Broadview Sewer & Drainage Improvement Program

Broadview Community Council

April 19, 2016

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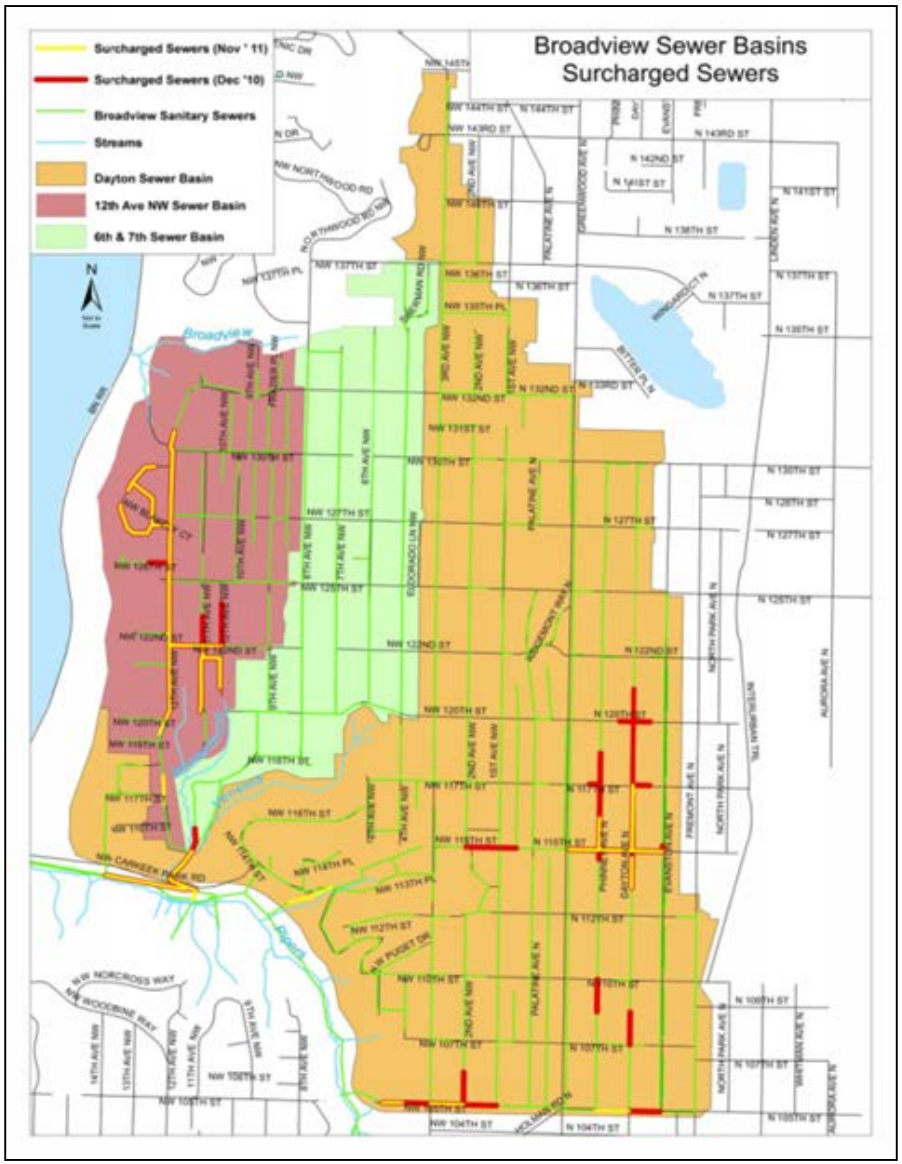
Background on Broadview



- Annexed in Seattle
- Informal separated drainage system
- Poorly drained soils
- High groundwater table
- Sewer system in 12th Ave may have been designed to allow infiltration
- Many houses with sump pumps and foundation drains connected to sanitary sewer

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Problem Definition

Sewer backup in basement

Stormwater jumping inlet
125th and 9th

Stormwater flooding on 11th,
south of 122nd

SSO on 115th Street, west of 3rd

Stormwater flooding on 12th,
north of 122nd

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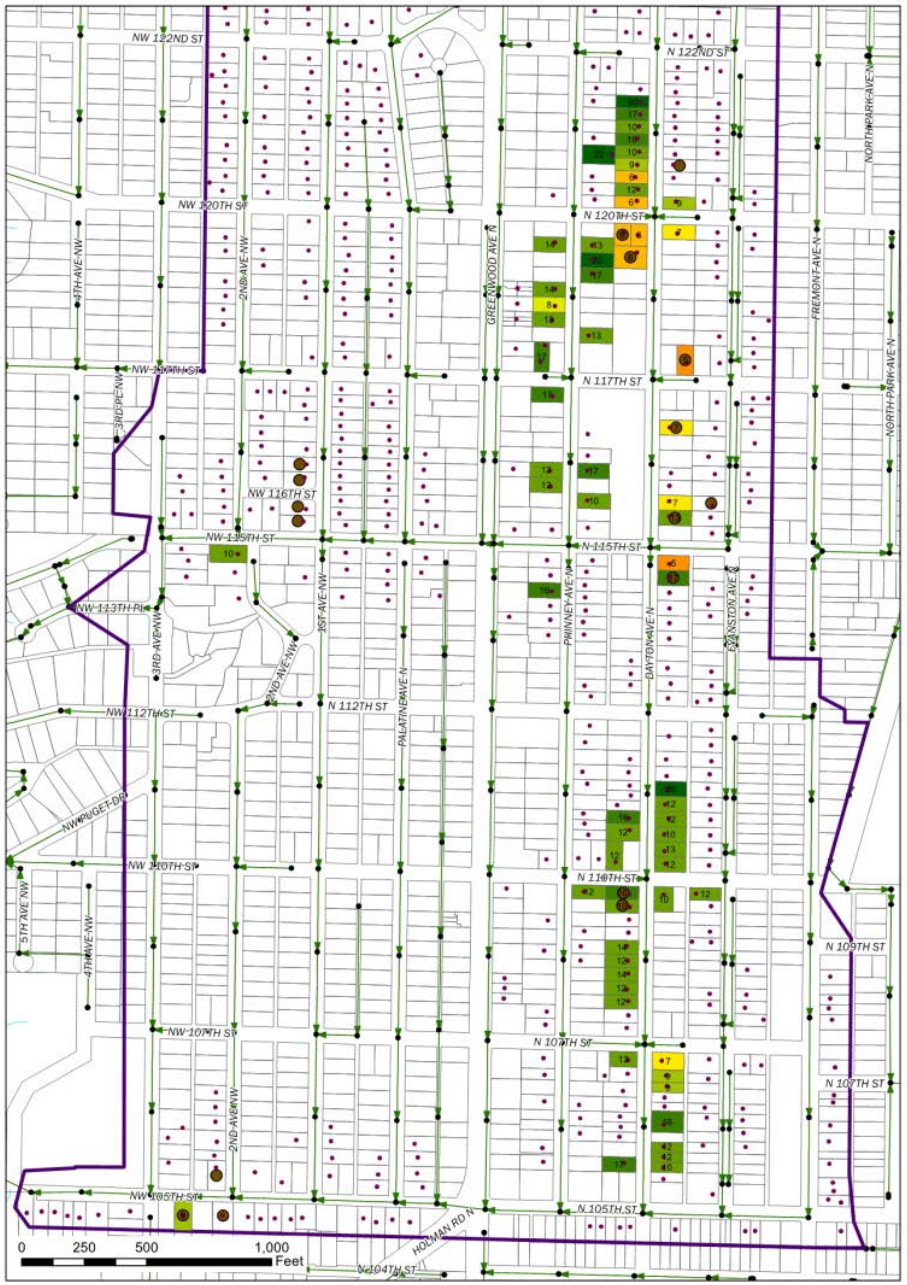
Dayton Ave Basin Sewer Problems

- 66 homes with reported sewer problems
- Many homes experience sewer back ups every 6-10 years



Dayton Avenue Area Sanitary LOS
Backflow Preventer Locations

Modeled with SPU 158 Year Timeseries

Legend

Parcel Sanitary LOS (yrs)
20 - 24
15 - 19
10 - 14
9
8
7
6
5

BFP
Surveyed Basement Model Nodes
Sanitary Model Extent
Sanitary System

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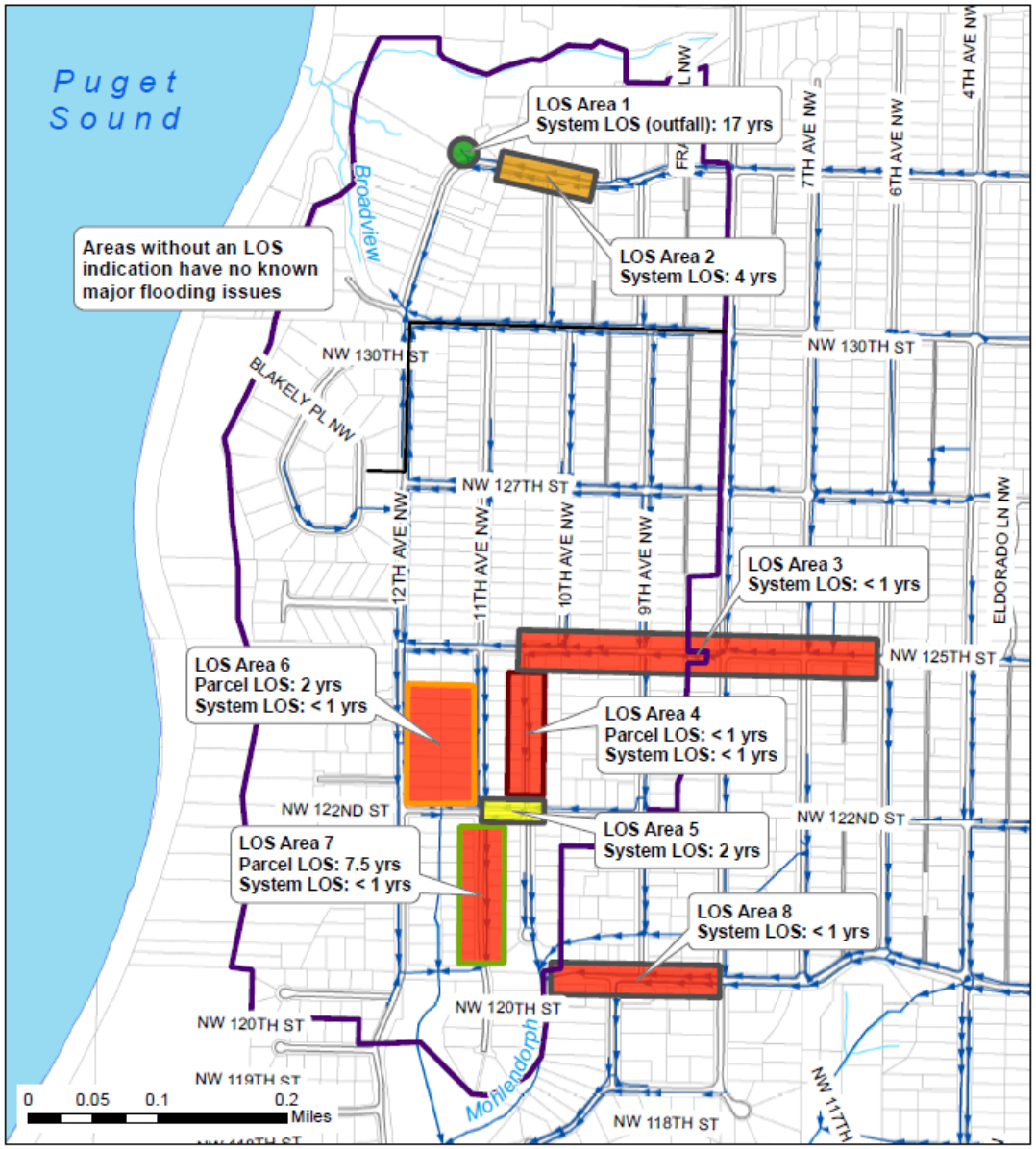
12th Ave NW Basin Storm Drainage Problems



- Right of ways flood multiple times per year
- Private homes flood every 1-7 years

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Early Action Projects

- 2011 Backflow Prevention Pilot Program
  - SPU installed backflow preventers at 23 homes
- 2012 Flood Grouting Pilot Program
  - 5,900 feet of SPU Sewers
- 2012-2015 Spot Drainage Improvements

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Regional Sewer Option

- SPU considered over a dozen options addressing sewer and drainage issues in Broadview last spring.
- None of these options, however, provided the neighborhood with enough value to balance high costs.

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Phased approach

- While we continue to study a possible long-term regional sewer option with King County, we are proposing two smaller, cost-effective projects
- Focus first on addressing the biggest sewer and drainage issues
- These projects are considered the first phase of our work in Broadview

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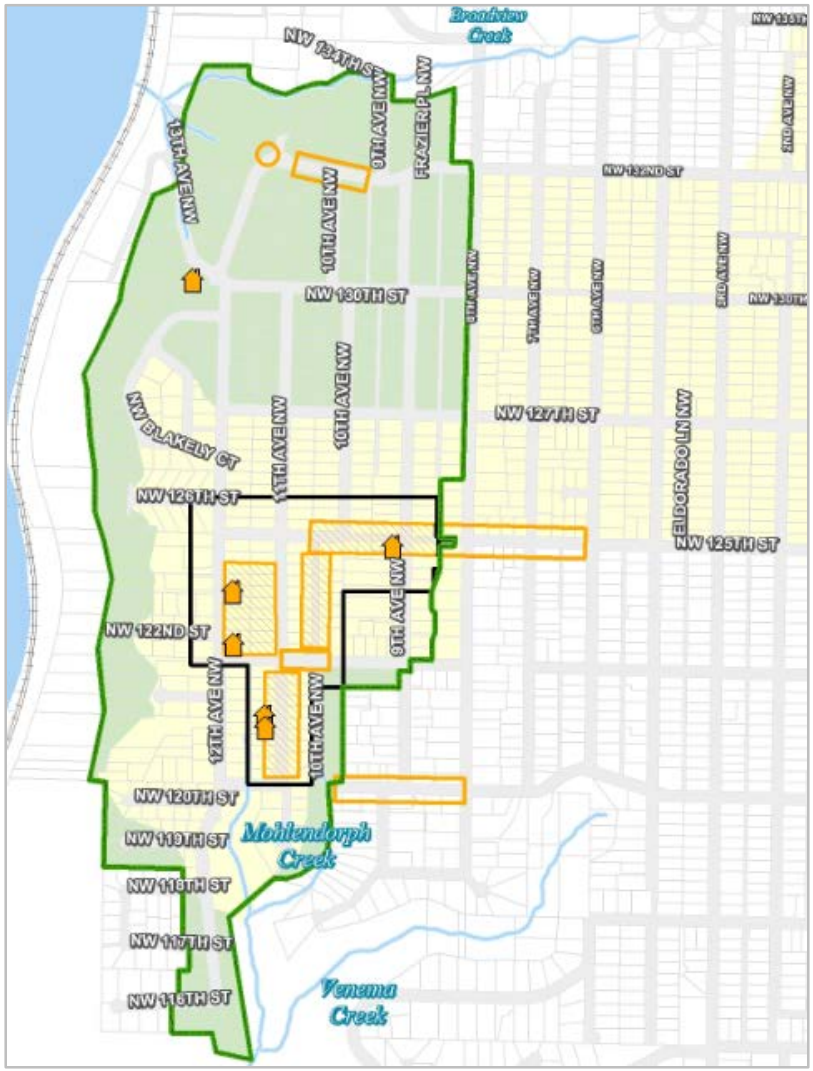
12th Ave NW Phase 1 Drainage Improvement



- Project goal to reduce “high priority” flooding (defined as flooding to private structures)
- Improve water quality requirements to help protect creek

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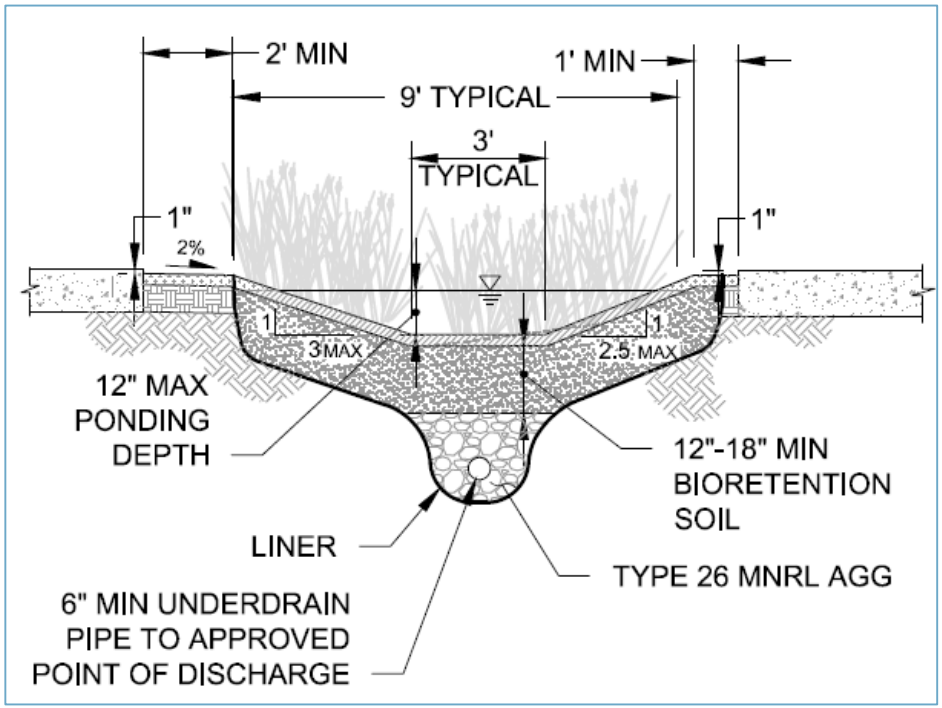
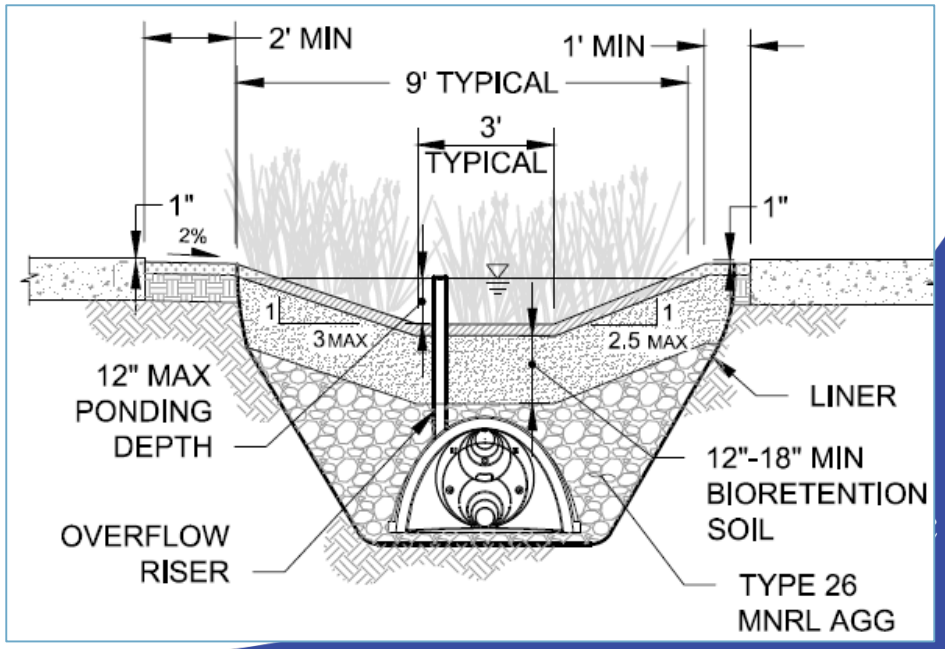
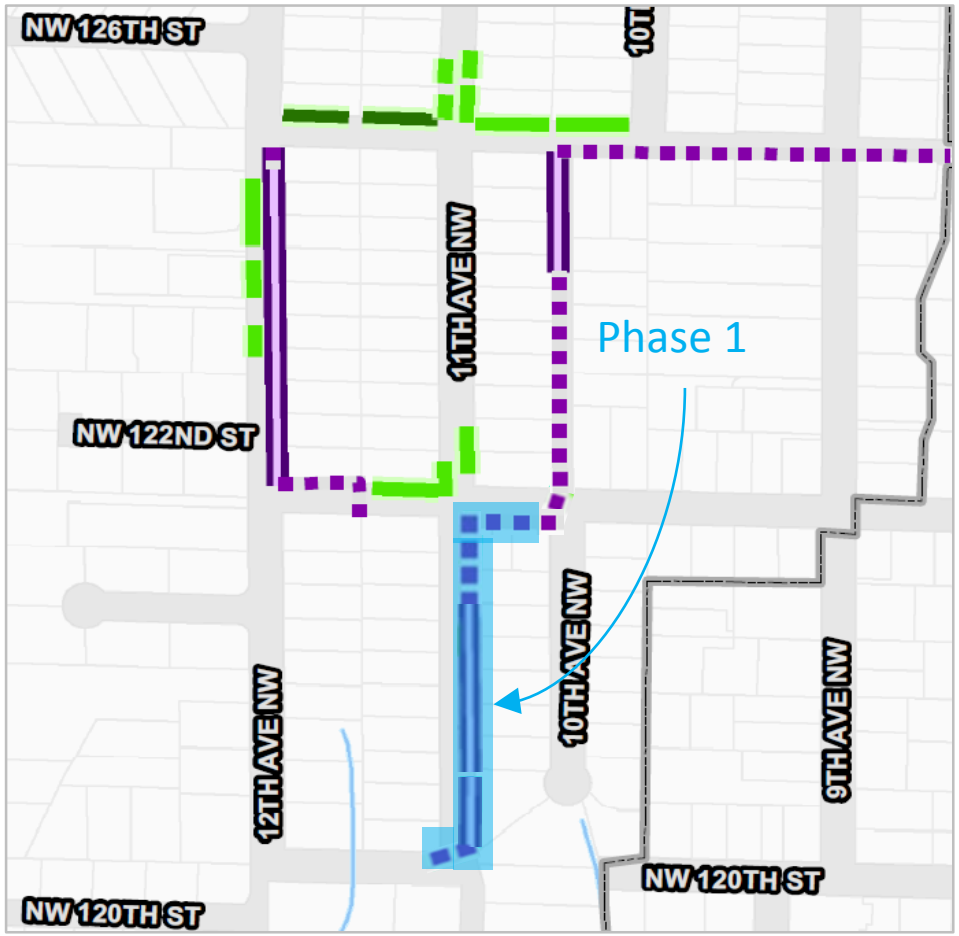
ROW Drainage Option

- Includes a mix of lined green & grey components
  - Pipe detention
  - Lined bioretention with underdrains/orifice control
  - Lined bioretention with storage chamber/orifice control
  - Lined stormwater cascades with orifice control





12th Ave NW Phase I



- Components:
  - Upsized pipes: 780 linear feet
  - Detention pipe: 450 linear feet
  - GSI: 400 linear feet
  - GSI locations TBD during design
- Cost:
  - $4.9 million

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Dayton Ave N Phase 1 Sewer Improvement

- Stormwater entering pipes is the main cause of sewer back ups
- This project will:
  - Fix leaks in the mainline sewer and in up to 150 side sewers
  - Increase size of mainline pipe
  - Disconnect private sump pumps, foundation drains and downspouts
  - Add new GSI
- Cost:
  - $13.7 million

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Next steps

- Implement Phase 1 Projects
  - 12th Avenue NW Drainage Improvement
    - Design: Spring 2016 - Winter 2017
    - Construction: Winter 2017 – 2018
  - Dayton Avenue N Sewer Improvement
    - Design: Spring 2016 - 2017
    - Construction: 2018

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Next steps

- Continue to work with King County DNRP and the Ship Canal Water Quality Project Team on future phases
- Evaluate effectiveness of Phase I projects
- Use Decision Model to determine future phases
- Move Seattle Levy coordination with Seattle Department of Transportation

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Community Outreach

- Update the community at key project milestones
  - SPU will provide information on project progress through targeting mailings, regular updates to our website and listserv
  - Large door-to-door, targeted outreach during design for both projects
    - GSI siting (12th and Dayton)
    - Fixing leaks in side sewers (Dayton)
    - Disconnecting private sump pumps, foundation drains, and downspouts (Dayton)

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Questions

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