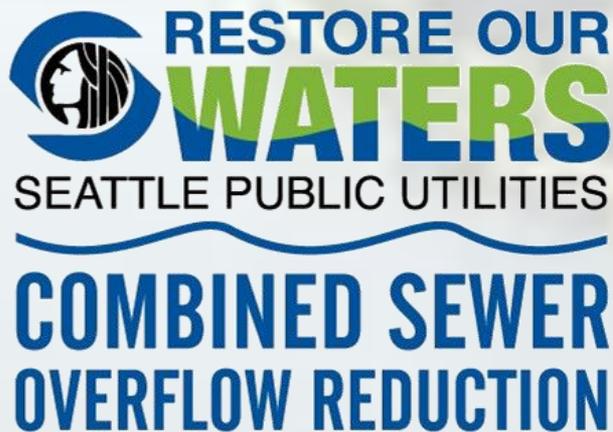


# **North Henderson Area Combined Sewer Overflow Reduction Projects**



**North Henderson  
Community Meeting**

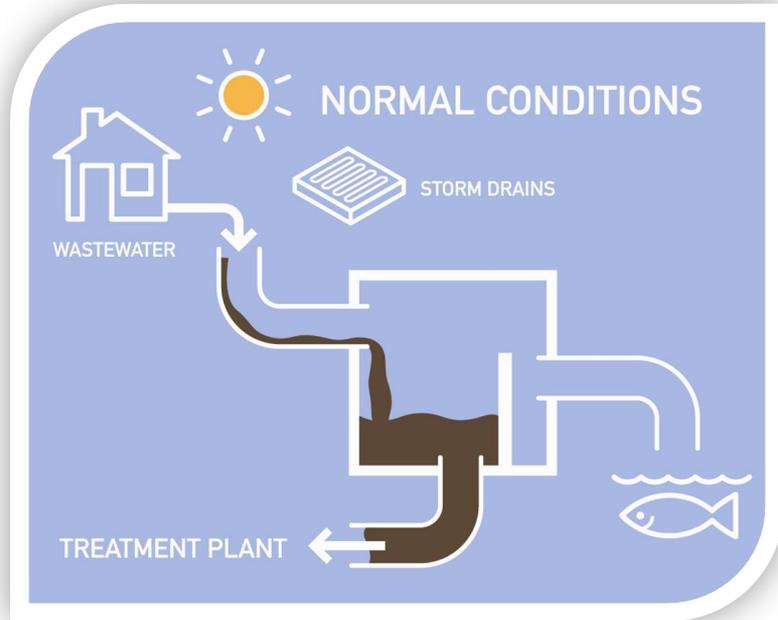
**November 18, 2010**

# AGENDA:

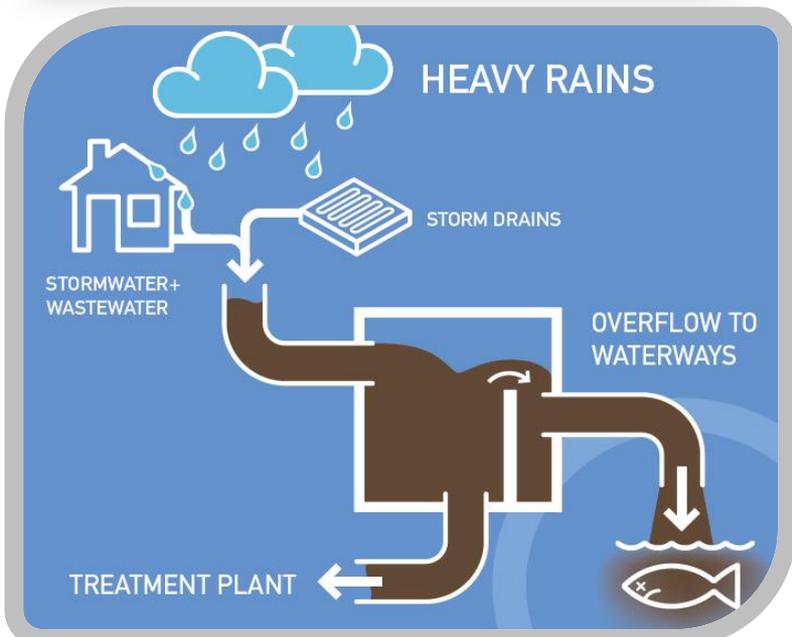
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- I. Welcome & Workshop Overview (*Marcia Wagoner*)**
- II. CSO Program Overview (*Trish Rhay*)**
- III. North Henderson CSO Reduction Project (*Andrew Lee*)**
  - I. Basin Overview***
  - II. Modeling / Monitoring***
  - III. Project Schedule***
- IV. CSO Options (*Break Out*)**
- V. Options Report-Outs (*Marcia Wagoner*)**
- VI. Options Evaluation (*Andrew Lee*)**
- VII. Next Steps (*Marcia Wagoner*)**

# 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



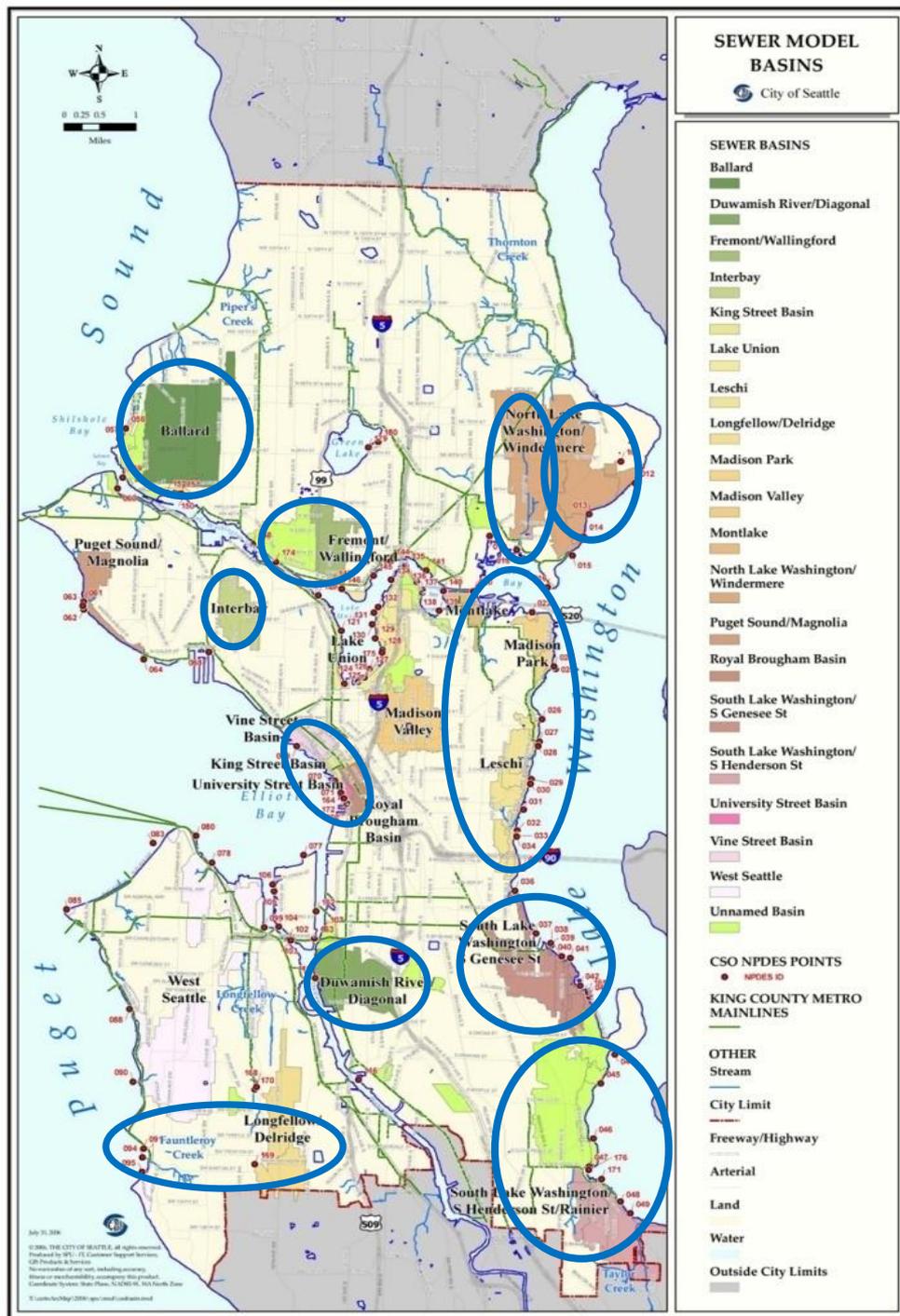
# CSO Reduction Program Goals

- 💧 Comply with Clean Water Act, state/federal regulations
  - 💧 *Goal is to reduce CSOs to no more than an average of one overflow per site per year.*
- 💧 Improve water quality
- 💧 Finish historic effort
- 💧 Minimize rate impacts
- 💧 Partner for cost-effective solutions



# Focus on Next 5 Years

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



# North Henderson Workshops



## ***November 18, 2010 (Today)***

- Present CSO reduction options (storage, transfer, separation, treatment)
- Obtain feedback/input on options
- Identify community values and concerns
- Confirm that SPU is pursuing the right CSO reduction option



## ***December 14, 2010***

- Present site-specific CSO reduction alternatives
- Obtain feedback on alternatives
- Confirm evaluation criteria (i.e., community values and concerns)
- Weight relative importance of evaluation criteria

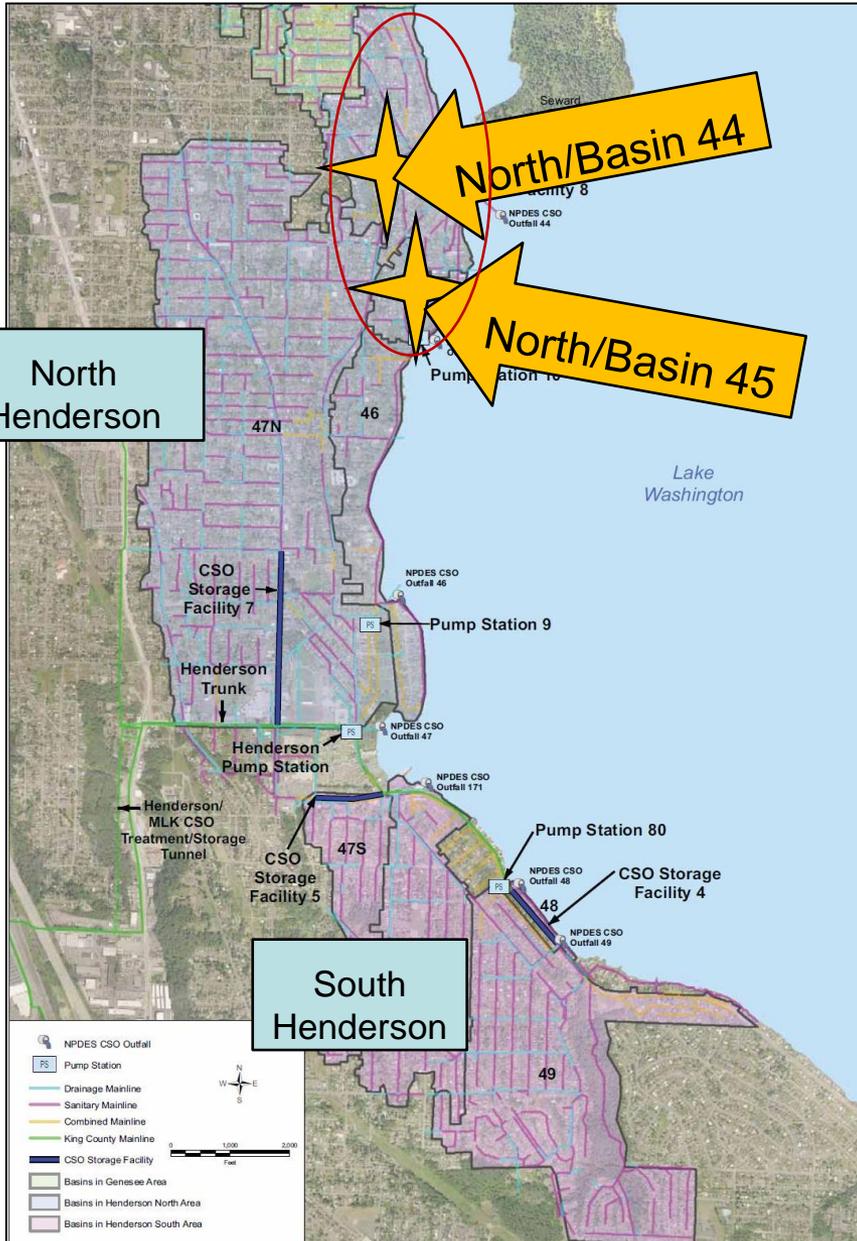


## ***January 19, 2011***

- Present results of alternatives evaluation
- Obtain feedback on results
- Narrow down site-specific alternatives

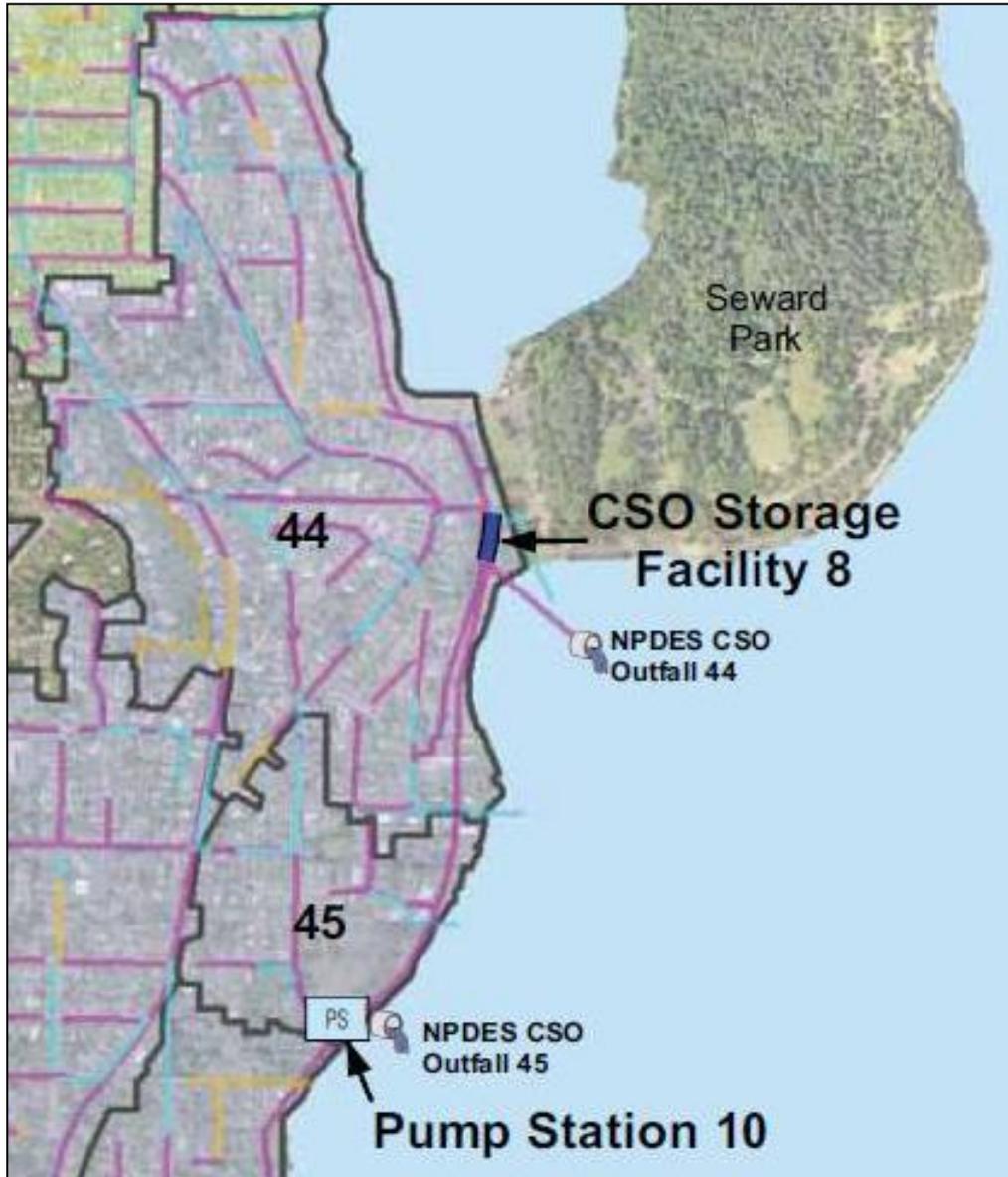


# Henderson CSO Basins



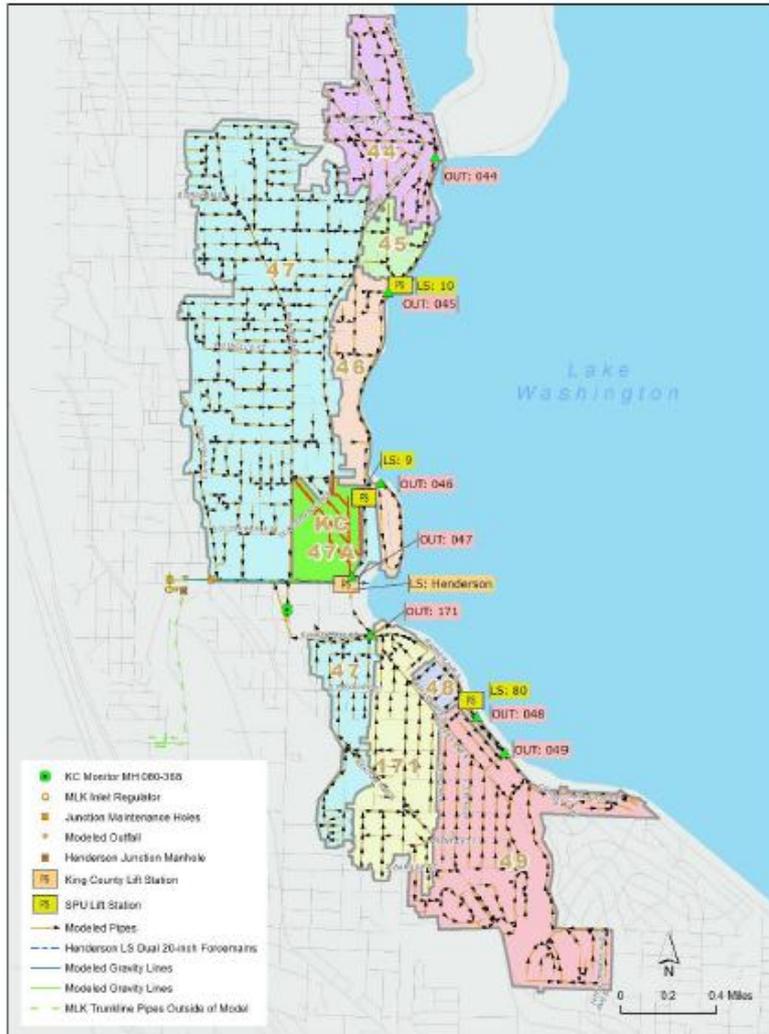
- Top-Priority for CSO reduction
- 1,800 Acres
- Seven basins
- CSOs discharge from the basins approximately 17 times per year
- Construction projects to reduce CSOs in North Henderson must begin in 2015.

# North Henderson (Basins 44 and 45)



- Sewer lines constructed from 1910-20; raw sewage originally discharged directly to Lake Washington
- Seward Park Trunk Sewer (i.e., 15" Lake line), Pump Station #10 and #9 constructed ~1930.
- Partial separation (i.e., installation of new storm drains to collect street drainage) in the 1970s.
- 2009 CSOs:
  - 27 Events
  - 8.5 million gallons of CSO

# How SPU Determines the Amount of Storage Volume Needed



- Collect flow monitoring data
  - Continuing data collection for Basin 44
  - Data collection complete for Basin 45
- Build, calibrate, and run a 32-year computer model simulation of the sewer system to determine the amount of storage volume needed
  - Basin 44: 2.4 million gallons
  - Basin 45: 200,000 gallons

Figure 4-2. Extent of Henderson Hydraulic Model

# Project Schedule

