

# **Ship Canal Water Quality Project Semiannual Report**

Prepared in accordance with  
Ordinance 18313, Section 2

**January 2018**



**King County**

Department of Natural Resources and Parks  
Wastewater Treatment Division

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Attachment A: Annual Cash Flow Projections and Actual Expenses for King County Share of Ship Canal Water Quality Project

## **Introduction**

King County Ordinance 18313, Section 2 requires the King County Executive to transmit a report to the Council semiannually as a project status update on the Ship Canal Water Quality Project.

Specifically, the Ordinance requires the report to summarize:

- Project budget status and anticipated cash flow through construction phases;
- Key upcoming activities that demonstrate progress on design and construction of county-focused elements;
- Major schedule milestones and the project status in achieving those milestones; and
- Potential uses of contingency and management reserve.

This report addresses each requirement under a separate heading that corresponds to the particular requirement.

## **Executive Summary**

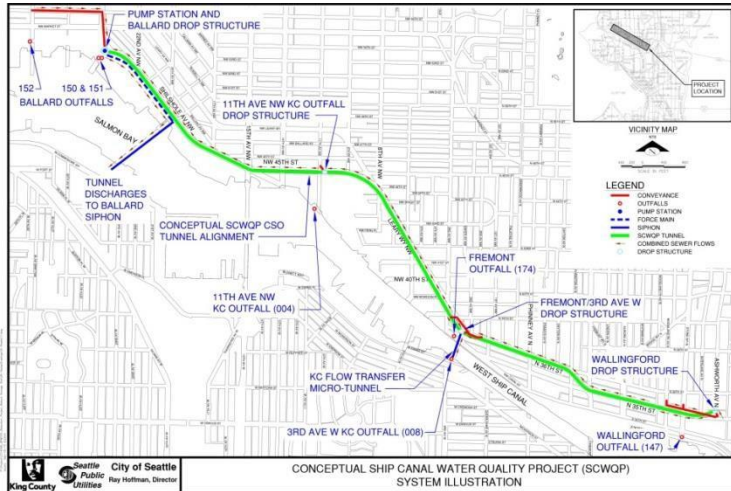
This third semiannual report shows that the project continues to meet or exceed the milestones required under King County's federal Consent Decree with the Washington State Department of Ecology (Ecology) and U.S. Environmental Protection Agency. Seattle Public Utilities (SPU) is moving forward with an eighteen foot ten inch (inside diameter) tunnel. WTD does not require an eighteen foot ten inch tunnel to meet its Consent Decree requirements, but WTD will need some additional volume in the tunnel beyond that available with the current fourteen foot tunnel diameter described in the Joint Project Agreement (JPA). Complete system flow modeling just concluded and this information is now available to confirm WTD's tunnel volume needs.

SPU included a revised estimate of \$540 million as the total project cost in its budget submittal to the Seattle City Council in fall 2017. In addition to the increased tunnel size, this revised estimate includes adjustments for a more competitive regional construction bidding market and design refinements. The revised cost estimate is being carefully reviewed and validated with the assistance of Value Management Services (VMS) cost consultants. The current approved County cost share for the project is \$142.4 million. SPU will have a complete cost reconciliation available in late February 2018 which will inform negotiations between WTD and SPU on any additional costs for the County. King County and SPU continue to work on minimizing project cost increases.

## Background

Ordinance 18313 authorizes King County and SPU to partner on the Ship Canal Water Quality Project, and requires semiannual project status reports. This third report covers the period July 1 through December 31, 2017.

## Project Summary



This project will be designed and constructed to control combined sewer overflows (CSOs) to the Lake Washington Ship Canal, as approved by both King County's and City of Seattle's respective Consent Decrees. SPU is responsible for completion of the construction, subsequent operation and maintenance, periodic repair, replacement and permitting of the Ship Canal Project.

The Joint Project Agreement approved by Ordinance 18313 chartered a Project Review and Change

Management Committee (PRCMC) to provide project oversight and to monitor and approve formal changes of project scope, schedule, and budget, among other governance responsibilities. The PRCMC is comprised of executive and management staff from SPU and King County.

## Facility Ownership

SPU will own and operate all facilities once constructed. King County retains ownership of its 3rd Avenue West outfall and 11th Avenue NW outfall, to meet compliance with the Consent Decree for its two CSOs within the system, and owns storage capacity of a minimum of 6.03 million gallons in the completed facility, which will be adjusted based on recently completed modeling.

## Project Components

SPU is designing and constructing a storage tunnel and associated facilities, including structures for diverting influent CSO flow away from existing CSO outfalls to the tunnel; four drop structures to convey influent CSO flow into the storage tunnel; gravity sewer lines to convey flows from King County's diversion structure at 11th Avenue NW; a siphon microtunnel under the Ship Canal to convey flows from King County's 3rd Avenue West diversion structure to the new Fremont drop shaft to the tunnel; conveyance lines to drain flows from the tunnel effluent pump station to King County's existing Ballard Siphon structure; and conveyance facilities related to the Fremont, Wallingford and Ballard Outfalls. Wallingford/Ballard work is not a King County shared cost.

***Cost Monitoring and Change Control***

<b>King County Budget Status (King County Capital Share only)</b> <i>(All figures in millions of dollars, escalated to year of expenditure)</i>	Total Planned Capital Cost (A)	Total County Adopted Budget** (B)	Amount Expended (C)	Remaining Budget Balance (B-C)
Values as of 12/31/2017* * actuals through Nov. + projected	\$133.7	\$142.4	\$15.3	\$127.2

*\*\* Includes changes approved by Project Review and Change Management Committee.*

***Annual Cash Flow Projections***

See table: Attachment A.

***Major Proposed and Accepted Changes Summary***

No changes were submitted to the Project Review and Change Management Committee (PRCMC) for review and approval during the six-month period since submittal of the last semiannual report to Council on July 30. However, SPU is moving forward with final design of an eighteen foot ten inch (inside diameter) tunnel. King County staff are analyzing the additional volume (i.e., capacity in the tunnel) needed to meet the County’s Consent Decree requirements based on recently updated system modeling data and how that impacts our cost share. Complete updated cost detail regarding the project cost increase to \$540 million will be available from SPU in late February 2018.

King County will have the opportunity to re-evaluate final tunnel size capacity decisions and cost share after receiving all cost documentation. This documentation will include a cross-walk from the \$423.4 million approved project cost in the JPA to the updated total cost projection. Note that the \$540 million total cost projection falls within the Class 4 estimate range of minus 20 percent to plus 30 percent as approved in the JPA. Additionally, SPU does not attribute the total project increase solely to the increased tunnel sizing; additional cost increases are also expected for contract escalation and market condition impacts beyond what was included in the baseline budget, as well as property cost increases, design refinements and PRCMC-approved scope additions, and related impacts to sales tax and cost reserves. Per the JPA, the County pays only its proportionate share of cost increases associated with changes to project scope, schedule or budget which are agreed to by SPU and the County through the change management process.

King County and SPU continue efforts to minimize costs. For example, the County and SPU are exploring the use of alternative technologies for flow measurement instead of magnetic flow meters. This technology would be used to measure the combined sewer flows entering the tunnel. There is a potential for a cost savings of several million dollars provided an alternative is feasible.

## *Current Activities*

- Updating project and programs cost estimates to provide consistency of documentation and clarity of actual and projected costs of the revised project scope, including alternatives for the County's potential cost share.
- Proceeding with 90 percent design for tunnel storage and conveyance for Fremont, 3rd Avenue West, and 11th Avenue NW outfall diversions.
- Proceeding with 60 percent design for the tunnel effluent pump station (TEPS).
- Continuing with developing a joint TEPS operational strategy to coordinate effective communications and operations between agencies once the project is completed.
- Finalizing contract and integration of Construction Management (and program support services) consultant Jacobs Engineering with the project team.
- Continuing to coordinate the design of the Shilshole (effluent) pipeline design with the Seattle Department of Transportation's Burke-Gilman trail "missing link" project in Ballard.
- Continuing 3rd and 11th Avenue shaft mechanical and electrical facility design to coordinate with conveyance designs.
- Preparing an Addendum to the previously approved Final Facility Plan to incorporate technical updates, primarily the completion of an Integrated Model for evaluating design performance, which includes the tunnel system, the County's North Interceptor, upstream flows from University and Montlake basins, and West Point Treatment Plant.
- Completing agreement over tribal fishing access with the Muckleshoot Indian Tribe for the in-water work.
- Initiating the Ballard Early Works construction package, now that a mitigation plan for the in-water work portion has been approved by the U.S. Army Corps of Engineers, to be advertised in early 2018.
- Procuring environmental permits related to construction of the new pier and outfall in Ballard, required site remediation, and project elements including downshafts, vaults, and the tunnel itself.
- Preparing to meet the requirements for a Platinum award level for environmental design using the Envision Rating System.
- Executing the public relations coordination and communications strategy for Ballard TEPS and related work.
- Continuing to refine hydraulic modeling efforts with SPU to verify appropriate tunnel sizing and operations requirements.

- Continuing coordination and negotiations with Puget Sound Energy and Seattle City Light for project-related utility relocations.
- Continuing briefings and outreach efforts with community stakeholders including the Seattle Bicycle Advisory Board, Nordic Heritage Museum, Friends of Street Ends, Ballard Chamber of Commerce, Ballard District Council, Seattle Pacific University, Pacific Fisherman, Cascade Bicycle Club, and nearby property owners.

<b><i>Project Schedule</i></b>
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<b><i>Key Consent Decree (CD) Milestones</i></b>	<b><i>CD Compliance Date</i></b>	<b><i>Current Project Schedule</i></b>	<b><i>Variance from CD Schedule (years)</i></b>
Draft Engineering Report (Facility Plan)	3/31/2017	1/15/2016 (actual)	(1.2)
Final Engineering Report for Approval	12/31/2017	3/21/2017 (actual)	(.7)
Draft Plans and Specs to Ecology for Review	3/31/2020	4/22/2018	(1.9)
Final Plans & Specs for Approval	12/31/2020	6/26/2018	(2.5)
Construction Start (Notice to Proceed)	7/1/2021	4/16/2019	(2.2)
Construction Completion	12/31/2025	12/31/2025	0
Achieve Controlled Status	12/31/2026	12/31/2026	0

<b><i>Potential Use of Contingency and Management Reserve</i></b>
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- No new proposed changes submitted to the PRCMC for review and approval.

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**Annual Cash Flow Projections and Actual Expenses for King County Share of Ship Canal Water Quality Project**

*Note: All figures are in millions of dollars (except percentages)*

<b>Total Project Cost per Joint Project Agreement</b>	<b>423.4</b>
<b>Total Current Approved Budget</b>	<b>453.9</b>
<b>Total Current Joint Shared Cost</b>	<b>408.3</b>
<b>Total Current Approved King County Share</b>	<b>142.4</b>
<b>King County % of Total Shared Cost</b>	<b>35%</b>

<b>King County WTD Share (escalated):</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
Annual forecast/actuals	0.5	5.0	5.4	4.4	8.9	5.1	25.6	34.6	25.3	13.5	10.6	3.7	<b>142.4</b>
Cumulative forecast	0.5	5.5	10.9	15.3	24.2	29.2	54.8	89.4	114.7	128.1	138.7	142.4	<b>142.4</b>
% of King County Total share	0.3%	3.5%	3.8%	3.1%	6.2%	3.6%	18.0%	24.3%	17.8%	9.4%	7.5%	2.6%	<b>100%</b>
Cumulative % of King County Total share	0.3%	3.9%	7.7%	10.7%	17.0%	20.5%	38.5%	62.8%	80.5%	90.0%	97.4%	100.0%	<b>100%</b>