King County WTD System

- 5 WWTPs, 26 regulator stations, 47 pump stations, and 391 miles of sewer pipelines
- Serves 1.7 million over a 424-square-mile service area in King and parts of Pierce and Snohomish Counties
- Large portions of the system are combined wastewater and storm-water
West Point Treatment Plant

- Averages 90 million gallons a day during dry months
- Wet weather design capacity of 440 million gallons a day
- Serves City of Seattle’s combined stormwater and sewer system
- 14 years of excellent compliance with discharge permits
February 9, 2017

- Severe flooding caused by power fault and subsequent equipment failure
- Flood damage temporarily halted plant operations
- 180 million gallons of a 90/10% storm-water/wastewater discharged to Puget Sound
- Plant was quickly brought back on-line with a reduced plant capacity, level of treatment
February 9, 2017

Flooded equipment galleries
Immediate Response

- Employee safety paramount
- Diverted flows to other facilities
- Mobilized crews and equipment for 24/7 response
- Posted beaches and monitored water quality to protect public
- Implemented multiple plans for restoration of treatment processes

Flashlight shows water line
Assessing Damage
Body of Work

<table>
<thead>
<tr>
<th>Type of Equipment Damaged</th>
<th>Equipment Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 x 12-foot tunnels</td>
<td>1 Mile</td>
</tr>
<tr>
<td>Electric Motors</td>
<td>149</td>
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<tr>
<td>Pumps</td>
<td>127</td>
</tr>
<tr>
<td>Electrical Motor Control Centers Buckets</td>
<td>200</td>
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<tr>
<td>Electrical Panels</td>
<td>125</td>
</tr>
<tr>
<td>Electrical Transformers</td>
<td>25</td>
</tr>
<tr>
<td>Local Electrical Control Stations</td>
<td>125</td>
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<tr>
<td>Light Fixtures</td>
<td>&gt;2000</td>
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<tr>
<td>Outlets and Switches</td>
<td>&gt;1200</td>
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<tr>
<td>Instruments</td>
<td>&gt;125</td>
</tr>
<tr>
<td>Solenoids</td>
<td>&gt;200</td>
</tr>
<tr>
<td>Equipment Control Systems</td>
<td>3</td>
</tr>
</tbody>
</table>
Emergency Resources

- Emergency declaration
- Broad response effort
- Critical path scheduling
- Support recolonization of biology in secondary and solids
- Set goal to restart all plant processes by April 30
Restoration Work

- Plant cleanup and sanitation
- Repairing and replacing critical pumps, motors and electrical equipment
- Addressing non-critical building and equipment damage.
- Goal to restart all plant processes by April 30
Equipment Control Panels – Cleaned, inspected, and ready for repair/replacement

Gravity Belt Thickener Feed Pumps - Ready for replacement motors

Pumps being repaired
Status

- All plant processes were online – April 27
- Achieved NPDES permit compliance limits – May 9
- Continue work on replacing interim repairs with permanent equipment
- Council Independent Review
- Identify and address opportunities to improve plant resiliency
What’s Next

- Complete permanent equipment repairs
- Address lessons learned in a comprehensive manner
- Work with reviewers
- Thank employees for their dedication in supporting the restoration effort
Thank you!

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