



## Wastewater Treatment Division

### Executive Summary

#### **RWSP Update – Policy Memo #4/#5 Pollution (Source Control and Legacy)**

This executive summary provides a synopsis of the policy questions, problem statement, challenges, and the policy options developed for the questions associated with the Pollution (Source Control and Legacy) topic of the Regional Wastewater Services Plan (RWSP) Update.

#### **Policy Questions**

- i. What upstream or source control actions should the region undertake to prevent contaminants and reduce costs?
- ii. How can the Wastewater Treatment Division (WTD) best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?
- iii. How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?

#### **Problem Statement**

Pollutants that enter the regional wastewater system have the potential to be in effluent that is discharged into water bodies and accumulate in sediment and marine life and to enter products recovered by WTD, like recycled water or biosolids. Ongoing sources of pollutants entering the regional wastewater system may pose a risk to worker safety at the treatment plants, public health, and the environment. Pollutants, particularly those that are persistent and costly to remove at treatment plants, are best prevented or reduced at the source prior to entering the regional wastewater system using source control strategies.

Legacy pollution is a result of historic practices and discharges that have led to water quality impairments and resulting sediment contamination. Sediment contamination associated with WTD Combined Sewer Overflow (CSO) discharges needs to be addressed through cleanups and source control.

## **Policy Issues, Challenges, and Opportunities**

Challenges and opportunities inherent to address source control and legacy pollution are as follows:

- Cost considerations for pollution prevention
- The County has limited authority or influence over production and use of toxic persistent contaminants
- Legacy pollution cleanup methods and timelines
- Limited funding sources to pay for cleaning up legacy pollution
- Addressing pollution entering the regional wastewater system through education programs
- Addressing concerns that recycled wastewater products are contaminated

## **Policy Options**

Policy options to address the pollution questions fall under three general topical areas: Source Control, Education, and Legacy Pollution.

*Source Control (includes Industrial Waste, Facilities and Procurement, and Upstream Sources):* Eliminating, reducing, or mitigating harmful levels of toxic contaminants *before entering* the regional wastewater system.

### *Industrial Waste*

1. Maintain current policies for Industrial Waste.
2. Improve methods to identify more industrial users and encourage additional best management practices (BMPs).
3. Encourage reduction of non-regulated CECs from industrial users.

### *Facilities and Procurement, Upstream Sources*

1. Maintain existing purchasing and source control policies and requirements.
2. Apply additional resources and incentives to reduce, mitigate and eliminate harmful levels of contaminants from existing sources.
3. Lead and partner with others to maximize the reduction, mitigation, and elimination of harmful levels of contaminants from existing sources.

*Education: Increasing individual awareness of toxic persistent contaminants in products.*

1. Maintain existing programs to educate public about pollutants.
2. Broaden engagement programs and use different tools and tactics to educate more individuals about pollutants.
3. Lead and partner with others to maximize educational reach about pollutants.

*Legacy Pollution:* Remediating harmful levels of toxic contaminants *in or from* the regional wastewater system. Source control is an integral part of legacy pollution cleanup to ensure sediments are not re-contaminated.

1. Maintain current Sediment Management policies by implementing the Sediment Management Plan (slow pace).
2. Use lessons learned to improve process, accelerate new sediment cleanups, and remove known and identified pollution from the conveyance system.
3. Apply new and creative approaches for faster sediment cleanups.

## **RWSP Update – Pollution (Source Control and Legacy)**

### **Policy Memo #4/#5**

#### **A. Policy Question**

This memo focuses on the policy questions related to the Pollution (Source Control and Legacy) topic of the Regional Wastewater Services Plan (RWSP) Update. The policy questions analyzed in this memo are as follows:

- i. What upstream or source control actions should the region undertake to prevent contaminants and reduce costs?
- ii. How can the Wastewater Treatment Division (WTD) best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?
- iii. How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?

In the RWSP Update Budget Proviso Report, Appendix B, WTD indicated there would be two memos (Policy Memo #4 and Policy Memo #5) for the Pollution policy questions. Because of the overlap in background information and context for both memos, the policy questions are combined into this one memo.

#### **B. Problem Statement**

Historic practices and discharges led to water quality impairments and resulting sediment contamination. Water quality has improved greatly through passage of the Clean Water Act in 1972. However, water and sediment quality are still impaired in some receiving waterbodies.

Pollutants entering the regional wastewater system may pose a risk to worker safety at the treatment plants, public health, and the environment. Many contaminants, such as Poly Chlorinated Biphenyls (PCBs), mercury, per- and polyfluoralkyl substances (PFAS), pharmaceuticals, and hazardous household products, are persistent and costly to remove at treatment plants. Therefore, it is more cost effective and beneficial to human and environmental health to prevent them at the source before the contaminants reach the regional wastewater system.

Pollutants that enter the regional wastewater system have the potential to be in effluent that is discharged into water bodies and accumulate in sediment and marine life.

Pollutants also have the potential to enter products recovered by WTD, like recycled water

or biosolids, which may pose risks as those products are used. It is less costly to WTD and rate payers to prevent pollutants from entering the regional wastewater system than removing them at treatment plants.

### **C. Contextual and Baseline Information**

#### **i. What is known about the topic and current conditions**

##### *Source Control*

Source control is the process of finding or identifying sources of contamination, then stopping or reducing them before they reach waterways through untreated Combined Sewer Overflow (CSO) discharges and wastewater treatment facilities. Source control also reduces contaminants in WTD products (e.g., biosolids, recycled water).

In both the combined and separated sewer systems, source control is implemented through the King County Industrial Waste Program (KCIW). The KCIW program conducts the following activities to protect the wastewater system, environment and workers:

- Issues permits to industrial users to discharge industrial wastewater to the sanitary sewer which can include pretreatment and discharge limits;
- Inspects industrial users regularly, investigates industrial user instance of non-compliance, conducts regular compliance and surcharge sampling, reviews engineering documents and reports, develops local discharge limits, and issues enforcement actions to bring industrial users into compliance

In the combined system, additional source control activities are conducted to help prevent contaminants found in stormwater from entering the sewer system. The National Pollutant Discharge Elimination System (NPDES) Permit for the West Point Treatment Plant, which includes the County's CSO discharges, follows the guidance from the U.S. Environmental Protection Agency (EPA) Nine Minimum CSO Controls. Control Item # 7 requires pollution prevention programs focused on reducing the impact of CSOs on receiving waters. An element of this is to control sources of pollutants in stormwater runoff that enters the combined system. WTD has several programs that help with source control in the combined system:

- RainWise (rebate program for installation of rain gardens and cisterns)
- Waterworks Grants (grant program that funds projects to improve water quality)
- Education and Engagement (education on best practices and safer alternatives)
- KCIW (program that regulates commercial and industrial customers discharging to WTD's system)

- Hazardous Waste Management Program (technical assistance to businesses on proper handling, storage, and disposal)
- Sediment Management and Cleanup (source control to prevent recontamination of cleanups)
- Coordination with Seattle Public Utilities (stormwater prevention best management practices)

### *Legacy Pollution*

Historic practices and discharges led to water quality impairments and resulting sediment contamination, which is called legacy pollution. Water quality has improved greatly through passage of the Clean Water Act in 1972 and implementation of associated NPDES permits, building of regional wastewater treatment facilities, implementation of the KCIW Program, along with education and engagement activities. Even with these efforts, water and sediment quality is still impaired in some receiving waterbodies. WTD is working on sediment cleanups associated with WTD’s discharges to address sediment impairments, and source controls and treatment to address water impairments.

Cleanups remove the legacy pollution that impairs those portions of waterbodies. Source control is an integral part of sediment cleanup, including tracing pollution sources, inspecting industrial discharges, line cleaning, and many other activities to ensure sediments are not re-contaminated.

WTD is addressing sediment contamination near County CSO outfalls through a Sediment Management Plan. The plan was developed in the late 1990s and adopted as part of the 1999 RWSP. The plan was updated in 2018 to reflect data from more recent studies.

WTD has completed sediment cleanups at Denny Way and Pier 53-55 in Elliott Bay. WTD has also completed sediment cleanups at Duwamish Diagonal Storm Drain/CSO and Norfolk Storm Drain/CSO in the Lower Duwamish Waterway. WTD has other sediment cleanups in process as outlined in the Sediment Management Plan including the Lower Duwamish Waterway and Harbor Island (East Waterway) Superfund sites.

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

All current policies and practices related to pollution implement the County’s inherited responsibilities under RCW 35.58.200 - the water pollution abatement responsibilities under the legislation that Metro was created under. In particular, those responsibilities include:

- Plan provisions for water quality improvement - subsection (1), and
- To fully participate in federal and state programs under the federal water pollution control act – subsection (7).

The federal code outlines activities essential for effectively participating in federal and state programs aimed at improving water quality and preventing pollution including federal programs which aim to prevent, reduce, or eliminate pollution entering receiving waters.

The policies relevant to this memo are described in the table below. Most policies are in King County Code Chapter 28.86 Wastewater Treatment, except for those regarding Industrial Waste, which are included in King County Code Chapter 28.84 Water Pollution Abatement.

<b>Relevant Policies in King County Code</b>	<b>Description</b>
<b>WQPP-6</b>	King County shall implement and maintain water quality, monitoring, evaluating and reporting programs to support the national pollutant discharge elimination system for wastewater and other permit applications, and ensure permit compliance.
<b>CSO-4</b>	Consistent with its legal authority, if King County constructs new projects that would separate stormwater from its combined system that result in separated stormwater discharges to waterways, the county shall coordinate with the city of Seattle in the city's municipal stormwater National Pollutant Discharge Elimination System permit (MS4) process as appropriate.
<b>CSO-5</b>	King County's wastewater conveyance and treatment facilities shall not be designed to intercept, collect and treat new sources of stormwater. However, King County may evaluate benefits and impacts to the county system from accepting stormwater from the city of Seattle that is not currently in the combined system and shall consider factors including, but not limited to existing capacity, benefits and costs to ratepayers and the regional system, operational impacts, payment to county for value of the use of available capacity and for the costs of conveyance and treatment of new sources of stormwater and compliance with state and federal regulations and commitments.
<b>CSO-6</b>	In accordance with King County's industrial waste rules and regulations, including K.C.C. 28.84.050.K.1 and 28.84.060, the county shall accept contaminated stormwater runoff from industrial sources and shall establish a fee to capture the cost of transporting and treating this stormwater. Specific authorization for such discharge is required.

<b>Relevant Policies in King County Code</b>	<b>Description</b>
<b>CSO-9</b>	King County shall implement its long-range sediment management strategy to address its portion of responsibility for contaminated sediment locations associated with county CSOs and other facilities and properties. Where applicable, the county shall implement and cost share sediment remediation activities in partnership with other public and private parties, including the county's current agreement with the Lower Duwamish Waterway Group, the Department of Ecology and the Environmental Protection Agency, under the federal Comprehensive Environmental Response, Compensation and Liability Act
<b>EMP-1</b>	King County shall work with affected communities to develop mitigation measures for environmental impacts created by the construction, operation, maintenance, expansion or replacement of regional wastewater facilities. These mitigation measures shall: <ol style="list-style-type: none"> <li>1. Address the adverse environmental impacts caused by the project;</li> <li>2. Address the adverse environmental impacts identified in the county's environmental documents; and</li> <li>3. Be reasonable in terms of cost and magnitude as measured against severity and duration of impact.</li> </ol>
<b>BP 1</b>	King County shall strive to achieve beneficial use of wastewater solids. A beneficial use can be any use that proves to be environmentally safe, economically sound and utilizes the advantageous qualities of the material.
<b>BP-6</b>	King County shall strive to produce the highest quality biosolids economically and practically achievable and shall continue efforts to reduce trace metals in biosolids consistent with 40 C.F.R. Part 503 pollutant concentration levels (exceptional quality) for individual metals. The county shall continue to provide class B biosolids and also to explore technologies that may enable the county to generate class A biosolids cost-effectively or because they have better marketability. Future decisions about technology, transportation and distribution shall be based on marketability of biosolids products.
<b>WRP-1</b>	King County shall actively pursue the use of reclaimed water while protecting the public health and safety and the environment. The county shall facilitate the development of a water reuse program to help meet the goals of the county to preserve water supplies within the region and to ensure that any reclaimed water reintroduced into the environment will protect the water quality of the receiving water body and the aquatic environment.

<b>Relevant Policies in King County Code</b>	<b>Description</b>
<b>King County Council Motion 16434</b>	King County seeks to identify, prioritize, reduce, and control sources, exposures, and risk from per- and polyfluoroalkyl substances ("PFAS") and contaminants of concern to people and the environment in King County.
<b>King County Code 28.84.060 Industrial waste rules and regulations</b>	Establishes a program regulating Industrial Waste

Water Quality Protection Policy 6 (WQPP-6) and Combined Sewer Overflow Control Policies 4, 5, and 6 (CSOCP-4, CSOCP5, and CSOCP-6) address source control activities in the regional system. Most WTD source control activities address pollution sources in both the combined and separated conveyance areas. WTD conducts additional source control activities specific to the combined sewer area including:

- Projects that will reduce overflows or control CSOs
- Implementing stormwater NPDES permit at County-owned facilities
- Stormwater pollution prevention programs
- Identifying and tracing sources of pollution, line cleaning (operation and maintenance (O&M))
- RainWise program

Combined Sewer Overflow Control Policy 9 (CSOCP-9) and Environmental Mitigation Policy 1 (EMP-1) address sediment contamination. WTD is addressing sediment contamination near County CSO outfalls through the Sediment Management Plan. Cleanups remove the legacy pollution that impairs those portions of waterbodies. Source control is an integral part of sediment cleanup.

Biosolids Policies 1 and 6 (BP-1 BP-6), Water Reuse Policy 1 (WRP-1), Environmental Mitigation Policy 1 (EMP-1), and Motion 16434 describe the current policies on resource recovery and how the County manages PFAS and other contaminants. WTD provides education to the public on several topics related to wastewater treatment and contaminants. WTD supports pollution prevention (source control) programs and promotes existing safe product certifications. WTD purchases products and materials that reduce environmental and human health impacts. WTD advocates for policies that would

mandate full disclosure of toxic contaminants or ban certain contaminants (e.g., PFAS) in products.

King County Code Chapter 28.84.060 establishes a program to regulate industrial waste. KCIW protects the wastewater system, environment, and workers by regulating commercial and industrial customers discharging into the regional wastewater system.

### **iii. The system “must-dos”**

#### *Industrial Waste (Delegated Pretreatment Program)*

WTD’s NPDES permits have a pretreatment section that requires the County (through the Industrial Waste Program) to implement the delegated industrial waste pretreatment program in accordance with King County Code 28.84.060. The pretreatment section has multiple detailed requirements for KCIW to implement including Section 307 (b) and (c) of the federal Clean Water Act and its implementing regulations - the General Pretreatment Regulations under 40 CFR 403. The pretreatment sections in the NPDES permits have other specific tasks such as conducting industrial user surveys, local limits evaluations, sampling and monitoring requirements, annual pretreatment reports to Ecology, etc.

#### *King County Sustainable Purchasing Executive Policy regarding Contaminants of Emerging Concern (CECs)*

King County's Sustainable Purchasing Policy provides a framework for reducing environmental and health impacts through purchasing decisions. By implementing the policy's provisions related to CECs, the County can reduce pollutant loading to the wastewater system from County operations and facilities and demonstrate leadership in pollution prevention. Procurement decisions affect thousands of products used across County facilities, making this a scalable source control action. Success requires ongoing training for staff to maintain awareness of CEC issues and product alternatives. Implementation may result in higher upfront costs for some products, though lifecycle costs may be lower. Product availability and suitable alternatives vary by product category. Suitable alternatives (non-regrettable substitutions) may also be difficult to determine for some contaminants/products.

#### *Sediment Management Plan and Superfund*

State and federal laws require cleanup when sediment contamination poses unacceptable risk to human health or the environment. WTD has identified sites that require cleanup through its Sediment Management Plan program and requirements under its NPDES permit.

The EPA placed the Lower Duwamish Waterway on its Superfund list in 2001. That launched a formal process to clean up contaminated sediments throughout the Lower Duwamish Waterway. In 2014, EPA released its Record of Decision directing cleanup actions and offering plans for source control and long-term monitoring in the Lower Duwamish Waterway. WTD is working with Lower Duwamish Waterway Group partners to implement cleanup actions.

The East Waterway of the Duwamish River is also part of a superfund site; it is an operable unit of the Harbor Island Superfund Site. WTD along with the City of Seattle and Port of Seattle formed the East Waterway Group in 2006 to address sediment contamination in the East Waterway. In 2024, EPA released its Interim Record of Decision directing cleanup actions in the East Waterway. WTD and its partners are working to implement remedial design for the cleanup actions.

*EPA Nine Minimum CSO Controls (Control # 7)*

There is a requirement in the West Point Treatment Plant NPDES permit that requires a pollution prevention program focused on reducing the impact of CSOs on receiving waters. An element of this is to control sources of pollutants in stormwater runoff that enter the combined system.

**iv. Current and budgeted expenditures (Capital)**

As part of the 2026 Sewer Rate adoption process, WTD presented a 20-year forecast of its Capital Improvement program that included sediment management capital projects. The first decade of this forecast consists of both active and planned capital projects ranging in status from active construction to long-range identified concept. The second decade of the forecast is determined by a long-range model that leverages accounting data and assumptions regarding remaining useful life to forecast a portfolio-level annual spend. Because of the varying level of definition between active capital projects, planned capital projects, and long-range model assumptions, the Capital Improvement Plan (CIP) annual forecast contains significant uncertainty, particularly beyond the 6-year forecast window that WTD daylights as part of its biennial budget proposal process.

Below are the two currently active and appropriated WTD pollution capital projects as of the 2026/2027 biennial budget adoption by King County Council in November 2025.

- Sediment Management Plan (including the East Waterway Operable Unit of Harbor Island Superfund) - \$88,600,000

- Lower Duwamish Waterway Superfund - \$141,500,000

Note that these costs may be updated as capital projects are advanced and further defined.

Costs for source control activities including KCIW, education, etc. are minor projects in the CIP and thus not included in the list, or they are funded through the operating budget.

#### **v. Summary of science/data**

##### *Source Control and Priority Pollutants*

Washington Department of Ecology conducts water quality assessments to categorize water bodies as clean or polluted. Polluted water bodies are prioritized for cleanup to restore water quality. The list of polluted water is referred to as the state's 303(d) list under the federal Clean Water Act. Some waters where County CSOs discharge, along with stormwater from local jurisdictions and private entities, are listed as impaired under the 303(d) list. Depending on the location, the impairments include contaminants such as PCBs, polycyclic aromatic hydrocarbons, and mercury. The listings and the data to support the listing are found at [Water Quality Atlas - Map](#).

Sampling of solids and wastewater for contaminants in the combined sewer system have been conducted. The following reports present these data:

- [Duwamish River Basin Combined Sewer Overflow Data Report for Samples Collected from September 2007 to January 2010-King County 2011](#)
- Chelan, Hanford, Lander, King and Kingdome CSO Wastewater Data Summary-King County 2023 (available upon request)
- Chelan, Hanford, Lander, King and Kingdome CSO Solids Data Summary-King County 2023 (available upon request)

Implementing the County's CSO Control Program is a key source control action for the combined sewer system. The County is legally required to control all its CSO outfalls. A "controlled" CSO outfall can overflow no more than one time each year based on a long-term average, according to the Washington State standard. More information on the CSO Control Program can be found at the [CSO Control Program webpage here](#).

##### *Source Control and PFAS*

From October 2023 to August 2024, the King County Department of Natural Resources and Parks collected monthly samples of wastewater and biosolids from WTD's three regional

wastewater treatment plants and leachate<sup>1</sup> from the Cedar Hills Regional Landfill to test for 40 types of PFAS compounds.

The results from the [12-month study](#) found PFAS was present in King County's waste systems at levels similar to other municipal waste systems. This is likely coming from diffuse sources, namely from the everyday products that people in WTD's service area use and send down drains, toilets, and put in the trash which ends up in landfill leachate.

### *Legacy Pollution*

Figure 1 below shows groups of known and potential sediment cleanup sites that are identified in the Sediment Management Plan that are in process or still need to be addressed.

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<sup>1</sup> Leachate is water that has percolated through a solid and leached out some of the constituents



There are approximately 383 miles of sewer lines in WTD’s system. Solids build up in places and require removal for the system to function properly. In some areas, legacy pollution has contaminated these solids that can settle in combined sewer system conveyance lines. These solid deposits can be remobilized within the conveyance system during moderate to heavy rainfall events to CSOs or treatment plants. The line cleaning program removes these deposits to maintain function but also removes legacy pollution that can be released to receiving waters.

#### **D. Example Practices from Other Jurisdictions/Industry**

##### *Pollution prevention*

The City of Seattle’s program to keep pollution from entering the Lower Duwamish Waterway is one example of a pollution prevention program and an important element of the watershed-wide source control efforts by other jurisdictions and part of municipal and general industrial stormwater permits from the state Department of Ecology. The City of Seattle’s program includes elements such as source tracing, business inspections, and storm line and right of way catch basin cleaning, and public education and outreach.

The City of Tacoma is also investing in pollution prevention and restoration efforts including:

- Thea Foss and Wheeler-Osgood waterways cleanup
- Annual storm line and right of way catch basin cleaning
- Regular business and construction inspections
- Pollution source tracing
- Public education and outreach

Many state agencies and municipalities across the United States have undertaken efforts to characterize PFAS in their waste streams and recovered products. Several of these agencies are also taking an active role in public outreach and education surrounding PFAS source control. Two examples include:

Michigan’s Department of Environment, Great Lakes, and Energy—the state agency responsible for protecting environment and public health—has been proactive in sampling for PFAS, pursuing source control, and providing public education. This website details their efforts: [Regulated wastewater](#)

Madison, Wisconsin’s Metropolitan Sewerage District has been proactive in sampling for PFAS and providing public outreach on this topic for several years. The Madison PFAS Initiative is detailed at this website: [Home - Madison Sewer District PFAS Initiative](#).

## **E. Policy Issues, Challenges, and Opportunities**

### **1. Cost considerations for pollution prevention**

The costs of near-term investments should be weighed against future avoided costs and potential co-benefits. The risk of contamination and environmental degradation should also be compared to the associated costs of cleanup liability and restoration. Upfront source control spending on pretreatment, monitoring, and education can reduce spending on additional treatment needs, extend infrastructure life, increase public confidence in resource recovery products, and environmental damage liabilities. Step 2 (sections K and L) of this memo and analysis will evaluate the near-term and future avoided costs for the various policy options described below.

### **2. The County has limited authority or influence over production and use of toxic persistent contaminants**

The best way to prevent toxic persistent contaminants from entering our waterways and regional wastewater system is by reducing or banning the production of these contaminants. Industry can play an important role in this.

### **3. Legacy pollution cleanup methods and timelines**

Addressing legacy pollution is required as described in the sections above. However, as more sediment cleanups are performed, there are opportunities to enhance and improve the process to achieve improved water/sediment quality and more quickly reduce water body impairments.

### **4. Limited funding sources for cleaning up legacy pollution**

Parties responsible for pollution should help pay for legacy cleanup projects in polluted waterways. Industry can improve their own property cleanups and source control to prevent additional contaminants from entering the wastewater system. Competitive state grants are available for up to 50% of public costs of remediating contaminated sites including sediment, but funding of grants is limited.

### **5. Addressing pollution to the regional wastewater system through education programs**

One of the best ways to prevent pollution from entering our waterways and the regional wastewater system is by preventing pollution at the source. Individuals, businesses, and industries all have important roles in pollution prevention. Education on best practice and safer alternatives have been demonstrated to be extremely effective. Current programs by KCIW, King County Hazardous Waste Management, and state and NPDES stormwater requirements are effective when fully implemented.

## 6. Addressing concerns that recycled products are contaminated

Preventing harmful levels of pollutants from reaching the wastewater system can lower the risk of pollutants in biosolids and recycled water. Continued research and monitoring are needed to ensure that recycled products are safe for their intended use.

### **F. Range of policy options with associated actions and considerations**

The policy options presented below describe potential choices and pollution-related actions that would be implemented to address the following policy questions:

- What upstream or source control actions should the region undertake to prevent contaminants and reduce costs?
- How can the Wastewater Treatment Division (WTD) best support environmental benefits while instituting safeguards to protect against environmental risks of contamination? How should cost considerations be weighed?
- How should WTD efforts support the water quality of Puget Sound and applicable inland waterways?

The remainder of this memo describes policy options according to the following three topical areas:

- **Source Control** - Eliminating, reducing, or mitigating harmful levels of toxic contaminants and nutrients *before entering* the regional wastewater system;
- **Education** - Increasing individual awareness of toxic persistent contaminants in products.
- **Legacy Pollution** - Remediating harmful levels of toxic contaminants *in or from* the regional wastewater system. Source control is an integral part of legacy pollution cleanup to ensure sediments are not re-contaminated.

### Summary of Policy Options – Source Control (Industrial Waste)

	Goal	Description	Pollution Actions
#1	Manage and reduce contaminants from industrial sources using current methods	Maintain current policies for Industrial Waste	<ul style="list-style-type: none"> <li>Implement current requirements for industrial waste under King County Code (KCC), NPDES (National Pollutant Discharge Elimination System), and 40.CFR.403 (General Pretreatment Regulations for Existing and New Sources of Pollution in U.S. Code)</li> </ul>
#2	Manage and reduce <b>more contaminants</b> from industrial sources	Improve methods to identify more industrial users	<ul style="list-style-type: none"> <li>In addition to traditional industrial user surveying methods, use alternative or new ways of conducting surveys to identify potential unpermitted significant industrial users (SIUs).</li> </ul>
#3	<b>Lower CECs</b> to our regional wastewater system	Encourage reduction of non-regulated CECs from industrial users	<ul style="list-style-type: none"> <li>Survey industrial users for additional non-regulated CECs and suggest voluntary best management practices (BMPs).</li> </ul>

### Summary of Policy Options – Source Control (Facilities and Procurement, Upstream Sources)

	Goal	Description	Pollution Actions
#1	Reduce harmful levels of contaminants from existing sources	Maintain existing purchasing and source control policies and requirements	<ul style="list-style-type: none"> <li>● <b>Facilities and Procurement</b> – Implement King County Sustainable Purchasing Executive Policy regarding CECs.</li> <li>● <b>Facilities and Procurement</b> – Conduct operations and maintenance at WTD facilities to prevent unexpected releases of pollutants due to equipment failures.</li> <li>● <b>Upstream Sources</b> – Advocate for policies that would mandate full disclosure of toxic contaminants in all consumer and non-consumer product labeling, and limit or ban toxic persistent contaminant (e.g. PFAS) use in products.</li> </ul>
#2	Reduce, mitigate, and eliminate harmful levels of contaminants from existing sources	Apply additional resources and incentivizes to reduce, mitigate, and eliminate harmful levels of contaminants from existing sources	<ul style="list-style-type: none"> <li>● <b>Facilities and Procurement</b> – Inventory specialists will work across WTD facilities and King County Divisions to ensure coordination of sustainable purchasing.</li> <li>● <b>Facilities and Procurement</b> – Proactively remove or encapsulate building materials with high PCB levels in WTD-owned facilities.</li> <li>● <b>Upstream Sources</b> – Use incentives or buybacks for residential or business source control for products containing toxic persistent contaminants, such as replacements, buybacks of Teflon pans, etc.</li> <li>● <b>Upstream Sources</b> – Dedicating additional resources and priority to advocacy for bans on toxic persistent</li> </ul>

	Goal	Description	Pollution Actions
			contaminants (e.g., PFAS) across categories of goods: household products, industrial materials, transportation/automotive products, and building materials.
#3	Create and/or expand partnerships to address contaminants	Lead and partner with others to maximize the reduction, mitigation, and elimination of harmful levels of contaminants from existing sources	<ul style="list-style-type: none"> <li>• <b>Facilities and Procurement</b> – Lead regional coalition of wastewater and stormwater utilities to jointly develop procurement standards to avoid products containing CECs, develop pre-qualified vendor lists, and leverage collective buying power for safer alternatives.</li> <li>• <b>Facilities and Procurement</b> – Work with other King County departments to improve and coordinate source control across county-owned non-wastewater facilities that are known to have high levels of contaminants or nutrients, such as landfills, and PCB in building materials.</li> <li>• <b>Upstream Sources</b> – Build and lead a regional coalition of governments, non-profits, and businesses to advocate for broad policies that would mandate full disclosure of toxic contaminants in all consumer and non-consumer product labeling, and limit or ban toxic persistent contaminant (e.g., PFAS) use in products.</li> </ul>

### Summary of Policy Options – Education

	<b>Goal</b>	<b>Description</b>	<b>Pollution Actions</b>
<b>#1</b>	Educate individuals so they can take responsible action	<b>Maintain existing programs</b> to educate public about pollutants	<ul style="list-style-type: none"> <li>• Continued support of education and engagement around various pollutants/CECs, as well as continued support for WTD Education Programs WaterWorks Grants (funding education &amp; engagement efforts); Rainwise (workshops); and Hazardous Waste (Take back meds program, curriculum, K-12 programs).</li> <li>• Promote existing safe product certifications.</li> </ul>
<b>#2</b>	Educate <b>more</b> individuals so they can take responsible action	<b>Broaden engagement programs</b> and use different tools/tactics to educate more individuals about pollutants	<ul style="list-style-type: none"> <li>• Initiate internal education campaign and external social marketing campaign to educate public about avoiding/reducing various pollutants/CECs in daily life and purchasing.</li> <li>• Promote and/or endorse existing and/or new product rating systems and AI-based tools that help the public to avoid products containing toxic persistent contaminants.</li> </ul>
<b>#3</b>	<b>Maximize educational impact</b> so individuals can take responsible action	<b>Lead and partner</b> with others to <b>maximize educational reach</b> about pollutants	<ul style="list-style-type: none"> <li>• Establish WTD as a regional leader for consistent water quality and pollution prevention education through an expanded social marketing campaign effort in partnership with regional agencies, non-profits, CBO's, businesses and retailers. Develop new incentive programs where possible.</li> </ul>

### Summary of Policy Options – Legacy Pollution

	Goal	Description	Pollution Actions
#1	<b>Meet regulatory requirements</b> to conduct sediment cleanup and source control activities at the current slow pace	<b>Maintain current policies</b> by implementing the Sediment Management Plan	<ul style="list-style-type: none"> <li>• <b>Sediment Management</b> – Implement current Sediment Management Plan</li> <li>• <b>Line Cleaning</b> – Continue current sewer conveyance maintenance cleaning frequency that prioritizes based on O&amp;M needs but has the benefit of removing legacy pollution deposits</li> <li>• <b>Source Control</b> - Implement a pollution prevention program in the combined system to comply with the current West Point NPDES permit Nine Minimum Controls (Control #7).</li> </ul>
#2	Implement <b>process improvements</b> to improve water/sediment quality more quickly	Apply lessons learned to <b>improve processes, accelerate new sediment cleanups</b> , and remove known and identified pollution from conveyance system	<ul style="list-style-type: none"> <li>• <b>Sediment Management</b> – Advocate to Ecology for process improvements to accelerate new sediment cleanups led by WTD</li> <li>• <b>Line Cleaning</b> – Expand targeted structure and line cleaning in County-owned infrastructure to combat known and identified legacy pollution deposits</li> <li>• <b>Source Control</b> - Partner with local sewer districts to conduct additional business inspections to aid in stormwater pollution prevention, enhancing source control within the combined system.</li> </ul>
#3	<b>Faster</b> improvements to water/sediment quality	<b>Apply new and creative</b> approaches for sediment cleanups	<ul style="list-style-type: none"> <li>• <b>Sediment Management</b> – Implement and lead multi-party sediment cleanups without other Potentially Responsible Parties (PRPs) and</li> </ul>

	Goal	Description	Pollution Actions
	through <b>alternative approaches</b>		<p>pursue cost recovery after completing cleanup actions</p> <ul style="list-style-type: none"> <li>• <b>Sediment Management</b> – Apply Enhanced Natural Recovery cleanup to all WTD CSO associated contaminated sediment areas and promote development of bioremediation of bio-accumulative organics to treat those areas in the future</li> <li>• <b>Line Cleaning</b> – Partner with local sewer agencies to remove all legacy pollution deposits in sewer conveyance systems by surveying entire system and cleaning all needed structures and pipes of accumulated sediment (including both County-owned and locally-owned infrastructure)</li> </ul>

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

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

### **H. Rate structure considerations (if applicable)**

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

### **I. Relationship to contracts**

There are no known contract implications for these policy questions.

### **J. Equity and Social Justice (ESJ) impacts**

The policy options relating to legacy pollution have the potential to have ESJ impacts if selected. Some portions of the WTD service area that have sediment cleanup sites, like superfund sites, also have higher Social Vulnerability Index (SVI) scores.

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

The SVI scores for King County indicate that there are at risk communities along the shores of the Duwamish River, particularly those near the Lower Duwamish Waterway and the East Waterway Operable Unit of Harbor Island Superfund Sites. Proximity to superfund sites has been linked to higher rates of lung diseases<sup>2</sup> and even lower life expectancy.<sup>3</sup>

Local tribes, like the Muckleshoot, are historically reliant on the Duwamish River for access to salmon, and legacy pollution is one of multiple factors that affect fish

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<sup>2</sup> Stephens, C., Kim, Y. I., Ramachandran, R., Baskin, M. L., Antony, V., & Bae, S. (2022). Disparities in Healthcare Utilization: Superfund Site vs. Neighboring Comparison Site. *International journal of environmental research and public health*, 19(15), 9271. <https://doi.org/10.3390/ijerph19159271>

<sup>3</sup> Kiaghadi, A., Rifai, H.S. & Dawson, C.N. (2021). The presence of Superfund sites as a determinant of life expectancy in the United States. *Nat Commun* 12, 1947. <https://doi.org/10.1038/s41467-021-22249-2>

consumption advisories. A diverse group of over 20 ethnic communities, including Asian, Pacific Islander, Hispanic, and Somali immigrants, also fish in the Duwamish River for subsistence and cultural reasons. WTD is currently working under EPA oversight on the sediment cleanups in the Duwamish River, partnering with the Port of Seattle, the City of Seattle, and Boeing to fund the projects.

Legacy Pollution Policy Options #2 and #3 propose to accelerate new sediment cleanups and remove known and identified pollution. This could provide opportunities for positive ESJ impacts as socially vulnerable populations benefit from harmful pollutants being cleaned from their local waterways.

Many of the source control actions reduce contaminant releases to the sewer system by businesses and individuals instead of building infrastructure, which can have ESJ impacts. Source control policies, such as bans and extended producer responsibility, that reduce contaminants in products, have potential for positive ESJ impacts in reducing overall exposure of vulnerable communities to contaminants.

#### **K. Planning-level cost estimates**

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

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

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

## **Appendix A: Policy Options Justifications and Considerations**

### **Policy Options – Source Control (Industrial Waste)**

#### ***Policy Option #1 – Maintain current policies for Industrial Waste***

##### *Justification*

KCIW is a delegated pretreatment program with a mandate to implement all local, state, and federal rules and regulations to reduce and/or eliminate pollutant discharge from industries into Publicly Owned Treatment Works (POTWs). This mandate is a part of WTD's NPDES permits and thus for WTD to remain compliant with its NPDES permits and for the protection of WTD's assets from harmful industrial wastes, KCIW must continue to regulate industrial dischargers.

##### *Considerations*

The program received its delegation from EPA in 1981, before the state was delegated NPDES permitting authority in 1986 and has been successfully protecting KC's assets and beneficial use products. The nature of the work KCIW is doing has been evolving due to CECs and there are now more smaller dischargers than traditional major platers and other categorical users. KCIW is also doing more permitting and oversight of biotechnology and high-tech companies, which pose relatively minor risk to the system, but the regulations are newer and evolving.

#### ***Policy Option #2 – Improve methods to identify more industrial users***

##### *Justification*

KCIW will use the best information technology available to find significant industrial users. KCIW could seek a vendor-developed technology or app to use to survey.

##### *Considerations*

KCIW has a longer-term goal of having Investigators be responsible for actively seeking out significant industrial users via an on-going program.

#### ***Policy Option #3 – Encourage reduction of non-regulated CECs from industrial users***

##### *Justification*

Identifying sources of non-regulated CECs that might be regulated in the future and promote voluntary actions to reduce their release would result in benefits to the regional wastewater system.

### *Considerations*

This option could involve work with fire stations, local sewer agencies, and other business organizations. This option would likely require increased staffing levels.

Some CECs may fall under the purview of the existing Local Hazardous Waste Management Program and can be handled via product substitution and proper disposal techniques.

### **Policy Options – Source Control (Facilities and Procurement, Upstream Sources)**

#### ***Policy Option #1 – Maintain existing purchasing and source control policies and requirements***

##### *Justification*

King County's Sustainable Purchasing Policy provides a framework for reducing environmental and health impacts through purchasing decisions. Procurement decisions affect thousands of products used across County facilities, making this a scalable source control action.

Routine operations and maintenance activities ensure WTD facilities do not become sources of pollution to the wastewater or stormwater systems. Equipment failures that lead to unexpected overflow events or bypasses can result in releases of untreated wastewater and stormwater. Preventive maintenance reduces the likelihood of such releases, protecting water quality and avoiding potential regulatory violations and cleanup costs.

Mandatory disclosure helps consumers make informed purchasing decisions and avoid products with toxic persistent contaminants, reducing these substances from entering wastewater systems and improving human health outcomes. Extended producer responsibility policies hold producers accountable for the entire lifecycle of their products, particularly disposal and recycling. WTD currently participates in advocacy efforts when opportunities arise, such as commenting on proposed state regulations and coordinating with County legislative staff on relevant bills. Product labeling, use restrictions, and extended producer responsibility are most effectively implemented at state or federal levels where they can create consistent requirements for manufacturers and protect public health broadly.

##### *Considerations*

Sustainable purchasing success requires ongoing training for staff to maintain awareness of CEC issues and product alternatives. Implementation may result in higher upfront costs for some products, though lifecycle costs may be lower. Product availability and suitable

alternatives vary by product category. Suitable alternatives (non-regrettable substitutions) may also be difficult to determine for some contaminants/products.

Maintenance activities address equipment function but do not address upstream source control or line cleaning (addressed in the Legacy Pollution options). Pollution prevention benefits are incidental to the primary O&M objectives rather than a targeted outcome.

King County lacks direct regulatory authority over product manufacturing and labeling, and producer responsibility, but we do have the resources and authority already in place to advocate for changes at the state and federal level. The County typically responds to opportunities rather than proactively driving policy agendas. This requires continued coordination with other jurisdictions and stakeholder groups to build support. Other lobbying efforts may take higher priority. Some product categories may lack suitable alternatives currently, making bans challenging.

***Policy Option #2 –Apply additional resources and incentivizes to reduce harmful levels of contaminants from existing sources***

*Justification*

Coordinating sustainable purchasing across County Divisions leverages existing inventory specialist expertise to ensure consistent application of CEC-related purchasing criteria. Cross-program coordination would identify commonly purchased products containing CEC and consolidate research on safer alternatives.

PCBs are toxic chemicals that were commonly used from 1929 to 1979 for numerous industrial activities and in some household products and building materials. PCBs were widely used in hydraulic oils, electrical transformers, electrical equipment, caulk and oil-based paint. Although the manufacturing of PCBs was banned in the United States in 1979, they continue to be found in the environment and products still in use that were manufactured prior to the ban. PCBs are the primary reason local urban waterways have Washington State Department of Health seafood consumption advisories to limit consumption of locally caught fish and shellfish. In certain age and style of buildings, PCBs are found in building materials such as caulk and paint. Removing or encapsulating these sources of PCBs would be an effective means to keep this source of PCBs from entering the combined sewer system or local waterbodies via stormwater.

Incentive and buyback programs provide a direct mechanism to remove existing sources of contamination from the service area. Many households and businesses currently possess products containing PFAS and other toxic persistent contaminants that enter wastewater and stormwater. Financial incentives can overcome the barrier of replacement costs and

encourage participation. Incentive and buyback programs would increase public awareness about harmful products.

Expanding and prioritizing advocacy accelerates policy changes that eliminate toxic persistent contaminants at their source by building on current advocacy efforts. It also accelerates policy changes that would hold producers accountable for the entire lifecycle of their products, particularly disposal and recycling. This is a cost-effective long-term strategy compared to treatment but would require more resource investment to build on current advocacy efforts. Recent momentum for PFAS restrictions at state and federal levels creates a timely opportunity for increased impact. Expanding and prioritizing advocacy addresses contaminants that cannot be treated based on current treatment plant processes before discharge (shifting to prevention rather than treatment).

#### *Considerations*

Coordinating sustainable purchasing across County Divisions requires dedicated staff time and potentially expanded training. Coordination across divisions requires buy-in from leadership and procurement staff. Product alternatives may not exist for all applications or may have higher costs.

To remove or encapsulate building materials with high PCB levels in WTD-owned facilities, WTD would need to conduct an inventory assessment to identify facilities likely to contain PCBs in building materials. Removal of such materials is subject to regulatory oversight by EPA under the Toxic Substances Control Act. This can result in more lengthy and costly processes. If PCB-containing materials can be successfully encapsulated in place, until such time the facility receives a more comprehensive upgrade, this could be a faster and more cost-effective approach to controlling PCB sources in building materials. Handling and disposal of demolition waste is managed under a different and simpler regulatory process.

Incentive and buyback program costs could be substantial depending on participation rates and types of products included. These programs would require significant outreach to achieve meaningful participation. Replacement products must be readily available and affordable. Disposal of collected buyback products could be difficult. These programs could overlap with existing Hazardous Waste Management Program services, requiring coordination. Targeting the program geographically to the combined sewer service area could maximize CSO-related benefits but may create equity concerns.

Expanding and prioritizing advocacy requires more resource investment and staff time. Success depends on political will and priorities at state and federal levels, which are outside WTD's control. Must coordinate to align with County's overall advocacy agenda.

Benefits would accrue over long timeframes (5-20+ years) as bans are implemented and products cycle out of use, and producers take responsibility for end of life of their products.

***Policy Option #3*** –*Lead and partner with others to maximize the reduction, mitigation and elimination of harmful levels of contaminants from existing sources*

*Justification*

Leading a regional coalition to develop procurement standards extends sustainable purchasing beyond King County to create regional impact. A coalition of utilities would develop consistent procurement standards, reducing the burden on individual agencies to research products and vet vendors. Pre-qualified vendor lists would simplify purchasing decisions and signal market demand for safer products. Collective buying power could negotiate better pricing for alternatives that may currently cost more than conventional products. Regional coordination also sends a stronger market signal to manufacturers, potentially accelerating development of CEC-free products for the utility sector.

A coordinated, County-wide approach to improve and coordinate source control across the County would address contamination more comprehensively than WTD acting alone, maximizing pollution reduction benefits, and ensuring consistent standards across all County operations.

Building and leading a regional coalition to advocate for broad policies on extended producer responsibility, labeling and bans would amplify advocacy impact beyond what WTD can achieve alone, creating a unified voice representing millions of residents and diverse stakeholders. Regional coordination can pool technical expertise, share advocacy costs, and demonstrate broad-based support that is more compelling to state and federal policymakers. Businesses included in the coalition can provide industry perspectives and demonstrate feasibility of alternatives. This comprehensive approach addresses the full life cycle of toxic persistent contaminants entering the wastewater service areas throughout the region. Taking a leadership role in convening this coalition positions King County as a regional leader on source control and can accelerate policy changes that reduce the need for costly treatment or cleanups.

*Considerations*

Leading a regional coalition to develop procurement standards requires significant investment to convene and coordinate multiple utilities with different procurement systems, priorities, and governance structures. Coalition development and standard-setting could take several years to develop. Pre-qualified vendor lists can be difficult to develop under current legal and administrative frameworks across levels of government.

A coordinated, County-wide approach to improve source control requires establishing cross-departmental “action teams” and cost-sharing agreements. Different departments have different budgets, priorities, and capital planning cycles. Industrial waste rules and regulations sometimes may make collaborative approaches - between WTD and SWD, for example - limited in scope. Identifying and prioritizing facilities requires significant assessment work. This may require investment in onsite treatment technology research, such as treatment at the landfill facility for leachate and other wastewaters to meet federal, state, and local pretreatment requirements and standards. Collaboration among County agencies would be bound within the framework of existing regulatory requirements.

As with procurement, convening and maintaining a regional coalition requires substantial staff time for coordination, facilitation, and communication. Different jurisdictions may have varying priorities, technical capacities, and political constraints that complicate consensus-building. King County would likely need to provide staff support and contribute to funding for coalition activities. Coalition effectiveness depends on sustained participation over many years.

### **Policy Options – Education**

#### ***Policy Option #1 – Maintain existing programs to educate public about pollutants***

##### *Justification*

Maintaining support of existing education programs is important for engaging communities and stakeholders on issues related to contaminants in wastewater and stormwater. Existing WTD education efforts include facility tours, K-12 field trips, classroom programs, curriculum, resources, community programs, adult workshops, and more. As the science on CECs evolves, these established programs can adapt to address emerging concerns while leveraging existing community relationships and trust.

Choices that individual community members make to buy or use some products over others can translate to successful source control outcomes while also improving human and environmental health.

##### *Considerations*

Established programs have data and metrics for tracking success that are not necessarily tied to source control outcomes. It can be difficult to quantify reduction in pollutant loading to wastewater treatment plant systems as a result of education and grant programs. Continuation of current WTD education programs and support from WTD for programs in other divisions assumes long-term funding stability for staff/staff time.

Tracking outcomes can be challenging as there is no way to determine how many people change their purchasing decisions based on safe product certifications.

***Policy Option #2 – Broaden engagement programs and use different tools/tactics to educate more individuals about pollutants***

*Justification*

Implementing a County-wide education program related to reducing contaminant exposures would result in improved employee health and wellness as well as reduce pollutant loading from thousands of households across the service area. Employees can serve as ambassadors for source control in their communities, multiplying the impact of external campaigns. Internal buy-in also ensures organizational purchasing decisions are aligned with pollution prevention policies and goals. A comprehensive social marketing campaign could significantly shift public product purchasing behavior at a greater scale, reaching a larger audience and leading to reduced contaminants entering the wastewater stream, and improved health outcomes for communities and the environment. Particularly for products/purchasing, this preventive source control approach is more cost-effective than end-of-pipe treatment.

AI-based tools could provide real-time, personalized guidance for consumers. This would make it easier for the public to avoid products containing harmful chemicals. If those products are not purchased and used by consumers, this can help reduce the amount of those chemicals from entering the wastewater treatment system without having to invest extensive staff time and resources in education and outreach programs.

*Considerations*

County Employee training could be incorporated into new employee orientation – internal education is likely to be easier to implement and track than external education. Significant staff time needed for trainers and trainees to keep up to date on latest developments for CECs and their sources of exposure. Campaign messaging could be tailored to address different communities within King County and should be available in multiple languages. Success metrics should be established upfront. Will likely require additional staff or staff time for those who have expertise in social media marketing, and messaging will change over time as new products/CECs come on the market or are discovered to be harmful. This strategic enhancement would require sustained multi-year funding to accurately assess effectiveness compared to other education and outreach initiatives. For some types of products, there may not be a better alternative, or people may not have the funds to replace existing products.

Some AI-based tools already exist and are being considered by other programs (Public Health is exploring Clearya). Tool reliability, accuracy, and safety/privacy should be verified before endorsement. There may be accessibility concerns for non-English speakers and those without smartphones. Cost to consumers to pay subscriptions for (or for King County to host) one of these tools could be a limiting factor, largely unknown at this point.

***Policy Option #3 – Lead and partner with others to maximize educational reach about pollutants***

*Justification*

A regional partnership would create unified public messaging for source control actions. Partnering with businesses and retailers brings education to the point of purchase, where consumer decisions are made. Adding incentive programs addresses a key limitation of education-only approaches by providing financial motivation to change behavior. This comprehensive approach could shift purchasing patterns at a scale that meaningfully reduces contaminant loading to wastewater and combined sewer systems regionwide.

*Considerations*

Establishing regional leadership requires significant investment in staff, coordination, and sustained funding beyond current levels. This would require negotiating agreements with multiple partners, each with different priorities and capacities. Incentive program design requires careful consideration of funding sources and equity. Long-term sustainability depends on demonstrating value to partners and securing ongoing funding.

**Policy Options – Legacy Pollution**

***Policy Option #1 – Maintain current Sediment Management policies by implementing the Sediment Management Plan (slow pace)***

*Justification*

Adopted as part of the RWSP in 1999 to clean up sediment contamination near CSOs. State and federal law require cleanup when contamination poses unacceptable risk to human health or the environment.

The current approach to line cleaning as an O&M action is largely to address blockages and, in some cases, clean lines and facilities due to pollution source tracing that identified high levels of contaminants in the conveyance lines.

Implementing a pollution prevention program in the combined system is a West Point Treatment Plant NPDES permit requirement.

### *Considerations*

WTD has identified sites that require cleanup through this program and requirements under its NPDES permit. More than half of these sites have been cleaned up or are in process. The State will eventually require WTD to conduct the cleanups. The Sediment Management Plan allows WTD control over the timing of these efforts to provide flexibility on when to incur costs and pursue contributions from other responsible parties. Competitive state grants are available for up to 50% of public costs but funding of grants is limited.

The current line cleaning program is limited by available equipment and staff.

Source control in the combined system is supported by the KCIW program, County's Hazardous Waste Management Program, RainWise, education and engagement as well as pollution prevention activities such as best management practices such as street sweeping conducted by City of Seattle, and spill prevention programs.

***Policy Option #2*** – *Use lessons learned to improve process, accelerate new sediment cleanups, and remove known and identified pollution from conveyance system*

### *Justification*

Current cleanups are increasingly taking longer to complete and are exacerbated by recent Ecology (State of Washington, Department of Ecology) staffing issues (e.g., turnover in staff leading to vacancies, insufficient staff due to budget constraints). Advocacy for improvements in process to reduce time to conduct and reduce Ecology staff commitments could shorten time for achieving environmental improvements and reduce Ecology workload.

Expanding the line cleaning program to clean more areas each year and address more lines identified with harmful levels of contamination would combat known and identified legacy pollution deposits.

Business inspections are needed throughout the combined sewer service area to promote and ensure stormwater pollution prevention best management practices are being implemented. Those inspections also check that required stormwater infrastructure is being maintained and potential pollution generating materials are properly stored. Prevention of contaminants including CECs from entering the combined sewer system would prevent more pollutants from reaching the environment from CSOs or incomplete breakdown during treatment.

### *Considerations*

Ecology's regulatory process for many sites can be slow and overly complex. Site cleanups adjacent to the Lower Duwamish Waterway can often take over 10 years to go from the start of the agreed order, the remedial investigation and feasibility study, and finally a cleanup action plan. Most sediment cleanups are now relatively predictable and could be moved through the process quickly without compromising results. If effective, such changes would hasten completion of the Sediment Management Plan and significantly reduce costs.

Expanding line cleaning would require more equipment and staffing. Line cleaning and business inspections would lower concentrations of both legacy contaminants and CECs in our recovered products, protecting their markets, and in discharges to receiving waters, improving water quality. Keeping contaminants from getting into our conveyance system or from reaching treatment plants is more cost-effective than end-of-pipe treatment

WTD could incur costs for conducting business inspections for stormwater pollution prevention in the combined sewer areas not currently being conducted by local jurisdictions that collect the surface water drainage fees for that area. Source control focuses on preventing pollution from entering the stormwater runoff that enters the combined system in the first place, which can be more efficient and less expensive than enhancing treatment to remove more pollutants.

### ***Policy Option #3 – Apply new and creative approaches for faster sediment cleanups***

#### *Justification*

Waiting for completion of often lengthy legal process to settle responsibility for historical contamination at a site delays cleanups, adding years of human health and environmental health risks. Having WTD act proactively and recover other responsible party cost shares later would result in cleanups occurring sooner, expanding cleanup footprints, and avoiding more years of health risks.

Sediment cleanups often take a decade, with complex sites taking more than two decades. During this time, the adverse environmental effects continue. In addition, conventional cleanups using dredging resuspends a certain amount of contamination, which can create more environmental damage. By taking more benign interim action to stop adverse environmental effects and waiting for advancement of in-situ bioremediation developments to complete the cleanup in the future, cleanup can move forward with lower environmental consequences.

Proactively planning to clean all conveyance lines with contaminated deposits within a set timeframe would remove all legacy pollution in the system. Over the years, sediment has

accumulated in various parts of the sanitary sewer system in amounts that wouldn't otherwise be targeted for conveyance maintenance needs. But older deposits, particularly in industrial and commercial areas of combined system, are routinely higher in contaminants. These sediment deposits can be remobilized within conveyance system during moderate to heavy rainfall events and release contamination to the receiving water.

### *Considerations*

If WTD acts prior to the official legal process, WTD runs the risk of not being able to share the cost burden with PRPs. Waiting for legal process also has risks, as companies that are PRPs may go bankrupt in the meantime. Competitive state grants are available for up to 50% of public costs, which could reduce County's upfront costs, making it easier for WTD to begin cleaning up while waiting for the legal process for PRP cost sharing. Although there is a limited amount of grant funding available each grant cycle.

The timeframe to complete a cleanup starts once the regulators take their first formal action – and many sites sit for years before the regulators take that step. WTD can take voluntary action without going through the formal cleanup process – which won't resolve liability but stops environmental impacts from continuing. In addition, more benign treatments have less disruption to the existing ecosystem, meaning actions have lower environmental effects. But relying on bioremediation advances at some point in the future to achieve final cleanup goals.

When performing line cleaning, upstream local lines need to be cleaned first, or they could re-contaminate County lines after they have been cleaned. King County could incur costs if cleaning local sewer lines that are typically the responsibility of local sewer agencies. It would take many years to both survey the entire conveyance system to identify lines with solids containing harmful levels of contaminants and then to remove these solids from them. If moderate to high levels of toxic contaminants are present and the source(s) is not controlled, the solids in the line will become contaminated again. Note, sanitary lines are already cleaned when needed to maintain adequate conveyance (e.g., when there is a buildup of fats, oils and grease [referred to as FOG] and other solid material).