Structure of Presentation

1. The Big Picture
   - Clarifying Definitions
   - Overview Statistics
   - System Map
   - System Processes
   - Historical and Projected Wastewater

2. Finances
   - Sources and Uses of Funds
   - Capital Investment Cycle

3. Service Targets

4. Customer Engagement

5. What’s Changed and Challenges
   – What’s Changed Since 2014
   – Ongoing and Upcoming Challenges
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

What’s a “Combined Sewer Overflow (CSO)”?
• Discharge of stormwater and untreated sewage from one of our 86 outfalls into a water body. These occur when the system is overwhelmed during a rain event and does not have the capacity to handle all the stormwater and wastewater.

What’s a “Dry Weather Overflow (DSO)”?
• Discharge of untreated sewage from one of our 86 outfalls into a water body. These occur when it’s not raining.

What’s a “Sewer Overflow (SSO)”?
• Also known as a Sanitary Sewer Overflow - occurs anywhere in the sewer system, whether or not it’s raining.
The Big Picture: Clarifying Definitions

**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 “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
- 86 Combined Sewer Overflows points
- 68 wastewater pumps
- 295 storm drain outfalls
- No wastewater treatment plants (flows sent to King County)

## Employees

<table>
<thead>
<tr>
<th># employees (2016 budgeted)</th>
<th>561</th>
</tr>
</thead>
<tbody>
<tr>
<td># Union</td>
<td>12</td>
</tr>
</tbody>
</table>

## 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

<table>
<thead>
<tr>
<th>Rates and Bills</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of Current Rate Path</strong></td>
<td>3 years, 2016-2018</td>
</tr>
<tr>
<td><strong>Billing Mechanism (2015 data)</strong></td>
<td></td>
</tr>
<tr>
<td>• Property Tax (drainage)</td>
<td></td>
</tr>
<tr>
<td>• Combined Utility Bill (wastewater)</td>
<td></td>
</tr>
<tr>
<td><strong>Rate Revenue</strong></td>
<td></td>
</tr>
<tr>
<td>• $102.1M (drainage)</td>
<td></td>
</tr>
<tr>
<td>• $257.1M (wastewater)</td>
<td></td>
</tr>
<tr>
<td><strong># Customer Accounts</strong></td>
<td></td>
</tr>
<tr>
<td>• 214,119 (drainage)</td>
<td></td>
</tr>
<tr>
<td>• 172,532 (wastewater)</td>
<td></td>
</tr>
<tr>
<td><strong>Rate Methodology – Drainage</strong></td>
<td></td>
</tr>
<tr>
<td>• Bills based on parcel size and impervious surface</td>
<td></td>
</tr>
<tr>
<td><strong>Rate Methodology – Wastewater</strong></td>
<td></td>
</tr>
<tr>
<td>• Bills based on water usage, adjusted for water not entering sewer system</td>
<td></td>
</tr>
<tr>
<td><strong>Customer Classes - Drainage</strong></td>
<td></td>
</tr>
<tr>
<td>• Two: residential and general service (which includes large residential lots)</td>
<td></td>
</tr>
<tr>
<td><strong>Customer Classes – Wastewater</strong></td>
<td></td>
</tr>
<tr>
<td>• Two: residential and commercial, both pay the same rates</td>
<td></td>
</tr>
</tbody>
</table>
Drainage and Wastewater Goals

• Collect and convey wastewater in our public sanitary and combined sewer systems to protect public health and the environment by preventing sewer back-ups and overflows.

• Manage stormwater and drainage from the public system to reduce flooding, protect and improve receiving water and sediment quality, public safety and the environment.
The Big Picture: Drainage & Wastewater Infrastructure Map

Combined System

Partially Separated System

Fully Separated System
The Big Picture:
System Processes – Combined System

One pipe for all
To
King County Treatment Plant
And
Overflow to Receiving Water Bodies
The Big Picture: System Processes – Partially Separated

**Two Pipe Systems**

One for *some* drainage to receiving water body and

One for sewage/stormwater to King County Treatment Plant
The Big Picture:
System Processes – Fully Separated

Two Pipe Systems

One for drainage to receiving water body
and
One for sewage to King County Treatment Plant
The Big Picture: System Processes – Wastewater and Drainage Destinations

- **Wastewater**: Treated at King County West Point Treatment Plant; discharged into receiving waters

- **Drainage**: It depends:
  - One-third of City has pipes that combine drainage and wastewater; all goes to treatment plant
  - One-third of City is partially separated; so some drainage flows combine with wastewater flows; other drainage flows remain separate.
  - One-third of City has fully separated pipes for drainage and wastewater; drainage flows sent untreated to various receiving waters
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 additional collection system storage, untreated sewage continues to flow into our water bodies.

• Flooding. Impacts to property and mobility can occur where inadequate drainage infrastructure exists.
The Big Picture: Wastewater Use

1991-2025 Billed Wastewater Consumption

Gallons (billions)

Sources & Uses of Funds

Drainage and Wastewater Fund Revenues and Expenses (2015, $ in millions)

**Revenues**
- Wastewater: $257.1 (71%)
- Drainage: $102.0 (28%)
- Other: $4.7 (1%)

**Expenses**
- Treatment: $150.3 (40%)
- O&M: $80.9 (22%)
- Debt Service: $47.4 (13%)
- Taxes: $47.4 (13%)
- Cash Fin CIP: $48.2 (13%)

[Pie charts showing the proportions of revenues and expenses]
Service Targets

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

**Drainage Service Targets**

- To support the city-wide goal of 700 million gallons of runoff managed using Green Stormwater Infrastructure by 2025. SPU has a goal of managing 10 million gallons of stormwater via RainWise rain gardens and cisterns
- No critical services (e.g. hospitals) are inaccessible due to flooding, except during extreme storm events (e.g. events exceeding 100-year, 24-hour storm event)
- Remove 140 tons of pollutants from roads during 2016

**Wastewater Service Target**

- Limit sewer overflows to no more than 4 per 100 miles of pipe, on a two-year average

**Combined Service Targets**

- Respond to 90% of high priority drainage and wastewater problems within one hour
- Limit combined sewer overflows to 1 per outfall per year over a 20-year moving average
Are We Meeting Our Service Targets?

**Performing Well in Most Areas**

- Meeting our drainage service targets
- Meeting one of our combined service targets:
  - Respond to 90% of high priority DWW problems within one hour

**Area for Improvement**

- Limit sewer overflows to no more than 4 per 100 miles of pipe, on a two-year average
- Limit CSOs to an average of no more than 1 untreated discharge per CSO outfall per year
Public behaviors are key to meeting our water quality goals. The following initiatives work to educate and engage residents:

- Education programs about the impacts of pesticides, fertilizers, automobiles, pharmaceuticals and pet waste.
- K-12 education programs to build knowledge in generations to come.
- RainWise program and non profit partnerships to build and maintain green stormwater infrastructure.
- reLeaf and Green Seattle Partnership urban forestry programs.
- Green Business program providing spill kits and other tools.
- Water Quality Hotline (684-7587) for residents to report issues.

Customer Engagement

Public behaviors are key to meeting our water quality goals. The following initiatives work to educate and engage residents:
What’s Changed since 2014?

- Move Seattle levy and other major interagency projects – funding for utility impacts
- Increasing costs for street work
- The weather, changing precipitation patterns
- Implementation of the Plan to Protect Seattle’s Waterways for Consent Decree, greater clarity on
  - Schedule
  - Cost
  - Risks
- Port is no longer a customer as of 2015
Ongoing and Upcoming Challenges

• Our infrastructure continues to age, past deferrals of renewal and replacement
  • Pipes
  • Pump stations
  • Facilities
• Less MTCA funding for sediment remediation
• 2013 “culvert case”
• Shared wastewater system operations with King County
• Resiliency, climate adaptation
• More stringent regulation, wastewater and stormwater