

City of Kent

Stormwater Utility Update

City Council Workshop

January 2, 2018

Stormwater Utility Update

- **Green River Levee Repairs**
- FEMA Flood Map Update
- Local Mill Creek Drainage
- Local Drainage
- Natural Resource Enhancement
- National Pollutant Discharge Elimination System (NPDES) Permit
- Maintenance Needs
- Utility Rates



Lower Russell Road Levee

The Green River – Historical Flooding



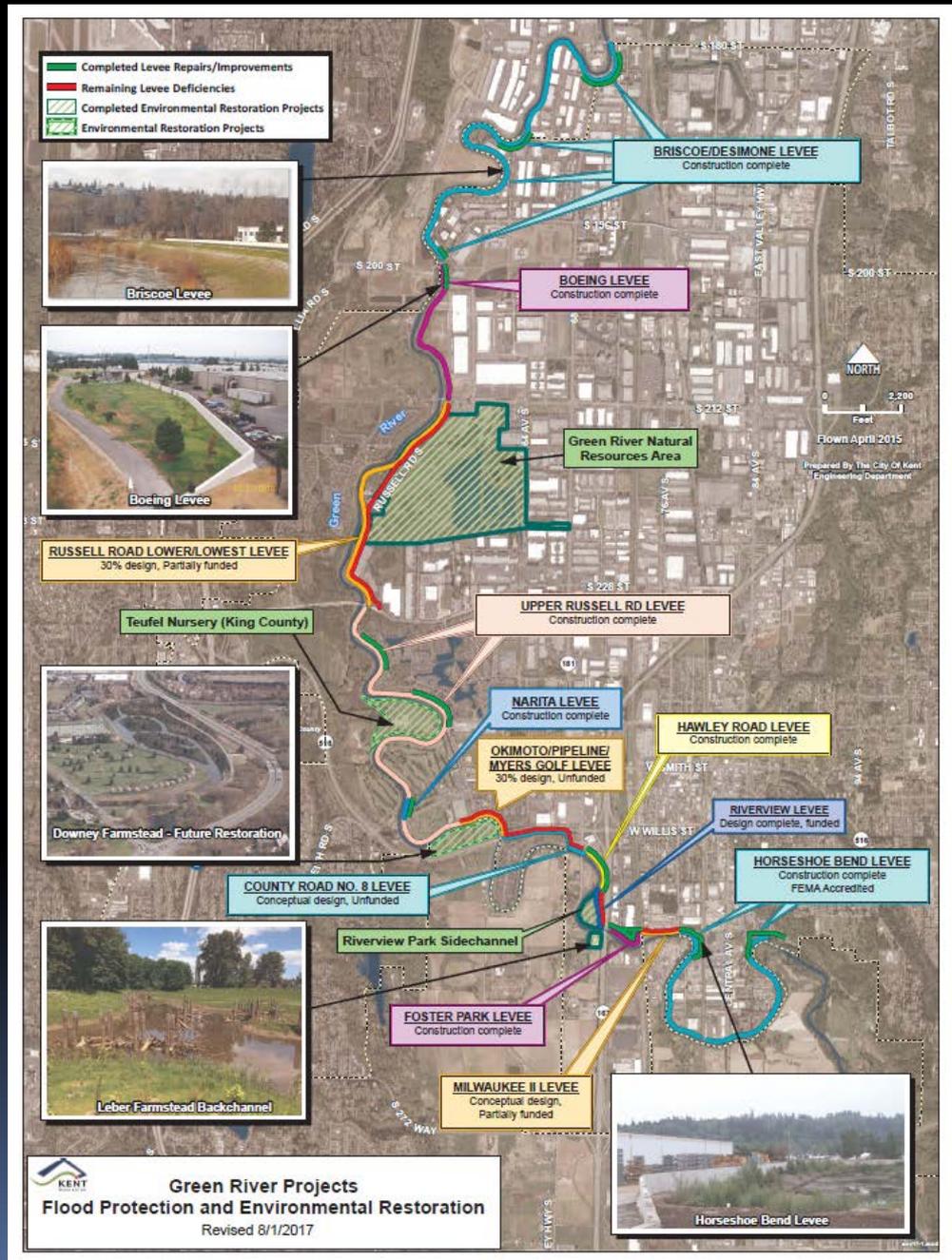
Property of Museum of History & Industry, Seattle

The Green River - A Complex Web of Issues



Green River Levee Projects in Kent

- Public Safety
- FEMA Accreditation
- Protect Parks & Open Spaces
- Environmental Restoration



The Green River Valley: An Economic Engine

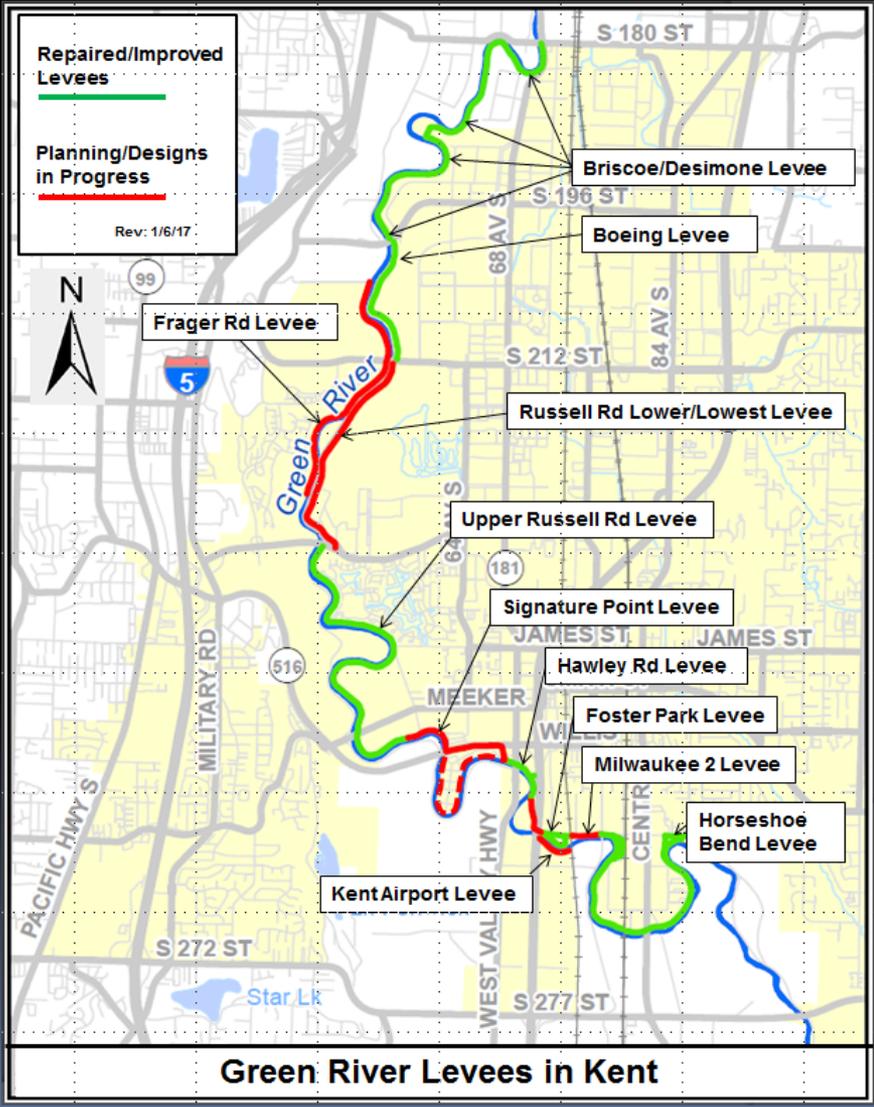


What's at Risk?

- About 4,000 businesses and roughly 90,000 jobs
- Fourth largest manufacturing/distributing center in the US
- One eighth (\$42 billion) of the state's GDP
- Regional Transportation and Utility Corridors

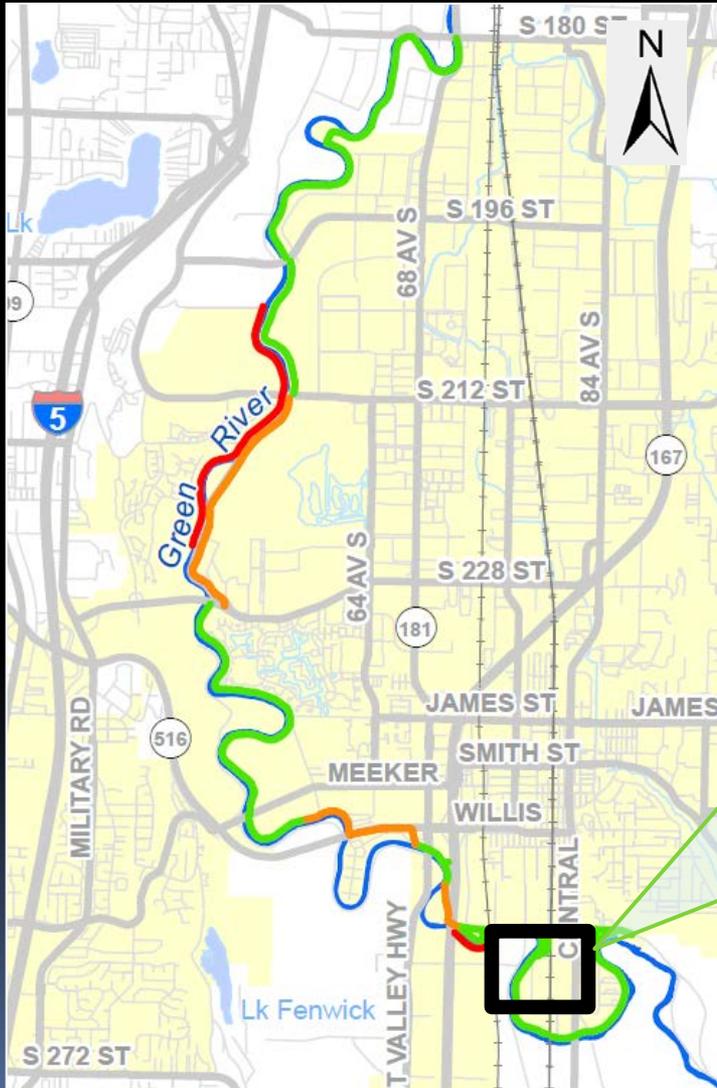
Green River Levees

Steady Progress of Repairs and Improvements since 2008



Breda (Horseshoe Bend) Levee

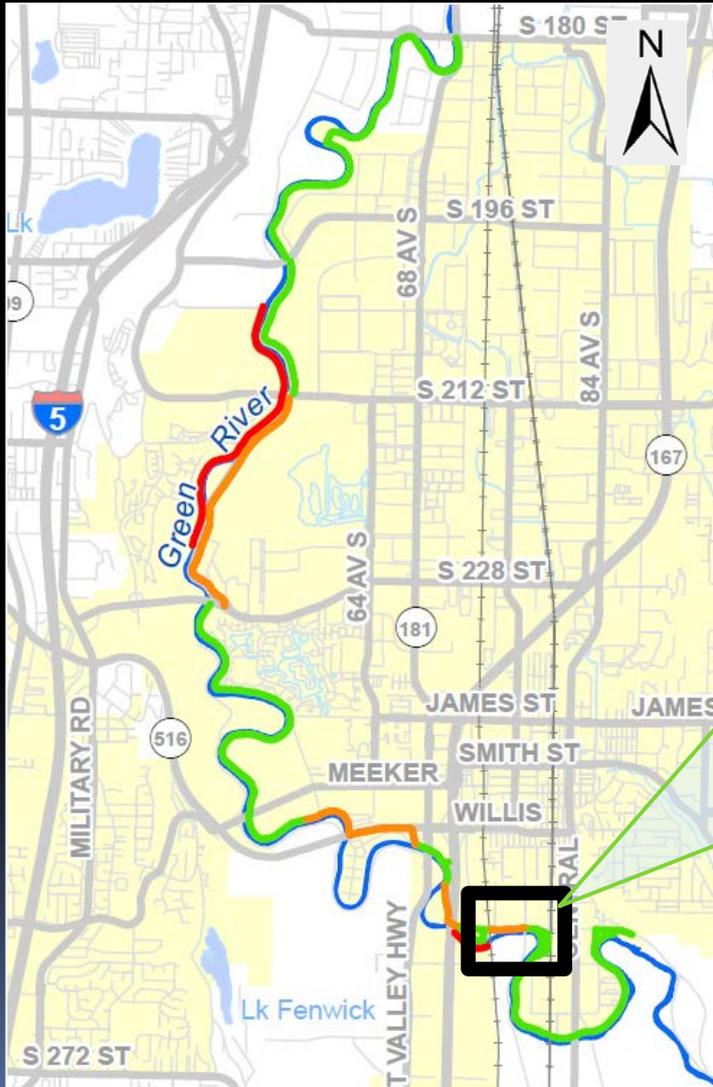
Complete ILA, Planning and Design in 2018



Potential Levee Alignment

Milwaukee #2 Levee

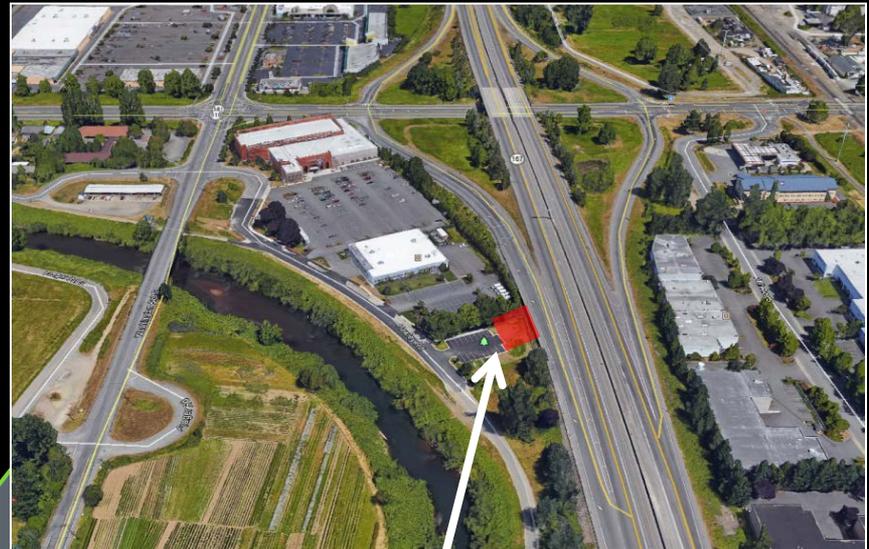
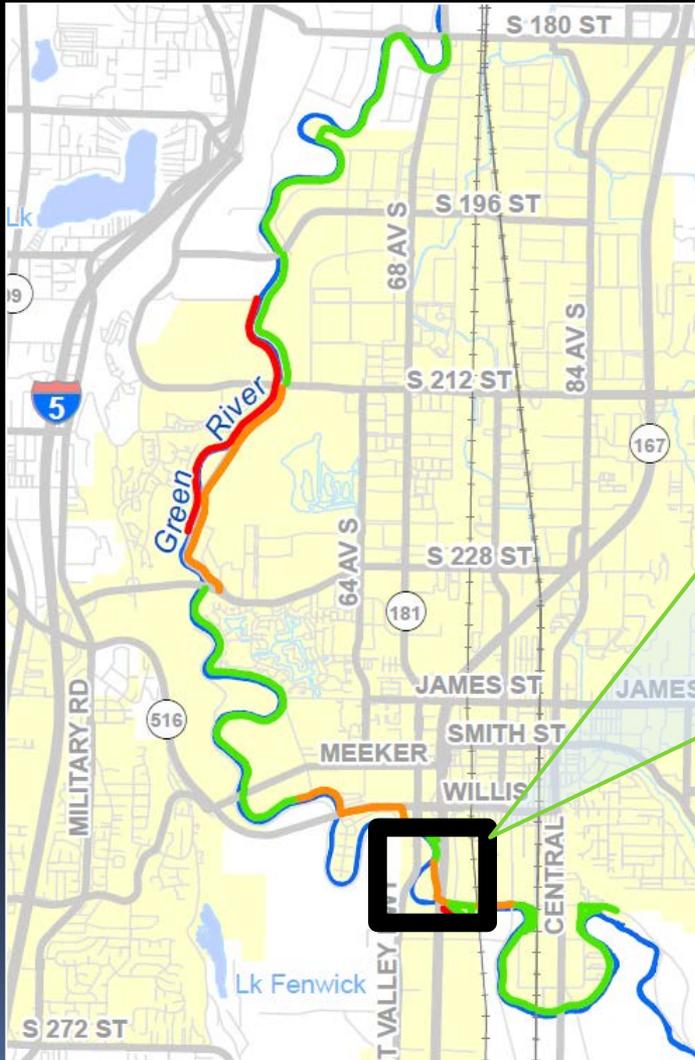
Finalize Levee Alignment in 2018



Potential Levee Alignment

Hawley Road Levee

Completed Levee Connection to SR 167 in Oct 2017

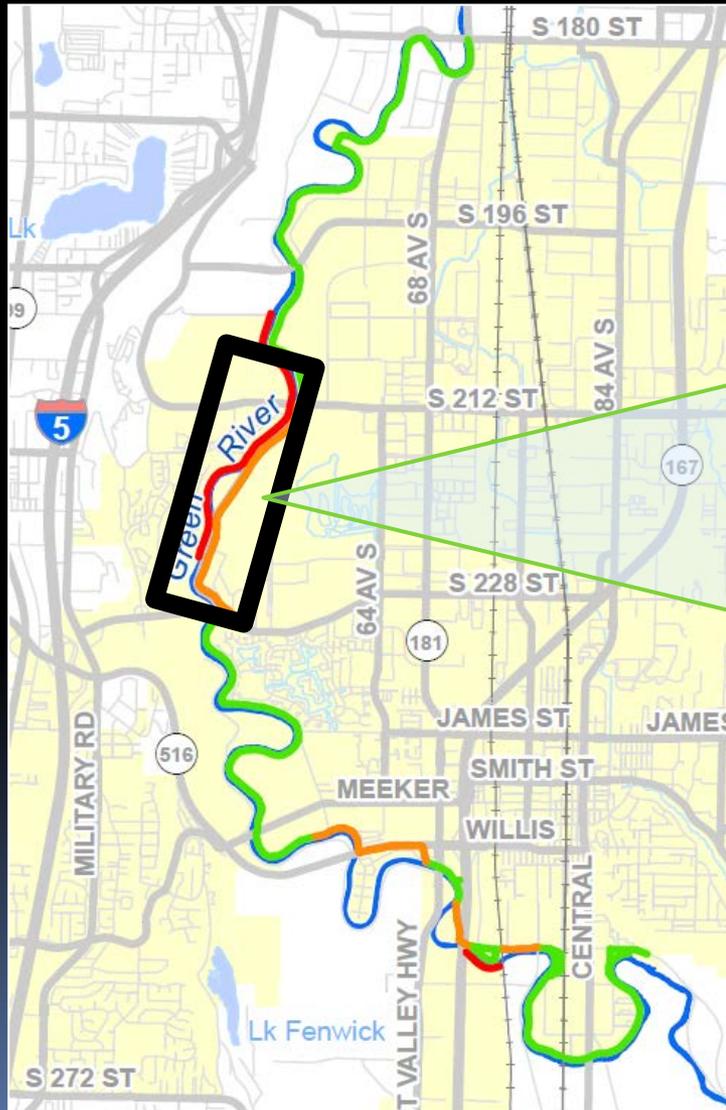


New Earthen Levee - Hawley Rd to SR 167



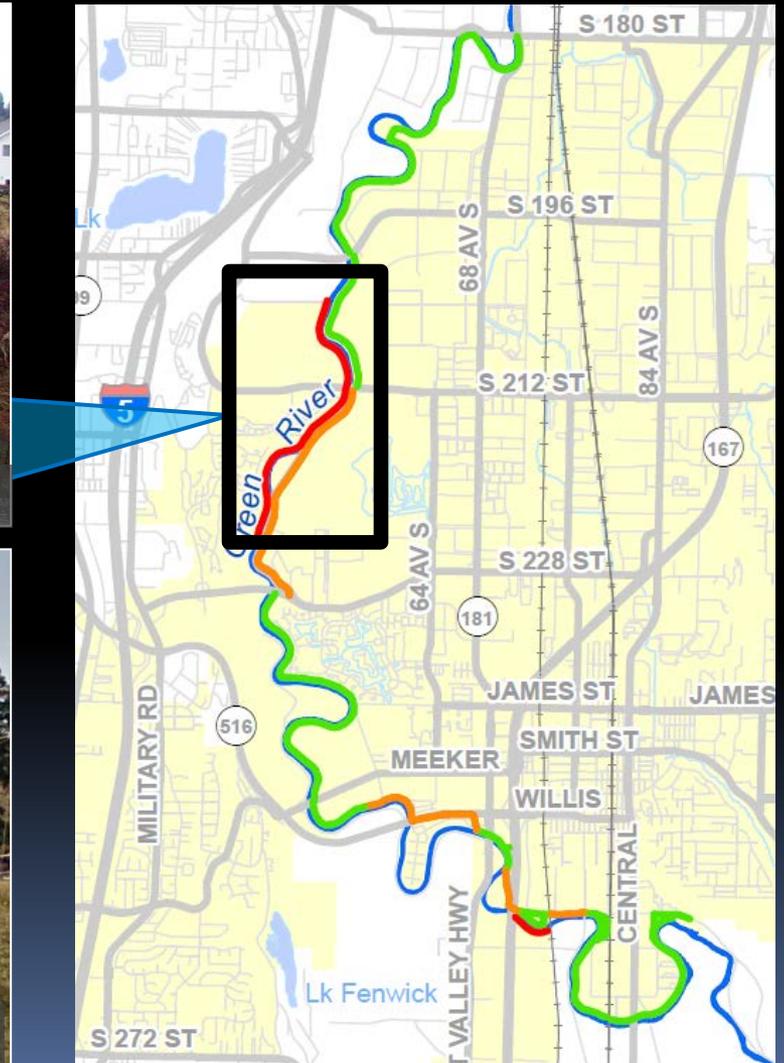
Lower Russell Road Levee

Continue Partnership with King County Flood Control District
Anticipated Construction in 2019/2020



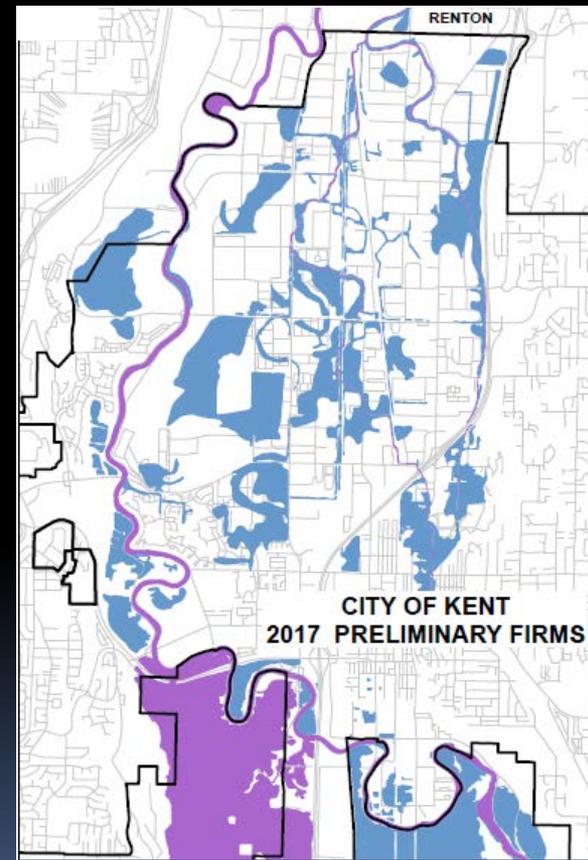
Frager Road Levee – Green River Left Bank

Submit Levee Certification Report to FEMA in 2018



Stormwater Utility Update

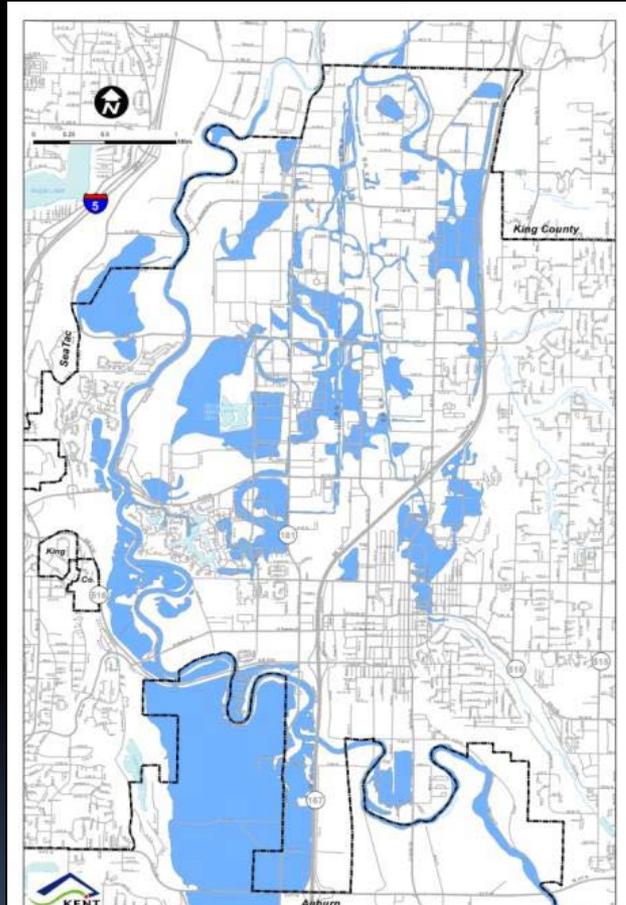
- Green River Levee Repairs
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2017 Preliminary FEMA Maps

FEMA Flood Maps Update

FEMA Flood Maps Background



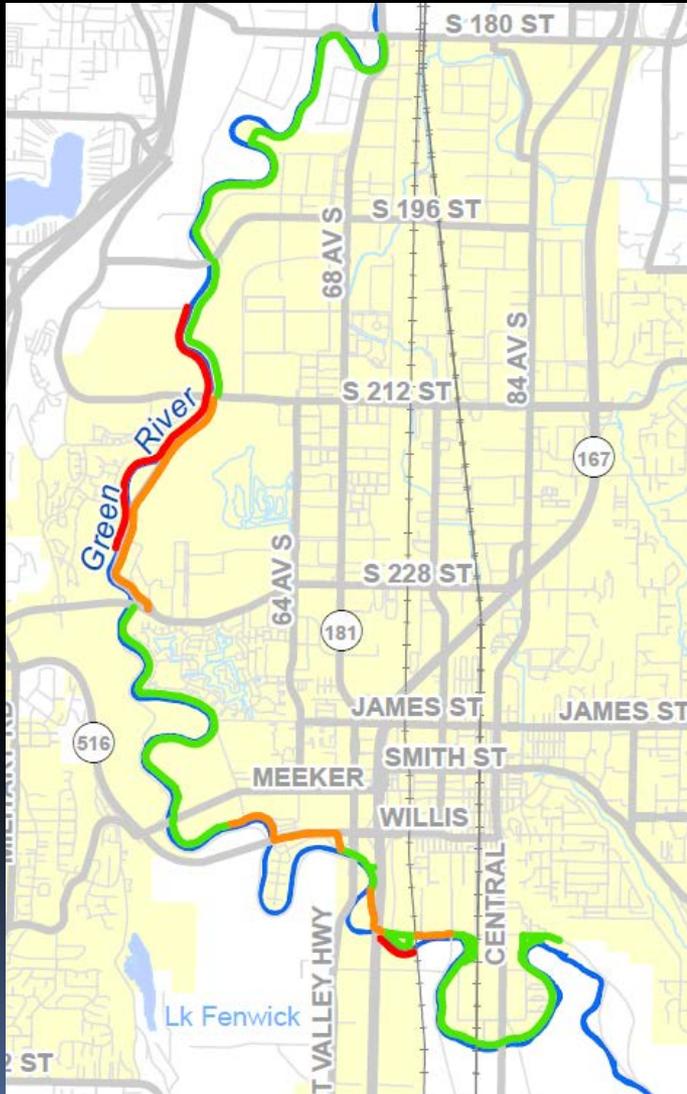
FEMA 1995 Flood Map – Current Map

FEMA Flood Maps

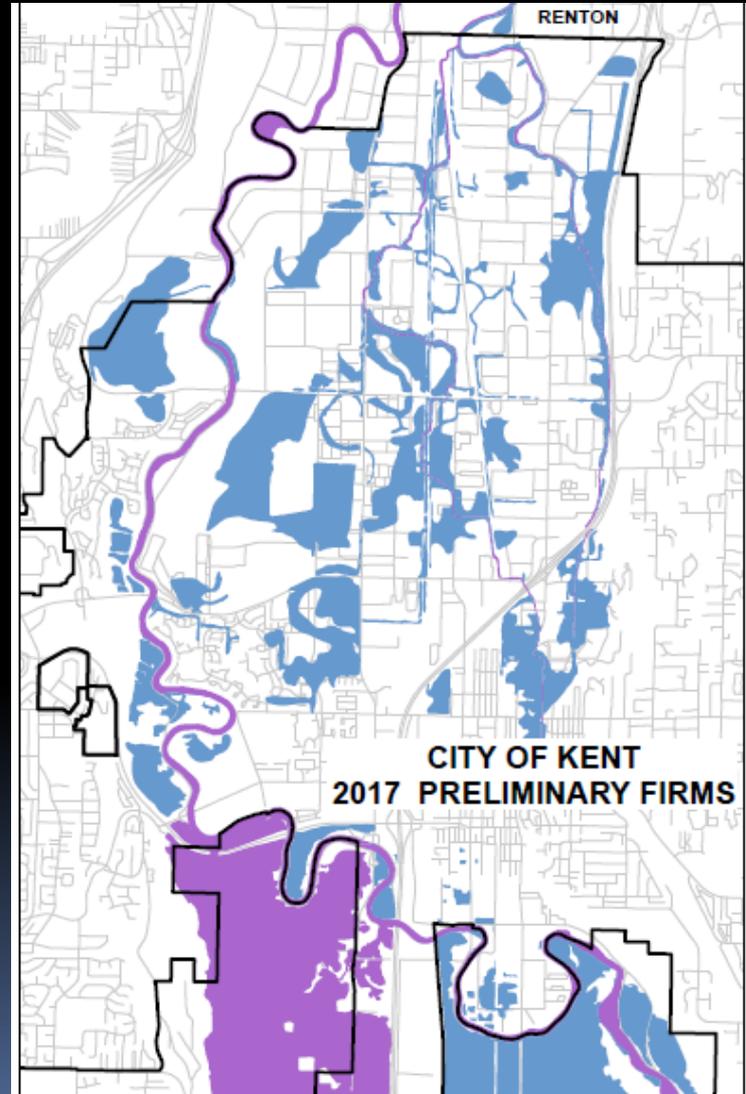
- Requires FEMA Flood Insurance
- Increases Development Regulation
- Affects Property Values

FEMA Flood Maps Update

Completed Levee Repairs Have Revised FEMA Flood Maps



Kent Levee Progress Map



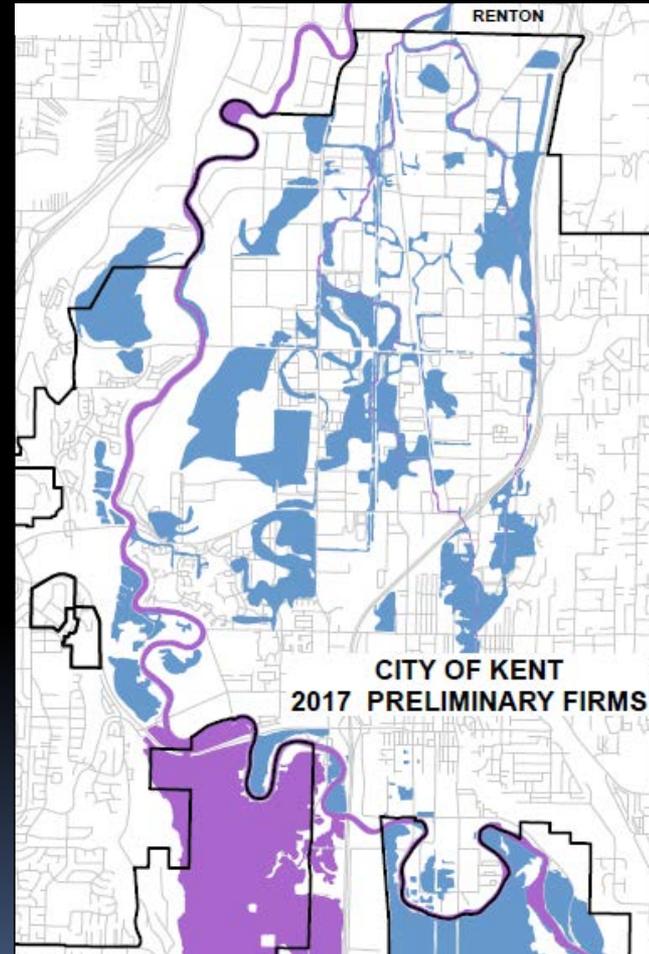
NEW FEMA 2017 Preliminary Map

FEMA Flood Maps Update

FEMA Flood Maps Implementation Schedule

FEMA Flood Map Schedule

- Local Agency Meeting
Nov 2017
- FEMA Public Meeting
Feb 2018
- Preliminary Map Appeal Period
Mar through May 2018
- Effective Map Implementation
Spring 2019



NEW FEMA 2017 Preliminary Map

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Mill Creek and Kennebeck Ave North

Mill Creek Plan

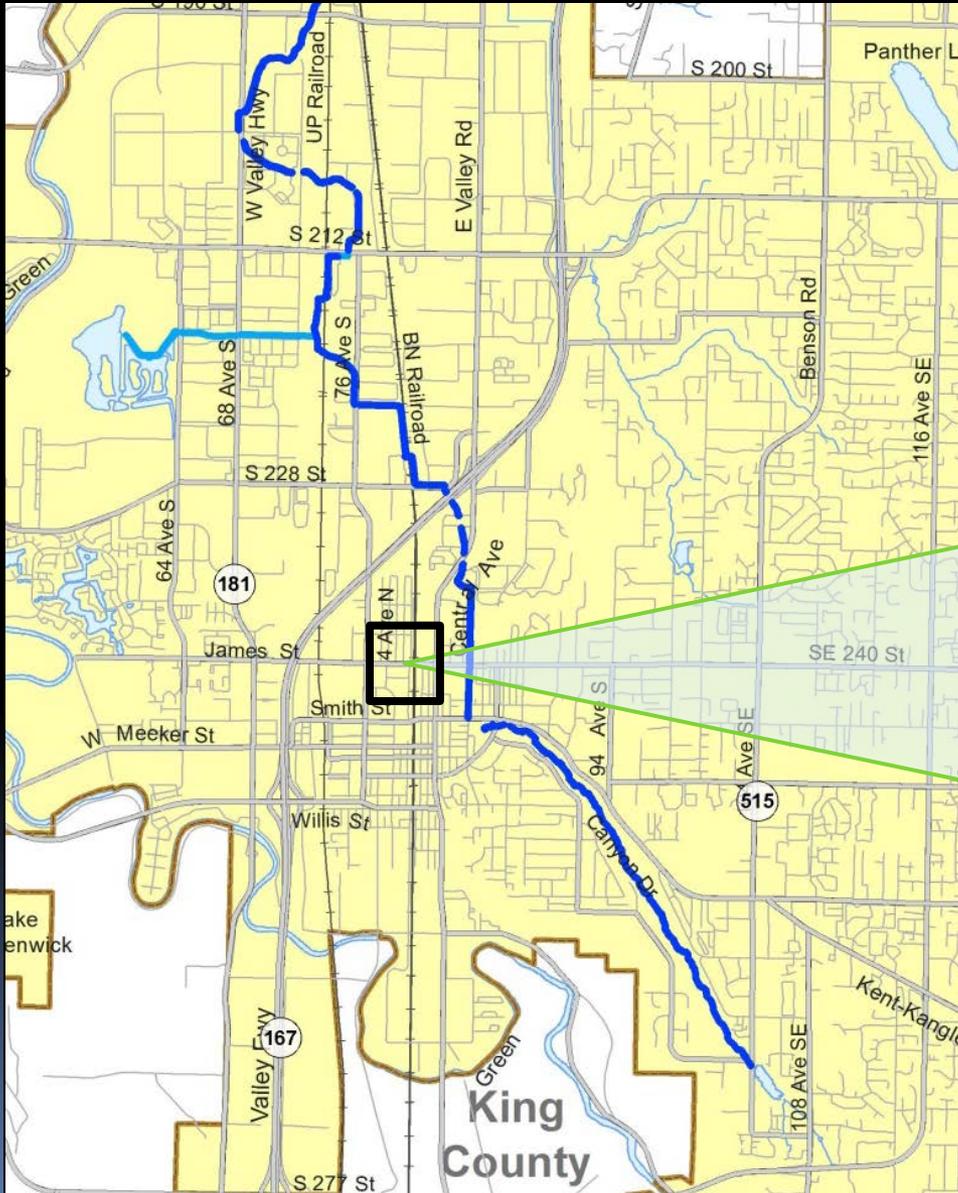
Major Projects to Address Flooding

- James Street Pump Station
- Upper Mill Creek Dam
- Mill Creek Culvert Replacements
- Mill Creek Reestablishment
- Green River Natural Resource Area Pump Station
- Green River Natural Resource Area South Pump Station



Mill Creek Plan

James Street Stormwater Pump Station – Completed 2016



Operational in October 2016

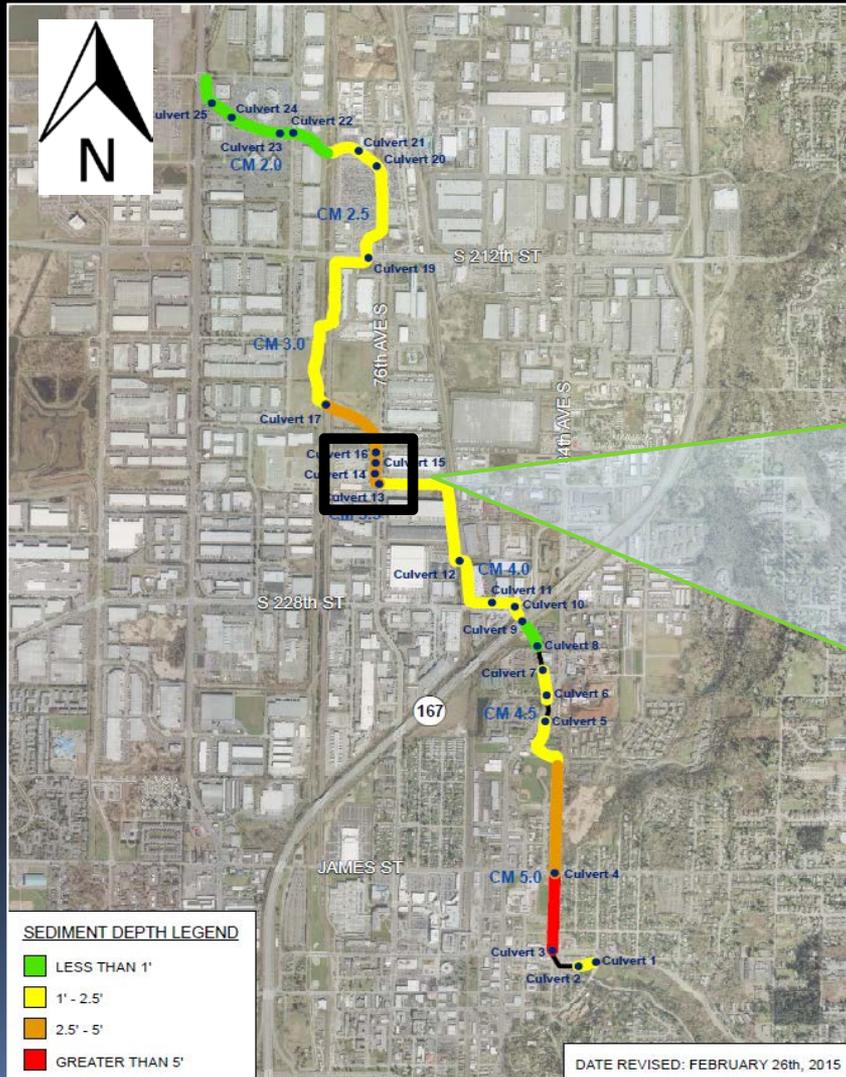
Mill Creek Plan

Improve Upper Mill Creek Dam for Additional Flood Storage



Mill Creek Plan

Replace Undersized Drainage Culverts along 76th Ave South



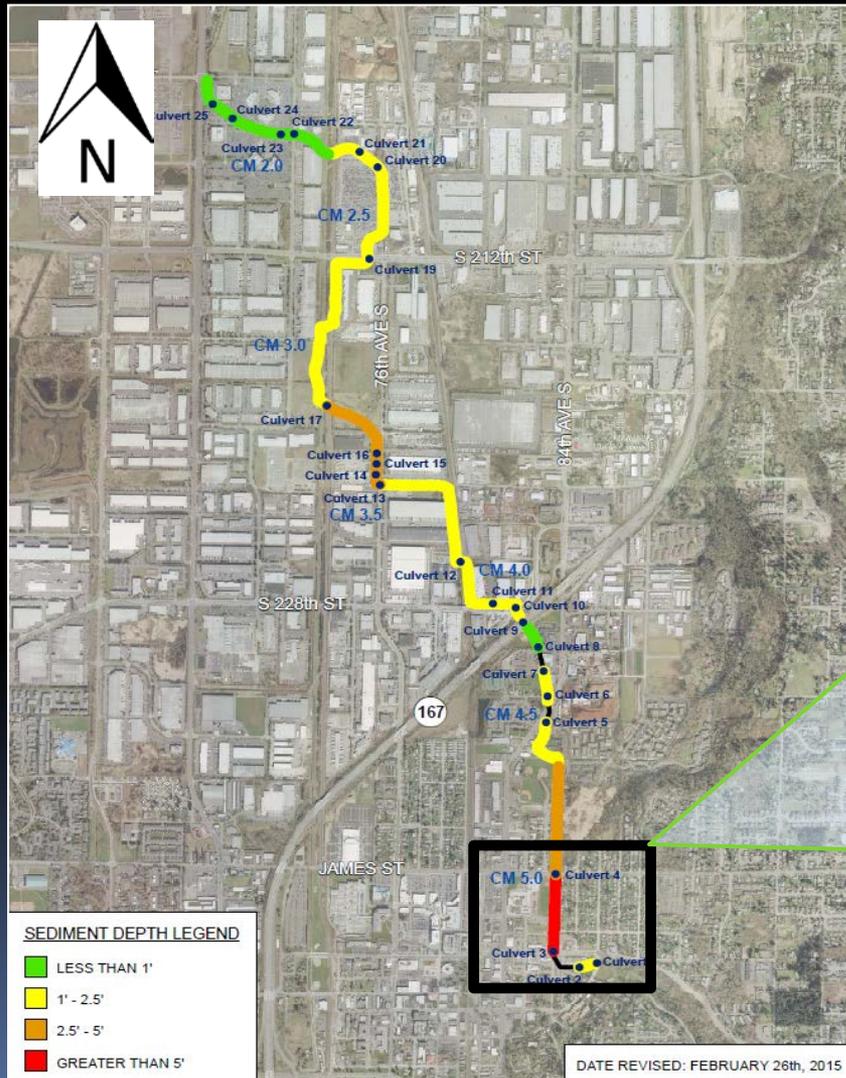
Narrow Culverts and Channel Sediment



Roadway Flooding along 76th Ave South

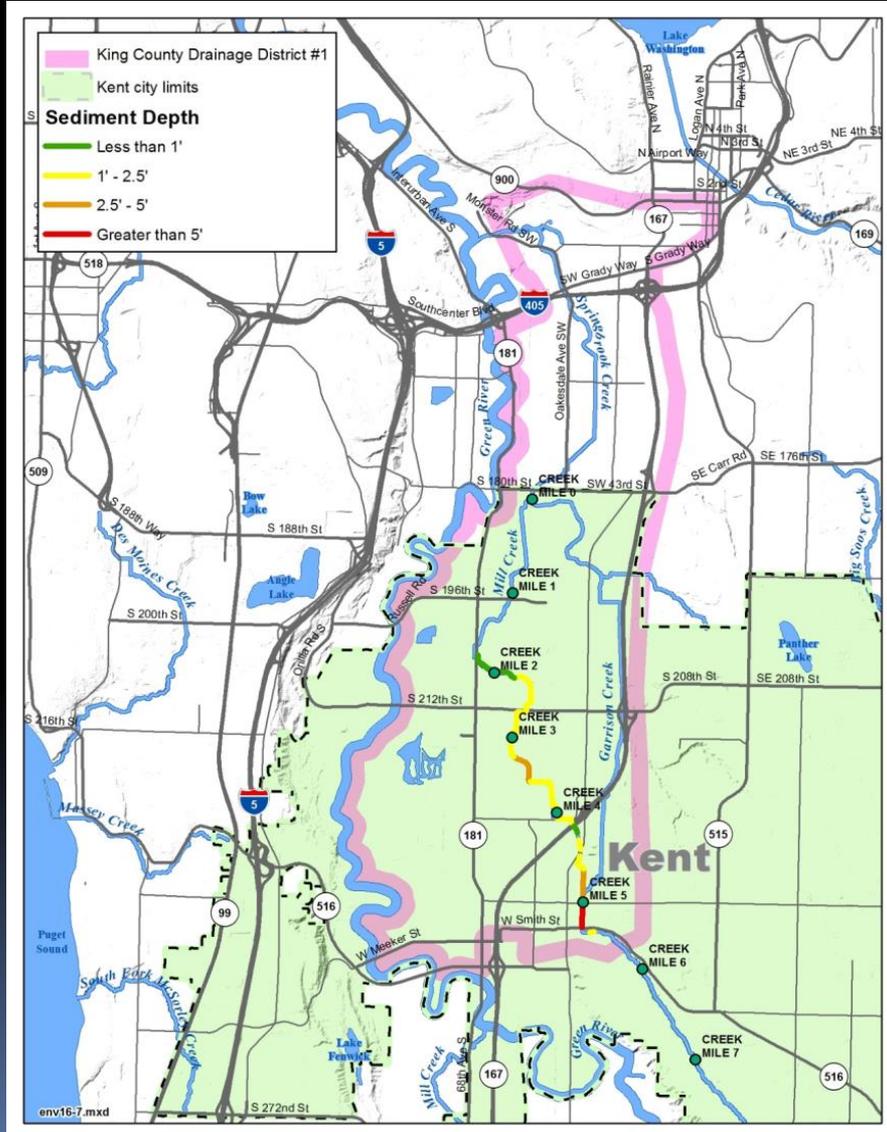
Mill Creek Channel Reestablishment

Restore Conveyance Capacity of Mill Creek



Mill Creek Plan

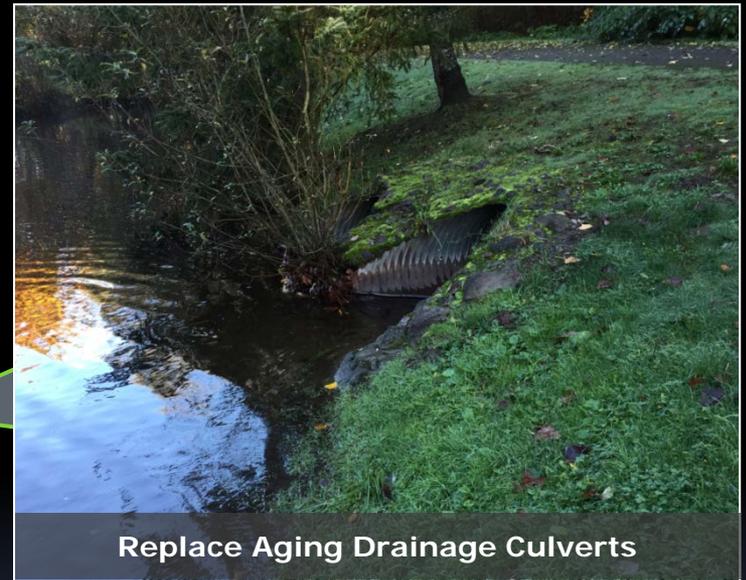
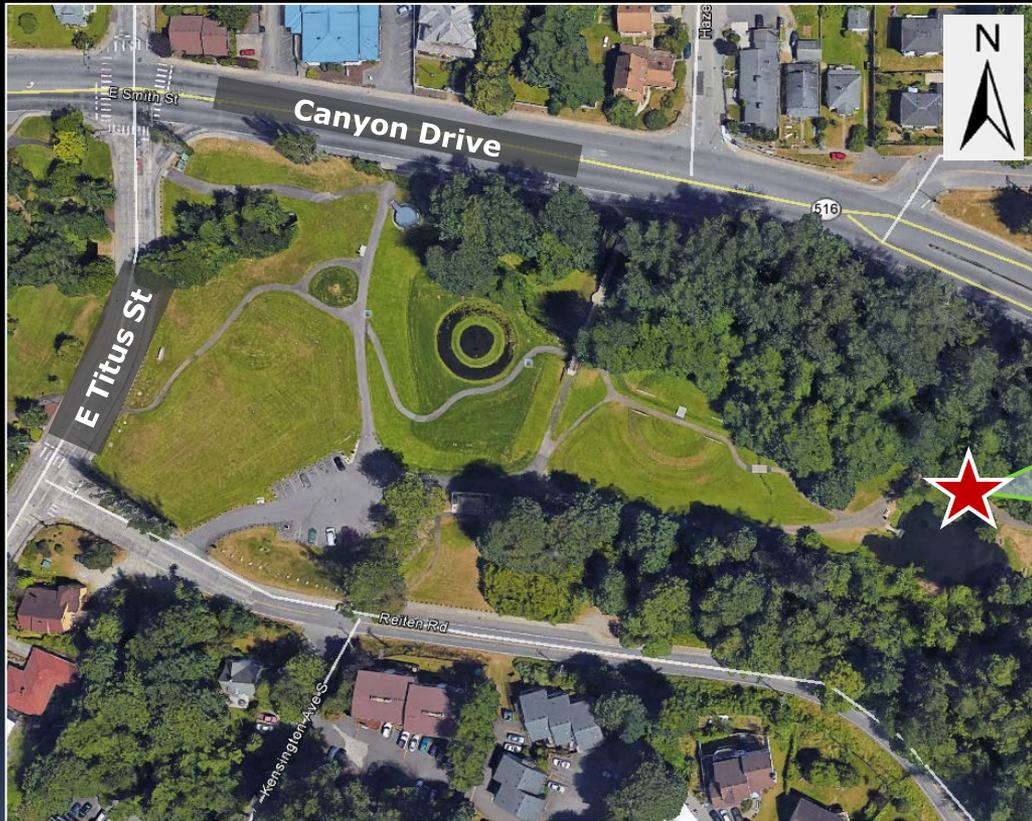
Future Partnership with Drainage District #1 of King County



- Maintain 14.2 miles of creek in Kent and Renton
- Remove grass and brush along banks of creek yearly;
- Remove blocking downed logs and perform beaver control as necessary;
- Plant ~2000 LF of native plants along streambanks annually;
- Perform twice-yearly water quality monitoring

Earthworks Park Sediment Pond Culverts

Replace Aging Storm Drainage Culvert Pipe



Green River Natural Resources Area

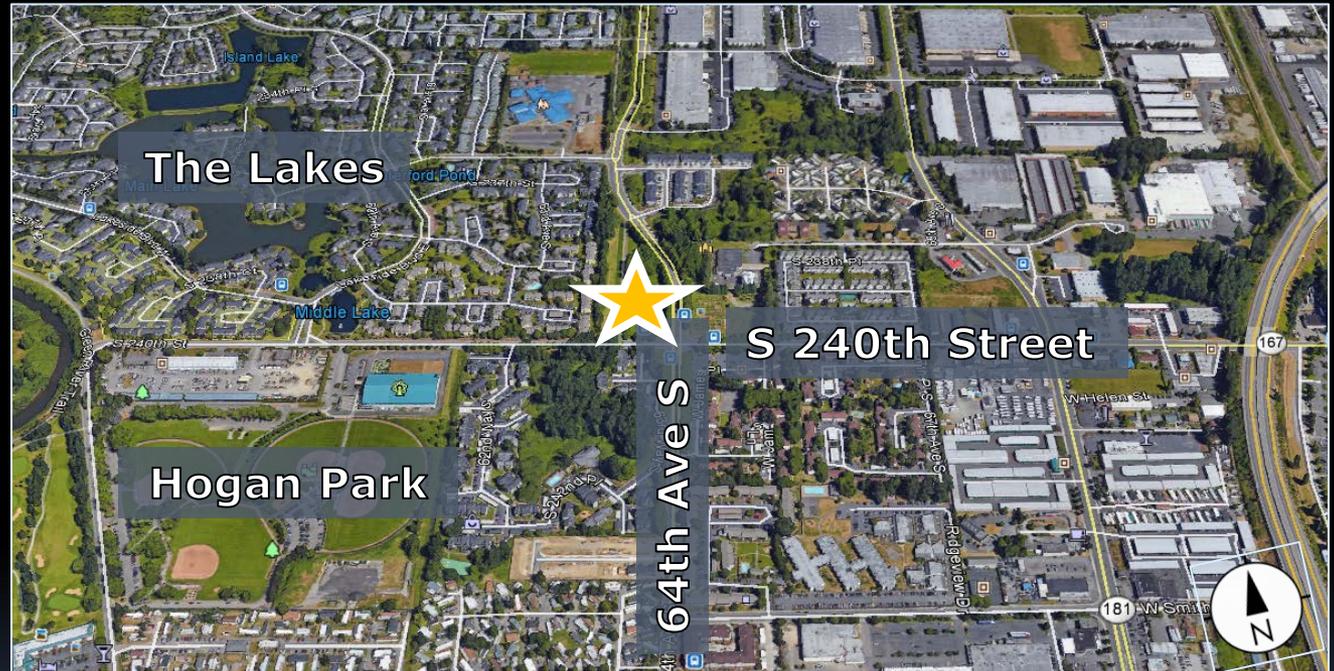
Stormwater Pump Station Improvement – Increase Flood Storage



Green River Natural Resource Areas

South Pump Station

Stormwater Pump Station Improvement – Reduce Flood Risk



Future Stormwater Pump Station

Other Mill Creek Capital Projects

- S. 267th St. Culvert Replacement
- Green River Natural Resource Area Forebay Maintenance
- Mill Creek at Senior Center Conveyance and Sedimentation Improvements
- Mill Creek at BNSF Culvert Improvements
- 104th Ave. SE/SE. 256th to 260th St. Trunk Storm Drain

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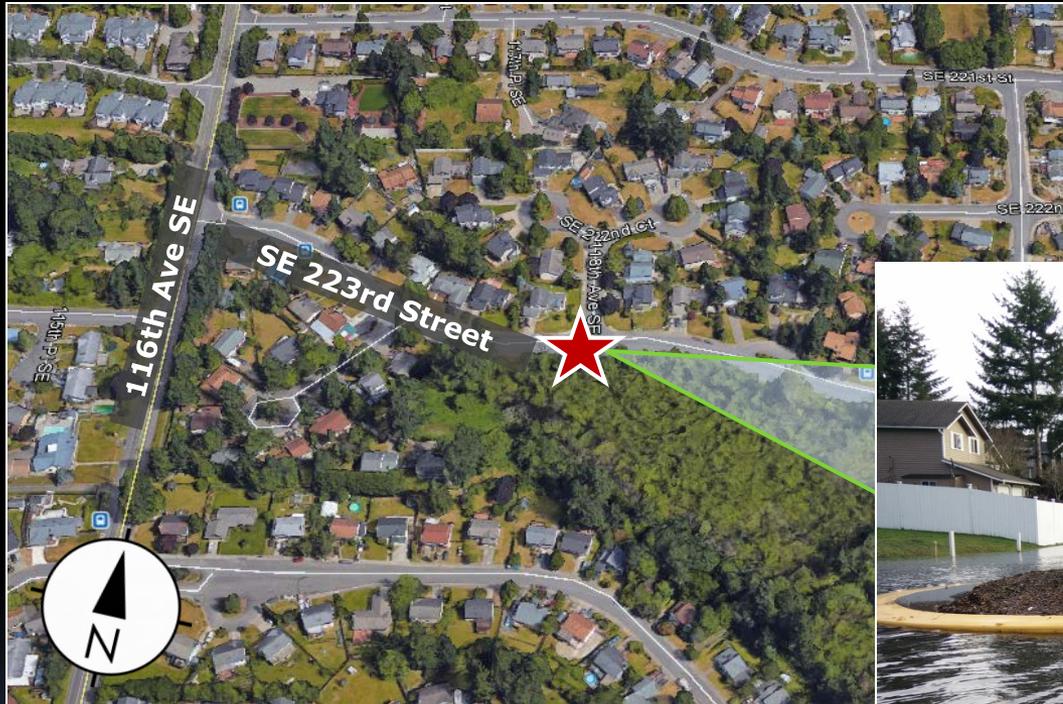
Lake Meridian Estates Storm Improvements – Phase II

Upsize Storm System and Clear Outfall Pipe



Southeast 223rd Street Drainage Improvements

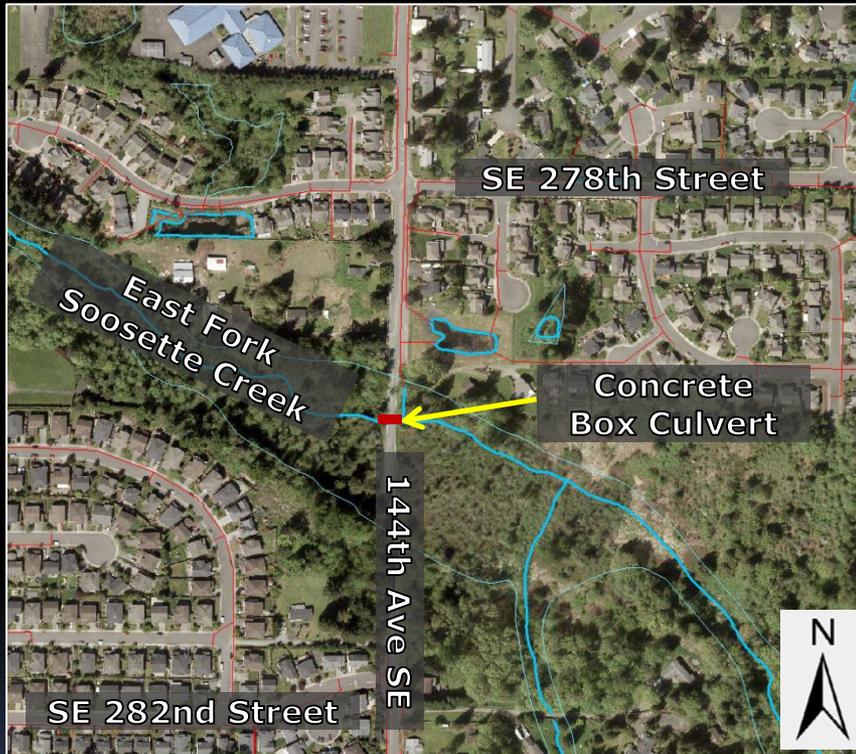
Investigate Downstream System to Improve Roadway Drainage



Roadway Flooding on Southeast 223rd Street

144th Avenue SE Drainage Improvements

Address Nuisance Roadway Flooding



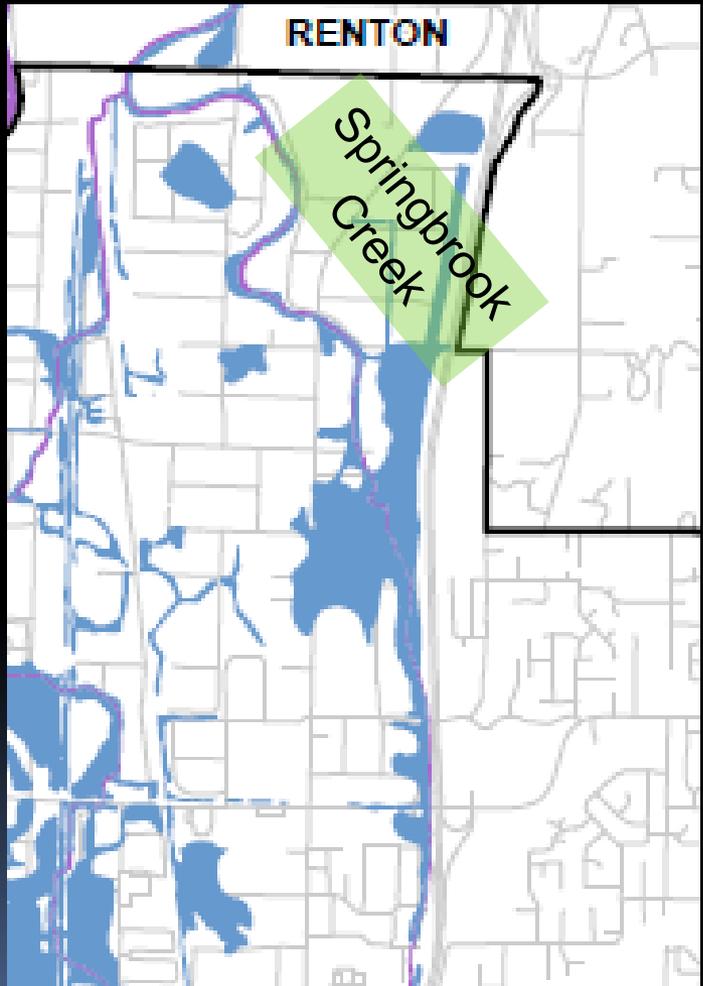
City of Kent Photo – March 6, 2014



Culvert Maintenance and Cleaning - 2011

Springbrook Creek

Conditional Letter of Map Revision



S. 188th St. Culvert

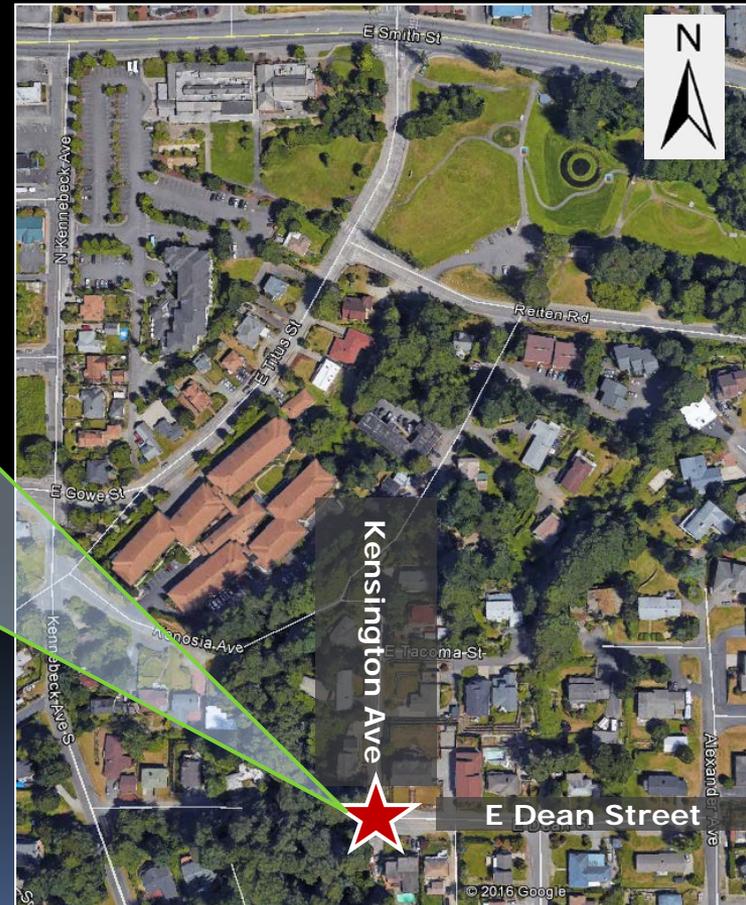
- Previously caused floodwater backup
- Removed by developer
- 2017 preliminary maps still include effects from culvert

Kent Scenic Hill Drainage at Kensington

Address Ongoing Erosion Problems along Steep Ravine



Riprap Repair in 2010 to Address Erosion Problems



Lake Fenwick

Water Quality



or
gooey and green?

What goes down the storm drain goes straight to the lake.
The future of the lake is in your hands!

**ONLY RAIN
DOWN THE DRAIN**

Keep our water clean!
Please help keep lakes and streams clean by preventing anything except clean rainwater from entering the stormdrains!

For more information on **pollution prevention**, please contact:
City of Kent Public Works
Environmental Engineering
253-856-5500

**Lake Fenwick
Clean & Pristine?**

South 212th Street Roadway Repair Phase II

Relocate Garrison Creek



Other Local Drainage Capital Projects

- Stormwater component of roadway projects (e.g. S. 224th and 228th Streets, S. 248th at the YMCA)
- Springbrook Creek Flood Containment
- Springbrook and Garrison Creek Reestablishment
- S. 196th at 84th Ave. Trunk Storm Drain
- Big Soos Creek Bridge at SE 256th St.
- N. Meridian Valley Ck Culvert at SE 236th St.

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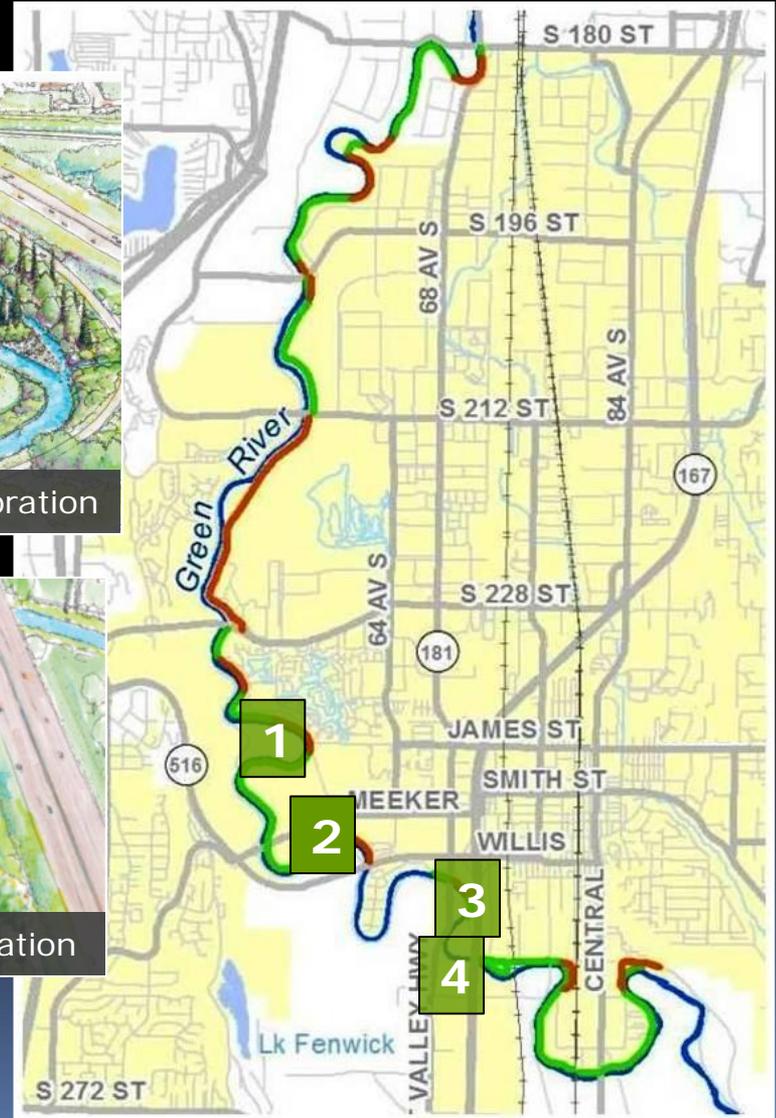
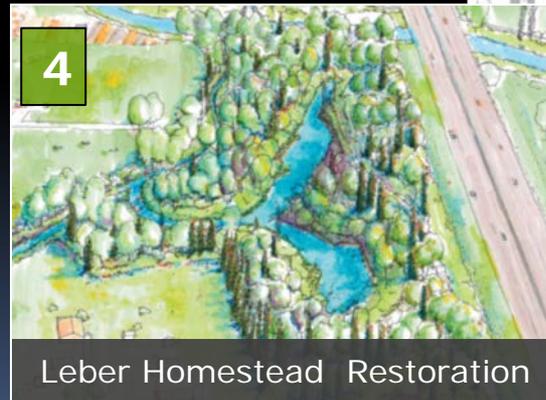
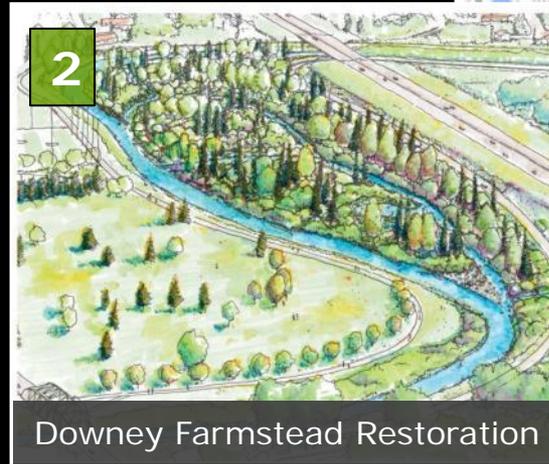
Leber Homestead Side Channel Restoration

Environmental Issues along the Green River

Vegetation, Temperature and Salmon Habitat



Green River Environmental Restoration Projects



Leber Homestead Restoration Project

Completed in 2016



Downey Farmstead Restoration Project

Relocate Frager Road and Overhead Utilities



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National Pollutant Discharge Elimination System Program

Current NPDES Program Implementation Requirements

- NPDES Program permit requirements:
 - Public Education and Outreach
 - Public Involvement and Participation
 - Illicit Detection and Elimination
 - Controlling Runoff from New Development, Redevelopment and Construction Sites
 - Municipal Operations and Maintenance



National Pollutant Discharge Elimination System Program

Water Quality Monitoring and Assessment

Water Quality Monitoring Program

Collective regional water quality monitoring fund



National Pollutant Discharge Elimination System Program

2019 NPDES Permit Reissuance New Requirements

- Development of a Source Control Inspection Program
- Public Education and Outreach Program expansion
- Illicit Discharge Detection and Elimination Program Updates
- Implement a Long-term Municipal Planning Program



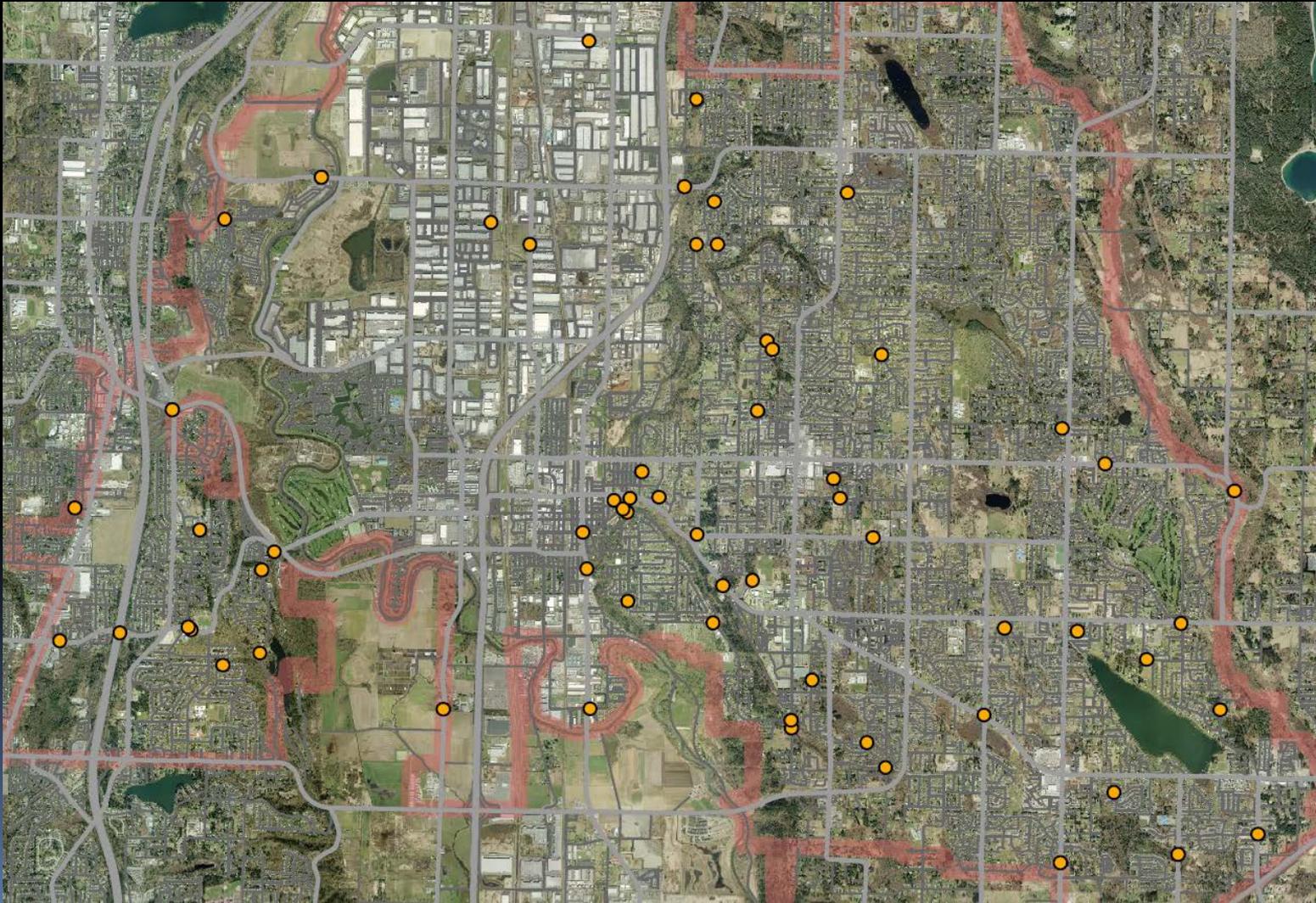
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Maintenance Needs

Stormwater Problem Spots



Maintenance Needs

Stormwater Problem Spots



Maintenance Needs

Mill Creek/Titus Access Hatches



Maintenance Needs

Earthworks Park and Garrison Creek Sedimentation Removal



Maintenance Needs

Soosette Ck/124th Ave. SE Culverts



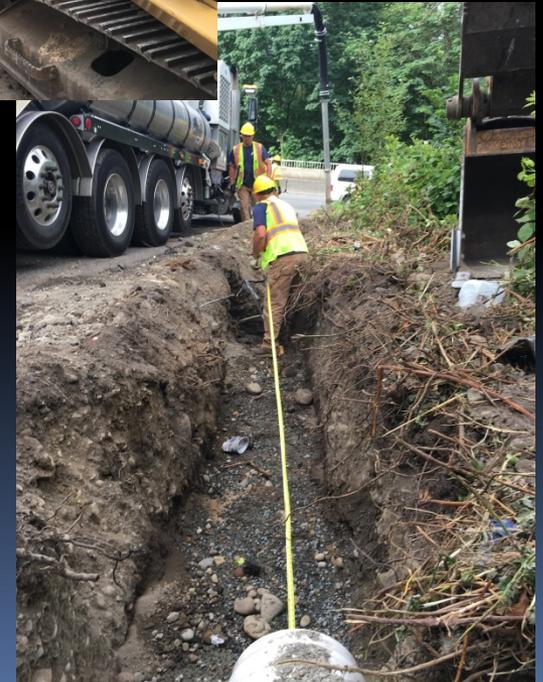
Maintenance Needs

James St. Hill Sinkhole/Pipe Repair



Maintenance Needs

Summit Pipe Replacement



Maintenance Needs

Beaver Dams



Maintenance Needs

Vactor Solids Storage and Disposal

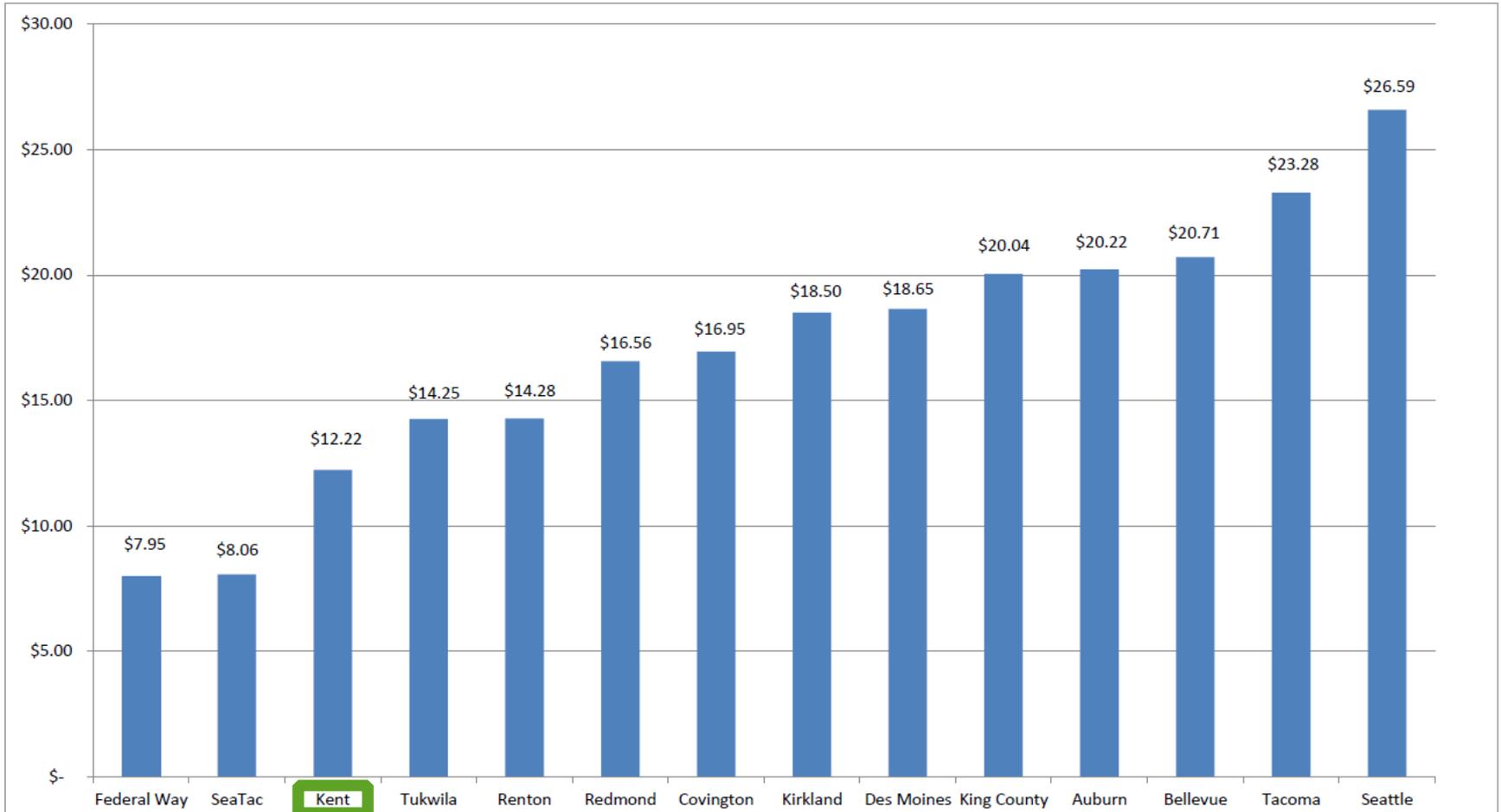


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2017 Residential Drainage Comparison

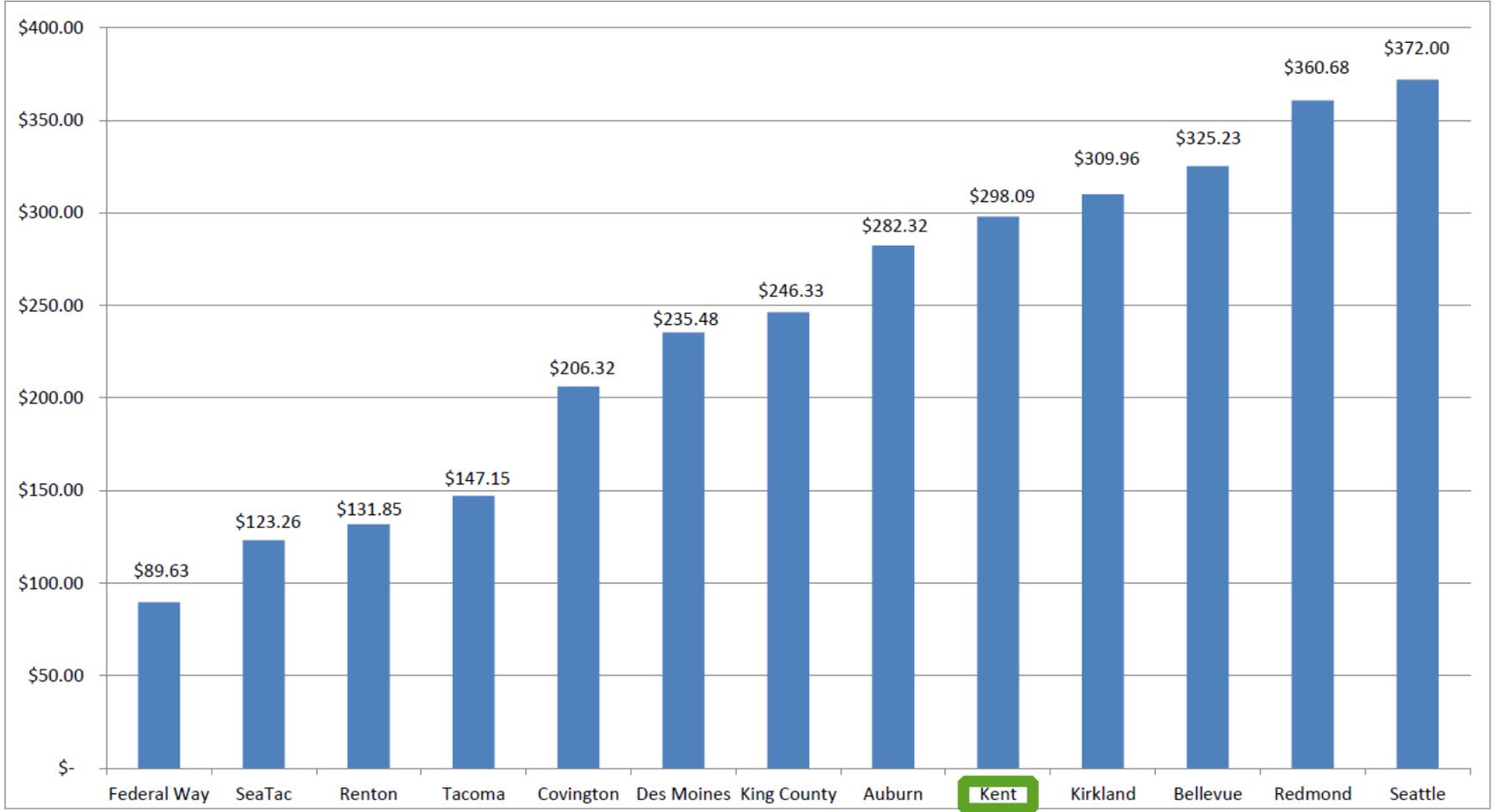


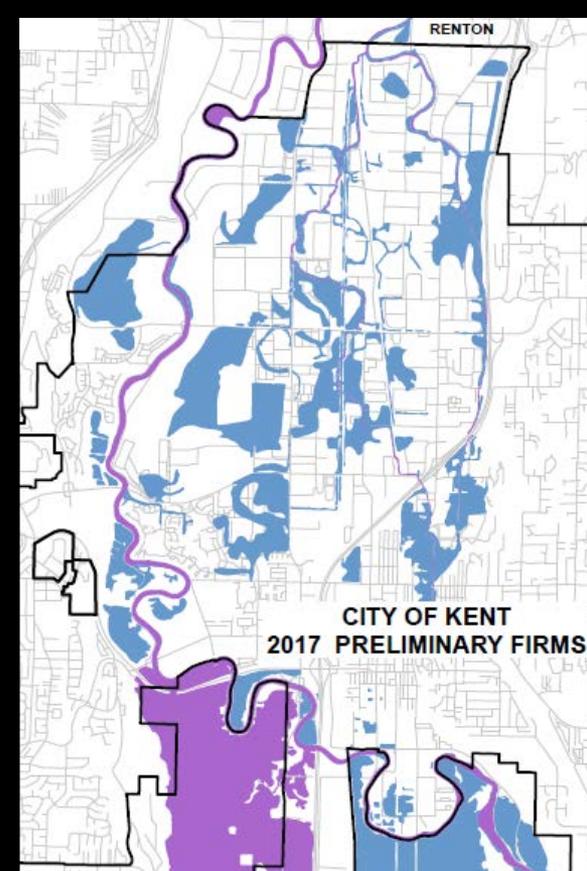
12/1/2017

City of Kent 2018 Single Family Rate - \$12.51

2017 Non-Single Family Residential Drainage Comparison

One acre heavy development





City of Kent

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