



516 Third Avenue, Council
Chambers, 10th Floor,
Seattle, WA 98104

King County

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: *Angelica Calderon (206-477-0874)*

3:00 PM

Wednesday, September 2, 2026

Hybrid Meeting

Hybrid Meetings: Attend this King County Council committee meeting in person in Southwest Conference Room 12th Floor King County Courthouse 516 3rd Avenue, Seattle WA 98104, 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 committees@kingcounty.gov. If your comments are submitted before 1:30 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.

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

1. **Call to Order**
2. **Roll Call**
3. **Approval of Minutes** **P. 4**
Minutes of August 5, 2026 meeting.
4. **Chair's Report**
5. **Metropolitan Water Pollution Abatement Advisory Committee (MWPAAAC) Report**
6. **Wastewater Treatment Division Report** **p. 7**

Briefing

7. [Briefing No. 2026-B0083](#) **P. 14**
Vision for Clean Water 2100



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Janice Johnson, Project Manager, Regional Wastewater Services Plan Update, Wastewater Treatment Division (WTD)
Darren Greve, Government Relations, WTD

8. [Briefing No. 2026-B0102](#) **P. 23**

Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 7: Level of Treatment

Darren Greve, Government Relations, Wastewater Treatment Division (WTD)
Janice Johnson, Project Manager, Regional Wastewater Services Plan Update, WTD
Alison Tarbox, Treatment Planning Program Manager, WTD
Tiffany Knapp, Treatment & Separated Conveyance Planning, WTD,
Jacque Klug, Nutrient Management Coordinator, WTD

9. [Briefing No. 2026-B0002](#) **P. 89**

Discussion of 2026 Regional Water Quality Committee Work Program

Jenny Giambattista, Council staff

Other Business

Adjournment



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King County

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Meeting Minutes Regional Water Quality Committee

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Alternate: Rob Saka

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

Lead Staff: Jenny Giambattista (206-477-0879)
Committee Clerk: Angelica Calderon (206-477-0874)

3:00 PM

Wednesday, August 5, 2026

Hybrid Meeting

SPECIAL MEETING - DRAFT MINUTES

1. Call to Order

Chair Balducci called the meeting to order at 3:04 PM.

2. Roll Call

Present: 12 -Balducci, Clarke, Dunn, Hamilton, Hollingsworth, Lewis, Moore, McClellan,
Mork, Rossman, Warren and Lin

3. Approval of Minutes

Vice Chair Mork moved approval of the July 1, 2026 meeting minutes. There being no objections, the minutes were approved.

4. Chair's Report

Chair Balducci provided an overview of the agenda.

5. MWPAAC Report

John McClellan, Chair, MWPAAC, briefed the committee on the annual MWPAAC summer tour, the content and outcomes of the special MWPAAC meeting on July 26, 2026, and answered questions from the members.

6. Wastewater Treatment Division Report

Kamuron Gurol, Director, Wastewater Treatment Division (WTD), Department of Natural Resources and Parks, briefed the committee via PowerPoint presentation on WTD's collaboration with Ed Cebon, the WTD Sewer Rate and Capital Work Plan, the West Point and Vashon facilities' National Pollutant Discharge Elimination System (NPDES) permits, the 2026 National Association of Clean Water Agencies (NACWA) Utility Leadership Conference, the annual MWPAAC summer tour, and the Coal Creek Sewer Upgrade Project and answered questions from the members.

Briefing**7. [Briefing No. 2026-B0091](#)**

Department of Ecology, Washington's Water Future Initiative

This matter was presented.

Jennifer Hennessey, Special Assistant to the Director, Department of Ecology, State of Washington, briefed the committee via PowerPoint presentation.

8. [Briefing No. 2026-B0092](#)

Integrating Financial and System Sustainability: Financial Planning, Risk Assessment, and Performance Metrics

This matter was presented.

Ed Cebon, Rate and Finance Consultant, briefed the committee via PowerPoint presentation and answered questions from the members. Caitlyn Hall, Chief Financial Officer, Wastewater Treatment Division, Department of Natural Resources and Parks, also briefed the committee.

9. [Briefing No. 2026-B0093](#)

Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 6: Combined System Management

This matter was presented.

Darren Greve, Government Relations, WTD; Janice Johnson, Project Manager, Regional Wastewater Services Plan Update, WTD; and Faon O'Conner, Program Manager, Combined Sewer Overflow, WTD; briefed the committee via PowerPoint presentation and answered questions from the members.

The Chair recessed the meeting into Executive Session under RCW 42.30.110 to discuss with legal counsel litigation or potential litigation to which the County is or is likely to become a party when public knowledge regarding the discussion is likely to result in an adverse legal or financial consequence to the County at 4:45 PM for 10 minutes. The meeting returned to regular session at 4:58 PM.

10. [Briefing No. 2026-B0002](#)

Discussion of 2026 Regional Water Quality Committee Work Program

This matter was deferred.

Chair Balducci provided updates on the work program.

Adjournment

The meeting was adjourned at 5:00 PM.

Approved this _____ day of _____

Clerk's Signature

Regional Water Quality Committee

Item 6

Director's Report:

Wastewater Treatment Division

Capital Project Report

September 2, 2026

Note: Changes from last month’s update are in bold, blue font.

Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
1. Meaningful and Timely Engagement in Development of Sewer Rate. For the 2027 rate process and on-going, Wastewater Treatment Division (WTD) should implement an updated rate process that includes: a. Regular discussions throughout the year with the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC), Regional Water Quality Committee (RWQC), and King County Council at the relevant level of detail for each body on key factors and assumptions affecting the rate and forecast. This includes transparency on capital improvement program assumptions. b. Time for more in-depth review and understanding of costs, discussion of specific rate scenarios/options, and effects during rate discussions with MWPAAC, RWQC, and other stakeholders, at the relevant level of detail for each body. c. Ensure that the long-term rate forecast methodology requested by Motion 16449 is used to develop scenarios to evaluate options.	- To promote meaningful and timely engagement, WTD will host regular meetings with MWPAAC and/or its subcommittees to review: 10-year Capital Improvement Program. - Project prioritization, including transparency on how decisions are made and policy drivers of capital prioritization. - Timely updates on changes in large project costs that may impact rates as information becomes available. - Expenditure forecast assumptions and impacts to different types of projects across the capital program.	Q4 2025 and ongoing	Briefings provided on WTD’s capital project prioritization process and key capital projects impacting the rate in Q3/Q4 2025. Most recently, MWPAAC received a Capital Projects briefing on June 24, 2026. A draft rate engagement calendar for Q4 2026 – Q2 2027 is in development and will be shared with MWPAAC’s Executive Board for input. WTD is meeting with individual Board members to explore what success looks like for engagement for the next rate cycle
	Work with King County Executive's Office to schedule early 'look ahead' presentations on known and potential factors affecting the 2027 rate proposal and forecast.	Q1/Q2 2026	“Look Ahead” briefings to MWPAAC scheduled for Q4 2025 and Q1 2026. WTD briefed MWPAAC on 1/28/26 on the rate strategy for 2027 and assumptions. WTD provided a preliminary sewer rate and capacity charge briefing to MWPAAC on 2/5/26 and 2/25/26, and a briefing on WTD’s proposed rate on 3/5.
	As part of the 2027 rate proposal, include options for multiple rate scenarios, including those that offer various capital portfolio options. Scenarios should detail tradeoffs and associated risks and benefits. This should include a discussion about the level of service WTD is able to deliver under each option.	Q2 2026	WTD presented preliminary scenarios for illustrative purposes to RWQC on 2/4/26 and MWPAAC Rates and Finance Subcommittee on 2/5/26, and as part of WTD’s proposed rate on 3/5/26. Two scenarios, in addition to the Executive’s proposed rate, are included in the Technical Memorandum transmitted to Council with proposed Ordinance 2026-0103.
	The report on long-term forecasting model required by Motion 16449 was presented to RWQC in September 2025. To increase transparency and credibility in the long-term	Q3 2025 and ongoing	An independent consultant selected by MWPAAC members briefed MWPAAC on 1/28/26 and a video of the presentation can be found here. Further briefings on

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Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
	forecasting model, WTD will work with a MWPAAC work group to identify the model details that should be shared and further refined in order to improve understanding of the assumptions, formulas, data sets, and policy implications embedded in the long-term rate model and allow for informed questions. The MWPAAC work group should identify areas of improvement to continue to align with industry best practices to inform suggestions for improvements. • Work with MWPAAC Executive Board member(s) to develop a process for members to observe WTD Capital Portfolio management staff meetings while not hampering WTD's process and progress.	Q1/Q2 2026	implementation of the long-term forecasting model will be provided to MWPAAC with an opportunity to suggest any further improvements to align with industry standards. A briefing on the long-term forecast model and refinements is tentatively scheduled for MWPAAC’s Rates and Finance Subcommittee on October 1, 2026. WTD is engaged with MWPAAC’s Executive Board to provide an opportunity to observe the Definition and/or Delivery Board meetings in the Portfolio Management process beginning in Q1 2026. MWPAAC’s Executive Board selected two representatives to attend WTD Capital Portfolio management meetings beginning in Q2 2026. The two MWPAAC representatives attended an orientation on WTD’s governance board structure on June 22 and their first WTD Project Oversight Board on July 7, 2026.
2. Early visibility and transparency on large project planning. Develop mechanisms for MWPAAC and RWQC to engage in the planning and development process for large capital projects prior to decision-making to improve knowledge and confidence.	• 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. These reviews will happen at key phases in the development of these selected projects, including concept definition, alternatives analysis, alternative selection, and final design. Each engagement will create an opportunity to influence outcomes by collaboratively discussing comments and questions with WTD before a decision in each phase identified above is finalized.	Q1 2026	MWPAAC representatives’ attendance at WTD Project Oversight Board meetings will help inform MWPAAC members regarding WTD’s process for project prioritization and decisions. The topic of alternatives analysis for selected projects will be revisited at the next MWPAAC Executive Board in Q3 2026.

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Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
3. Improve multi-year rate predictability. Develop options and implement a mechanism to improve rate predictability to help partner agencies better plan and lessen large changes in rate proposals, especially for the first three years of the rate. A multi-year rate would provide more time for an in-depth review and understanding of costs and how investments are prioritized, and discussion of options and tradeoffs.	Prepare and deliver options for multi-year rate predictability, including options for a multi-year rate commitment. Options should be prepared in discussion with MWPAAC’s Executive Board and partner agencies and in coordination with King County Executive’s Office and county budget process. Any multi-year option should include a process for WTD to update the rate if there are significant changes that impact the rate forecast.	Q3 2025 – Q2 2026 (Options identified by end 2025 and multi-year rate implementation by end of Q2 2027 for 2028 and 2029 rates)	WTD began discussions with MWPAAC’s Executive Board and King County’s budget office in Q3/Q4 2025 on options for rate predictability. MWPAAC received an initial briefing and provided feedback on potential options at its 12/4/25, Rates and Finance Subcommittee meeting. Further discussion of options for rate predictability is planned for MWPAAC’s Rates and Finance Subcommittee on June 4, 2026. Based on feedback from MWPAAC and local agency partners on the options, WTD plans to recommend a two-year rate for 2028-2029 to help with predictability and align with the County’s biennial budget. The sewer contracts still require the Council to adopt the rate annually.
4. Evaluate regulatory requirements and develop options to address financial sustainability. Evaluate consent decree and permit deadlines for major projects and investments associated with multiple and concurrent requirements and identify options to address financial sustainability while optimizing water quality benefits and maintaining permit compliance.	- Evaluate the costs/benefits of seeking regulatory changes to improve the environmental and financial sustainability of the regional system. - Coordinate on outreach plan with local agency partners, to state and federal government. The outreach plan should address regulatory issues and funding availability from state and federal agencies.	Q3 2025 – 2026 Q3 2025 – 2026	WTD’s Planning team is coordinating with the King County Prosecuting Attorney’s Office and County Executive’s Office to evaluate potential regulatory changes. WTD is exploring options for an environmentally protective and financially sustainable path in preparation for initiating discussions with regulators. WTD met with Washington State Department of Ecology on June 24 and July 30. WTD plans on meeting with Ecology leadership in late September/early October to continue discussions on the water quality, capital program and rate impacts of current and new regulations, and potential alternative options to better prioritize requirements under the Clean Water Act. WTD is initiating outreach with its local agency partners on a federal/state outreach strategy. WTD and Seattle Public Utilities (SPU) coordinated on delegation meetings as part of Water

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Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
			Week (April 12 – 18, 2026) in Washington, D.C. Additionally, WTD is coordinating with City of Bellevue on key messages in advance of the city’s D.C. trip in June 2026. WTD shared information with local agency government relations on EPA’s comment period for the Financial Capability Assessment guidance which closed May 26. WTD staff briefed MWPAAC on June 26 regarding the draft discharge permit for West Point Treatment Plant issued by Ecology which includes requirements for nutrients. MWPAAC submitted a comment letter in August 2026 on the draft permit to Ecology. King County is a member of the National Association of Clean Water Agencies which also submitted a comment letter on nutrients requirements to Ecology.
5. Independent, third-party oversight. Provide for independent third-party review for WTD's capital program, including <i>mega</i> capital projects such as the Mouth of Duwamish Combined Sewer Overflow Program.	Develop a proposal in coordination with MWPAAC's Executive Board for review by the Executive's Office to procure an independent consultant to review WTD's capital program, including large capital projects.	Q4 2025 – Q2 2026	WTD provided an opportunity for MWPAAC’s Executive Board to review the scope of work to procure an independent third-party consultant. The King County Auditor’s Office has agreed to serve as the Project Representative. MWPAAC has selected a representative from its Executive Board to participate in the consultant proposal and interview process. The advertisement for the independent consultant contract opened on 2/10/26 and closed on 3/11/26. The selected consultant, PMA Consultants , executed a contract with WTD and received notice to proceed on June 11. The consultant held a kick-off meeting on June 25 with the King County Auditor’s Office (KCAO) as the project manager. KCAO and the consultant have begun meeting with stakeholders to get their input on focus

Note: Changes from last month’s update are in bold, blue font.

Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
			areas for the third-party review.
6. Regional Utility Affordability Summit. In partnership with local municipal leaders, prepare a multi-jurisdictional summit to address affordability and access to essential utilities.	Work with RWQC, Sound Cities Association, Seattle, and sewer districts to bring a wastewater perspective to the development and planning of the regional utility affordability summit.	Q3 2025 – Q1 2026	The Regional Utility Rate Summit was held in SeaTac on November 14, 2025, with approximately 150 attendees. WTD participated in the Staff Committee and Steering Committee for planning the Summit and as a participant presenting at the Summit.
	Identify and implement resources to execute follow-up steps agreed upon at the summit.	Q4 2025-Q1 2026	Follow-up will be coordinated with participants, including a potential second summit in 2026. Sound Cities Association (SCA) and County staff participated in a discussion with MWPAAC at its April 28 General Meeting to solicit input on next steps. WTD and SCA staff met in May to consider this initial input and how it would shape a second summit. WTD will continue to gather input from interested parties. The Department of Natural Resources and Parks and WTD met with Sound Cities Association (SCA) on June 16 and again on July 20 regarding a second summit. WTD continues to coordinate with the Executive’s Office on a Utility Summit with a target timeframe of December 2026.
	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.	Q1 2026	WTD held two sessions in January 2026 with local agency public information officers and similar staff to gather feedback. The sessions included discussion of what local agencies are hearing from customers, more information on current outreach efforts, and ideas for coordination with

Wastewater Treatment Division (WTD’s) Sewer Rate and Capital Work Plan to Continue to Improve Engagement, Transparency, and Accountability – September 2, 2026, Status Update

Note: Changes from last month’s update are in bold, blue font.

Major Recommendations from RWQC Letter	Wastewater Treatment Division Tasks	Working Timeline	
			WTD on rate messages. This feedback will inform WTD’s communications strategy development in Q1/Q2 2026. WTD hosted a virtual meeting local agency public information staff on 4/28/26 and shared a communications tool kit for the proposed 2027 sewer rate. WTD’s Director also participated in an interview with Bellevue TV regarding utility rates. In response to comments received, WTD will develop a bill stuffer or something similar that local sewer agencies can send to customers explaining the King County wastewater rate increase for 2027 and the importance of the regional system in protecting public health and the environment. WTD provided information on the adopted 2027 sewer rate to local agency communications staff to help with coordinated messaging to ratepayers. One local agency has shared these materials with their ratepayers; WTD is encouraging local agencies to use these materials in advance of the 2027 rate taking effect on January 1.

Vision for Clean Water

September 2, 2026
RWQC





Challenges and Opportunities



**Aging
infrastructure**



**Changing
regulations**



**Climate
change**



**Community
engagement**



**Customer
affordability of
wastewater services**



**Digital
technology
& AI**



**Emergency
preparedness**



**Equity & social
justice**



**Pollution reduction
& source control**



**Population
Growth**



**Workforce
development**



Partnerships



Vision for Clean Water 2100

Our Vision:

Clean waters for vibrant communities.

The Puget Sound region is swimmable, fishable, and full of life. Our high-quality, regional wastewater system is cared for by dedicated professionals and is affordable to everyone.

Our Mission:

We protect public health and the environment by collecting and cleaning wastewater while recovering valuable resources for a thriving Puget Sound region.





Commitments

Affordability

- Financial sustainability
- Financial stewardship

Partnerships

- Shared success

Public Health & Environmental Stewardship

- Clean water
- Re-use resources

Reliability & Resilience

- Exceptional service
- Resilience

Transparency & Accountability

- Trusted Partner

Workforce Excellence

- Meaningful Jobs

Vision Options Presented to Community

Reactions to Vision Options



Turning Wastewater into Opportunity



Recognized Clean Water Leader



Clean Water, Thriving Community



Innovation and Imagination



Vision engagement by the numbers

900+ people visited with us at community events

110+ King County employees shared their input

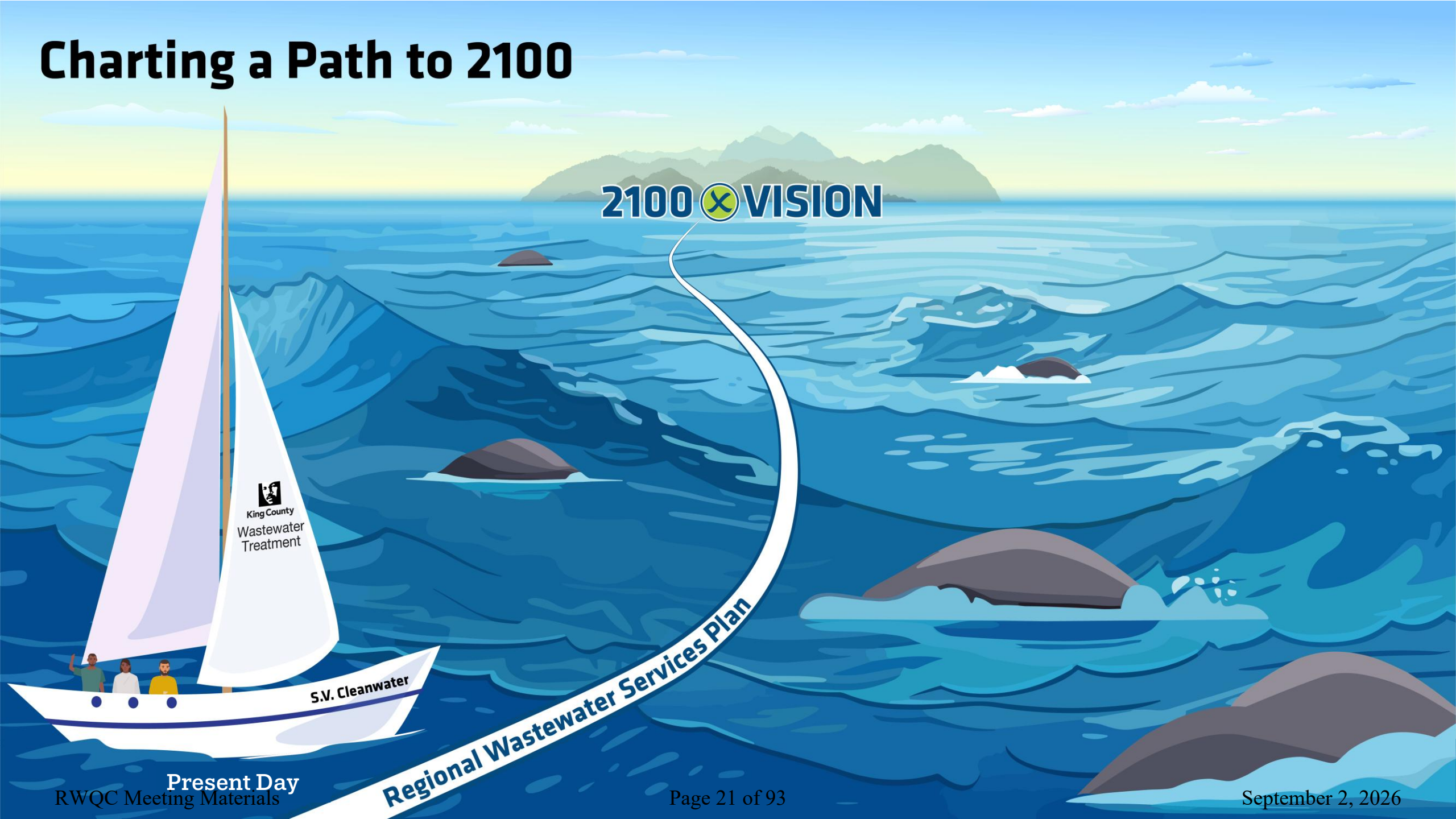
21,390 people visited the online open house

430 people completed our community questionnaire

About 70 community leaders joined listening sessions



Charting a Path to 2100



2100 X VISION

King County
Wastewater
Treatment

S.V. Cleanwater

Regional Wastewater Services Plan

Together, we
create a new
clean water
future.



Regional Wastewater Services Plan (RWSP) Update: Treatment Policy Questions and Options

Regional Water Quality Committee (RWQC)

September 2, 2026

Policy analysis schedule

11 “Groups” of Policy Analyses with policy options for RWQC:

March	Group #1: Separated System Conveyance
April	Group #2: Pollution Source Control & Legacy Pollution
May	Group #3: Asset Renewal & Replacement
June	Group #4: Climate Impact Preparedness & Natural Hazard Resiliency
July	Group #5: Affordability Metrics
August	Group #6: Combined System Management
September	Group #7: Treatment (Levels & Capacity)
October	Group #8: Resource Recovery
November	Group #9: Finance/Rate Structure
December	Group #10: Equity & Social Justice
June 2027	Group #11: Relationship to Contracts

Major Policy Questions: Treatment (1 of 3)

Policy Memo #10

- **Level of Treatment (1):** Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
- **Level of Treatment (2):** How should the County anticipate, engage with, and plan for future nutrient permit requirements, regulations related to Contaminants of Emerging Concern (CECs) such as PFAS, or other future regulatory changes?

Major Policy Questions: Treatment (2 of 3)

Policy Memo #11

- **Treatment Capacity:** 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 [*treatment plant*] capacity to account for future population growth?
- **Site Use & Expansion:** To what extent should WTD prioritize use of existing facility sites vs. acquiring new property to accommodate future treatment needs (including capacity)?

Major Policy Questions: Treatment (3 of 3)

Policy Memo #12

- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

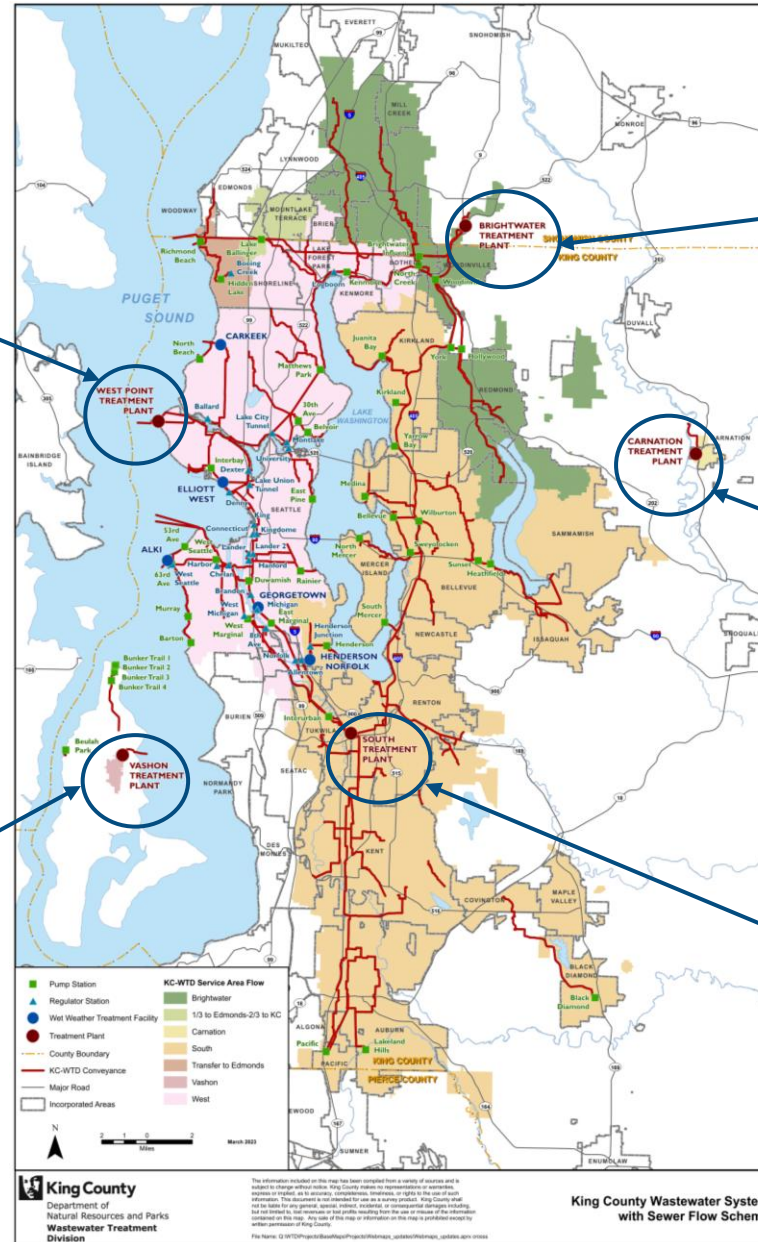
King County's Wastewater Treatment System



West Point Treatment Plant



Vashon Treatment Plant



Brightwater Treatment Plant

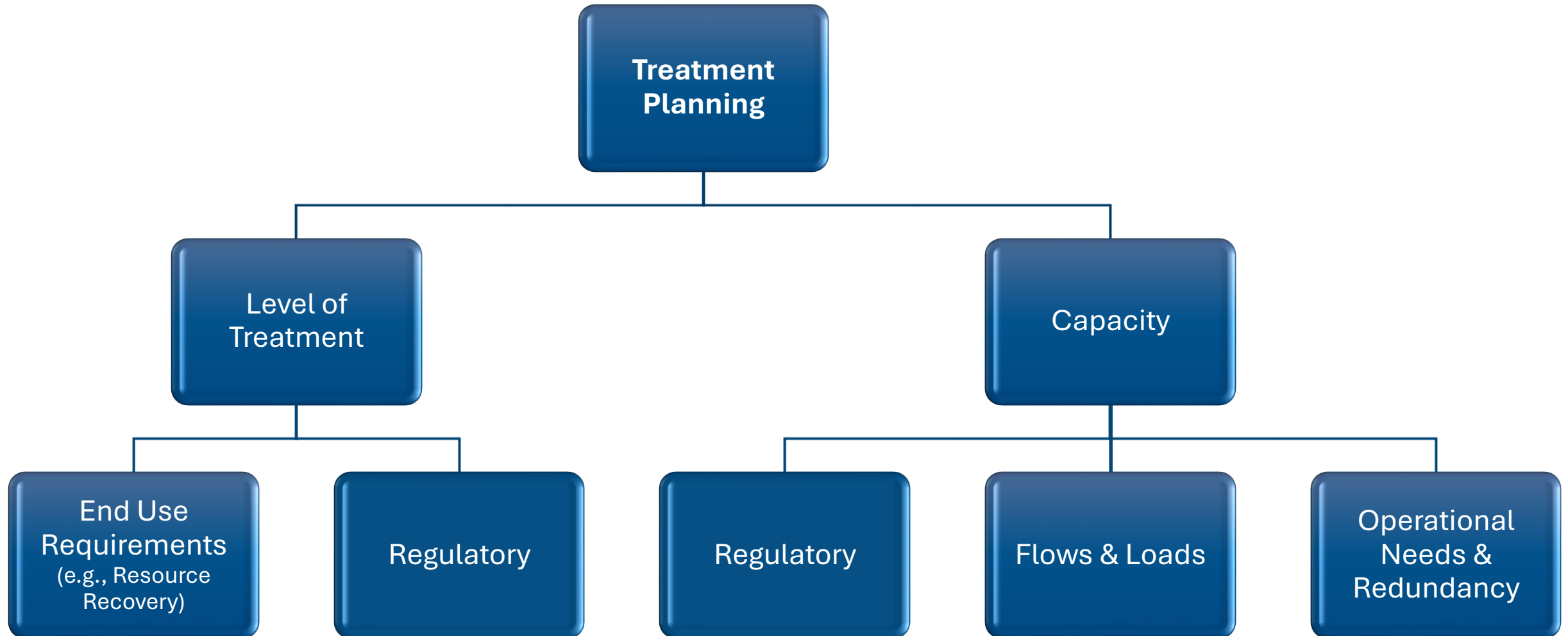


Carnation Treatment Plant



South Plant Treatment Plant

Wastewater Treatment Planning Big Picture



Treatment: relationships to other RWSP topics

1. **Resource Recovery:** Resource recovery goals and policies can be a driver to implement treatment technologies that produce particular qualities or quantities of recovered products, e.g., biogas, biosolids, or recycled water.
2. **Separated System Conveyance:** Conveyance planning and treatment planning share many data inputs and assumptions, such as projections for population and flows. In some cases, conveyance decisions directly impact treatment plant influent volumes and characteristics.
3. **Combined System:** CSO and treatment planning are connected since effective treatment planning must account for strategies that minimize overflows during wet weather events, as well as potential options to redirect flows away from the West Point treatment plant. Wet weather treatment stations provide primary treatment when flows cannot reach full secondary treatment at West Point.
4. **Pollution (Source Control and Legacy):** Source control activities can prevent toxic contaminants from entering the wastewater system and potentially reduce the need for additional treatment.
5. **Asset Renewal and Replacement:** Asset R&R supports day-to-day treatment reliability.

Current and Forecasted Expenditures – *Treatment Capacity*

From the 2027 Sewer Rate Forecast:

- First decade (2026-2036)
 - Treatment is about 8% of the forecast
 - Current treatment projects are approximately \$366 million
- Both decades (2026-2046)
 - Treatment forecast is about \$4.0 billion (with much uncertainty)

These estimates include wastewater treatment-related project costs in the capacity improvement and regulatory portfolio categories, but not substantive investment for nutrient regulations.

Level of Treatment (1)

RWSP Scoping Document:

"Major Policy Questions" – Level of Treatment

- **Level of Treatment:** Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
- **Level of Treatment:** How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?
- **Treatment Capacity:** 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?
- **Site Use and Expansion:** To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?
- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

Problem statement: Level of Treatment

- Current planning **focus is on existing and near-term anticipated regulatory requirements**
- More proactive evaluation could identify opportunities to improve public health and environment
- **Potential underinvestment areas:**
 - Long-term strategic **resilience**
 - **Reducing unregulated contaminants** flowing through the system
 - Expanding or **maximizing resource recovery**
- Core challenge: deciding how far planning should go beyond compliance-driven approaches
- **Future-focused planning may require anticipating major shifts** in regulatory, environmental, political, and market conditions

Level of treatment – Existing policies in code and/or practice

Relevant policy question(s): Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?

Level of Treatment

Relevant policies and plans	Description
TPP-1	Secondary treatment at all plants for base flows. Treatment beyond secondary level to achieve other goals.
TPP-5*	Conduct feasibility studies for discharge of reclaimed water into freshwater systems.
TPP-8*	Continue water reuse and explore opportunities to expand at existing and new facilities.
NPDES permits	Regulations for discharge requirements for each plant.

* TPP-5 and TPP-8 relate to Resource Recovery topics

Current interpretation:

- Plan and implement projects to **meet permit requirements, including treating flows to at least secondary level.**
- **Treat portions of flows to higher levels** to meet requirements for recycled water.
- **Explore opportunities with local agency partners to expand water reuse.**
- **Plan for anticipated near-term permit requirements** to understand potential capital needs.

Range of policy options - summary

Major policy question: Should the County [in its ongoing treatment planning efforts] evaluate costs and plan for levels of treatment beyond current legal requirements?

	Policy option #1	Policy option #2	Policy option #3*
	Plan as needed to prepare for current and near-term anticipated conditions.	Plan for targeted treatment beyond current requirements to provide community or environmental benefits or prepare for currently unregulated harmful pollutants .	Plan for treatment levels to maximize resource recovery .
Goals/ Outcomes:	Maintain compliance. Focus on established drivers.	Increase agility. Increase readiness for emerging issues and potential future needs.	Additional revenue possibilities. Improve environmental outcomes and resiliency.

* Policy Option #3 specifically responds to the resource recovery policy goals under development in Group 8. Options #1 and #2 may still support resource recovery but are not driven only by Group 8 goals.

Level of Treatment (2)

Major policy question: How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?

Nutrient and other future regulations (1 of 3)

- The RWSP Update needs to meet or exceed regulatory and legal requirements – i.e., the Plan must be submitted to Department of Ecology for approval as the County’s General Sewer Plan Update.
- WTD anticipates future nutrient treatment requirements, but we do not know exactly what the requirements will be or the timing for the next phase in nutrient regulation.
- WTD is working on nutrient upgrade planning to identify treatment upgrade options, costs, and rate impacts, as well as present our case for the All Known Available and Reasonable Technology (AKART) alternative for treating nutrients.
 - The nutrient plan and AKART alternative will be submitted to Ecology for its consideration in enacting future regulatory requirements.
 - WTD and other Puget Sound utilities are proactively engaging with Ecology to find an effective, adaptable, and affordable approach to managing nutrients.
- The RWSP will incorporate this nutrient planning to ensure the Plan is aligned with anticipated future nutrient requirements. If a new legal and enforceable framework is approved by the EPA and Ecology, the Plan will be adjusted.

Nutrient and other future regulations (2 of 3)

- Additionally, and separate from the RWSP process, WTD is exploring options with its regulators to balance nutrient regulations with other concurrent regulatory requirements and address financial sustainability and affordability (as outlined in the Executive's Sewer Rate and Capital Work Plan).
 - WTD is exploring tools authorized by the Clean Water Act, such as Integrated Planning, to improve water quality outcomes with a financially sustainable and predictable rate path. King County will need buy-in from the EPA and Ecology;
 - Integrated Planning can help prioritize regulatory obligations and asset management needs in a way that benefits communities;
 - WTD is working with other Puget Sound utilities to advocate for robust engagement with interested parties and an adaptive management approach to nutrient regulation;
 - Regulators have signaled willingness to have a regional dialogue on nutrient management

Potential PFAS and CEC regulations (3 of 3)

- **Policy and regulation:** WTD will monitor and engage on proposed regulatory requirements for treatment of PFAS and CECs under consideration by federal or state regulatory entities.
- **Management actions:** Source control remains the most effective management tool for PFAS and CECs through tools like consumer education and advocacy for bans on CECs in products.
- **Research:** WTD will continue to sample, track, and participate in research on PFAS and CECs in wastewater and resource recovery products.
- **Technology evaluation:** WTD will continue to evaluate emerging wastewater treatment technologies to prepare for future regulation, or as a driver for resource recovery.

Treatment Capacity

RWSP Scoping Document:

"Major Policy Questions" – Treatment Capacity

- **Level of Treatment (1):** Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
- **Level of Treatment (2):** How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?
- **Treatment Capacity:** 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?
- **Site Use and Expansion:** To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?
- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

RWSP Scoping Document :

"Major Policy Questions" – Site Use and Expansion

- **Level of Treatment:** 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 and regulations related to CECs such as PFAS, or other future regulatory changes?
- **Treatment Capacity:** 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?
- **Site Use and Expansion:** To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?
- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

Additional Context on Treatment Capacity Planning

- Under current regulations (which do not include nutrient removal upgrades) and available capacity information, WTD does not anticipate space constraints at any treatment plant before 2060.
- Future regulatory changes requiring higher levels of treatment (such as for nutrient removal) could introduce new space constraints.
- Space constraints due to capacity are expected soon after 2060, so WTD will need to *plan* for addressing them before that time.
- Ongoing treatment planning (to address regulations and capacity) will determine whether constraints may occur earlier.
- Evaluating different approaches to addressing regulations and capacity will require weighing their benefits, costs, and potential negative impacts.

Problem Statement: Treatment Capacity & Site Use/Expansion

- **Long-term population uncertainty** can complicate planning the scale and timing for future expansions.
- WTD already plans capacity well ahead of regulatory thresholds, helping to **avoid both under- and over-building**.
- Current approach does not fully resolve whether future expansion should occur within existing facility sites
- Some sites may be able to accommodate treatment needs in the long term, while others may in the future face physical limitations that require new property.
- Challenge will be deciding when and where to invest in additional site space.

Treatment capacity – existing policies in code and/or practice

Major 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?

Treatment capacity

Relevant policies and plans	Description
TPP-2	Build Brightwater. West Point maintains rated capacity of 133 mgd. South Plant capacity to serve east and south King County, with exceptions for specific named flows. Expanding West Point and South Plant retained for unexpected circumstances.
NPDES permits	NPDES permits require WTD to maintain adequate capacity. Triggering conditions for capacity planning: 1) actual flow or waste load reaches 85 percent of design criteria for three consecutive months or 2) projected plant flow or loading would reach design capacity within 5 years.

Current interpretation:

- WTD projects flows and loadings for both separated conveyance and treatment planning using a consistent set of data inputs, statistical methods, and technical assumptions.
- WTD projects flows and loadings decades (30-40+ years) into the future and updates these forecasts at least every 10 years to inform long-term planning and develop a high-level conceptual understanding of future capacity needs.
- If influent data or WTD projections indicate flows or loads are approaching Ecology’s thresholds, WTD begins planning in more detail the projects needed to provide additional capacity.
- WTD has a degree of operational flexibility to adjust plant conditions to manage capacity constraints within a plant on a short-term basis with higher operational risks.

Answer in brief

Major 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 [treatment] capacity to account for future population growth?

Short answer	Rationale
WTD should maintain current policies and practices in treatment capacity planning for population growth.	1. Through its NPDES permits, Ecology requires WTD to initiate prudent planning in advance of approaching treatment capacity constraints. 2. Implementing capacity expansion projects larger or sooner than needed risks overbuilding and • operational challenges • costly underutilized infrastructure if future treatment needs change 3. WTD can manage growth uncertainty to a degree by adjusting operations to manage capacity constraints while maintaining effective treatment.

Site Use and Expansion

RWSP Scoping Document:

"Major Policy Questions" – Site Use and Expansion

- **Level of Treatment:** 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 and regulations related to CECs such as PFAS, or other future regulatory changes?
- **Treatment Capacity:** 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?
- **Site Use and Expansion:** To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?
- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

Site use and expansion – existing policies in code and/or practice

Major policy question: To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?

Site Use and Expansion

Relevant policies and plans	Description
TPP-2	Build Brightwater. West Point maintains rated for 133 mgd. South Plant capacity to serve east and south King County, with exceptions for specific named flows. Expanding West Point and South Plant retained for unexpected circumstances.
TPP-3	Changes to West Point must comply with terms of West Point settlement agreement.
TPP-7	Explore possibility of satellite treatment plants to produce reclaimed water.
NPDES permits	NPDES permits require WTD to maintain adequate capacity. Triggering conditions for capacity planning: 1) actual flow or waste load reaches 85 percent of design criteria for three consecutive months or 2) projected plant flow or loading would reach design capacity within five years.

Current interpretation:

- Since Brightwater was built, WTD has been able to **meet capacity expansion needs at existing facility sites.**
- WTD is projected to be able to **accommodate capacity needs at existing treatment sites** for the next several decades.
- The **West Point settlement** agreement guides WTD’s planning and decision-making related to site use, operations and maintenance, and construction management.
- WTD regularly updates its projections for flows and loadings and **plans capacity expansion projects to address capacity needs** ahead of time.

Answer in brief

Major policy question: To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?

Short answer	Rationale
WTD should assess both existing sites and potential new property to determine the best approach to meet future treatment and capacity needs, considering the full range of risks, costs, and benefits.	1. Long-term planning clarifies when and why additional space may be needed. 2. WTD is projected to be able to accommodate capacity needs at existing treatment sites for the next several decades 3. WTD will continue to evaluate whether future treatment and capacity needs can be met at existing sites, require new property, or could be addressed either way. 4. If existing sites approach buildout, potential alternatives include • Increasing process intensity within current footprints • Expanding existing facility footprints • Adding targeted facilities near current sites • Acquiring property for a treatment facility or additional regional treatment plant 5. Each option presents distinct risks, benefits, and operational implications. Some approaches may limit flexibility, require major capital investment, or face land-use or community constraints. 6. WTD can manage uncertainty by refining analyses over time to support well-grounded decisions about site use or property acquisition.

Regional Strategy

RWSP Scoping Document:

"Major Policy Questions" – Site Use and Expansion

- **Level of Treatment:** 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 and regulations related to CECs such as PFAS, or other future regulatory changes?
- **Treatment Capacity:** 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?
- **Site Use and Expansion:** To what extent should WTD prioritize use of existing facility sites versus acquiring new property to accommodate future needs?
- **Regional Strategy:** Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

Answer in brief (1 of 2)

Major policy question: Should the region continue to provide a centralized [i.e., regional plants] approach for regional wastewater treatment, or should the region move towards a more decentralized [i.e., satellite plants] approach?

Short answer

The region should continue to provide a regional plants approach for regional wastewater treatment, with satellite treatment plants as appropriate.

Rationale

- ☐ The regional system is primarily a centralized system with three regional plants serving large subregional geographies, but also has two small satellite plants serving specific communities not connected to the regional system
- ☐ A regional plant approach:
 - ☐ treats wastewater often far away from source of generation
 - ☐ has a proven success protecting public health & the environment, cleaning wastewater for nearly 2 million people every day, year-round
 - ☐ allows for efficient and coordinated infrastructure planning
 - ☐ allows planning across local sewer agency boundaries using a watershed-based approach
 - ☐ allows for cost sharing, which lowers overall costs and increases affordability in areas with concentrations of people with lower incomes
 - ☐ provides an ability for innovation, as large plants support technologies that require scale to be cost-effective

Answer in brief (2 of 2)

Major policy question: Should the region continue to provide a centralized [i.e., regional plants] approach for regional wastewater treatment, or should the region move towards a more decentralized [i.e., satellite plants] approach?

Short answer

The region should continue to provide a regional plants approach for regional wastewater treatment, with satellite treatment plants as appropriate.

Rationale

- ☐ A satellite treatment plant approach
 - ☐ treats wastewater closer to the source of generation
 - ☐ would be a shift in how the region manages wastewater and would require realignment of regulatory, administrative, and operational practices
 - ☐ could reduce the scale of systemwide risk by distributing risk across multiple sites, and may be closer to resource recovery opportunities, making them more feasible
 - ☐ would cost more to build, operate, and maintain (limited economy of scale) at multiple satellite plants
 - ☐ result in more complex operations, maintenance, and regulatory oversight

Q&A



King County | Wastewater Treatment

Wastewater Treatment Division**Executive summary****RWSP Update – Group #7, Policy Memo #10: Level of Treatment**

This executive summary provides a synopsis of the policy questions, problem statement, issues, challenges, and the options developed for the Treatment Topic of the Regional Wastewater Services Plan (RWSP) Update.

Policy questions

1. Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
2. How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?

Problem statement

WTD's wastewater treatment planning framework is currently oriented toward meeting existing and near-term anticipated requirements. Without structured, proactive evaluation of treatment levels beyond current legal requirements, WTD risks underinvesting in activities that could further protect public health and the environment, such as building long-term strategic resilience, reducing unregulated contaminants flowing through the system, and expanding or maximizing resource recovery. The core challenge is to determine whether, and to what extent, treatment planning should move beyond compliance-driven approaches toward anticipating substantial changes in regulatory, environmental, political, and market conditions; proactively enabling expanded resource recovery options; or fully maximizing new resource streams.

Policy issues, challenges, and opportunities

WTD is navigating challenging uncertainty around future treatment regulations. Future treatment requirements and their timing remain uncertain. This uncertainty creates risks and strategic opportunities.

Proactively evaluating higher levels of treatment beyond or in advance of regulations could help the County to stay ahead of emerging standards and address broader community and environmental goals.

WTD could also evaluate higher levels of treatment to expand resource recovery. Pursuing expanded opportunities to recover and use valuable resources, such as biosolids, recycled water, and energy, could require modifying or adding steps in the treatment process to produce the desired quality and quantity of recovered resources.

The RWSP is a long-range plan (i.e. to 2060 or 30 yrs). While considering investments beyond current legal requirements may be hard to imagine today, it is important the Plan allows for good choices in 10, 15 or 20 years from now. In the future it may be appropriate to consider actions that position the regional wastewater system for the long term by proactively going beyond legal minimum requirements. In the context of today's rate pressures, WTD is working to address the current rate and affordability challenge and is looking to create a spectrum of policy options with that in mind. This spectrum will be fully evaluated, pro's and con's, costs and benefits, as part of the Step 2 process in 2027. With this in mind, the circumstances when Treatment Planning options beyond current regulatory minimum requirements (Options 2 and 3 below) could be considered include: (1) after ensuring that aging infrastructure / critical assets are addressed, (2) ensuring such investments would result in demonstrable, science-based environmental benefits, and (3) sufficient funding to augment rate-based sources is confirmed. Other circumstances are possible as well.

Policy options

Policy question #1: Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?

- a. Policy option #1: Plan as needed to prepare for current and near-term conditions.

Outcome: Maintain regulatory compliance and align plans with established, foreseeable drivers; support incremental, low-risk improvements within current mandates.

- b. Policy option #2: Plan for targeted treatment beyond current requirements to provide community or environmental benefits or prepare for currently unregulated harmful pollutants.

Outcome: Increase agility by evaluating higher levels of treatment that could provide additional community or environmental benefits (e.g., reduction of specific non-regulated pollutants); improve readiness for treatment of emerging, unregulated contaminants and potential future needs.

- c. Policy option #3: Plan for treatment levels to maximize resource recovery, including any or all of the following: recycled water, biosolids, energy, new recovered resources.

Outcome: Advance long-term resource recovery goals; enhance environmental outcomes and regional resiliency; may create additional revenue opportunities.

Policy question #2: How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to contaminants of emerging concern (CECs) such as PFAS, or other future regulatory changes?

WTD anticipates future nutrient treatment requirements, but it is uncertain as to what the requirements will be or the timing for the next phase in nutrient regulation. WTD is working on nutrient upgrade planning to identify treatment upgrade options, costs, and rate impacts, as well as present the case for the All Known Available and Reasonable Technology (AKART) alternative for treating nutrients. The nutrient reduction evaluation and AKART alternative will be submitted to the Washington State Department of Ecology (Ecology) for its consideration in enacting future regulatory requirements. WTD and other Puget Sound utilities are proactively engaging with Ecology to find an effective, adaptable, and affordable approach to managing nutrients. The RWSP Update will incorporate this nutrient planning to ensure the plan is aligned with anticipated future nutrient requirements. If a new legal and enforceable framework is approved by the EPA and Ecology, the Plan will be adjusted.

Additionally, and separate from the RWSP Update process, WTD is exploring options with its regulators to balance nutrient regulations with other concurrent regulatory requirements and address financial sustainability and affordability (as outlined in the Executive's Sewer Rate and Capital Work Plan). Through this effort WTD is exploring tools authorized by the Clean Water Act, such as Integrated Planning, to improve water quality outcomes with a financially sustainable and predictable rate path. Integrated Planning can help prioritize regulatory obligations and asset management needs in a way that benefits communities. King County will need approval from the EPA and Ecology to advance Integrated Planning. WTD is also working with other Puget Sound utilities to advocate for robust engagement with interested parties and an adaptive management approach to nutrient regulation. An outcome of this effort is that the Department of Ecology has signaled willingness to have a regional dialogue on nutrient management.

In regard to CECs, WTD will monitor and engage on proposed regulatory requirements for treatment of PFAS (per- and polyfluoroalkyl substances) and other CECs under consideration by federal or state regulatory entities. Source control remains the most effective management tool for PFAS and CECs through tools like consumer education and advocacy for bans on CECs in products. WTD will continue to track and participate in research on PFAS and CECs in wastewater and resource recovery products. WTD will continue to evaluate

emerging wastewater treatment technologies to prepare for future regulations, or as a driver for supporting resource recovery.

Relationship to other RWSP topics

Level of treatment is a foundational part of the RWSP Update and is essential for sustaining the regional wastewater system into the future. As such, it intersects with many RWSP topics as described below.

Resource Recovery: Resource recovery goals and policies can be a driver to implement treatment technologies that produce particular qualities or quantities of recovered products, e.g., biogas, biosolids, or recycled water.

Pollution (Source Control and Legacy): Source control activities can prevent toxic contaminants from entering the wastewater system and potentially reduce the need for additional treatment.

Asset Renewal and Replacement (R&R): Asset R&R supports day-to-day treatment reliability. Long-term treatment planning is a complex process that considers many interrelated topics like current and future regulations, flow monitoring, population growth, capacity constraints, existing asset conditions, upstream and downstream process impacts, climate-related effects, evolving technologies, and input from interested parties and external partners.

RWSP Update – Level of Treatment

Policy Memo #10

A. Policy question

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

- i. Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?
- ii. How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?

B. Problem statement

The County's wastewater treatment planning framework is currently oriented toward meeting existing and near-term anticipated requirements. Without structured, proactive evaluation of treatment levels beyond current legal requirements, the County risks underinvesting in activities that could further protect public health and the environment, such as building long-term strategic resilience, reducing unregulated contaminants flowing through the system, and expanding or maximizing resource recovery. The core challenge is to determine whether, and to what extent, treatment planning should move beyond compliance-driven approaches toward anticipating substantial changes in regulatory, environmental, political, and market conditions; proactively enabling expanded resource recovery options; or fully maximizing new resource streams.

C. Contextual and baseline Information

i. What is known about the topic and current conditions

The Clean Water Act (1972) establishes the federal framework for regulating water quality in surface waters of the United States. Under this authority, the U.S. Environmental Protection Agency (EPA) delegates primary responsibility for water quality regulation in Washington State to the Department of Ecology (Ecology).

Ecology's delegated responsibilities include setting water quality standards for all state waters and administering National Pollutant Discharge Elimination System (NPDES) permits for wastewater dischargers, including King County's treatment plants.

NPDES permits provide the regulatory basis for compliance. These permits prescribe effluent water quality parameter limits, which are currently regulated primarily on flow,

solids, and organics, identify required monitoring and reporting, and identify flow and loading triggers for planning to maintain adequate capacity

Regulatory requirements continue to evolve as new information becomes available to support the goals of the Clean Water Act. Ecology is actively developing new requirements to address emerging water quality concerns, including anticipated limits on nitrogen discharges to Puget Sound.

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

Relevant Policies in K.C.C.	Description
TPP-1	Provide secondary treatment to all base sanitary flow delivered to treatment plants. Further treatment to meet water quality standards and achieve other goals may be provided.
TPP-2	Provide additional treatment capacity by constructing Brightwater and expanding capacity at South Plant. West Point to maintain rated capacity, and South Plant capacity limited to that needed to serve the eastside and south King County, except specific named flows. (Potential expansion at South Plant and West Point retained for unexpected circumstances).
TPP-5	Commitment to undertake studies to determine the economic and environmental feasibility of discharging reclaimed water to local water systems (overlaps with Resource Recovery).
TPP-8	Commitment to continue water reuse and to explore opportunities for expanded use at existing plants and all new treatment facilities (overlaps with Resource Recovery).
NPDES permits	Regulations for discharge requirements for each plant.

iii. The system “must-dos”

Preliminary treatment: Wastewater systems must remove trash, grit, and other inorganic materials at the beginning of the treatment processes to protect downstream equipment.

Primary treatment: Facilities then settle out and remove organic solids, directing these materials to dedicated solids-handling facilities.

Secondary treatment: After primary treatment, aeration and biological processes further break down remaining organic material and separate out biomass using clarifiers or membrane systems. Some of this organic matter returns to the secondary process to maintain the biomass, and the remainder goes to solids treatment for further processing.

Disinfection: Before discharging into receiving waters, wastewater effluent receives treatment with ultraviolet light or hypochlorite to reduce pathogens.

Solids treatment: Thickening, digestion, and dewatering produce biosolids suitable for beneficial use as a nutrient-rich soil amendment for crops and forests in Washington state.

Resource recovery: Wastewater treatment can create a range of products that can be used on site or in the community. Additional treatment steps often occur to meet resource recovery requirements. For more information, see forthcoming policy memos pertaining to recycled water, biosolids, energy, and new recovered resources.

iv. Current and Budgeted Expenditures

In WTD's 2027 Sewer Rate Forecast, current treatment projects are about \$366 million. Treatment is about 8% of the forecast spending between 2026 and 2036. Going further out to 2046, the total forecast for treatment is about \$4.0 billion. These estimates include wastewater treatment-related project costs currently in the capacity improvement and regulatory portfolio categories. There is a high degree of uncertainty in these forecasts, particularly in the second decade, for which the estimates are based on placeholder projects. This uncertainty is being addressed through ongoing planning efforts—including the RWSP Update and a Long-term Treatment Plan—aimed at defining what future projects may be needed to address capacity and regulatory needs.

Figure 1 below shows WTD's capital forecast by portfolio category, provided in the 2027 rate-setting process. The forecasted treatment-related project costs are included as a portion of the capacity improvement and regulatory non-CSO categories (i.e., the orange and light green in Figure 1).

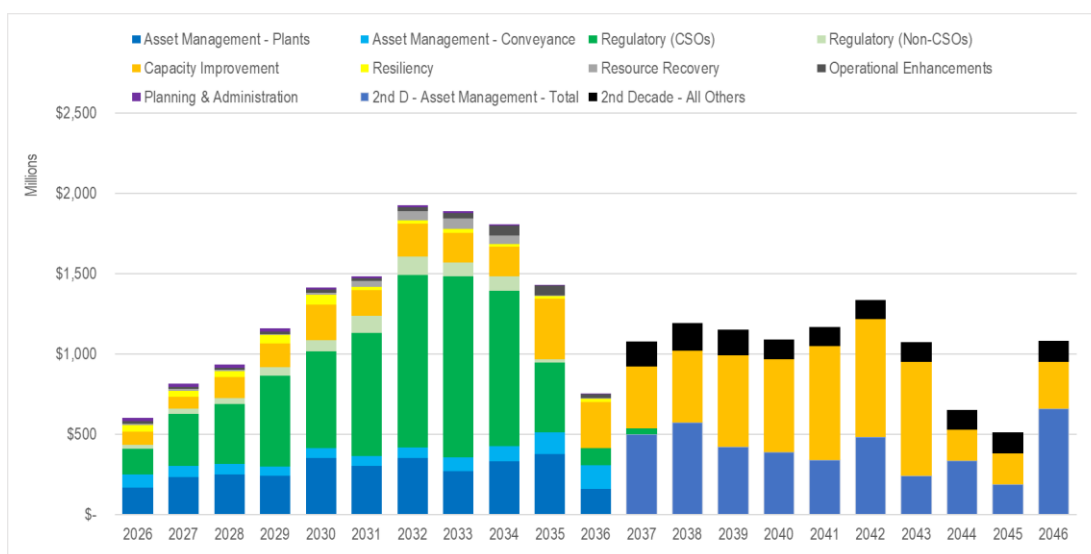


Figure 1. 20 Year Capital Forecast by Portfolio Category

v. Summary of science/data

All of WTD's treatment plants include processes that meet secondary treatment standards and provide disinfection prior to discharge to the receiving waterbody. While primary treatment is generally a physical process designed to separate solids from wastewater, a secondary treatment process is generally a biological process designed to further break down organic matter and remove solids. Disinfection processes are designed to inactivate pathogens prior to discharge. The existing treatment and disinfection processes employed at each of WTD's treatment plants are summarized in Table 1.

Facility	Average annual flow (2025) (mgd)	Maximum monthly average flow (design) (mgd)	Site size (acres)	Discharge location	Secondary Treatment Process	Disinfection Process
West Point	83	215	32	Puget Sound	High purity oxygen activated sludge, secondary clarifier	Hypochlorite
South Plant	69.8	144	72	Puget Sound	Anoxic-oxic, secondary clarifier	Hypochlorite
Brightwater	18.1	40.9	79	Puget Sound	Modified Ludzack Ettinger activated sludge, membrane bioreactor	Hypochlorite
Carnation	0.10	0.48	2	Chinook Bend Natural Area or Snoqualmie River	Activated sludge, membrane bioreactor	Ultraviolet
Vashon	0.13	0.52	11	Puget Sound	Oxidation ditch, secondary clarifier	Ultraviolet

Table 1. Comparison of King County Treatment Facilities and their Treatment Processes

While all of WTD's treatment plants are designed to meet a secondary treatment standard, the membrane processes at Brightwater and Carnation provide a greater level of removal than the secondary clarifiers employed at WTD's other treatment plants. This additional removal facilitates beneficial use of recycled water at both facilities.

D. Example practices from other jurisdictions and relevant industries

East Bay Municipal Utility District (EBMUD)¹

EBMUD is a regional utility, similar to WTD, providing wastewater treatment for the East San Francisco Bay area. The EBMUD wastewater system treats about 50 million gallons per day, serving about 740,000 people from nine cities. Wastewater is treated at their main treatment plant using a secondary treatment process similar to West Point, high purity oxygen activated sludge. The treated wastewater is discharged into San Francisco Bay. The wastewater treatment plant produces Class A biosolids, and a portion of the flow undergoes additional treatment to become recycled water for non-potable purposes.

LOTT (Lacey, Olympia, Tumwater, and Thurston County) Clean Water Alliance²

LOTT is another regional wastewater utility in Washington state serving the communities of Lacey, Olympia, and Tumwater in Thurston County. LOTT serves over 119,000 people, using one central treatment plant, which produces reclaimed water, and another satellite treatment plant constructed for local reclaimed water production. The central treatment plant was upgraded in 1994 with advanced secondary treatment, including nitrogen removal. The reclaimed water systems were built in the early 2000s supplying Class A reclaimed water for irrigation, water features, and ground water replenishment. LOTT's reclaimed water program was established to comply with its NPDES permit, which specifies limits for biochemical oxygen demand (BOD), total suspended solids (TSS), and total inorganic nitrogen (TIN) seasonally.

Pierce County

Pierce County, another wastewater utility in Washington state, serves over 320,000 people across a 117-square-mile area, using two treatment plants. The Chambers Creek Regional Wastewater Treatment Plant³ serves a 117-square-mile area, while the Cascadia Wastewater Treatment Plant⁴ serves the planned community of Tehaleh (population of ~8,000 and growing rapidly). The Chambers Creek Regional Wastewater Treatment Plant

¹ East Bay Municipal Utility District: [Collection and treatment: East Bay Municipal Utility District](#)

² LOTT Clean Water Alliance: <https://www.lottcleanwater.org/wastewater-treatment/>

³ Chambers Creek Regional Wastewater Treatment Plant: <https://www.piercecountywa.gov/9002/Chambers-Creek-Regional-Wastewater-Treat>

⁴ Cascadia Wastewater Treatment Plant: <https://www.piercecountywa.gov/8528/Cascadia-Wastewater-Treatment-Plant>

provides secondary treatment and ultraviolet disinfection before the treated flow is discharged into Puget Sound. The plant produces a Class A biosolids product. The water treated at the Cascadia Wastewater Treatment Plant has nitrogen removal in its process and is pumped to a drainfield to re-enter the ground and filter through the soil to groundwater. Landscaped areas of the Tehaleh community are already plumbed with reclaimed water pipes to use reclaimed water for landscaping purposes.

E. Policy issues, challenges, and opportunities

1. WTD is navigating challenging uncertainty around future treatment regulations.

Future treatment requirements and their timing remain uncertain. State and/or federal regulations may change, and which regulations apply to WTD's treatment processes also depends on where the treated water is discharged or the intended end use of recovered resources, including Puget Sound, freshwater bodies, recycled water applications, environmental enhancement, and groundwater recharge. To stay ahead of changing expectations, WTD is closely tracking emerging regulations and treatment technologies for PFAS (per- and polyfluoroalkyl substances) in biosolids and effluent, other CECs (contaminants of emerging concern) commonly found in pharmaceuticals and personal care products, and nutrients—specifically nitrogen and phosphorus. These substances may be addressed through specialized secondary treatment systems (particularly in the case of nitrogen or phosphorus) or tertiary or advanced treatment processes focused on specific contaminants.

2. WTD has the opportunity to evaluate higher levels of treatment beyond or in advance of regulations.

WTD could explore whether higher levels of treatment could address broader community and environmental goals. For example, understanding what it would take to reduce the overall volume of effluent discharged to Puget Sound would require investigation of the opportunities for further expansion of recycled water distribution. Similarly, as treatment technologies for various contaminants of emerging concern mature, WTD could proactively explore non-mandatory treatment upgrades that reduce introduction of specific CECs into the environment. Early evaluation of these possibilities could position WTD to respond to evolving expectations and support long-term regional benefits.

3. Updated policies could drive WTD to evaluate higher levels of treatment to expand resource recovery.

As described in forthcoming Group #8 Resource Recovery policy memos and policy options, WTD could pursue expanding opportunities to recover valuable resources that are byproducts of the treatment process, including energy and heat, biosolids, recycled water,

and new recovered resources. Some of these efforts could require modifying or adding steps in the treatment process to produce the desired quality and quantity of recovered resources. For more information on the issues, challenges, and opportunities related to increasing recovery of resources in the wastewater treatment process, please see Group #8 policy memos.

F. Range of policy options

- i. Should the County evaluate costs and plan for levels of treatment beyond current legal requirements?

The RWSP is a long-range plan (i.e. to 2060 or 30 yrs). While considering investments beyond current legal requirements may be hard to imagine today, it is important the Plan allows for good choices in 10, 15 or 20 years from now. In the future it may be appropriate to consider actions that position the regional wastewater system for the long term by proactively going beyond legal minimum requirements. In the context of today's rate pressures, WTD is working to address the current rate and affordability challenge and is looking to create a spectrum of policy options with that in mind. This spectrum will be fully evaluated, pro's and con's, costs and benefits, as part of the Step 2 process in 2027. With this in mind, the circumstances when Treatment Planning options beyond current regulatory minimum requirements (Options 2 and 3 below) could be considered include: (1) after ensuring that aging infrastructure / critical assets are addressed, (2) ensuring such investments would result in demonstrable, science-based environmental benefits, and (3) sufficient funding beyond rate-based sources is confirmed. Other circumstances are possible as well.

Policy Option #1: Plan to meet current and near-term anticipated conditions, focusing on compliance with reasonably foreseeable regulatory and market drivers. This approach supports incremental improvements and cost effectiveness but may result in compliance challenges if regulatory requirements come faster than is forecasted. Additionally, it may limit the ability to pursue longer-term resource recovery opportunities, such as expanding recycled water, when clear drivers for implementation are not yet established.

Policy Option #2: Plan for selected treatment enhancements beyond current requirements to advance community or environmental benefits and address emerging, unregulated pollutants. This proactive approach increases flexibility but may anticipate needs that do not materialize. Examples could include evaluating options to reduce effluent discharged to Puget Sound—potentially through expanded recycled water use—

and assessing the feasibility and costs of removing contaminants of emerging concern before regulations are in place.

Policy Option #3: Plan for treatment levels that maximize resource recovery, including recycled water production, biosolids quality, energy recovery, and other beneficial uses. This transformative approach aligns with long-term resource recovery goals but would require strong policy drivers, markets, and partnerships to succeed.

Summary of Policy Options

	Description	Goals/outcomes	Tradeoffs
#1	Plan as needed to prepare for current and near-term anticipated conditions.	Maintain regulatory compliance and align plans with established, foreseeable regulatory and resource recovery drivers. Support incremental, low-risk improvements within current mandates.	May miss longer-term opportunities. Limited preparation for shifts in expectations or environmental conditions beyond what is already required or anticipated.
#2	Plan for targeted treatment beyond current requirements to provide community or environmental benefits or prepare for currently unregulated harmful pollutants.	Increase agility by evaluating higher levels of treatment that could provide community or environmental benefits. Improve readiness for emerging, unregulated contaminants and potential future needs.	May invest in needs that ultimately do not materialize. Requires balancing proactive exploration with uncertainty about future regulatory or market drivers.
#3	Plan for treatment levels to maximize resource recovery, including any or all of the following: recycled water, biosolids, energy, new recovered resources	Advance long-term resource recovery goals. Enhance environmental outcomes and regional resiliency. May create additional revenue opportunities.	<i>To be discussed during Resource Recovery Group (Group 8) – some tradeoffs may include:</i> Success may depend on strong partnerships and favorable external conditions. May represent a higher-investment, higher-commitment approach. Higher upfront costs but opportunity for long-term revenue. Potential community and environmental benefits. Potential climate preparedness benefits.

Note: Following consultation with Regional Water Quality Committee staff, this policy memo does not include policy options for the question below.

- ii. How should the County anticipate, engage with, and plan for future nutrient permit requirements and regulations related to CECs such as PFAS, or other future regulatory changes?

Potential future nutrient regulations

WTD anticipates future nutrient treatment requirements, but it is uncertain as to what the requirements will be or the timing for the next phase in nutrient regulation. WTD is working on nutrient upgrade planning to identify treatment upgrade options, costs, and rate impacts, as well as present the case for the All Known Available and Reasonable Technology (AKART) alternative for treating nutrients. The nutrient reduction evaluation and AKART alternative will be submitted to Ecology for its consideration in enacting future regulatory requirements. WTD and other Puget Sound utilities are proactively engaging with Ecology to find an effective, adaptable, and affordable approach to managing nutrients. The RWSP Update will incorporate this nutrient planning to ensure the plan is aligned with anticipated future nutrient requirements. If a new legal and enforceable framework is approved by the EPA and Ecology, the Plan will be adjusted.

Additionally, and separate from the RWSP Update process, WTD is exploring options with its regulators to balance nutrient regulations with other concurrent regulatory requirements and address financial sustainability and affordability (as outlined in the Executive's Sewer Rate and Capital Work Plan). Through this effort WTD is exploring tools authorized by the Clean Water Act, such as Integrated Planning, to improve water quality outcomes with a financially sustainable and predictable rate path. Integrated Planning can help prioritize regulatory obligations and asset management needs in a way that benefits communities. King County will need approval from the EPA and Ecology to advance Integrated Planning. WTD is also working with other Puget Sound utilities to advocate for robust engagement with interested parties and an adaptive management approach to nutrient regulation. An outcome of this effort is that the Department of Ecology has signaled willingness to have a regional dialogue on nutrient management.

Potential PFAS and CEC regulations

WTD will monitor and engage on proposed regulatory requirements for treatment of PFAS (per- and polyfluoroalkyl substances) and other CECs under consideration by federal or state regulatory entities. Source control remains the most effective management tool for PFAS and CECs through tools like consumer education and advocacy for bans on CECs in products. WTD will continue to track and participate in research on PFAS and CECs in wastewater and resource recovery products. WTD will continue to evaluate emerging

wastewater treatment technologies to prepare for future regulation, or as a driver for supporting resource recovery.

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

WTD needs to engage MWPAAC and the component agencies to which WTD provides sewerage services on the level of treatment policy options. WTD may also engage with tribes, community-based organizations (CBOs), and environmental non-governmental organizations (NGOs), businesses, industries, and the general public during implementation planning. All these parties have an interest in the benefits and potential tradeoffs associated with different levels of treatment.

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 these policy questions.

J. Equity and Social Justice (ESJ) impacts

Treatment Policy Option 2 has the potential for creating some ESJ benefits. Higher levels of treatment could lead to lower pollutant levels in the effluent that enters our waterways, which could be beneficial for aquatic life. Local tribes, like the Muckleshoot, are historically reliant on local waterways for access to shellfish and salmon. A diverse group, including Asian, Pacific Islander, Hispanic, and Somali immigrants, also fish in the region's waters for subsistence and cultural reasons. Additional treatment that is beneficial for aquatic life would benefit these groups.

Treatment Policy Option 3 has the potential for creating all the benefits that Policy Option 2 creates and some other ESJ benefits. Treatment options that create more opportunities for resource recovery are expected to have positive community impacts. One example of this would be if those resources could be used locally by residents, businesses, or local agencies for watering or soil amendment. Another example would be if recycled water could be used to recharge aquifers and augment stream flows, restoring habitat for salmon. Specific to frontline communities, the current biosolids compost pilot program can be used to benefit the community by providing compost to community gardens in underserved areas where frontline communities grow their own food. This use of biosolids increases food security and ability to grow culturally sought after crops which may otherwise be difficult to source.

Any decision that leads to additional construction or truck trips, whether to upgrade treatment processes or distribute recovered resources, has the potential to have adverse

or positive ESJ impacts depending on the decision-making criteria and how they are implemented. Generally, portions of the WTD service area that have the lowest land costs 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.

Socially vulnerable communities will also be more sensitive to rate increases. Treatment options that have a bigger impact on the rate would have a bigger impact on these communities. Special attention should be paid to keeping the cost burden from impacting the communities that are already facing the largest burdens due to climate change.

K. Summary of how MWPAAC/RWQC input was addressed

This section will be added into the policy memo as "Step 1" memos are finalized.

L. Planning-level cost estimates

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

M. 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.

Wastewater Treatment Division**RWSP Update – Group #7, Policy Memo #11: Treatment Capacity and Site Use**

Note: This policy memo directly answers the two questions related to treatment capacity and site use; it does not include policy options.

Executive summary

Long-term treatment capacity is a foundational issue for maintaining reliable and sustainable wastewater service across King County. Although long-range population forecasts remain uncertain, WTD’s current planning practices ensure that treatment capacity needs are identified well in advance of when they are needed while avoiding premature or oversized capital investments.

Under current regulations (which do not include nutrient removal upgrades) and available capacity needs information, WTD does not anticipate space constraints at existing treatment facilities or the need for additional treatment plants before 2060, but future regulatory changes or growth patterns could shift this timeline. A key challenge is determining whether future capacity expansion should occur within existing treatment plant footprints or through acquisition of new property. Some sites may accommodate future needs through process intensification or targeted footprint expansion, while others may face physical, operational, or community constraints that limit feasibility. Determining when and where to invest in additional site space based on the relative risks, costs, and benefits of all options is addressed during long-term planning and pre-design when specific constraints and requirements are known.

A. Policy questions

This memo is focused on two policy questions related to the Treatment topic of the Regional Wastewater Services Plan (RWSP) Update. The policy questions explored in this memo are:

- 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?
- ii. To what extent should WTD prioritize use of existing facility sites vs. acquiring new property to accommodate future treatment needs (including capacity)?

B. Problem statement

Despite uncertainty in long-term regional population growth projections, WTD's current practices support planning for capacity needs well in advance of regulatory thresholds while preventing costly overbuilding. WTD pairs this capital planning approach with a flexible operational management strategy that allows for short-term operational adjustments to manage episodic capacity constraints. However, these methods do not fully resolve whether future expansion, when it is needed, should occur within existing facility footprints. Some sites may be able to accommodate future needs through process intensification, while others may face physical limitations that require new property. Determining when and where to invest in additional site space based on the relative risks, costs, and benefits of all options is addressed during long-term planning and pre-design when specific constraints and requirements are known.

C. Contextual and baseline information

i. What is known about the topic and current conditions

Under current regulations (which do not include nutrient removal upgrades) and available capacity information, WTD does not anticipate space constraints at any treatment plant or the need for additional treatment plants before 2060. Future regulatory changes requiring higher levels of treatment (such as for nutrient removal) could introduce new space constraints. Space constraints due to capacity are expected soon after 2060, so WTD will need to plan for addressing them before that time. Ongoing long-term treatment planning to address both regulatory and capacity will determine whether constraints may emerge earlier. Evaluating different approaches to addressing regulations and capacity will require weighing their benefits, costs, and potential negative impacts.

Table 1 provides a comparison of site characteristics and flow-related capacity metrics across WTD's five treatment plants.

Facility	Began operation	Average annual flow (2025) (mgd)	Maximum monthly average flow (design) (mgd)	Site size (acres)	Discharge location	Population Served
West Point	1966	83	215	32	Puget Sound	807,952

South Plant	1965	69.8	144	72	Puget Sound	844,193
Brightwater	2012	18.1	40.9	79	Puget Sound	284,113
Carnation	2008	0.10	0.48	2	Chinook Bend Natural Area or Snoqualmie River	2,338
Vashon	1955 KC operation – 1999	0.13	0.52	11	Puget Sound	1,100

Table 1. Comparison of King County Treatment Facilities

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

Relevant Policies in K.C.C.	Description
TPP-2	Build Brightwater. West Point maintains rated capacity of 133 mgd. South Plant capacity to serve east and south King County, with exceptions for specific named flows. Expanding West Point and South Plant retained for unexpected circumstances.
TPP-3	Changes to West Point must comply with terms of West Point settlement agreement.
TPP-7	Explore possibility of satellite treatment plants to produce reclaimed water.
NPDES permits	NPDES permits require planning to maintain adequate capacity, including triggering conditions: 1) actual flow or waste load reaches 85 percent of design criteria for three consecutive months or 2) projected plant flow or loading would reach design capacity within five years.

Current Implementation

WTD projects flows and solids and organic loadings for both separated conveyance and treatment planning using a consistent set of data inputs, statistical methods, and

technical assumptions. WTD projects flows and loadings decades (30-40+ years) into the future, using the forecasts to inform long-term planning and to develop a high-level conceptual understanding of future capacity needs.

If influent data or WTD projections indicate flows or loadings are approaching Ecology's thresholds, WTD begins planning in more detail the projects needed to provide additional capacity. Implementing projects larger or sooner than these practices risks overbuilding, which can create operational challenges.

In many cases, WTD has a degree of operational flexibility to adjust plant conditions to expand capacity or mitigate peak flows on a short-term basis. This is another way WTD can manage uncertainty in population growth rates.

Long-term planning clarifies when and why additional space may be needed. WTD evaluates whether future treatment and capacity needs can be met at existing sites, require new property, or could be addressed either way. If existing sites approach buildout, potential alternatives may include increasing process intensity within current footprints, incrementally expanding existing facility footprints, adding targeted facilities near current sites, and acquiring property for a treatment facility or an additional regional treatment plant. Each option presents distinct risks, benefits, and operational implications. Some approaches may limit flexibility, require major capital investment, or face land-use or community constraints. WTD can manage uncertainty by refining analyses over time to support well-grounded decisions about site use or property acquisition.

iii. Relationship to other RWSP topics

Ensuring adequate treatment capacity is a foundational part of the RWSP Update and is essential for sustaining the regional wastewater system into the future. As such, it intersects with many RWSP topics, including Separated System and Combined System Conveyance and Resource Recovery. Capacity planning for conveyance and treatment share many data inputs and assumptions, such as projections for population and flows. In some cases, conveyance decisions directly impact treatment plant influent volumes and characteristics. Please see Policy Memo #2 for additional information on WTD's process for projecting population growth and resulting flows in the wastewater system. Like conveyance planning, treatment capacity planning has a connection with inflow and infiltration topics. Additionally, plant location can have impacts on Resource Recovery opportunities.

iv. Current and Budgeted Expenditures

In WTD's 2027 Sewer Rate Forecast, current treatment projects are about \$366 million. Treatment is about 8% of the forecast spending between 2026 and 2036. Going further out

to 2046, the total forecast for treatment is about \$4.0 billion. These estimates include wastewater treatment-related project costs currently in the capacity improvement and regulatory portfolio categories. There is a high degree of uncertainty in these forecasts, particularly in the second decade, for which the estimates are based on placeholder projects. This uncertainty is being addressed through ongoing planning efforts—including the RWSP Update and a Long-term Treatment Plan—aimed at defining what future projects may be needed to address capacity and regulatory needs.

D. Example practices from other jurisdictions and relevant industries

No known examples were identified of other wastewater utilities establishing defined policies around prioritization of existing sites versus acquiring new sites. The experience from similar jurisdictions has been very site specific and dependent on the specific need. Generally, utilities evaluate the tradeoffs between using existing site space versus acquiring new sites on a case-by-case basis to determine what provides the best balance of cost, benefits, and risk mitigation. There are examples of utilities proactively purchasing site space ahead of a needed treatment plant expansion (e.g., Pierce County, City of Bellingham, and LOTT Clean Water Alliance all own property adjacent to their existing treatment plant), but these decisions were reached based on the unique circumstances and opportunities at the time, not based on a defined policy choice.

E. Policy questions response

Summary response to policy question #1:

WTD should maintain current policies and practices in treatment capacity planning for population growth. Through its NPDES permits, Ecology requires WTD to initiate prudent planning in advance of approaching treatment capacity constraints. Implementing capacity expansion projects larger or sooner than needed risks overbuilding and wrong-sized components, which can lead to operational challenges or costly underutilized infrastructure. WTD can also manage episodic capacity constraints to a degree by adjusting operations while maintaining effective treatment, though this introduces risks and is not an appropriate long-term approach to managing growth.

Summary response to policy question #2:

WTD should assess both existing sites and potential new property to determine the best approach to meeting future treatment and capacity needs, considering the full range of risks, costs, and benefits. Long-term planning clarifies when and why additional space may be needed. Under current regulations (which do not include nutrient removal upgrades) and available capacity information, WTD does not anticipate space constraints at any treatment plant or the need for additional treatment plants before 2060. If existing sites approach buildout, WTD will evaluate whether future treatment and capacity needs

can be met at existing sites, require new property, or could be addressed either way. Potential alternatives include increasing process intensity within current footprints, incrementally expanding existing facility footprints, adding targeted facilities near current sites, and acquiring property for a treatment facility or additional regional treatment plant.

Each option presents distinct risks, benefits, and operational implications. Some approaches may limit flexibility, require major capital investment, or face land-use or community constraints. WTD can manage uncertainty by refining analyses over time to support well-grounded decisions about site use or property acquisition.

WTD is considering adding a long-range planning schedule to the RWSP that includes a midpoint review and update. If new capacity-planning issues emerge during the RWSP planning horizon, the midpoint review and update would give an opportunity for decision-makers to weigh in sooner than waiting the full 30 years after this RWSP Update is adopted.

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

WTD needs to engage MWPAAC and the component agencies to which WTD provides sewerage services on the site use and capacity policy questions. WTD may also engage with tribes, community-based organizations (CBOs), and environmental non-governmental organizations (NGOs), businesses, industries, and the general public during implementation planning.

G. Rate structure considerations (if applicable)

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

H. Relationship to contracts

There are no known contract implications for these policy questions.

I. Equity and Social Justice (ESJ) impacts

Any decision to purchase new land to build a new treatment facility, or for any other reason, has the potential to have positive or adverse ESJ impacts depending on the decision-making criteria and how they are implemented. Generally, portions of the WTD service area that have the lowest land costs 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.

Policy decisions that increase spending on treatment have the possibility of increasing WTD's rates. Socially vulnerable communities will also be more sensitive to any further rise in the rate. More expensive changes to the treatment system will have a bigger impact on the rate and, therefore, have a bigger impact on these communities. Special attention

should be paid to keeping the cost burden from impacting the communities that are already facing the largest burdens due to climate change.

Wastewater Treatment Division

RWSP Update – Group #7, Policy Memo #12: Treatment – Regional Strategy

Note: Following consultation with Regional Water Quality Committee staff, this policy memo does not include policy options.

Executive summary

The region has invested in a regional treatment approach for decades, creating a system with treatment plants in several parts of the region. Regional treatment plants have multiple benefits and economies of scale, and shifting away from them as the backbone of the system to a decentralized treatment approach with satellite treatment plants would be destabilizing to the overall system, could increase overall environmental impacts, and would increase overall costs in the region, including for those parts of the region where affordable sewer service is most needed. Although use of satellite treatment plants may have some benefits and can serve specific purposes when circumstances warrant them, the region should continue to focus on a regional treatment system approach for wastewater treatment and only use satellite treatment plants as appropriate.

A. Policy question

This memo is focused on the policy question related to the Treatment topic of the Regional Wastewater Services Plan (RWSP) Update. The policy question explored in this memo is:

- i. Should the region continue to provide a centralized approach for regional wastewater treatment, or should the region move towards a more decentralized approach?

For the purpose of answering this policy question, centralized/regional and decentralized/satellite are defined as the following:

- Centralized wastewater treatment approach refers to a regional wastewater system, with medium to larger treatment plants, connected by an extensive pipe network that collects and treats wastewater from a larger geographic area. Effluent is often also discharged far from the point of wastewater origin. The King County wastewater system is primarily a regional wastewater system with three large regional treatment plants (Brightwater, South Plant, and West Point).
- Decentralized wastewater treatment approach refers to a system with smaller satellite treatment plants that treat wastewater from homes and businesses near the source where wastewater is generated. Effluent is generally discharged,

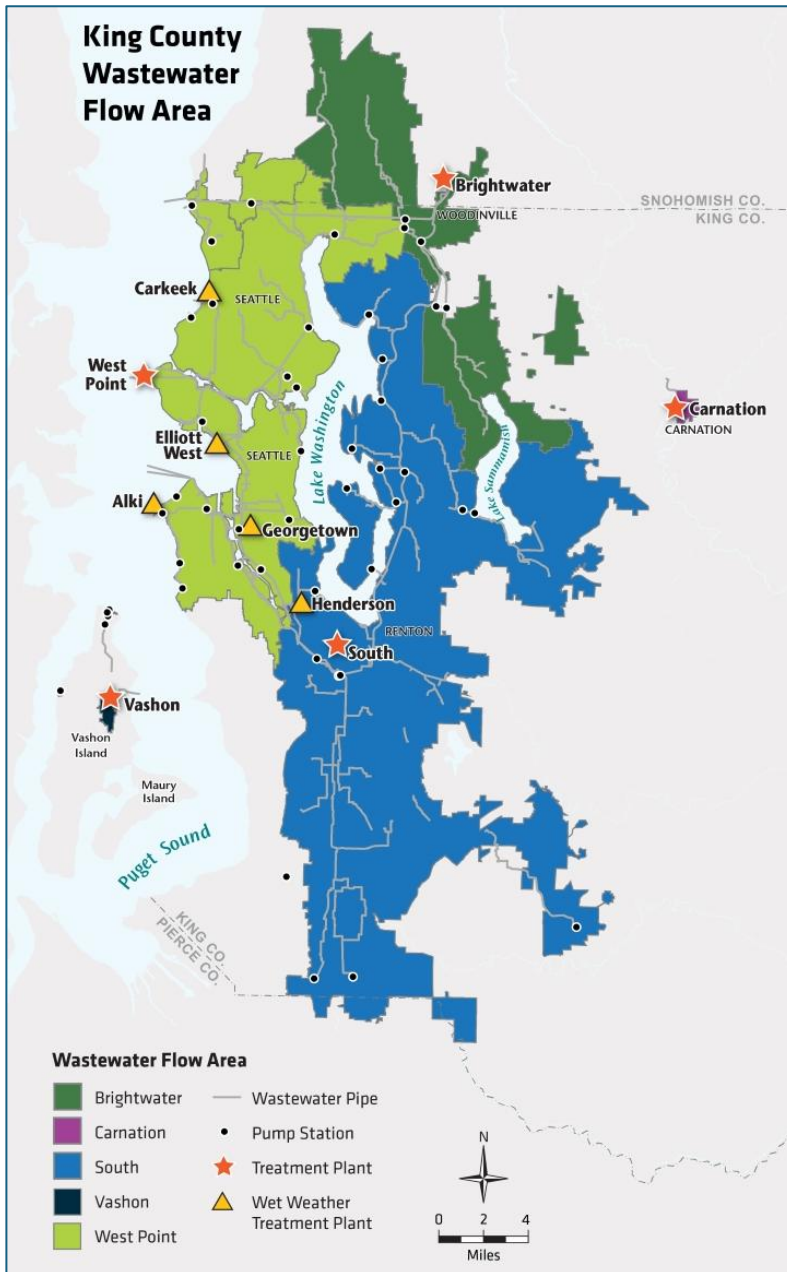
disposed, or reused locally as well. WTD's Vashon and Carnation treatment plants are examples of satellite treatment plants.

See *Policy Memo #10: Level of Treatment* and *Policy Memo #11: Treatment Site Use and Capacity* for additional information on Treatment topics.

B. Problem statement

The King County wastewater treatment system is primarily a regional system that serves about 2 million customers through three large treatment plants (Brightwater, South Plant, and West Point) and two smaller satellite treatment plants on Vashon Island and the City of Carnation. Although these smaller plants are distinct from the regional system (and, thus, could be considered decentralized or satellite treatment plants), their circumstances of being owned and operated by King County are specific and situational. For example, the Vashon Treatment Plant is located on Vashon Island and connecting to the King County regional system across Puget Sound is not a feasible consideration. When discussing decentralization in the context of this policy question, the consideration is whether areas that are currently or could feasibly be connected to the regional system could or should be addressed through a decentralized treatment approach (i.e., using satellite treatment plants).

Figure 1. King County Wastewater Flow Area Map



The policy question asks whether the Regional Wastewater System should focus on larger, regional infrastructure (centralized) or localized and smaller infrastructure (decentralized). This memo refers to a system with larger treatment plants that collect wastewater from a large geographic area as a "regional or centralized approach" and a system of smaller treatment plants dispersed throughout a geographic area that treat wastewater close to the point of generation as a "decentralized or satellite approach."

Answering this question in the abstract is challenging, as the answer depends on numerous factors including treatment regulatory requirements, population and

employment growth patterns, climate change impacts, asset management needs and opportunities, local sewer agency needs, community interests, resource recovery drivers and opportunities, and more. That said, this policy memo responds to the question with known and available information.

C. Contextual and baseline information

i. What is known about the topic and current conditions

Previous WTD planning efforts identified a range of ways in which a more decentralized approach could be applied to the current regional wastewater system, as summarized below.

- Converting wet weather treatment stations into year-round treatment. Wet weather treatment stations are small, strategically located facilities that provide temporary, high-flow wastewater treatment during storm events to reduce overflows. Converting to or building these as year-round treatment plants could add some wastewater treatment capacity in conjunction with combined sewer overflow (CSO) treatment investments. Such an approach could alleviate capacity needs at other regional plants (specifically West Point), though previous analysis indicated using wet weather treatment stations for year-round treatment would likely only delay the need for additional capacity at regional plants, not eliminate it.
- City-scale decentralized treatment could include distributed satellite treatment plants positioned throughout an area to handle wastewater locally rather than relying solely on large regional facilities. These treatment plants could address conveyance and treatment capacity needs in localized areas with significant upcoming development and population growth, which could offset some conveyance needs and potentially provide increased opportunity for partnerships to use recycled water. Development of these plants would also lead to community impacts and some community benefits that come with infrastructure projects in more areas.
- Community/neighborhood-scale decentralized treatment could include satellite treatment plants that treat wastewater close to the neighborhoods they serve, reducing conveyance needs and supporting localized reuse. These satellite plants could support densification of the Urban Growth Area as well as onsite septic system (OSS) conversion to conveyance and treatment with increased wastewater flows in concentrated areas.
- Building-scale decentralized treatment are on-site treatment systems located within or adjacent to individual buildings that process wastewater directly at the source. This treatment approach could support densification of the Urban Growth Area through alternate technology approaches to managing wastewater. Building-scale treatment would require building code revisions to require developments over a size threshold to include on-site treatment. On-site treatment could support use of recycled water. This approach would require changes to existing, and building of new, partnerships.

For all these decentralized approaches, overall system resiliency could improve in some circumstances, such as earthquakes, since sites would be distributed across the region. It would also mean that impacts are created at more locations throughout the region. Focusing on satellite facilities would also reduce the economies of scale that come with larger plants. A decentralized treatment approach would be a shift in how the region manages wastewater and with the commensurate need to realign regulatory, administrative, and operational practices.

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

While the range of activities at satellite treatment plants might vary (e.g., resource recovery activities or odor control facilities), similar to regional treatment plants, they would be governed by complex regulatory frameworks; engineering, environmental and public health standards; and permitting processes. This means that many of the policies, codes, and practices that affect existing and new regional treatment plants would be generally similar for satellite plants. Therefore, the existing policies, regulations, and codes for all treatment plants are not described in this memo; please refer to the other Treatment Policy Memos which explore these topics in detail.

Beyond the provisions that impact both types of plants, there are very few policies that specifically address satellite plants. The table below identifies the one current King County policy that specifically addresses one component of this question.

Relevant Policies in K.C.C.	Description
TPP-7	Explore satellite treatment plants to produce reclaimed water.

iii. Relationship to other RWSP topics

In addition to levels and types of treatment at regional and satellite plants, the regional strategy policy question intersects with many RWSP topics. Regardless of plant type and treatment standards, conveyance lines bringing flow from residences, businesses, and/or industry connect to these facilities, and decisions about plant type have conveyance routing and sizing implications and assumptions. In some cases, conveyance decisions directly impact treatment plant types and characteristics. Please see Policy Memo #2 for additional information on WTD’s process for projecting population growth and resulting flows into the wastewater system. Collateral to this therefore is a linkage to Inflow and Infiltration topics, depending on whether the conveyance is through existing or new lines. Additionally, as discussed in subsequent sections, plant location has impacts on Resource Recovery opportunities.

iv. The system "must-dos"

There are no system must-dos that are explicit and distinct for decentralized/satellite verses regional system approaches (see previous *ii. Current policies in code, contract, or in practice* subsection).

v. Current and budgeted expenditures

There are no expenditure allocations that are specifically guided by this policy question. Budgeted investments are planned for regional plants (South Plant, West Point, Brightwater) as well as plants that could be considered satellite (Vashon, Carnation). Please refer to other Policy Memos which explore these topics and expenditures.

vi. Summary of science/data

There is no science that is specific to this policy question. As noted in other sections of this memo, the choice between regional system and decentralized system approaches includes tradeoffs.

D. Example practices from other jurisdictions and relevant industries

Metropolitan regions around the country with similar populations as WTD can use both regional treatment plants and satellite treatment plants. The Great Lakes Water Authority in Detroit, Michigan is an example of a utility in a large metropolitan area that is served by a single, centralized facility (with a capacity to treat up to 1.7 billion gallons per day). But most utilities serving large metropolitan areas are similar to WTD in that they operate multiple treatment plants of various sizes. For example, the Metropolitan Water Reclamation District in Chicago operates 7 treatment plants ranging in average flows from 700 million gallons per day (mgd) to 2 mgd. New York City Department of Environmental Protection operates 14 treatment plants ranging from 310 mgd to 40 mgd in capacity and the Massachusetts Water Resources Authority in Boston operates 2 treatment plants, one sized for 1.3 billion gallons per day and another sized for 12 mgd. Initial research indicated that no major metropolitan areas are known to be served primarily by satellite treatment facilities however.

The use of satellite treatment in other jurisdictions is typically driven by the same factors that have driven King County to operate satellite facilities: locating a new facility in a location geographically isolated from the regional system (e.g., Vashon in WTD's current system; historically the original Alki, Carkeek, and Richmond Beach treatment plants; the new Cascadia treatment plant in Pierce County) and/or to take advantage of an opportunity to expand resource recovery (e.g., Carnation, the Martin Way/Hawks Prairie facility operated by LOTT). Satellite treatment is generally found to not be cost effective or

beneficial without a resource recovery opportunity (e.g., recycled water beneficial use) and when located within the collection system of an existing regional facility.

Additional research would be needed to comprehensively assess how the systems operated by other jurisdictions compare to WTD's system in terms of geographic area served, miles of conveyance lines, state and federal regulatory requirements, asset condition, governance structure, and other indicators.

E. Policy issues, challenges, and opportunities

Many factors influence the approach to treatment in a large geographical urban area as discussed in previous sections. Briefly summarized below are some of the tradeoffs between the regional (centralized) and satellite (decentralized) treatment system approaches.

Regional treatment systems

- WTD has proven success in protecting public health and the environment, with an award-winning track record of cleaning wastewater for nearly 2 million people every day, year-round.
- The regional approach has allowed for:
 - efficient and coordinated infrastructure planning
 - a watershed-based approach that allows planning across local sewer agency boundaries
 - economies of scale that come with larger plants for capital and operations
 - cost sharing, with shared investments reducing overall costs
 - improved equity outcomes for jurisdictions and geographic areas with concentrations of people with low incomes
 - an ability to support innovation and technologies that require scale to be cost-effective

Decentralized treatment systems

- A decentralized approach:
 - would be a shift in how the region manages wastewater and would require realignment of regulatory, administrative, and operational practices
 - could minorly offset some, but not eliminate, regional system needs
 - would have localized impacts, and mitigation benefits as well, in more locations in the region
 - could reduce the scale of systemwide risk by distributing risk across multiple sites, potentially improving systemwide resilience

- could face challenges securing new permits to discharge to waterbodies depending on waterbody, distance to the waterbody, or length of effluent conveyance
- could reduce treated water discharge to Puget Sound by creating recycled water opportunities closer to the source of wastewater generation
- could mean solids would be conveyed to regional plants for treatment, thereby not reducing loading to the regional plants
- would mean more duplicative infrastructure to manage as part of an Asset Management program, thereby increasing overall costs
- would require more operations staff across a larger geographic area, adding operational and regulatory complexities and oversight
- could require redundant back up connections to the regional system for emergencies or satellite plant failures
- would reduce economies of scale and generally cost more to build, operate, and maintain

F. Policy question response

Based on the history of past and recent decisions, regulatory complexity of the system, operational complexities, economies of scale, WTD should *continue* to use a regional treatment system approach for wastewater treatment and only use satellite treatment plants in specific circumstances that warrant them.

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

WTD needs to engage MWPAAC and the component agencies to which WTD provides sewerage services on the regional strategy policy approach. WTD may also engage with tribes, community-based organizations (CBOs), and environmental non-governmental organizations (NGOs), businesses, industries, and the general public during implementation planning. All these parties have an interest in the benefits and potential tradeoffs associated with different levels of treatment.

H. Rate structure considerations (if applicable)

There are no rate implications for this policy question currently. Should the region choose to change its approach, it would have rate considerations and ramifications at levels dependent on future decisions.

I. Relationship to contracts

Similar to Rate Structure, there are no known contract implications for this policy question currently but there would be ramifications dependent on future decisions.

J. Equity and Social Justice (ESJ) impacts

Regional treatment plants concentrate impacts into fewer areas, whereas satellite plants spread impacts in more areas. At the same time, development of plants brings economic development, employment, and inclusion of potential community amenities in new infrastructure. Satellite plants could support equitable delivery of recycled water to priority community customers. Should the region choose to change its approach, it would have ESJ considerations and ramifications at levels dependent on future decisions.

RWQC Work Program for 2026 September 2, 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.
- ✓ Wastewater Treatment Division's Preliminary 2027 Sewer Rate and Capacity Charge, Including Rate Options.

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.)
- ✓ WTD's 2027 Sewer Rate and Capacity Charge Recommendations and Options.
- ✓ WTD Initial Presentation Prior to Ordinance Transmittal on Proposed Capacity Charge Code Changes.

March 26, 2026 9-11 am. Optional Site Visit 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.
- ✓ WTD's 2027 Sewer Rate and Capacity Charge Recommendations and Options
- ✓ If transmitted and time available, Proposed Capacity Charge Code Changes.

May 6, 2026

- ✓ Executive's Proposed 2027 Sewer Rate and Capacity Charge.
- ✓ Proviso Response on RWSP Policy Questions.
- ✓ Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 3: Asset Renewal and Replacement.
- ✓ Proposed Ordinance 2026-0066. Capacity Charge Code Changes.

June 3, 2026

- ✓ Proposed Ordinance 2026-0066 on Capacity Charge Code Changes.
- ✓ Regional Wastewater Services Plan Update: Policy Questions Initial Analysis Group 4: Climate Impact and Natural Disaster Resiliency.
- ✓ Executive's Proposed 2027 Sewer Rate and Capacity Charge.

June 25, 2026 Optional Visit to South Plant Treatment**July 1, 2026**

- ✓ Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 5: Finance/Affordability.
- ✓ Capital Project Cost Update per proviso (Written).

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

- ✓ Department of Ecology: Washington's Water Future Initiative. (20 minutes)
- ✓ Integrating Financial and System Sustainability. Briefing by Edward Cebon. (35 minutes)
- ✓ Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 6: Combined System Management. (35 minutes).

September 2, 2026

- ☐ Vision for Clean Water 2100 (15 minutes)
- ☐ Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 7: Level of Treatment (80 minutes).

October Optional Site Visit to Brightwater. Date TDB.**October 7, 2026**

- ☐ Regional Wastewater Services Plan Update Policy Questions Initial Analysis Group 8: Resource Recovery (60 minutes).
- ☐ Puget Sound Institute Briefing on Low Oxygen Impacts in Puget Sound (30 minutes).
- ☐ Capital Project Cost Update per proviso (Written).

November 5, 2026

- ☐ Regional Wastewater Services Plan Update Policy Questions Initial Analysis
Group 9: Rate structure questions (70 minutes)

December 3, 2026

- ☐ Regional Wastewater Services Plan Update Policy Questions Initial Analysis
Summary Groups 1-9 (60 minutes)
- ☐ Regional Wastewater Service Plan Update ESJ Approach (30 minutes)
- ☐ ~~Stormwater Update (35 minutes)~~
- ☐ Capital Project Cost Update per proviso (Written).
- ☐ ~~PFAS Annual Update (20 minutes).~~

Note for RWSP Update—Policy Analysis. Costing information for Policy Questions Groups #1-9 will be provided 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.

DRAFT