

Drainage & Wastewater Lines of Business

**May, 2013 Discussion
With the Customer Review Panel**

Seattle
 Public
Utilities

Structure of Presentation

1. The Big Picture
 - Clarifying Definitions
 - Overview Statistics
 - System Map
 - System Processes
 - Historical and Projected wastewater
2. Finances:
 - Sources & Uses of Funds
 - Capital Investment Cycle
3. Customer Promises
4. Customer Engagement
5. Looking To 2015-2020
 - Opportunities for strategic focus
 - Decisions already made
 - Decisions to make

The Big Picture: Clarifying Definitions

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)**



The Big Picture: Clarifying Definitions

Three Confusing Terms

What's a "Sewer Backup"?

- A sewer backup is a discharge of sewage into a customer's basement or other location (such as onto the street). These occur when the system is clogged (e.g., by tree roots or grease), or 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. These occur when the system is overwhelmed during a storm event and does not have the capacity to handle all the stormwater and wastewater.

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.

The Big Picture:

Overview Statistics for Size, Employees, Regulators

Size

Service Territory City of Seattle, with small exceptions due to infrastructure

Infrastructure

- 448 miles of sanitary sewers
- 968 miles of combined sewers
- 477 miles of storm drains
- 90 Combined Sewer Overflow points
- 295 storm drain outfalls

Employees

Employees (2013 budgeted) 539 (includes drainage & wastewater)

Unions 15

Regulators

- WA State Dept of Ecology
- WA State Dept of Fish and Wildlife
- US Environmental Protection Agency
- National marine Fisheries Service
- US Army Corps of Engineers

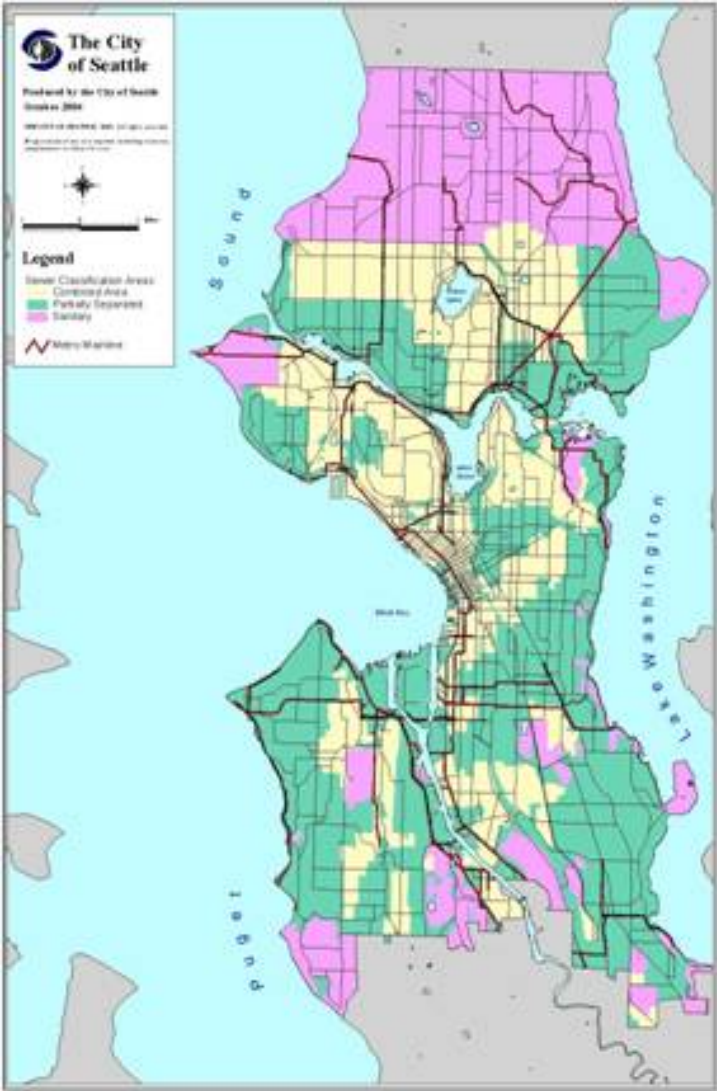
The Big Picture:

Overview Statistics for Rates and Bills

Rates and Bills

Length of Current Rate Path	3 years; 2013-2015
Billing Mechanism	<ul style="list-style-type: none">▪ Property Tax (drainage)▪ Combined Utility Bill (wastewater)
Rate Revenue	<ul style="list-style-type: none">▪ \$75.5M (drainage)▪ \$221.6M (wastewater)
# Customer Accounts	<ul style="list-style-type: none">▪ 212,717 (drainage)▪ 172,532 (wastewater)
Rate Methodology – Drainage	<ul style="list-style-type: none">▪ Bills based on parcel size & impervious surface
Rate Methodology – Wastewater	<ul style="list-style-type: none">▪ Bills based on water usage, adjusted for water not entering sewer system
Customer Classes – Drainage	<ul style="list-style-type: none">▪ Two: residential and general service (which includes large residential lots)
Customer Classes -- Wastewater	<ul style="list-style-type: none">▪ Two: residential and commercial; both pay the same rate

The Big Picture: Drainage & Wastewater Infrastructure Map



Combined System

Partially Separated System

Fully Separated System

The Big Picture: System Processes – Combined System

Combined System

Toilets
Sinks
Showers
Washing Machines



Roof
Runoff



Other Stormwater
Runoff to Streets



**Combined Sewer to
King County Treatment
Plant**

The Big Picture: System Processes – Partially Separated

Partially Separated System

Toilets
Sinks
Showers
Washing Machines



Roof
Runoff



Other Stormwater
Runoff to Streets



**Sanitary Sewer
to King County
Treatment Plant**

Existing



New



**Storm Drain to
Receiving Water
Body**



The Big Picture: System Processes – Fully Separated

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



The Big Picture:

System Processes – Wastewater and Drainage Destinations

- Wastewater: Treated at King County Treatment Plants (Discovery Park or Renton); discharged into receiving waters
- Drainage: It depends....
 - One-third of City has pipes that combine drainage and wastewater; all goes to treatment plants
 - One-third of City has fully separated pipes for drainage and wastewater; drainage flows sent untreated to various receiving waters
 - One-third of City is partially separated; so some drainage flows combine with wastewater flows; other drainage flows remain separate.

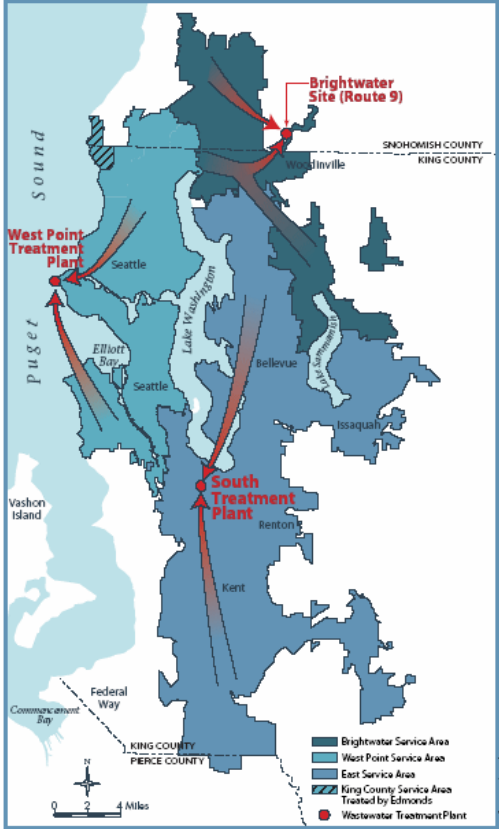
The Big Picture: System Processes – Why do we care about all of this?

- **Untreated Stormwater Runoff.** Water from the separated system goes untreated to our lakes, creeks, Puget Sound and the Duwamish river.
- **Combined Sewer Overflows.** Without fixes capacity issues in the combined system results in overflows of untreated sewage to our water bodies.
- **Flooding.** Impacts to property and mobility can occur where inadequate drainage infrastructure exists.

The Big Picture: System Processes – King County Wastewater Treatment



West Point

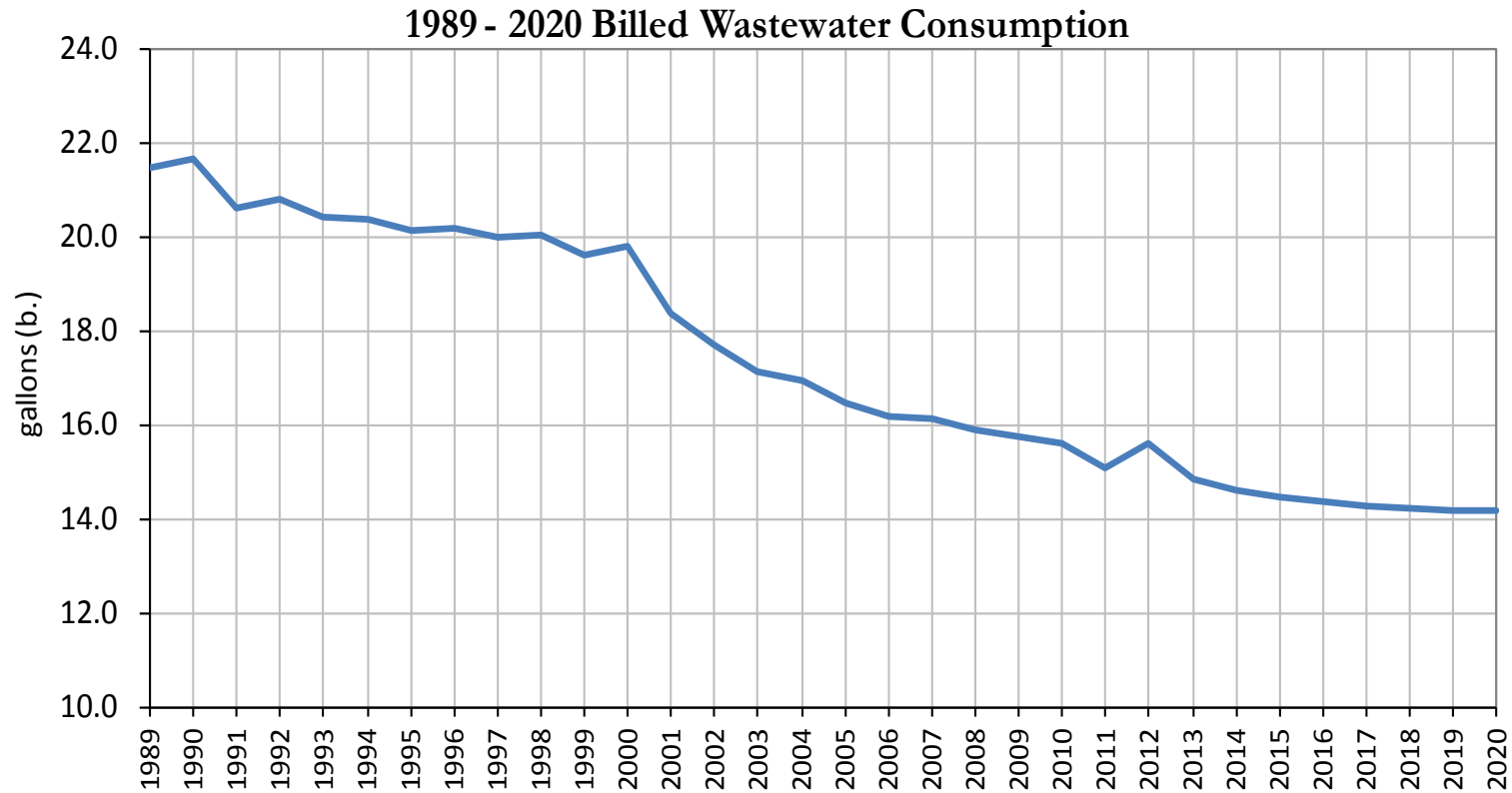


Brightwater



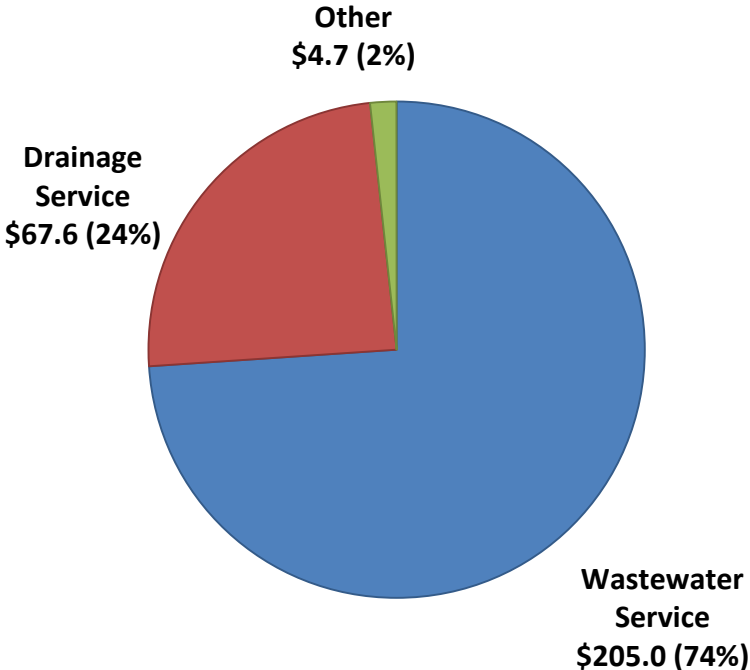
South Treatment Plant

The Big Picture: Wastewater Use



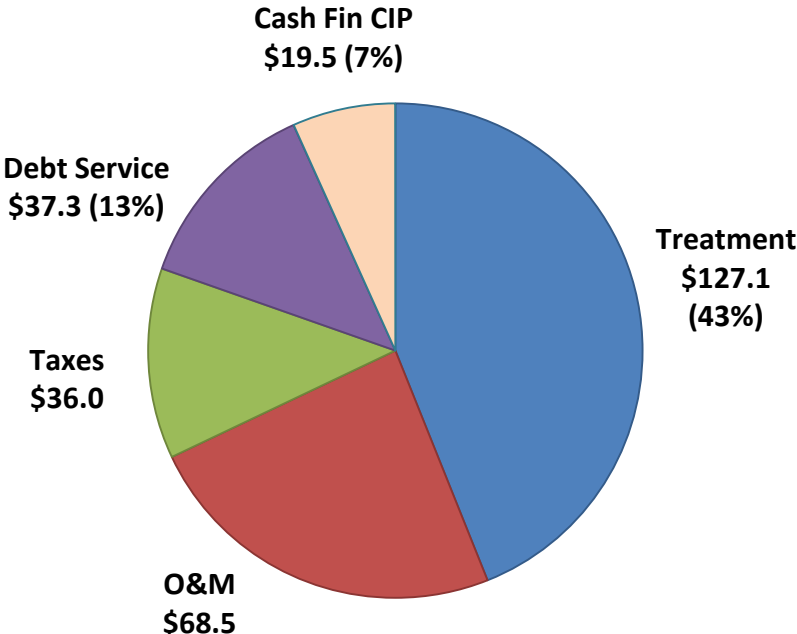
Sources & Uses of Funds

Operating Revenue



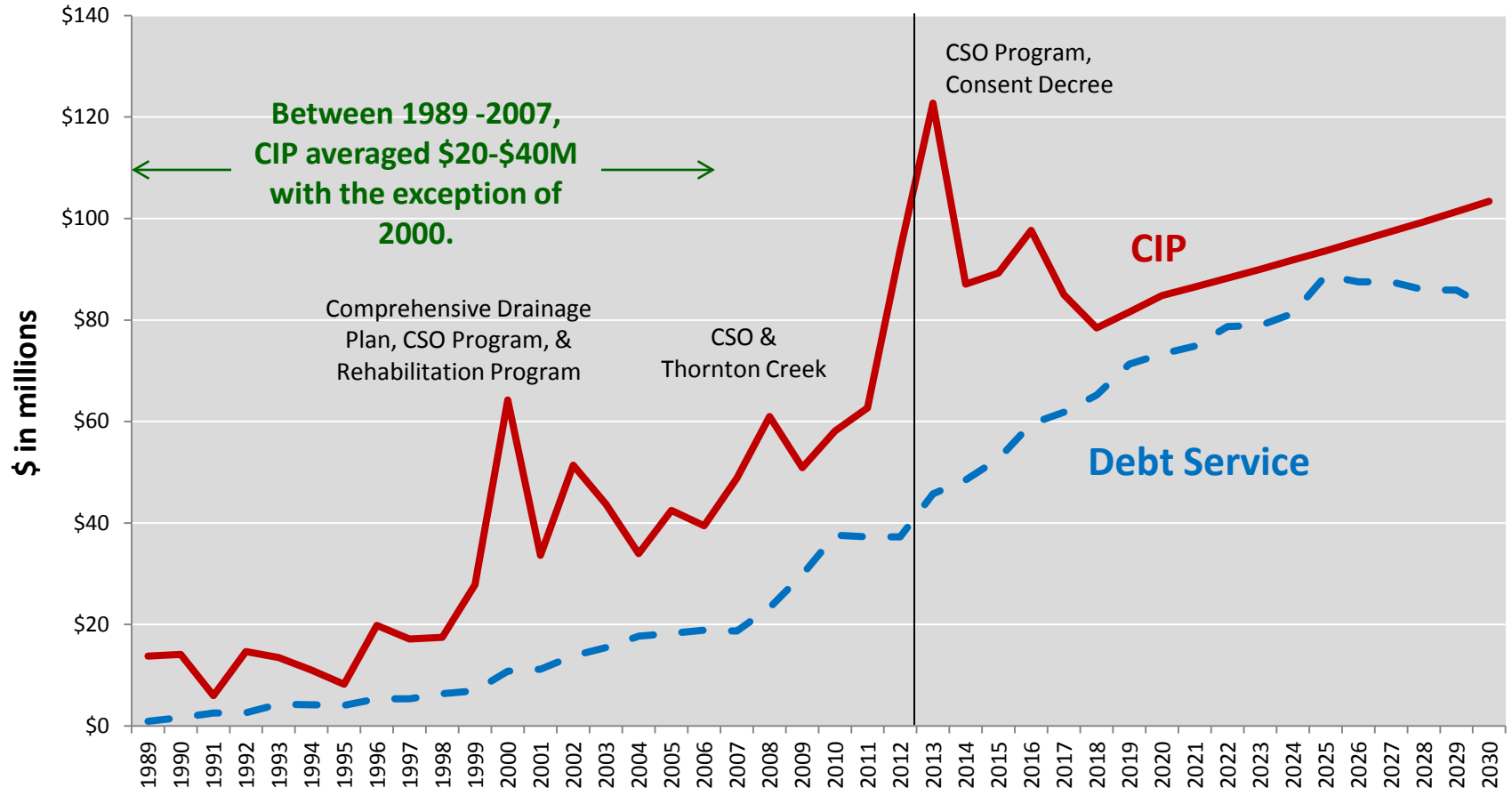
Total 2011 Operating Revenue = \$277 million

Operating Expense



Total 2011 Operating Expense = \$288 million

Where We Are in Our Capital Investment Cycle



Our Promises to Customers

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 Keeping Our Promises?

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

Customer Engagement

Public behaviors in a number of areas have significant impacts on our ability to keep our promises and make Seattle the best place to live:

- Education around the impacts of pesticides, fertilizers, drug disposal, cleaning agents, pet waste and car washing.
- K-12 education programs to support awareness in generations to come.
- RainWise program and non profit partnerships to build and maintain rain gardens.
- reLeaf and Green Seattle Partnership urban forestry programs.
- Assistance with clearing storm drains.

Strategic Business Plan Opportunities For Being Efficient, Forward Looking and Solving Problems at the Source

- Integrate regulatory requirements into a coherent action plan around CSO, stormwater and sediment clean-up
- Respond effectively to new scientific information and resultant regulatory changes
- Address existing needs, growth and climate change
- Negotiate with King County on combined sewer overflow, treatment and joint operations
- Partner with other jurisdictions, and state and federal agencies to maximize efficiencies
- Partner with customers to address water quality issues and to maintain and build green stormwater infrastructure
- Address ownership of side sewers and driveway culverts and other factors that impact Drainage and Wastewater responsibilities
- Better define service charges for system growth

Looking to 2015-2020: Decisions Already Made

On expenditure path to comply with all regulations:

- Limit combined sewer overflows.
- Meet Stormwater NPDES permit requirements for water quality and flow control in our separated system areas.
- Sediment remediation actions along the Duwamish Waterway.
- Projects and programs to limit sewer backups and flooding.
- Maintain base reliability of the systems.

Looking to 2015-2020:

Decisions to Make – Some Possible Action Plans

- Accelerate implementation of pipe system reliability and capacity improvements.
- Expand street sweeping and other source control measures to improve water quality.
- Accelerate ability to understand and analyze systems to better proactively identify and address problems flooding and sewer back up problem areas.
- Implementation of Integrated Plan stormwater projects.