

Drainage & Wastewater Lines of Business

**March 25, 2014 Discussion
with the Council SPUN Committee**

Seattle
 Public
Utilities

Structure of Presentation

1. Then and Now
2. Overview
3. Customer Services & Service Levels
4. DWW Investments
5. Cost of Services

DWW Then: International Visitors Sickened



More than 500 people became ill with typhoid and 61 died during the 1909 Alaska-Yukon-Pacific Exhibition in Seattle.



When the cause was found to be sewage-contaminated drinking water, it spurred improvements to the sewer system, like the Fort Lawton sewer tunnel (under construction in 1912).

DWW Then: No Swimming in Lake Washington

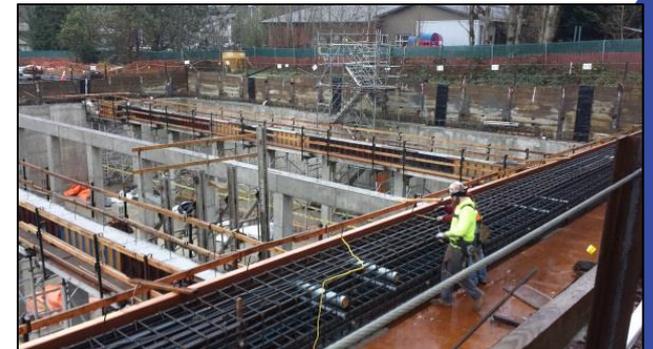


Matthews Beach in 1958

DWW Now: Sewage and Stormwater Management



- **1987** - Clean Water Act amendments permit to discharge stormwater
- **1989** - Drainage utility created in Engineering Department
- **1994** - EPA Combined Sewer Overflow (CSO) Control Policy
- **2001** - Pioneer in Green Stormwater Infrastructure (GSI)
- **2013** – CSO consent decree with EPA/Ecology



Overview:

Where drainage and wastewater come from

Drainage (stormwater) and wastewater come from...

**Stormwater
Runoff to Streets**



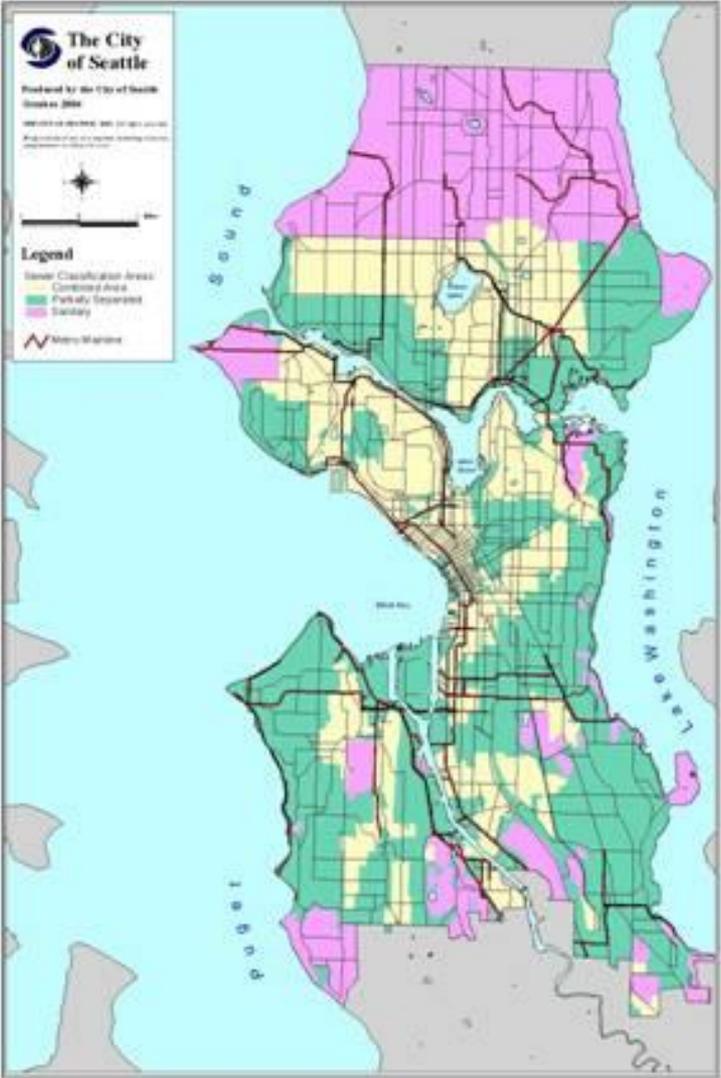
**Roof
Runoff
(drainage/stormwater)**



**Toilets
Sinks
Showers
Washing Machines
(wastewater)**



Drainage & Wastewater System Map



Combined System

Partially Separated System

Fully Separated System

Combined System

Toilets
Sinks
Showers
Washing Machines



Roof
Runoff



Other Stormwater
Runoff to Streets



**Combined Sewer to
King County Treatment
Plant**

Partially Separated System

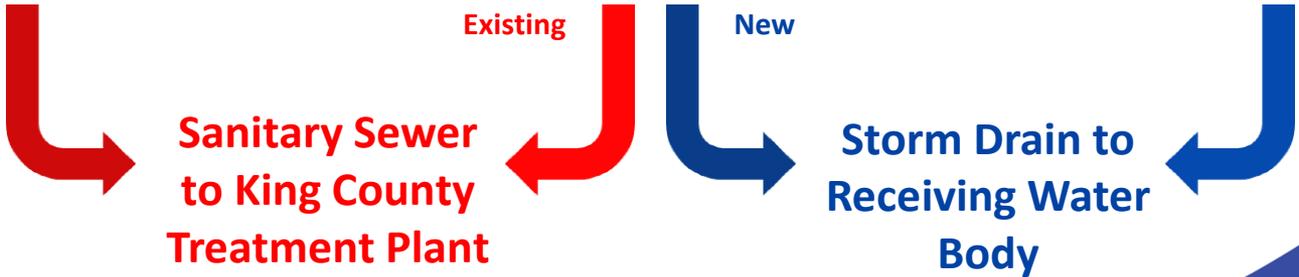
Toilets
Sinks
Showers
Washing Machines



Roof
Runoff



Other Stormwater
Runoff to Streets



Fully Separated System

Toilets
Sinks
Showers
Washing Machines



**Sanitary Sewer
to King County
Treatment Plant**

Roof
Runoff



**Storm Drain, Ditch,
Creeks Infiltrated or to
Receiving Water Body**

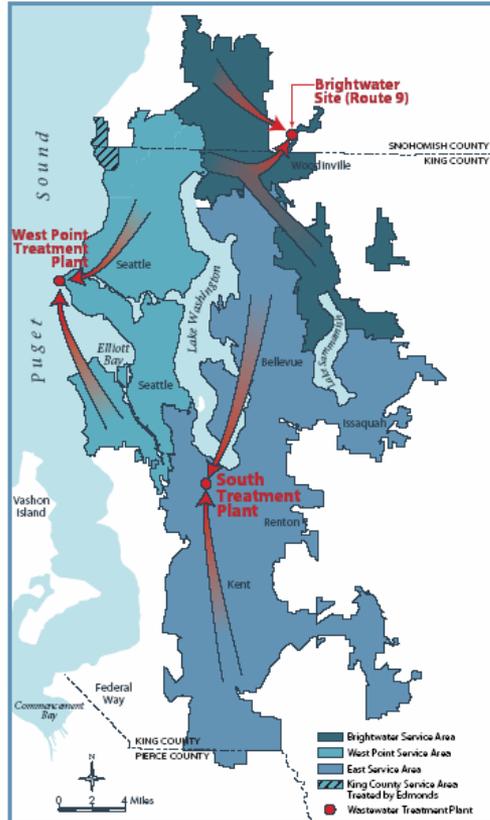
Other Stormwater
Runoff to Streets



King County Wastewater Treatment



West Point



Brightwater



South Treatment Plant

Three Confusing Terms

What's a "Sewer Backup"?

- A sewer backup is a discharge of sewage into a customer's basement or other location (e.g. onto the street). These occur when the system is clogged (e.g., by tree roots or grease), is broken, or is at capacity during a storm event. Also referred to as SSO's (Sanitary Sewer Overflows)

What's a "Combined Sewer Overflow"?

- A combined sewer overflow (CSO) is a discharge of stormwater and untreated sewage into a water body that occurs when the system is overwhelmed during a storm event.

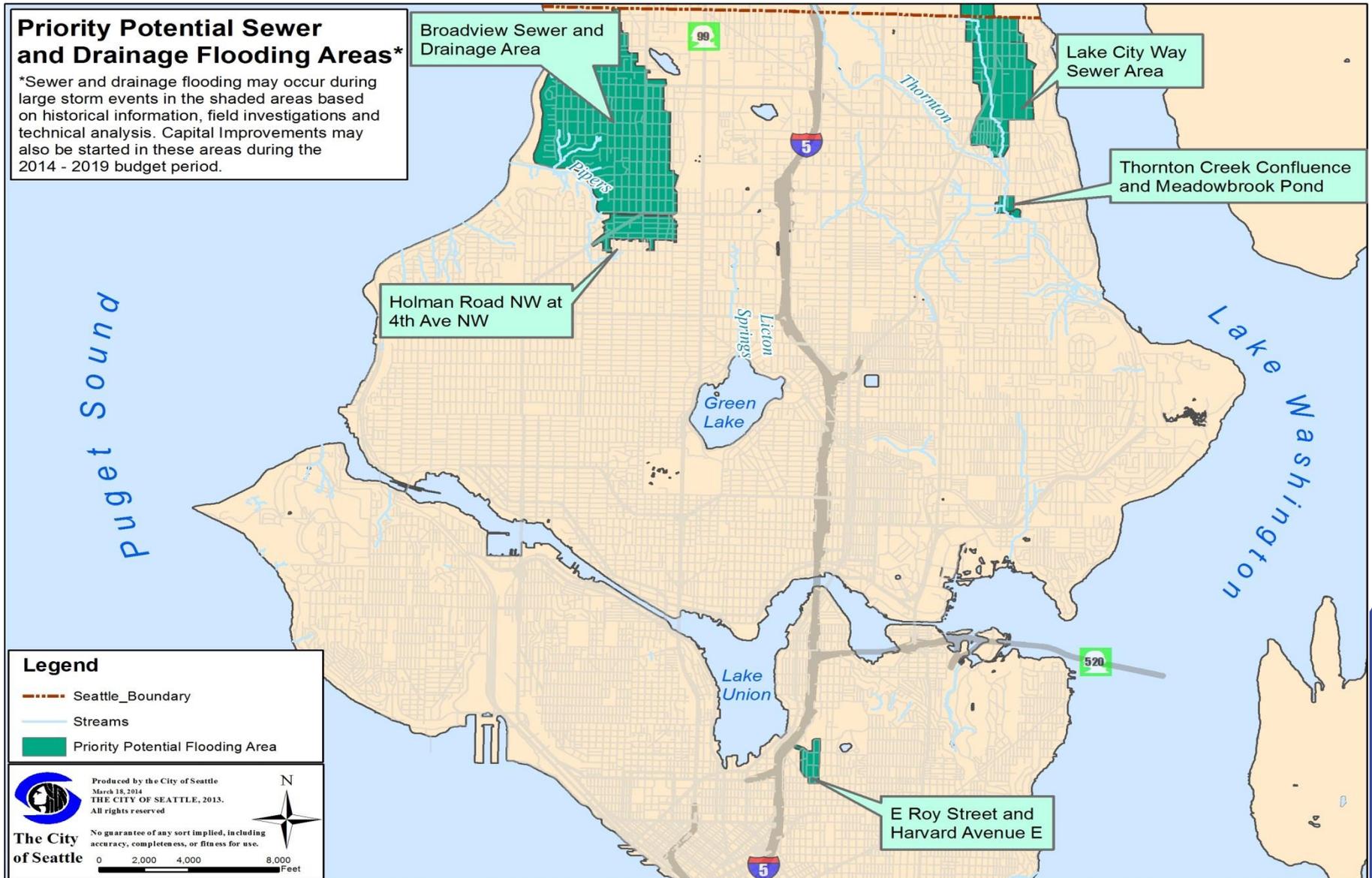
What's a "Side Sewer"?

- A side sewer is the area of the sewer customers control that runs from the home or building to the main street sewer.

Why do we care?

- Untreated stormwater runoff from the separated system goes untreated to our lakes, creeks, Puget Sound and the Duwamish river.
- Combined Sewer Overflows result in overflows of untreated sewage to our water bodies.
- Flooding damages homes and other property.

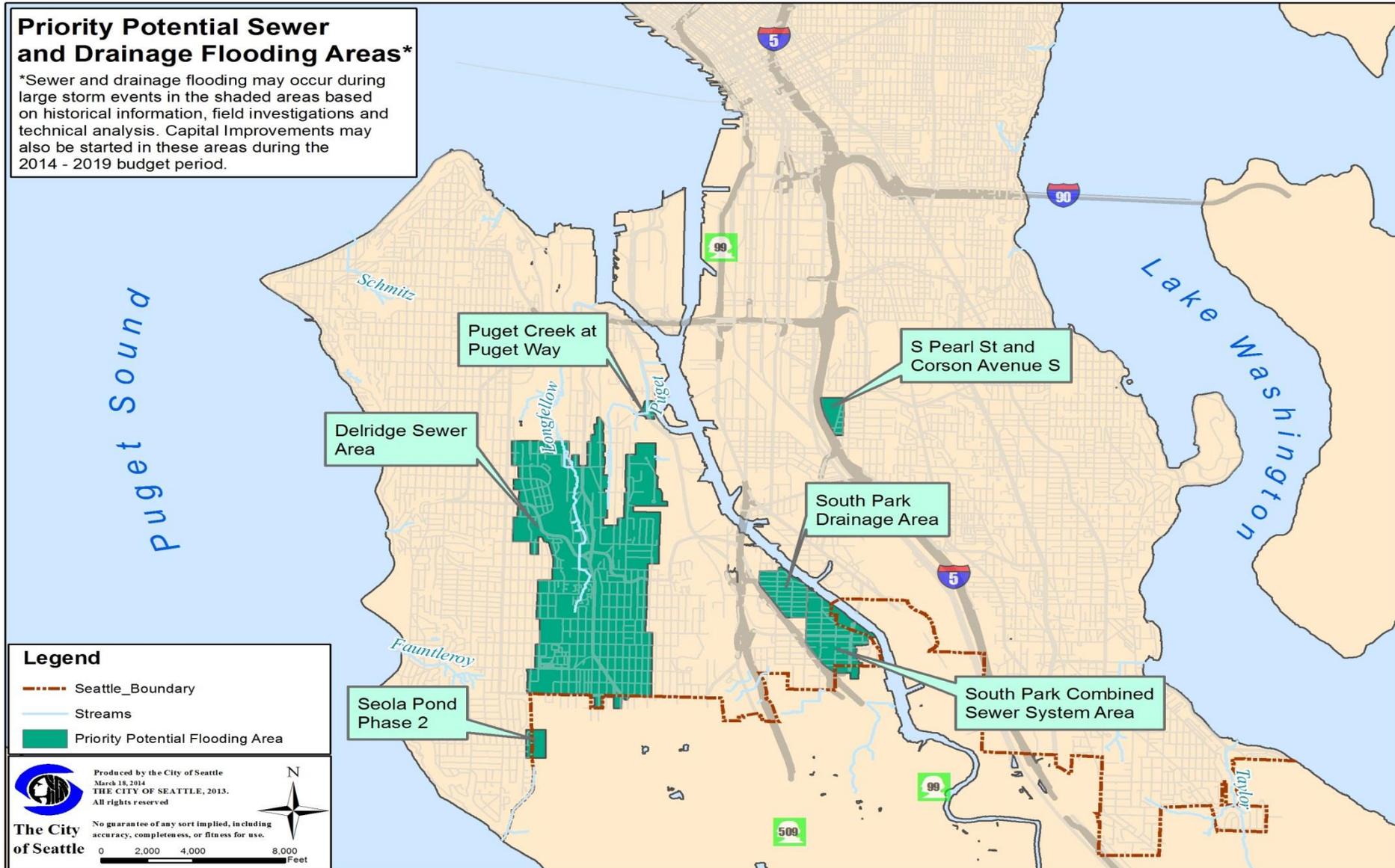
Priority Areas for Stormwater and Sewer Flooding – North Seattle



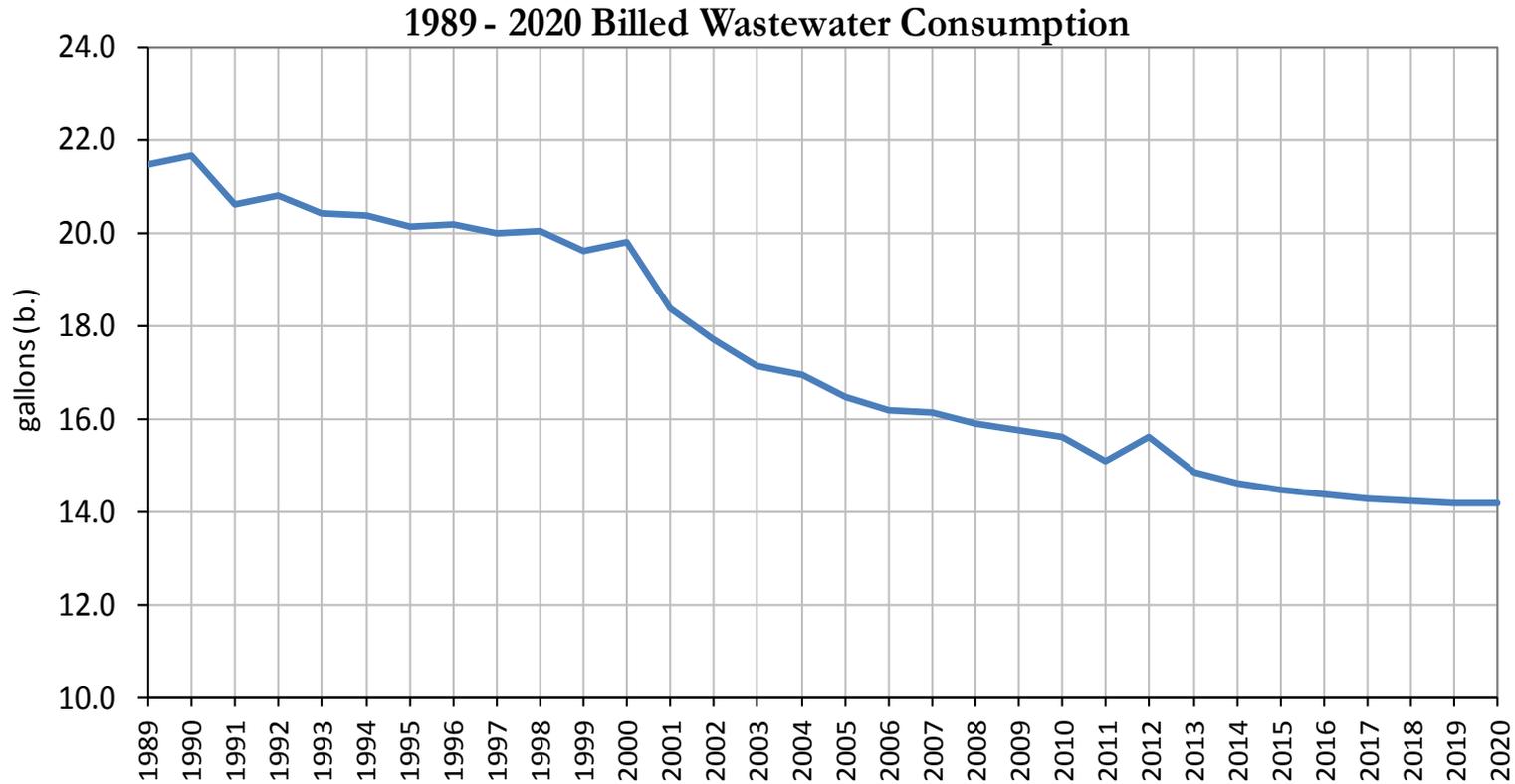
Priority Areas for Stormwater and Sewer Flooding – South Seattle

Priority Potential Sewer and Drainage Flooding Areas*

*Sewer and drainage flooding may occur during large storm events in the shaded areas based on historical information, field investigations and technical analysis. Capital Improvements may also be started in these areas during the 2014 - 2019 budget period.



Wastewater Use Over Time



DWW Customer Services & Service Levels

SPU uses the following service targets as key indicators of quality and success:

Drainage Service Targets

- Limit SPU drainage system-related interior flooding to 0.1% of customers
- No critical services are inaccessible due to flooding, except during extreme storm events

Wastewater Service Targets

- Limit SPU-related sewer backups to no more than 4 per 100 miles of pipe
- Eliminate sewer backups due to missed maintenance
- Eliminate dry weather sewer overflows

Combined Service Targets

- Respond to 90% of high priority DWW problems within one hour
- 80% of safety-related DWW problems resulting in a service interruption will have service reinstated within 6 hours
- Limit storm-driven sewer overflows to an average of 1 untreated discharge per overflow site per year

Are We Meeting Our Service Levels?

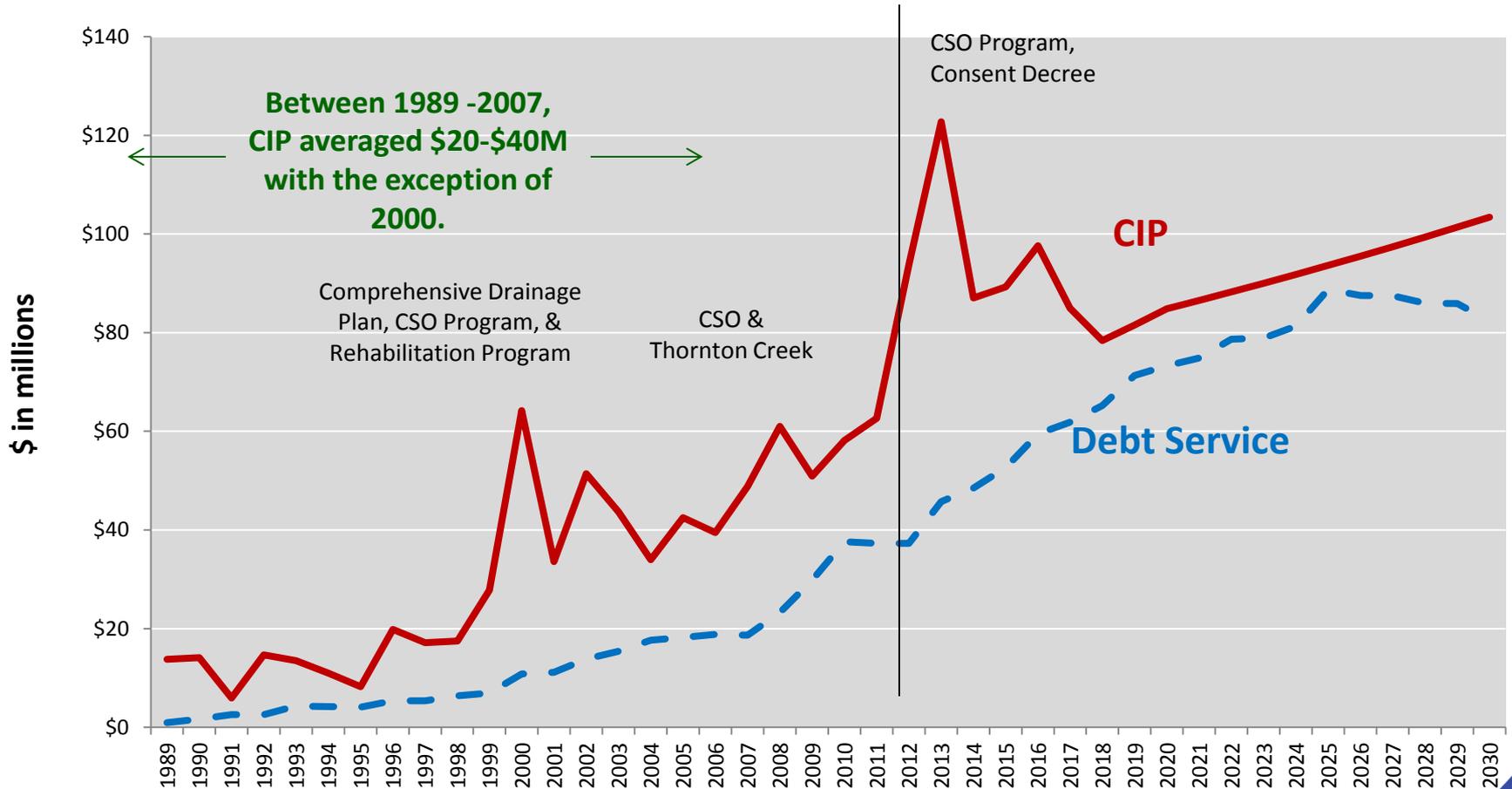
Performing Well in Most Areas

- Meeting our drainage service targets and wastewater service targets
- Meeting two of our combined service targets:
 - Respond to 90% of high priority DWW problems within one hour
 - 80% of safety-related DWW problems resulting in a service interruption will have service reinstated within 6 hours

Area for improvement

- Limit storm-driven sewer overflows to an average of 1 untreated discharge per overflow site per year
- Efficiency in delivery of service
- System capacity to meet service levels

Where We Are in Our Capital Investment Cycle



DWW Investments in CSOs



Windermere CSO storage tank



Ballard Rain Garden

Other DWW Investments



Better drain cleaning



South Park Sewer & Drainage Projects



Maintenance and education to prevent SSOs due to “ragging” and FOG



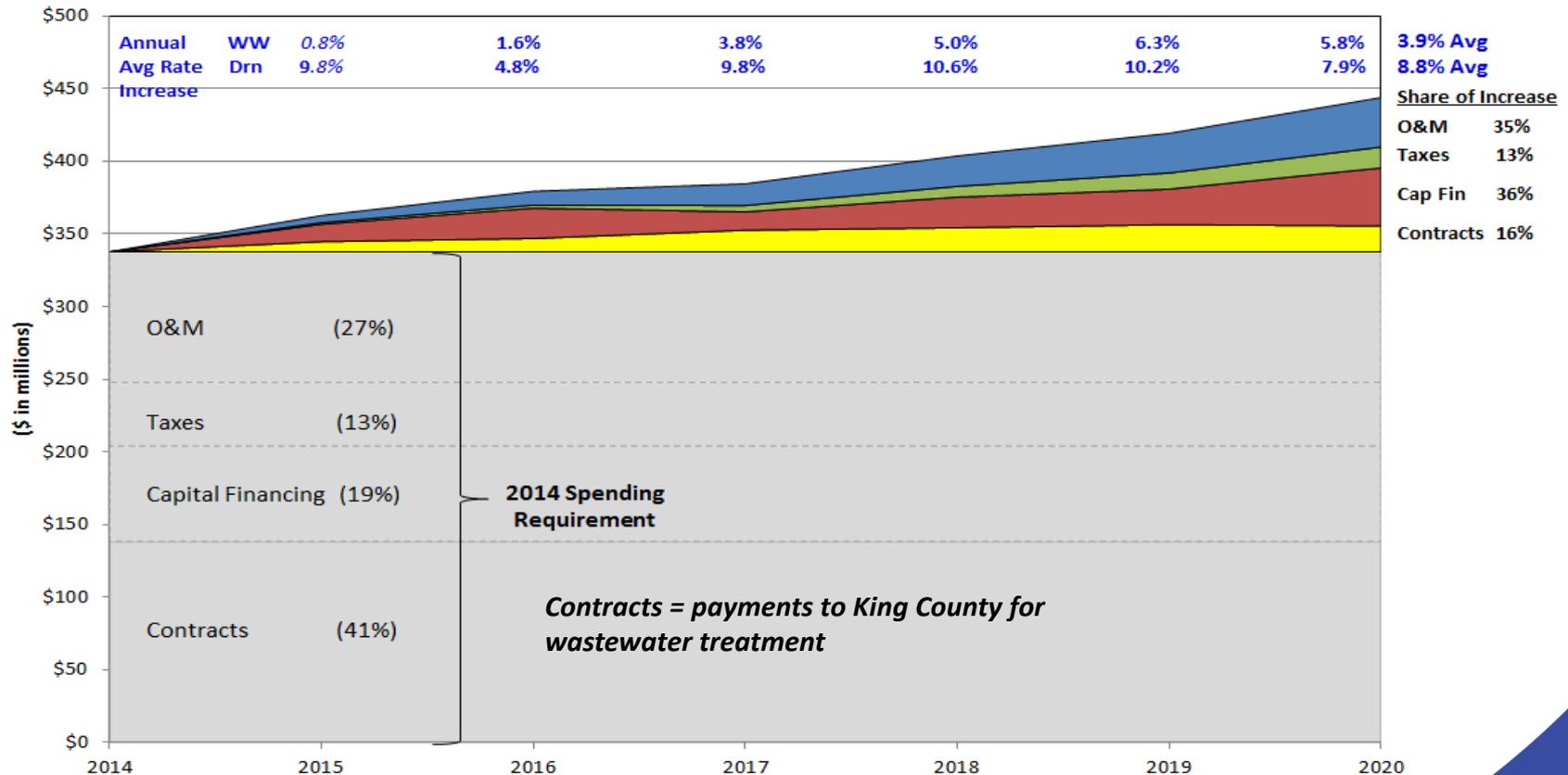
Source control and Spill response



Cost of Services: 2015-2020 Baseline

(= current services + meeting firm regulatory requirements)

Drainage & Wastewater Fund 2014-2020 Spending Requirement



Average annual baseline increase for **drainage** = 8.8% from 2015-2020
 Average annual baseline increase for **wastewater** = 3.9% from 2015-2020

Cost of Services: 2015-2020 Baseline

(= current services + meeting firm regulatory requirements)

In 2020 baseline, sewage is taken away from your home or business at a cost to you of about 2 pennies per gallon

Typical residential monthly bill for drainage and wastewater services in 2014 is **\$77.13** (**\$50.53** for wastewater; **\$26.58** for drainage)

Typical residential monthly bill for drainage and wastewater services in 2014 for household on low income rate assistance is **\$38.56** (**\$25.27** for wastewater; **\$13.29** for drainage)