CSO Program Update and Status Report

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METROPOLITAN WATER POLLUTION ABATEMENT ADVISORY COMMITTEE
General Meeting
August 27, 2014
Presentation Overview

Overview of CSO Program
CSO Project Status

• North Beach CSO
• South Magnolia CSO
• Murray CSO
• Barton GSI
• Rainier Valley
• Brandon-Michigan
Regional Combined Sewer Overflow CSO Locations

- 38 total CSOs
- 14 still require upgrade to meet state and federal standards
  - 4 in the Ship Canal area
  - 10 in the Elliott Bay Duwamish area
King County’s Approved CSO Control Plan

- 9 projects to control 14 CSOs
- 2 projects being implemented
Location of the Puget Sound Beach CSO Control Projects

- All Four Beach projects are in construction
Location of the Ballard Siphon Replacement Project

- The Siphon’s primary purpose is to convey wastewater from north Seattle to West Point.
- The Siphon also controls the Ballard CSO.
North Beach CSO Control Project
North Beach CSO Project

• Purpose – Improve water quality and complete commitments to CSO control
• Constructing 325 feet of pipe storage – 0.33 million gallons (MG)
• Construction 15% complete
• Substantial completion August 22, 2015
• Construction contract $9.6m
North Beach CSO – Rerouting an existing sewer pipe
North Beach CSO Rendering – Front View
South Magnolia CSO Project

• Purpose – Improve water quality and complete commitments to CSO control
• 1.8 MG storage tank, 2700 feet gravity pipeline
• Construction 18% complete on storage, 2% complete on HDD
• Substantial completion October 23, 2015
• Construction contracts: Storage $12.5m, pipeline $9.4m
South Magnolia Conveyance Alignment

HDD Drill Rig Areas

HDD Bore

Pipe Assembly Area
South Magnolia Smith Cove conveyance site –
installing sheet piling; completed 24-in effluent pipe on Port property
32nd Avenue detour for HDD entry location

Smith Cove conveyance site
Sample Artifacts
Murray CSO Project

- Purpose – Improve water quality and complete commitments to CSO control
- 1 MG storage tank
- Construction 22% complete
- Substantial completion August 31, 2015
- Construction contract $20.8m
Placing concrete for a secant pile and drilling a second secant pile. 50.1 nail shoring is visible in the background.
Drilling a starter casing for a secant pile
Move secant pile work
Preparing for dewatering well installation
General site with Lowman Beach park in the distance
View from over the CSO storage site NW toward Lowman Beach Park
Barton CSO GSI Project

- Barton basin 1,112 acres
- Five sub basins
- Project is located in the Sunrise Heights & Westwood Neighborhoods in West Seattle – 151 acres
- 45% combined sewer system flows come from subbasin 416
• Purpose – Improve water quality and complete commitments to CSO control
• Removes 5.88 MG/year of flow from the combined sewer system
• Construction 72% complete
• Substantial completion November 20, 2015 - ahead of schedule
• Construction contract $5.5m
Green Stormwater Infrastructure (GSI) Design Elements

- Bioretention swales
- Under drains
- Underground Injection Control (UIC) wells
To ensure plants get established
To avoid construction during rainy season To reduce community impacts
With the support of the community we were able to complete some of the year 2 work this year

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<th>Construction Element</th>
<th>Planned</th>
<th>Actual</th>
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<tr>
<td>Well construction</td>
<td>Year 1: 8</td>
<td>Year 1: all 15</td>
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<td>Year 2: 7</td>
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<tr>
<td>Utility relocations and new water services</td>
<td>Year 1: 8</td>
<td>Year 1: all 15</td>
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<td>Year 2: 7</td>
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<tr>
<td>Roadside Rain Gardens</td>
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<tr>
<td></td>
<td>Year 2: 7</td>
<td>Year 2: 5</td>
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Before and After

34th Ave SW & Webster St
GSI Phase 1 Preconstruction
2/28/14
Looking down into a UIC well manhole
Landscaped swales during plant establishment period
Brandon-Michigan CSO

- “Control of Brandon and South Michigan Street CSO Outfalls in accordance with WAC 173-245-020(22).”
- WAC defines control as “no more than one event per year over a twenty year average” or treatment that is at least equal to primary treatment standards.
- Achieve all consent decree requirements.
Brandon-Michigan CSO

Project defined as:
• CSO Treatment and Conveyance – 66 MGD peak
• High rate clarification treatment

Compliance Schedule
• Submission of Facilities Plan by December 31, 2015
• Completion of Bidding by December 31, 2017
• Construction Completion by December 31, 2022
• Achievement of Performance Standard by December 31, 2024 or two full wet seasons.
<table>
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<th>Facility Plan*</th>
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<td>Completion of Bidding</td>
<td>12/31/2017</td>
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<tr>
<td>Construction Completion</td>
<td>12/31/2022</td>
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<tr>
<td>Achievement of Performance Standard</td>
<td>12/31/2024</td>
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*Develop and select design alternatives Sept-Nov 2014
Cost Control

- Scope and cost containment critical to project
- Direction to re-evaluate alternatives identified during strategic planning and carry forward for further evaluation
- Project schedule allows for re-evaluation
- Ensure best project is moved forward with appropriate cost control and cost reduction
Rainier Valley Wet Weather Storage

- 0.34mg offline storage tank
- Conveyance from Bayview North overflow structure to Bayview Tunnel
- Rehabilitate an existing 48-in brick lined sewer
- $17M construction
- In final design now
  - Construction start 3rd quarter 2015
  - Construction complete end of 2017
RAINIER VALLEY WET WEATHER STORAGE: ELEVATION FROM S HANFORD ST

SCALE: 1-1/2" = 1'-0"
Questions?

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