



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Scope of Work for Water Quality Assessment and Monitoring Study

For comments or questions, contact:

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Introduction

On Sept. 17, 2012, the King County Council, through Ordinance 17413, approved an amendment to the County's long-term combined sewer overflow (CSO) control plan. The approved plan includes construction of nine capital projects to control the remaining 14 uncontrolled CSOs to the Washington State Department of Ecology (Ecology) standard.¹ Completion of the projects will meet the Ecology and U.S. Environmental Protection Agency (EPA) requirement that all King County CSOs be controlled by 2030. The planning-level cost estimate to complete the amended long-term CSO control plan is \$711 million (2010 dollars).

Section 2 of Ordinance 17413 authorizes the County Executive to conduct a water quality assessment and monitoring study (assessment) to help ensure that investments in CSO control optimize water quality improvements in the sub-basins where CSOs discharge. Results of the assessment will inform the next CSO control program review.

The assessment will provide information on how CSO control can work in conjunction with other water quality projects, identify opportunities to lower the cost of CSO control, evaluate the effectiveness of emerging technologies, and build a foundation for conducting post-construction monitoring of CSO control projects. It will also help in deciding whether to pursue an integrated CSO control plan under the EPA Consent Decree. Recommendations that emerge from the assessment may include changes in the sequencing and prioritization of the last seven CSO control projects while meeting the County's legal obligations to complete all projects by 2030.

Scope of Work and Cost to Complete the Assessment

The project team plans to complete the assessment in 2016 so that information can be considered during the next CSO control program review, scheduled to be submitted to the Council in 2017.

The scope of work closely follows the elements listed in Section 2C of Ordinance 17413; fulfills the requirement in Section 2E that the assessment include a transparent and inclusive stakeholder process; and reflects guidance from the Regional Water Quality Committee, per Section 2D of the ordinance.

Additional information can be found at:

- The County's long-term CSO control plan:
<http://www.kingcounty.gov/environment/wastewater/CSO/ProgramReview/Plan.aspx>
- Exhibit A of this scope of work - Section 2 of King County Ordinance 17413 Authorizing the Executive to Implement a Water Quality Assessment and Monitoring Study
- Exhibit B of this scope of work – Questions to be Addressed by the Water Quality Assessment and Monitoring Study

¹ Ecology's standard for CSO control is an average of one untreated discharge per CSO outfall per year based on a 20-year moving average.

Elements of the Scope of Work

The main elements of the scope of work and timeframes for their completion are as follows:

- Review and analyze the large amount of existing scientific and technical data on impairments, defined as water quality-related concerns, in receiving waters where uncontrolled county CSOs discharge (e.g., the Ship Canal, Duwamish River, and Elliot Bay); the sources of impairments; and planned and potential corrective actions. 2013
- Provide venues for stakeholders to be engaged throughout the process. 2013–2016
- Conduct targeted data gathering and monitoring, as necessary, to fill identified gaps in scientific data on water quality in these receiving waters. 2014–2015
- Analyze, synthesize, and summarize scientific and technical data collected and reviewed during the assessment and produce a comprehensive synthesis report. 2015
- Make recommendations on (1) the sequencing and integration of CSO control projects and other corrective actions, and (2) additional means, such as coordinating projects with the City of Seattle, to increase the effectiveness and reduce the costs of controlling all County CSOs by 2030. 2016

The Water and Land Resources Division will perform the scientific and technical work. Advice and recommendations will be made by an Executive's Advisory Panel to the King County Executive and Council as described below. The Wastewater Treatment Division (WTD) will take lead responsibility for completing the assessment.

Transparent and Inclusive Stakeholder Process

Stakeholder involvement began in fall 2012 to help develop the questions to be addressed in the assessment and help shape the stakeholder process. As a starting point for developing a list of stakeholders, WTD began with those parties who had expressed interest in the CSO plan update process that concluded in September 2012. There is a wide range of stakeholders and WTD is planning additional effort to identify stakeholder groups. Input from our stakeholders thus far has emphasized the importance of maintaining communication and seeking independent review throughout the assessment.

To achieve these objectives, two main groups will provide independent review. The groups and their roles are as follows:

- The *Scientific and Technical Review Team* will consist of approximately five independent technical experts in water quality science, stormwater, and wastewater management who will review scientific methodologies and findings.
- The *Executive's Advisory Panel*, composed of approximately 10 regional leaders with a variety of perspectives and expertise will provide advice and make recommendations based on assessment findings, regional values, and interested party input. Members will

be appointed by the King County Executive and confirmed by the County Council in 2015.

WTD will also provide opportunities for other interested parties to review and provide input. Interested parties are residents, businesses, environmental organizations, elected officials, local sewer utilities, and technical staff from government agencies who want to stay informed and provide input to the assessment. They will have opportunities for involvement during all phases of the assessment, including the recommendations phase. There will be additional effort to collaborate with jurisdictions in the assessment area.

Study Cost

The cost estimate for the water quality assessment and monitoring study will vary depending on the assessment of available data and the data needed to fill identified gaps. The current cost estimate for the assessment and monitoring study is \$2.1 to \$3.2 million; however, the cost estimate will be refined in the early phases of the assessment once it has been determined if additional sampling and data analysis is needed. This cost estimate covers technical work, project management, and the stakeholder process as described in more detail below:

- **Technical work and project management.** This component will cover the following work: (1) conducting a comprehensive review of existing data, identifying data gaps, and monitoring and modeling to fill data gaps as needed to address the assessment questions, (2) analyzing the impact of CSO control projects and other projects on water quality, schedule, and cost, and (3) preparing the synthesis report described above.
- **Transparent and objective stakeholder and expert review process.** This includes the following activities: (1) communicating with interested parties throughout the process; (2) convening and facilitating the Scientific and Technical Review Team to ensure the assessment's design and results are scientifically robust; and (3) convening and facilitating the Executive's Advisory Panel to make recommendations to inform the next CSO control program review.

An equivalent of five employees per year will be engaged on the assessment, consisting of existing or temporary staff. This includes County employees and consultants.

Section 2 of King County Ordinance 17413 Authorizing the Executive
to Implement a Water Quality Assessment and Monitoring Study

147 SECTION 2. A. The King County executive is hereby authorized to implement a
148 water quality assessment and monitoring study, consistent with applicable legal
149 requirements, including analysis and value engineering of planned projects to inform
150 EPA's integrated planning approach and future CSO control program review with regard
151 to sequencing and prioritization of CSO projects while meeting the county's state and
152 federal legal obligations to complete required CSO control projects by 2030 and to
153 conform to CSO control regulations in chapter 173-245 WAC.

154 B. The study should utilize the new EPA integrated planning approach
155 framework to allow integration and sequencing of projects to ensure that investments in
156 CSO control projects are well-planned and timed to optimize water quality improvements
157 in the sub-basins to which King County's CSOs discharge. Furthermore, the study should
158 emphasize and support value-engineering efforts to refine projects and reduce the costs of
159 constructing CSO infrastructure. This should include opportunities to pursue
160 complementary or combined projects with the city of Seattle or other entities, if it is cost-
161 effective for King County ratepayers.

162 C. The study shall include:

- 163 1. Analyzing and synthesizing findings from existing studies;
164 2. Collecting new information and filling data gaps through additional
165 monitoring and sampling where identified as necessary;
166 3. Assessing factors affecting water quality in the sub-basins and water bodies
167 where King County CSOs discharge; and
168 4. Recommending integration and sequencing of projects to meet current federal
169 and state water quality standards and improve water quality.

170 D. The regional water quality committee shall provide policy guidance and
171 specific questions for analysis in the study scope of work.

172 E. The King County executive shall transmit legislation for approval of a scope
173 of work for the study and its cost, consistent with the direction of this ordinance,
174 including a transparent and inclusive stakeholder process. Where appropriate,
175 participation by federal, state, tribal and regional environmental leaders shall be arranged
176 through executive appointment and confirmation by the King County council.

177 F. The regional water quality committee shall review the recommendations that
178 emerge from the analysis and study.

Questions to be Addressed by the Water Quality Assessment and Monitoring Study

This first set of questions will be addressed during the data gathering and analysis phase of the project:

1. What are the existing and projected water quality impairments in receiving waters (water bodies) where King County CSOs discharge?
2. How do County CSOs contribute to the identified impairments?
3. How do other sources contribute to the identified impairments?
4. What activities are planned through 2030 that could affect water quality in the receiving waters?
5. How can CSO control projects and other planned or potential corrective actions be most effective in addressing the impairments?
6. How do various alternative sequences of CSO control projects integrated with other corrective actions compare in terms of cost, schedule, and effectiveness in addressing impairments?
7. What other possible ways, such as coordinating projects with the City of Seattle and altering the design of planned CSO control projects, could make CSO control projects more effective and/or help reduce the costs to WTD and the region of completing all CSO control projects by 2030?

This second set of questions will be addressed in the recommendations phase of the project:

1. What regional values, priorities, and objectives should be considered when sequencing CSO control and other corrective actions? (examples: saving money, maximizing water quality improvements, expediting CSO control project completion, equity and social justice)
2. What is the best way to sequence CSO control projects and integrate them with other corrective actions to meet these regional values, priorities, and objectives?