Drainage & Wastewater Lines of Business

May, 2013 Discussion

With the Customer Review Panel
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
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**

<table>
<thead>
<tr>
<th>Service Territory</th>
<th>City of Seattle, with small exceptions due to infrastructure</th>
</tr>
</thead>
</table>
| 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**

<table>
<thead>
<tr>
<th># Employees (2013 budgeted)</th>
<th>539 (includes drainage &amp; wastewater)</th>
</tr>
</thead>
<tbody>
<tr>
<td># Unions</td>
<td>15</td>
</tr>
</tbody>
</table>

**Regulators**

<table>
<thead>
<tr>
<th>WA State Dept of Ecology</th>
</tr>
</thead>
<tbody>
<tr>
<td>WA State Dept of Fish and Wildlife</td>
</tr>
<tr>
<td>US Environmental Protection Agency</td>
</tr>
<tr>
<td>National marine Fisheries Service</td>
</tr>
<tr>
<td>US Army Corps of Engineers</td>
</tr>
</tbody>
</table>
# The Big Picture: Overview Statistics for Rates and Bills

## Rates and Bills

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length of Current Rate Path</strong></td>
<td>3 years; 2013-2015</td>
</tr>
<tr>
<td><strong>Billing Mechanism</strong></td>
<td>- Property Tax (drainage)</td>
</tr>
<tr>
<td></td>
<td>- Combined Utility Bill (wastewater)</td>
</tr>
<tr>
<td><strong>Rate Revenue</strong></td>
<td>- $75.5M (drainage)</td>
</tr>
<tr>
<td></td>
<td>- $221.6M (wastewater)</td>
</tr>
<tr>
<td><strong># Customer Accounts</strong></td>
<td>- 212,717 (drainage)</td>
</tr>
<tr>
<td></td>
<td>- 172,532 (wastewater)</td>
</tr>
<tr>
<td><strong>Rate Methodology – Drainage</strong></td>
<td>- Bills based on parcel size &amp; impervious surface</td>
</tr>
<tr>
<td><strong>Rate Methodology – Wastewater</strong></td>
<td>- Bills based on water usage, adjusted for water not</td>
</tr>
<tr>
<td></td>
<td>- entering sewer system</td>
</tr>
<tr>
<td><strong>Customer Classes – Drainage</strong></td>
<td>- Two: residential and general service (which includes</td>
</tr>
<tr>
<td></td>
<td>- large residential lots)</td>
</tr>
<tr>
<td><strong>Customer Classes -- Wastewater</strong></td>
<td>- Two: residential and commercial; both pay the same rate</td>
</tr>
</tbody>
</table>

Drainage & Wastewater
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

Drainage & Wastewater
The Big Picture: System Processes – Fully Separated

Fully Separated System

Toilets
Sinks
Showers
Washing Machines

Sanitary Sewer to King County Treatment Plant

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

Roof Runoff

Other Stormwater Runoff to Streets

Drainage & Wastewater
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

Drainage & Wastewater
The Big Picture: Wastewater Use

1989 - 2020 Billed Wastewater Consumption

gallons (b.)

Sources & Uses of Funds

**Operating Revenue**
- Drainage Service: $67.6 (24%)
- Wastewater Service: $205.0 (74%)
- Other: $4.7 (2%)

**Operating Expense**
- Cash Fin CIP: $19.5 (7%)
- Debt Service: $37.3 (13%)
- Taxes: $36.0
- O&M: $68.5
- Treatment: $127.1 (43%)

Total 2011 Operating Revenue = $277 million
Total 2011 Operating Expense = $288 million
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
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.
• 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.