King County

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

Meeting Agenda

Regional Water Quality Committee

Councilmembers:
Claudia Balducci, Chair
Reagan Dunn, Rhonda Lewis

Sound Cities Association: Vice Chair, Laura Mork, Shoreline; Dave Hamilton, Bellevue; Sarah Moore, Burien; Jessica Rossman, Medina

Alternates: Hanan Amer, Auburn; Melissa Stuart, Redmond

Sewer/Water Districts: Chuck Clarke, Woodinville Water District; Lloyd Warren, Sammamish Plateau Water District
Alternate: Ryika Hooshangi, Sammamish Plateau Water

City of Seattle: Joy Hollingsworth, Eddie Lin
Alternate: Rob Saka

Non-Voting Member: John McClellan, Metropolitan Water Pollution Abatement Advisory Committee

Lead Staff: Jenny Giambattista (206-477-0879)
Committee Clerk: Marka Steadman (206-477-0887)

3:00 PM **Wednesday, March 4, 2026** **Hybrid Meeting**

Hybrid Meetings: Attend the King County Council committee meetings in person in Council Chambers (Room 1001), 516 3rd Avenue in Seattle, or through remote access. Details on how to attend and/or to provide comment remotely are listed below.

Pursuant to K.C.C. 1.24.035 A. and F., this meeting is also noticed as a meeting of the Metropolitan King County Council, whose agenda is limited to the committee business. In this meeting only the rules and procedures applicable to committees apply and not those applicable to full council meetings.

HOW TO PROVIDE PUBLIC COMMENT: The Regional Water Quality Committee values community input and looks forward to hearing from you on agenda items.

Sign language and interpreter services can be arranged given sufficient notice (206-848-0355).
TTY Number - TTY 711.
Council Chambers is equipped with a hearing loop, which provides a wireless signal that is picked up by a hearing aid when it is set to 'T' (Telecoil) setting.

The Committee will accept public comment on items on today's agenda in writing. You may do so by submitting your written comments to kcccomitt@kingcounty.gov. If your comments are submitted before 2:00 p.m. on the day of the meeting, your comments will be distributed to the committee members and appropriate staff prior to the meeting.

HOW TO WATCH/LISTEN TO THE MEETING REMOTELY: There are three ways to watch or listen to the meeting:
1) Stream online via this link: www.kingcounty.gov/kctv, or input the link web address into your web browser.
2) Watch King County TV on Comcast Channel 22 and 322(HD) and Astound Broadband Channels 22 and 711(HD).
3) Listen to the meeting by telephone.

Dial: 1 253 215 8782
Webinar ID: 827 1536 1574

To help us manage the meeting, please use the Livestream or King County TV options listed above, if possible, to watch or listen to the meeting.

1. **Call to Order**

2. **Roll Call**

To show a PDF of the written materials for an agenda item, click on the agenda item below.

3. **Approval of Minutes**

February 4, 2026, meeting ***p. 4***

4. **Chair's Report**

5. **MWPAAC Report**

6. **Wastewater Treatment Division Report**

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Briefing

7. Briefing No. 2026-B0032 **p. 7**

Regional Wastewater Services Plan Update: Proviso Response and Initial Analysis of Policy Questions Related to Separated System Conveyance

Darren Greve, Government Relations Administrator, Wastewater Treatment Division
Janice Johnson, RWSP Update Program Manager, Wastewater Treatment Division
Johnson Nguyen, Senior Planner, Wastewater Treatment Division
Katie Stanchak, Senior Planner, Wastewater Treatment Division
Luke Slaughterbeck, Senior Financial Analyst, Wastewater Treatment Division

8. Briefing No. 2026-B0033 **p. 184**

Wastewater Treatment Division's (WTD) 2027 Sewer Rate and Capacity Charge Recommendations and Options

Kamuron Gurol, Director, Wastewater Treatment Division
Caitlyn Hall, Interim Chief Financial Officer, Wastewater Treatment Division
Luke Slaughterbeck, Senior Financial Analyst, Wastewater Treatment Division
Peter Sutton, Capital Portfolio Analyst, Wastewater Treatment Division

9. Briefing No. 2026-B0034 **p. 218**

Briefing on Pending Ordinance Related to Proposed Capacity Charge Code Changes

Luke Slaughterbeck, Senior Financial Analyst, Wastewater Treatment Division

10. Briefing No. 2026-B0002 **p. 234**

Discussion of 2026 Regional Water Quality Committee Work Program

Jenny Giambattista, Council staff

Other Business

Adjournment

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Meeting Minutes

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Lead Staff: Jenny Giambattista (206-477-0879)
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3:00 PM | **Wednesday, February 4, 2026** | **Hybrid Meeting**

DRAFT MINUTES

1. Call to Order

Chair Balducci called the meeting to order at 3:02 p.m.

2. Roll Call

Present: 12 - Balducci, Clarke, Dunn, Hollingsworth, Lewis, Moore, McClellan, Mork, Rossman, Amer, Hooshangi and Stuart

Excused: 3 - Hamilton, Rivera and Warren

3. Approval of Minutes

Council President Stuart moved approval of the January 7, 2026, meeting minutes. There being no objections, the minutes were approved.

4. Chair's Report

Chair Balducci noted an article included in the meeting packet regarding the senior gardener at the South Treatment Plant and an upcoming tour opportunity at the same. Also noted were the topics to be covered in the meeting.

5. MWPAAC Report

John McClellan, MWPAAC Chair, reported on election results at the January 28, 2026, general meeting and a presentation that provided an assessment of the Wastewater Treatment Division's financial model, which it is hoped can be shared with RWQC in some form.

6. Wastewater Treatment Division (WTD) Report

Kamuron Gurol, Director, Wastewater Treatment Division, commented on the following: factors and scenarios impacting the initial 2027 sewer rate and 20-year rate forecast to be presented today; recent State Department of Ecology modifications to their nutrient regulatory approach and potential impacts on King County projects; and a rebate check received from the IRS related to the West Point Power Quality Project.

Briefing

7. Briefing No. 2026-B0018

An Overview of Water Quality in Puget Sound

Beth Ledoux, Environmental Program, Managing Supervisor, Water and Land Resources Division, King County Department of Natural Resources and Parks; briefed the committee and answered questions from the members. Kamuron Gurol, Director, Wastewater Treatment Division, answered questions from the members.

This matter was Presented

8. Briefing No. 2026-B0019

Wastewater Treatment Division's Preliminary 2027 Sewer Rate and Capacity Charge

Kamuron Gurol, Director, Wastewater Treatment Division (WTD); and Caitlyn Hall, Interim Chief Financial Officer, WTD, King County Department of Natural Resources and Parks (DNRP); briefed the committee and answered questions from the members.

This matter was Presented

9. Briefing No. 2026-B0002

Discussion of 2026 Regional Water Quality Committee Work Program

Chair Balducci provided brief comments related to the committee's proposed work plan.

This matter was Deferred

Other Business

There was no further business to come before the committee.

Adjournment

The meeting was adjourned at 4:56 p.m.

Approved this _____ day of _____

Clerk's Signature

King County

Metropolitan King County Council
Regional Water Quality Committee

STAFF REPORT

Agenda Item:	7	**Name:**	Jenny Giambattista and Andy Micklow
Proposed No.:	2026-B0032	**Date:**	March 4, 2026

SUBJECT

Briefing on Proposed Motion 2026-0038 which would acknowledge receipt of a plan describing the proposed analysis to be completed for the policy questions identified in the RWSP Update scope document. The plan was prepared in accordance with the 2026-2027 budget ordinance, Ordinance 20023, Section 115, Proviso P1.

SUMMARY

The Regional Wastewater Services Plan (RWSP) Update is a large planning project to update the RWSP, which was adopted by ordinance in 1999. The RWSP serves as King County's comprehensive wastewater plan. The 2026-2027 budget includes an appropriation of an additional $7.4 million for this project

In 2025, the Regional Water Quality Committee (RWQC) adopted resolutions[1] in support of the scope and charter for the RWSP Update. At the request of RWQC, both the scope and the charter include the same list of policy questions that are to be analyzed as part of the RWSP Update.

In order to ensure that the policy analysis is completed, the Council included a proviso[2] in the 2026-2027 Adopted Budget requesting that the Wastewater Treatment Division develop a plan describing the proposed analysis to be completed for the policy questions identified in the scope document for the RWSP Update. There is also an additional proviso[3] restricting the expenditure of the $7.4 million appropriation in the 2026-2027 Adopted Budget for the RWSP Update until the motion requested by the first proviso is approved by the Council.

This motion was transmitted on February 26, 2026 and it is likely to be referred to the Transportation, Economy, and Environment (TrEE) Committee. Pending referral, this is tentatively scheduled for consideration by the TrEE committee on May 19, 2026.

[1] Resolution RWQC2025-01 and Resolution RWQC2025-02
[2] Ordinance 20023, Section 115, Proviso P1
[3] Ordinance 20023, Section 132, Proviso P3

At today's briefing, WTD staff will present the policy analysis for the first three policy questions related to separated system conveyance WTD has analyzed. These questions are:

- How should Inflow and Infiltration (I/I) be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I?
- Given the uncertainties in future growth rates reported by Washington state and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?
- How should the conversion of on-site septic systems to sewer in the service area be managed and should WTD implement programs to encourage conversion within the service area.

WTD is seeking feedback on this initial analysis, largely focused on whether the information and options presented sufficiently address the policy questions.

Staff analysis is ongoing.

BACKGROUND

Regional Wastewater Services Plan Update. The Regional Wastewater Services Plan (RWSP) was adopted by Ordinance 13680 in November 1999 to ensure the continuation of high-quality wastewater treatment services through 2030. The RWSP outlines programs and projects through 2030 to increase wastewater system capacity and function; gives guidance on recovering and recycling beneficial resources from the wastewater treatment process; and provides direction on protecting and monitoring water quality and meeting permit conditions. Many of the major projects outlined in the RWSP have been completed as the plan reaches the end of its intended planning period of 2030. The process to update the RWSP started in 2019 and was paused by WTD at the end of 2021 to consider the feedback it had received. WTD re-launched the planning effort in 2024 to update the Regional Wastewater Services Plan.

The Regional Water Quality Committee (RWQC) has been closely following the launch of the RWSP Update and has adopted resolutions in support of the RWSP's scope and charter. In early 2025, RWQC adopted resolutions[4] in support of the scope and charter for the RWSP. RWQC has expressed interest in addressing the long-term policy questions for the regional wastewater system and included a set of policy questions in both the scope and charter documents to be analyzed as part of the RWSP Update. Both the scope and charter have the same set of policy questions and are included in Table 1.

[4] Resolution RWQC 2025-01 and Resolution RWQC 2025-02

Table 1.
Major Policy Questions in the RWSP Scope and Charter to be Analyzed in RWSP Update

Challenges and Opportunities – Topics/Themes	Major Policy Questions to be Analyzed in RWSP Update
Regulatory Landscape CSO, nutrients, per- and polyfluoroalkyl substances (PFAS) and other contaminants of emerging concern (CECs), current and existing requirements, new and anticipated requirements, opportunities for larger regional partnerships to address water concerns, requirement to comply with future total maximum daily loads	Should the County evaluate costs and plan for levels of treatment beyond current legal requirements? How should the County anticipate, engage with, and plan for future nutrient permit requirements, regulations related to CECs such as PFAS, or other future regulatory changes? What upstream or source control actions should the region undertake to prevent contaminants and reduce costs? How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?
Capacity Demands I/I, population growth, conveyance and treatment capacity demand, including on-site septic systems in urban areas	Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth? To what extent should WTD prioritize use of existing facility sites vs. acquiring new property to accommodate future treatment needs (including capacity)? Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach? How should I/I be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I? How should the conversion of on-site septic systems to sewers in the service area be managed and should WTD implement programs to encourage conversion within the service area?
Infrastructure Resiliency Asset management, maintenance, improvements,	How proactive vs. reactive should WTD be when deciding to refurbish or replace aging infrastructure? What level of resiliency should WTD plan for regarding

Challenges and Opportunities – Topics/Themes	Major Policy Questions to be Analyzed in RWSP Update
renewal, replacement, labor and supply chain disruptions, natural hazard resiliency	seismic and other natural hazards to avoid or minimize risks? What level of risk tolerance should WTD accept? How can these considerations be best informed by the long-term capital motion work in progress? What level of redundancy of critical systems should WTD have?
Equity and Social Justice Distributional equity, WTD role in safeguarding public health	What actions should WTD take to increase equity and social justice for the regional wastewater system? How will equity and social justice be interwoven in the update: community engagement, rate structure analysis, etc.? How should the regional wastewater system address environmental justice concerns as described in the 2021 Healthy Environment for All Act[5], such as addressing the disproportionate environmental health impacts of vulnerable populations and overburdened communities?
Climate Change Mitigation – green building, eliminating/reducing fossil fuel use, energy and water efficiency, renewable energy, materials management, tree planting, etc. Adaptation – sea level rise, more extreme heat, increased storm intensities, wildfire smoke, increased river flooding, etc.	Should existing wastewater policy language (KCC 28.86) be revised to specifically call out planning for future climate conditions in addition to population growth and other environmental factors? How much should WTD reduce energy use and reduce greenhouse gas emissions? How should WTD prepare and adapt to climate impacts (e.g., precipitation/storm intensities, sea level rise, river flooding, etc.) in line with the Strategic Climate Action Plan? What level of climate impact risk tolerance should WTD plan for to avoid or minimize risks to the system?
Resource Recovery Recycled water, biosolids, energy capture	Energy production and heat recovery – Should WTD be expanding its efforts to capture energy and heat? If so, at what level of effort? Biosolids – Should WTD further expand its efforts to develop Class A biosolids? What changes are needed to biosolid recovery policies to get to Class A? Recycled water – Under what circumstances should the

[5] RCW 70.A.02

Challenges and Opportunities – Topics/Themes	Major Policy Questions to be Analyzed in RWSP Update
	region expand the use of reclaimed water? Which uses (e.g., environmental benefits, groundwater recharge, industrial uses, irrigation) are most appropriate? How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?
Finance / Affordability Rate equity, fairness, and structure, capital financing and debt management, financial planning and revenue sufficiency	How will WTD measure affordability for contract agencies and ratepayers? Is there a better rate structure for the sewer rate? (Note: WTD has identified a work plan to further evaluate the residential customer equivalent conversion factor of 750 cubic feet per month.) Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery rate structures to reflect other system impacts? Should WTD update the rate structure for the capacity charge to align with current industry standards? (Note: The capacity charge rate structure was updated in 2021. A capacity charge methodology study is in progress.) What other rate relief approaches should WTD implement to improve affordability for those who may struggle to pay their sewer bill?
Relationship to Contracts	Are major policy updates aligned with component agency contracts? How will WTD implement the RWSP Update consistent with direction and requirements expected of contract agencies?

Budget actions. The 2026-2027 budget includes an appropriation of an additional[6] $7.4 million for this project. The 2026-2027 Adopted Budget includes a proviso[7] requesting the Wastewater Treatment Division develop a plan describing the proposed analysis to be completed for the policy questions identified in the RWSP Update, to be transmitted by March 1, 2026.

[6] To date, total appropriation for the RWSP Update is $39.4. (It was previously referred to Clean Water Plan.) Total spending through December 2025 is $24.7 million.
[7] Ordinance 20023, Section 115, Proviso P1

P1 PROVIDED THAT:

Of this appropriation, $250,000 shall not be expended or encumbered until the executive transmits a plan describing the proposed analysis to be completed for the policy questions identified in the Regional Wastewater Services Plan Update scope document as adopted by regional water quality committee resolution 2025-01, and a motion acknowledging receipt of the plan, and motion acknowledging receipt of the plan is passed by the council. The motion should reference the subject matter, the proviso's ordinance, ordinance section, and proviso number in both the title and body of the motion.

A. The plan shall be developed with input from the regional water quality committee and describe how the policy questions identified in the Regional Water Services Plan Update Scope document as adopted by the regional water quality committee resolution 2025-01 will be analyzed, including but not limited to:

1. A framework for the analysis of the policy questions which identifies the topics that shall be addressed as part of policy analysis;

2. The proposed format for reporting the analysis; specifying whether the analysis will be available as standalone reports presentations, or in other formats;

3. For each policy question, how the policy analysis will inform the RWSP Update;

4. Timelines for the analysis for each policy question;

5. A problem statement corresponding to each policy question; and

6. In instances where the analysis of a policy question is anticipated to occur in more than one section of the Regional Wastewater Services Plan Update, the plan required by this proviso shall identify how the complete analysis for the policy question will be addressed.

B. The plan shall also include policy analysis for at least two policy questions from the RWSP scope document as adopted by the regional water quality committee resolution 2025-01. The analysis of these policy questions is intended to serve as a proof of concept for the level of analysis of the remaining policy questions.

C. The plan may also propose modifications to the list of policy questions identified in the Regional Water Services Plan scope document, and, if modifications are proposed, the topics in subsections A. and B. of this proviso shall be discussed in relation to the alternate proposal.

The executive should electronically file the plan and motion required by this proviso by March 1, 2026, with the clerk of the council, who shall retain an electronic copy and provide an electronic copy to all councilmembers, the council chief of staff, and the lead staff for the transportation, economy, and environment committee or its successor, and the lead staff for the regional water quality committee or its successor.

There's also an additional proviso[8] restricting the expenditure of the $7.4 million appropriation in the 2026-2027 Adopted Budget for the RWSP Update until the motion requested by the first proviso is approved by the Council.

P3 PROVIDED FURTHER THAT:

Of the appropriation for capital project 1134066, Regional Wastewater Services Plan (RWSP) Update, $7,382,000 shall not be expended or encumbered until the council passes the motion required by section 115, Proviso P1, of this ordinance.

[8] Ordinance 20023, Section 132, Proviso P3

ANALYSIS

The report and accompanying motion were transmitted on February 26, 2026. Staff analysis is ongoing.

INVITED

- Darren Greve, Government Relations Administrator, Wastewater Treatment Division
- Janice Johnson, RWSP Update Program Manager, Wastewater Treatment Division
- Johnson Nguyen, Senior Planner, Wastewater Treatment Division
- Katie Stanchak, Senior Planner, Wastewater Treatment Division
- Luke Slaughterbeck, Senior Financial Analyst, Wastewater Treatment Division

ATTACHMENTS

1. RWSP Update: Separated System Conveyance Policy Questions and Analysis
2. Policy Memo 1 I and I
3. Policy Memo 2 Population Growth and Capacity
4. Policy Memo 3 Onsite Septic Conversion
5. Proposed Motion 2026-0038 (and its attachments)
6. Transmittal Letter

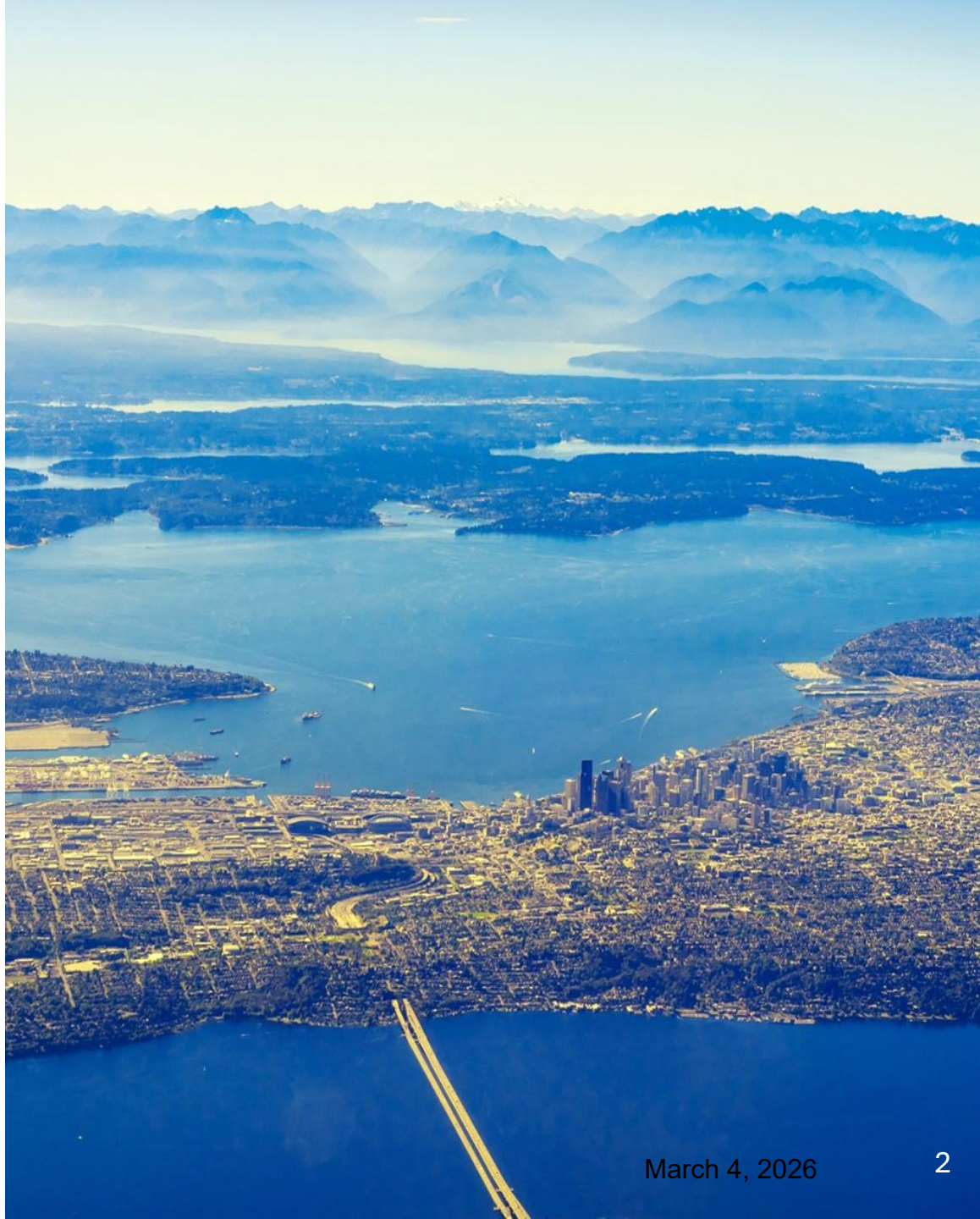
Regional Wastewater Services Plan (RWSP) Update Separated System Conveyance Policy Questions & Analyses

Presented to the Regional Water Quality Committee

March 4, 2026

Purpose

- No decisions today
- Context and background for policy questions related to Separated System Conveyance topic of the RWSP
- Share range of policy options to answer the questions
- Gather feedback from RWQC
- Any policy options we missed that you want evaluated ?



RWSP Update Schedule for Policy Analysis (from Proviso Report)

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Group #1 **Separated System Conveyance** Step #1: March 2026 Step #2: November 2026 (Tentative) Elements that relate to the Relationship to Contracts and Equity and Social Justice will be addressed as part of each policy memo. See Group #10 and Group #11 for details	1	1	How should I/I be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I?	Separated System Conveyance (including I/I)
		25	Is there a better rate structure for the sewer rate?	Finance/Affordability
		26	Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery structures to reflect other system impacts?	Finance/Affordability
	2	2	Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?	Separated System Conveyance (including I/I) (see also: Treatment)
	3	3	How should the conversion of on-site septic systems to sewer in the service area be managed and should WTD implement programs to encourage conversion within the service area?	Separated System Conveyance (including I/I)

Today's Focus

Included in meeting packet

Policy Memo Contents

Step #1 - Today

- Problem Statement
- Contextual and Baseline Information
- Example Practices From Industry
- Policy Issues, Challenges, and Opportunities
- Policy Options

- Current Conditions
- Current Policies, Code, Contract, Practice
- System "Must-Dos"
- Summary of Science

- Interested and Affected Parties
- Rate Structure Considerations
- Relationship To Contracts
- Equity & Social Justice Impacts

Policy Memo Contents

Step #2 – November 2026 (Tentative)

Planning-Level Cost Estimates of Policy Options

Evaluation of Policy Option Tradeoffs & Outcomes

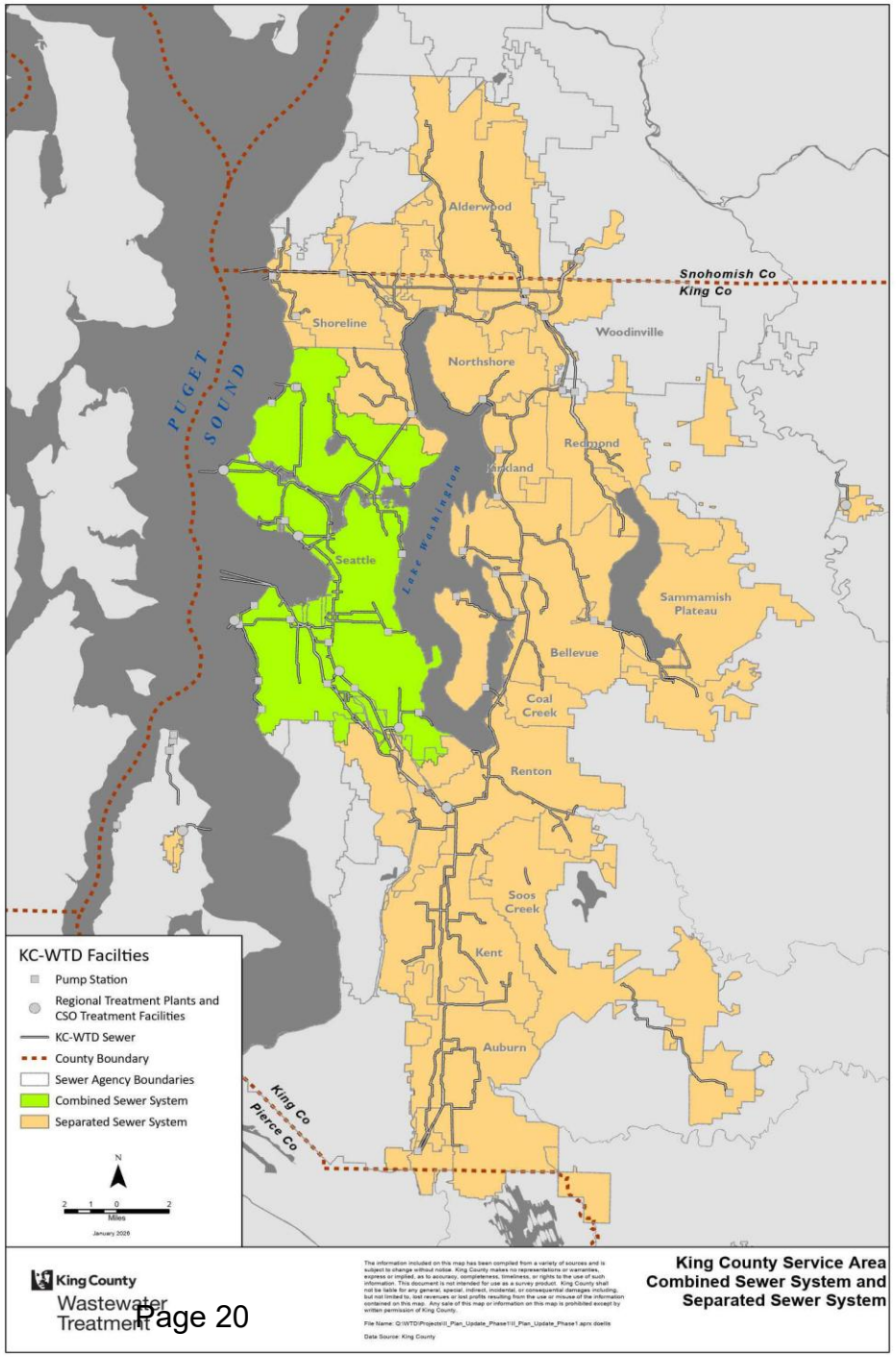
Policy Questions on Infiltration/Inflow (I/I)

1. How should I/I be managed and how can costs be fairly apportioned?

2. Should system capacity be expanded to account for increases in I/I?

3. Should I/I policies change to support reducing the capacity needed for I/I?

Regional Separated Sewer System

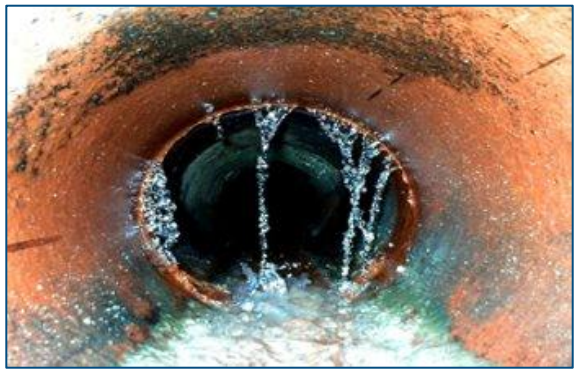


What is infiltration and inflow (I/I)?

I/I is excess water that flows into sanitary sewer pipes from groundwater and stormwater.

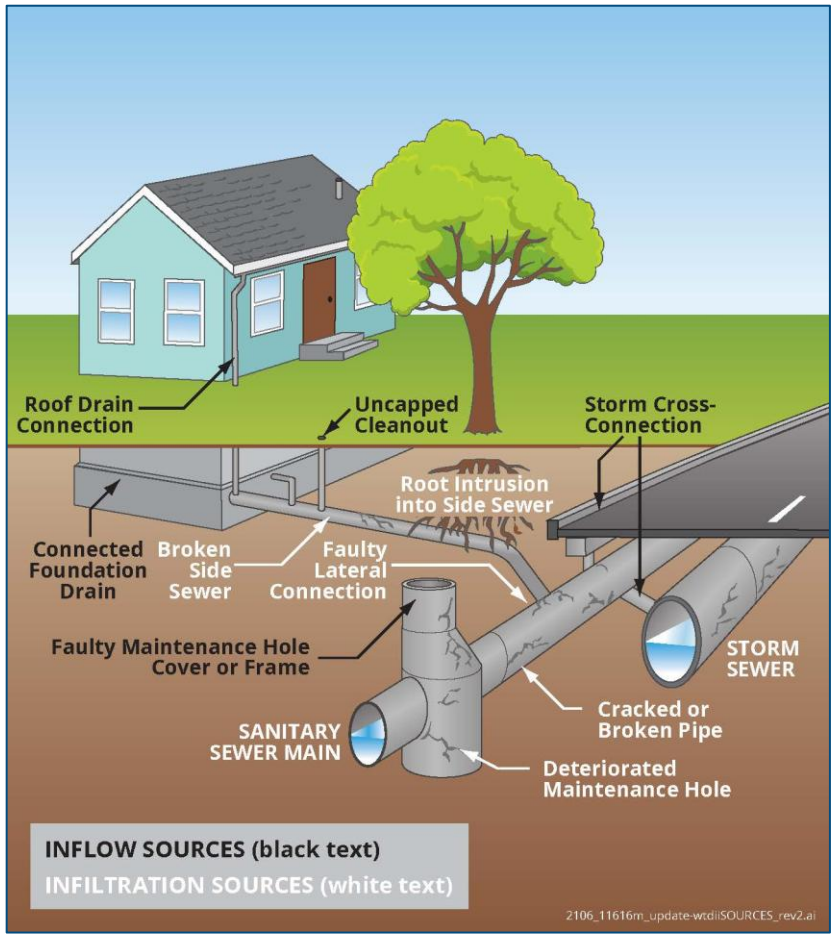
Infiltration refers to groundwater that infiltrates or leaks into pipes.

Inflow refers to storm or surface water that enters pipes from sources other than infiltration.



Infiltration

Inflow

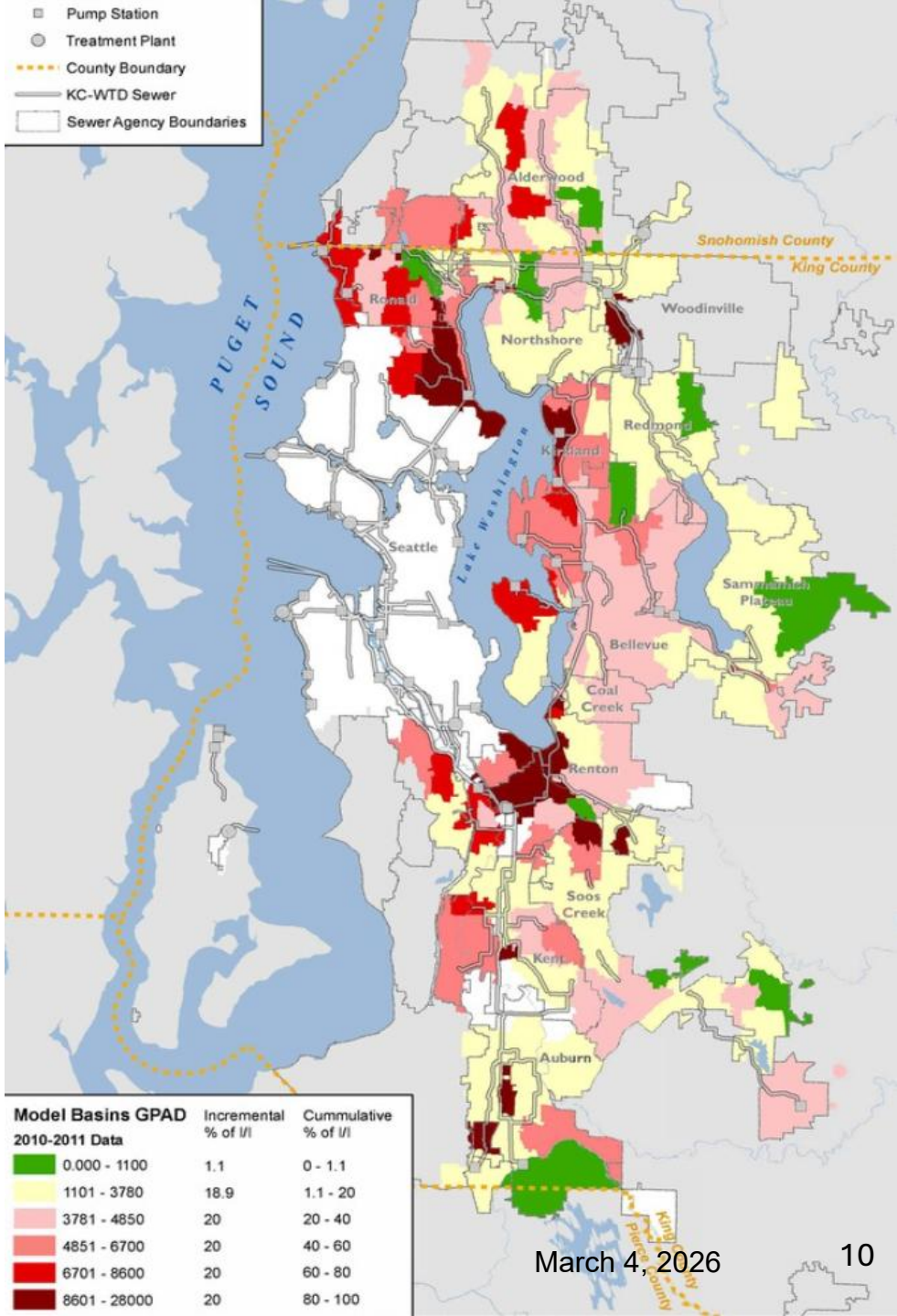


Problem Statement

- I/I contributes large and increasing amounts of flow to the separated conveyance system during wet weather.
- This results in the need to expand system capacity, including larger conveyance pipes, sending more flow to the treatment plants.
- The region is paying to convey and treat extraneous water.
- I/I contribution is uneven across the regional system.

Infiltration and Inflow (I/I) in the Regional Separated System

- On average during wet weather, as much as three-quarters of peak flow is I/I
- About one-quarter of the annual separated wastewater system flow is I/I
- A majority of I/I originates from side sewer pipes on private property
- I/I contributes heavily to Sanitary Sewer Overflow (SSO) risk during wet weather

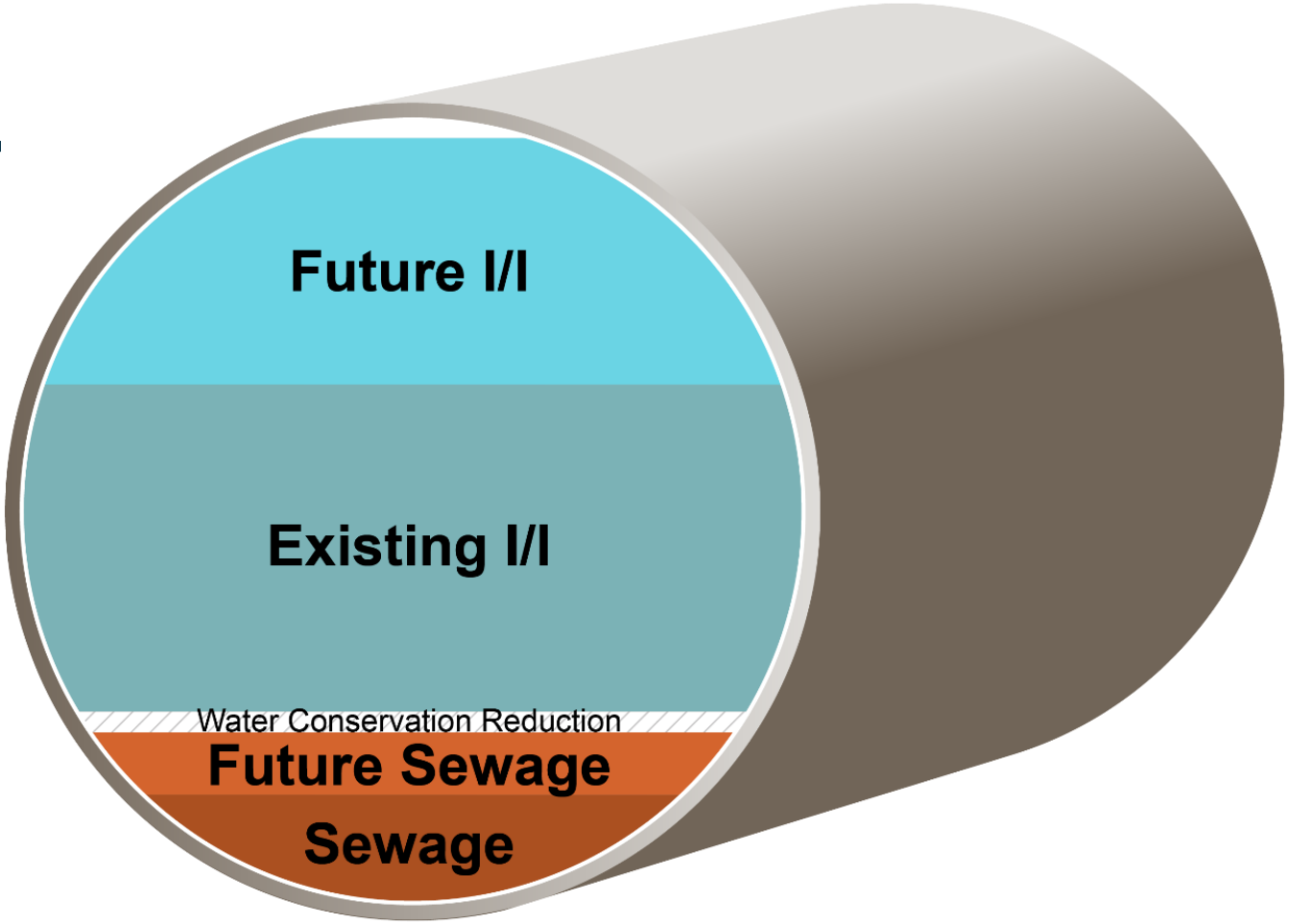


I/I in the Regional Separated System

I/I drives conveyance capacity needs in the regional system

I/I results in approximately $1.7 billion (2016$) in Conveyance System Improvement (CSI) Projects through 2060

I/I results in approximately $16M-$40M per year in conveyance and treatment costs



Current I/I related policies and their interpretation

Relevant Policies in K.C.C.	Description
I/IP – 1	King County shall reduce I/I when cost effective
I/IP – 2	King County shall work cooperatively with component agencies to reduce I/I in local conveyance systems
I/IP – 3	King County shall consider an I/I surcharge, no later than June 30, 2006
CP – 3 (2)	Decennial Flow Monitoring (DFM) to correspond with the Federal Census conducted every 10 years.

Current Implementation:

- Wastewater Treatment Division (WTD) evaluates every conveyance project to determine if I/I reduction is cost effective. Based on current methodology, no I/I reduction projects have been found to be cost effective.
- I/I reduction pilot projects were completed in early 2000's.
- Surcharge was not implemented due to cost of administering.
- DFM completed alongside 2020 Federal Census to update flow projections, including I/I.

Current I/I language in Some Sewage Disposal Contracts

- "… the City will undertake continual rehabilitation and replacement of its local sewage facilities for **purposes of preventing, reducing and eliminating the entry of extraneous water** into such facilities and will **expend annually**, averaged over five (5) years, an amount equal to **two (2) cents per inch of diameter per foot of its local sewage facilities**, excluding combined sewers and force mains, for said rehabilitation and replacement." – *City of Bellevue contract*

- "An additional charge may be made for quantities of storm or ground waters entering those Local Sewerage Facilities which are constructed after January 1, 1961 in excess of the minimum standard established by the general rules and regulations of Metro." – *in all contracts*

The County has not enforced these provisions.

System “must-dos”

WAC 173-240-050

The General sewer plan shall include the following information…

- (g) A discussion of any infiltration and inflow problems and a discussion of actions that will alleviate these problems in the future.

Example practices from other jurisdictions/industry

I/I Reduction Option/Action	Examples of agencies using the option/action
Targeted or Comprehensive Rehabilitation or Replacement of Sewer System Components	• Clackamas County (OR) • Northeast Ohio Regional Sewer District (OH) • Hampton Roads Sanitation District (VA) • Miami Dade County (FL)
Private Side Sewer Inspection and/or Certification Programs	• East Bay Municipal Utility District (CA) • Pinellas County (FL)
Peak Flow Limitation Program	• Northeast Ohio Regional Sewer District (OH) • Miami Dade County (FL) • Metropolitan Council Environmental Services (MN-WI)

Policy issues, challenges and opportunities

- As a regional provider at the downstream end of the sewer system, WTD accepts and ratepayers pay the costs of all I/I from local agencies and their customers.
- WTD's authority as a wholesaler to remedy I/I is limited (e.g., WTD lacks authority to mandate actions for private property owners)
- There is not a quick fix to removing I/I from the system because sources of I/I are diffuse and spread across the WTD service area. I/I reduction requires multiple approaches that affect private side sewers and public sewer systems.
- The benefits of I/I rehabilitation work are most apparent close to where the work is performed in the local system. Benefits are sometimes more difficult to see downstream in the regional system.

Range of Policy Options - Summary

Policy Option #1	Policy Option #2	Policy Option #3
Maintain current policies and expand conveyance and treatment capacity to accommodate I/I and remove I/I only when cost-effective	**Incentivize I/I reduction** in areas with highest levels of I/I	**Implement flow limits** system-wide and administer penalties if flow limits are exceeded due to excessive I/I

Policy Option #1

	Goal	Description	Separated System Actions	Cost Burden
#1	**Expand conveyance and treatment capacity** to accommodate I/I and remove I/I when cost effective	**Maintain current I/I policies** and continue to accept all component agency flows and complete I/I reduction when the cost of rehabilitation is less than the cost of constructing a project to convey and treat the flow on a project-by-project basis	**Capacity Management** – WTD conducts I/I reduction when cost-effective; component agencies conduct I/I reduction according to internal policies and procedures **Flow Monitoring** – Conduct extensive regional flow monitoring every decade to correspond with the U.S. Census to supplement permanent flow monitoring	**The region will pay** for conveyance and treatment capacity projects to accept I/I unless it is cost-effective to remove **The region will benefit** from having expanded conveyance and treatment capacity in the regional separated system **Component agencies contributing excessive I/I will disproportionately benefit** by having the region pay to accept excessive I/I that is contributed from their systems

Policy Option #2

	Goal	Description	Separated System Actions	Cost Burden
#2	**Incentivize I/I reduction** in areas of high I/I to defer conveyance capacity projects and potentially reduce treatment capacity needs	**Provide financial support** to component agencies and private property owners to reduce I/I in areas with high I/I	**Capacity Management –** Targeted regional I/I reduction strategies addressing areas of high I/I to defer the need for capacity upgrades. **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies' systems.	**The region will pay** for I/I reduction in areas of high I/I. **The region will benefit** from the cost-savings of I/I reduction when conveyance capacity projects are deferred. **Component agencies and communities in areas with high I/I will benefit disproportionately** from having I/I reduction subsidized.

Policy Option #3

	Goal	Description	Separated System Actions	Cost Burden
#3	**Maximize I/I reduction system-wide** to eliminate conveyance and treatment capacity projects	**Implement I/I limits** on component agencies system-wide and enforce penalties if limits are exceeded	**Capacity Management –** Service area wide required I/I reduction to eliminate need for capacity upgrades and reduce costs to convey and treat flows **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies systems.	**Component agencies contributing I/I will pay** for the cost of I/I and/or the cost of I/I reduction **The region will benefit** from the elimination of the need for conveyance and treatment capacity projects due to I/I

Interested and affected parties WTD will engage to gather input

Engagement may include the following:

- RWQC, MWPAAC, RWSP Working Group
- Tribes
- Regulators
- Academia
- Community Based Organizations (CBOs)
- Environmental Non-Governmental Organizations (NGOs)
- General Public
- WTD Employees

Relationships to Contracts

According to current sewer contracts, WTD must accept all sewage and waste delivered for treatment and disposal from component agencies

- **Policy Option #1** would not pose a change to the sewer contracts, as WTD would continue to accept flow from the component agencies as detailed in the contracts, and complete I/I reduction when cost effective.

- **Policy Option #2** provides incentivizes, such as grants and loans for I/I reduction and is allowed under current contracts, as long as a net benefit to the regional system can be demonstrated according to the Attorney General's Opinion 2009 No.5.

Relationships to Contracts

- **Policy Option #3** implements a flow limit, and would require an update to the sewer contracts, or an update to King County Code
  - Modifying the sewer contracts presents unique challenges as there are two sets of expiration dates for the contracts - 25 contracts run through July 2036 and nine contracts run through July 2056
  - Following adoption of the approved RWSP by County Council, WTD would seek to update all agency contracts to be consistent with the Updated RWSP.

Equity & Social Justice Impacts

Generally, portions of WTD's service area that have the highest levels of I/I also have higher Social Vulnerability Index (SVI) scores.

- **Policy Option #1:** Socially vulnerable populations will continue to experience high sewer rates to pay for the construction of conveyance capacity projects to accept increased I/I.

- **Policy Option #2:** Could provide opportunities for positive ESJ impacts:
  - Ratepayers in high I/I areas would have opportunities to get side sewers inspected for low or no cost. Additional programs could be implemented to increase eligibility for low-income ratepayers.

Equity & Social Justice Impacts

- **Policy Option #3:** Compels I/I reduction through penalties and could have adverse ESJ impacts on socially vulnerable populations when:
  - Costs of the I/I reduction or the penalties from contributing excessive flows are passed down from the component agencies to the ratepayers;
  - Additional programs could be delivered in unison to mitigate the adverse ESJ impacts, such as exemptions, subsidies, or grants for low-income ratepayers.

Rate Structure Considerations

- The 1999 'Robinswood' agreement focused on a regional '*all for one and one for all*' approach where a uniform rate structure would be in place throughout WTD's service area and all member jurisdictions contribute equally to dealing with I/I.

- **Policy Options #1 and #2** both maintain this approach, with WTD providing financial support for upstream projects that reduce the overall cost of I/I to WTD. Any financial benefits or costs to WTD would thus be shared proportionately throughout the service area.

Rate Structure Considerations

- **Policy Option #3,** which would create an I/I surcharge rate class, would be a departure from WTD's current uniform sewer rate as intended in the Robinswood agreement.
  - Local Sewer Agencies (LSAs) with a high I/I flow will pay more, and LSAs with low I/I flow pay less.
  - Any I/I surcharge would need to be calculated in accordance with cost-of-service principles.
  - I/I surcharges would be more variable than WTD's existing rate structure and likely result in greater fluctuation in month-to-month revenues. A more variable rate structure will require reexamination of some financial policies.

Rate Structure Considerations

- **Policy Option #3 (continued)**
  - Any detailed discussion of moving away from a uniform sewer rate will likely *not* be constrained to only an I/I surcharge.
  - Because the combined conveyance system (roughly approximate to the City of Seattle) was designed to convey stormwater, it would not be charged through a potential I/I surcharge for the regional separated sewer system.
  - **Policy Decision:** An I/I surcharge for the separated system may need to be paired with a CSO surcharge for the combined system.

Q & A

King County | Wastewater Treatment

Policy Question on Population Growth

Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand [conveyance] capacity to account for future population growth?

Problem Statement

- Need for increased conveyance capacity is due to population growth (more pipe reaches and greater pipe volume) and an increase in infiltration and inflow (I/I).
- Over a 50-year planning horizon, most of the needed expansion in conveyance capacity is due to increasing levels of I/I.
- Conveyance infrastructure is sized conservatively to ensure capacity well into the future.

Problem Statement

- Building infrastructure to meet larger, and perhaps unnecessary, conveyance capacity requirements is more costly than building smaller infrastructure.
- Installing capacity improvements before they are needed ties up capital that could be used for other improvements.
- However, building undersized infrastructure risks needing additional capacity upgrades more quickly, while delaying a project until its need is imminent could precipitate construction cost risks.

Current population growth related policies and their interpretation

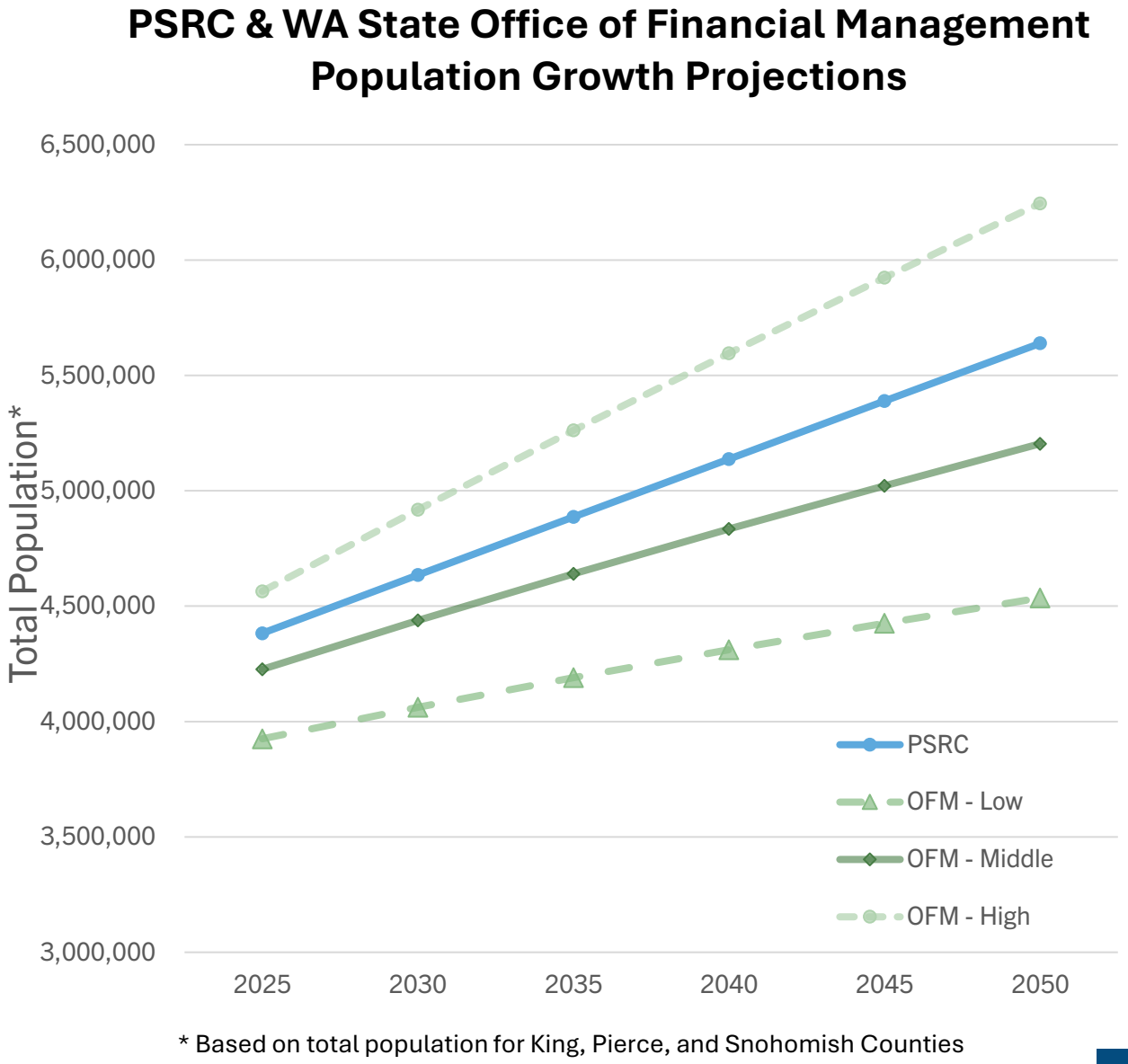
Relevant Policies in K.C.C.	Description
CP – 1 (1)	The twenty-year peak flow storm shall be used as the design standard
CP – 2	King County shall construct the necessary wastewater conveyance facilities to convey wastewater from component agencies to the treatment plants
CP – 3	King County shall periodically evaluate population and employment growth assumptions

Current Implementation:

- WTD is currently using the 20-year peak flow as expected 50 years into the future for designing new conveyance facilities
- Population and employment growth assumptions updated every decade using Puget Sound Regional Council forecasts

Population Growth in the Regional Separated System

- WTD uses population and employment forecasts provided by PSRC
- PSRC forecasts are aggregated from parcel level to match WTD's service area
- Forecasts are provided every 10 years to correspond with U.S. Census updates



* Based on total population for King, Pierce, and Snohomish Counties

Policy issues, challenges and opportunities

- Population growth is a small component of projected future flows over the 50 year planning horizon.

- I/I plays a larger factor in sizing conveyance facilities

Range of Policy Options - Summary

Policy Option #1	Policy Option #2	Policy Option #3
Maintain current policies and practice	Take a **less aggressive** approach to expanding conveyance capacity by reducing pipe sizing design standard and apply a less conservative guideline for identifying new capacity needs.	Take a **more aggressive** approach to expanding conveyance capacity by installing planned capacity improvement projects more quickly.

Policy Option #1

	Goal	Description	Separated System Actions
#1	**Maintain** current policies and practice in conveyance capacity planning for population growth	Continue to identify needs and develop conceptual projects based on the 20-year design standard but take on risk in implementation timelines to allow for flexibility in capital allocation.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 20-year peak flows at the 50-year time horizon.

Policy Option #2

	Goal	Description	Separated System Actions
#2	Take a **less aggressive** approach to conveyance capacity planning due to population growth	Reduce short-term construction costs by reducing pipe sizing design standard and applying a less conservative guideline for identifying new capacity needs.	Identify needs and develop conceptual projects when conveyance capacity falls below a 5-year LOS (depending on chosen I/I Policy Options); prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 5-year peak flows at the 50-year time horizon.

Policy Option #3

	Goal	Description	Separated System Actions
#3	Take a **more aggressive** approach to conveyance capacity planning due to population growth	Better protect against risk of SSO by installing planned capacity improvement projects more quickly.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 5-year LOS.

Q & A

King County | Wastewater Treatment

Policy Questions on Onsite Septic Conversion

1. How should the conversion of on-site septic systems to sewers in the service area be managed?

2. Should WTD implement programs to encourage conversion within the service area?

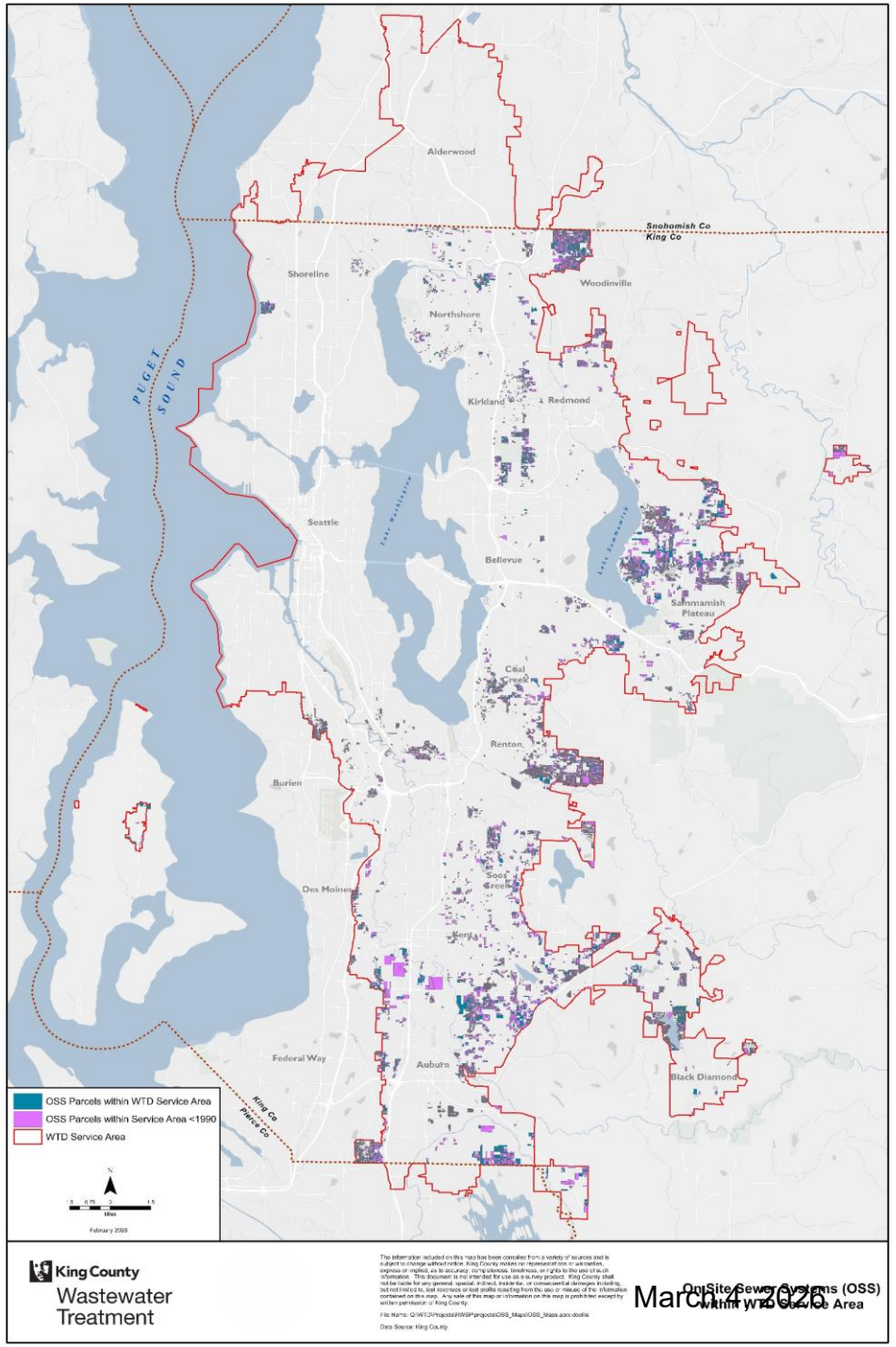
Problem Statement(s) for the septic conversion policy questions

- Septic systems can fail, and untreated wastewater can enter ground or surface waters
- The number of parcels on septic in the Urban Growth Area could limit future urban growth
- Connecting to sewer may create a financial burden on property owners for both the up-front cost of sewer conversion and the ongoing payment of wastewater utility rates after conversion

Failing/overflowing on-site septic system

Septic Conversion in WTD's Separated System

- ~20,000 on-site septic systems within the King County portion of WTD's service area
  - ~45% are within 200 feet of a local public sewer line
  - ~ 15% are within 100 feet of a water body
  - This does not include on-site septic systems within the Snohomish and Pierce County portions of WTD's service area (data is forthcoming)
- Connection to the sewer system can cost homeowners over $100,000



Current septic conversion related policies and their interpretation

Current Implementation

- WTD relies on Public Health – Seattle King County and local jurisdictions for conversion of on-site septic systems to sewer in the wastewater regional service area

Relevant Policies in K.C.C. and WAC	Description
K.C.C. 13.04.050 WAC 246-272A-0025	KCC and WAC require property owners in urban King County to connect to public sewer if their property is a new development, or if the existing on-site septic system fails and: • **The property owner is unable to replace the on-site septic system** with a system that conforms to current standards or code • **It is feasible for the property owner to connect to public sewer** (the property is within 200 feet of a local public sewer line, and the local sewer utility permits the connection)

System “must-dos”

- WTD must accept all flows that it receives from the component agencies that it provides sewerage services to, which means it must accept any additional flow from on-site septic systems that convert to sewer
  - WTD recoups this cost by collecting a capacity charge from property owners for any new sewer connections

Policy issues, challenges and opportunities

- WTD subsidizing the cost of connecting to sewer for a subset of ratepayers or component agencies can be interpreted as service inequity
- Supporting conversion of on-site septic systems near waterbodies or with a high risk of failure proactively protects public and environmental health
- Supporting the conversion of urban properties with on-site septic systems to sewer will help King County meet housing and growth management goals

Range of Policy Options - Summary

Policy Option #1	Policy Option #2	Policy Option #3
Maintain current practice and rely on Public Health – Seatle King County and local jurisdictions to manage on-site septic system conversion	**Support conversion of septic to sewer on properties near waterbodies** within WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve private property owners	**Support all septic conversion in WTD's service area** by partnering with local sewer agencies in the service area to construct local sewer lines that could serve all developable parcels by 2060

Policy Option #1

	Goal	Description	Separated System Actions
#1	Provide sewerage services to residents in the urban growth area within WTD's service area as they connect to the regional sewer system	**Maintain practice** and rely on Public Health – King County Seattle and local jurisdictions to manage on-site septic system conversion	Rely on Public Health – King County Seattle and local jurisdictions to facilitate conversions due to OSS failures and/or redevelopment.

Policy Option #2

	Goal	Description	Separated System Actions
#2	Proactively protect environmental and public health by supporting conversion of parcels with on-site septic systems near water bodies throughout the WTD service area through supporting extension of local sewer lines to serve those parcels	**Support conversion of septic to sewer on properties near waterbodies** within WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve private property owners	Partner with local sewer agencies to convert on-site septic systems near water bodies within WTD service area

Policy Option #3

	Goal	Description	Separated System Actions
#3	Proactively protect environmental and public health by supporting conversion of all on-site septic systems within the WTD service area to sewer through supporting extension of local sewer lines to serve those parcels	**Support all septic conversion in WTD's service** area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve all developable parcels by 2060	Partner with and/or require all developed parcels in the service area to connect to the sewer system by 2060

Equity & Social Justice Impacts

- About 45% of on-site septic systems nearing or at the end of their useful life in urban King County are in the top 40% of most socially vulnerable census tracts

- However, many on-site septic systems approaching the end of their useful life are in more well-resourced neighborhoods

Equity & Social Justice Impacts

Policy Options #2 and #3, which would support conversion of on-site septic systems by extending sewer lines could advance equity by:

- Subsidizing some of the connection costs for residents who are living in cities that have experienced inequitable sewer infrastructure investment

- Support urban development and housing density
  - Homes on septic could de-commission their system, convert to sewer, and construct accessory dwelling units (ADUs)
  - Vacant parcels that are too small for septic could connect to sewer and be developed

Q & A

King County | Wastewater Treatment

RWSP Update – Separated System Conveyance

Policy Memo #1

A. Policy Question

This memo is focused on the policy questions related to the Separated System Conveyance topic of the Regional Wastewater Services Plan (RWSP) Update. The policy questions analyzed in this memo are:

- **i.** How should Infiltration/Inflow (I/I) be managed and how can costs be fairly apportioned?
- **ii.** Should system capacity be expanded to account for increases in I/I?
- **iii.** Should I/I policies change to support reducing the capacity needed for I/I?

B. Problem Statement

I/I currently drives the need to increase the capacity of King County Wastewater Treatment Division's (WTD) separated system conveyance facilities. The majority of conveyance facilities have capacity to convey base flows and flow from future population growth, but require upgrades due to the amount of I/I entering the system during rain events. I/I makes up the majority of flow entering the separated system during wet weather events. Though it is impossible to remove all I/I, removing excessive I/I can significantly decrease the need for conveyance capacity capital upgrades. In the 2017 Conveyance System Improvement Plan, approximately $1.7B (2016 dollars) in conveyance capacity upgrades were projected to be needed over the next 40 years, and one of the major drivers for these upgrades is increases in I/I. As conveyance facilities are upgraded with larger pipes and pumps, more I/I is also being conveyed to the treatment plants increasing the need for capacity upgrades at the treatment plants.

I/I is not distributed evenly. I/I levels vary throughout the region and by component agency based on numerous factors, including condition of existing infrastructure, groundwater levels, soil conditions, and other hydrologic factors. It is also estimated that up to 75% of I/I in the region originates from side sewers that connect private property residences and businesses to the separated sewer system. When WTD upgrades infrastructure due to I/I, agencies pay for projects equally through WTD's region-wide sewer rate, regardless of the amount of I/I the agency contributes to the regional separated system.

C. Contextual and Baseline Information

i. What is known about the topic and current conditions

Separated Sewer Systems

Separated sewer systems consist of sewers designed to convey sanitary sewage but not stormwater. In the urban landscape, the separated sewer system works in concert with separate stormwater collection systems to manage sanitary and wet weather flows, respectively. Separated sewer systems comprise an interconnected system of pipes, pump stations, and other infrastructure that convey wastewater from homes and businesses to local wastewater collection systems and then to the regional wastewater treatment facilities. Despite the intended separation between wastewater and stormwater, separated sewer systems are vulnerable to wet weather infiltration and inflow (I/I).

Typically, sewers built after the 1950s do not combine sanitary and stormwater into a single sewer system. WTD owns and maintains about 250 miles of separated sewer system conveyance, which represents about 65% of WTD's pipe system. Wastewater from homes and businesses within all the cities and sewer agencies within the WTD service area, except most of Seattle, is collected through around 5,900 miles of locally managed pipes, which then are connected to the regional separated system.

WTD's separated sewers convey flow primarily to South Treatment Plant and Brightwater Treatment Plant for treatment. West Point Treatment Plant treats flow primarily from combined sewers but also serves a portion of the separated sewer system in Kenmore, parts of Kirkland, Lake Forest Park, Shoreline, and parts of North Seattle.

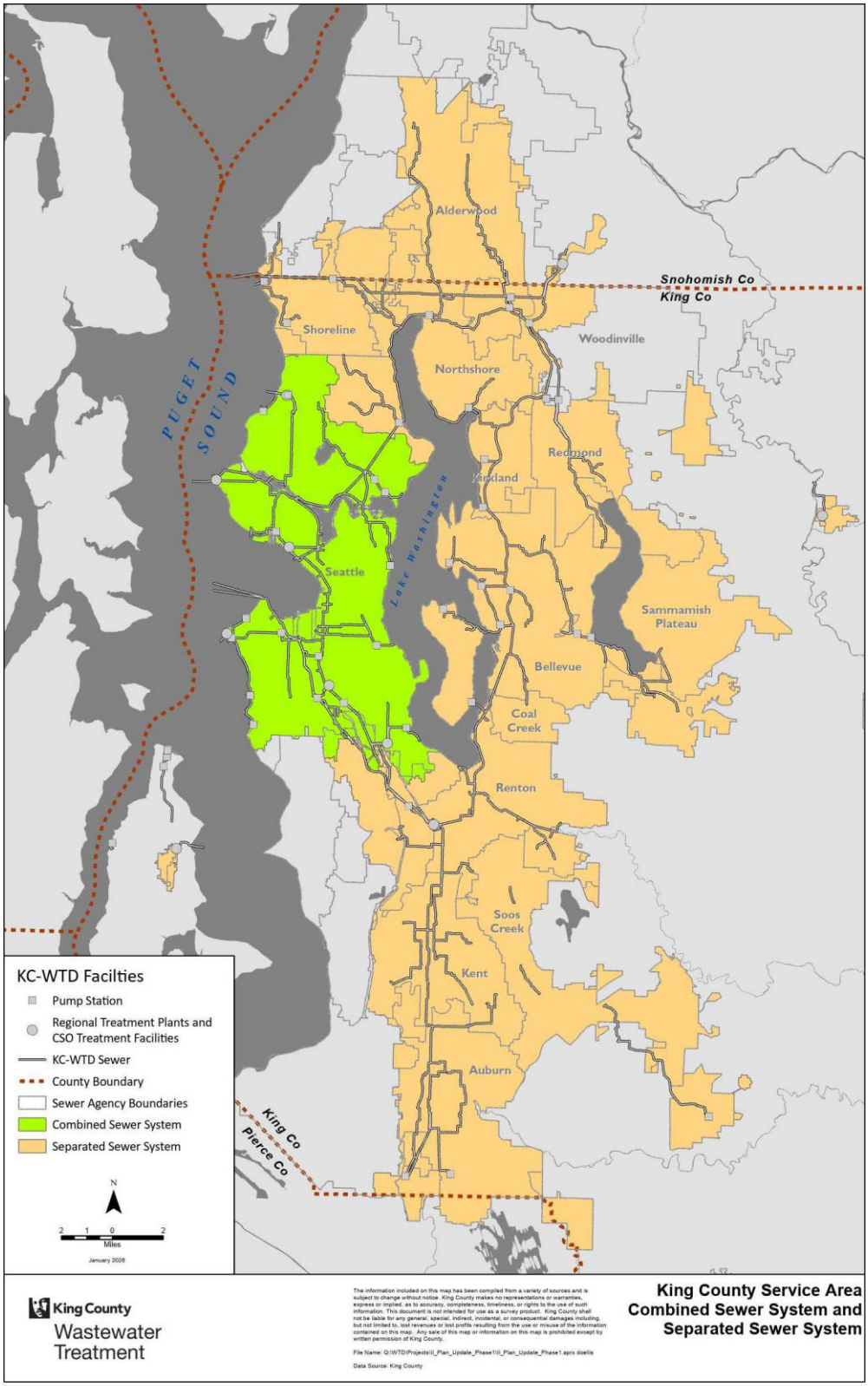


Figure 1. King County Service Area Combined and Separated Sewer Systems

Infiltration and Inflow in the Regional System

I/I is the unwanted entry of extraneous water into the sanitary sewer system. Infiltration occurs when groundwater seeps into sewer pipes through cracks, leaky pipe joints, root intrusion, and/or deteriorated maintenance holes. Inflow is stormwater that enters the sewer system through sump pumps, roof or foundation drains illegally connected to the sewer system, uncapped cleanouts, and/or faulty maintenance hole covers. Together, inflow and infiltration place a burden of additional flow on the regional separated system and treatment plants.

I/I in the regional system not only contributes heavily to sanitary sewer overflows (SSOs) but also drives most conveyance capacity and flow-based treatment needs. On average, as much as 75% of peak flows in the regional separated system are comprised of I/I and approximately 25% of the annual flow treated at Brightwater and South Plant is I/I. While I/I levels currently vary throughout the regional system, as infrastructure ages, I/I levels are expected to increase.

Based on flow monitoring conducted in the early 2000's, where WTD deployed over 800 flow meters in both local and regional pipes, WTD estimates that up to 75% of I/I originates from private properties. Although a majority of I/I is believed to originate at private properties, I/I is diffuse and addressing only private properties is not expected to significantly reduce or eliminate I/I in the area as I/I can enter other parts of the system where defects or illicit connections have not yet been addressed.

ii. Current policies in code, contract, or in practice

King County Code (K.C.C. 28.86, Wastewater Treatment) guides WTD's work in the separated conveyance system regarding I/I. The policies relevant to this memo are:

Relevant Policies in K.C.C.	Description
I/IP – 1	King County is committed to controlling I/I within its regional conveyance system and shall rehabilitate portions of its regional conveyance system to reduce I/I whenever the cost of rehabilitation is less than the costs of conveying and treating that flow or when rehabilitation provides significant environmental benefits to water quantity, water quality, stream flows, wetlands or habitat for species listed under the ESA.

I/IP – 2	King County shall work cooperatively with component agencies to reduce I/I in local conveyance systems utilizing and evaluating I/I pilot rehabilitation projects, and developing draft local conveyance systems' design guidelines, procedures and policies, including inspection and enforcement standards. Evaluations of the pilot rehabilitation projects and a regional needs assessment of the conveyance system and assessments of I/I levels in each of the local sewer systems will form the basis for identifying and reporting on the options and the associated cost of removing I/I and preventing future increases. The executive shall submit to the council a report on the options, capital costs and environmental costs and benefits including but not limited to those related to water quality, groundwater inception, stream flows and wetlands, and habitat of species listed under the ESA. No later than December 31, 2005, utilizing the prior assessments and reports the executive shall recommend target levels for I/I reduction in local collection systems and propose long-term measures to meet the targets. These measures shall include, but not be limited to, establishing new local conveyance systems design standards, implementing an enforcement program, developing an incentive-based cost sharing program and establishing a surcharge program. The overall goal for peak I/I reduction in the service area should be thirty percent from the peak twenty-year level identified in the report. The county shall pay one hundred percent of the cost of the assessments and pilot projects.
I/IP – 3	King County shall consider an I/I surcharge, no later than June 30, 2006, on component agencies that do not meet the adopted target levels for I/I reduction in local collection systems. The I/I surcharge should be specifically designed to ensure the component agencies' compliance with the adopted target levels. King County shall pursue changes to component agency contracts if necessary or implement other strategies in order to levy an I/I surcharge
CP – 3 (2)	King County shall periodically evaluate population and employment growth assumptions and development pattern assumptions used to size conveyance facilities to allow for flexibility to convey future flows that may differ from previous estimates. The following activities shall take place to confirm assumptions and conveyance improvement needs: 1. Field verification of wastewater flows and conveyance component conditions prior to implementation of regional conveyance capital projects that are intended to expand capacity of the system; and

	2. Decennial flow monitoring to correspond with the Federal Census conducted every ten years.

I/I Policy 1 (I/IP-1) requires WTD to evaluate every conveyance capacity project to determine if I/I reduction would be more cost effective than the cost of conveying and treating the flow. Typically, a desktop analysis is sufficient to determine the cost effectiveness of I/I reduction. Through these analyses, WTD has found that conveyance upgrades are almost always less expensive to complete than I/I reduction. Sometimes projects require additional analysis to confirm the cost effectiveness of I/I reduction. The most recent I/I reduction analysis was completed for the Thornton Creek Trunk. The project included development of I/I reduction alternatives to address the conveyance capacity need. After extensive evaluation, it was determined that I/I reduction would be significantly more expensive for WTD to complete than upgrading the existing trunk line.

I/I Policy 2 (I/IP-2) was meant to support the development of the original I/I Control Program in the early 2000's. This policy requires WTD to:

- Work cooperatively with component agencies to complete I/I reduction pilot projects
- Develop voluntary draft local conveyance systems' design guidelines, procedures and policies, including inspection and enforcement standards
- Identify levels and sources of I/I in each local agency system through flow monitoring
- Develop a cost-benefit methodology to identify cost-effective I/I reduction projects
- Develop a recommended long-term I/I control plan

The work culminated in the 2005 Executive's recommended I/I Control Program Plan. The plan directed WTD to identify and complete demonstration scale projects to confirm the effectiveness of the I/I reduction techniques used in the I/I pilot projects on a larger scale. WTD identified the Skyway I/I Reduction project which was completed in early 2014. This project was the first attempt at completing I/I reduction in lieu of constructing a conveyance capacity capital project – the Bryn Mawr Storage Tank. The results of the Skyway I/I Reduction project showed that though there was a significant amount of flow reduction at the local level, there was considerably less flow reduction downstream in the regional system, and the Bryn Mawr Storage Tank project was subsequently not deferred.

I/I Policy 3 (I/IP-3) directed WTD to consider implementation of a surcharge, a monetary fine, for exceeding adopted levels of flow. The surcharge was considered as part of the development of the I/I Control Program's development but was ultimately not

implemented. The County and component agencies found that implementing a surcharge, as contemplated in the King County Code, would be costly to administer and would pose difficulties in verifying violations. Component agencies were also concerned that a surcharge would be pointless because WTD had agreed to pay for cost-effective I/I reduction. There were additional concerns regarding WTD taking a regulatory role that would expend ratepayer dollars on enforcement and monitoring activities. Instead, component agencies preferred to own the decision to complete I/I reduction based on their system needs.

Conveyance Policy 3 (2) (CP-3 (2)) requires WTD to conduct Decennial Flow Monitoring (DFM) alongside the United State (U.S.) Census. DFM consists of installing additional flow meters, to be used alongside the existing 130 permanent flow meters in the separated portions of the regional conveyance system, to provide a more comprehensive review of flow for conveyance improvement planning. DFM data is also used to identify levels of I/I in each model basin. The most recent DFM project took place between 2019 and 2022 and collected data to coincide with the 2020 U.S. Census.

iii. The system "must-dos"

WTD must meet Washington State requirements, which are derived from and expand upon U.S. Law and Code (Clean Water Act, Pub. L. 92-500; 33 U.S.C. § 1251 et seq.).

The Washington Administrative Code (173-220-020):

> "No pollutants shall be discharged to any surface water of the state from a point source, except as authorized by an individual permit issued pursuant to this chapter or as authorized by a general permit issued pursuant to chapter 173-226 WAC."

The separated sewer system must be built to convey all expected flows, to prevent sanitary sewer overflows (SSOs), which may occur due to improperly maintained or sized sewer collection systems. Due to WTD's position as a wholesale provider of sewerage services, WTD must properly maintain and operate the regional system, while sizing its facilities large enough to accept base flow as well as I/I from component agencies to prevent SSOs.

WTD is not permitted for SSOs under the National Pollutant Discharge Elimination System (NPDES) permits issued by the Washington Department of Ecology. Even discharges that do not reach waters of the U.S. can be violations of the federal Clean Water Act permit requirements under some circumstances.

iv. Current and budgeted expenditures

In July 2025, WTD provided a list of conveyance capacity projects to the Regional Water Quality Committee (RWQC). 11 are related to conveyance capacity upgrades, totaling $736M or approximately 6.5% of WTD's total capital improvement program (CIP) between 2025 and 2035. The conveyance capacity projects and the costs included in the CIP include:

Project Name	2025-2035 Cost Estimates
North Mercer Island and Enatai Interceptors Upgrade	$ 38,415,620
Richmond Beach PS Upgrade	28,789,079
Richmond Beach Edmonds Interceptor Parallel	10,513,782
Black Diamond Trunk Capacity Upgrade	164,391,988
Garrison Creek Interceptor Replacement, Realignment, and Diversion	14,173,165
Lake Hills and NW Lake Sammamish Interceptor Upgrade	152,451,573
Boeing Creek Trunk Replacement and Parallel	835,661
Coal Creek Siphon and Trunk Parallel	153,671,044
Medina Pump Station Upgrade	43,618,526
Sammamish Plateau Diversion (Phase 1)	112,165,420
Soos Creek Cascade Relief Interceptor No. 2 Upgrade	16,796,707
	$ 735,822,565

** The cost estimates described here are what were presented in July 2025 and may be updated as capital projects are advanced and further defined.

v. Summary of science/data

The figure below shows the peak I/I flow rate for each of the 181 model basins in the regional separated sewer system in WTD's service area. This figure was developed using flow monitoring information from the 2010 Decennial Flow Monitoring effort. During development of the 2005 Executive's Recommended I/I Control Program, Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and WTD identified 3,500 GPAD (Gallons Per Acre Day) based on the peak 20-year hourly flow as an agreed-upon target limit that could be reached through I/I rehabilitation. Currently 108 out of 181 model basins exceed that limit.

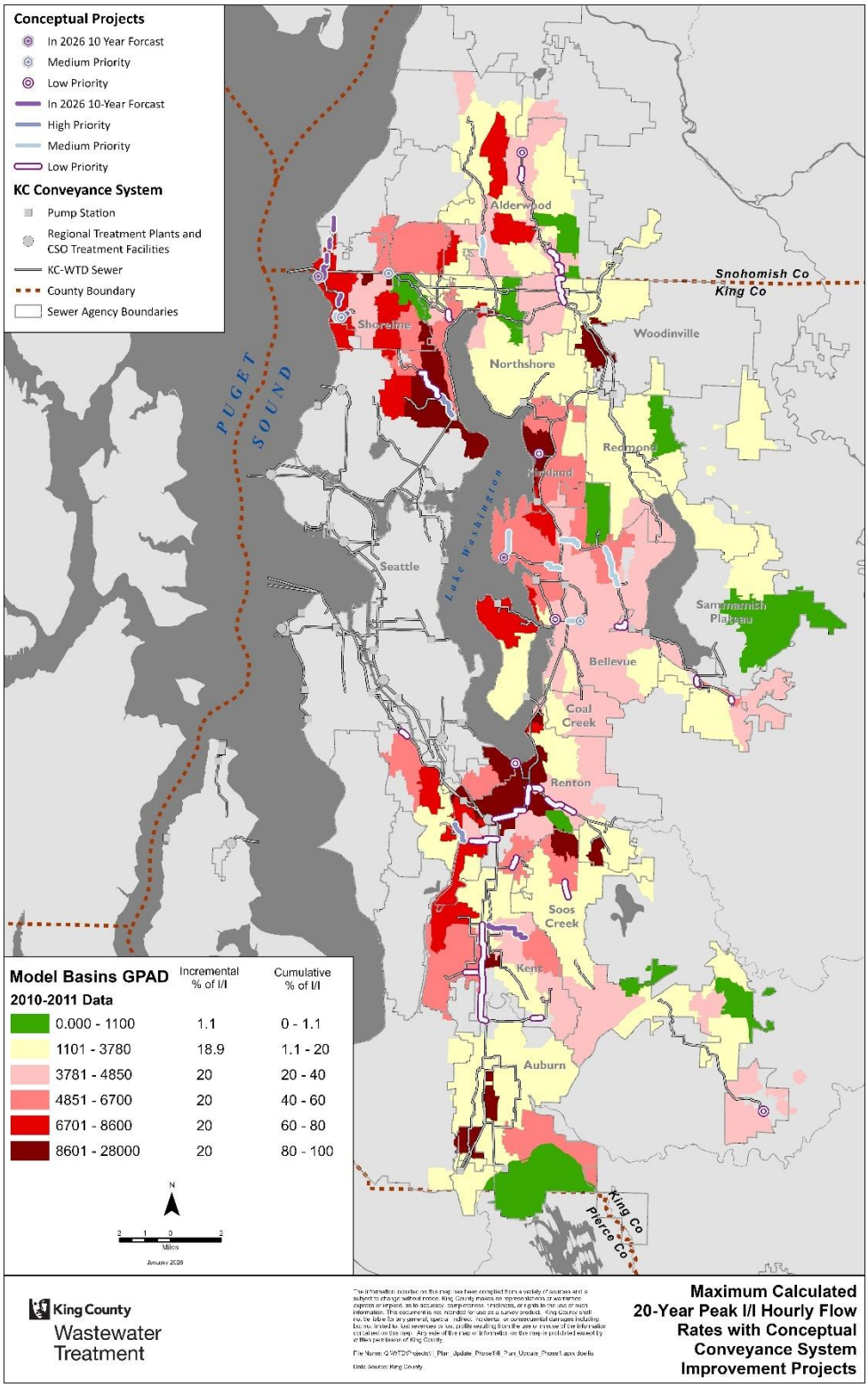


Figure 2. Inflow / Infiltration in WTD's Separated System Service Area 181 Model Basins

D. Example Practices from Other Jurisdictions/Industry

On multiple occasions since the early 2000's, WTD has interviewed other regional sewerage agencies across the United States to investigate how the organizations are approaching I/I mitigation efforts, including the inspection and rehabilitation methods they are using, I/I reduction effectiveness, and the successes and challenges they have encountered. Some agencies conduct I/I mitigation work in their region due to regulatory actions, such as consent decrees, that require them to reduce I/I or prevent SSO's. Other agencies conduct I/I mitigation because it is more cost-effective than upgrading conveyance facilities.

Rehabilitation/Replacement of Sewer System Components

Many agencies focus on targeted or comprehensive rehabilitation or replacement of sewer system components, similar to WTD's work in Skyway. This work typically involves systematic rehabilitation, replacement, or upgrade of public and private sewer system components to reduce I/I. The approach can be targeted based on measured or predicted I/I rates, needed downstream infrastructure improvements, or other location-specific factors. This type of action is typically highly effective at reducing I/I in areas with high I/I severity, known defects, and appropriate stormwater conveyance system availability. Work is usually only completed when it is considered to be more cost effective than upgrading conveyance capacity. Some agencies who have used this approach to I/I mitigation include Clackamas County, Northeast Ohio Regional Sewer District, Hampton Roads Sanitation District, and Miami Dade County.

Private Side Sewer Inspection and/or Certification Programs

East Bay Municipal Utility District and Pinellas County are two agencies that have implemented a private side sewer inspection and certification program. This action includes systematic assessment and/or improvement of the condition of private side sewers, which can be a significant source of I/I, as is assumed in WTD's service area. Through inspection and/or certification, defects can be identified and repairs required. Side sewer inspection and certification can be required at the time of property sale or triggered when certain types of building permits are submitted (e.g., demolition, change to occupancy content, etc.). I/I reduction effectiveness can be difficult to quantify unless all properties in an area have been inspected and rehabilitated, but noticeable decreases in I/I are expected over time. East Bay Municipal Utility District has had success with this action in their service area.

Peak Flow Limitation Program

Other regional agencies use enforceable flow thresholds for local agencies to control peak I/I flows. Under this action, when peak flow rates exceed defined limits, agencies are required to initiate investigations, flow monitoring, or mitigation planning. This action may also impose a surcharge, restrict new connections, or invoke other governmental consequences. By establishing flow limits as triggers for action or accountability, this action creates strong incentives for I/I reduction and aligns wastewater planning with system capacity constraints. Under this action, a gradual reduction of peak I/I flows are anticipated over many years. Agencies that WTD has interviewed that have implemented a peak flow limitation program include Northeast Ohio Regional Sewer District, Miami Dade County, and Metropolitan Council Environmental Services (MCES).

MCES has a flow-based policy to compel component agency I/I control. MCES sets a peak flow limit by taking the 10-year average and applying standard peaking factors specific to each component agency to establish a threshold for peak hourly flow. When a component agency exceeds the peak flow, they receive notification from MCES. MCES currently charges component agencies $461,000 per million gallon per day (mgd) of flow exceedance. Instead of paying the surcharge, component agencies are able to spend an equivalent amount on work to investigate and mitigate excess I/I sources. Component agencies are given four years to complete the work, but MCES allows for extensions, if needed. The component agencies are required to report on the status of work annually to MCES. Work is complete once all money from the surcharge has been expended or when the sources of I/I are found and mitigated.

E. Policy Issues, Challenges, and Opportunities Related to the Policy Question

Addressing I/I presents a set of unique challenges, as well as potential opportunities for the region.

1. WTD's authority as a wholesaler is limited

   WTD lacks authority to mandate actions for private property owners. WTD's ability to compel I/I reduction work extends only to the component agencies that it serves. Cities have authority to mandate I/I reduction on private property where a significant portion of I/I originates from. Additionally, sewer districts that have contracts with WTD do not have the same legal authority as cities, limiting their ability to mandate I/I reduction.

2. Sources of I/I are diffuse

There is not a quick fix to removing I/I from the system because sources of I/I are diffuse and spread across the WTD service area. I/I reduction requires multiple approaches that rehabilitate both private side sewers and public sewer systems.

3. The benefits of I/I reduction are sometimes difficult to see downstream

   The benefits of I/I rehabilitation work are most apparent close to where the work is performed in the local system. Benefits are sometimes more difficult to see downstream in the regional system, as evidenced from the Skyway Demonstration Project. As a regional provider at the downstream end of the sewer system, WTD accepts and ratepayers pay the costs of all I/I from local agencies and their customers. If the benefits of reductions in I/I are not seen at the regional level, then the cost-savings from I/I reduction work are not realized at the regional level as conveyance capacity will still need to be expanded.

4. Effectively reducing I/I may benefit the treatment plants as well as the conveyance system

   Reducing influent flow through I&I control could positively benefit WTD's ability to meet future treatment needs, including nitrogen management, by reducing flow capacity-driven sizing of treatment improvements. It could also provide operational cost savings associated with running treatment processes at lower flows. Reducing flow capacity-driven improvements could contribute to the ability of WTD to meet forecasted population growth within the footprint of our existing treatment plants, which may be constrained due to nitrogen reduction-related requirements further into the future.

F. Range of Policy Options with Associated Actions and Considerations (including qualitative description of costs)

The policy options presented below describe potential choices and Separated System Actions that could be implemented to address the following policy questions:

- How should I/I be managed and how can costs be fairly apportioned?
- Should system capacity be expanded to account for increases in I/I?
- Should I/I policies change to support reducing the capacity needed for I/I?

The policy options include:

- Maintaining the current policies, including expanding conveyance and treatment capacity and removing I/I when cost-effective

- Amend or add new policies to either focus on incentivizing I/I reduction in areas of greatest I/I, or implementing flow limits systemwide and administering penalties if flow limits are exceeded due to I/I

Summary of Policy Options

	Goal	Description	Separated System Actions	Cost Burden
#1	**Expand conveyance and treatment capacity** to accommodate I/I and remove I/I when cost effective	**Maintain current I/I policies** and continue to accept all component agency flows and complete I/I reduction when the cost of rehabilitation is less than the cost of constructing a project to convey and treat the flow on a project-by-project basis	**Capacity Management** – WTD conducts I/I reduction when cost-effective; component agencies conduct I/I reduction according to internal policies and procedures **Flow Monitoring** – Conduct extensive regional flow monitoring every decade to correspond with the U.S. Census to supplement permanent flow monitoring	**The region will pay** for conveyance and treatment capacity projects to accept I/I unless it is cost-effective to remove **The region will benefit** from having expanded conveyance and treatment capacity in the regional separated system **Component agencies contributing excessive I/I will disproportionately benefit** by having the region pay to accept excessive I/I that is contributed from their systems

	Goal	Description	Separated System Actions	Cost Burden
#2	**Incentivize I/I reduction** in areas of high I/I to defer conveyance capacity projects and potentially reduce treatment capacity needs	**Provide financial support** to component agencies and private property owners to reduce I/I in areas with high I/I	**Capacity Management –** Targeted regional I/I reduction strategies addressing areas of high I/I to defer the need for capacity upgrades. **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies' systems.	**The region will pay** for I/I reduction in areas of high I/I. **The region will benefit** from the cost-savings of I/I reduction when conveyance capacity projects are deferred. **Component agencies and communities in areas with high I/I will benefit disproportionately** from having I/I reduction subsidized.
#3	**Maximize I/I reduction system-wide** to eliminate conveyance and treatment capacity projects	**Implement I/I limits** on component agencies system-wide and enforce penalties if limits are exceeded	**Capacity Management –** Service area wide required I/I reduction to eliminate need for capacity upgrades and reduce costs to convey and treat flows **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies systems.	**Component agencies contributing I/I will pay** for the cost of I/I and/or the cost of I/I reduction **The region will benefit** from the elimination of the need for conveyance and treatment capacity projects due to I/I

Policy Option #1 – Maintain current I/I policies and continue to accept all component agency flows and complete I/I reduction when the cost of rehabilitation is less than the cost of constructing a project to convey and treat the flow on a project-by-project basis

Justification

This policy option would maintain the current I/I policies with WTD continuing to accept all component agency flows as described in the current sewer contracts. This policy option would also allow component agencies to prioritize and conduct I/I reduction on their systems when it makes sense based on their capital portfolio priorities.

Considerations

The continued implementation of these actions could result in no I/I reduction being completed at the regional or local level, as I/I reduction has not proven to be less expensive than the cost of constructing a project to convey and treat I/I using the current cost-benefit ratio. The cost-benefit ratio would need to be updated to be more comprehensive of cost-savings for I/I reduction to be deemed cheaper than constructing a capital project. Additionally, if component agencies are left with the choice to complete I/I reduction on their systems, component agencies would be less incentivized to complete I/I reduction as WTD is required to accept all component agency flows as part of the sewer contracts.

WTD would continue implementation of ongoing permanent flow monitoring as well as expanded regional flow monitoring concurrent with the U.S. Census to identify conveyance capacity needs in the separated sewer system.

This cost would be borne by the region and the benefits of expanded treatment and conveyance capacity in the system would be experienced by the region, but the agencies who contribute excessive I/I would benefit disproportionately as they could defer I/I rehabilitation on their systems.

Policy Option #1 would have lower near-term costs compared to Policy Options #2 and #3 as WTD and the component agencies would need to invest in I/I reduction only when it is cost-effective. But Policy Option #1 would have higher long-term costs as I/I is the most significant contributor of conveyance capacity needs and not addressing it would require the region to continue to build conveyance capacity projects to accommodate I/I into the future.

Policy Option #2 – Provide financial support to component agencies and private property owners to reduce I/I in areas with high I/I

Justification

This policy option would amend the current I/I policies to allow WTD to provide financial support to certain component agencies and private property owners to complete I/I reduction in areas with high levels of I/I. This policy option would incentivize component agency rehabilitation of local infrastructure to reduce I/I and incentivize private property owners to rehabilitate their side sewers, where a large portion of I/I enters the system by off-setting some or all the costs of rehabilitation. This policy option would reduce the amount of peak wet weather flow entering the regional sewer system and offer component agencies or private property owners the opportunity to improve the local public or private sewer system at lower or no cost. If enough flow is removed, then conveyance capacity projects could be deferred.

This policy option in action could include:

- Matching grants for I/I rehabilitation projects that component agencies could apply for
- Side sewer inspection rebate program
- Low-interest loan program for private property owners to get their side sewers inspected or repaired

Considerations

This policy option would provide regional funds to component agencies and private property owners in areas with high I/I, and the cost of I/I reduction would be borne by the region, as opposed to being borne by the agencies who are contributing the I/I. Conversely, areas with high levels of I/I are generally areas with lower average income, older systems, areas with higher groundwater tables, or are located in lower lying areas near bodies of water making their systems more vulnerable to I/I. These conditions present an equity opportunity, as this policy option could help more socially vulnerable communities improve their systems, as well as acknowledging conditions that the component agencies serving those communities do not have control over, such as geographical conditions.

Additionally, to implement this policy option, a net benefit must be demonstrated when providing funds to component agencies or private citizens. Analysis must demonstrate that funding I/I reduction would defer a capacity capital project or reduce operation and

maintenance needs that are equal or greater to the cost of the reduction. Any funds distributed through this policy option would need to be evaluated on a case-by-case basis.

WTD would need to implement enhanced ongoing permanent flow monitoring and continue with expanded regional flow monitoring concurrent with the U.S. Census to identify and confirm conveyance capacity needs and areas with high levels of I/I.

The costs would be borne by the region. The benefit of deferring conveyance capacity capital projects and reducing treatment capacity needs also would be experienced by the region. Agencies who are contributing excessive I/I would benefit disproportionately, as they would also have I/I rehabilitation subsidized by the region.

In the near-term Policy Option #2 would cost more than Policy Option #1 but would likely realize cost-savings long-term as Option #2 would defer capacity projects as excessive I/I is removed.

Policy Option #3 – Implement I/I limits on component agencies systemwide and enforce penalties if limits are exceeded

Justification

This policy option in action would set peak I/I limits from component agencies to reduce the amount of peak wet weather flow entering the regional sewer system. This policy option compels I/I reduction by administering penalties to component agencies who contribute flows that exceed the limit. It could also enforce penalties on component agencies that do not complete required I/I reduction work. If enough flow is removed, then conveyance and treatment capacity projects could be eliminated. This policy option in action could look like:

- A surcharge fee that is calculated based on the amount of flow exceeded
- Requirements to develop an I/I reduction plan for agencies that exceed limits

Considerations

This policy option would require I/I reduction by administering penalties on component agencies contributing excessive flow to the regional system. Flow monitoring in the past has shown that areas with high I/I are generally areas that have lower average income and older systems and this policy could impose excessive financial burden on those agencies and their ratepayers. Supplemental programs could be implemented to mitigate this, such as offering component agencies who serve more socially vulnerable communities a “grace period” to reduce the amount of flow they are contributing before administering surcharge fees. Component agencies can also be offered the option to invest the dollar amount of the

fine that is administered into rehabilitation of their systems and submit a report of what rehabilitation was implemented, instead of paying the amount of the fine to WTD.

Policy Option #3 would create significant costs to launch the program. A considerable amount of resources would need to be dedicated to increase permanent flow monitoring, research and identify flow targets, and validate any flow exceedances before penalties could be administered.

The costs would be borne by component agencies contributing excessive I/I to the regional system, as they would be required to either pay fines or invest in rehabilitating their sewer systems. The region would benefit from the elimination of the need for conveyance and treatment capacity projects due to I/I.

Policy Option #3 would likely be the more expensive to implement both in the near-term and the long-term compared to Policy Option #2. Option #3 would require more resources to launch a program that involves enforcing fines or surcharges on component agencies, and there would be more scrutiny on the flow monitoring required to enforce penalties.

Relative to Option #2, Policy Option #3 would have higher long-term costs as managing an enforcement program would be more resource intensive than managing an incentive program. Relative to Option #1, Policy Option #3 would likely cost less in the long-term as capacity projects would be eliminated due to removal of excessive I/I.

G. Interested and Affected Parties WTD will Engage to Gather Input

MWPAAC and the component agencies that WTD provides sewerage services to are the primary audiences that need to be engaged on the I/I policy options. Additional engagement with tribes, community based organizations (CBOs), and environmental non-governmental organizations (NGOs) may be conducted during implementation planning.

H. Rate Structure Considerations (if applicable)

All three of the forementioned policy options could have potential impacts to WTD's overall rate structure. The 1999 'Robinswood' agreement focused on a regional 'all for one and one for all' approach where all member jurisdictions would contribute equally to dealing with I/I, and a uniform rate structure would be in place throughout WTD's service area. Policy Options #1 and #2 both maintain this approach, with WTD providing financial support for upstream projects that reduce the overall cost of I/I to WTD. Any financial benefits or costs to WTD would thus be shared proportionately throughout the service area.

Policy Option #3, which could create an I/I surcharge rate class, would be a departure from this previous approach. WTD currently has only one customer class outside of the general sewer rate (high-strength dischargers), who pay the marginal operating cost of treating high-strength wastewater. If WTD were to implement a surcharge for I/I and apply the revenue to existing and planned obligations, the general sewer rate would be lower than it otherwise would be. This situation would result in Local Sewer Agencies (LSAs) with a high I/I flow paying more, and LSAs with low I/I flow paying less. Any I/I surcharge would need to be calculated in accordance with cost-of-service principles and is unlikely to substantially reduce the general sewer rate.

However, I/I is not the only cost driver within WTD's service area that is concentrated within a specific geographic zone. Because the combined conveyance system (roughly approximate to the City of Seattle) is designed to convey stormwater, it would not be charged through a potential I/I surcharge. However, it is possible that an I/I surcharge would need to be paired with a CSO surcharge that assesses all or some of the impacts of the Combined Sewer Overflow program on LSAs within the combined system area. Any detailed discussion of moving away from the Robinswood agreement's 'all for one and one for all' approach will likely not be constrained to only an I/I surcharge.

There are also potential impacts to the general sewer rate structure. If surcharges were implemented, the general sewer rate would need to recover less revenue than it otherwise would. WTD's general sewer rate currently consists of a uniform rate structure, where all single-family residences (SFR) are assumed to equal one Residential Capacity Equivalent (RCE). Non-SFR customers are measured based on flow, and a conversion factor of 750 cubic feet per month is equal to one RCE. There is evidence that a lower conversion factor would be more appropriate and reflect real world conditions. WTD has identified a work plan to evaluate the conversion factor, in line with Financial Policy 15.4, "*King County shall periodically review the appropriateness of this factor to ensure that all accounts pay their fair share of the cost of the wastewater system…*".

Any I/I based surcharge would likely be flow-based, which could have 'knock-on' effects in terms of measuring the number of flow-based RCEs in each LSA. In addition, I/I based surcharges would be more variable than WTD's existing rate structure and likely result in greater fluctuation in month-to-month revenues. If WTD were to adopt a more variable rate structure, some financial policies may need to be reexamined as well.

I. Relationship to contracts

According to the current sewer contracts, WTD must accept all sewage and waste delivered for treatment and disposal from the component agencies. The sewer contracts

also state that the contracts may be modified from time to time through changes to King County Code.

Policy Option #1 would not pose a change to the sewer contracts, as WTD would continue to accept flow from the component agencies as detailed in the contracts, and complete I/I reduction when cost effective. Implementing a flow limit, as with Policy Option #3, would require an update to the sewer contracts, or an update to King County Code. Modifying the sewer contracts presents unique challenges as there are two sets of expiration dates for the contracts - 25 contracts run through July 2036 and nine contracts run through July 2056.

Providing incentivizes, such as grants and loans for I/I reduction as with Policy Option #2 is allowed as long as a net benefit to the regional system can be demonstrated according to the Attorney General's Opinion 2009 No.5, and does not directly conflict with language in the sewer contracts.

J. Equity and Social Justice (ESJ) impacts (if applicable)

The policy options described have the potential to have positive or adverse ESJ impacts if selected. Generally, portions of the WTD service area that have the highest levels of I/I also have higher Social Vulnerability Index (SVI) scores.

SVI is a metric used by the Center for Disease Control (CDC) that assesses each census tract's vulnerability to disasters and public health threats. Many of those factors overlap with equity considerations, such as poverty, age, disability, and housing. SVI scores are assigned from 0 (least vulnerable) up to 1.0 (most vulnerable). Areas in the WTD service area that have a peak I/I rate of 3,500 GPAD or more have an average SVI score of 0.43 compared to the WTD Service Area average of 0.38 and the King County average of 0.40.

Policy Option #1 proposes the least amount of I/I reduction across the region, and the costs of constructing treatment and conveyance capacity projects in lieu of conducting I/I reduction are distributed across the service area through the sewer rate. Socially vulnerable populations across the region will continue to experience a higher sewer rate to pay for the construction of capacity projects to accept the increased I/I.

Policy Option #2 could provide opportunities for positive ESJ impacts. Ratepayers who live in high I/I areas would have opportunities to participate in programs to get their side sewers inspected for low or no cost. Additional programs could be implemented to increase the amount that the ratepayers may be eligible for if they are low-income.

In contrast, Policy Option #3 compels I/I reduction through penalties and could have adverse ESJ impacts on socially vulnerably populations – especially if the costs of the I/I

reduction or the penalties from contributing excessive flows are passed down from the component agencies to the ratepayers. If the policy includes programs that directly impact ratepayers like a private side sewer inspection program, then additional programs could be delivered in unison to mitigate the adverse ESJ impacts, such as exemptions, subsidies, or grants for low-income ratepayers.

K. Planning-level cost estimates

This section will be added into the policy memo as the "Step 2" analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the "Step 2" analysis later.

RWSP Update - Separated System Conveyance

Policy Memo #2

A. Policy Question

This memo is focused on policy questions related to the Separated System Conveyance topic of the Regional Wastewater Services Plan (RWSP) Update. The policy question analyzed in this memo is:

i. Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?

For the purposes of this memo, this capacity question is analyzed through the lens of separated system conveyance, particularly focusing on project sizing and project timing. This capacity-related question will also be analyzed in a policy memo dedicated to treatment capacity scheduled for completion in September 2026.

B. Problem Statement

King County's Wastewater Treatment Division (WTD) uses a set of planning assumptions to estimate the need for infrastructure expansion to meet future conveyance capacity needs. The need for increased capacity is due to population growth (i.e., a need for more pipe reaches and greater pipe volume) and an increase in infiltration and inflow (I/I) that results both from expansion of the system (more pipe surface area that can harbor leaks or illicit connections) and degradation of existing pipes. Over a 50-year planning horizon, most of the volume expansion needed in a planned capacity improvement is due to increasing levels of I/I.

After assessing capacity needs, conveyance infrastructure improvements are then sized conservatively to ensure that new infrastructure can support capacity well into the future. Due to capital funding constraints, these improvements are often installed just before the old structure reaches full capacity.

Building infrastructure to meet larger—and perhaps unnecessary—capacity requirements is more costly than building smaller infrastructure. Similarly, installing capacity improvements before they are needed ties up capital that could be used for other improvements. However, building undersized infrastructure risks needing additional capacity upgrades more quickly, while delaying a project until its need is imminent could precipitate construction cost risks.

C. Contextual and Baseline Information

ii. What is known about the topic and current conditions

WTD's Separated Sewer System

Typically, sewers built after the 1950s do not combine sanitary and stormwater flows into a single sewer system. In the urban landscape, the separated sewer system works in concert with distinct stormwater collection systems to manage sanitary and wet weather flows, respectively. Separated sewer systems comprise an interconnected system of pipes, pump stations, and other infrastructure that convey wastewater from homes and businesses to local wastewater collection systems and then to the regional wastewater treatment facilities.

WTD owns and maintains about 250 miles of separated sewer system conveyance, which represents about 65% of WTD's pipe system. Wastewater from homes and businesses within all the cities and sewer agencies within the WTD service area, except most of Seattle, is collected through around 5,900 miles of locally managed pipes, which then are connected to the regional separated system.

WTD's Separated Sewer Planning Process

WTD plans for capacity upgrades to the separated sewer system through updates to the Conveyance System Improvement (CSI) Plan. Each decade, with the start coinciding with U.S. Census years, WTD undertakes an extensive Decennial Flow Monitoring effort to document flows throughout its conveyance system. This large decennial flow monitoring effort temporarily augments a system of permanent flow monitors that WTD continuously maintains. This flow data and a set of planning assumptions are used to model future flows in each segment of conveyance. The planning assumptions include estimates of population growth, water usage, and expected infiltration and inflow (I/I) across the planning horizon. Increases in I/I are the largest contribution to increasing conveyance capacity needs.

Through this process, WTD can determine which segments of conveyance have inadequate capacity to manage future flows. Once these conveyance capacity needs are identified, WTD then develops conceptual projects to meet future capacity needs. Current practice for how this process is implemented is described below.

iii. Current policies in code, contract, or in practice

King County Code (K.C.C. 28.86, Wastewater Treatment) guides WTD's work in the separated conveyance system. The policies relevant to this memo are:

Relevant Policies in K.C.C.	Description
CP-1(1)	The twenty-year peak flow storm shall be used as the design standard.
CP-2	King County shall construct the necessary wastewater conveyance facilities to convey wastewater from component agencies to the treatment plants.
CP-3	King County shall periodically evaluate population and employment growth assumptions.

Current Practice—Developing Capacity Improvement Projects

The process used to develop capacity improvement projects first determines whether conveyance facilities can convey a 20-year peak flow without surcharging (filling and backing up through the pipe) under current conditions. Pipes that surcharge are at risk of overflowing. Facilities that can convey this estimated peak flow are assigned a level of service (LOS) of greater than 20. Facilities that cannot convey a peak flow are assigned a LOS of less than 20; for example, a LOS below 5 means there is a one-in-five chance that surcharging will occur in any given year.

Conceptual projects to increase capacity are then developed for infrastructure with a LOS of less than 20. These conceptual projects are sized to accommodate the 20-year peak flow projected for 50 years from the year of the last major flow monitoring effort; these peak flows include both increased flow due to projected PSRC population growth and increased I/I. For example, in the 2017 CSI report, based on flow monitoring that began in 2010, the 20-year peak flow expected in 2060 was used as the basis for sizing new pipe.

Although the project planning process begins for all conveyance needs once they are identified as being below a 20-year LOS, the conceptual projects are not advanced through WTD's project development pipeline until later. Capacity improvements are generally implemented when the capacity-limited infrastructure reaches a 2-year LOS.

Current Practice—Estimating Population Growth

WTD currently updates population and employment growth assumptions every decade using Puget Sound Regional Council (PSRC) forecasts, which correspond with decadal

updates to the U.S. Census. These PSRC forecasts are aggregated from the parcel level to match WTD's service area. PSRC does not extend its forecasts to the time horizon that WTD considers for conveyance planning, so WTD's planning and modeling teams extend the PSRC data using simple extrapolation methods.

iv. The system "must-dos"

WTD must meet Washington State requirements, which are derived from and expand upon U.S. Law and Code (Clean Water Act, Pub. L. 92-500; 33 U.S.C. § 1251 et seq.). WTD must also abide by the growth management policies of Washington State by providing services to the local urban growth area, and WTD must account for projected population growth in its General Sewer Plan.

Essentially, the separated sewer system must not be underbuilt for the projected population growth. The system must be built to convey all expected flows from the population, with no sanitary sewer overflows (SSOs). Even overflows that do not reach waters of the U.S. can be violations of the federal Clean Water Act permit requirements under some circumstances. WTD's National Pollutant Discharge Elimination System (NPDES) permits, issued by the Department of Ecology, do not allow for SSOs in the separated conveyance system.

The Revised Code of Washington (RCW 36.70A.110) states:
"(2) Based upon the growth management population projection made for the county by the office of financial management, the county and each city within the county shall include areas and densities sufficient to permit the urban growth that is projected to occur in the county or city for the succeeding twenty-year period [...] As part of this planning process, each city within the county must include areas sufficient to accommodate the broad range of needs and uses that will accompany the projected urban growth including, as appropriate, medical, governmental, institutional, commercial, service, retail and other nonresidential uses."

The Washington Administrative Code (WAC 173-240-050) states:
"(3) The general sewer plan shall include the following information [...]

(e) The population trend as indicated by available records, and the estimated future population for the stated design period."

v. Current and budgeted expenditures

In July 2025, WTD provided a list of conveyance capacity projects to the Regional Water Committee (RWQC). 11 projects are related to conveyance capacity upgrades, totaling $736M or approximately 6.5% of WTD's total Capital Improvement Plan (CIP) between 2025 and 2035. The conveyance capacity projects and the costs included in the CIP include:

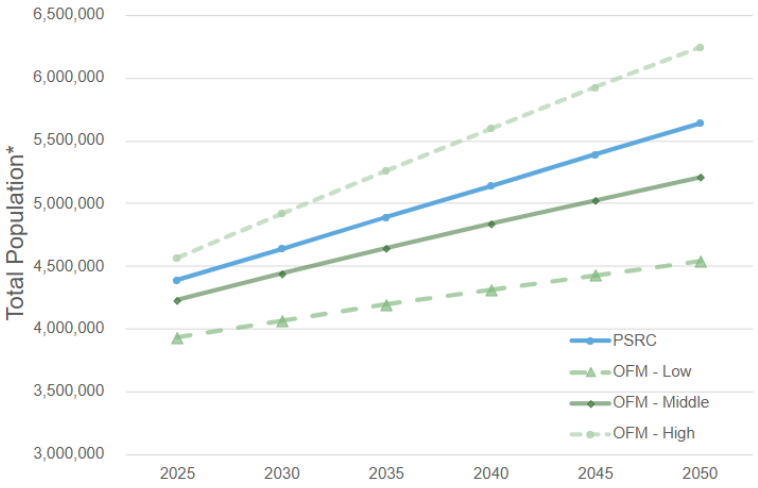
Project Name	2025-2035 Cost Estimates	
North Mercer Island and Enatai Interceptors Upgrade	$	38,415,620
Richmond Beach PS Upgrade		28,789,079
Richmond Beach Edmonds Interceptor Parallel		10,513,782
Black Diamond Trunk Capacity Upgrade		164,391,988
Garrison Creek Interceptor Replacement, Realignment, and Diversion		14,173,165
Lake Hills and NW Lake Sammamish Interceptor Upgrade		152,451,573
Boeing Creek Trunk Replacement and Parallel		835,661
Coal Creek Siphon and Trunk Parallel		153,671,044
Medina Pump Station Upgrade		43,618,526
Sammamish Plateau Diversion (Phase 1)		112,165,420
Soos Creek Cascade Relief Interceptor No. 2 Upgrade		16,796,707
	$	735,822,565

** The cost estimates shown above were presented to RWQC in July 2025 and may be updated as capital projects are advanced and further defined.

vi. Summary of science/data (if applicable)

Population Growth

The Washington Office of Financial Management (OFM) provides ranges of possible population growth scenarios for Washington counties, from low to high. The PSRC forecast through 2050, included in the graph below, falls within this range. Note that WTD's service area is not the entirety of these three counties; this data is provided to show consistency across agencies that issue the raw data WTD uses to develop service-area estimates.



*Based on total population for King, Pierce, and Snohomish Counties

Sanitary Sewer Overflows

WTD's system modeling strategy focuses on surcharging (the backing-up of flow within a pipe) rather than SSOs because (1) surcharging is much easier to predict and detect, and (2) surcharging is a more conservative standard. Surcharging is a necessary precondition to overflow, but pipes that surcharge do not necessarily overflow.

Understanding WTD's experience with SSOs can provide context for the region's risk tolerance in relation to determining how large and how quickly conveyance capacity projects are constructed.

Sanitary sewer overflows are relatively rare across WTD's system. SSOs attributable to capacity limitations tend to be concentrated in specific problematic locations.

Between 2019-2024, WTD experienced six SSOs that can be attributed to capacity limitations. Three were at Medina pump station. Some improvements to the Medina pump station have since been made, and further improvement projects for the Medina conveyance and the Medina pump station are in the CIP.

Over the same time period, WTD experienced another 26 SSOs that were attributed to asset or operational failure or another non-capacity-related cause.

D. Example Practices from Other Jurisdictions/Industry

Wastewater utilities across the country use different standards for designing for future capacity. Following King County Code, WTD designs conveyance capacity to a 20-year peak flow standard, using a 50-year planning horizon.

This 20-year peak flow standard is a conservative standard nationwide. For example, East Bay Municipal Utilities District, which provides sewage treatment services for the communities east of San Francisco Bay in California, uses a 5-year design storm standard that accounts for elevated groundwater.

E. Policy Issues, Challenges, and Opportunities

There are a few challenges to consider when considering population growth as it relates to conveyance system capacity.

1. Population growth is a relatively small component of projected future flows.

   Infiltration and inflow (I/I) are much larger factors in sizing new conveyance facilities. Because the planning process to determine conveyance size and improvement installation timing accounts for total flows, including both population changes and I/I, the policy question here overlaps with policy questions for I/I. That is, risks and opportunities associated with project sizing and timing could be impacted by policy decisions to reduce I/I.

2. WTD accepts all flows sent to the regional system from its component agencies, and component agencies are required to provide sewer services within the Urban Growth Area. WTD cannot refuse to accept these flows.

F. Range of policy options with associated actions and considerations (including qualitative description of costs)

The policy options presented below describe potential choices and Separated System Actions that could be implemented to address the policy question:

- How aggressively beyond legal requirements should WTD expand capacity to account for future population growth?

WTD expects the need for increased sewer conveyance capacity to extend well into the future. Most of this conveyance capacity need is driven by increasing I/I; options for reducing that need are provided in a separate policy memo dedicated to the I/I topic. Given increasing capacity needs and the mandated prevention of SSOs, several policy options to answer this question include:

1. Maintain current policies and practice
2. Take a less aggressive approach to expanding conveyance capacity by reducing pipe sizing design standard and applying a less conservative guideline for identifying new capacity needs.

3. Take a more aggressive approach to expanding conveyance capacity by installing planned capacity improvement projects more quickly.

Summary of Policy Options

	Goal	Description	Separated System Actions
#1	**Maintain** current policies and practice in conveyance capacity planning for population growth	Continue to identify needs and develop conceptual projects based on the 20-year design standard but take on risk in implementation timelines to allow for flexibility in capital allocation.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 20-year peak flows at the 50-year time horizon.
#2	Take a **less aggressive** approach to conveyance capacity planning due to population growth	Reduce short-term construction costs by reducing pipe sizing design standard and applying a less conservative guideline for identifying new capacity needs.	Identify needs and develop conceptual projects when conveyance capacity falls below a 5-year LOS (depending on chosen I/I Policy Options); prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 5-year peak flows at the 50-year time horizon.
#3	Take a **more aggressive** approach to conveyance capacity planning due to population growth	Better protect against risk of SSO by installing planned capacity improvement projects more quickly.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 5-year LOS.

Policy Option #1 – Maintain current policies and practice in conveyance capacity planning for population growth.

Justification

This policy option would maintain the current approach to managing separated system conveyance capacity due to population growth. It maintains a conservative design standard but allows WTD more flexibility in allocating the capital budget to different projects as needed.

Considerations

This policy option would result in the continued implementation of current practice, meaning that sizing requirements for the separated conveyance system would not change, and WTD would implement projects as capital funding is available but before severe risk of SSO. In practice, this means that projects are sized conservatively, but that their installation is deprioritized for other system-wide capital needs that are driven by more stringent regulatory requirements.

Policy Option #2 – Take a less aggressive approach to conveyance capacity planning due to population growth.

A less aggressive approach would reduce the design standard specified in King County Code to be less than the 20-year peak flow at the planning horizon. By choosing a reduced design standard, such as a 5-year peak flow instead of a 20-year peak flow, WTD would design slightly smaller conveyance projects. Note that the design standard would still be applied to the extent of the 50-year planning time horizon; e.g., the estimated 5-year peak flow in 2070 based on flow monitoring from 2020.

Justification

The current 20-year peak flow design standard is very conservative compared to other design standards used by other utilities nationally. Lowering the standard would decrease the number of conveyance capacity projects included within the 50-year planning horizon of the Conveyance System Improvement Plan (as WTD would only plan upgrades for sections of conveyance that are at the 5-year design capacity).

Considerations

In the short term, with Option #2 conveyance capacity projects would require fewer resources overall since there would be fewer capacity projects in the 50-year planning

horizon. Those projects constructed would have smaller pipe sizes and, thus, often be less expensive to build. So, in the short term, individual conveyance projects and the overall cost of all conveyance capacity projects under Option #2 may be less costly than Option #1. Note though, that the majority of the costs of major conveyance projects are not in the size of pipes, but in other construction costs.

Long-term, by using a reduced design standard, WTD may need to construct conveyance capacity projects more frequently, as the full capacity of the pipe could be reached more quickly. More conveyance capacity projects more frequently could result in higher total costs for conveyance capacity over the longer term.

Determining capacity needs in the planning process as pipe capacity falls below a 5-year LOS rather than a 20-year LOS would have the effect of postponing projects from the CIP, potentially allowing for more flexibility in capital allocations across the agency.

Additionally, when pipes are built to a 5-year design standard, larger storms would result in a higher risk of SSOs, due to less volume in the pipe to accommodate large amounts of I/I.

Overlap with I/I Policy Options:

If more aggressive approaches to reducing I/I are chosen as part of this update to the Regional Wastewater Services Plan (see Policy Memo #1), potential conveyance capacity needs would still need to be identified well in advance to have enough time for an I/I reduction project to reduce or eliminate the need for a capacity improvement. Identifying projects according to the 5-year standard suggested here would not provide enough time; however, a 20-year standard could still be used to identify needs and develop projects, while the design standard is set at 5 years.

Policy Option #3 – Take a more aggressive approach to conveyance capacity planning due to population growth.

A more aggressive approach to conveyance capacity would prioritize installing capacity improvement projects more rapidly, when a 5-year LOS is reached rather than a 2-year LOS.

Justification

By prioritizing capacity improvements at a 5-year LOS, WTD could better protect against risk of SSO.

Considerations

Earlier construction of conveyance capacity projects may result in projects from other categories of WTD's capital program being deferred. This could result in further exacerbating the backlog of WTD capital projects that would need to be built in the near term to reach compliance. Compared to Options #1 and #2, this would result in more spending on capacity improvement upgrades in the separated system in the short-term.

G. Interested and affected parties WTD will engage to gather input

WTD's component agencies and MWPAAC are the primary audiences that need to be engaged on separated sewer capacity population growth policy options.

H. Rate structure considerations (if applicable)

There are no known rate structure considerations for this policy question.

I. Relationship to contracts

There are no known contract implications for this policy question.

J. Equity and Social Justice (ESJ) impacts

Based on the definition of equity and social justice in the King County Equity and Social Justice Plan 2016-2022, there are no known equity and social justice impacts for this question.

K. Planning-level cost estimates

This section will be added into the policy memo as the "Step 2" analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the "Step 2" analysis later.

RWSP Update – Separated System Conveyance

Policy Memo #3

A. Policy Question

This memo is focused on the following policy questions related to the Separated System Conveyance topic of the Regional Wastewater Services Plan (RWSP) Update.

- **i.** How should the conversion of on-site septic systems in the service area be managed?
- **ii.** Should WTD implement programs to encourage conversion within the service area?

B. Problem Statement

Within King County's Urban Growth Area (UGA) there are about 40,000 on-site septic systems. Approximately 3,000 of these are within 100 feet of a water body. When septic systems fail, untreated wastewater can enter ground or surface water through homes, yards, and waterbodies. Untreated wastewater can introduce bacteria, disease, and contaminate groundwater and compromise public and environmental health.

Roughly 75% of the on-site septic systems in urban King County are more than 30 years old, which is the average working lifetime for a properly installed and maintained on-site septic system according to the U.S. Environmental Protection Agency (EPA). As on-site septic systems approach failure, owners must either connect to the local sewer system or replace or repair their old system with a system that meets County requirements. Because so many septic systems are approaching the end of their life, King County now has a window of opportunity to connect parcels with on-site septic systems to the regional sewer system before they are replaced with new on-site septic systems that will last another 30 or more years.

Connecting to sewer is expensive and can create a financial burden for property owners. Not only are property owners responsible for the up-front cost of installing a side sewer from their home to the public sewer, they are often also required to pay the cost of extending public sewer lines to their parcel. Property owners also pay the ongoing costs of monthly wastewater utility rates charged by their local sewerage agency after connecting, as well as the capacity charge that is administered by the Wastewater Treatment Division (WTD) when new properties connect. The cost to connect to public sewer can range from $37,000 up to $124,000. Property owners often elect to replace their on-site septic system, as the connection to sewer would be a larger financial burden compared to the lower cost of installing a new on-site septic system ($41,000 on average).

In addition to posing a safety risk, lack of local public sewer lines also impedes urban growth and development. Currently, there are a portion of urban parcels that remain vacant because they are too far from sewer lines to make connection affordable, yet the parcel is too small for an on-site septic system. Lack of sewer access also prevents already-developed parcels from increasing housing density through the construction of accessory dwelling units (ADUs) or multifamily housing. Providing feasible sewer access to these parcels would enable housing growth within the Urban Growth Area (UGA).

C. Contextual and Baseline Information

i. What is known about the topic and current conditions

On-Site Septic Systems

On-site septic systems are underground, decentralized wastewater treatment structures, commonly used in rural or suburban areas. On-site septic systems treat wastewater when homes and buildings are not connected to public sewer systems. Septic systems treat flow by capturing solids and liquids for treatment and solids removal in an underground watertight septic tank. Solids from the influent settle at the bottom of the tank, while effluent from the tank is then conveyed to a drainfield, which is a series of trenches filled with gravel or sand, and then filtered through the soil. The soil accepts, treats, and disperses wastewater as it percolates through the soil, ultimately discharging to groundwater. On-site septic systems can be expensive to maintain, as inspections of the system are usually required every 1-3 years ($400 per inspection), and the systems need to be pumped every 5-10 years ($800 per session). A full on-site septic system replacement costs about $41,000. If used for its full useful life of 30-years, maintaining and replacing an on-site septic system can cost about $66,000.

On-Site Septic Systems in King County

In King County there are roughly 85,000 on-site septic systems. Public Health – Seattle King County permits on-site septic systems, supports homeowners in maintaining their on-site septic system, and supports homeowners in connecting to public sewer if their on-site septic system has failed and they are unable to replace it with a conforming system. In certain instances, as described below, urban property owners with failing septic systems are required to connect to public sewer. Waivers for connecting to sewer can be granted in extraordinary circumstances, such as if a connection would place an unreasonable financial burden on the property owner. Waivers are not guaranteed and must be reviewed by Public Health – Seattle King County, the local sewer utility, and the local building or planning department.

ii. Current policies in code, contract, or in-practice

King County Code (KCC) and Washington Administrative Code (WAC) require property owners in urban King County to connect to public sewer if their property is a new development, or if the existing on-site septic system fails and:

1. The property owner is unable to replace the on-site septic system with a system that conforms to current standards or code
2. It is feasible for the property owner to connect to public sewer (the property is within 200 feet of a local public sewer line, and the local sewer utility permits the connection)

Waivers may be granted by the King County Health Officer or delegated authority in extraordinary cases when connecting to sewer is cost-prohibitive for the property owner. Waivers are reviewed and coordinated with the applicable municipality and the local sewerage agency that serves the area where the parcel with the on-site septic system is located. Those cases must then be reported to the Washington Department of Health and can be rescinded if the on-site septic system is later deemed to be an environmental or public health threat.

King County Board of Health Code (Title 13 On-Site Sewage) and the Washington Administrative Code (WAC 246-272A On-Site Sewage Systems) provide guidance on how on-site septic systems connect to sewer.

King County Board of Health Code 13.04.050 Connection to Public Sewer
A. The owner or occupant of lands or premises located within the Urban Growth Area, as defined in the King County Comprehensive Plan, undertaking new residential or nonresidential construction, short subdivision or subdivision from which sewage will originate shall connect the construction to a public sewer if the sewer utility permits such connection. Within unincorporated King County such connection shall be in accordance with K.C.C. 13.24.136. Within incorporated cities such connection shall be in accordance with the policies of that city or the local sewer utility. The connection shall be made by connecting the building drain with an approved side sewer, and the side sewer to the public sewer. B. For existing development located within the Urban Growth Area and which is within two hundred feet of a public sewer, where an on-site sewage system is operating, the owner shall abandon the on-site sewage system in accordance with WAC 246-272A-0300 and connect the sanitary drainage system to the public sewer when the sewering authority permits such connection and when:

King County Board of Health Code 13.04.050 Connection to Public Sewer

a) Repair, modification or replacement of the on-site sewage system is necessary, or the existing on-site sewage system has failed and an on-site sewage system fully conforming to this title cannot be designed and installed; or

b) Additional construction which in any way affects the on-site sewage system is proposed.

C. The distances set forth in subsection B. of this section shall be calculated along the shortest route in road rights-of-way and easements from the existing sewer to the nearest point of the lands or premises to be served, consistent with the jurisdictional comprehensive plan and sewer extension practices of the sewer utility involved.

D. Every plumbing fixture and every sanitary drainage system not connected to a public sewer, or not required by law to be connected to a public sewer, shall be connected to an on-site sewage system.

E. The health officer is authorized to grant waivers from specific requirements of this section in accordance with WAC 246-272A-0420, as amended. (R&R No. 24-05 § 3, 2024: R&R No. 08-03 § 2, 2008: R&R No. 99-01 § 2 (part), 3-19-99: R&R No. 3 Part 13 § 1, 12-19-86).

WAC 246-272A-0025 Connection to Public Sewer System

1. Upon the failure of an existing OSS within the service area of a sewer utility, the local health officer shall:
   a) Permit the repair or replacement of the OSS only if a conforming OSS can be designed and installed, excluding OSS designed in compliance with or proposing to use Table X in WAC 246-272A-0280
   b) Require connection to a public sewer system if the sewer utility allows the connection and has adequate public sewer services available within 200 feet from where the existing building drain connects to the existing building sewer, or where no building drain exists, within 200 feet from where the sewer line begins, as measured along the usual or most feasible route of access.
2. The owner of a structure served by an OSS permitted as a repair under Table X in WAC 246-272A-0280 shall abandon the OSS as specified in WAC 246-272A-0300, and connect the structure to a public sewer system when:
   a) Connection is deemed necessary to protect public health by the local health officer;

WAC 246-272A-0025 Connection to Public Sewer System
b) An adequate public sewer becomes available within 200 feet of the existing structure, or in cases where no building drain exists, within 200 feet from where the sewer for the building begins, as measured along the usual or most economically feasible route of access; c) The sewer utility allows the sewer connection

iii. The system "must-dos"

WTD must accept all flows that it receives from the component agencies that it provides sewerage services to, which means it must accept any additional flow from on-site septic systems that convert to sewer. WTD recoups this cost by collecting a capacity charge from property owners for any new sewer connections, reconnections after 5 years, additions, and changes of use. The capacity charge is billed quarterly for 15 years directly from King County and helps fund the costs of new wastewater infrastructure in the region.

iv. Current and budgeted expenditures

N/A

v. Summary of science/data (if applicable)

The information collected regarding on-site septic systems in King County is managed by Public Health – Seattle King County. WTD provides services to most of urban King County, as well as parts of Snohomish and Pierce County. Information regarding on-site septic systems in those parts of Snohomish and Pierce County was not readily available during the development of Part 1 of the policy memo. The information will be gathered during develop of Part 2, as cost-estimates and evaluation of outcomes are developed for the policy options.

There are currently 20,119 on-site septic systems within the King County portion of WTD's service area, with 13,919 of those systems being built before 1990. About 45% or 9,067 of the on-site septic systems within the King County portion of WTD's service area are within 200 feet of a public sewer line, and about 15% or 3,017 are within 100 feet of a waterbody.

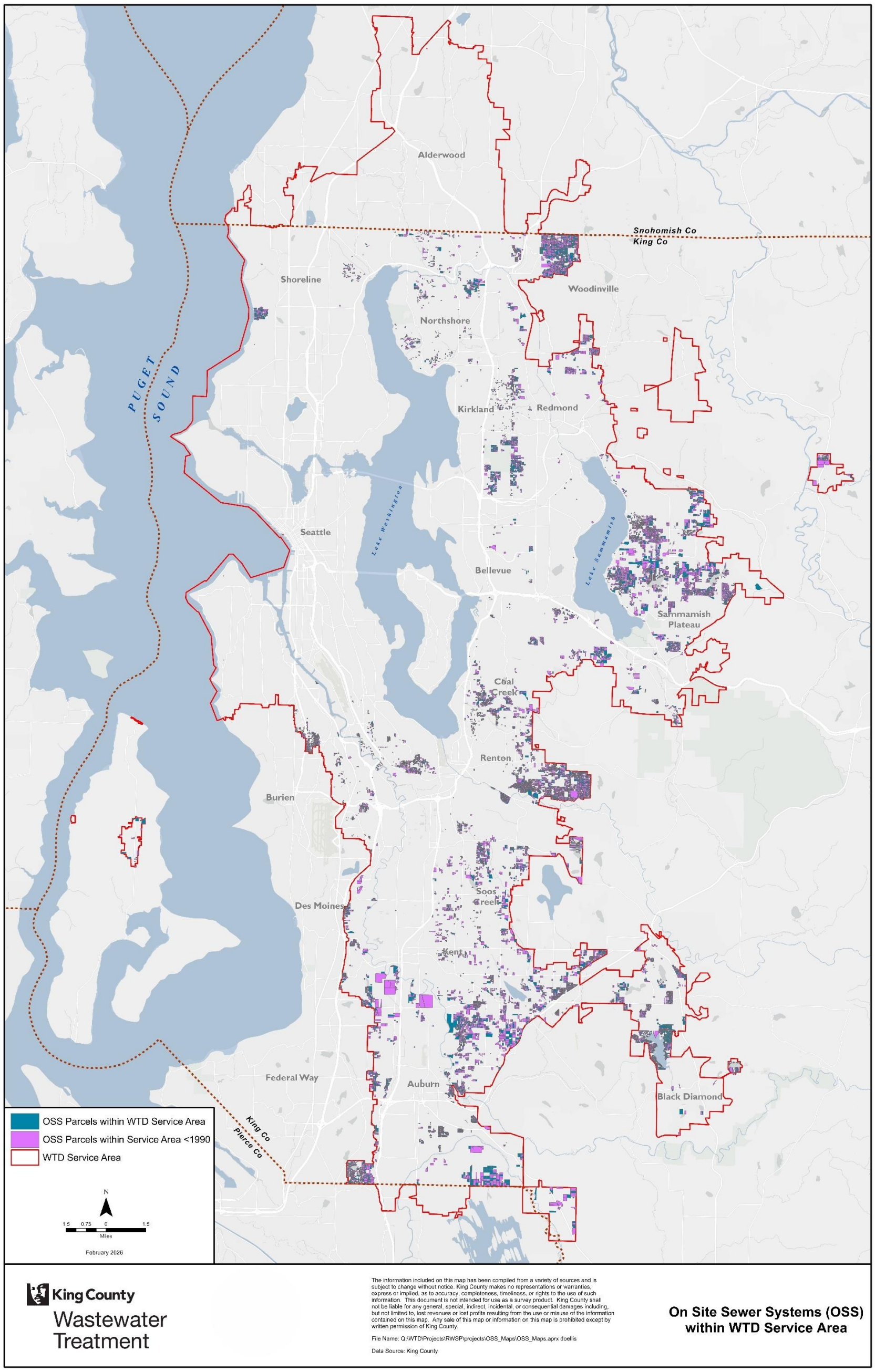


Figure 1. On-Site Sewer Systems within WTD Service Area

D. Example Practices from Other Jurisdictions/Industry

Metropolitan Sewer District of Greater Cincinnati (MSDGC)

MSDGC administers a Sewer Assessment Program that subsidizes a portion of the cost to extend public sewer mains or laterals in Hamilton County, Ohio. The goal of the program is to provide sewers to unsewered properties – some of which were built before sewers were available. MSDGC offers property owners two options, the first being construction of a lateral sewer stub from an existing public sewer main to a property line or public right-of-way and would serve a single property. The second option would extend a public sewer main to extend sewer service to a neighborhood or area, as well as a lateral sewer from the new main to the property line or public right-of-way. The second option extends sewer service to multiple properties. Property owners would pay up to $12,000, plus any applicable interest and fees, for MSDGC to design and construct a new public sewer main and/or lateral sewer. MSDGC would then fund all costs in excess of the $12,000 paid by the property owner. That amount can be paid upon invoice, placed on property taxes as an assessment, or a combination of the two.

Lacey, Olympia, Tumwater, and Thurston County (LOTT) Clean Water Alliance (CWA)

LOTT offers a rebate of 50% of the LOTT connection fee for property owners converting from an existing on-site septic system to connect to the LOTT wastewater system. Property owners who meet the criteria for hardship status may qualify for an additional rebate of up to 25% of the connection fee. The rebates are granted as “instant” rebates at the time of payment to the city for charges related to connection to the sewer system. In 2026, the LOTT connection fee is about $7,800, the individual cities as a part of LOTT (Lacey, Olympia, Tumwater) also charge a connection fee to connect to their local public sewer system that ranges from about $3,200 to $4,700. The rebate must be redeemed and the remaining portion of the LOTT connection fee paid within three months of rebate approval. The goal of the program is to incentivize property owners to abandon on-site septic systems and connect to the public sewer system to protect environmental health and protect LOTT’s continued ability to discharge to receiving waters. The program also supports LOTT by spreading the cost of operating the public sewer system over more ratepayers and supports LOTT’s efforts in gathering data to inform future efforts to incentivize septic to sewer conversion.

City of Bend, Oregon – Septic to Sewer Conversion Program

Bend, Oregon administers a program that allows residents to apply for funding annually to complete a sewer project in an area where properties are currently served by private on-site septic systems. The program is funded through utility rate revenues and allows residents to apply for up to $3.5M annually. Projects that are selected are referred to as Neighborhood Extension Projects. The projects are selected by a program committee, and the funds can be used to extend the sewer main in the road right-of-way. Property owners are responsible for extension of the private portion of the sewer lateral. Property owners also can receive a 50% discount on the connection fee to the system but must redeem it within two years after the project is completed. The City of Bend recently completed a project through this program in 2022 called the Silver Sage Sewer Project, in which gravity sewer mains and laterals were installed to allow 63 properties to decommission their septic systems and connect to the public sewer system.

E. Policy Issues, Challenges, and Opportunities Related to the Policy Questions

1. WTD subsidizing the cost of connecting private properties to sewer for a subset of ratepayers or component agencies can be interpreted as service inequity.

   WTD does not typically play an active role in supporting connection of private property to sewer. Additionally, WTD administers a capacity charge to new properties connecting to any local sewer system that eventually conveys flow to WTD's system. WTD subsidizing connections to sewer for certain ratepayers through local agency extension of local sewer lines, while only administering a capacity charge for others who connect to the sewer system, could be viewed as a service equity issue. If WTD provides financial support for the extension of local public sewer lines to facilitate private property connection to sewer, this could also be interpreted as providing disproportionate benefit for those sewerage agencies.

2. Supporting conversion of on-site septic systems near waterbodies or with a high risk of failure proactively protects public and environmental health.

   On-site septic system failures can cause significant harm to public health and environmental health by discharging untreated effluent and bacteria into the surrounding environment and nearby waterbodies. Failures can contaminate groundwater, impact shellfish safety, and spread disease. WTD has an opportunity to take a proactive role in reducing the risk of harm to public and environmental health by

supporting properties to connect to sewer if they have on-site septic systems near waterbodies, or with on-site septic systems that are older and have a higher risk of failure.

3. Supporting the conversion of urban properties with on-site septic to sewer will help King County meet housing and growth management goals.

   WTD has a unique opportunity to remove barriers to development and advance housing and growth management goals. Supporting on-site septic system conversion to sewer in King County's urban growth area can provide opportunities for housing densification when homeowners decommission their on-site septic systems and potentially use that space for ADUs. It could also provide opportunities for smaller vacant lots that do not have space to host an on-site septic system to be developed as it removes barriers to connecting to sewer.

F. Range of Policy Options and Associated Actions and Considerations (including qualitative description of costs)

The policy options presented below describe potential choices and Separated System Actions that could be implemented to address the following policy questions:

- How should the conversion of on-site septic systems in the service area be managed?
- Should WTD implement programs to encourage conversion within the service area?

The policy options include:

1. Maintaining the current practice and rely on Public Health – Seattle King County and local jurisdictions to manage on-site septic system conversion;
2. Support conversion of septic to sewer on properties near waterbodies within WTD's service area;
3. Support all septic conversion in WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve all developable parcels by 2060.

Summary of Policy Options

Policy Option	Goal	Description	Separated System Actions	Example Programs
1	Provide sewerage services to residents in the urban growth area within WTD's service area as they connect to the regional sewer system	Maintain practice and rely on Public Health – King County Seattle and local jurisdictions to manage on-site septic system conversion	Rely on Public Health – King County Seattle and local jurisdictions to facilitate conversions due to on-site septic system failures and/or redevelopment.	Continue to rely on Public Health – Seattle King County to administer the on-site septic system program
2	Proactively protect environmental and public health by supporting conversion of parcels with on-site septic systems near water bodies throughout the WTD service area through supporting extension of local sewer lines to serve those parcels	Support conversion of septic to sewer on properties near waterbodies within WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve private property owners	Partner with local sewer agencies to convert on-site septic systems near water bodies within WTD service area	Administer grants to local agencies to extend sewer lines to parcels with on-site septic systems near a waterbody Partner with local agencies to extend sewer lines in areas near waterbodies with a high concentration of parcels with on-site septic systems
3	Proactively protect environmental and public health by supporting conversion of all on-site septic systems within the WTD service area to sewer through supporting extension of local sewer lines to serve those parcels	Support all septic conversion in WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve all developable parcels by 2060	Partner with and/or require all developed parcels in the service area to connect to the sewer system by 2060	Administer grants to local agencies to extend sewer lines to parcels with on-site septic systems Partner with local agencies to complete capital projects to extend sewer lines in areas with a high concentration of parcels with on-site septic systems Partner with local agencies and private property owners to identify joint projects in which costs are shared to extend sewers

Policy Option #1 - Maintain practice and rely on Public Health – Seattle King County and local jurisdictions to manage on-site septic system conversion.

Justification
This policy option would maintain current practice and allow Public Health – Seattle King County and local jurisdictions to manage and make decisions on conversion of on-site septic systems to sewer. WTD would continue to provide wholesale sewerage services to those local jurisdictions that would be collecting sewage from any new connections that are completed. This policy option would continue to advance WTD's mission to protect environmental and public health through providing wholesale sewerage services to the region.

Considerations
The continued implementation of these actions could result in minimal conversion of on-site septic systems in WTD's service area to sewer. Financial burden is one of the main reasons private property owners do not connect to sewer. With 75% of on-site septic systems in urban King County approaching the end of their useful life, those property owners will likely elect to replace their septic system as opposed to connecting to sewer since it is typically cheaper. This will result in limiting urban development. This policy option will provide the least protection to environmental and public health, as on-site septic systems are generally less reliable than sewer and are prone to pollute their surrounding environment if they fail.

Policy Option #2 - Support conversion of septic to sewer on properties near waterbodies within WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve private property owners.

Justification
This option would amend current policy to provide support to component agencies to construct local sewer lines that serve private property owners with on-site septic systems near waterbodies. This would proactively protect environmental and public health above current practices by prioritizing connection of parcels near waterbodies to sewer, as septic system failures near waterbodies have greater potential to harm environmental and public health.

Considerations

This policy option would address both on-site septic systems near waterbodies, as well as a portion of older on-site septic systems that are more prone to failure, as 75% of systems in urban King County are at or near the end of their useful life. This would cost substantially more than Policy Option #1 as many more on-site septic systems would be converted to sewer. The costs of Option #2 will be evaluated in the step 2 analysis for this policy question.

This policy option would provide disproportionate benefit to the local agencies and communities that are receiving support to extend their sewer lines and expand their sewer system. This policy option would also provide disproportionate benefit to the communities in which the sewer lines are extended, as private property owners may free up available square footage previously used for on-site septic system for construction of accessory dwelling units (ADUs). It would also support development of new housing, as there are a number of vacant properties that are not large enough to host an on-site septic system, but are too far from a local public sewer line.

Policy Option #3 - Support all septic conversion in WTD's service area by partnering with local sewer agencies in the service area to construct local sewer lines that could serve all developable parcels by 2060.

Justification

This option would amend existing policy to provide support for conversion of all on-site septic systems throughout WTD's service area to proactively protect environmental and public health. Due to roughly 75% of on-site septic systems in urban King County approaching the end of their useful life and being at higher risk of failure, there could be a significant return-on-investment in reducing potential harm to environmental and public health.

Extending sewer lines to connect all parcels currently using on-site septic systems would support urban development and housing densification at greater scale than Option #2. Option #3 would enable construction of ADUs as significantly more property owners would be able to free up available square footage previously dedicated to septic systems. And, a greater number of vacant properties not large enough to host an on-site septic system, but too far from a local public sewer line, would also be able to connect if Option #3 is implemented.

Considerations

This policy option has similar considerations to Policy Option #2. Though the goal is to convert all parcels with on-site septic systems to sewer across the region, there are cities within the service area that have higher number of septic systems such as Kent, Auburn, and Pacific. Private property owners that have sewer lines extended to them would receive disproportionate benefit, as the costs of extending those lines are subsidized by the region. Additionally, the sewerage agencies that have their lines extended would have their systems expanded at a lower cost. Sewer is generally more reliable, at less risk to failure, and more sustainable long-term. Though Policy Options #2 and #3 are similar, the scale at which the sewer line extensions are completed and connections are supported is much greater in Policy Option #3, leading to a greater reduction in potential harm due to on-site septic system failures. Since the scale of Policy Option #3 is greater, it would have a higher cost than Policy Options #1 and #2.

G. Interested and affected parties WTD will engage to gather input

Public Health – Seattle King County, the King County Board of Health, MWPAAC, and component agencies that WTD provides sewerage services to, will be the primary audiences that need to be engaged on the on-site septic conversion policy options. The general public, and specifically property owners with on-site septic systems, near local public sewer lines, or near waterbodies would be engaged during implementation planning.

H. Rate Structure Considerations (if applicable)

There are no known rate structure considerations for this policy question.

I. Relationship to Contracts

There are no known contract implications for this policy question.

J. Equity and Social Justice (ESJ) impacts (if applicable)

The policy options described have the potential to have positive and adverse ESJ impacts depending on which is selected. Generally, developable portions of the WTD service area that have the oldest on-site septic systems, and in turn the ones at higher risk of failure, also have higher Social Vulnerability Index (SVI) scores.

SVI is a metric used by the Center for Disease Control (CDC) that assesses each census tract's vulnerability to disasters and public health threats. Many of those factors overlap with equity considerations, such as poverty, age, disability, and housing.

In urban King County, of the roughly 30,000 onsite septic systems that are nearing or at the end of their useful life, about 13,300 systems are located in the top 40% of most socially vulnerable census tracts. Furthermore, about 5,000 are located in the top 20% of most socially vulnerable census tracts. When sewers in King County were built, the focus was on expanding urban services around Lake Washington to address pollution impacting the lake. Other cities that were not directly surrounding Lake Washington did not get the same level of funding for sewer connections. There are many on-site septic systems that currently serve residents in those cities. Policy Options #2 and #3, which would support conversion of on-site septic systems by extending sewer lines, could advance equity by subsidizing some of the connection costs for residents who are living in cities that have experienced inequitable sewer infrastructure investment.

In contrast, there are also a subset of on-site septic systems that serve less socially vulnerable cities. Policy Options #2 and #3 could result in WTD funds subsidizing the costs for residents living in more affluent communities to connect to sewer in addition to the communities with high social vulnerability.

Policy Options #2 and #3 that propose extending public local sewer lines to expand connection to sewer would also support development and housing densification. This means homes that currently have an on-site septic system could de-commission their on-site septic systems and could use that land to construct ADUs. These changes increase property value and development options, which can have positive results for current residents and property owners, especially if anti-displacement policies are in place. There is also a subset of parcels that are far away from a sewer line but are too small to host an on-site septic system. Extending sewer lines closer to those parcels would allow them to be developed.

K. Planning-level cost estimates (if applicable)

This section will be added into the policy memo as the “Step 2” analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the “Step 2” analysis later.

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

KING COUNTY

Signature Report

Motion

Proposed No. 2026-0038.1 **Sponsors**

A MOTION acknowledging receipt of a plan describing the analysis to be completed for the policy questions identified in the Regional Wastewater Services Plan Update scope document as adopted by regional water quality committee resolution 2025-01, prepared in accordance with the 2026-2027 Budget Ordinance, Ordinance 20023, Section 115, Proviso P1.

WHEREAS, the King County 2026-2027 Budget Ordinance, Ordinance 20023, Section 115, Proviso P1 states that $250,000 shall not be expended or encumbered until the executive transmits a plan describing the proposed analysis to be completed for the policy questions identified in the Regional Wastewater Services Plan Update scope document as adopted by regional water quality committee resolution 2025-01, and a motion acknowledging receipt of the plan, and motion acknowledging receipt of the plan is passed by the council, and

WHEREAS, the executive has transmitted to the council the requested plan entitled Analysis for Regional Wastewater Services Plan Policy Questions along with a motion acknowledging the receipt thereof by March 1, 2026;

NOW, THEREFORE, BE IT MOVED by the Council of King County:

Receipt of the Analysis for Regional Wastewater Services Plan Policy Questions, Attachment A to this motion, is hereby acknowledged.

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

_____

Sarah Perry, Chair

ATTEST:

_____

Melani Pedroza, Clerk of the Council

APPROVED this _____ day of _____, _____.

_____

Girmay Zahilay, County Executive

Attachments: A. Analysis for Regional Wastewater Services Plan Policy Questions, March, 2026

Analysis for Regional Wastewater Services Plan Policy Questions

March 1, 2026

King County

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I. Proviso Text

Ordinance 20023, Sections 115 and 132, Department of Natural Resources and Parks, pp. 146, 183.[1]

SECTION 115. WASTEWATER TREATMENT

P1 PROVIDED THAT:

Of this appropriation, $250,000 shall not be expended or encumbered until the executive transmits a plan describing the proposed analysis to be completed for the policy questions identified in the Regional Wastewater Services Plan Update scope document as adopted by regional water quality committee resolution 2025-01, and a motion acknowledging receipt of the plan, and motion acknowledging receipt of the plan is passed by the council. The motion should reference the subject matter, the proviso's ordinance, ordinance section, and proviso number in both the title and body of the motion.

A. The plan shall be developed with input from the regional water quality committee and describe how the policy questions identified in the Regional Water Services Plan Update Scope document as adopted by the regional water quality committee resolution 2025-01 will be analyzed, including but not limited to:
   1. A framework for the analysis of the policy questions which identifies the topics that shall be addressed as part of policy analysis;
   2. The proposed format for reporting the analysis; specifying whether the analysis will be available as standalone reports presentations, or in other formats;
   3. For each policy question, how the policy analysis will inform the RWSP Update;
   4. Timelines for the analysis for each policy question;
   5. A problem statement corresponding to each policy question; and
   6. In instances where the analysis of a policy question is anticipated to occur in more than one section of the Regional Wastewater Services Plan Update, the plan required by this proviso shall identify how the complete analysis for the policy question will be addressed.

B. The plan shall also include policy analysis for at least two policy questions from the RWSP scope document as adopted by the regional water quality committee resolution 2025-01. The analysis of these policy questions is intended to serve as a proof of concept for the level of analysis of the remaining policy questions.

C. The plan may also propose modifications to the list of policy questions identified in the Regional Water Services Plan scope document, and, if modifications are proposed, the topics in subsections A. and B. of this proviso shall be discussed in relation to the alternate proposal.

The executive should electronically file the plan and motion required by this proviso by March 1, 2026, with the clerk of the council, who shall retain an electronic copy and provide an electronic copy to all councilmembers, the council chief of staff, and the lead staff for the transportation, economy, and environment committee or its successor, and the lead staff for the regional water quality committee or its successor.

[1] Link to Ordinance 20023

SECTION 132. CAPITAL IMPROVEMENT PROGRAM
P3 PROVIDED FURTHER THAT:
Of the appropriation for capital project 1134066, Regional Wastewater Services Plan (RWSP) Update, $7,382,000 shall not be expended or encumbered until the council passes the motion required by section 115, Proviso P1, of this ordinance.

II. Executive Summary

The Regional Wastewater Services Plan (RWSP) serves as King County's comprehensive wastewater plan, providing policy and operational direction for capital improvements and future development of King County's wastewater system across the service area. The RWSP was adopted in 1999 and planned through 2030, with the foundational Robinswood Agreement establishing core financing principles that guided capital project funding. [2] In 2024, King County's Wastewater Treatment Division (WTD) began the effort to update the RWSP to prepare for the future and to plan for new and emerging challenges, a process called the RWSP Update.

The RWSP Update process began with the adoption of the RWSP Scoping Document in early 2025 by the Regional Water Quality Committee (RWQC), which outlines the overall approach and highlights 29 "Major Policy Questions" requiring analysis. Throughout 2025, WTD began the first phase of work for the update, which focused on current conditions and brainstorming early actions and policy options in response to the Major Policy Questions, setting the foundation for future planning.

WTD will prepare policy memos for each Major Policy Question requiring analysis; WTD will also prepare presentations summarizing the policy analyses for certain Major Policy Questions to be discussed at RWQC meetings. WTD will work with the RWQC Chair and RWQC staff to determine which policy analyses are most important to present and discuss during RWQC meetings. Policy memos and Major Policy Questions will be grouped into topics and brought to RWQC on a rolling basis. Questions that overlap with multiple topics will have multiple touchpoints and will be considered holistically near the end of each step in the process.

WTD will use a two-step approach to provide analyses of the 29 Major Policy Questions:

Step 1 will include:

a. Problem Statement
b. Contextual and Baseline Information
    i. What is known about the topic and current conditions
    ii. Current policies in policies in code, contract, or in practice
    iii. The system "must-dos"
    iv. Current and budgeted expenditures
    v. Summary of science/data (if applicable)
c. Example practices from other jurisdictions/industry
d. Policy issues, challenges and opportunities related to the policy question
e. Range of policy options with associated actions and considerations (including qualitative description of costs)

[2] "Robinswood Agreement" Letter

f. Interested and affected parties WTD will engage to gather input
g. Rate structure considerations (if applicable)
h. Relationship to contracts with local sewer agencies
i. Equity and Social Justice (ESJ) impacts

Step 2 will include:

j. Planning-level cost estimates
k. Evaluation of outcomes: identify impacts and outcomes of each option

The responses to the Major Policy Questions will form the foundation of the Draft RWSP Update, which will contain a full suite of options to consider without recommendations, before the Executive-Proposed RWSP Update is put forward. The plan put together in this report will help ensure that King County fully considers and addresses each Major Policy Question, in addition to supplemental technical work, for a successful RWSP Update process.

III. Background

A. Department Overview

The Department of Natural Resources and Parks (DNRP) includes the Parks, Solid Waste, Wastewater Treatment, and Water and Land Resources divisions. The Wastewater Treatment Division (WTD) protects water quality and public health in the central Puget Sound region by providing high-quality and effective treatment to wastewater collected from 34 local sewer agencies in King, Pierce, and Snohomish counties.

WTD serves about two million people within a 424-square-mile service area, which includes most urban areas of King County and parts of south Snohomish County and northeast Pierce County. WTD seeks to protect public health and the environment by conveying, treating, and reclaiming wastewater and by-products; operating and maintaining wastewater facilities; and planning to meet future wastewater needs.

B. Historical Context

The Regional Wastewater Services Plan (RWSP) is King County's comprehensive plan for wastewater. RWSP policies provide direction for the operation and further development of the wastewater system, its capital improvement program, and, as necessary, the development of subsequent policies.[3] The RWSP and its related components form King County's General Sewer Plan, which was approved by the Department of Ecology.

The current RWSP is a supplement to the original Comprehensive Water Pollution Abatement Plan, which was adopted in 1959 by the Metropolitan Council. The Municipality of Metropolitan Seattle (Metro) was formed by public vote in 1958 to address water quality concerns in Lake Washington and Metro later drafted the Comprehensive Water Pollution Abatement Plan. Until the formation of Metro, effluent was discharged into Lake Washington by 10 treatment plants operated by different sewage

[3] RWSP policies are set forth in King County Code 28.86.010 and 28.86.040 through 28.86.150.

districts.[4] This discharge led to poor water quality that was unsafe for fishing or swimming. After the formation of Metro to address these concerns as a region, the first comprehensive sewage plan was published.

The Comprehensive Water Pollution Abatement Plan was the region's first of its kind and led to the construction of new treatment plants at West Point, Renton (South Plant), Carkeek Park, and Richmond Beach, as well as new tunnels and pipelines that carried sewage to these new facilities. Many of the capital assets that were created during this time are still operational.

The plan proposed that a central agency be established for financing, constructing, operating, maintaining, and administering the proposed sewerage projects. It also covered a wide variety of topics, including increasing population, sewage overflow concerns, discharges of untreated sewage, and capacity concerns, among others.

In 1994, Metro and King County merged in response to a 1990 Federal District Court ruling.[5] As a result, King County assumed the responsibility for treating wastewater from 34 jurisdictions and local sewage agencies. A few years before this, in 1991, Metro had begun planning efforts to update the Comprehensive Water Pollution Abatement Plan, which was adopted in 1999 as the RWSP, amending the original plan and codifying RWSP policies in King County Code.

The Robinswood Agreement was foundational to the approval of the RWSP by King County Council. In October 1998, the King County Executive and the Regional Water Quality Committee (RWQC) held a retreat at Robinswood House in Bellevue to discuss financing the implementation of the RWSP. This resulted in the creation of the Robinswood Agreement that guided the funding of RWSP capital projects. At this retreat, the core principles of "all for one and one for all" and "growth pays for growth" were established, forming the basis of the financial policies for the RWSP.

The RWSP's planning horizon covered capital plans and projects through 2030. WTD began planning efforts in 2019 to update the RWSP, then called the Clean Water Plan. In 2021, the Clean Water Plan process was paused to consider feedback and regulatory uncertainty. Planning restarted in 2024 as the Regional Wastewater Services Plan Update (RWSP Update).

C. Current Context

In January 2025, the RWQC adopted a resolution in support of the RWSP Update Scoping Document.[6] This scoping document describes the overall approach that will be used and some of the major policy issues and questions that will be analyzed to update King County's RWSP. The document incorporates input and feedback from members of the RWQC and Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) on the scope of the RWSP Update.

[4] Effluent is used water from homes, industries or stormwater that flows out from a treatment plant or system into the environment after undergoing treatment.
[5] *Cunningham v. Municipality of Metropolitan Seattle*, 751 F.Supp. 885 (W.D. Wash. 1990)
[6] RWSP Update Scoping Document

In February 2025, the RWQC adopted a resolution in support of the RWSP Update Charter.[7] This Charter is similar to a Memorandum of Understanding and is an agreement representing the shared goals, roles and responsibilities, and agreed-upon process between WTD and MWPAAC for the RWSP Update. It describes the intent of the parties but does not create any legally binding obligations. The Charter resulted in the formation of an RWSP Working Group as a forum for MWPAAC and RWQC member staff to collaborate with WTD's RWSP Update project team.

Throughout 2025, WTD began preliminary work on the RWSP Update. This preliminary work has been referred to as "Module 1," with the primary goal of understanding current conditions of the regional system and initial brainstorming of alternatives for long-range planning**.** This was the first phase of RWSP Update planning work in a series of modules to be presented to the RWSP Working Group, MWPAAC, and RWQC. WTD began to develop presentations on current conditions and to brainstorm potential actions to respond to the 29 Major Policy Questions in the Scoping Document. The Major Policy Questions are the focus of the Proviso P1 in Ordinance 20023, and subsequently the focus of this report.

D. Report Methodology

This report was prepared by the comprehensive planning group at WTD, alongside members of the Government Relations Team within the Director's Office at WTD. The two proof of concepts were prepared by subject matter experts in the Separated System Conveyance team within the planning group at WTD. The materials for the proof of concepts include previously completed work for the RWSP Working Group in 2025 and are supplemented by work completed to address the contents of the policy analyses specifically.

On December 3, 2025, RWQC provided input on the initial approach for this report. Further input from RWQC was received on January 7, 2026, on the timeline and schedule of the delivery of the policy analyses for the 29 Major Policy Questions. WTD received feedback from councilmembers that they preferred to receive policy analyses as a written document, or policy memo, and as a PowerPoint presentation used at the RWQC meeting. RWQC also confirmed that a two-step approach for each policy question and analysis is sufficient and that it is appropriate to group the policy questions by topic. RWQC suggested using the RWSP Working Group to help with the grouping and sorting of questions by topic.

IV. Report Requirements

A. Framework for Policy Question Analysis, including Identifying Topics Addressed

The Major Policy Questions are clustered by common topics, and WTD will schedule these groupings and sequence RWQC briefings to ensure a Draft RWSP Update is produced by 2027.

Information for the Major Policy Questions will be developed, and the questions will be analyzed, in consultation with the RWSP Working Group and MWPAAC, in the following two-step process:

[7] RWSP Update Charter

Step 1:

a. Problem Statement
b. Contextual and Baseline Information
    i. What is known about the topic and current conditions
    ii. Current policies in policies in code, contract, or in practice
    iii. The system "must-dos"
    iv. Current and budgeted expenditures
    v. Summary of science/data (if applicable)
c. Example practices from other jurisdictions/industry
d. Policy issues, challenges and opportunities related to the policy question
e. Range of policy options with associated actions and considerations (including qualitative description of costs)
f. Interested and affected parties WTD will engage to gather input
g. Rate structure considerations (where applicable)
h. Relationship to contracts with local sewer agencies
i. Equity and Social Justice (ESJ) impacts

The analysis conducted as part of Step 1 will be brought to RWQC on a rolling basis over the course of 2026, beginning in March 2026. A detailed template for Step 1 is available in the attached Appendix A: Policy Memo Template. The template includes a short description of each section within Step 1, including estimated lengths and sources of information.

Analyses for ESJ Impacts and Relationship to Contracts policy questions will be integrated into each group of questions brought to RWQC.

Step 2:

j. Planning-level cost estimates
k. Evaluation of outcomes: identify impacts and outcomes of each option

The analysis conducted as part of Step 2 will be brought to RWQC on a rolling basis over the course of 2026-2027, tentatively set to begin in October 2026. Step 2 will be amended to the Step 1 policy analysis memo after planning-level cost estimates and evaluations are completed.

B. Proposed Reporting Format

WTD will use two different formats for reporting the analyses on all Major Policy Questions: a policy memo and a PowerPoint slide deck for those specific analyses to be presented at RWQC meetings.

WTD will prepare a policy memo using the template in Appendix A for the Major Policy Questions that is grouped and brought to RWQC.

WTD will prepare a PowerPoint for the policy question(s) brought to RWQC to be shared prior to the meeting. The PowerPoint slide deck will be consistent with the current WTD Visual Design Style Guide.

C. How Policy Analysis Will Inform RWSP Update for Each Question

WTD will ensure all policy issues associated with the Major Policy Questions are included and addressed in the Draft RWSP Update. The analyses of the Major Policy Questions will intentionally guide and specifically inform development of RWSP policy options included in the Draft RWSP Update. RWQC can use analyses to identify any additional policy options for further analysis, which WTD will include in the Draft RWSP Update. Policy Options that do not meet legal requirements will be identified and reviewed by legal counsel before being included in the Draft RWSP Update.

WTD will begin a three-step process with RWQC to evaluate and consider the policy analyses, and for RWQC to provide feedback to influence WTD's development of the Draft RWSP Update in the planning and development stages of the work:

Step 1: RWQC can share its initial and general preferences with WTD during and after Committee discussion on parts "a" to "i" of the policy analysis for a given policy question, particularly the proposed policy options.

Step 2: Upon completion of cost estimates for the policy options, WTD will provide follow-up analyses to include costs and evaluation of impacts and outcomes as parts "j" and "k" for all policy options, inclusive of those RWQC expressed desire to see evaluated. Equipped with this additional information, RWQC will have a second opportunity to identify its policy option preferences, and WTD will include those policy options in the Draft Plan.

Step 3: WTD will integrate RWQC's policy option preferences into development of a full range of policy options that will be included in the Draft RWSP Update for a State Environmental Policy Act (SEPA) process.[8]

The completed policy analyses will be used following the Draft Plan SEPA process for development of the Executive's Preferred Plan. The analyses may also be used in decision-making by RWQC members and King County Council members for the Council-adopted Plan following transmittal of the Executive's Preferred Plan to the County Council, which is scheduled for 2029.

A parallel effort outside the RWSP Update process will explore alternate regulatory strategies to achieve positive water quality outcomes. This process requires approval from the Washington State Department of Ecology and United States Environmental Protection Agency. If a change results from this effort, policy options and actions will be revised or added as appropriate.

D. Timelines for Analysis for Each Policy Question

The Major Policy Questions are grouped by category of capital investment as described in the RWSP Charter supported by RWQC via Resolution RWQC2025-02. The analyses of these questions will be brought to RWQC on a monthly cadence. See the attached Appendix B: Schedule for Policy Analyses for the planned schedule for 2026. This schedule includes groupings of policy questions and the order in which each grouping will be presented to RWQC in 2026. The schedule for 2027 will be planned in January 2027 in conjunction with RWQC.

[8] SEPA stands for the Washington State Environmental Protection Act

E. Problem Statement Corresponding to Each Policy Question

Problem statements will be written for each Major Policy Question as the policy analyses are completed. These problem statements will help frame the answers or policy solutions that each policy question raises. The problem statements will help policymakers consider the adequacy of policy options in answering each policy question. For more information, see Section A. Framework for Policy Question Analysis, including Identifying Topics Addressed.

F. How Complete Analysis will be Addressed for Questions Falling under Multiple Sections of RWSP Update

Some of the Major Policy Questions need to be addressed through multiple topics in the RWSP Update. These questions will be evaluated holistically in the topic where they most naturally reside. However, for these questions that have relevance to other topics, WTD will explicitly identify and explain the connection in the Step 1 analysis of a related topic and will dedicate a section in the policy memo to address the relationship a given question has with these other topics.

For example, Questions 25 and 26 in Appendix B, having to do with sewer rate structure, will be holistically addressed in the Group #9 policy analyses focused on Finance. However, these two rate structure questions also have relevance to Question 1, related to Inflow and Infiltration (Group #1), Question 6, related to Asset Renewal and Replacement (Group #3), Question 15 related to the Combined System (Group #6), and Question 18, related to Treatment (Group #7). Therefore, in the policy analyses for these related questions, WTD will dedicate a section in each policy memo to address the rate structure questions through the lens of Inflow and Infiltration, Asset Renewal and Replacement, Combined System, and Treatment, respectively.

In Appendix B, the questions that cover multiple topics, which will be evaluated in the manner described above, are shown in italics.

G. Two “Proof of Concept” Policy Question Analyses

Two of the Major Policy Questions from the RWSP Scoping Document have been analyzed as part of this report. These policy memos serve as a “proof of concept” for the level of analysis of the remaining policy questions.

Proof of Concept 1

See attached Appendix C: Policy Memo Proof of Concept 1, which is a policy memo that addresses the policy question:

> How should I/I be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I?

Proof of Concept 2

See attached Appendix D: Policy Memo Proof of Concept 2, which is a policy memo that addresses the policy question:

> Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?

H. Proposed Modifications to List of Policy Questions

WTD is proposing modifications to the Major Policy Questions identified in the RWSP Scoping Document in accordance with the proviso requirements. WTD does not propose modifications to the 29 Major Policy Questions outlined by the RWSP Scoping Document. However, WTD does propose adding three additional questions to cover important topics that were not fully captured by the existing questions.

Below are three additional policy questions that WTD proposes to be analyzed and discussed with RWQC.

Proposed New Policy Questions	**Rationale**
What approach should WTD use to fund asset renewal and replacement projects?	This question guides analysis on the different tools available to fund asset renewal and replacement projects, as proposed by the Asset Management Steering Committee, in coordination with the RWSP Working Group.
How should WTD best upgrade the combined system to address regulatory requirements, regional water quality, and West Point operations? How can combined system costs be fairly apportioned?	These questions introduce discussion on the combined system and the associated regulatory requirements.
How should WTD maximize recovery of new resources? How should WTD prioritize and monetize environmental and other co-benefits when considering cost of recovering new resources?	These questions encompass the potential for WTD to expand into new resource recovery areas.

Table A: Proposed Additions to Major Policy Questions

Appendix E: Major Policy Questions List shows the complete list of Major Policy Questions with proposed modifications included.

Given the large volume of policy memos WTD plans to deliver to RWQC (25 in total) and the time constraints placed upon RWQC members to evaluate all the policy memos, WTD will consult with the

Chair of RWQC if, and when, appropriate to consider prioritizing or deprioritizing certain policy memos listed in Appendix E for delivery to RWQC.

V. Conclusion and Next Steps

This report summarizes the plan to address the requirements of the Proviso. The plan will be implemented beginning in March 2026 until all policy analyses have been completed. Policy analyses for the Major Policy Question will be conducted in a two-step analysis, beginning with Step 1, which includes a problem statement, background context, policy options, and more, followed by Step 2, which includes an analysis of planning-level costs and outcomes. These questions will be grouped into categories and sequenced with RWQC throughout 2026 and 2027, leading to the production of a Draft RWSP Update, currently scheduled to be published in 2027. The Draft RWSP Update will present a full suite of policy options to consider before the Executive's Proposed RWSP Update is put forward, currently scheduled to occur in 2028.

VI. Appendices

Appendix A: Policy Memo Template
Appendix B: Schedule for Policy Analyses
Appendix C: Policy Memo Proof of Concept 1
Appendix D: Policy Memo Proof of Concept 2
Appendix E: Major Policy Questions List

RWSP Update - [Topic]

A. Policy Question

This memo is focused on the policy questions related to the [Topic] topic of the Regional Wastewater Services Plan (RWSP) Update. The policy question[s] explored in this memo [is/are]:

i. [Insert Policy Question(s)]

B. Problem Statement

[~100-200 words to summarize the current challenges identified by the policy question]

C. Contextual and Baseline Information

i. What is known about the topic and current conditions

Subheading

[Information based on previously completed "101" materials for MWPAAC Engineering and Planning Subcommittee. Subheadings should break down into key themes or concepts, (e.g., *Separated Sewer Systems* and *Infiltration and Inflow in the Regional System*).]

ii. Current policies in policies in code, contract, or in practice

[Insert King County policy reference number and/or source(s) into the table below. May also include policies from outside King County Code, including the County's Comprehensive Plan, as needed.]

Relevant Policies in K.C.C.	Description
[Policy Number]	[Copy and paste from K.C.C. or other sources.]
[Policy Number]	[Copy and paste from K.C.C. or other sources.]

[For each Policy Number, include a brief summary (~50-100 words) and current implementation as paragraphs below the policy table.]

iii. The system "must-dos"

[Describe any regulatory or legal requirements related to the question. E.g., sanitary sewer overflows, combined sewer overflows, NPDES permits, other permits, etc.]

iv. Current and budgeted expenditures

[Include a short introduction to the current and budgeted expenditures table, highlighting key information from the table. Include a table with project names and 2025-2035 cost estimates included in the CIP.]

v. Summary of science/data (if applicable)

[As needed, describe any science or data related to the policy question.]

D. Example Practices from Other Jurisdictions/Industry

Subheading

[~100-200 words per example. Highlight key tools, strategies, or programs as relevant to the policy question and proposed policy options or actions. Include where these examples are found.]

E. Policy Issues, Challenges, and Opportunities

[Use numbered list, with brief title and description (<100 words) for each policy issue, challenge or opportunity that may be related]

F. Range of policy options with associated actions and considerations (including qualitative description of costs)

[Include policy question again. Include high-level bullet preview of policy options. Include a summary table with the following format for each policy option related to the policy question. After the table, include a write-up for each policy option, including justification, considerations, and a qualitative description of costs.]

Summary of Policy Options

	Goal	Description	[Category] Actions	Examples
#1	[Goal of the policy option]	[Description of the policy option]	• [List Relevant Actions]	• [~25-50 word example(s)]
#2			•	•
Etc.			•	•

***Columns may be added or deleted for the topic, as appropriate**

Policy Option #1 – [Description]

Justification

[A more detailed description of the policy option]

Considerations

[]

Policy Option #2 – [Description]

Justification

Considerations

[Etc.]

G. Interested and affected parties WTD will engage to gather input

[A sentence or short paragraph describing all groups that will be engaged to gather input]

H. Rate structure considerations (if applicable)

[Description of the potential relationship with these Policy Options and financial policy questions]

I. Relationship to contracts

According to the current sewer contracts, [Example text: WTD must accept all sewage and waste delivered for treatment and disposal from the component agencies]. The sewer contracts also state that the contracts may be modified from time to time through changes to King County Code.

[~100-200 words describing the potential different contract changes that would be required for each Policy Option]

J. Equity and Social Justice (ESJ) impacts

K. Planning-level cost estimates

This section will be added into the policy memo as the "Step 2" analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the “Step 2” analysis later.

RWSP Update Schedule for Policy Analysis

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Group #1 **Separated System Conveyance** **Step #1: March 2026** **Step #2: Nov 2026 *(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	1	1	How should I/I be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I?	Separated System Conveyance (including infiltration/inflow)
		25	*Is there a better rate structure for the sewer rate?*	*Finance/Affordability*
		26	*Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery rate structures to reflect other system impacts?*	*Finance/Affordability*
	2	2	Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?	Separated System Conveyance (including infiltration/inflow) *(see also: Treatment Group #7)*
	3	3	How should the conversion of on-site septic systems to sewers in the service area be managed and should WTD implement programs to encourage conversion within the service area?	Separated System Conveyance (including infiltration/inflow)

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Group #2 **Pollution (Source Control and Legacy)** **Step #1: April 2026** **Step #2: Dec 2026** ***(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	4	4	What upstream or source control actions should the region undertake to prevent contaminants and reduce costs?	Pollution (Source Control and Legacy)
	5	5	How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?	Pollution (Source Control and Legacy) *(see also: Treatment Group 7 and Resource Recovery Group 8)*
Group #3 **Asset Renewal and Replacement** **Step #1: May 2026** **Step #2: Jan 2027** ***(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	6	6	How proactive vs. reactive should WTD be when deciding to refurbish or replace aging infrastructure?	Asset Renewal and Replacement
		7	What level of redundancy of critical systems should WTD have? What level of risk tolerance should WTD accept?	Asset Renewal and Replacement *(see also: Climate Impact Preparedness and Natural Hazard Resiliency Group 4)*
		8 (added question)	What approach should WTD use to fund Asset R&R projects?	Asset Renewal and Replacement *(see also: Finance/Affordability Group 9)*
		25	*Is there a better rate structure for the sewer rate?*	Finance

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
		26	*Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery rate structures to reflect other system impacts?*	Finance
<u>Group #4</u> **Climate Impact Preparedness and Natural Hazard Resiliency** **Step #1: June 2026** **Step #2: Feb 2027 *(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	7	9	What level of resiliency should WTD plan for regarding seismic and other natural hazards to avoid or minimize risks? What level of risk tolerance should WTD accept? How can these considerations be best informed by the long-term capital motion work in progress?	Climate Impact Preparedness and Natural Hazard Resiliency
		7	*What level of redundancy of critical systems should WTD have?*	Climate Impact Preparedness and Natural Hazard Resiliency *(see also: Asset Renewal and Replacement Group 3)*
	8	10	Should existing wastewater policy language (KCC 28.86) be revised to specifically call out planning for future climate conditions in addition to population growth and other environmental factors?	Climate Impact Preparedness and Natural Hazard Resiliency
		11	How should WTD prepare and adapt to climate impacts (e.g., precipitation/storm intensities, sea level rise, river flooding, etc.) in line	Climate Impact Preparedness and Natural Hazard Resiliency

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
			with the Strategic Climate Action Plan? What level of climate impact risk tolerance should WTD plan for to avoid or minimize risks to the system?	
	9	12	How much should WTD reduce energy use and reduce greenhouse gas emissions?	Climate Impact Preparedness and Natural Hazard Resiliency
Group #5 **Finance/Affordability** **July 2026** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	10	13	How will WTD measure customer affordability for contract agencies and ratepayers?	Finance/Affordability
	11	14	What other rate relief approaches should WTD implement to improve affordability for those who may struggle to pay their sewer bill?	Finance/Affordability
Group #6 **Combined System Management** **Step #1: August 2026** **Step #2: March 2027** ***(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each	12	15 (added question)	How should WTD best upgrade the combined system to address regulatory requirements, regional water quality, and West Point operations? How can combined system costs be fairly apportioned?	Combined System Management
		25	*Is there a better rate structure for the sewer rate?*	*Finance/Affordability*
		26	*Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all,*	*Finance/Affordability*

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
policy memo. See Group #10 and Group #11 for details.			*all for one"), or consider alternative cost recovery rate structures to reflect other system impacts?*	
Group #7 **Treatment** **Step #1: September 2026** **Step #2: April 2027 *(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	13	16	Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?	Treatment
		17	How should the County anticipate, engage with, and plan for future nutrient permit requirements, regulations related to CECs such as PFAS, or other future regulatory changes?	Treatment
		5	*How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?*	Treatment *(see also: Pollution and Resource Recovery Group 2)*
	14	*2*	*Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?*	Treatment *(see also: Separated System Conveyance Group 1)*
	15	18	To what extent should WTD prioritize use of existing facility sites vs. acquiring new property to accommodate future treatment needs (including capacity)?	Treatment

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
		25	*Is there a better rate structure for the sewer rate?*	*Finance/Affordability*
		26	*Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery rate structures to reflect other system impacts?*	*Finance/Affordability*
	16	19	Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?	Treatment
<u>Group #8</u> **Resource Recovery (Biosolids, Energy, Recycled Water)** **Step #1: October 2026** **Step #2: May 2027 *(tentative)*** Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	17	20	Energy production and heat recovery – Should WTD be expanding its efforts to capture energy and heat? If so, at what level of effort?	Resource Recovery
	18	21	Biosolids – Should WTD further expand its efforts to develop Class A biosolids? What changes are needed to biosolid recovery policies to get to Class A?	Resource Recovery (Biosolids, Energy, Recycled Water)
		5	*How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?*	Resource Recovery *(see also: Pollution Group 2 and Treatment Group 7)*

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
	19	22	Recycled Water – Under what circumstances should the region expand the use of reclaimed water? Which uses (e.g., environmental benefits, groundwater recharge, industrial uses, irrigation) are most appropriate?	Resource Recovery
		5	*How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?*	Resource Recovery *(see also: Pollution Group 2 and Treatment 7)*
	20	23 (added question)	How should WTD maximize recovery of new resources? How should WTD prioritize and monetize environmental and other co-benefits when considering cost of recovering new resources?	Resource Recovery
Group #9 **Finance**	21	24	Should WTD update the rate structure for the capacity charge to align with current industry standards? (Note: The capacity charge rate structure was updated in 2021. A capacity charge methodology study is in progress.)	Finance/Affordability

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Q4 2026: Full analysis of the rate structure policy questions 21, 22, 23 (both Capacity Charge and RCE) & **March, May, Aug, Sep. 2026:** WTD will begin to address the rate structure question sequentially where relevant as we move through Policy Question Groups 1, 3, 6, 7. This will allow RWQC members to see how the rate structure issue relates to various topics. Each relevant analysis would include a specific section **dedicated to addressing "rate structure considerations"** alongside the policy options. e.g. the policy memo 2 analysis will introduce and begin to address the rate structure question as it relates to the I/I issue. RWQC may choose to form a subcommittee focused on the rate structure question and/or WTD may propose a consultant-separate track for this discussion. Elements that relate to the Relationship to Contracts and Equity and Social Justice policy questions will be addressed as part of each policy memo. See Group #10 and Group #11 for details.	22	25	Is there a better rate structure for the sewer rate? (Note: WTD has identified a work plan to further evaluate the residential customer equivalent conversion factor of 750 cubic feet per month)	Finance/Affordability *(see also: Separated System Group 1, Asset Renewal and Replacement Group 2, Combined System Management Group 6, and Treatment Group 7)*
	23	26	Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood "one for all, all for one"), or consider alternative cost recovery rate structures to reflect other system impacts?	Finance/Affordability *(see also: Separated System, Asset Renewal and Replacement, Combined System Management, and Treatment)*

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Group #10 **Equity and Social Justice** Analyses for these questions will be integrated into each of the analyses for Groups 1 through 9. **May 2027:** A comprehensive ESJ analysis for these questions across all topics/groups will be completed.	24	27	What actions should WTD take to increase equity and social justice for the regional wastewater system?	Equity and Social Justice
		28	How will equity and social justice be interwoven in the update: community engagement, rate structure analysis, etc.?	Equity and Social Justice
		29	How should the regional wastewater system address environmental justice concerns as described in the 2021 Healthy Environmental for All Act, such as addressing the disproportionate environmental health impacts of vulnerable populations and overburdened communities?	Equity and Social Justice
Group #11 **Relationship to Contracts** Analyses for these questions will be integrated into each of the analyses for Groups 1 through 9. **June 2027 *tentative*** (following completion of step #2 for all Groups of questions)	25	30	Are major policy updates aligned with component agency contracts?	Relationship to Contracts
		31	How will WTD implement the RWSP Update consistent with direction and requirements expected of contract agencies?	Relationship to Contracts

Timeline (RWQC Discussion)	Policy Memo Number	Major Policy Question Number	Major Policy Questions from Scoping Document	Major Policy Question Topic
Will be addressed across all 25 policy memos	NA	32	How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?	All topics

RWSP Update – Separated System Conveyance

Policy Memo #1

A. Policy Question

This memo is focused on the policy questions related to the Separated System Conveyance topic of the Regional Wastewater Services Plan (RWSP) Update. The policy questions analyzed in this memo are:

- **i.** How should Infiltration/Inflow (I/I) be managed and how can costs be fairly apportioned?
- **ii.** Should system capacity be expanded to account for increases in I/I?
- **iii.** Should I/I policies change to support reducing the capacity needed for I/I?

B. Problem Statement

I/I currently drives the need to increase the capacity of King County Wastewater Treatment Division's (WTD) separated system conveyance facilities. The majority of conveyance facilities have capacity to convey base flows and flow from future population growth, but require upgrades due to the amount of I/I entering the system during rain events. I/I makes up the majority of flow entering the separated system during wet weather events. Though it is impossible to remove all I/I, removing excessive I/I can significantly decrease the need for conveyance capacity capital upgrades. In the 2017 Conveyance System Improvement Plan, approximately $1.7B (2016 dollars) in conveyance capacity upgrades were projected to be needed over the next 40 years, and one of the major drivers for these upgrades is increases in I/I. As conveyance facilities are upgraded with larger pipes and pumps, more I/I is also being conveyed to the treatment plants increasing the need for capacity upgrades at the treatment plants.

I/I is not distributed evenly. I/I levels vary throughout the region and by component agency based on numerous factors, including condition of existing infrastructure, groundwater levels, soil conditions, and other hydrologic factors. It is also estimated that up to 75% of I/I in the region originates from side sewers that connect private property residences and businesses to the separated sewer system. When WTD upgrades infrastructure due to I/I, agencies pay for projects equally through WTD's region-wide sewer rate, regardless of the amount of I/I the agency contributes to the regional separated system.

C. Contextual and Baseline Information

i. What is known about the topic and current conditions

Separated Sewer Systems

Separated sewer systems consist of sewers designed to convey sanitary sewage but not stormwater. In the urban landscape, the separated sewer system works in concert with separate stormwater collection systems to manage sanitary and wet weather flows, respectively. Separated sewer systems comprise an interconnected system of pipes, pump stations, and other infrastructure that convey wastewater from homes and businesses to local wastewater collection systems and then to the regional wastewater treatment facilities. Despite the intended separation between wastewater and stormwater, separated sewer systems are vulnerable to wet weather infiltration and inflow (I/I).

Typically, sewers built after the 1950s do not combine sanitary and stormwater into a single sewer system. WTD owns and maintains about 250 miles of separated sewer system conveyance, which represents about 65% of WTD's pipe system. Wastewater from homes and businesses within all the cities and sewer agencies within the WTD service area, except most of Seattle, is collected through around 5,900 miles of locally managed pipes, which then are connected to the regional separated system.

WTD's separated sewers convey flow primarily to South Treatment Plant and Brightwater Treatment Plant for treatment. West Point Treatment Plant treats flow primarily from combined sewers but also serves a portion of the separated sewer system in Kenmore, parts of Kirkland, Lake Forest Park, Shoreline, and parts of North Seattle.

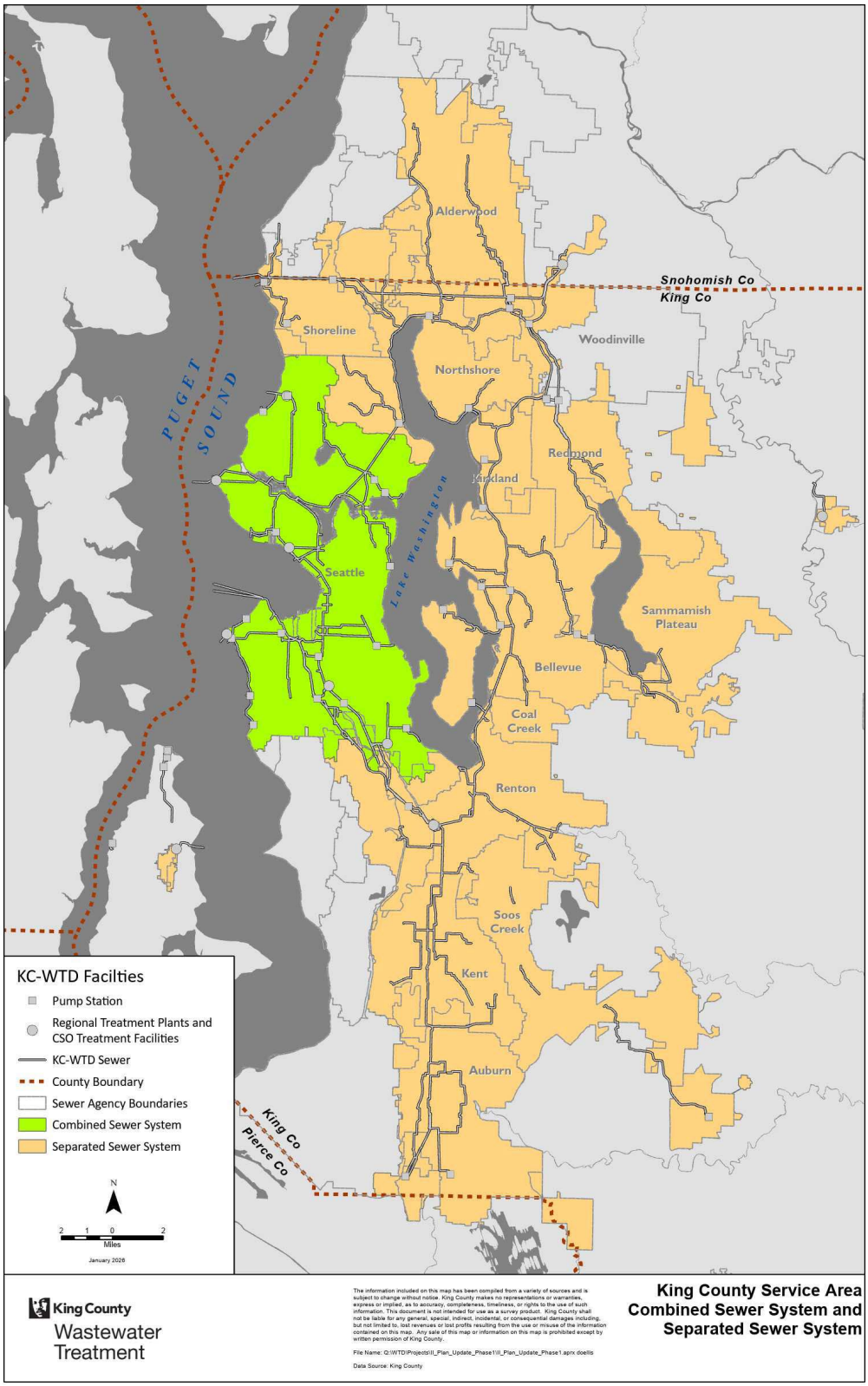


Figure 1. King County Service Area Combined and Separated Sewer Systems

Infiltration and Inflow in the Regional System

I/I is the unwanted entry of extraneous water into the sanitary sewer system. Infiltration occurs when groundwater seeps into sewer pipes through cracks, leaky pipe joints, root intrusion, and/or deteriorated maintenance holes. Inflow is stormwater that enters the sewer system through sump pumps, roof or foundation drains illegally connected to the sewer system, uncapped cleanouts, and/or faulty maintenance hole covers. Together, inflow and infiltration place a burden of additional flow on the regional separated system and treatment plants.

I/I in the regional system not only contributes heavily to sanitary sewer overflows (SSOs) but also drives most conveyance capacity and flow-based treatment needs. On average, as much as 75% of peak flows in the regional separated system are comprised of I/I and approximately 25% of the annual flow treated at Brightwater and South Plant is I/I. While I/I levels currently vary throughout the regional system, as infrastructure ages, I/I levels are expected to increase.

Based on flow monitoring conducted in the early 2000's, where WTD deployed over 800 flow meters in both local and regional pipes, WTD estimates that up to 75% of I/I originates from private properties. Although a majority of I/I is believed to originate at private properties, I/I is diffuse and addressing only private properties is not expected to significantly reduce or eliminate I/I in the area as I/I can enter other parts of the system where defects or illicit connections have not yet been addressed.

ii. Current policies in code, contract, or in practice

King County Code (K.C.C. 28.86, Wastewater Treatment) guides WTD's work in the separated conveyance system regarding I/I. The policies relevant to this memo are:

Relevant Policies in K.C.C.	Description
I/IP – 1	King County is committed to controlling I/I within its regional conveyance system and shall rehabilitate portions of its regional conveyance system to reduce I/I whenever the cost of rehabilitation is less than the costs of conveying and treating that flow or when rehabilitation provides significant environmental benefits to water quantity, water quality, stream flows, wetlands or habitat for species listed under the ESA.

I/IP – 2	King County shall work cooperatively with component agencies to reduce I/I in local conveyance systems utilizing and evaluating I/I pilot rehabilitation projects, and developing draft local conveyance systems' design guidelines, procedures and policies, including inspection and enforcement standards. Evaluations of the pilot rehabilitation projects and a regional needs assessment of the conveyance system and assessments of I/I levels in each of the local sewer systems will form the basis for identifying and reporting on the options and the associated cost of removing I/I and preventing future increases. The executive shall submit to the council a report on the options, capital costs and environmental costs and benefits including but not limited to those related to water quality, groundwater inception, stream flows and wetlands, and habitat of species listed under the ESA. No later than December 31, 2005, utilizing the prior assessments and reports the executive shall recommend target levels for I/I reduction in local collection systems and propose long-term measures to meet the targets. These measures shall include, but not be limited to, establishing new local conveyance systems design standards, implementing an enforcement program, developing an incentive-based cost sharing program and establishing a surcharge program. The overall goal for peak I/I reduction in the service area should be thirty percent from the peak twenty-year level identified in the report. The county shall pay one hundred percent of the cost of the assessments and pilot projects.
I/IP – 3	King County shall consider an I/I surcharge, no later than June 30, 2006, on component agencies that do not meet the adopted target levels for I/I reduction in local collection systems. The I/I surcharge should be specifically designed to ensure the component agencies' compliance with the adopted target levels. King County shall pursue changes to component agency contracts if necessary or implement other strategies in order to levy an I/I surcharge
CP – 3 (2)	King County shall periodically evaluate population and employment growth assumptions and development pattern assumptions used to size conveyance facilities to allow for flexibility to convey future flows that may differ from previous estimates. The following activities shall take place to confirm assumptions and conveyance improvement needs: 1. Field verification of wastewater flows and conveyance component conditions prior to implementation of regional conveyance capital projects that are intended to expand capacity of the system; and

	2. Decennial flow monitoring to correspond with the Federal Census conducted every ten years.

I/I Policy 1 (I/IP-1) requires WTD to evaluate every conveyance capacity project to determine if I/I reduction would be more cost effective than the cost of conveying and treating the flow. Typically, a desktop analysis is sufficient to determine the cost effectiveness of I/I reduction. Through these analyses, WTD has found that conveyance upgrades are almost always less expensive to complete than I/I reduction. Sometimes projects require additional analysis to confirm the cost effectiveness of I/I reduction. The most recent I/I reduction analysis was completed for the Thornton Creek Trunk. The project included development of I/I reduction alternatives to address the conveyance capacity need. After extensive evaluation, it was determined that I/I reduction would be significantly more expensive for WTD to complete than upgrading the existing trunk line.

I/I Policy 2 (I/IP-2) was meant to support the development of the original I/I Control Program in the early 2000's. This policy requires WTD to:

- Work cooperatively with component agencies to complete I/I reduction pilot projects
- Develop voluntary draft local conveyance systems' design guidelines, procedures and policies, including inspection and enforcement standards
- Identify levels and sources of I/I in each local agency system through flow monitoring
- Develop a cost-benefit methodology to identify cost-effective I/I reduction projects
- Develop a recommended long-term I/I control plan

The work culminated in the 2005 Executive's recommended I/I Control Program Plan. The plan directed WTD to identify and complete demonstration scale projects to confirm the effectiveness of the I/I reduction techniques used in the I/I pilot projects on a larger scale. WTD identified the Skyway I/I Reduction project which was completed in early 2014. This project was the first attempt at completing I/I reduction in lieu of constructing a conveyance capacity capital project – the Bryn Mawr Storage Tank. The results of the Skyway I/I Reduction project showed that though there was a significant amount of flow reduction at the local level, there was considerably less flow reduction downstream in the regional system, and the Bryn Mawr Storage Tank project was subsequently not deferred.

I/I Policy 3 (I/IP-3) directed WTD to consider implementation of a surcharge, a monetary fine, for exceeding adopted levels of flow. The surcharge was considered as part of the development of the I/I Control Program's development but was ultimately not

implemented. The County and component agencies found that implementing a surcharge, as contemplated in the King County Code, would be costly to administer and would pose difficulties in verifying violations. Component agencies were also concerned that a surcharge would be pointless because WTD had agreed to pay for cost-effective I/I reduction. There were additional concerns regarding WTD taking a regulatory role that would expend ratepayer dollars on enforcement and monitoring activities. Instead, component agencies preferred to own the decision to complete I/I reduction based on their system needs.

Conveyance Policy 3 (2) (CP-3 (2)) requires WTD to conduct Decennial Flow Monitoring (DFM) alongside the United State (U.S.) Census. DFM consists of installing additional flow meters, to be used alongside the existing 130 permanent flow meters in the separated portions of the regional conveyance system, to provide a more comprehensive review of flow for conveyance improvement planning. DFM data is also used to identify levels of I/I in each model basin. The most recent DFM project took place between 2019 and 2022 and collected data to coincide with the 2020 U.S. Census.

iii. The system "must-dos"

WTD must meet Washington State requirements, which are derived from and expand upon U.S. Law and Code (Clean Water Act, Pub. L. 92-500; 33 U.S.C. § 1251 et seq.).

The Washington Administrative Code (173-220-020):

> "No pollutants shall be discharged to any surface water of the state from a point source, except as authorized by an individual permit issued pursuant to this chapter or as authorized by a general permit issued pursuant to chapter 173-226 WAC."

The separated sewer system must be built to convey all expected flows, to prevent sanitary sewer overflows (SSOs), which may occur due to improperly maintained or sized sewer collection systems. Due to WTD's position as a wholesale provider of sewerage services, WTD must properly maintain and operate the regional system, while sizing its facilities large enough to accept base flow as well as I/I from component agencies to prevent SSOs.

WTD is not permitted for SSOs under the National Pollutant Discharge Elimination System (NPDES) permits issued by the Washington Department of Ecology. Even discharges that do not reach waters of the U.S. can be violations of the federal Clean Water Act permit requirements under some circumstances.

iv. Current and budgeted expenditures

In July 2025, WTD provided a list of conveyance capacity projects to the Regional Water Quality Committee (RWQC). 11 are related to conveyance capacity upgrades, totaling $736M or approximately 6.5% of WTD's total capital improvement program (CIP) between 2025 and 2035. The conveyance capacity projects and the costs included in the CIP include:

Project Name	2025-2035 Cost Estimates	
North Mercer Island and Enatai Interceptors Upgrade	$	38,415,620
Richmond Beach PS Upgrade		28,789,079
Richmond Beach Edmonds Interceptor Parallel		10,513,782
Black Diamond Trunk Capacity Upgrade		164,391,988
Garrison Creek Interceptor Replacement, Realignment, and Diversion		14,173,165
Lake Hills and NW Lake Sammamish Interceptor Upgrade		152,451,573
Boeing Creek Trunk Replacement and Parallel		835,661
Coal Creek Siphon and Trunk Parallel		153,671,044
Medina Pump Station Upgrade		43,618,526
Sammamish Plateau Diversion (Phase 1)		112,165,420
Soos Creek Cascade Relief Interceptor No. 2 Upgrade		16,796,707
	$	735,822,565

** The cost estimates described here are what were presented in July 2025 and may be updated as capital projects are advanced and further defined.

v. Summary of science/data

The figure below shows the peak I/I flow rate for each of the 181 model basins in the regional separated sewer system in WTD's service area. This figure was developed using flow monitoring information from the 2010 Decennial Flow Monitoring effort. During development of the 2005 Executive's Recommended I/I Control Program, Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and WTD identified 3,500 GPAD (Gallons Per Acre Day) based on the peak 20-year hourly flow as an agreed-upon target limit that could be reached through I/I rehabilitation. Currently 108 out of 181 model basins exceed that limit.

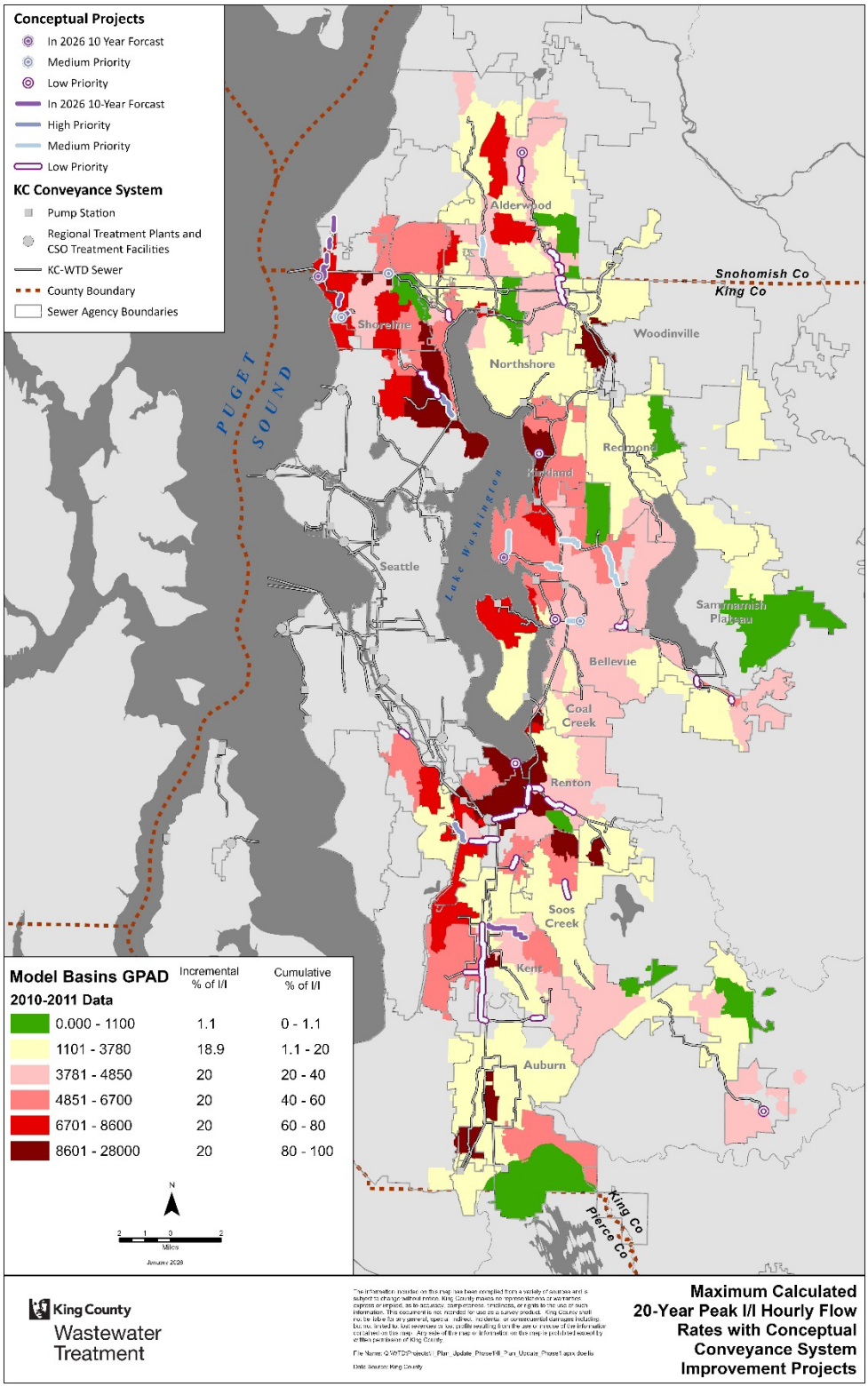


Figure 2. Inflow / Infiltration in WTD's Separated System Service Area 181 Model Basins

D. Example Practices from Other Jurisdictions/Industry

On multiple occasions since the early 2000's, WTD has interviewed other regional sewerage agencies across the United States to investigate how the organizations are approaching I/I mitigation efforts, including the inspection and rehabilitation methods they are using, I/I reduction effectiveness, and the successes and challenges they have encountered. Some agencies conduct I/I mitigation work in their region due to regulatory actions, such as consent decrees, that require them to reduce I/I or prevent SSO's. Other agencies conduct I/I mitigation because it is more cost-effective than upgrading conveyance facilities.

Rehabilitation/Replacement of Sewer System Components

Many agencies focus on targeted or comprehensive rehabilitation or replacement of sewer system components, similar to WTD's work in Skyway. This work typically involves systematic rehabilitation, replacement, or upgrade of public and private sewer system components to reduce I/I. The approach can be targeted based on measured or predicted I/I rates, needed downstream infrastructure improvements, or other location-specific factors. This type of action is typically highly effective at reducing I/I in areas with high I/I severity, known defects, and appropriate stormwater conveyance system availability. Work is usually only completed when it is considered to be more cost effective than upgrading conveyance capacity. Some agencies who have used this approach to I/I mitigation include Clackamas County, Northeast Ohio Regional Sewer District, Hampton Roads Sanitation District, and Miami Dade County.

Private Side Sewer Inspection and/or Certification Programs

East Bay Municipal Utility District and Pinellas County are two agencies that have implemented a private side sewer inspection and certification program. This action includes systematic assessment and/or improvement of the condition of private side sewers, which can be a significant source of I/I, as is assumed in WTD's service area. Through inspection and/or certification, defects can be identified and repairs required. Side sewer inspection and certification can be required at the time of property sale or triggered when certain types of building permits are submitted (e.g., demolition, change to occupancy content, etc.). I/I reduction effectiveness can be difficult to quantify unless all properties in an area have been inspected and rehabilitated, but noticeable decreases in I/I are expected over time. East Bay Municipal Utility District has had success with this action in their service area.

Peak Flow Limitation Program

Other regional agencies use enforceable flow thresholds for local agencies to control peak I/I flows. Under this action, when peak flow rates exceed defined limits, agencies are required to initiate investigations, flow monitoring, or mitigation planning. This action may also impose a surcharge, restrict new connections, or invoke other governmental consequences. By establishing flow limits as triggers for action or accountability, this action creates strong incentives for I/I reduction and aligns wastewater planning with system capacity constraints. Under this action, a gradual reduction of peak I/I flows are anticipated over many years. Agencies that WTD has interviewed that have implemented a peak flow limitation program include Northeast Ohio Regional Sewer District, Miami Dade County, and Metropolitan Council Environmental Services (MCES).

MCES has a flow-based policy to compel component agency I/I control. MCES sets a peak flow limit by taking the 10-year average and applying standard peaking factors specific to each component agency to establish a threshold for peak hourly flow. When a component agency exceeds the peak flow, they receive notification from MCES. MCES currently charges component agencies $461,000 per million gallon per day (mgd) of flow exceedance. Instead of paying the surcharge, component agencies are able to spend an equivalent amount on work to investigate and mitigate excess I/I sources. Component agencies are given four years to complete the work, but MCES allows for extensions, if needed. The component agencies are required to report on the status of work annually to MCES. Work is complete once all money from the surcharge has been expended or when the sources of I/I are found and mitigated.

E. Policy Issues, Challenges, and Opportunities Related to the Policy Question

Addressing I/I presents a set of unique challenges, as well as potential opportunities for the region.

1. WTD's authority as a wholesaler is limited

   WTD lacks authority to mandate actions for private property owners. WTD's ability to compel I/I reduction work extends only to the component agencies that it serves. Cities have authority to mandate I/I reduction on private property where a significant portion of I/I originates from. Additionally, sewer districts that have contracts with WTD do not have the same legal authority as cities, limiting their ability to mandate I/I reduction.

2. Sources of I/I are diffuse

There is not a quick fix to removing I/I from the system because sources of I/I are diffuse and spread across the WTD service area. I/I reduction requires multiple approaches that rehabilitate both private side sewers and public sewer systems.

3. The benefits of I/I reduction are sometimes difficult to see downstream

   The benefits of I/I rehabilitation work are most apparent close to where the work is performed in the local system. Benefits are sometimes more difficult to see downstream in the regional system, as evidenced from the Skyway Demonstration Project. As a regional provider at the downstream end of the sewer system, WTD accepts and ratepayers pay the costs of all I/I from local agencies and their customers. If the benefits of reductions in I/I are not seen at the regional level, then the cost-savings from I/I reduction work are not realized at the regional level as conveyance capacity will still need to be expanded.

4. Effectively reducing I/I may benefit the treatment plants as well as the conveyance system

   Reducing influent flow through I&I control could positively benefit WTD's ability to meet future treatment needs, including nitrogen management, by reducing flow capacity-driven sizing of treatment improvements. It could also provide operational cost savings associated with running treatment processes at lower flows. Reducing flow capacity-driven improvements could contribute to the ability of WTD to meet forecasted population growth within the footprint of our existing treatment plants, which may be constrained due to nitrogen reduction-related requirements further into the future.

F. Range of Policy Options with Associated Actions and Considerations (including qualitative description of costs)

The policy options presented below describe potential choices and Separated System Actions that could be implemented to address the following policy questions:

- How should I/I be managed and how can costs be fairly apportioned?
- Should system capacity be expanded to account for increases in I/I?
- Should I/I policies change to support reducing the capacity needed for I/I?

The policy options include:

- Maintaining the current policies, including expanding conveyance and treatment capacity and removing I/I when cost-effective

- Amend or add new policies to either focus on incentivizing I/I reduction in areas of greatest I/I, or implementing flow limits systemwide and administering penalties if flow limits are exceeded due to I/I

Summary of Policy Options

	Goal	Description	Separated System Actions	Cost Burden
#1	**Expand conveyance and treatment capacity** to accommodate I/I and remove I/I when cost effective	**Maintain current I/I policies** and continue to accept all component agency flows and complete I/I reduction when the cost of rehabilitation is less than the cost of constructing a project to convey and treat the flow on a project-by-project basis	**Capacity Management** – WTD conducts I/I reduction when cost-effective; component agencies conduct I/I reduction according to internal policies and procedures **Flow Monitoring** – Conduct extensive regional flow monitoring every decade to correspond with the U.S. Census to supplement permanent flow monitoring	**The region will pay** for conveyance and treatment capacity projects to accept I/I unless it is cost-effective to remove **The region will benefit** from having expanded conveyance and treatment capacity in the regional separated system **Component agencies contributing excessive I/I will disproportionately benefit** by having the region pay to accept excessive I/I that is contributed from their systems

	Goal	Description	Separated System Actions	Cost Burden
#2	**Incentivize I/I reduction** in areas of high I/I to defer conveyance capacity projects and potentially reduce treatment capacity needs	**Provide financial support** to component agencies and private property owners to reduce I/I in areas with high I/I	**Capacity Management –** Targeted regional I/I reduction strategies addressing areas of high I/I to defer the need for capacity upgrades. **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies' systems.	**The region will pay** for I/I reduction in areas of high I/I. **The region will benefit** from the cost-savings of I/I reduction when conveyance capacity projects are deferred. **Component agencies and communities in areas with high I/I will benefit disproportionately** from having I/I reduction subsidized.
#3	**Maximize I/I reduction system-wide** to eliminate conveyance and treatment capacity projects	**Implement I/I limits** on component agencies system-wide and enforce penalties if limits are exceeded	**Capacity Management –** Service area wide required I/I reduction to eliminate need for capacity upgrades and reduce costs to convey and treat flows **Flow Monitoring** – Expanded permanent flow monitoring throughout the separated system to quantify levels of I/I in the local agencies systems.	**Component agencies contributing I/I will pay** for the cost of I/I and/or the cost of I/I reduction **The region will benefit** from the elimination of the need for conveyance and treatment capacity projects due to I/I

Policy Option #1 – Maintain current I/I policies and continue to accept all component agency flows and complete I/I reduction when the cost of rehabilitation is less than the cost of constructing a project to convey and treat the flow on a project-by-project basis

Justification

This policy option would maintain the current I/I policies with WTD continuing to accept all component agency flows as described in the current sewer contracts. This policy option would also allow component agencies to prioritize and conduct I/I reduction on their systems when it makes sense based on their capital portfolio priorities.

Considerations

The continued implementation of these actions could result in no I/I reduction being completed at the regional or local level, as I/I reduction has not proven to be less expensive than the cost of constructing a project to convey and treat I/I using the current cost-benefit ratio. The cost-benefit ratio would need to be updated to be more comprehensive of cost-savings for I/I reduction to be deemed cheaper than constructing a capital project. Additionally, if component agencies are left with the choice to complete I/I reduction on their systems, component agencies would be less incentivized to complete I/I reduction as WTD is required to accept all component agency flows as part of the sewer contracts.

WTD would continue implementation of ongoing permanent flow monitoring as well as expanded regional flow monitoring concurrent with the U.S. Census to identify conveyance capacity needs in the separated sewer system.

This cost would be borne by the region and the benefits of expanded treatment and conveyance capacity in the system would be experienced by the region, but the agencies who contribute excessive I/I would benefit disproportionately as they could defer I/I rehabilitation on their systems.

Policy Option #1 would have lower near-term costs compared to Policy Options #2 and #3 as WTD and the component agencies would need to invest in I/I reduction only when it is cost-effective. But Policy Option #1 would have higher long-term costs as I/I is the most significant contributor of conveyance capacity needs and not addressing it would require the region to continue to build conveyance capacity projects to accommodate I/I into the future.

Policy Option #2 – Provide financial support to component agencies and private property owners to reduce I/I in areas with high I/I

Justification

This policy option would amend the current I/I policies to allow WTD to provide financial support to certain component agencies and private property owners to complete I/I reduction in areas with high levels of I/I. This policy option would incentivize component agency rehabilitation of local infrastructure to reduce I/I and incentivize private property owners to rehabilitate their side sewers, where a large portion of I/I enters the system by off-setting some or all the costs of rehabilitation. This policy option would reduce the amount of peak wet weather flow entering the regional sewer system and offer component agencies or private property owners the opportunity to improve the local public or private sewer system at lower or no cost. If enough flow is removed, then conveyance capacity projects could be deferred.

This policy option in action could include:

- Matching grants for I/I rehabilitation projects that component agencies could apply for
- Side sewer inspection rebate program
- Low-interest loan program for private property owners to get their side sewers inspected or repaired

Considerations

This policy option would provide regional funds to component agencies and private property owners in areas with high I/I, and the cost of I/I reduction would be borne by the region, as opposed to being borne by the agencies who are contributing the I/I. Conversely, areas with high levels of I/I are generally areas with lower average income, older systems, areas with higher groundwater tables, or are located in lower lying areas near bodies of water making their systems more vulnerable to I/I. These conditions present an equity opportunity, as this policy option could help more socially vulnerable communities improve their systems, as well as acknowledging conditions that the component agencies serving those communities do not have control over, such as geographical conditions.

Additionally, to implement this policy option, a net benefit must be demonstrated when providing funds to component agencies or private citizens. Analysis must demonstrate that funding I/I reduction would defer a capacity capital project or reduce operation and

maintenance needs that are equal or greater to the cost of the reduction. Any funds distributed through this policy option would need to be evaluated on a case-by-case basis.

WTD would need to implement enhanced ongoing permanent flow monitoring and continue with expanded regional flow monitoring concurrent with the U.S. Census to identify and confirm conveyance capacity needs and areas with high levels of I/I.

The costs would be borne by the region. The benefit of deferring conveyance capacity capital projects and reducing treatment capacity needs also would be experienced by the region. Agencies who are contributing excessive I/I would benefit disproportionately, as they would also have I/I rehabilitation subsidized by the region.

In the near-term Policy Option #2 would cost more than Policy Option #1 but would likely realize cost-savings long-term as Option #2 would defer capacity projects as excessive I/I is removed.

Policy Option #3 – Implement I/I limits on component agencies systemwide and enforce penalties if limits are exceeded

Justification

This policy option in action would set peak I/I limits from component agencies to reduce the amount of peak wet weather flow entering the regional sewer system. This policy option compels I/I reduction by administering penalties to component agencies who contribute flows that exceed the limit. It could also enforce penalties on component agencies that do not complete required I/I reduction work. If enough flow is removed, then conveyance and treatment capacity projects could be eliminated. This policy option in action could look like:

- A surcharge fee that is calculated based on the amount of flow exceeded
- Requirements to develop an I/I reduction plan for agencies that exceed limits

Considerations

This policy option would require I/I reduction by administering penalties on component agencies contributing excessive flow to the regional system. Flow monitoring in the past has shown that areas with high I/I are generally areas that have lower average income and older systems and this policy could impose excessive financial burden on those agencies and their ratepayers. Supplemental programs could be implemented to mitigate this, such as offering component agencies who serve more socially vulnerable communities a “grace period” to reduce the amount of flow they are contributing before administering surcharge fees. Component agencies can also be offered the option to invest the dollar amount of the

fine that is administered into rehabilitation of their systems and submit a report of what rehabilitation was implemented, instead of paying the amount of the fine to WTD.

Policy Option #3 would create significant costs to launch the program. A considerable amount of resources would need to be dedicated to increase permanent flow monitoring, research and identify flow targets, and validate any flow exceedances before penalties could be administered.

The costs would be borne by component agencies contributing excessive I/I to the regional system, as they would be required to either pay fines or invest in rehabilitating their sewer systems. The region would benefit from the elimination of the need for conveyance and treatment capacity projects due to I/I.

Policy Option #3 would likely be the more expensive to implement both in the near-term and the long-term compared to Policy Option #2. Option #3 would require more resources to launch a program that involves enforcing fines or surcharges on component agencies, and there would be more scrutiny on the flow monitoring required to enforce penalties.

Relative to Option #2, Policy Option #3 would have higher long-term costs as managing an enforcement program would be more resource intensive than managing an incentive program. Relative to Option #1, Policy Option #3 would likely cost less in the long-term as capacity projects would be eliminated due to removal of excessive I/I.

G. Interested and Affected Parties WTD will Engage to Gather Input

MWPAAC and the component agencies that WTD provides sewerage services to are the primary audiences that need to be engaged on the I/I policy options. Additional engagement with tribes, community based organizations (CBOs), and environmental non-governmental organizations (NGOs) may be conducted during implementation planning.

H. Rate Structure Considerations (if applicable)

All three of the forementioned policy options could have potential impacts to WTD's overall rate structure. The 1999 'Robinswood' agreement focused on a regional 'all for one and one for all' approach where all member jurisdictions would contribute equally to dealing with I/I, and a uniform rate structure would be in place throughout WTD's service area. Policy Options #1 and #2 both maintain this approach, with WTD providing financial support for upstream projects that reduce the overall cost of I/I to WTD. Any financial benefits or costs to WTD would thus be shared proportionately throughout the service area.

Policy Option #3, which could create an I/I surcharge rate class, would be a departure from this previous approach. WTD currently has only one customer class outside of the general sewer rate (high-strength dischargers), who pay the marginal operating cost of treating high-strength wastewater. If WTD were to implement a surcharge for I/I and apply the revenue to existing and planned obligations, the general sewer rate would be lower than it otherwise would be. This situation would result in Local Sewer Agencies (LSAs) with a high I/I flow paying more, and LSAs with low I/I flow paying less. Any I/I surcharge would need to be calculated in accordance with cost-of-service principles and is unlikely to substantially reduce the general sewer rate.

However, I/I is not the only cost driver within WTD's service area that is concentrated within a specific geographic zone. Because the combined conveyance system (roughly approximate to the City of Seattle) is designed to convey stormwater, it would not be charged through a potential I/I surcharge. However, it is possible that an I/I surcharge would need to be paired with a CSO surcharge that assesses all or some of the impacts of the Combined Sewer Overflow program on LSAs within the combined system area. Any detailed discussion of moving away from the Robinswood agreement's 'all for one and one for all' approach will likely not be constrained to only an I/I surcharge.

There are also potential impacts to the general sewer rate structure. If surcharges were implemented, the general sewer rate would need to recover less revenue than it otherwise would. WTD's general sewer rate currently consists of a uniform rate structure, where all single-family residences (SFR) are assumed to equal one Residential Capacity Equivalent (RCE). Non-SFR customers are measured based on flow, and a conversion factor of 750 cubic feet per month is equal to one RCE. There is evidence that a lower conversion factor would be more appropriate and reflect real world conditions. WTD has identified a work plan to evaluate the conversion factor, in line with Financial Policy 15.4, "*King County shall periodically review the appropriateness of this factor to ensure that all accounts pay their fair share of the cost of the wastewater system…*".

Any I/I based surcharge would likely be flow-based, which could have 'knock-on' effects in terms of measuring the number of flow-based RCEs in each LSA. In addition, I/I based surcharges would be more variable than WTD's existing rate structure and likely result in greater fluctuation in month-to-month revenues. If WTD were to adopt a more variable rate structure, some financial policies may need to be reexamined as well.

I. Relationship to contracts

According to the current sewer contracts, WTD must accept all sewage and waste delivered for treatment and disposal from the component agencies. The sewer contracts

also state that the contracts may be modified from time to time through changes to King County Code.

Policy Option #1 would not pose a change to the sewer contracts, as WTD would continue to accept flow from the component agencies as detailed in the contracts, and complete I/I reduction when cost effective. Implementing a flow limit, as with Policy Option #3, would require an update to the sewer contracts, or an update to King County Code. Modifying the sewer contracts presents unique challenges as there are two sets of expiration dates for the contracts - 25 contracts run through July 2036 and nine contracts run through July 2056.

Providing incentivizes, such as grants and loans for I/I reduction as with Policy Option #2 is allowed as long as a net benefit to the regional system can be demonstrated according to the Attorney General's Opinion 2009 No.5, and does not directly conflict with language in the sewer contracts.

J. Equity and Social Justice (ESJ) impacts (if applicable)

The policy options described have the potential to have positive or adverse ESJ impacts if selected. Generally, portions of the WTD service area that have the highest levels of I/I also have higher Social Vulnerability Index (SVI) scores.

SVI is a metric used by the Center for Disease Control (CDC) that assesses each census tract's vulnerability to disasters and public health threats. Many of those factors overlap with equity considerations, such as poverty, age, disability, and housing. SVI scores are assigned from 0 (least vulnerable) up to 1.0 (most vulnerable). Areas in the WTD service area that have a peak I/I rate of 3,500 GPAD or more have an average SVI score of 0.43 compared to the WTD Service Area average of 0.38 and the King County average of 0.40.

Policy Option #1 proposes the least amount of I/I reduction across the region, and the costs of constructing treatment and conveyance capacity projects in lieu of conducting I/I reduction are distributed across the service area through the sewer rate. Socially vulnerable populations across the region will continue to experience a higher sewer rate to pay for the construction of capacity projects to accept the increased I/I.

Policy Option #2 could provide opportunities for positive ESJ impacts. Ratepayers who live in high I/I areas would have opportunities to participate in programs to get their side sewers inspected for low or no cost. Additional programs could be implemented to increase the amount that the ratepayers may be eligible for if they are low-income.

In contrast, Policy Option #3 compels I/I reduction through penalties and could have adverse ESJ impacts on socially vulnerably populations – especially if the costs of the I/I

reduction or the penalties from contributing excessive flows are passed down from the component agencies to the ratepayers. If the policy includes programs that directly impact ratepayers like a private side sewer inspection program, then additional programs could be delivered in unison to mitigate the adverse ESJ impacts, such as exemptions, subsidies, or grants for low-income ratepayers.

K. Planning-level cost estimates

This section will be added into the policy memo as the "Step 2" analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the "Step 2" analysis later.

RWSP Update - Separated System Conveyance

Policy Memo #2

A. Policy Question

This memo is focused on policy questions related to the Separated System Conveyance topic of the Regional Wastewater Services Plan (RWSP) Update. The policy question analyzed in this memo is:

i. Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?

For the purposes of this memo, this capacity question is analyzed through the lens of separated system conveyance, particularly focusing on project sizing and project timing. This capacity-related question will also be analyzed in a policy memo dedicated to treatment capacity scheduled for completion in September 2026.

B. Problem Statement

King County's Wastewater Treatment Division (WTD) uses a set of planning assumptions to estimate the need for infrastructure expansion to meet future conveyance capacity needs. The need for increased capacity is due to population growth (i.e., a need for more pipe reaches and greater pipe volume) and an increase in infiltration and inflow (I/I) that results both from expansion of the system (more pipe surface area that can harbor leaks or illicit connections) and degradation of existing pipes. Over a 50-year planning horizon, most of the volume expansion needed in a planned capacity improvement is due to increasing levels of I/I.

After assessing capacity needs, conveyance infrastructure improvements are then sized conservatively to ensure that new infrastructure can support capacity well into the future. Due to capital funding constraints, these improvements are often installed just before the old structure reaches full capacity.

Building infrastructure to meet larger—and perhaps unnecessary—capacity requirements is more costly than building smaller infrastructure. Similarly, installing capacity improvements before they are needed ties up capital that could be used for other improvements. However, building undersized infrastructure risks needing additional capacity upgrades more quickly, while delaying a project until its need is imminent could precipitate construction cost risks.

C. Contextual and Baseline Information

ii. What is known about the topic and current conditions

WTD's Separated Sewer System

Typically, sewers built after the 1950s do not combine sanitary and stormwater flows into a single sewer system. In the urban landscape, the separated sewer system works in concert with distinct stormwater collection systems to manage sanitary and wet weather flows, respectively. Separated sewer systems comprise an interconnected system of pipes, pump stations, and other infrastructure that convey wastewater from homes and businesses to local wastewater collection systems and then to the regional wastewater treatment facilities.

WTD owns and maintains about 250 miles of separated sewer system conveyance, which represents about 65% of WTD's pipe system. Wastewater from homes and businesses within all the cities and sewer agencies within the WTD service area, except most of Seattle, is collected through around 5,900 miles of locally managed pipes, which then are connected to the regional separated system.

WTD's Separated Sewer Planning Process

WTD plans for capacity upgrades to the separated sewer system through updates to the Conveyance System Improvement (CSI) Plan. Each decade, with the start coinciding with U.S. Census years, WTD undertakes an extensive Decennial Flow Monitoring effort to document flows throughout its conveyance system. This large decennial flow monitoring effort temporarily augments a system of permanent flow monitors that WTD continuously maintains. This flow data and a set of planning assumptions are used to model future flows in each segment of conveyance. The planning assumptions include estimates of population growth, water usage, and expected infiltration and inflow (I/I) across the planning horizon. Increases in I/I are the largest contribution to increasing conveyance capacity needs.

Through this process, WTD can determine which segments of conveyance have inadequate capacity to manage future flows. Once these conveyance capacity needs are identified, WTD then develops conceptual projects to meet future capacity needs. Current practice for how this process is implemented is described below.

iii. Current policies in code, contract, or in practice

King County Code (K.C.C. 28.86, Wastewater Treatment) guides WTD's work in the separated conveyance system. The policies relevant to this memo are:

Relevant Policies in K.C.C.	Description
CP-1(1)	The twenty-year peak flow storm shall be used as the design standard.
CP-2	King County shall construct the necessary wastewater conveyance facilities to convey wastewater from component agencies to the treatment plants.
CP-3	King County shall periodically evaluate population and employment growth assumptions.

Current Practice—Developing Capacity Improvement Projects

The process used to develop capacity improvement projects first determines whether conveyance facilities can convey a 20-year peak flow without surcharging (filling and backing up through the pipe) under current conditions. Pipes that surcharge are at risk of overflowing. Facilities that can convey this estimated peak flow are assigned a level of service (LOS) of greater than 20. Facilities that cannot convey a peak flow are assigned a LOS of less than 20; for example, a LOS below 5 means there is a one-in-five chance that surcharging will occur in any given year.

Conceptual projects to increase capacity are then developed for infrastructure with a LOS of less than 20. These conceptual projects are sized to accommodate the 20-year peak flow projected for 50 years from the year of the last major flow monitoring effort; these peak flows include both increased flow due to projected PSRC population growth and increased I/I. For example, in the 2017 CSI report, based on flow monitoring that began in 2010, the 20-year peak flow expected in 2060 was used as the basis for sizing new pipe.

Although the project planning process begins for all conveyance needs once they are identified as being below a 20-year LOS, the conceptual projects are not advanced through WTD's project development pipeline until later. Capacity improvements are generally implemented when the capacity-limited infrastructure reaches a 2-year LOS.

Current Practice—Estimating Population Growth

WTD currently updates population and employment growth assumptions every decade using Puget Sound Regional Council (PSRC) forecasts, which correspond with decadal

updates to the U.S. Census. These PSRC forecasts are aggregated from the parcel level to match WTD's service area. PSRC does not extend its forecasts to the time horizon that WTD considers for conveyance planning, so WTD's planning and modeling teams extend the PSRC data using simple extrapolation methods.

iv. The system "must-dos"

WTD must meet Washington State requirements, which are derived from and expand upon U.S. Law and Code (Clean Water Act, Pub. L. 92-500; 33 U.S.C. § 1251 et seq.). WTD must also abide by the growth management policies of Washington State by providing services to the local urban growth area, and WTD must account for projected population growth in its General Sewer Plan.

Essentially, the separated sewer system must not be underbuilt for the projected population growth. The system must be built to convey all expected flows from the population, with no sanitary sewer overflows (SSOs). Even overflows that do not reach waters of the U.S. can be violations of the federal Clean Water Act permit requirements under some circumstances. WTD's National Pollutant Discharge Elimination System (NPDES) permits, issued by the Department of Ecology, do not allow for SSOs in the separated conveyance system.

The Revised Code of Washington (RCW 36.70A.110) states:
"(2) Based upon the growth management population projection made for the county by the office of financial management, the county and each city within the county shall include areas and densities sufficient to permit the urban growth that is projected to occur in the county or city for the succeeding twenty-year period [...] As part of this planning process, each city within the county must include areas sufficient to accommodate the broad range of needs and uses that will accompany the projected urban growth including, as appropriate, medical, governmental, institutional, commercial, service, retail and other nonresidential uses."

The Washington Administrative Code (WAC 173-240-050) states:
"(3) The general sewer plan shall include the following information [...]

(e) The population trend as indicated by available records, and the estimated future population for the stated design period."

v. Current and budgeted expenditures

In July 2025, WTD provided a list of conveyance capacity projects to the Regional Water Committee (RWQC). 11 projects are related to conveyance capacity upgrades, totaling $736M or approximately 6.5% of WTD's total Capital Improvement Plan (CIP) between 2025 and 2035. The conveyance capacity projects and the costs included in the CIP include:

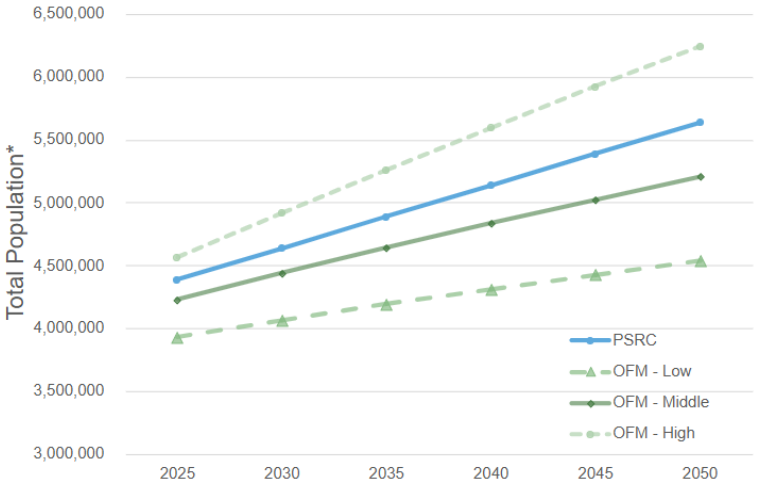
Project Name	2025-2035 Cost Estimates	
North Mercer Island and Enatai Interceptors Upgrade	$	38,415,620
Richmond Beach PS Upgrade		28,789,079
Richmond Beach Edmonds Interceptor Parallel		10,513,782
Black Diamond Trunk Capacity Upgrade		164,391,988
Garrison Creek Interceptor Replacement, Realignment, and Diversion		14,173,165
Lake Hills and NW Lake Sammamish Interceptor Upgrade		152,451,573
Boeing Creek Trunk Replacement and Parallel		835,661
Coal Creek Siphon and Trunk Parallel		153,671,044
Medina Pump Station Upgrade		43,618,526
Sammamish Plateau Diversion (Phase 1)		112,165,420
Soos Creek Cascade Relief Interceptor No. 2 Upgrade		16,796,707
	$	735,822,565

** The cost estimates shown above were presented to RWQC in July 2025 and may be updated as capital projects are advanced and further defined.

vi. Summary of science/data (if applicable)

Population Growth

The Washington Office of Financial Management (OFM) provides ranges of possible population growth scenarios for Washington counties, from low to high. The PSRC forecast through 2050, included in the graph below, falls within this range. Note that WTD's service area is not the entirety of these three counties; this data is provided to show consistency across agencies that issue the raw data WTD uses to develop service-area estimates.



*Based on total population for King, Pierce, and Snohomish Counties

Sanitary Sewer Overflows

WTD's system modeling strategy focuses on surcharging (the backing-up of flow within a pipe) rather than SSOs because (1) surcharging is much easier to predict and detect, and (2) surcharging is a more conservative standard. Surcharging is a necessary precondition to overflow, but pipes that surcharge do not necessarily overflow.

Understanding WTD's experience with SSOs can provide context for the region's risk tolerance in relation to determining how large and how quickly conveyance capacity projects are constructed.

Sanitary sewer overflows are relatively rare across WTD's system. SSOs attributable to capacity limitations tend to be concentrated in specific problematic locations.

Between 2019-2024, WTD experienced six SSOs that can be attributed to capacity limitations. Three were at Medina pump station. Some improvements to the Medina pump station have since been made, and further improvement projects for the Medina conveyance and the Medina pump station are in the CIP.

Over the same time period, WTD experienced another 26 SSOs that were attributed to asset or operational failure or another non-capacity-related cause.

D. Example Practices from Other Jurisdictions/Industry

Wastewater utilities across the country use different standards for designing for future capacity. Following King County Code, WTD designs conveyance capacity to a 20-year peak flow standard, using a 50-year planning horizon.

This 20-year peak flow standard is a conservative standard nationwide. For example, East Bay Municipal Utilities District, which provides sewage treatment services for the communities east of San Francisco Bay in California, uses a 5-year design storm standard that accounts for elevated groundwater.

E. Policy Issues, Challenges, and Opportunities

There are a few challenges to consider when considering population growth as it relates to conveyance system capacity.

1. Population growth is a relatively small component of projected future flows.

   Infiltration and inflow (I/I) are much larger factors in sizing new conveyance facilities. Because the planning process to determine conveyance size and improvement installation timing accounts for total flows, including both population changes and I/I, the policy question here overlaps with policy questions for I/I. That is, risks and opportunities associated with project sizing and timing could be impacted by policy decisions to reduce I/I.

2. WTD accepts all flows sent to the regional system from its component agencies, and component agencies are required to provide sewer services within the Urban Growth Area. WTD cannot refuse to accept these flows.

F. Range of policy options with associated actions and considerations (including qualitative description of costs)

The policy options presented below describe potential choices and Separated System Actions that could be implemented to address the policy question:

- How aggressively beyond legal requirements should WTD expand capacity to account for future population growth?

WTD expects the need for increased sewer conveyance capacity to extend well into the future. Most of this conveyance capacity need is driven by increasing I/I; options for reducing that need are provided in a separate policy memo dedicated to the I/I topic. Given increasing capacity needs and the mandated prevention of SSOs, several policy options to answer this question include:

1. Maintain current policies and practice
2. Take a less aggressive approach to expanding conveyance capacity by reducing pipe sizing design standard and applying a less conservative guideline for identifying new capacity needs.

3. Take a more aggressive approach to expanding conveyance capacity by installing planned capacity improvement projects more quickly.

Summary of Policy Options

	Goal	Description	Separated System Actions
#1	**Maintain** current policies and practice in conveyance capacity planning for population growth	Continue to identify needs and develop conceptual projects based on the 20-year design standard but take on risk in implementation timelines to allow for flexibility in capital allocation.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 20-year peak flows at the 50-year time horizon.
#2	Take a **less aggressive** approach to conveyance capacity planning due to population growth	Reduce short-term construction costs by reducing pipe sizing design standard and applying a less conservative guideline for identifying new capacity needs.	Identify needs and develop conceptual projects when conveyance capacity falls below a 5-year LOS (depending on chosen I/I Policy Options); prioritize installation when conveyance capacity is at or below a 2-year LOS. Design conveyance capacity improvements to accommodate 5-year peak flows at the 50-year time horizon.
#3	Take a **more aggressive** approach to conveyance capacity planning due to population growth	Better protect against risk of SSO by installing planned capacity improvement projects more quickly.	Develop conceptual projects when conveyance capacity falls below a 20-year LOS; prioritize installation when conveyance capacity is at or below a 5-year LOS.

Policy Option #1 – Maintain current policies and practice in conveyance capacity planning for population growth.

Justification

This policy option would maintain the current approach to managing separated system conveyance capacity due to population growth. It maintains a conservative design standard but allows WTD more flexibility in allocating the capital budget to different projects as needed.

Considerations

This policy option would result in the continued implementation of current practice, meaning that sizing requirements for the separated conveyance system would not change, and WTD would implement projects as capital funding is available but before severe risk of SSO. In practice, this means that projects are sized conservatively, but that their installation is deprioritized for other system-wide capital needs that are driven by more stringent regulatory requirements.

Policy Option #2 – Take a less aggressive approach to conveyance capacity planning due to population growth.

A less aggressive approach would reduce the design standard specified in King County Code to be less than the 20-year peak flow at the planning horizon. By choosing a reduced design standard, such as a 5-year peak flow instead of a 20-year peak flow, WTD would design slightly smaller conveyance projects. Note that the design standard would still be applied to the extent of the 50-year planning time horizon; e.g., the estimated 5-year peak flow in 2070 based on flow monitoring from 2020.

Justification

The current 20-year peak flow design standard is very conservative compared to other design standards used by other utilities nationally. Lowering the standard would decrease the number of conveyance capacity projects included within the 50-year planning horizon of the Conveyance System Improvement Plan (as WTD would only plan upgrades for sections of conveyance that are at the 5-year design capacity).

Considerations

In the short term, with Option #2 conveyance capacity projects would require fewer resources overall since there would be fewer capacity projects in the 50-year planning

horizon. Those projects constructed would have smaller pipe sizes and, thus, often be less expensive to build. So, in the short term, individual conveyance projects and the overall cost of all conveyance capacity projects under Option #2 may be less costly than Option #1. Note though, that the majority of the costs of major conveyance projects are not in the size of pipes, but in other construction costs.

Long-term, by using a reduced design standard, WTD may need to construct conveyance capacity projects more frequently, as the full capacity of the pipe could be reached more quickly. More conveyance capacity projects more frequently could result in higher total costs for conveyance capacity over the longer term.

Determining capacity needs in the planning process as pipe capacity falls below a 5-year LOS rather than a 20-year LOS would have the effect of postponing projects from the CIP, potentially allowing for more flexibility in capital allocations across the agency.

Additionally, when pipes are built to a 5-year design standard, larger storms would result in a higher risk of SSOs, due to less volume in the pipe to accommodate large amounts of I/I.

Overlap with I/I Policy Options:

If more aggressive approaches to reducing I/I are chosen as part of this update to the Regional Wastewater Services Plan (see Policy Memo #1), potential conveyance capacity needs would still need to be identified well in advance to have enough time for an I/I reduction project to reduce or eliminate the need for a capacity improvement. Identifying projects according to the 5-year standard suggested here would not provide enough time; however, a 20-year standard could still be used to identify needs and develop projects, while the design standard is set at 5 years.

Policy Option #3 – Take a more aggressive approach to conveyance capacity planning due to population growth.

A more aggressive approach to conveyance capacity would prioritize installing capacity improvement projects more rapidly, when a 5-year LOS is reached rather than a 2-year LOS.

Justification

By prioritizing capacity improvements at a 5-year LOS, WTD could better protect against risk of SSO.

Considerations

Earlier construction of conveyance capacity projects may result in projects from other categories of WTD's capital program being deferred. This could result in further exacerbating the backlog of WTD capital projects that would need to be built in the near term to reach compliance. Compared to Options #1 and #2, this would result in more spending on capacity improvement upgrades in the separated system in the short-term.

G. Interested and affected parties WTD will engage to gather input

WTD's component agencies and MWPAAC are the primary audiences that need to be engaged on separated sewer capacity population growth policy options.

H. Rate structure considerations (if applicable)

There are no known rate structure considerations for this policy question.

I. Relationship to contracts

There are no known contract implications for this policy question.

J. Equity and Social Justice (ESJ) impacts

Based on the definition of equity and social justice in the King County Equity and Social Justice Plan 2016-2022, there are no known equity and social justice impacts for this question.

K. Planning-level cost estimates

This section will be added into the policy memo as the "Step 2" analysis later.

L. Evaluation of outcomes: identify impacts and outcomes of each option

This section will be added into the policy memo as the "Step 2" analysis later.

Policy Questions for the RWSP Update

Below are 32 policy questions to be analyzed as part of the RWSP Update process. 29 policy questions were identified in the RWSP Update Scoping Document. WTD is proposing to add three new questions (question 8, 15, and 23), which are italicized below, to address additional topics or areas that WTD wants to analyze for policy implications.

1. Given the uncertainties in future growth rates reported by Washington State and the Puget Sound Regional Council, how aggressively beyond legal requirements should WTD expand capacity to account for future population growth?
2. How should I/I be managed and how can costs be fairly apportioned? Should system capacity be expanded to account for increases in I/I? Should I/I policies change to support reducing the capacity needed for I/I?
3. How should the conversion of on-site septic systems to sewers in the service area be managed and should WTD implement programs to encourage conversion within the service area?
4. What upstream or source control actions should the region undertake to prevent contaminants and reduce costs?
5. How can WTD best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?
6. How proactive vs. reactive should WTD be when deciding to refurbish or replace aging infrastructure?
7. What level of redundancy of critical systems should WTD have? What level of risk tolerance should WTD accept?
8. *What approach should WTD use to fund Asset R&R projects?*
9. What level of resiliency should WTD plan for regarding seismic and other natural hazards to avoid or minimize risks? What level of risk tolerance should WTD accept? How can these considerations be best informed by the long-term capital motion work in progress?
10. Should existing wastewater policy language (KCC 28.86) be revised to specifically call out planning for future climate conditions in addition to population growth and other environmental factors?
11. How should WTD prepare and adapt to climate impacts (e.g., precipitation/storm intensities, sea level rise, river flooding, etc.) in line with the Strategic Climate Action Plan? What level of climate impact risk tolerance should WTD plan for to avoid or minimize risks to the system?
12. How much should WTD reduce energy use and reduce greenhouse gas emissions?
13. How will WTD measure customer affordability for contract agencies and ratepayers?

14. What other rate relief approaches should WTD implement to improve affordability for those who may struggle to pay their sewer bill?
15. *How should WTD best upgrade the combined system to address regulatory requirements, regional water quality, and West Point operations? How can combined system costs be fairly apportioned?*
16. Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
17. How should the County anticipate, engage with, and plan for future nutrient permit requirements, regulations related to CECs such as PFAS, or other future regulatory changes?
18. To what extent should WTD prioritize use of existing facility sites vs. acquiring new property to accommodate future treatment needs (including capacity)?
19. Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?
20. Energy production and heat recovery – Should WTD be expanding its efforts to capture energy and heat? If so, at what level of effort?
21. Biosolids – Should WTD further expand its efforts to develop Class A biosolids? What changes are needed to biosolid recovery policies to get to Class A?
22. Recycled water – Under what circumstances should the region expand the use of reclaimed water? Which uses (e.g., environmental benefits, groundwater recharge, industrial uses, irrigation) are most appropriate?
23. *How should WTD maximize recovery of new resources? How should WTD prioritize and monetize environmental and other co-benefits when considering cost of recovering new resources?*
24. Should WTD update the rate structure for the capacity charge to align with current industry standards? (Note: The capacity charge rate structure was updated in 2021. A capacity charge methodology study is in progress.)
25. Is there a better rate structure for the sewer rate? (Note: WTD has identified a work plan to further evaluate the residential customer equivalent conversion factor of 750 cubic feet per month.)
26. Will WTD maintain a single uniform sewer rate per residential customer equivalent (Robinswood “one for all, all for one”), or consider alternative cost recovery rate structures to reflect other system impacts?
27. What actions should WTD take to increase equity and social justice for the regional wastewater system?
28. How will equity and social justice be interwoven in the update: community engagement, rate structure analysis, etc.?

29. How should the regional wastewater system address environmental justice concerns as described in the 2021 Healthy Environmental for All Act, such as addressing the disproportionate environmental health impacts of vulnerable populations and overburdened communities?
30. Are major policy updates aligned with component agency contracts?
31. How will WTD implement the RWSP Update consistent with direction and requirements expected of contract agencies?
32. How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?

King County

Girmay Zahilay
King County Executive

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February 25, 2026

The Honorable Sarah Perry
Chair, King County Council
Room 1200
C O U R T H O U S E

Dear Councilmember Perry

This letter transmits a report and proposed Motion as called for in Ordinance 20023 outlining how the King County Wastewater Treatment Division (WTD) plans to analyze policy questions identified during the Regional Wastewater Services Plan (RWSP) Update. The policy question analysis will be shared with the Regional Water Quality Committee (RWQC) as they discuss the RWSP Update.

The RWSP serves as King County's comprehensive wastewater plan, providing policy and operational direction for capital improvements and future development of King County's wastewater system. The RWSP Update process began with the adoption of the RWSP Scoping Document in early 2025 by the RWQC, which includes 29 major policy questions that will require analysis. This report explains how WTD will share its analysis and includes two examples in Appendices C and D, as well as appendices showing the policy memo template, schedule, and list of major policy questions.

The completed policy analyses will form the foundation of the Draft RWSP Update, currently scheduled to be published in 2027, that will precede the development of the Executive's Preferred Plan scheduled to occur in 2028. The analyses may also be used in decision-making by RWQC members and King County Council members following transmittal of the Executive's Preferred Plan to the County Council, which is scheduled for 2029.

Thank you for your consideration of this report and proposed motion. The policy analysis highlighted in this report will help the RWSP Update that will guide the County's stewardship of the regional wastewater system for years to come.

If your staff have questions, please contact Kamuron Gurol, Director, Department of Natural Resources and Parks Wastewater Treatment Division, at 206-549-1190.

Sincerely,

for

Girmay Zahilay
King County Executive

Enclosure

cc: King County Councilmembers
ATTN: Stephanie Cirkovich, Chief of Staff, King County Council
Melani Hay, Clerk of the Council
Karan Gill, Deputy Executive, Office of the Executive
Jasmin Weaver, Chief of Staff, Office of the Executive
Sierra Howlett-Brown, Policy Director, Office of the Executive
Garrett Holbrook, Council Relations Director, Office of the Executive
John Taylor, Director, Department Natural Resources and Parks (DNRP)
Kamuron Gurol, Director, Wastewater Treatment Division, DNRP

2027 Sewer Rate Proposal

Regional Water Quality Committee

March 4, 2026

Agenda

- Calendar
- Assumptions and challenges for 2027
- WTD's Recommended Rate
- Rate Forecast and Financial Analysis
- Affordability Efforts
- Summary and Next Steps

2027 Sewer Rate Process Calendar

Agency	Date	Briefing
Executive Budget Office	**1/29/2026**	2027 WTD Preliminary Sewer Rate Proposal
RWQC	**2/4/2026**	2027 WTD Preliminary Sewer Rate Proposal
MWPAAC R&F	**2/5/2026**	2027 WTD Preliminary Sewer Rate Proposal
MWPAAC Gen	**2/25/2026**	2027 WTD Preliminary Sewer Rate Proposal
E-Team	**2/26/2026**	2027 WTD Sewer Rate Proposal
RWQC	**3/4/2026**	2027 WTD Sewer Rate Proposal
MWPAAC R&F	**3/5/2026**	2027 WTD Sewer Rate Proposal
Executive	**3/19/2026**	2027 WTD Sewer Rate Proposal
MWPAAC Gen	**3/25/2026**	2027 WTD Sewer Rate Proposal
Executive	3/26/2026	Tech Memo due to the Executive
RWQC	4/1/2026	Discussion on potential letter on sewer rate
MWPAAC R&F	4/3/2026	Discuss potential letter to KC Council
KC Council	4/24/2026	Executive transmits 2027 Rate Proposal to Council
MWPAAC Gen	4/23/2026	Action on potential letter to KC Council
RWQC	5/6/2026	Briefing Only
Budget and Fiscal Mgmt Committee	5/28/2026	Discussion Only
RWQC	6/4/2026	Briefing Only
Budget and Fiscal Mgmt Committee	6/11/2026	Possible Action
KC Council	6/17/2026	Consideration/Possible Adoption
KC Council	6/24/2026	Consideration/Possible Adoption (backup date)
Approval Required by:	**7/1/2026**	

Challenges

- Operational cost increases
  - Chemicals, electricity and labor
- Convergence of challenges in capital program
  - Big three drivers – regulatory, asset management and capacity
  - Higher construction costs
  - Concurrent deadlines, stacking problem
- Lower risk projects already deferred to reduce rate increases
- Compounding effect from multiple double-digit increases is the main impact to customer affordability

Bottom Line Up Front

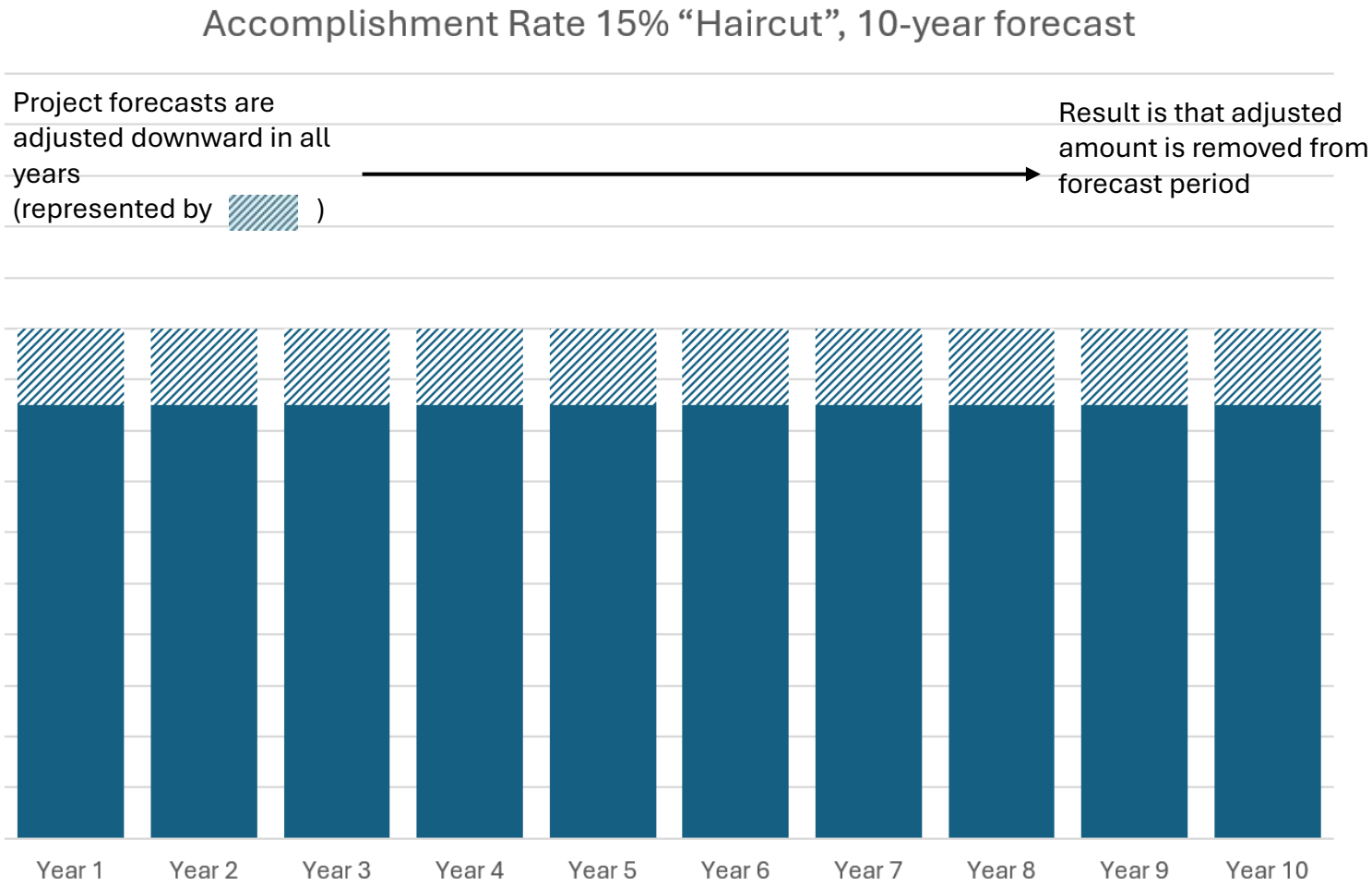
- Draft WTD rate proposal and forecast prioritizes regulatory compliance, limits rate increase forecast through 2034
- Alternative scenarios that shift project timing have modest value
  - Deferred asset renewal/replacement and capacity projects - adds risk of failure, risk of compliance or both
- Beyond just a ‘when’ question
  - Combined Sewer Overflow (CSO) consent decree, National Pollutant Discharge Elimination System (NPDES) permit, anticipated nutrient regulations
  - Requires successful negotiations, process may take some time
- WTD continuing to undertake variety of cost management efforts

2027 Rate Scenario Development

- Operating expenditure assumptions for 2027 are consistent with the 2026 adopted rate and associated forecast; outyear assumptions for inflation and growth also remain the same.
- Budget proviso requires two additional scenarios to complement the Executive's 2027 rate proposal.
  - One scenario must be at least 2% less than the official Executive proposal. Executive Work Plan also requires another scenario and associated tradeoffs. Scenarios presented are illustrative. Executive has not yet proposed an official rate.
- Inflation and schedule risk adjustment assumptions in the Capital Improvement Program (CIP) remain constant. Since last year, WTD is using schedule risk adjustment to more accurately reflect capital expenditures.
- Scenarios assume WTD will maintain strong financial policies to minimize cost of debt.

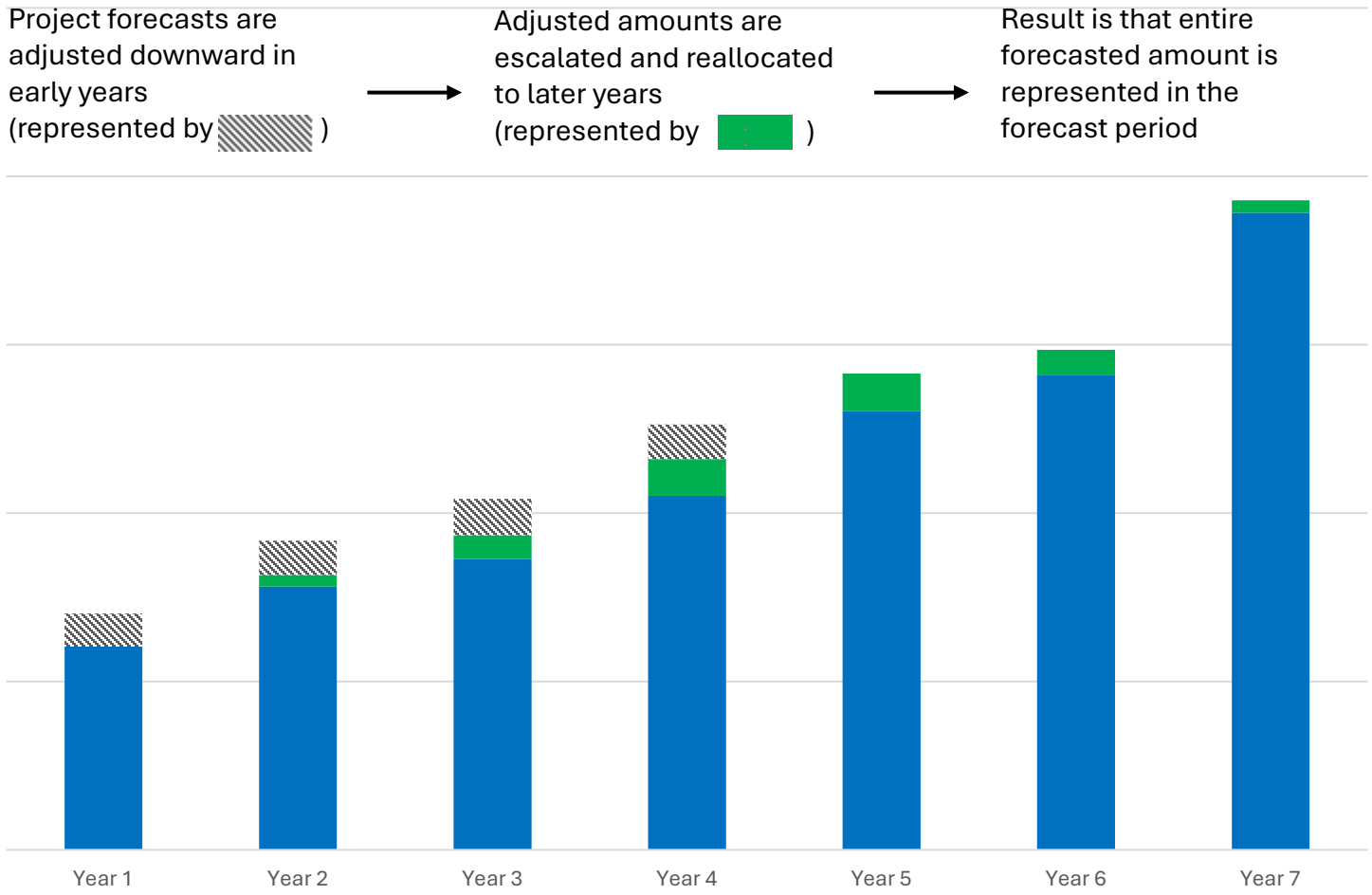
Assumptions for 2027 – Schedule Risk Adjustment vs Accomplishment Rate

Prior to the 2026 rate process (in 2025), WTD utilized an 85% accomplishment rate on the capital forecast input to the sewer rate model to attempt to reflect the tendency to overestimate capital expenditures in a given year.



Assumptions for 2027 – Schedule Risk Adjustment vs Accomplishment Rate

Since 2026, **WTD has shifted to using a 20% schedule risk adjustment factor** on non-regulatory projects to more accurately reflect the fact that capital projects tend to spend all of their budget, they just tend to spend it in later years than initial forecasts.



Capital Scenarios Summary

☑ =Minimal impact on risk ⚠ = Moderate impact on risk ☒ = Substantial impact on risk

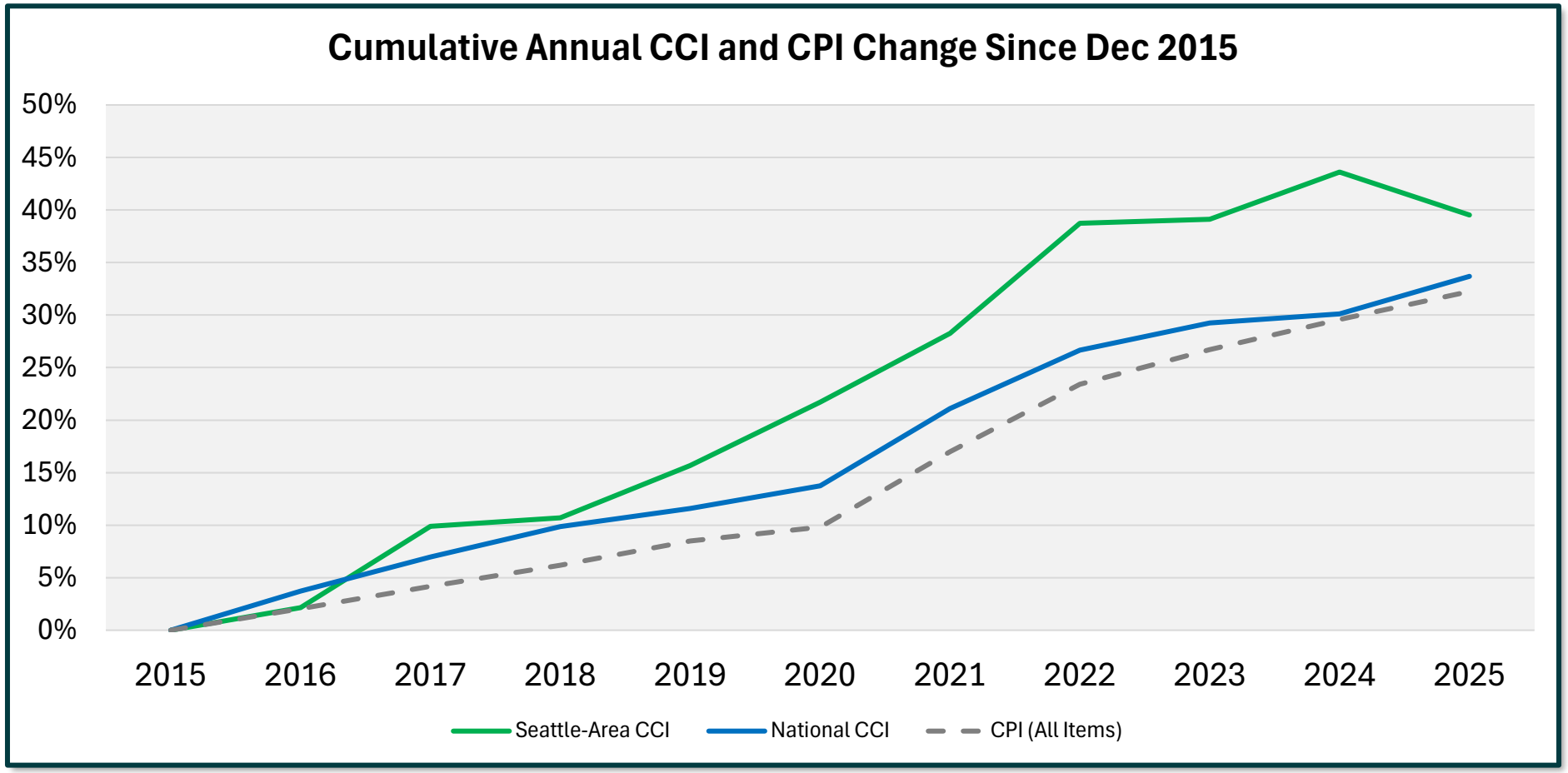
Scenario	10 yr Total CIP (2026-2036)	Change from WTD Proposed	Rate Increases			Asset Reliability and Safety Risk	System Capacity Risk	Regulatory Compliance Risk
			2027	2028	2029			
Draft WTD Proposal (2026 Rate Timing + Current Project Forecasts)	$14.2 B	$0 B	12.75%	12.75%	12.75%	⚠	⚠	☑
Council Request (2% below Previous 2027 Rate Forecast)	$12.8 B	-$1.4 B	10.75%	10.75%	10.75%	☒	☒	☑
Theoretical Regulatory Deadline Extension (Spreading Out Regulatory Projects)	$12.4 B	-$1.8 B	9.75%	9.75%	9.75%	⚠	⚠	☒

**The draft WTD proposal is very similar to the forecast projected at the time of the 2026 rate adoption but starts to differ significantly towards the end of the 6-year period.*

Major Changes in Current State from 2026 Adopted Sewer Rate Forecast

Project/Program	2026-2036 Impact	
Minor Asset Management Programs	+ $490M	Annual forecasts increased as part of 2026/2027 Budget Submittal decisioning
Sammamish Plateau Diversion	+ $460M	Prelim Gate 2 estimate in Oct 2025
Elliott West WWTS	+ $320M	Gate 3 approved June 2025
East Ship Canal CSO Program	+ $270M	ROM estimate for combined alternative
South Magnolia Supplemental Compliance Project	+ $235M	Identified in options analysis
South Plant Electrical Improvements	+ $170M	Charter approved July 2025
Lake Hills Trunk/NW Sammamish Interceptor Upgrade	+ $110M	Revised 90% estimate reflected in May 2025 forecast save
Brightwater Aeration Basin No. 4	+ $85M	Revised conceptual estimate from Treatment Planning Program

Seattle area construction costs have outpaced inflation



Source for Seattle-area and national CCI: Engineering News-Record
Source for CPI (All Items): Federal Reserve Bank of St. Louis

Capital Efficiency and Transparency Measures

- **Facility programs:** Dedicated facility-based delivery teams; reduces learning curve and provides increased coordination with O&M
- **Procurement Improvements:** Programmatic contracts to reduce procurement volume; expanded contractor outreach to increase competition; dashboards to identify and resolve bottlenecks
- **Real-Time Project Information:** Continuously improving project information system (PRISM) combining nightly accounting data with team reporting for real-time status, schedule, and cost visibility
- **Cost Estimating:** Formulation program for early conceptual estimates; standardized Basis of Estimate documentation; continue to build in-house estimating capability
- **Responsiveness and Transparency:** Long range capital forecast; clearer rate communication; increased engagement with MWPAAC

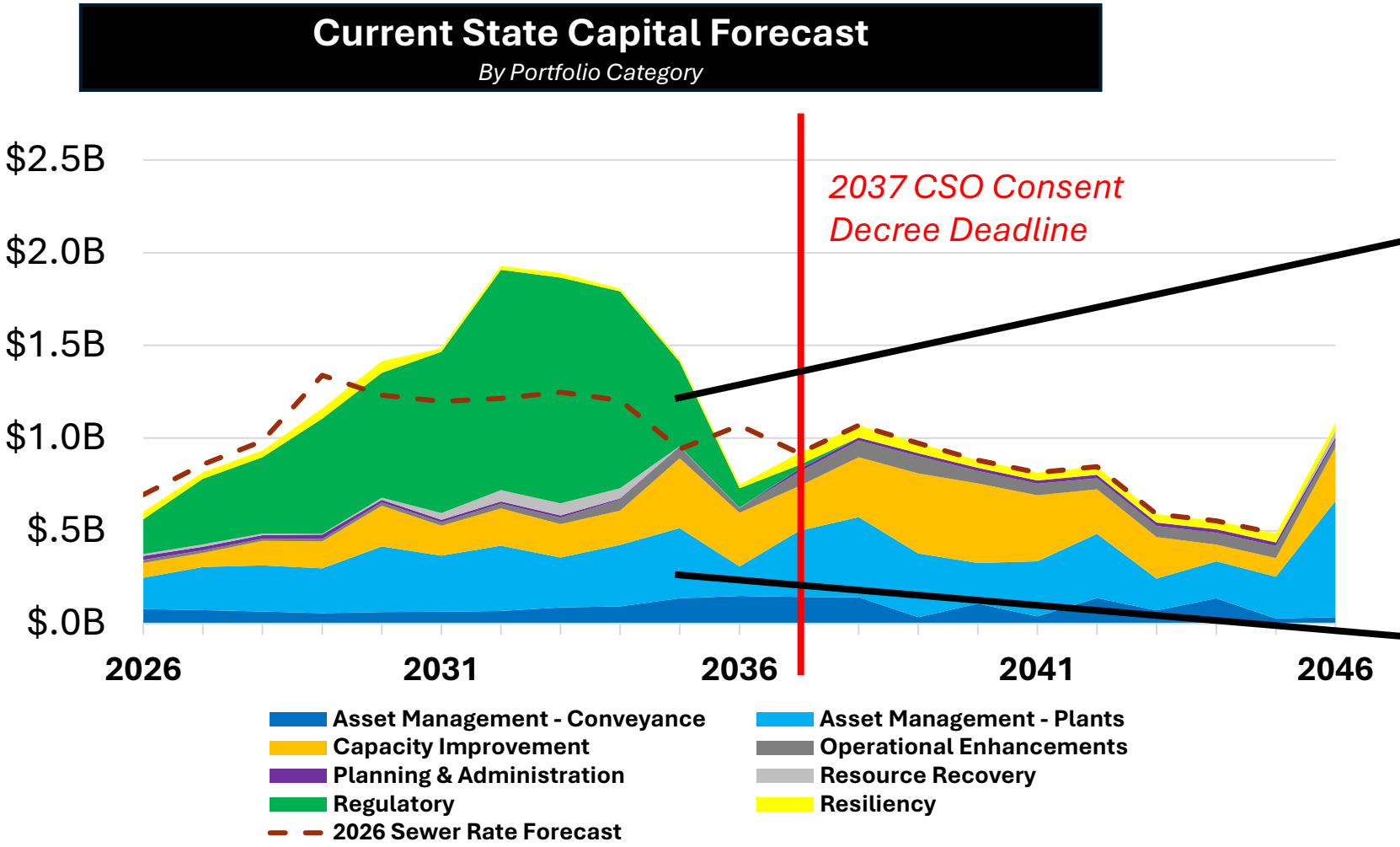
WTD Proposed Capital Portfolio Assumptions

1. **Regulatory (50% of 1st Decade Forecast)**
   - Prioritize meeting known regulatory requirements: CSO Consent Decree, Lower Duwamish, West Point Treatment Plant NPDES permit
   - Funds nutrient reduction evaluation and near-term optimization strategies, but not large-scale nitrogen reduction
   - Does not fund any other potential regulation (PFAS, other CECs, etc.)
2. **Asset Management Conveyance and Plants (27% of 1st Decade Forecast)**
   - Addresses the highest risk asset renewal and replacement needs – major asset, poor condition, larger scale cost (>$5M)
   - Includes funding (about $80M per year) to address small scale asset replacements that do not require major system overhauls

WTD Proposed Capital Portfolio Assumptions

3. **Capacity (15% of First Decade Forecast)**
   - Prioritizes capacity projects (conveyance system and treatment plants) that are driven by population growth
   - Deprioritizes conveyance system projects due to inflow and infiltration in first decade, shifts those to second decade forecast
4. **All Other Portfolio Categories (e.g., Resource Recovery, Op Enhancements, etc.) (8% of First Decade Forecast)**
   - Prioritizes system planning (RWSP Update, Conveyance System Improvements, Treatment Planning, Climate Adaptation Planning, etc.)
   - Prioritizes cost-efficient investments to meet climate action goals in the near-term
   - Defers investment in seismic resiliency to the second half of the 1st decade and beyond
   - Does not invest in projects to address climate resiliency of existing system

Regulatory required investment is a key rate driver



Regulatory projects – and the state and federal requirements that drive them – are the **largest driver** of the current sewer rate increases. **Changing this** requires modification of regulatory and consent decree requirements.

Asset management projects represent **minimal opportunity** to modify the rate and the **greatest risk** if deferred. Risks include overflows, sinkholes, equipment damage, permit violations, and life safety hazards.

Deferred investment in aging assets increases risk of catastrophic failures

Example: Unaddressed corrosion will cause pipeline failure resulting in sinkholes and raw sewage overflows

South Interceptor (Renton, located under I-405)

Heathfield Force Main (Bellevue)

Future Implications

- Some equipment and piping across the system are operating beyond useful life.
- Further deferral increases the risk of sudden failures, with significant consequences.
- Impacts to safety, human health, water quality, and higher response cost.

WTD’s Recommended Rate

Draft **WTD Proposal** prioritizes regulatory compliance, needed asset renewal and replacement, and addresses capacity needs

Benefits:

This capital forecast positions WTD to meet regulatory deadlines, proactively replace some of the most critical assets prior to failure, and avoid building moratoria driven by insufficient capacity.

Implications & Risks:

⚠ **Asset Reliability and Safety, System Capacity, and Financial Risk**

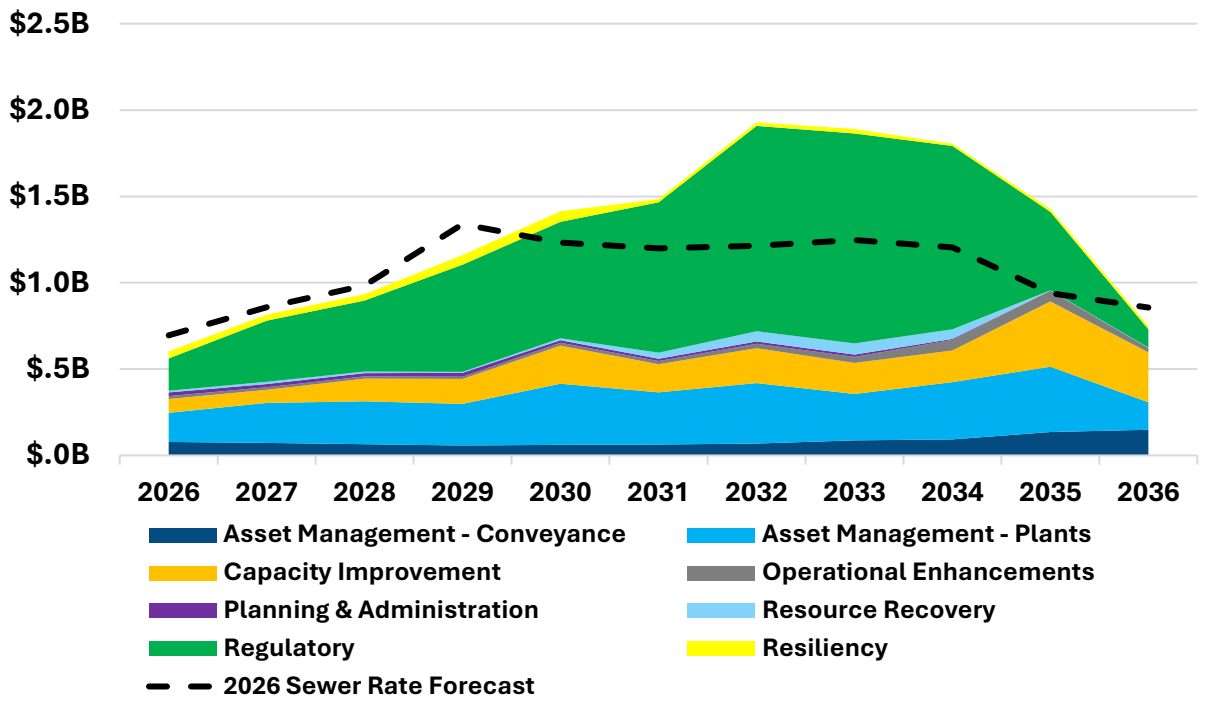
- Still defers some AM projects identified as being in poor to very poor condition. Risks include overflows, sinkholes, equipment damage, permit violations, and life safety hazards.
- Defers I/I driven capacity projects with low levels of service, risks include sewer overflows
- Deferrals affecting asset remaining useful life and condition also poses risk to credit ratings

☑ **Regulatory Compliance Risk**

- Includes significant investments (50% of 10-year CIP) to meet regulatory milestones

Current State Capital Forecast*

By Portfolio Category



Rate Impacts – WTD's Recommended Rate

2026 Rate Forecast:

	Adopted										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	12.75%	12.75%	13.50%	13.50%	13.50%	7.25%	7.25%	2.00%	2.00%	2.00%
Monthly Sewer Rate	$62.66	$70.65	$79.66	$90.42	$102.63	$116.49	$124.94	$134.00	$136.68	$139.42	$142.21
Rate Increase $	$4.38	$7.99	$9.01	$10.76	$12.21	$13.86	$8.45	$9.06	$2.68	$2.74	$2.79
All-In Debt Service Coverage	1.48x	1.47x	1.57x	1.50x	1.47x	1.57x	1.59x	1.57x	1.55x	1.53x	1.44x

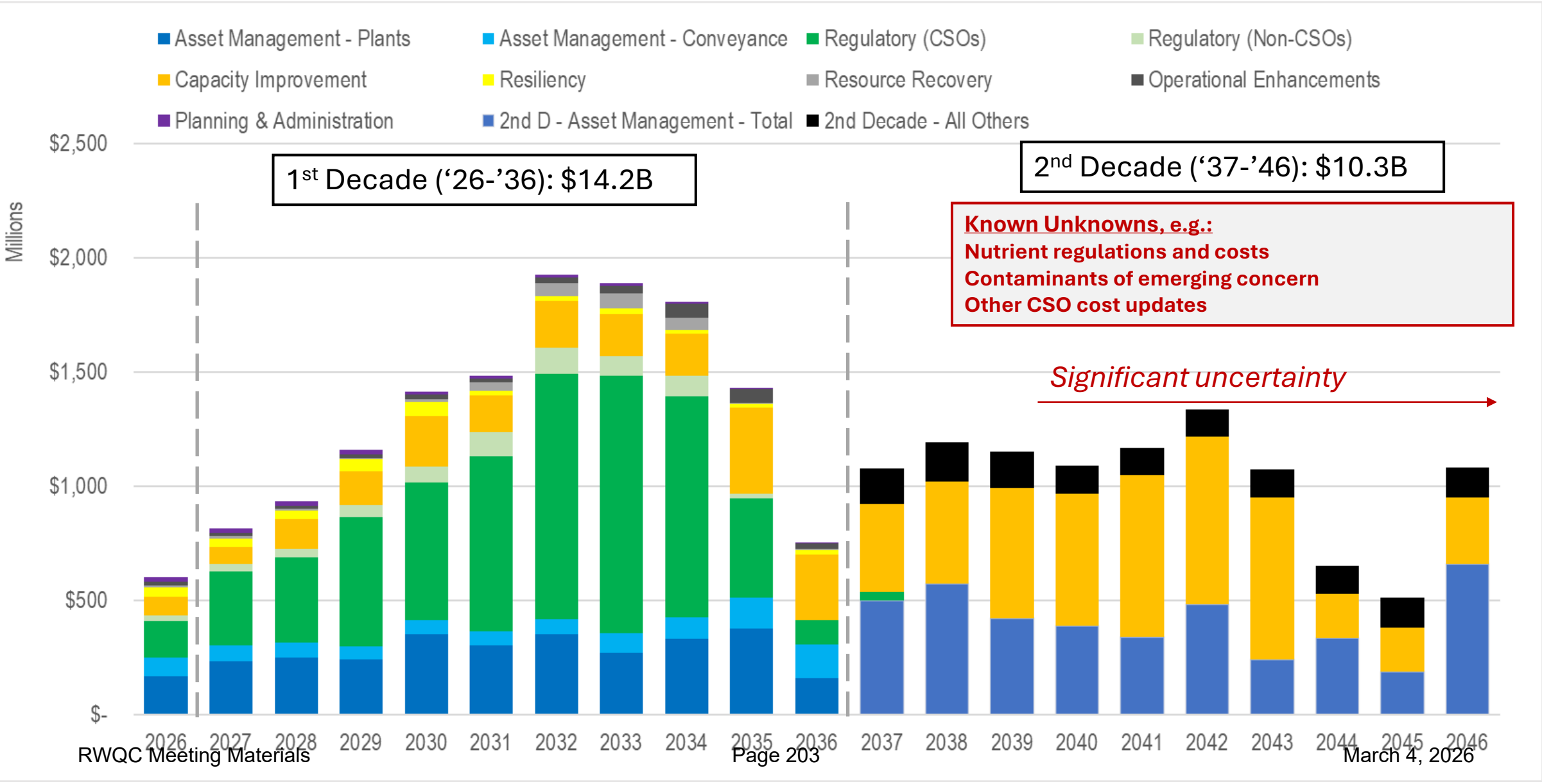
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Rate Increase %		4.50%	4.50%	4.50%	1.75%	1.75%	1.75%	0.50%	0.50%	0.50%	
Monthly Sewer Rate		$148.61	$155.30	$162.29	$165.14	$168.03	$170.98	$171.84	$172.70	$173.57	
Rate Increase $		$6.40	$6.69	$6.99	$2.85	$2.89	$2.95	$0.86	$0.86	$0.87	
All-In Debt Service Coverage		1.55x	1.66x	1.78x	1.83x	1.88x	1.93x	1.95x	1.96x	1.98x	

2027 WTD's Recommended Rate Forecast:

	Adopted	Proposed									
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	12.75%	12.75%	12.75%	12.75%	11.25%	11.25%	8.00%	8.00%	8.00%	1.75%
Monthly Sewer Rate	$62.66	$70.65	$79.66	$89.82	$101.28	$112.68	$125.36	$135.39	$146.23	$157.93	$160.70
Rate Increase $	$4.38	$7.99	$9.01	$10.16	$11.46	$11.40	$12.68	$10.03	$10.84	$11.70	$2.77
All-In Debt Service Coverage	1.62x	1.60x	1.74x	1.68x	1.60x	1.58x	1.61x	1.49x	1.51x	1.55x	1.55x

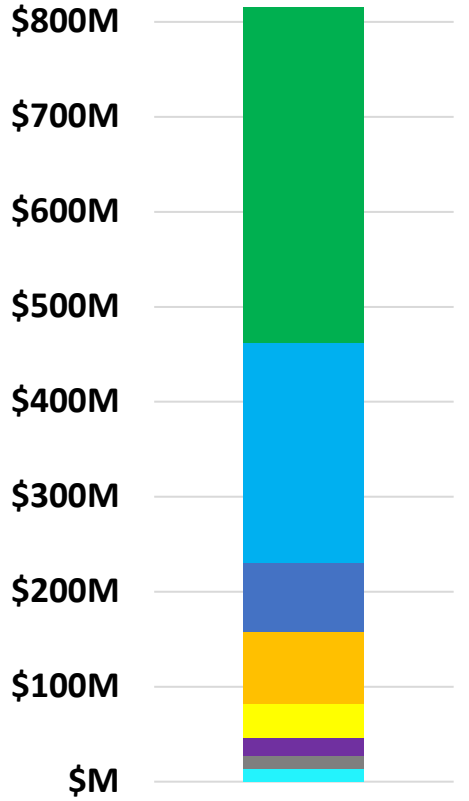
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Rate Increase %		1.75%	3.75%	3.75%	3.75%	2.25%	2.25%	2.25%	0.50%	0.50%	0.00%
Monthly Sewer Rate		$163.52	$169.66	$176.03	$182.64	$186.75	$190.96	$195.26	$196.24	$197.23	$197.23
Rate Increase $		$2.82	$6.14	$6.37	$6.61	$4.11	$4.21	$4.30	$0.98	$0.99	$0.00
All-In Debt Service Coverage		1.52x	1.54x	1.58x	1.61x	1.60x	1.63x	1.64x	1.66x	1.67x	1.69x

20-Year WTD's Recommended Rate Capital Forecast by Portfolio Category



Breakdown of forecasted $815M of capital spend in 2027

Capital Projects with Largest Forecasted 2027 Spend by Portfolio

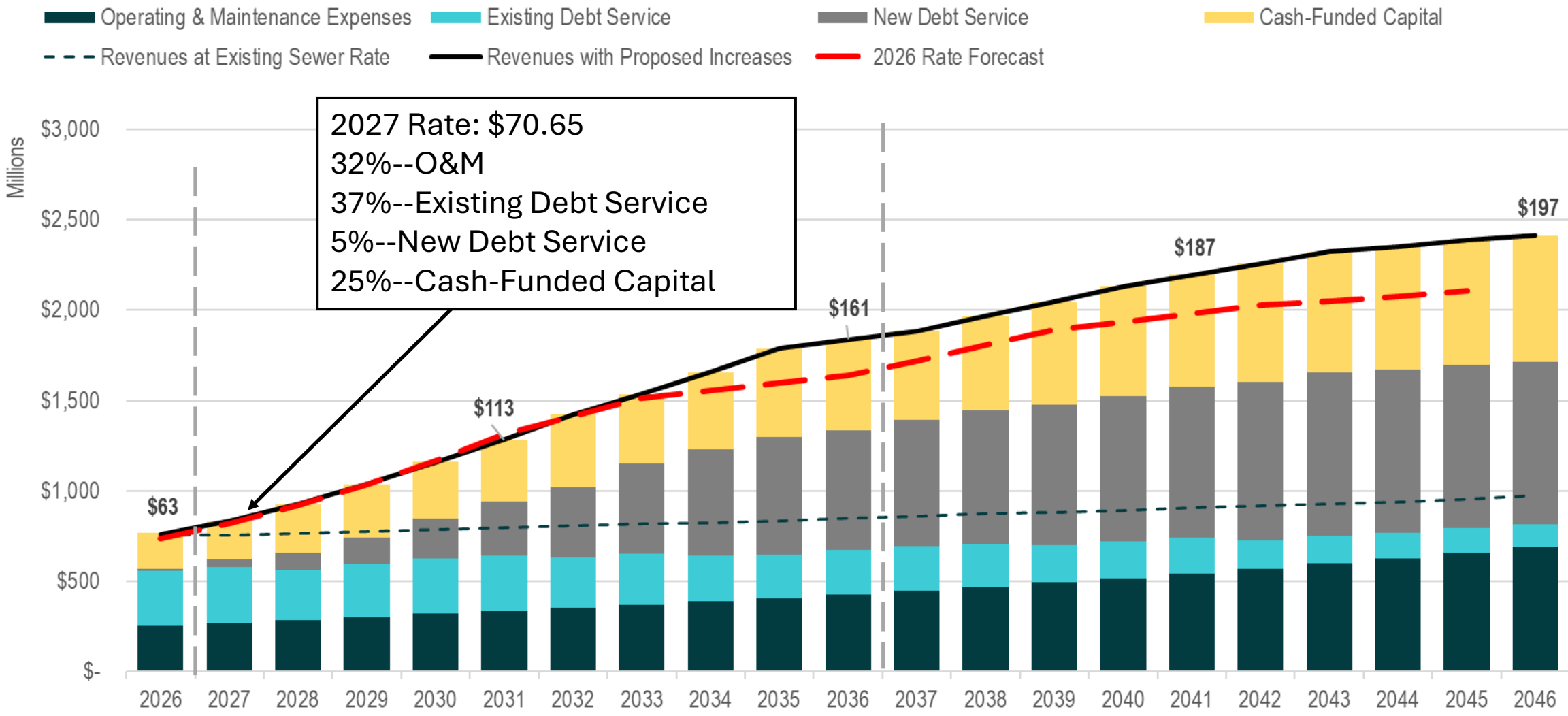


Regulatory (44%)
- Mouth of the Duwamish CSO ($200M) – *Pre-Design/Land Acquisition*
- West Duwamish Wet Weather Storage ($40M) – *Construction Awarded*
- Joint Ship Canal Water Quality Program ($25M) – *Nearing Completion*
- Elliott West Wet Weather Treatment Station ($20M) – *Final Design*

Asset Management – Plants & Conveyance (38%)
- West Point Electrical Improvements ($90M) – *Preliminary/Final Design*
- Interbay Force Main & Odor Control ($20M) – *Mid-Construction*

Capacity Improvement (9%)
- Coal Creek Siphon & Trunk Parallel ($30M) – *Mid-Construction*
- Sammamish Plateau Diversion ($20M) – *Preliminary Design*

Revenue Requirement



Alternative Scenarios

Council Request scenario accepts higher additional risk of asset failure and some financial risk, would shift costs out

Benefits:

Offers lower near-term rate increase relative to the Draft WTD Proposal

Implications & Risks:

Asset Reliability and Safety Risk + System Capacity Risk

- Requires deferral of approximately $1.4B of planned investment out of the first decade
- Deferrals in this scenario would impact asset replacement and capacity projects resulting in increased likelihood of detrimental impacts such as overflows, sinkholes, equipment damage, permit violations, and life-safety risks

Regulatory Compliance Risk

- Meets existing regulatory milestones (uncertainty remains around future nutrient requirements in operating permits)

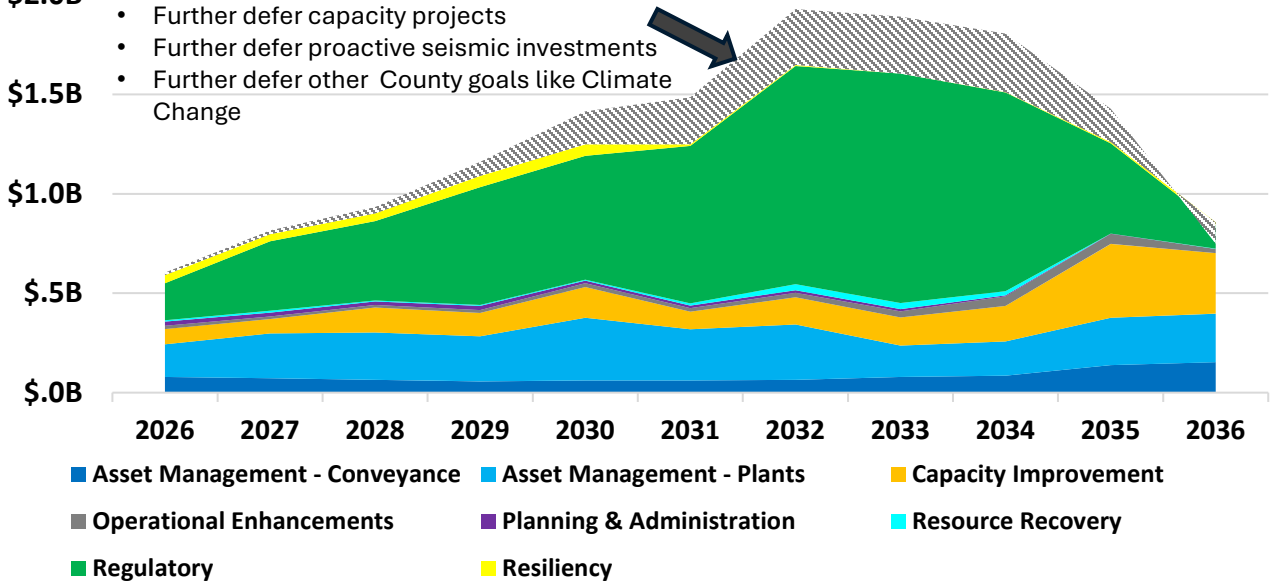
Financial Risk

- Future Borrowing: introduces additional risk of rating downgrades and higher cost of borrowing

Forecast Balancing to 10.75% Rate Increase

Assumptions to balance to ceiling:

- Keep CSO and other near term regulatory investments on current timeline
- Defer Nutrient Reduction Optimization
- Further defer high risk Asset R&R projects
- Further defer capacity projects
- Further defer proactive seismic investments
- Further defer other County goals like Climate Change



Rate Impacts – Council Request

2026 Rate Forecast:

	Adopted										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	12.75%	12.75%	13.50%	13.50%	13.50%	7.25%	7.25%	2.00%	2.00%	2.00%
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Rate Increase $		$6.40	$6.69	$6.99	$2.85	$2.89	$2.95	$0.86	$0.86	$0.87	
All-In Debt Service Coverage		1.55x	1.66x	1.78x	1.83x	1.88x	1.93x	1.95x	1.96x	1.98x	

2027 Council Request Rate Forecast:

	Adopted	Proposed									
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	10.75%	10.75%	10.75%	12.75%	12.75%	10.00%	10.00%	5.75%	5.75%	1.25%
Monthly Sewer Rate	$62.66	$69.40	$76.87	$85.14	$96.00	$108.24	$119.07	$130.98	$138.52	$146.49	$148.33
Rate Increase $	$4.38	$6.74	$7.47	$8.27	$10.86	$12.24	$10.83	$11.91	$7.54	$7.97	$1.84
All-In Debt Service Coverage	1.62x	1.58x	1.68x	1.60x	1.54x	1.57x	1.62x	1.56x	1.57x	1.59x	1.56x

		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Rate Increase %		1.25%	5.25%	5.25%	5.25%	3.25%	3.25%	3.25%	1.50%	1.50%	1.00%
Monthly Sewer Rate		$150.19	$158.08	$166.38	$175.12	$180.82	$186.70	$192.77	$195.67	$198.61	$200.60
Rate Increase $		$1.86	$7.89	$8.30	$8.74	$5.70	$5.88	$6.07	$2.90	$2.94	$1.99
All-In Debt Service Coverage		1.51x	1.54x	1.59x	1.60x	1.59x	1.63x	1.64x	1.66x	1.68x	1.68x

Theoretical Regulatory Deadline Extension Disclaimer

- Regulatory deadline extension scenario is *illustrative only*
- Successful negotiations with state and federal regulators would be needed to implement a scenario like the Regulatory deadline extension
- Potential penalties for violating consent decree include:
  - increased future borrowing costs
  - civil contempt sanctions
  - injunctive relief
  - criminal contempt proceedings
- WTD has not yet determined order/timing of projects that would best fit environmental quality and financial sustainability

Theoretical Regulatory Deadline Extension adds compliance and financial risk, assumes successful renegotiation of regulatory requirements

Benefits:

Offers lower near-term rate increase relative to the Draft WTD Proposal

Implications & Risks:

⚠ **Asset Reliability and Safety Risk & System Capacity Risk**

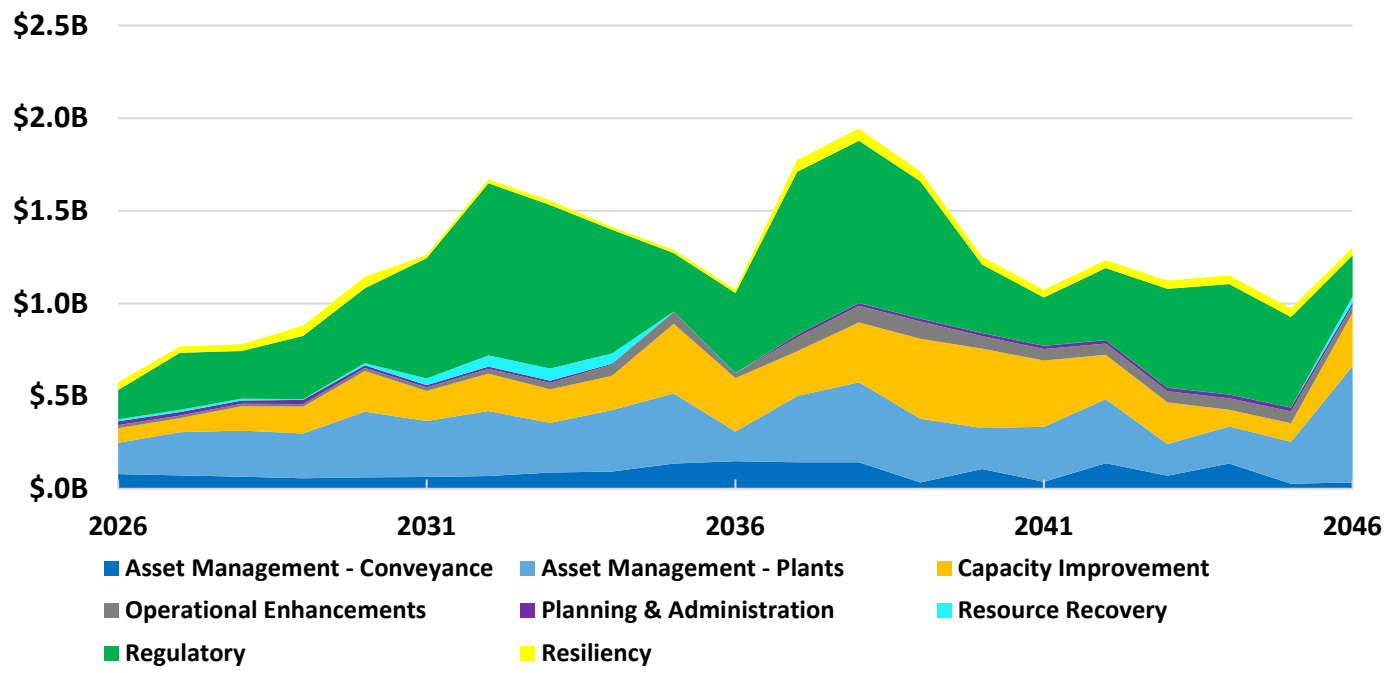
- Risk and implications remain the same for this criteria as the WTD Proposed scenario
- Capacity upgrade projects remain on same timeline as Current State scenario, posing moderate risk

☒ **Regulatory Compliance and Financial Risk**

- Regulatory compliance projects are no longer assumed to meet established deadlines
- Additional risks include:
  - future borrowing costs
  - civil contempt sanctions
  - injunctive relief
  - criminal contempt proceedings.

Regulatory Deadline Extension Scenario: 20-year Forecast by Portfolio Category

With Illustrative CSO Completion Milestones



Rate Impacts – Theoretical Regulatory Deadline Extension

2026 Rate Forecast:

	Adopted										
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	12.75%	12.75%	13.50%	13.50%	13.50%	7.25%	7.25%	2.00%	2.00%	2.00%
Monthly Sewer Rate	$62.66	$70.65	$79.66	$90.42	$102.63	$116.49	$124.94	$134.00	$136.68	$139.42	$142.21
Rate Increase $	$4.38	$7.99	$9.01	$10.76	$12.21	$13.86	$8.45	$9.06	$2.68	$2.74	$2.79
All-In Debt Service Coverage	1.48x	1.47x	1.57x	1.50x	1.47x	1.57x	1.59x	1.57x	1.55x	1.53x	1.44x

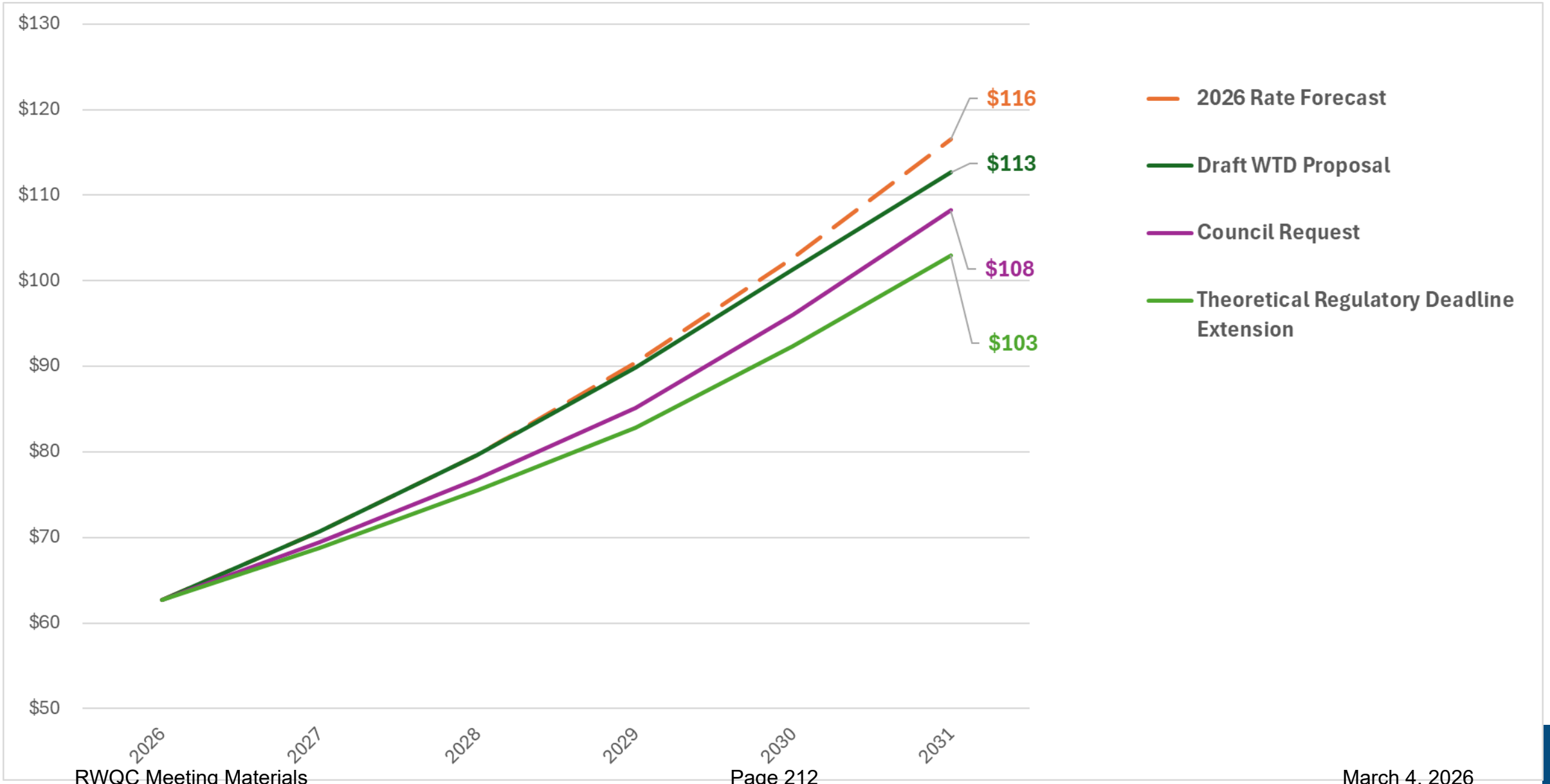
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Rate Increase %		4.50%	4.50%	4.50%	1.75%	1.75%	1.75%	0.50%	0.50%	0.50%	
Monthly Sewer Rate		$148.61	$155.30	$162.29	$165.14	$168.03	$170.98	$171.84	$172.70	$173.57	
Rate Increase $		$6.40	$6.69	$6.99	$2.85	$2.89	$2.95	$0.86	$0.86	$0.87	
All-In Debt Service Coverage		1.55x	1.66x	1.78x	1.83x	1.88x	1.93x	1.95x	1.96x	1.98x	

2027 Theoretical Regulatory Deadline Extension Rate Forecast:

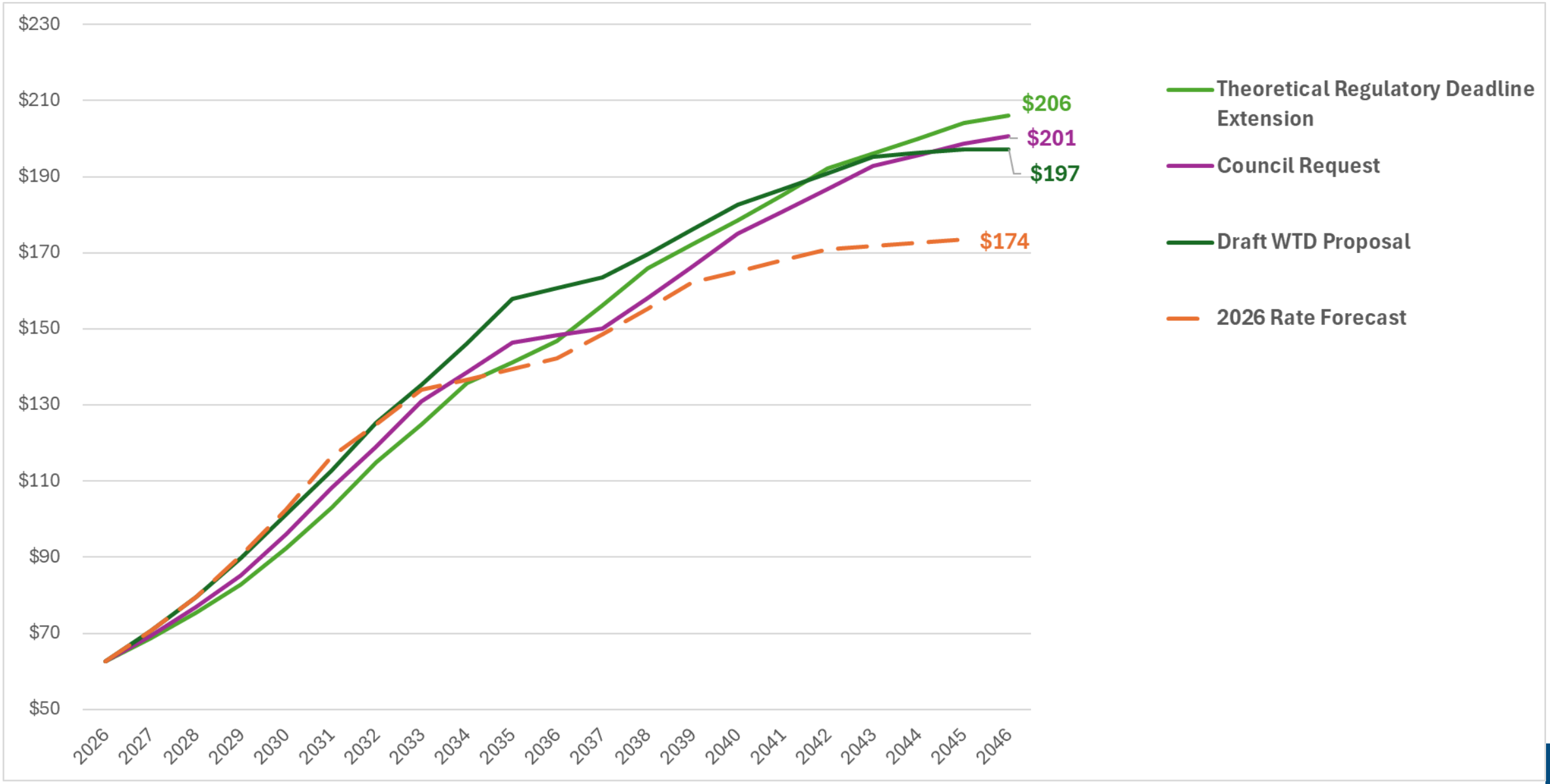
	Adopted	Proposed									
	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Rate Increase %	7.50%	9.75%	9.75%	9.75%	11.50%	11.50%	11.50%	8.75%	8.75%	4.00%	4.00%
Monthly Sewer Rate	$62.66	$68.77	$75.48	$82.84	$92.37	$103.00	$114.85	$124.90	$135.83	$141.27	$146.93
Rate Increase $	$4.38	$6.11	$6.71	$7.36	$9.53	$10.63	$11.85	$10.05	$10.93	$5.44	$5.66
All-In Debt Service Coverage	1.62x	1.58x	1.69x	1.64x	1.57x	1.57x	1.63x	1.54x	1.60x	1.59x	1.57x

		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Rate Increase %		6.25%	6.25%	3.75%	3.75%	3.75%	3.75%	2.00%	2.00%	2.00%	1.00%
Monthly Sewer Rate		$156.12	$165.88	$172.11	$178.57	$185.27	$192.22	$196.07	$200.00	$204.00	$206.04
Rate Increase $		$9.19	$9.76	$6.23	$6.46	$6.70	$6.95	$3.85	$3.93	$4.00	$2.04
All-In Debt Service Coverage		1.55x	1.57x	1.59x	1.58x	1.58x	1.61x	1.59x	1.63x	1.66x	1.66x

Scenario Rate Paths (Next 5 Years)



Scenario Rate Paths (20-Years)



Cost Management

- Improved transparency, cost containment initiative, overhead reductions
- Implement proviso and motion requirements (Increased reporting, third party oversight, etc.)
- Continue to pursue lower interest financing (SRF, WIFIA, etc.)

Affordability

- Define and measure affordability
  - RWSP update process
  - Nutrient Reduction Financial Capability Analysis
- Work with National Association of Clean Water Agencies
  - Low-Income Household Water Assistance Program, WIFIA protection
- Capacity charge payment plan program and low-income assistance

Summary and Next Steps

- Draft WTD rate proposal and forecast prioritizes regulatory compliance, limits rate increase forecast through 2034
- Alternative scenarios that shift project timing have modest value
  - Risk of equipment or facility failure, and/or risk of compliance, increases if further defer asset renewal/replacement and capacity projects
- Review CSO consent decree, NPDES permit, anticipated nutrient regulations, and pursue negotiations with regulators
- Next Steps
  - March 5 – MWPAAC R&F
  - March 25 – MWPAAC GEN
  - April 1 - RWQC

Q & A

King County | Wastewater Treatment

King County

Wastewater Treatment

Capacity Charge Methodology Update

Regional Water Quality Committee

March 4, 2026

Existing Capacity Charge Background

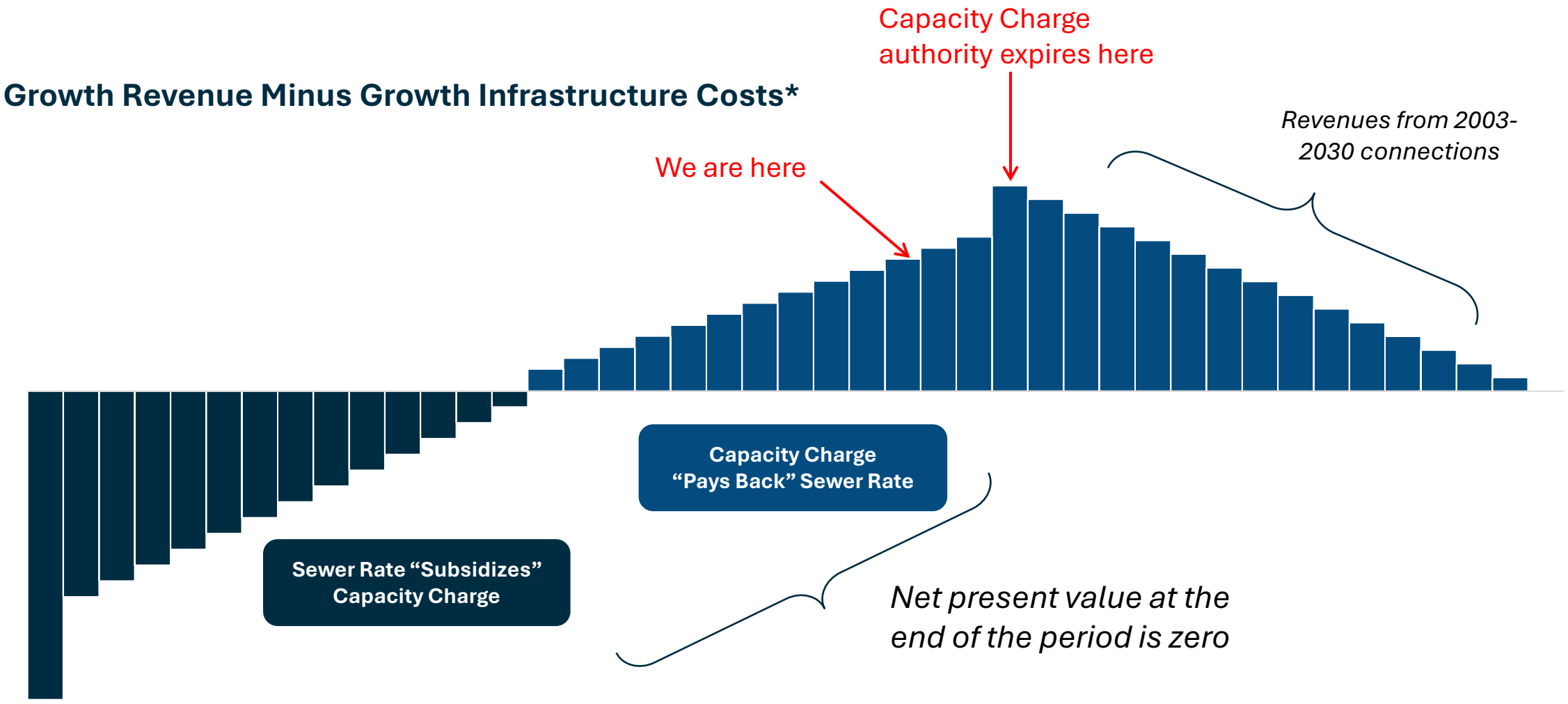
- 1999 Robinswood Agreement established guiding principles to manage wastewater through **2030**

> *"The regional wastewater financing structure should reflect uniform regional rates for existing and new customers and achieve the principle of "growth pays for growth."*

What is the capacity charge?

- A separate charge assessed on development that results in new connections to the sewer system
- Billed by and paid to King County in addition to the regular monthly sewer rate over 15-year timeframe, unlike other similar charges
- How it works:
    1. Growth-related costs are identified
    2. Monthly rate revenue from growth customers is calculated
    3. Capacity charge is set to cover any shortfall from rate revenues
    4. Includes discount rate for payment upfront

How existing methodology implements “growth pays for growth”



*For illustrative purposes, does not represent actual $ figures

Why Change Methodology?

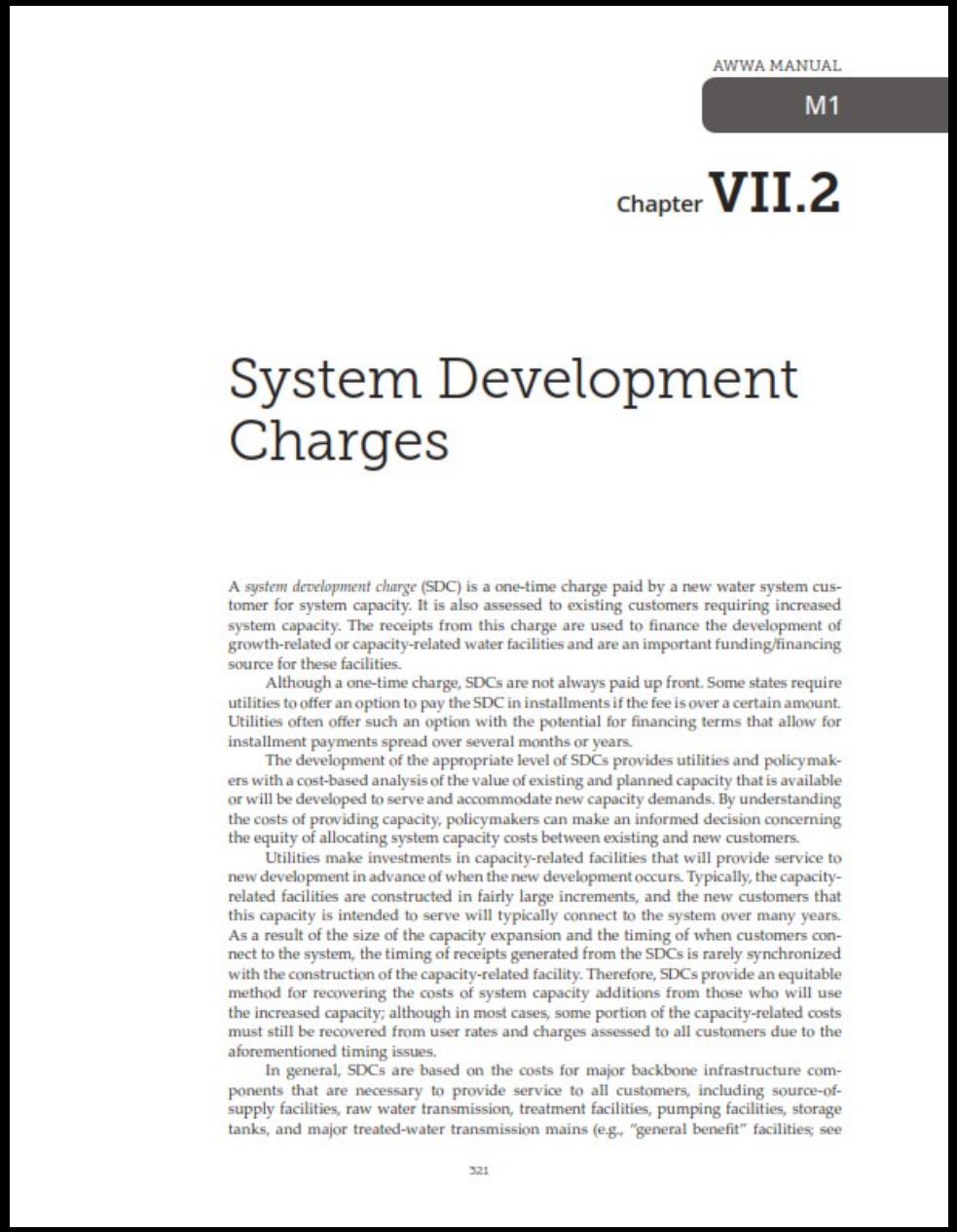
- We’re now 26 years into a 30-year Regional Wastewater Services Plan (RWSP) – the system is different than it was in 2000
- RWSP Update in progress that will help identify capital needs over the next 40 years
- Practically, complex to keep track of existing v. growth-related costs and subject to volatility based on past performance and market conditions (discount rate)
- 2016 Auditor’s report recommended a more transparent model

Goals of Methodology Update

- Aligned with Revised Code of Washington (RCW) Requirements
- Key concept in RCW 35.58.570 is “equitable share”
- Industry standard methodologies are aligned with the “equitable share” concept
- Accounts for current system investments and capacity, and future expanded capacity investments
- Based on the value of system assets (existing and future)
- Existing and future capacity will determine cost per Residential Customer Equivalent (RCE)
- More transparent and predictable calculation

Methodologies endorsed by water sector associations AWWA & WEF

- Buy-In Approach
  - Focuses on existing facilities with available capacity to serve new customers
  - Analysis based on fixed asset records
- Incremental Cost Approach
  - Focuses on additional facilities required to meet anticipated growth
  - Analysis based on capital improvement plan
- Combined Approach



AWWA MANUAL

M1

Chapter VII.2

System Development Charges

A *system development charge* (SDC) is a one-time charge paid by a new water system customer for system capacity. It is also assessed to existing customers requiring increased system capacity. The receipts from this charge are used to finance the development of growth-related or capacity-related water facilities and are an important funding/financing source for these facilities.

Although a one-time charge, SDCs are not always paid up front. Some states require utilities to offer an option to pay the SDC in installments if the fee is over a certain amount. Utilities often offer such an option with the potential for financing terms that allow for installment payments spread over several months or years.

The development of the appropriate level of SDCs provides utilities and policymakers with a cost-based analysis of the value of existing and planned capacity that is available or will be developed to serve and accommodate new capacity demands. By understanding the costs of providing capacity, policymakers can make an informed decision concerning the equity of allocating system capacity costs between existing and new customers.

Utilities make investments in capacity-related facilities that will provide service to new development in advance of when the new development occurs. Typically, the capacity-related facilities are constructed in fairly large increments, and the new customers that this capacity is intended to serve will typically connect to the system over many years. As a result of the size of the capacity expansion and the timing of when customers connect to the system, the timing of receipts generated from the SDCs is rarely synchronized with the construction of the capacity-related facility. Therefore, SDCs provide an equitable method for recovering the costs of system capacity additions from those who will use the increased capacity; although in most cases, some portion of the capacity-related costs must still be recovered from user rates and charges assessed to all customers due to the aforementioned timing issues.

In general, SDCs are based on the costs for major backbone infrastructure components that are necessary to provide service to all customers, including source-of-supply facilities, raw water transmission, treatment facilities, pumping facilities, storage tanks, and major treated-water transmission mains (e.g., "general benefit" facilities; see

321

Washington Dept. of Commerce endorses the average cost approach

- "The average cost approach acknowledges that the utility invests … to benefit both existing and future customers equally."
- "Commonly used … because it results in generally moderate and stable SDC [System Development Charge] over time and provides a straightforward and equitable allocation of system costs between existing and new customers."
- Equivalent to the combined approach

(Existing system cost + future system cost – adjustment for asset retirement*) ÷ (Total capacity units the system can serve) = SDC per unit

Capacity Charge

	Adopted	Proposed	Forecast			
Capacity Charge	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Monthly Charge	$77.99	**$83.10**	$85.86	$88.71	$91.65	$94.69
Increase %	2.50%	6.55%	3.32%	3.32%	3.31%	3.32%
Increase $	$1.90	$5.11	$2.76	$2.85	$2.94	$3.04
Annual Total	$936	$997	$1,030	$1,065	$1,100	$1,136
Total Payments (15 years)	$14,038	$14,958	$15,455	$15,968	$16,497	$17,044
Upfront Payment*	$9,870	$10,516	$10,865	$11,226	$11,598	$11,983

*Discount Rate of 5.14%

- WTD's rate consultant (Raftelis) recalculated the proposed capacity charge based on industry standard methodology for 2027
- Broadly in line with previous charge
- Propose indexing capacity charge to Construction Cost Index (CCI)
- Will update after RWSP process results in new capital plans

Q & A

Luke Slaughterbeck, Financial Planning Senior Analyst
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King County | Wastewater Treatment

Appendix: Summarized Charge Calculation

WTD has invested $6.8 billion in sewer system infrastructure used to provide service today

Existing Facilities Purchase Costs (Millions $)	Treatment Plants	Conveyance	CSO/ Regulatory	General Plant
Interceptors and Lines	$980	$1,035	$320	$289
Buildings	1,504	265	325	27
Land	191	21	23	13
Machinery/Equipment	857	238	106	151
Building Improvements	55	24	25	61
Other Misc.	29	5	10	32
Total	**$3,619**	**$1,591**	**$810**	**$819**
Grand Total				**$ 6,839**

The asset investment is adjusted as part of the System Buy-in calculation

- Exclude ineligible items:
  - Vashon Island and Carnation treatment facilities
  - Grant-funded or contributed assets
  - Small equipment and vehicles
  - Capitalized interest
- Add allowable carrying costs per RCW 35.58.570

(Millions $)	All Assets
Total Assets	$ 6,839
Capitalized Interest, Small Equipment, and Vehicles	(335)
Vashon and Carnation Treatment Plants	(52)
Grant-funded Assets	(431)
Debt Credit	(1,924)
Plus Carrying Cost	2,939
Grand Total	$7,037

Capital Improvement Plan (CIP) and preliminary long-range capital project needs reflect $6.9 billion in growth-related incremental costs through 2060

- Capital project sources:
  - 2019 Treatment Plant Flows and Loadings Study
  - 2017 Collection System Improvement Plan
- Projects designed to meet service requirements through 2060
- Project costs will ultimately be updated RWSP following the RWSP planning process

2025 Dollars *($ Millions)*	**Est. Costs of Growth Projects**	**Growth Share of Cost**
South WWTP	$ 4,860	$ 2,793
West WWTP	1,719	1,244
Brightwater WWTP	616	616
Conveyance System	3,675	2,235
TOTAL	**$ 10,870**	**$ 6,887**

Capital projects can address both renewal/replacement and capacity improvement. Engineering and planning identified the portion of each project that will serve future growth.

The Combined Approach uses the total costs to serve current and future system RCEs[1]

- Current system investment and future capital projects are included in capacity fee calculations, like the average cost approach[2]
- The $7.0 billion of investment in the existing system can serve approx. 910,000 RCEs
- The $6.9 billion of growth-related CIP will serve approximately 415,000 new RCEs by 2060

1. *The capacity charge RCE is based on a medium-sized, single-family home of 2.88 persons per household and an average loading per person of 0.15 lbs Biological oxygen demand (BOD) per month*
2. *Methodology recommended by the State Dept. of Commerce in "Residential Proportional Impact Fees and System Development Guidebook."*

Combined Approach Calculation

		Total Investments (Millions $)		
		Current System Investment	Growth-Related CIP Investment	Total Costs to Recover
System Investment				
Treatment Plants		$ 3,994	$ 4,653	$ 8,647
Conveyance		2,056	2,235	4,290
CSO/Regulatory		987	-	987
Total	(a)	**$ 7,037**	**$ 6,887**	**$ 13,924**
Total Available System RCEs (2060)	(b)			**1,325,000**
Total Fee Per RCE	**(a/b)**			**$ 10,516**
Total Monthly Charge	**(1)**			**$ 83.10**

(1) Per State law, the capacity charge is assessed monthly over 15 years. The monthly charge is calculated using the current early payoff discount rate.

King County

Wastewater Treatment

RWQC Work Program for 2026
March 4, 2026

The suggested agenda topics are based on the latest information available and are subject to change based on the availability of presenters and committee priorities. This work program will stay marked as "draft" to reflect that the committee will adjust the schedule throughout the year to accommodate any necessary changes.

RWSP Policy Analysis and RWQC

WTD is currently working on a multi-year plan to update the Regional Wastewater Services Plan. On January 16, 2025, the King County Council adopted the RWSP Update scope document to guide the update process. The scope document identifies policy questions to be analyzed as part of the RWSP Update. RWQC will have the opportunity to review the policy analysis both before and after the Draft RWSP is released.

Pre-Draft RWSP Update. Beginning in March 2026, the Wastewater Treatment Division (WTD) plans to present the initial analysis of selected policy questions from the RWSP Update scope document. WTD refers to this stage of the analysis for these policy questions as Step 1. Related policy questions will be grouped together. The intent of the initial Step 1 briefings is for members to receive information on each policy question and identify any gaps in the information or options presented by WTD. WTD's initial analysis of the policy questions will provide a framework for the committee for future discussions on these policy questions. WTD expects the options presented at these initial briefings and any additional RWQC-identified options to be included in the Draft RWSP Update . . WTD will accept feedback and suggestions on each group of policy questions during the month the analysis is presented to RWQC.

Beginning in Q4 2026 and continuing through Q3 2027, WTD intends to present cost information to RWQC on a rolling basis for the options related to each policy question. WTD refers to this cost information as Step 2. With this cost information, RWQC will have the opportunity to revisit any options it requested for analysis for inclusion in the DRAFT RWSP Update . All requested analysis and cost information for the policy questions is anticipated to be completed by Q3 2027.

After the DRAFT RWSP Update released. The Draft RWSP Update is scheduled for completion at the end of 2027. and RWQC will have another opportunity at this time to make comments to the Executive on the Draft RWSP Update The Executive will then develop the final Proposed Plan and transmit it to Council by the end of 2028 for Council adoption in 2029, at which time RWQC will have the opportunity to review and amend the plan.

MONTHLY MEETING SCHEDULE

January 7, 2026

- ✓ Regional Wastewater Services Plan Update: Update on RWSP Policy Analysis as Required by Proviso. This briefing will present the proposed schedule and grouping of policy questions.
- ✓ 2026 RWQC Work Program.

February 4, 2026

- ✓ An Overview of Water Quality in Puget Sound. Presentation by the Water and Land Resources Division, DNRP (40 minutes).
- ✓ Wastewater Treatment Division's Preliminary 2027 Sewer Rate and Capacity Charge, Including Rate Options (60 minutes).

March 4, 2026

- Proviso Response and Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 1: Separated System Conveyance (future conveyance capacity of the system, including Inflow and Infiltration and population growth.) (60 minutes)
- WTD's 2027 Sewer Rate and Capacity Charge Recommendations and Options (35 minutes).
- WTD Initial Presentation Prior to Ordinance Transmittal on Proposed Capacity Charge Code Changes (5 minutes).

March 26, 2026 9-11 am. Optional Site to South Plant to tour capital projects and compost pilot. This is not a RWQC meeting.

April 1, 2026

- Proviso Response and Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 2: Source Control and Legacy Pollution (50 minutes).
- WTD's 2027 Sewer Rate and Capacity Charge Recommendations and Options (Consider letter to Executive.) (25 minutes).
- WTD Presentation Prior to Ordinance Transmittal on Proposed Capacity Charge Code Changes (15 minutes).

May 6, 2026

- Regional Wastewater Services Plan Vision Final Vision (15 minutes).
- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 3: Asset Renewal and Replacement (40 minutes).
- Executive's Proposed 2027 Sewer Rate and Capacity Charge (Consider comment letter to Council.) (25 minutes).
- WTD presentation on Proposed Ordinance on Capacity Charge Code Changes (15 minutes).

June 3, 2026

- Council staff presentation and committee action on Proposed Ordinance on Capacity Charge Code Changes (15 minutes).
- Regional Wastewater Services Plan Update: Policy Questions Initial Analysis Group 4: Climate Impact and Natural Disaster Resiliency (50 minutes).
- Executive's Proposed 2027 Sewer Rate and Capacity Charge (If comment letter to King County Council is requested, approve.) (30 minutes).
- Capital Project Cost Update per proviso (Written).

Optional June Site Visit. Date TBD. SoDo Tour of MDCSO planned area. This would be a pre-construction tour.

July 1, 2026

- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 5: Finance/Affordability (60 minutes).
- Proviso Response Implementation Plan for Expanding Eligibility Requirements for WTD's Payment Plan Program. Transmittal Due April 3, 2026. (15 minutes).
- Regional Stormwater Solutions (30 minutes).
- Capital Project Cost Update per proviso (Written).

August 5, 2026 (This is considered a special meeting due to Council Recess)

- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 6: Combined System Management. (Combined Sewer Overflow policies) (70 minutes).

August Optional Site Visit to non-plant projects such as M Street Trunk Rehabilitation. Date TDB.

September 3, 2026

- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 7: Level of Treatment (50 minutes).
- Briefing by Edward Cebron, WTD Financial Planning Review. Tentative, pending speaker confirmation. (40 minutes)
- Capital Project Cost Update per proviso (Written).

October 1, 2026

- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 8: Resource Recovery (60 minutes).
- Update on Puget Sound Nutrient Issue (30 minutes).

November 5, 2026

- Regional Wastewater Services Plan Update ---Costing Information on Group 1: Separated System Conveyance (future conveyance capacity of the system, including Inflow and Infiltration and population growth) (45 minutes).
- Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 9: Rate structure/Robinswood questions (45 minutes)

December 3, 2026

- Regional Wastewater Services Plan Update ---Costing Information on Group 2: Source Control and Legacy Pollution (60 minutes).
- Capital Project Cost Update per proviso (Written).
- PFAS Annual Update (20 minutes).

Note for RWSP Update—Policy Analysis. Remaining costing information for Policy Questions Groups #3-9 will provided in Q1 and Q2 in 2027.

Monthly Written Report on Status Update for Motion 16900:
Committee requests monthly status report include status update on key tasks in Motion 16900, (WTD's sewer rate and capital work plan to improve engagement, transparency, and accountability) including:

- Develop and implement a process for MWPAAC and RWQC (as requested) to review a limited number of large capital projects selected by MWPAAC that substantively affect the rate.
- Develop public engagement strategy for rate payers in coordination with local contract agencies to explain why wholesale WTD rates are increasing and provide opportunities for public engagement.
- Independent consultant to review WTD's capital program.
- Evaluate regulatory requirements.
- Significant changes in capital project costs.
- Options for multi-year rate predictability.