



King County

**Wastewater Treatment Division
2024 Sewer Rate Process – Sensitivity Analysis
MWPAAC
February 22, 2023**

Agenda

1. Current status
2. Drivers for 2024 sewer rate and 10-year forecast
3. Comparison of 2023 and preliminary 2024 Sewer Rate Forecast
4. Financial practices, policies, assumptions, and sensitivity analysis options

Appendix A: Operating Investments

Appendix B: WTD Debt Balances and Coverage

Appendix C: Debt Service Savings Through Refinancing and Defeasance

Important Upcoming Dates

March 7 – MWPAAC Rates and Finance meeting

March 15 – Draft MWPAAC sewer rate recommendation letter is emailed to MWPAAC members

March 22 – MWPAAC General meeting

- Briefing on WTD's 2024 Sewer Rate and Capacity Charge Proposal
- MWPAAC considers and takes action on its recommendation letter to King County Executive

Current status

Where We Were

- A summary of key rate drivers and policy topics were reviewed in late November 2022 to solicit early input on the sewer rate forecast for 2024-2033.

Where We Are Now

- Capital Project Managers (PMs) updated their project forecasts in mid-February. Updated project forecasts are used to update the capital spending plan.
- WTD's review of Operating Decision Packages is complete.
- Formal briefings on the 2024-2033 sewer rate forecast began in mid-February.

What This Is

- The preliminary 10-year (2024-2033) forecast for the 2024 Sewer Rate.
- Sensitivity analyses on the effect of various changes to policy or practice that could help reduce the severity of future rate increases.
 - These analyses use the 10-year (2023-2032) forecast for the Adopted 2023 Sewer Rate.

Drivers for 2024 sewer rate and 10-year forecast

- The operating forecast has not changed
 - Combined Sewer Overflow (CSO) projects – updated designs and schedules, more costs within 10-year forecast period
 - NPDES permit requirements – West Point renewal that includes other Seattle-based projects
 - Updated and new non-CSO project costs
 - Capital projects, arising from asset management needs, regulatory requirements, and capacity improvements
- Preliminary Capital Improvement Program (CIP) could add ~\$1B+ in cost between 2024 and 2032, beyond what was included in the 2023-2032 Sewer Rate Forecast
- Rates today are not affordable for the lowest income households; the problem will worsen.

Preliminary Changes to Capital Spending Forecasts		
Project Type	Driver	2023-2032 Impact ¹
CSO projects ^{2,3}	Revised designs and schedules	\$723m
New projects ⁴	Newly identified needs	\$172m
Updated projects	Formulation scope definition	\$246m
Updated forecasts of existing projects	PMs annual forecast review	TBD
Preliminary Changes to CIP		\$1,141m
Preliminary Changes after 85% Accomplishment Rate		\$970m
2023 Rate Forecast: CIP 2023-2032 (after 85% AR)		\$6,014m
2024 Preliminary Rate Forecast: CIP 2023-2032 (after 85% AR) ¹		\$6,984m
<i>% Increase</i>		<i>16.1%</i>

¹2033 was excluded from this table to facilitate an easier comparison of changes between the 2023 and 2024 Sewer Rate Forecasts

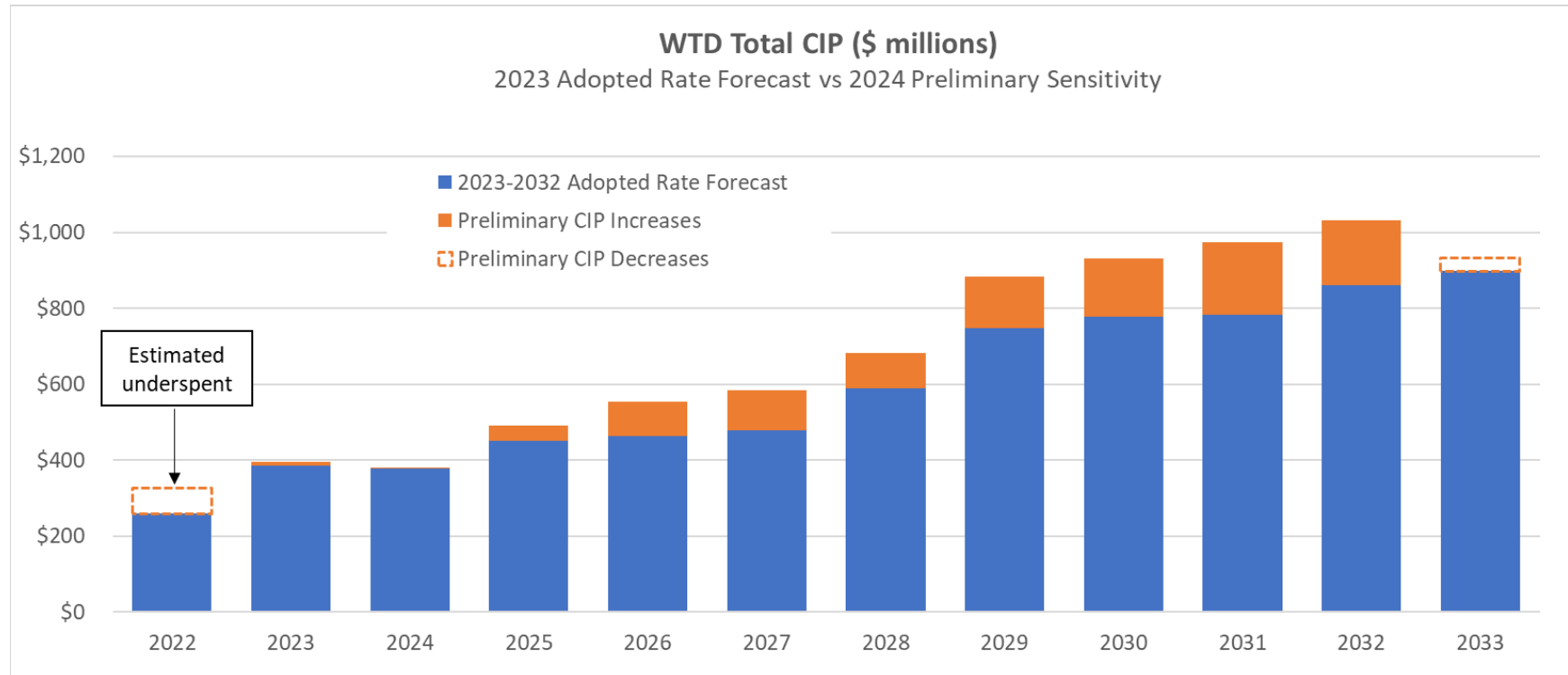
²Example timeline of 2040 completion used in the forecast anticipates CSO Consent Decree modifications. Actual timeline and project sequencing will be determined following completion of the Consent Decree negotiations

³CSO projects include Elliott West, Mouth of the Duwamish (MOD), University, Montlake, and Supplemental Compliance

⁴New projects include 4 in Asset Management, 1 in Capacity Improvements, 1 in Operational Enhancements, and 1 in Resource Recovery

Preliminary changes to 10-year CIP forecast

- Capital spending based on aggregated project forecasts (not resource constrained) and after 85% accomplishment rate.
- Changes (in orange) reflect revised CSO project designs and schedules, new project concepts, and updated project concepts.
- This graph is based on the 2023-2032 Sewer Rate Forecast with preliminary CIP updates; a full CIP update is scheduled to be complete mid-February.



Major categories within the CIP

Capital Portfolio Category	Description	Share (2023-2032 Forecast)
Asset Management – Conveyance	Refurbish/replace existing conveyance assets due to condition	12%
Asset Management - Plants	Refurb/replace existing vertical assets due to condition and obsolescence	28%
Capacity Improvement	New facilities to meet regional capacity demand (growth and/or inflow and infiltration)	22%
Operational Enhancements	Improve operability, reduce maintenance, reduce chemical usage and not related with other categories	2%
Planning & Administration	Program administration	1%
Resource Recovery	Energy conservation and/or increase, enhance, and improve the recovery of WTD's resources	4%
Regulatory	Required actions to satisfy a permit, an order, settlement, or a consent decree with a legal deadline.	26%
Resiliency	Improve survivability and operability of core assets against natural disasters and climate change	5%
Total - CIP		100%

Comparison of 2023 and preliminary 2024 Sewer Rate Forecast

2023 Rate and 10-year Forecast (Reference)

2023 Adopted Rate	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
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	
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	

2024 Preliminary Rate Sensitivity and 10-year Forecast

2024 Preliminary Sensitivity	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Rate Increase %	5.75%	6.75%	6.75%	6.75%	6.75%	11.25%	11.25%	11.25%	11.25%	11.25%	11.25%
Monthly Sewer Rate	\$52.11	\$55.63	\$59.39	\$63.40	\$67.68	\$75.30	\$83.78	\$93.21	\$103.70	\$115.37	\$128.35
All-In Debt Service Coverage	1.56x	1.57x	1.55x	1.55x	1.56x	1.61x	1.66x	1.68x	1.74x	1.79x	1.96x

Considerations for WTD in developing the 2024 recommended sewer rate

- CSO investment assumptions
- Asset Management investment assumptions
- Capacity Increase investment assumptions
- Financial practices, policies, and assumptions such as original cost depreciation

Longer-term mechanisms to address sewer rate growth

- Identify savings opportunities in projects and operating costs
- Employ collaborative delivery mechanisms to reduce staff growth
- Secure an objective, outside review of our capital program
 - Design and delivery practices
 - Cost estimation and financial assumptions
- Monitor/adjust financial assumptions and approaches

Financial practices, policies, and assumptions sensitivity analysis options

Various sensitivity analysis options were tested to understand the effect on the rate forecast. Each sensitivity uses the current 2023-2032 forecast as a baseline to facilitate comparisons.

Financial Practices and Policies:

- CIP Cash Funding Strategy
- Rate Pattern (Smoothing) Alternatives
- Debt Strategies

Financial Assumptions:

- Accomplishment Rate (AR)
- Debt Interest Rate

Financial Practice: CIP Cash Funding Strategy

Below are three forecasts using different funding strategies. While funding 40% of CIP with cash is reasonable and prudent under certain conditions, the practice may not be sustainable under a sharply growing CIP forecast with high uncertainty as discussed in the CIP forecast section. Recent experience also has shown that inflation is outpacing interest rates, which would suggest that borrowing more rather than deferring spending would reduce long term costs (this relationship could continue evolving in the future though).

Cash-Funding Alternatives and Rate Impacts ¹	2023 Forecast (Reference)	Original Cost (OC) Depreciation (approximates 36% of CIP)	30% Cash Funding
2024-2027 Annual Rate Increases	5.75%	5.75%	4.75%
2028-2032 Annual Rate Increases	9.00%	7.25%	7.00%
Sewer Rate in 2024	\$55.11	\$55.11	\$54.59
Sewer Rate in 2032	\$100.33	\$92.53	\$88.07

2023 Adopted Rate – 40% Cash Funding (Current practice)

2023 Adopted Rate	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
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

2023 Adopted Rate – Original Cost Depreciation (Approximates 36% cash funding; decreases with growing CIP)

2023 OC Depreciation	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	5.75%	5.75%	5.75%	5.75%	7.25%	7.25%	7.25%	7.25%	7.25%
Monthly Sewer Rate	\$52.11	\$55.11	\$58.28	\$61.64	\$65.19	\$69.92	\$74.99	\$80.43	\$86.27	\$92.53
All-In Debt Service Coverage	1.59x	1.63x	1.64x	1.65x	1.67x	1.66x	1.65x	1.59x	1.56x	1.53x

2023 Adopted Rate – 30% Cash Funding

2023 30% Cash-Funding	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	4.75%	4.75%	4.75%	4.75%	7.00%	7.00%	7.00%	7.00%	7.00%
Monthly Sewer Rate	\$52.11	\$54.59	\$57.19	\$59.91	\$62.76	\$67.16	\$71.87	\$76.91	\$82.30	\$88.07
All-In Debt Service Coverage	1.59x	1.62x	1.60x	1.59x	1.58x	1.57x	1.55x	1.48x	1.44x	1.40x

¹ Please see **Appendix B: WTD Debt Balances and Coverage** for charts illustrating the change in debt balance and debt services for each option.

Financial Practices and Policies:

Rate Pattern (Smoothing) Alternatives

- WTD's current rate pattern implements rate increases as flat percent increases, over two periods, in the 10-year forecast. Near term rates can be lowered, at the expense of later years, while still meeting cash funding goals over the 10-year forecast. The example below shows a three-period implementation pattern. Staff observe that shifting costs to later years is contrary to MWPAAC direction to date.

3-Step Smoothing	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	5.25%	5.25%	5.25%	7.25%	7.25%	7.25%	11.00%	11.00%	11.00%
Monthly Sewer Rate	\$52.11	\$54.85	\$57.73	\$60.77	\$65.18	\$69.91	\$74.98	\$83.23	\$92.39	\$102.56
All-In Debt Service Coverage	1.59x	1.62x	1.62x	1.62x	1.66x	1.66x	1.65x	1.65x	1.69x	1.73x

Debt Strategies

- WTD is looking into different debt strategies that could lower near term debt service and better manage CIP peaks. This assessment will be completed later this year after the current rate cycle.

Financial Assumptions:

Accomplishment Rate (AR)

- Historically, WTD has used an 85% AR for its capital spending forecasts when setting the sewer rate, which is a conservative assumption. AR Table 1 below, shows our actual AR from 2015 to 2022.

AR Table 1: History

Historical Accomplishment Rate (AR)	2015	2016	2017	2018	2019	2020	2021	2022 Est.
Capital Improvement Plan (CIP) ¹	\$191	\$207	\$211	\$239	\$252	\$247	\$291	\$360
Actual Annual CIP Spend²	\$160	\$168	\$188	\$231	\$211	\$199	\$201	\$257
Actual AR	84%	81%	89%	97%	84%	81%	69%	71%

¹Spending plan as recorded in PRISM after adjustments to the PMs mid-February updates

²Includes end-of-year accruals. Not the same as cash capital expenditures in each year

- Starting with the 2023 sewer rate process, WTD also attempted to capture the short-term constraints to ramping up capital expenditures. Based on the historical relationship between capital output and staffing/consultant resources, WTD created a “resource-constrained” CIP forecast to be used for sewer rate setting purposes (AR Table 2 below).
- This approach assumes that expenditures in years when the actual AR is below 85% are made up in subsequent years with an AR rate higher than 85%. As a long-term average, 85% appears to be a reasonable assumption based on historical CIP performance.

AR Table 2: Forecast

Forecast from Adopted 2023 Sewer Rate	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2023-2032
Aggregated CIP Project Forecasts	\$445	\$441	\$529	\$546	\$562	\$692	\$878	\$916	\$921	\$1,012	\$6,942
Resource-Constrained CIP Distribution at 85% AR	\$307	\$326	\$381	\$429	\$503	\$633	\$752	\$849	\$928	\$908	\$6,014
<i>Effective AR</i>	<i>69%</i>	<i>74%</i>	<i>72%</i>	<i>79%</i>	<i>89%</i>	<i>92%</i>	<i>86%</i>	<i>93%</i>	<i>101%</i>	<i>90%</i>	<i>87%</i>

Financial Assumptions:

Debt Interest Rate

- WTD assumes a 5% interest rate for future debt issuances, based on the highest interest rate its revenue bonds have been sold at in the last 10 years. Staff are engaging WTD's financial advisor for their opinion on the reasonableness of this assumption. Lowering the interest rate assumptions from 5% to 4.5% reduces projected sewer rate increases by 0.25 percentage points per year.

4.5% Interest Rate	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Rate Increase %	5.75%	5.50%	5.50%	5.50%	5.50%	8.75%	8.75%	8.75%	8.75%	8.75%
Monthly Sewer Rate	\$52.11	\$54.98	\$58.01	\$61.21	\$64.58	\$70.24	\$76.39	\$83.08	\$90.35	\$98.26
All-In Debt Service Coverage	1.60x	1.64x	1.64x	1.66x	1.68x	1.70x	1.73x	1.71x	1.72x	1.72x

Appendix A: Operating Investments

During the sewer rate development process, WTD prioritized \$9.1 million dollars (including 73 FTEs) of potential 2024 operational investments using criteria that categorized the investments based on operational need: Urgent, Necessary and Desirable. They were then categorized into WTD's five goals that were shared with MWPAAC, as follows:

Goal One: Respond to increasing regulatory requirements

- Staffing investments:
 - Source Control Specialist to coordinate and monitor sources of contaminants of emerging concern (CEC's) that come into the wastewater treatment stream.
 - Partial funding of a Toxicologist (housed in King County Public Health) that will support DNRP agencies in assessing the exposure, risks, and impacts of CEC's including PFAS.
 - Partial funding of a Water Quality Planning/Program Manager (housed in Water and Land Resources Division) that will implement technical studies and projects on PFAS.
- Operating Cost is ~\$4.0M.

Goal Two: Increase reliability at off-site locations and West Point Treatment Plant

- Vehicle/equipment investments:
 - Non-CDL vector truck to East Offsite to allow staff to better keep up with demand to clean catch basins and jet lines at all locations.
 - Mechanic equipment truck, instrument and electrical van, and operator truck to support Offsite Pump Station locations.
- Operating Cost is ~\$0.8M.

Goal Three: Respond to growth-related demand on the system

- Staffing investments:
 - Expansion (30 FTE positions) of Project Planning and Delivery section to equip all units to better support the expanded capital program.

- 10 FTE positions spread across all units of Environmental and Community Services section to oversee expanded staff and capital project workload.
- Operating Cost is ~\$2.1M.

Goal Four: Address the most critical asset management risks

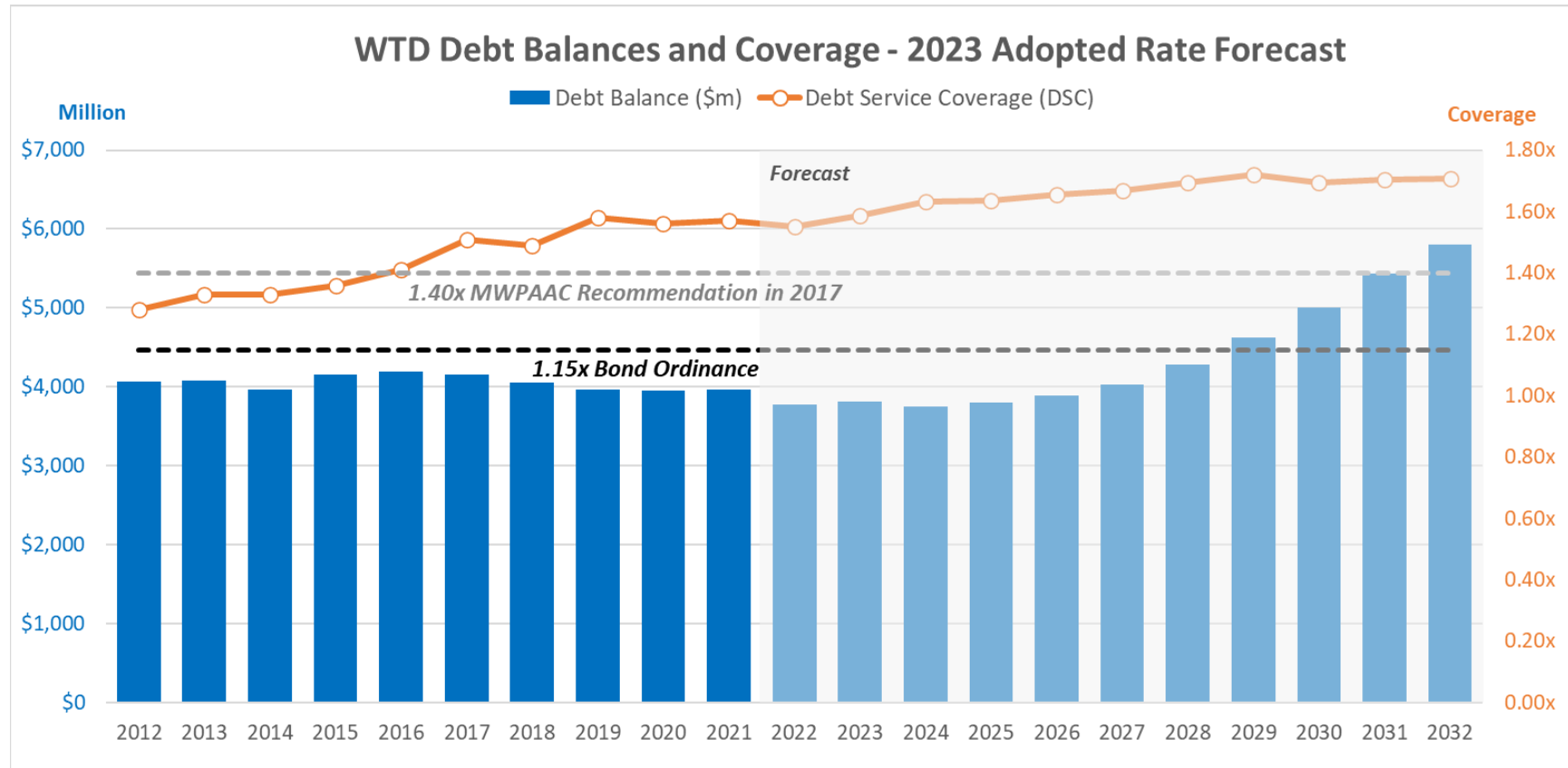
- Staffing investments:
 - 2 FTE positions to address aging infrastructure that will be assigned to current known unfunded high-priority and medium-priority Asset Management backlog projects within the next 6-year CIP plan period.
 - Add one additional FTE to Day Operations to better support preventative maintenance activities completed by plant staff and to fully support design, construction, and implementation of capital projects in the facility.
- Operating Cost is ~\$1.4M.

Goal Five: Respond to King County priorities:

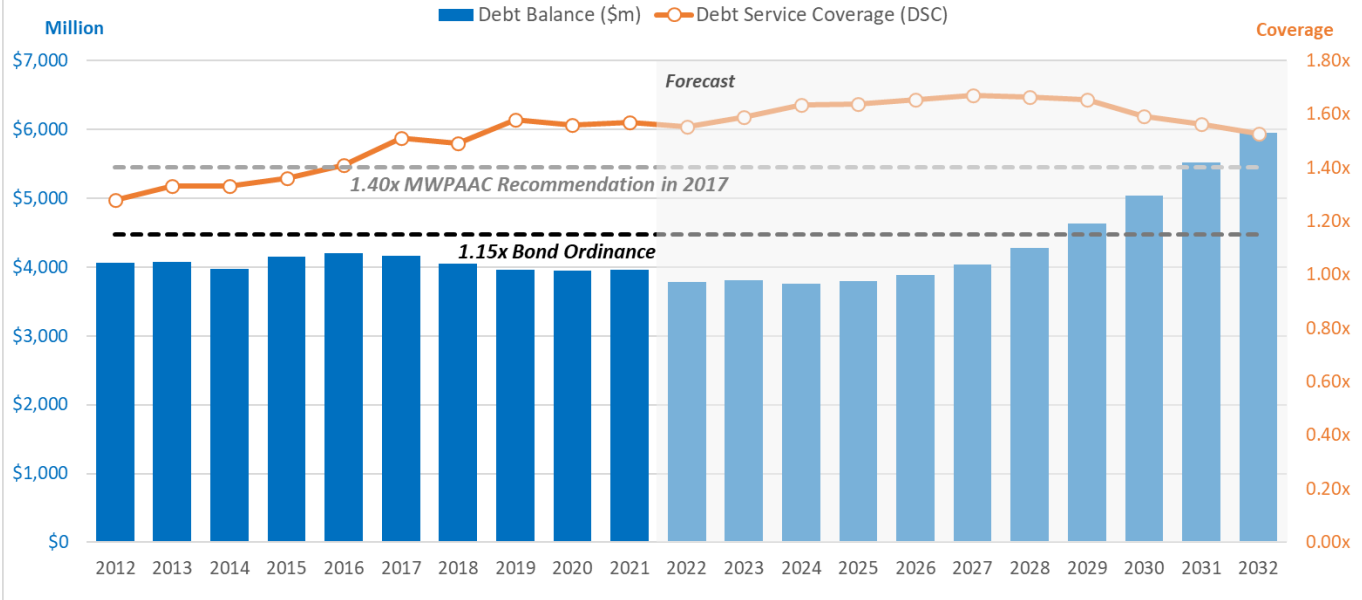
- Staffing investments:
 - Recycled Water Program Manager to coordinate policy and operational needs, deliver on Strategic Climate Action Plan initiatives and advance recycled water strategic planning actions.
 - WTD-wide Community Based Organization Partnership Program Manager to achieve more efficient, consistent, sustainable, and high-quality community partnerships and engagement outcomes, with the recognition that, historically, BIPOC, immigrant and refugee communities, low-income communities and people with disabilities have been underrepresented in County decisions that impact their communities, including water quality services provided by WTD.
- Operating Cost is ~\$0.8M.

Appendix B: WTD Debt Balances and Coverage

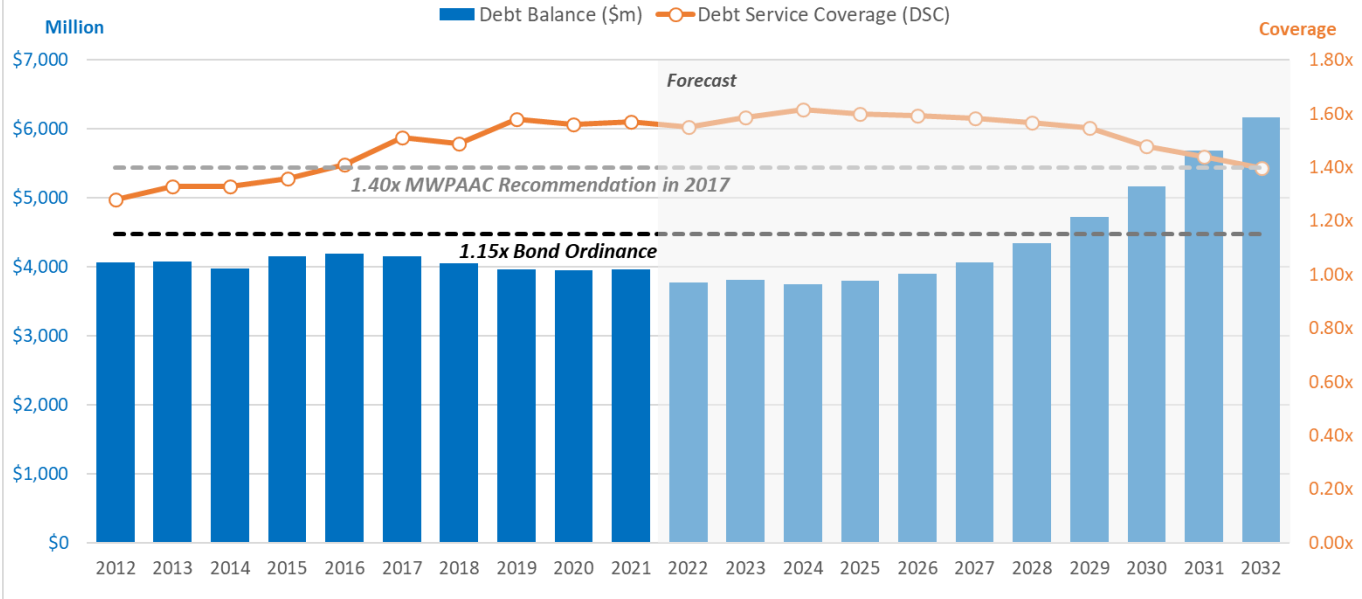
WTD debt balance has remained stable for the last 10 years, and it is expected to be around \$200 million lower in 2022 than it was in 2012. At the same time, WTD debt service coverage has been steadily increasing every year and has stabilized at around 1.55 times. This healthy level of debt service coverage is significantly higher than 1.15x, the minimum coverage adopted by RWQC (Resolution RWQ 2001-0002) and in WTD Bond Ordinances, and comfortably higher than the minimum recommended by MWPAAC's Debt Review Team in December of 2015 (1.40x).



WTD Debt Balances and Coverage - 2023 Rate Forecast & OC Depreciation



WTD Debt Balances and Coverage - 2023 Rate Forecast & 30% Cash Funding



Appendix C: Debt Service Savings Through Refinancing and Defeasance

Since 2010, WTD has produced an estimated \$759 million in total savings through refinancing and defeasing high interest debt. However, we can more clearly illustrate the impact of the savings by focusing on the next 10-year period. In the chart below, between 2023 and 2032, WTD will save \$334 million in total debt service, which equates to an average annual savings of \$33 million. In other words, these savings have effectively reduced the sewer rate by more than three dollars on an annual basis, returning value back to the ratepayer.

