 5,243	-1.2%
Net Cash Flow	\$ 136,579	\$ 153,549	\$ 16,971	
Beginning Balance	\$ 73,154	\$ 73,154	\$ -	
Net Cash Flow	136,579	153,549	16,971	
Policy Cash-Funded Capital (Transfer to Capital Fund)	(209,193)	(166,800)	42,393	
Ending Balance	\$ 540	\$ 59,904	\$ 59,364	
Ending Reserve Balances				
Water Quality Operating Liquidity Reserve	\$ 17,549	\$ 17,413	\$ (136)	
Rate Stabilization Reserve Account	\$ 46,250	\$ 46,250	\$ -	
Debt Service Coverage on Parity Bonds	2.68x	2.85x	0.17x	
Debt Service Coverage on Parity Bonds and Parity Lien Obligations	1.89x	2.00x	0.11x	
Debt Service Coverage on Total Debt Payments	1.63x	1.71x	0.08x	
*Sewer rate revenues include billing adjustments of \$182,418				

Revenue

Figure 35 shows that total RCEs were 0.2 percent higher than projected and related sewer rate revenues were 0.3 percent higher.

Capacity charge revenues were \$4.6 million higher than previously forecast, due to higher-than-expected elective early payoff activity.

Other operating revenues presented better-than-forecast results mostly due to increased RINs revenue, methane gas sales, and sale of County-owned timber.

⁵⁸ Audited 2022 financial information will be available in May of 2023. Preliminary (unaudited) year-end financial data is presented for comparison to the 2022 forecast from the 2023-2032 Financial Forecast.

Investment income exceeded the forecast, with interest rates from the King County Investment Pool averaging 1.1 percent in 2022.

Expenditures

In 2022, WTD realized operating expenditure savings of \$2.8 million below budget. The largest contributors to this underspend were lower use of central services and lower-than-projected electricity costs.

Debt

Debt service for 2022 was \$2.9 million lower than the projected \$238.8 million due to lower interest costs. The unfavorable market volatility presented few opportunities to produce cost savings to reduce overall debt service, as the bond market experienced its worst year ever with record outflows. WTD offset the lack of refunding and defeasance opportunities with low-interest state loans that will provide significant cost savings, compared to issuing sewer revenue bonds.

The County started its CP program in 2021 and continues utilizing the program to provide interim financing and refunding high-interest long-term debt. In January 2022, WTD issued \$31.4 million in interim financing CP to support the Georgetown and Joint Ship Canal projects. WTD planned to issue a further \$17.3 million to support the projects, but due to project delays, WTD deferred the issuance for the remainder of 2022. This is interim debt intended to pay for projects that have already secured low-interest-rate loans from the state and the federal government. Draws on these loans will then be used to repay the CP notes near project completion. This interim financing strategy is expected to reduce the County's borrowing costs for these projects, as short-term tax-exempt rates are expected to be below the long-term rates for state and federal loans. The secondary purpose of the CP program is to provide funds to refund high-interest outstanding and future junior lien sewer revenue and multi-modal LTGO bonds. Once refunded, the outstanding CP can be retired by issuing low-interest variable-rate debt in larger sums to maintain a variable-rate debt profile of 15 percent. The County issued \$8.2 million in CP to refund its 2012C Sewer Revenue Bonds in June 2022, with a July 1, 2022 call date, and \$22.67 million in December 2022, to refund the 2013A Sewer Revenue Bond with a January 1, 2023 call date. These two re-fundings produced \$3.3 million in total savings and \$1.8 million in present value savings — or six percent savings of the par amount of the refunded bonds.

Cash Funding and Defeasance

Operating revenue dedicated to the capital program funding can alternatively be used to remove outstanding high-interest-rate debt from the books through defeasance. Like refundings, defeasances are usually not incorporated in the financial forecasts since they are only carried out if interest rates are beneficial later in the year. WTD decided not to conduct a defeasance transaction as the market conditions were not favorable in 2022. Therefore, WTD transferred \$166.8 million from the operating fund to the capital fund to provide the year-end cash contribution for the capital program.

Net Cash Flow

The amount of operating revenue transferred to the capital fund in 2022 was \$166.8 million, which was \$57.9 million less than the amount of operating revenue available. WTD utilized \$37.5 million in operating cash to accelerate repayment of CP used to refund Sewer Revenue Bonds 2012, 2012C, and 2013A; along with LTGO Bonds 2012 in early January 2023. The \$166.8 million in cash-funded capital in addition to an ending balance of \$57.9 million translates into a positive variance of \$15.5 million when compared to the \$209.2 million in cash-funded capital (and zero ending balance) originally projected.