


KING COUNTY AUDITOR'S OFFICE

January 9, 2019

TO:

Metropolitan King County Councilmembers

FROM:

Kymber Waltmunson, County Auditor

Second Follow-up on Combined Sewer Overflow Performance Audit

The Wastewater Treatment Division continues to make progress in implementing recommendations from the 2012 Combined Sewer Overflow audit. In our 2014 follow-up, we determined that five of the 10 recommendations had been fully implemented. Since then, Wastewater Treatment Division (WTD) has implemented two recommendations and has partially implemented one recommendation. We are closing the two remaining recommendations, as the window of opportunity for their implementation has passed.

The recommendations implemented by WTD to date will improve the efficiency, quality, and consistency of cost estimations during combined sewer overflow (CSO) project planning. These recommendations will also increase the application of green stormwater infrastructure (GSI) to projects and ensure effective implementation and ongoing evaluation. However, opportunities for improvement remain around our recommendation to provide incentives for customers to reduce their use of the combined sewer system.

We are closing recommendations 9 and 10, both of which relate to implementing a sequencing analysis that considers the time value of pollution. WTD did conduct a sequencing analysis, but did not consider the time value of pollution in that analysis. Therefore the window of opportunity for these recommendations to impact WTD's planning process has passed.

Recommendations 1 through 5 were determined to be fully implemented in the 2014 follow-up. Therefore, the tables below provide status updates on recommendations 6 through 10 of the 2012 CSO audit.

Of the five remaining audit recommendations:

2 DONE	1 PROGRESS	0 OPEN
Fully implemented Auditor will no longer monitor.	**Partially implemented** Auditor will continue to monitor.	**Remain unresolved** Auditor will continue to monitor.

2 CLOSED: Two recommendations are no longer applicable, and the Auditor will no longer monitor them.

Please see below for details on the implementation status of these recommendations.

Recommendation 6

PROGRESS

King County should enhance its efforts to work with the City of Seattle to provide incentives for individual customers to reduce their use of the wastewater treatment system.

STATUS UPDATE: WTD and City of Seattle continue to partner on RainWise, which is the County's only program for voluntary volume reduction. According to WTD, as of May 2018, RainWise participants collectively captured runoff from two million square feet (45 acres) of impervious surfaces, which removed 13 million gallons of stormwater from the combined sewer system. In addition, 41 large buildings, characterized by having a roof larger than 2,000 square feet, completed RainWise installations.

However, WTD is not considering other customer incentives to reduce volume, and the effectiveness of RainWise continues to lag behind other programs discussed in the audit. For example, the City of Portland's Downspout Disconnect Program results in 1.2 billion gallons per year of volume reduction. As noted in the 2018 Findings of the Independent Expert Review Panel on the King County CSO Control Program, WTD is uncertain about RainWise's quantitative benefits on CSO flow reduction and does not reflect RainWise impacts in its modeling of GSI projects.

In order to fully implement this recommendation, WTD should look for ways to increase participation in RainWise. In addition, WTD should focus on cost-effective ways and impactful strategies to reduce volume; for example, WTD could leverage its partnership with SPU to pursue a rate incentive for large commercial and public buildings to implement GSI projects.

Recommendation 7

DONE

WTD should increase its institutional knowledge and expertise with GSI and strengthen its program methodology to address its planning and jurisdictional challenges by:

a) **Examining and investigating innovative and cost-effective GSI approaches successfully utilized by other jurisdictions, such as Portland's downspout disconnection program.**
b) **Continuing detailed GSI-effect modeling (based on EPA's SWMM model) for CSO basins feasible for GSI, not just basins pre-selected as having a GSI project component.**
c) **Performing an analysis of cost-effectiveness and cost comparison of GSI with gray infrastructure alternatives for each CSO project basin, applying GSI in the project design phase to the maximum extent cost-effectively possible and setting project targets based on these maximums.**
d) **Allowing for a wider range of GSI alternatives consideration in the project development phase for each CSO control project basin.**
e) **Revising the planning model for future iterations of the CSO Control Plan to integrate GSI planning and engineering into each project recommendation (while keeping the gray component for early phase cost estimating).**

STATUS UPDATE: WTD has taken several steps to improve its GSI expertise. This has improved WTD's program methodology to ensure it can more effectively plan and implement GSI projects

where applicable. Our report provided five specific challenges for WTD to address and the division has taken the following steps to overcome them:

a) WTD participates in the national Low Impact Development/GSI community of practice where ideas and practices are shared to encourage broader application nationwide.

b) WTD implemented a new hydraulic model to evaluate GSI options and gray infrastructure in a single model. Using this model, WTD may be able to more effectively evaluate current system performance and proposed CSO projects.

c) WTD developed a Cost-Performance Threshold Tool to evaluate the cost-effectiveness of GSI roadside retrofit options. With this tool, WTD can perform planning-level evaluation of different GSI retrofit options that meet site specifications. In addition, WTD revisited GSI applications in the remaining uncontrolled CSI basins as part of the 2018 CSO Long-Term Control Plan Update.

d) WTD standardized GSI design and implementation through the Seattle Public Utilities/WTD Joint GSI Program. The standardizations are designed to improve consistency across program methodology and implementation.

e) WTD established an Expert Review Panel to review the forthcoming Long-Term Control Plan Update. The panel, comprised of CSO experts at the local and national level, identified options for optimization, cost control, and risk management and mitigation.

By strengthening institutional knowledge around GSI and creating processes for its integration into the division's work, WTD now has standardized systems in place that allow it to more effectively plan, implement, and evaluate GSI projects.

Recommendation 8 — DONE

WTD should phase implementation of the individual control projects within the CSO Control Plan, ensuring inclusion of greater system modeling to assess wider application of GSI in each CSO basin, developing integrated project approaches, and providing a more concerted GSI strategy overall.

STATUS UPDATE: WTD has re-evaluated the feasibility of GSI in uncontrolled CSO basins. In doing so, it has identified viable project opportunities, including the University GSI Project, which will reduce the CSO control volume of the University Regulator Station Overflow Diversion Facility. These projects will be phased over time to implement GSI and evaluate its effectiveness. By implementing this recommendation, WTD has a practice in place to maximize GSI for system-wide benefits.

Recommendation 9 — CLOSED

To the extent that reliable scientific knowledge is available, WTD should develop quantitative measures of the impacts on water quality from CSO outfalls, and the expected water quality improvements to be provided by each control alternative. The development of such measures should be included in the Water Quality Assessment and Monitoring Study.

a) **These measures should then be applied in an analysis of project cost-effectiveness and the time-value of program sequencing alternatives.**

b) **This analysis should be used to propose updated prioritization and sequencing in the next CSO Control Program Review, to be completed in 2018.**

STATUS UPDATE: Although WTD did conduct a sequencing analysis, it did not consider the time value of pollution. The window of opportunity for implementation of this recommendation has passed.

Recommendation 10 CLOSED

Until such time that reliable scientific knowledge becomes available in evaluating the cost-effectiveness of overflow projects and project sequences, WTD should document:

a) **Consideration of CSO discharge volumes to be reduced.**

b) **The time value of volume reduction in evaluating the cost-effectiveness of overflow projects and project sequences.**

STATUS UPDATE: Although WTD did conduct a sequencing analysis, it did not consider the time value of pollution. The window of opportunity for implementation of this recommendation has passed.

Brooke Leary, Senior Principal Management Auditor, conducted this review. Please contact Brooke at 206-477-1044, if you have any questions about the issues discussed in this letter.

cc: Dow Constantine, King County Executive
Casey Sixkiller, Chief Operating Officer, King County Executive Office
Caroline Whalen, County Administrative Officer, Department of Executive Services
Dwight Dively, Director, Office of Performance, Strategy & Budget
Caroline Whalen, County Administrative Officer, Department of Executive Services
Ken Guy, Division Director, Department of Executive Services, Finance & Business Operations Division
Melani Pedroza, Clerk of the Council, Metropolitan King County Council
Lakeidra Williams, Administrator 1, King County Executive Office