Ship Canal Water Quality Project

Presented to the Metropolitan Water Pollution Abatement Advisory Committee
December 9, 2015
What are Combined Sewer Overflows?

- In older cities, sewage and stormwater flow in the same combined sewer pipe.
- CSOs are designed relief points that allow untreated discharges during heavy rains.
- King County has to work closely with Seattle to control overflows.
Where are CSOs?

- Combined System exists only within City of Seattle
  - ~20% of County system is combined
- King County & Seattle have responsibilities to manage CSOs
  - Seattle has ~90 CSOs
  - King County has 38 CSOs
    - Also 4 CSO treatment plants
Why Are Combined Systems a Challenge?

- Stormwater causes large fluctuations in volume
- The Hydrograph to the right shows:
  - Flow volume over time during a storm
  - The red line shows more flow than the pipeline can carry – it overflows
Where We Are Today

- Metro becomes operating wastewater agency under Comprehensive Sewerage Plan
- Regional treatment plants begin operation
- Major interceptors begin operation
- Computer control system online
- Seattle sewer separations under "Forward Thrust" bonds
- Regulator stations begin operation
- 1979 King County CSO Control Plan and 1980 Seattle CSO Control Plan approved
- Sewer separations
- 1988 King County CSO Control Plan approved
- Metro merges with King County
- CSO treatment plants begin operation
- Regional Wastewater Services Plan approved
- Denny Way/Lake Union and Henderson Street Storage Treatment Tunnels

Remaining King County CSO volume in million gallons

WA Standard of 1 untreated event/year outfall

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King County’s Approved CSO Control Plan
3rd Ave W – Storage

Approximate Boundary for Locating CSO Storage Tank

CSO storage tank can be located within or adjacent to the boundary shown.

Approximate boundary is intended for planning purposes only and does not represent all potential site locations. Further study and evaluation will be completed prior to selection of a preferred site for this CSO basin.

See 2012 CSO Control Program Review report for criteria and assumptions used in establishing the approximate boundary.
11th Ave NW – Conveyance

Increased Conveyance to Ballard Regulator Station (Upsizing or Parallelizing Existing Ballard Trunk)

Ballard Trunk

Ballard Siphons

To Ballard Regulator Station

KC Manholes
SPU Maintenance Hole
5-ft Contour
20-ft Contour
Alternative Pipe Route
KC-WTD Conveyance
SPU Drainage Mainline
SPU Sanitary Mainline
SPU Combined Mainline

Representative Footprint
Connected Area with High GSI Potential
Connected to Combined Sewer System
Total 11th Ave NW CSO Basin Area: ~921 acres

11th Ave NW CSO Outfall

11th Ave NW CSO Basin Boundary

Ship Canal

King County
Department of Natural Resources and Parks
Wastewater Treatment Division

2012 CSO Control Program Review

Figure X-X
11th Ave NW - DSN004-CON-1 (KC) Increased Conveyance
Ship Canal Water Quality Project
Overview continued

• Combines multiple independent projects into one shared project with King County to control:
  • Five City CSOs
  • Two County CSOs
• 2.7 mile underground storage tunnel between Ballard and Wallingford
• 15 million gallons of storage capacity
• Prevents 130 sewer overflows each year (about 50 million gallons)
BENEFITS OF THE SHIP CANAL WATER QUALITY PROJECT

• Construction of a single storage tunnel replaces the need to construct multiple independent storage facilities in the Wallingford/Ballard area

• Storage Tunnel construction will cause fewer construction disruptions across the project area

• Once completed, the Storage Tunnel has less of an impact on neighborhoods

• Storage Tunnel allows WTD and SPU to operate more as a single system
### Project Milestones

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Questions?