



King County

Department of
Natural Resources and Parks

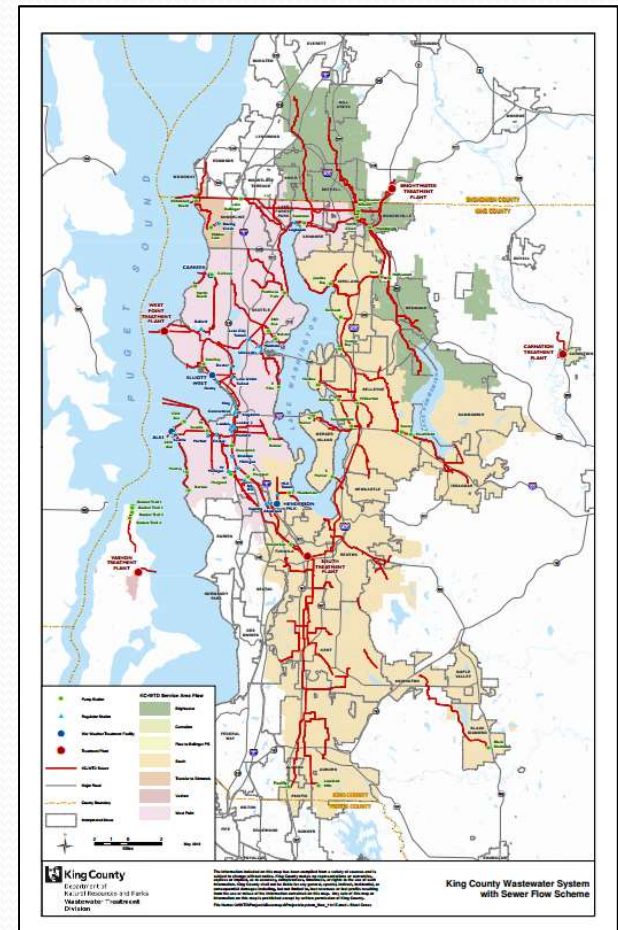
Wastewater Treatment Division

West Point Treatment Plant Restoration

Kolby Hoagland, Capital Project Manager
Monthly NWCCC Meeting
May 18, 2017; Lynnwood, WA

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

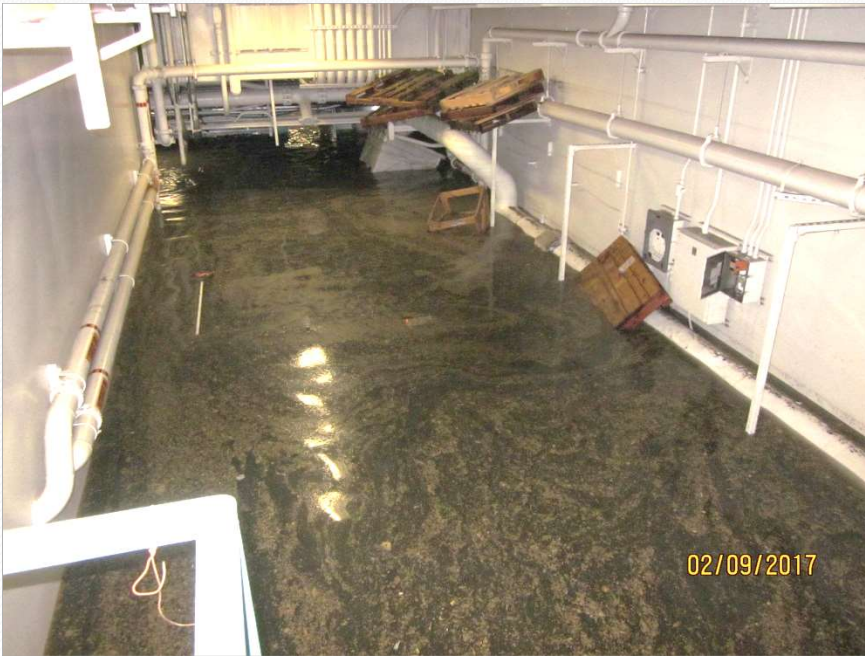


February 9, 2017

- 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

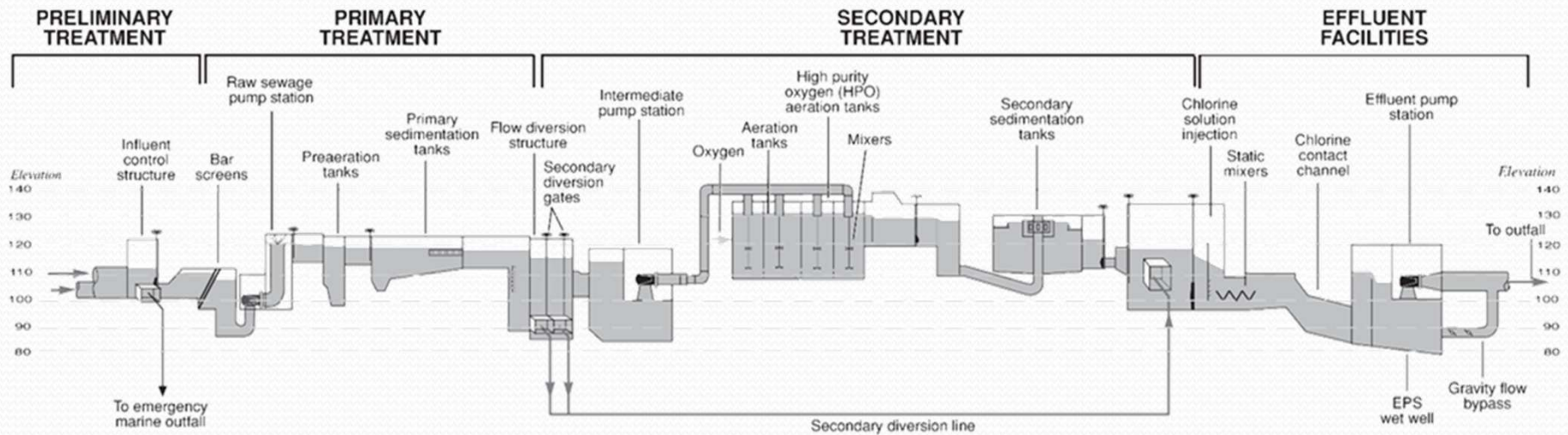


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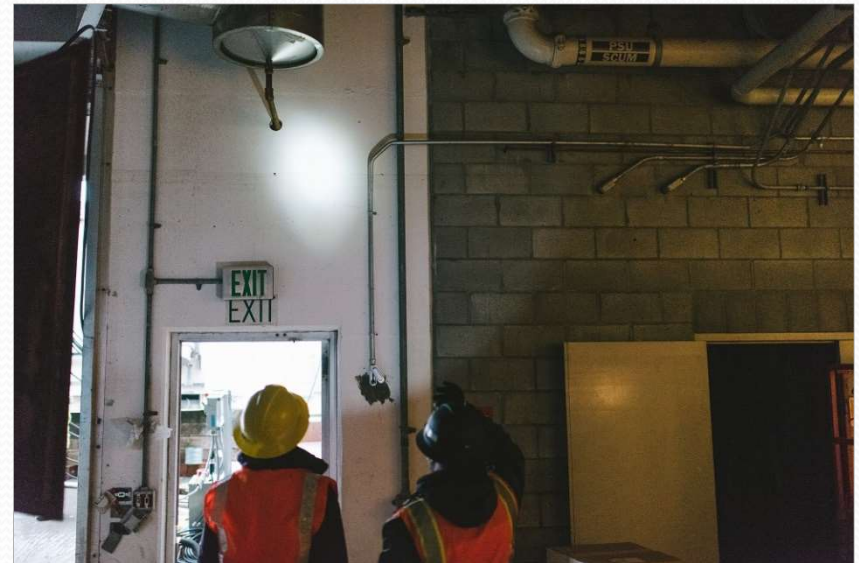
Flooded equipment galleries

West Point Treatment Plant Hydraulic Profile



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

Type of Equipment Damaged	Equipment Count
12 x 12-foot tunnels	1 Mile
Electric Motors	149
Pumps	127
Electrical Motor Control Centers Buckets	200
Electrical Panels	125
Electrical Transformers	25
Local Electrical Control Stations	125
Light Fixtures	>2000
Outlets and Switches	>1200
Instruments	>125
Solenoids	>200
Equipment Control Systems	3



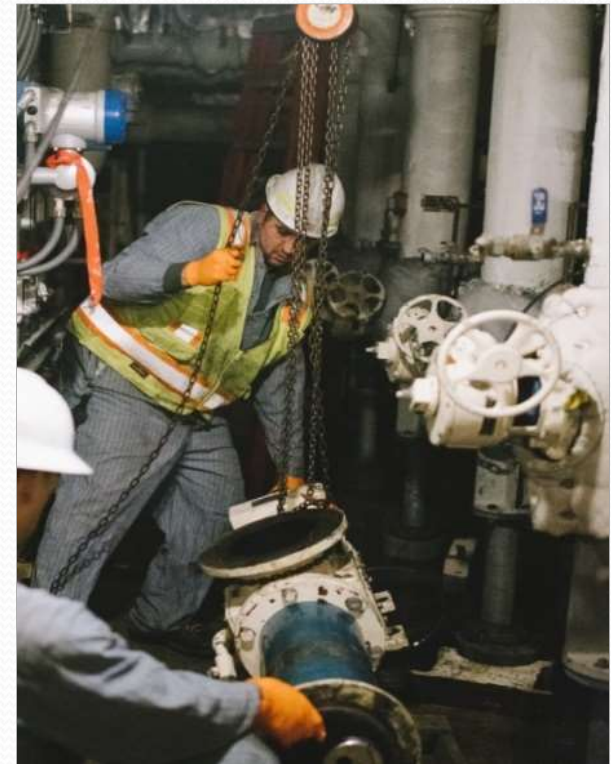
Emergency Resources

- 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



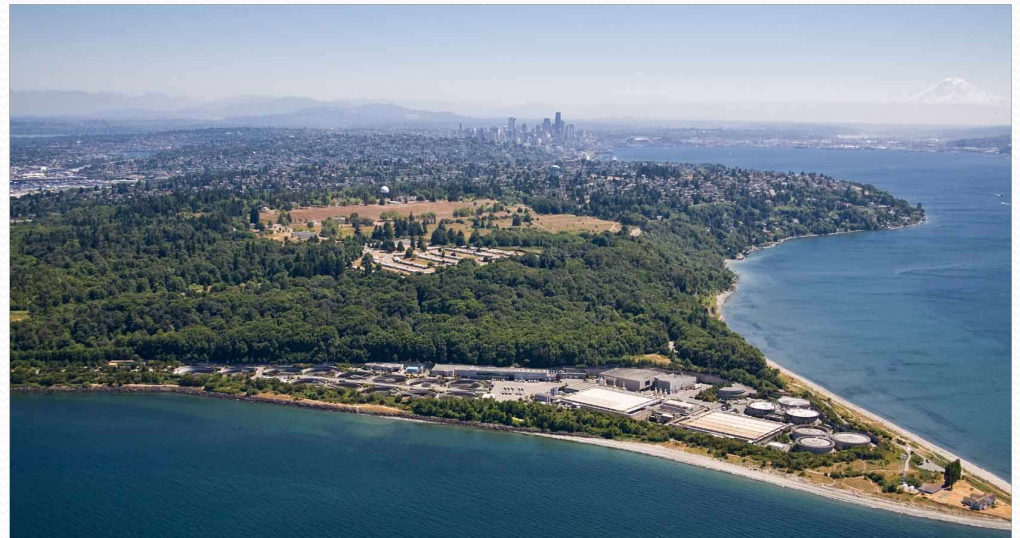
Thank you!

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