

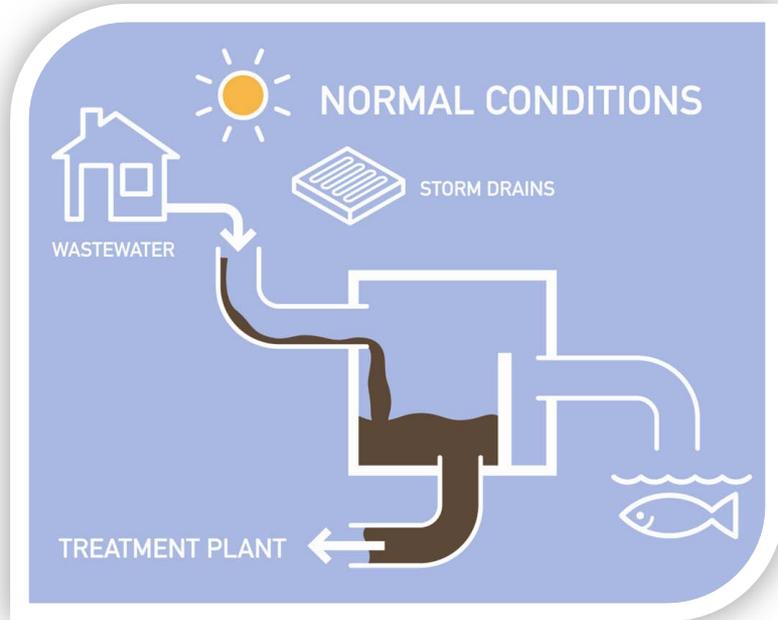
Genesee & North Henderson Areas Combined Sewer Overflow Reduction Projects



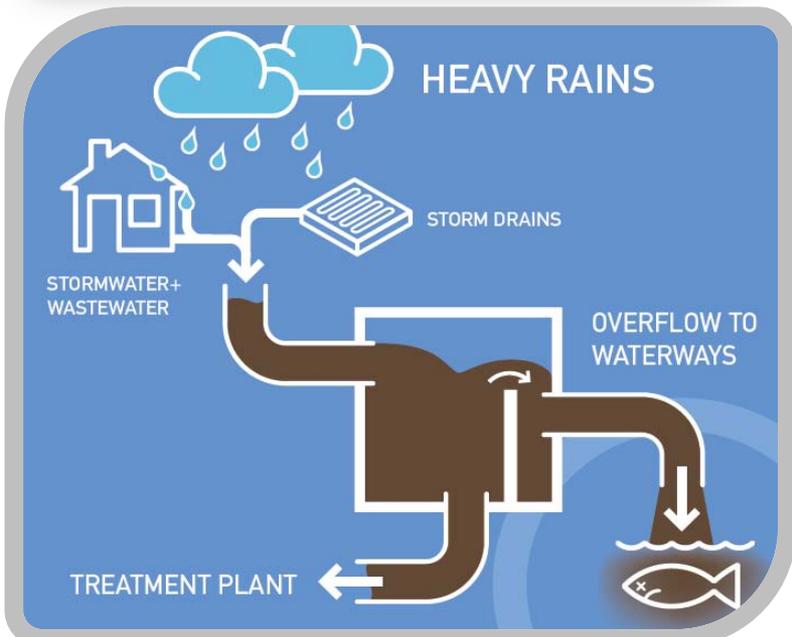
**Friends of Seattle's
Olmsted Parks**

October 4, 2010

What is a Combined Sewer Overflow?



- Wastewater (from homes) and stormwater (from rooftops, streets) flow in a single pipe - a “combined sewer.”



- During heavy rains, stormwater (~90%) and sewage (~10%) exceed the system, causing a combined sewer overflow (CSO) into nearest waterway.

Combined Sewer Overflows (CSOs)

- 90 permitted CSO outfalls
- 100 million gallons CSO discharge annually
- About 200 CSO discharge events annually



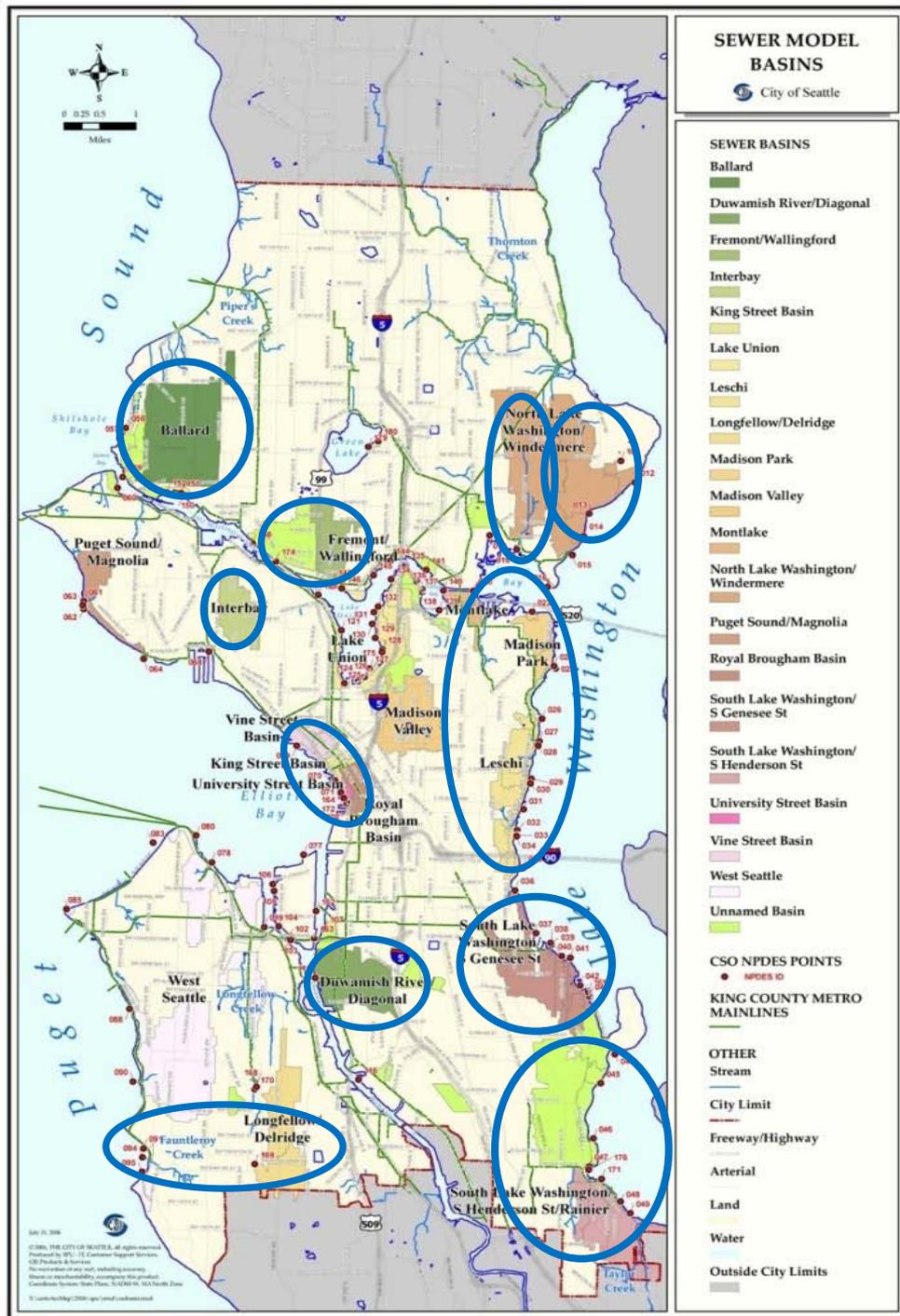
CSO Reduction Program Goals

- 💧 Comply with Clean Water Act, state/federal regulations
- 💧 Improve water quality
- 💧 Finish historic effort
- 💧 Minimize rate impacts
- 💧 Partner for cost-effective solutions

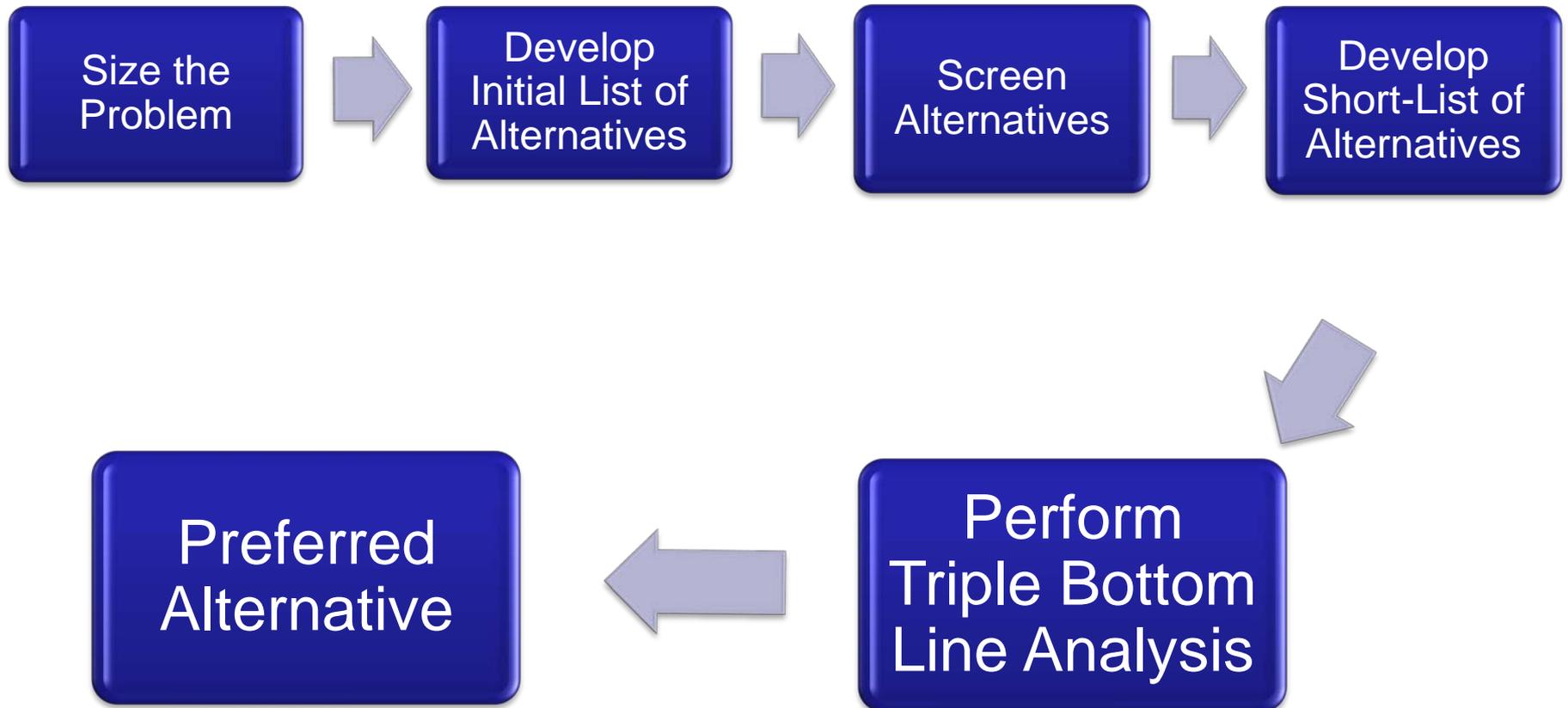


Focus on Next 5 Years

- 💧 Improve existing system - retrofits
- 💧 Pilot green infrastructure projects
- 💧 Construct CSO control projects
 - 💧 Windermere, Genesee, and Henderson basins
- 💧 Complete Long-term Control Plan



CSO Reduction Projects Planning & Site Selection Process



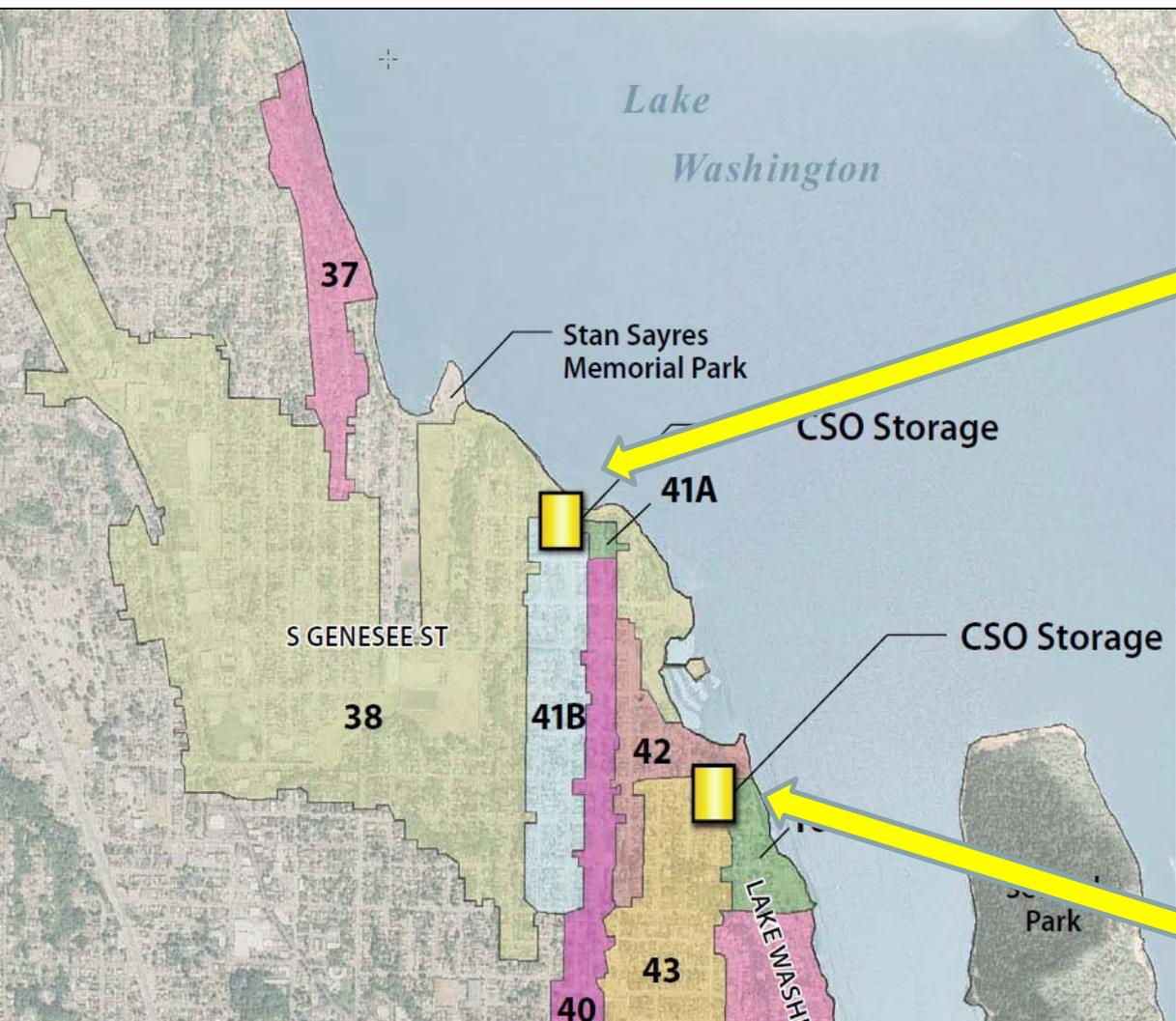
Genesee CSO Reduction Project



- 💧 Top Priority Basin
- 💧 700 Acres
- 💧 Construction 2012-15
- 💧 Reduces CSOs from 10 times to 1 time per year
- 💧 Storage Volumes:
 - 💧 Basins 40/41: 430,000 gal
 - 💧 Basin 43: 190,000 gal

Genesee Basin Recommended Alternative: Distributed Storage

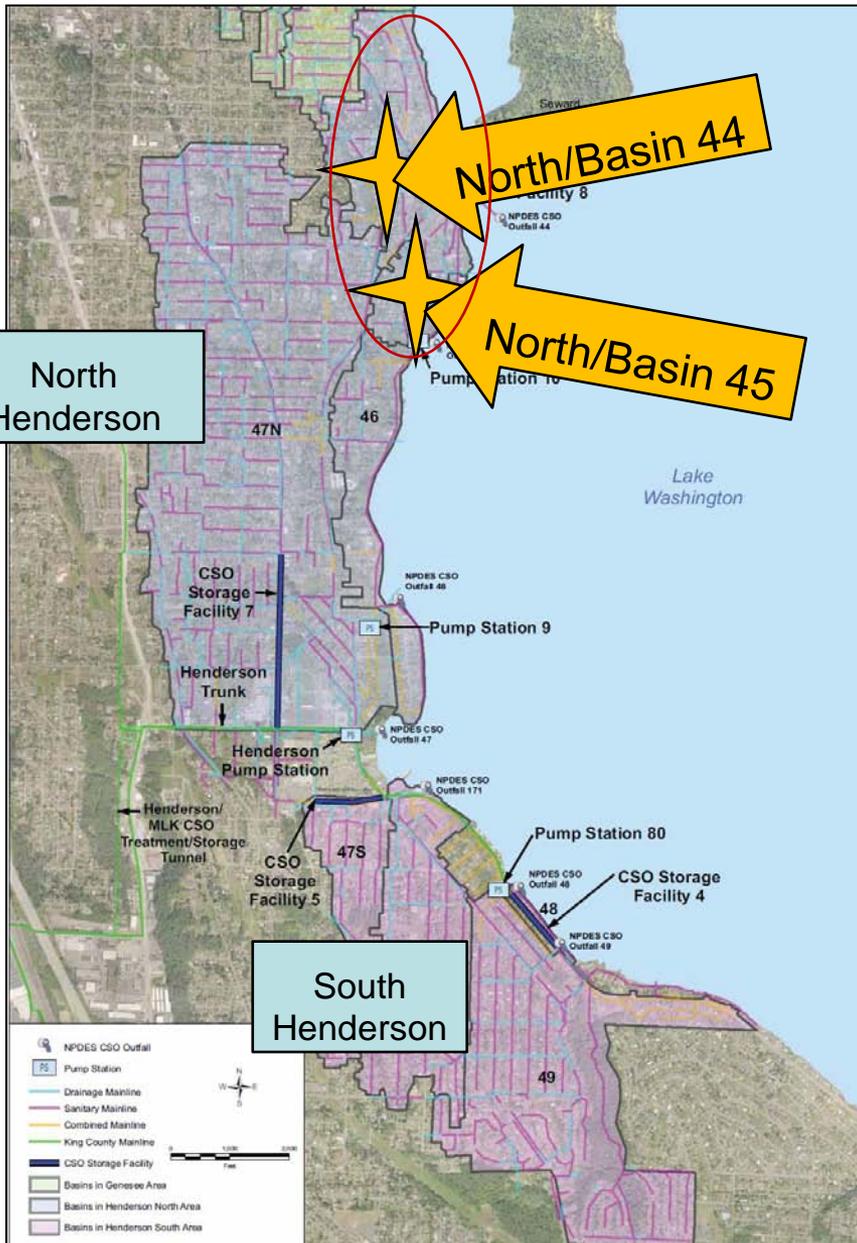
a) Storage in Triangle Parking Lot



b) Storage along S. Alaska St or 54th Ave S.



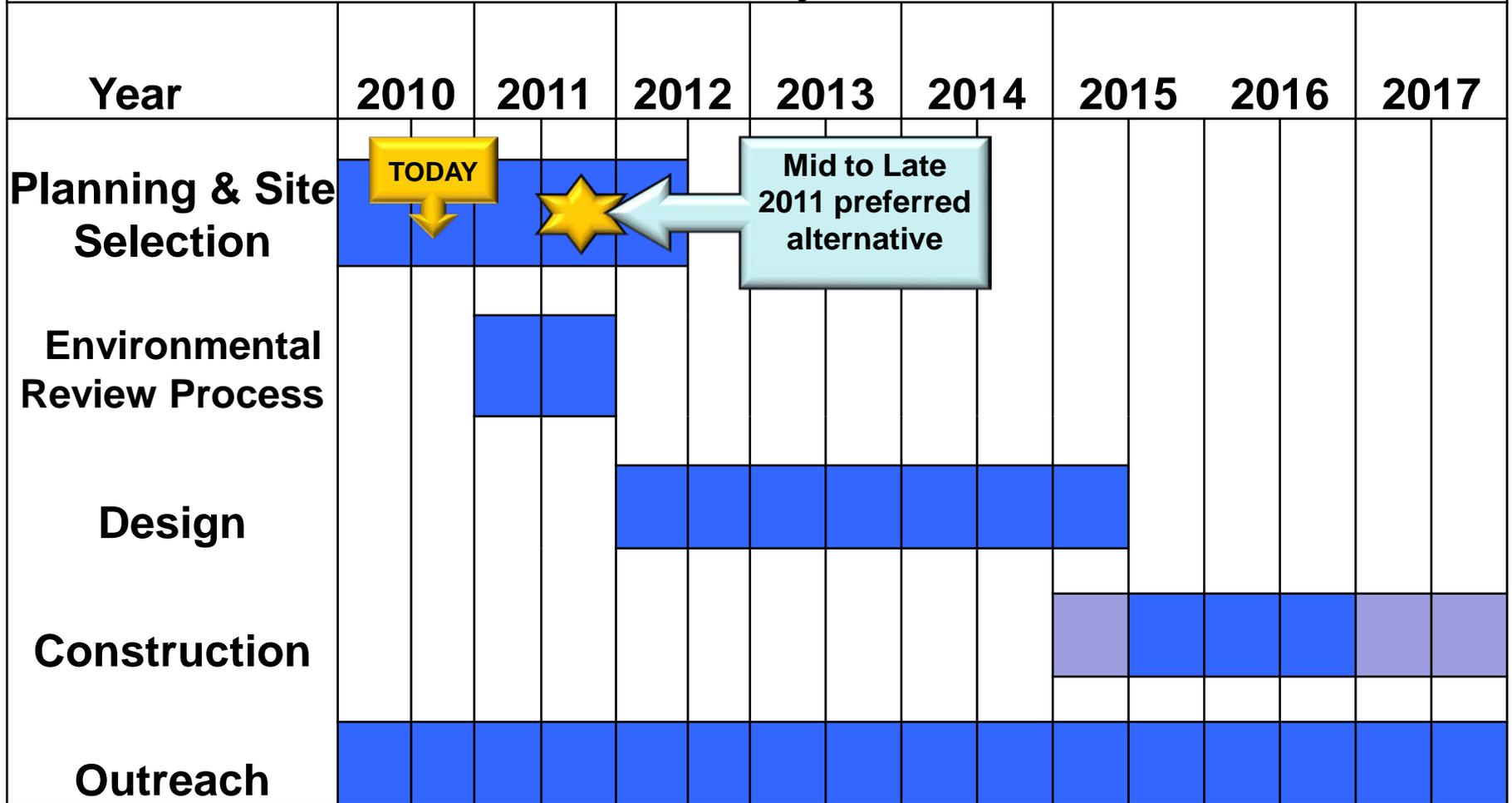
Henderson CSO Basins



- Top-Priority for CSO reduction
- 1,800 Acres
- Seven basins
- CSOs discharge from the basins approximately 17 times per year
- Construction projects to reduce CSOs in North Henderson must begin in 2015.

North Henderson Project Schedule

North Henderson CSO Reduction Projects (Basins 44 & 45)



North Henderson CSO Reduction Solution



Storage

Increase capacity of underground pipes and tanks.

- Reduces CSOs from 17 times to 1 time per year (EPA mandate)
- Storage Volumes:
(Approximate)
 - Basin 44: 2.4 Mgal
 - Basin 45: 200,000 gal



**King Co. North Creek Storage Facility
(Underground 6 MG tank)**

North Henderson

Possible CSO Reduction Projects

2 TANK ALTERNATIVE

Basin 44 - 2.4 million gallon underground storage tank (Seward Park)

Basin 45 - 200,000 gallon underground storage tank (Martha Washington Park)

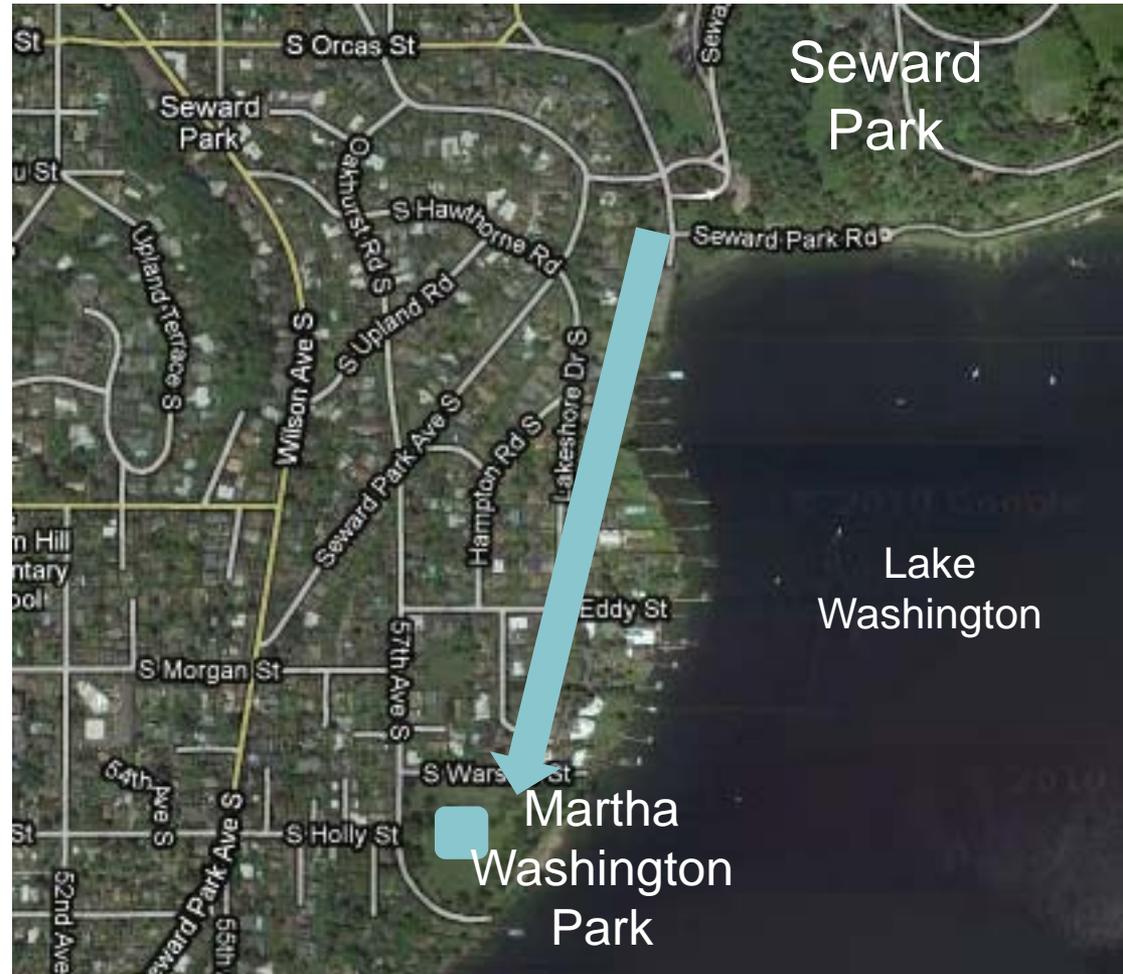


North Henderson Possible CSO Reduction Projects

1 TANK ALTERNATIVE

Convey flows through pipeline (and/or pipeline and pump station) from Seward Park to Martha Washington Park

Store combined sewage in 2.6 million gallon underground storage tank in Martha Washington Park



North Henderson Possible CSO Reduction Projects

TUNNEL ALTERNATIVE

2.6 million gallon
underground storage
tunnel under both
basins



North Henderson Basins

2 TANK ALT: SEWARD + MWP

Includes:

- Approx. 2.4 million gallons underground storage tank in parking lot in Seward Park (approximately 350 ft x 70 ft x 30 ft)



Basin 44 Underground Storage Tank in Seward Park

North Henderson Basins

2 TANK ALT: SEWARD + MWP

Other Basin 44 (Seward Park) Storage Locations Considered:



Along Lake WA Blvd



Near the Beach



In the Seward Park Meadow

North Henderson Basins

2 TANK ALT: SEWARD + MWP



Includes:

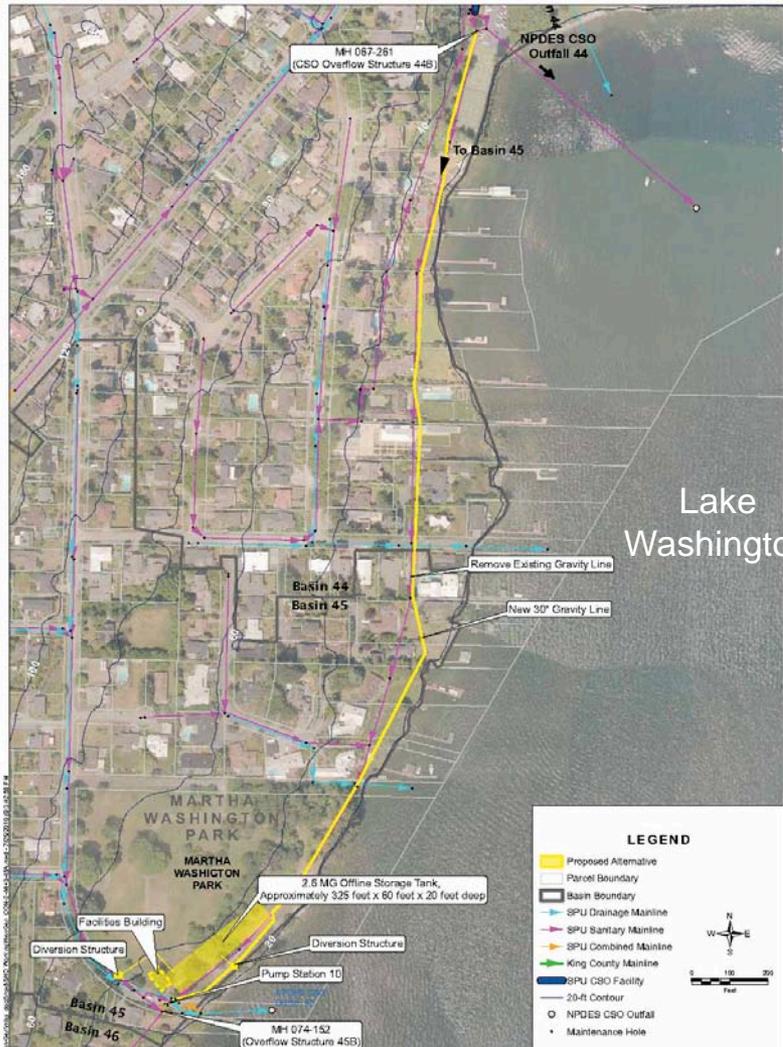
- 200,000 gallon underground storage tank, either
 - In street or
 - In the park
(approximately 70 ft x 40 ft x 25 ft deep)



Basin 45 Underground Storage Tank in Martha Washington Park and in Street

North Henderson Basins

1 TANK ALT: TRANSFER + MWP



Includes:

- Replacing/upsizing existing lake line (approx. 3,000 feet) from 15-in diameter to 24-in, crossing 15-20 properties
- 2.6 million gallon underground storage tank (approximately 200 ft x 150 ft x 30 ft deep) in Martha Washington Park

North Henderson Basins

1 TANK ALT: TRANSFER + MWP



Includes:

- Pump Station at Orcas Street
- Approximately 3,000 feet of 24-in pipe (force main) installed mostly in right-of-way (possible private property crossing at south end)
- 2.6 million gallon underground storage tank in Martha Washington Park

North Henderson Basins

1 TANK ALT: TRANSFER + MWP



Includes:

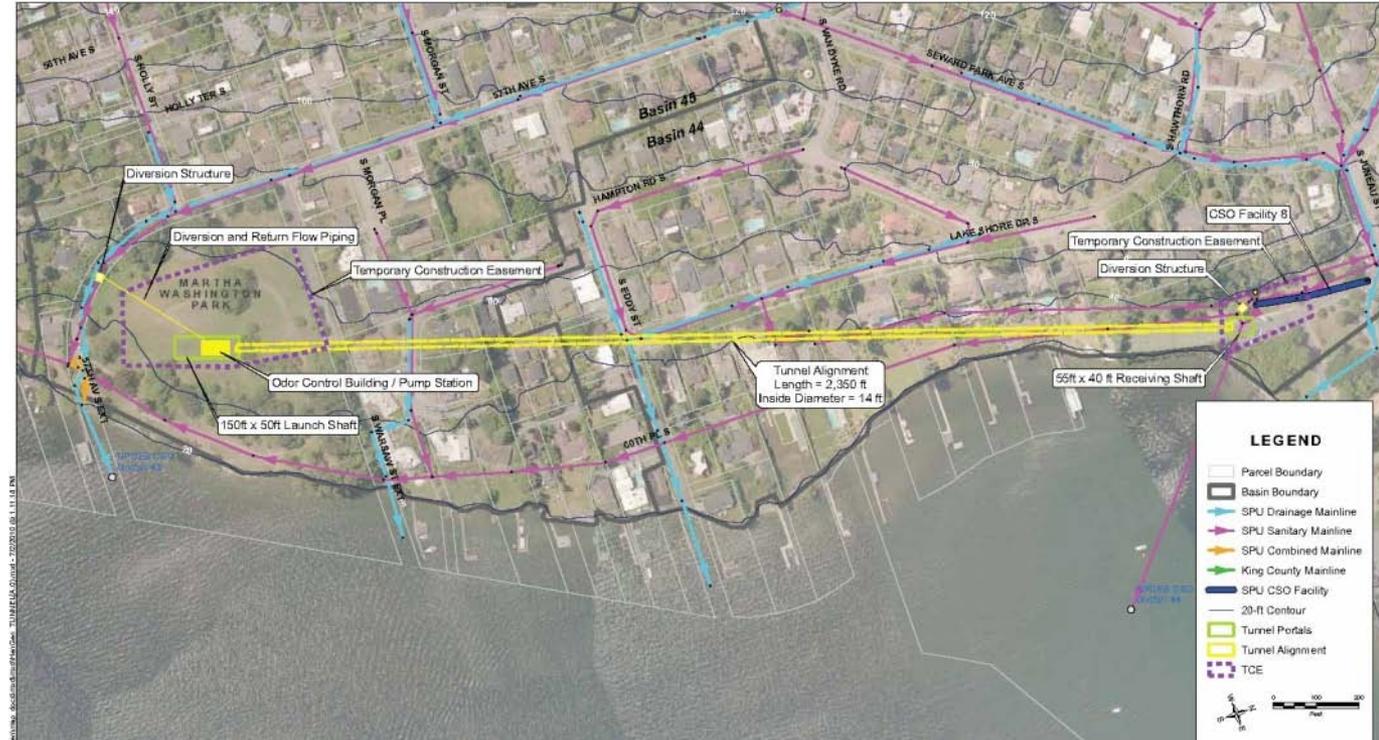
- Approximately 3,000 ft of 72-in diameter pipe (trenchless)
- 2.0 million gallon underground storage tank at Martha Washington Park

North Henderson Basins

TUNNEL ALTERNATIVE

Includes:

- 2,400 ft of 14 foot diameter underground tunnel (2.6 million gallon capacity), pump station and odor control
- Two tunnel portals:
 - Launch Portal (150 ft x 50 ft)
 - Receiving Portal (55 ft x 40 ft)(Portals would be in Seward and Martha Washington Parks)



Project Considerations

💧 Traffic & Park Access

💧 Workplace Expectations

💧 Parking

💧 Noise

💧 Odors

💧 Maintenance

💧 Structural Integrity

💧 Site Restoration

💧 Expectations around community events:

💧 Seafair

💧 Furry 5K

💧 Bicycle Sundays

💧 Live Strong Challenge

💧 Danskin Triathlon

💧 STP

Others?

On-going Project Communications

- ❑ SPU will send out monthly project updates through the e-mail distribution list (list-serv)
- ❑ Presentations, project updates, and other information will be posted to the project website (www.seattle.gov/cso)
- ❑ You can send emails directly to the project teams SPU_HCSO@Seattle.gov for Henderson
SPU_GCSO@Seattle.gov for Genesee
- ❑ You can call and leave a message for the project team (206-826-4767)

Henderson Project Outreach

- ❑ **Jun 23** - SE District Council
- ❑ **Sept. 16** – Friends of Martha Washington Park and Community
- ❑ **Oct. 2** – Friends of Seward Park Briefing
- ❑ **Oct. 4** – **Friends of Seattle’s Olmsted Parks Briefing**
- ❑ **Technical Workshops – Fall 2010 / Winter 2011**
 - Sizing the CSO Problem – Modeling & Monitoring
 - Solutions to Controlling CSOs
 - Site-Specific Alternatives to Controlling CSOs
- ❑ **Short-Listing Alternatives – Winter 2011**
 - Incorporating financial, environmental and community input = short list of alts determined; Feasibility analysis
- ❑ **Preferred Alternative – Mid to Late 2011**
 - Present preferred alternative to community
(2 - 4 months before submission to Ecology)

Contact Information

Project updates will be sent ongoing to those that signed up to be on the listserv
(sign-up in back)

**PLEASE SEND US YOUR COMMENTS
AND QUESTIONS:**

SPU_HCSO@Seattle.gov (Henderson)

SPU_GCSO@Seattle.gov (Genesee)

206-826-4767

www.seattle.gov/CSO

Questions & Comments

Odor Control During Operation

- 💧 Buried odor control in vaults
- 💧 Odor system operates year round
- 💧 Carbon-based air scrubber
- 💧 Vent designed to blend in with other site features



Rendering of Concept



Storage in Triangle Parking Lot

Capacity: Approx. 430,000 gallons

Genesee Project Schedule

Genesee CSO Reduction Project	2010		2011		2012		2013		2014		2015	
Planning & Site Selection												
Design												
Construction & Closeout <div style="margin-left: 20px;">Basin 43 (Park)</div> <div style="margin-left: 20px;">Basin 40/41 (Parking lot)</div>												
Outreach												