

Ballard Neighborhood Improvements



What is the problem?

When it rains, large volumes of stormwater flow into the same pipe that carries raw sewage. The system cannot carry that much volume, causing an overflow of untreated sewage and stormwater runoff into Salmon Bay. This overflow is called a Combined Sewer Overflow or CSO.

What is the solution?



1

Keep Stormwater Out

Roadside Rain Gardens

Seattle Public Utilities is exploring options to build roadside rain gardens in Ballard on some of the streets in the green dashed area on the map. Roadside rain gardens are an effective strategy in Ballard, given the high volume of overflow that needs to be reduced. Roadside rain gardens will help reduce future storage needs in Ballard.

RainWise

Ballard residents are eligible for rebates to offset most or all of the cost of installing a rain garden or cistern.

Learn more at www.rainwise.seattle.gov



Just after planting



10 months after planting



18 months after planting

Quick Facts:

- 73 overflows into Salmon Bay occurred in 2011
- 43 million gallons of untreated sewage and stormwater were released into Salmon Bay in 2011
- Ballard accounted for over half the volume of all sewage overflows citywide in 2011

2

Store What's Left

Underground Storage

Due to the large volume of stormwater runoff in Ballard, underground storage will also be needed. Seattle Public Utilities will identify specific sites for underground storage facilities after 2015.

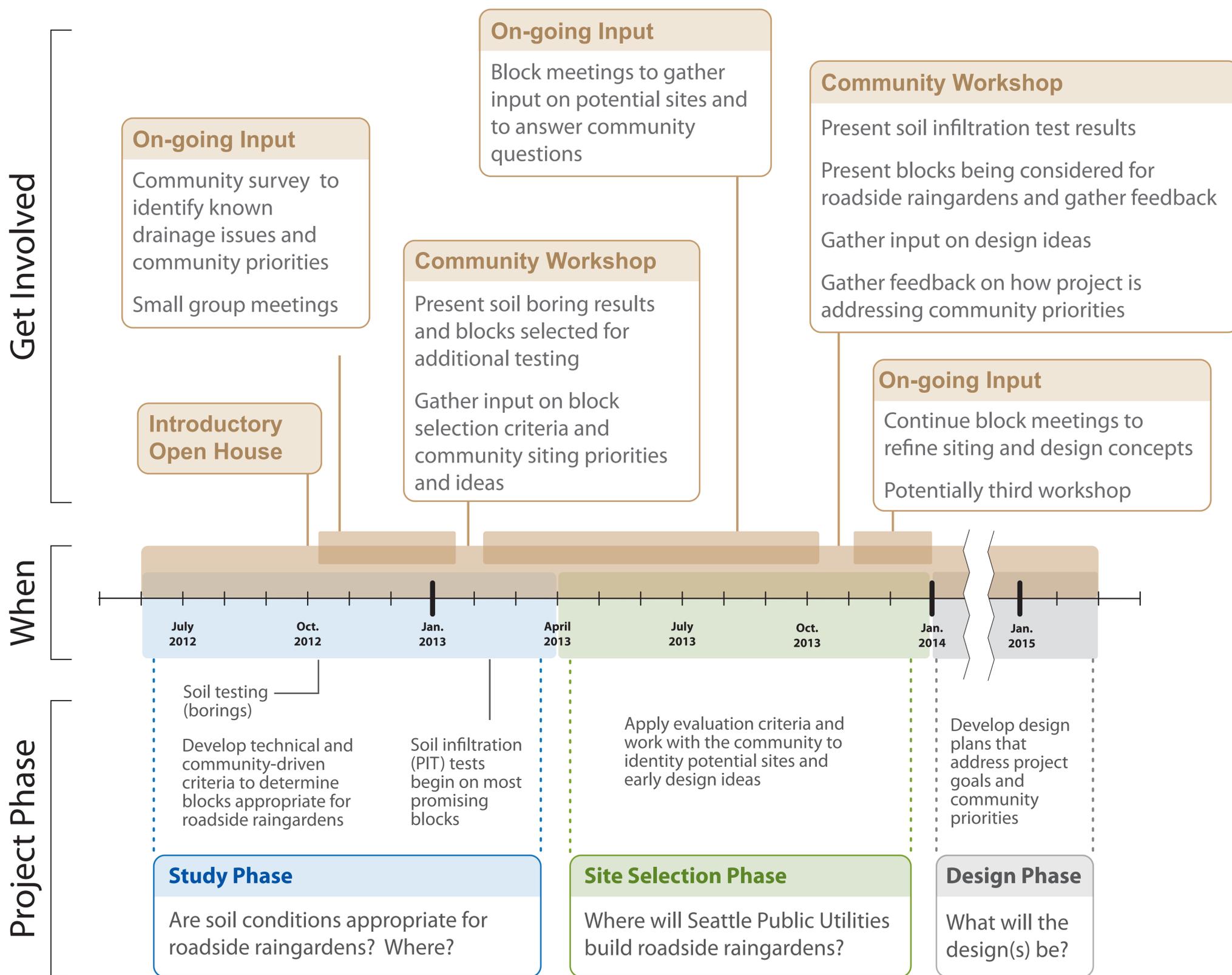


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Next Steps

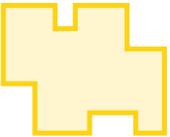
Want to Learn More?

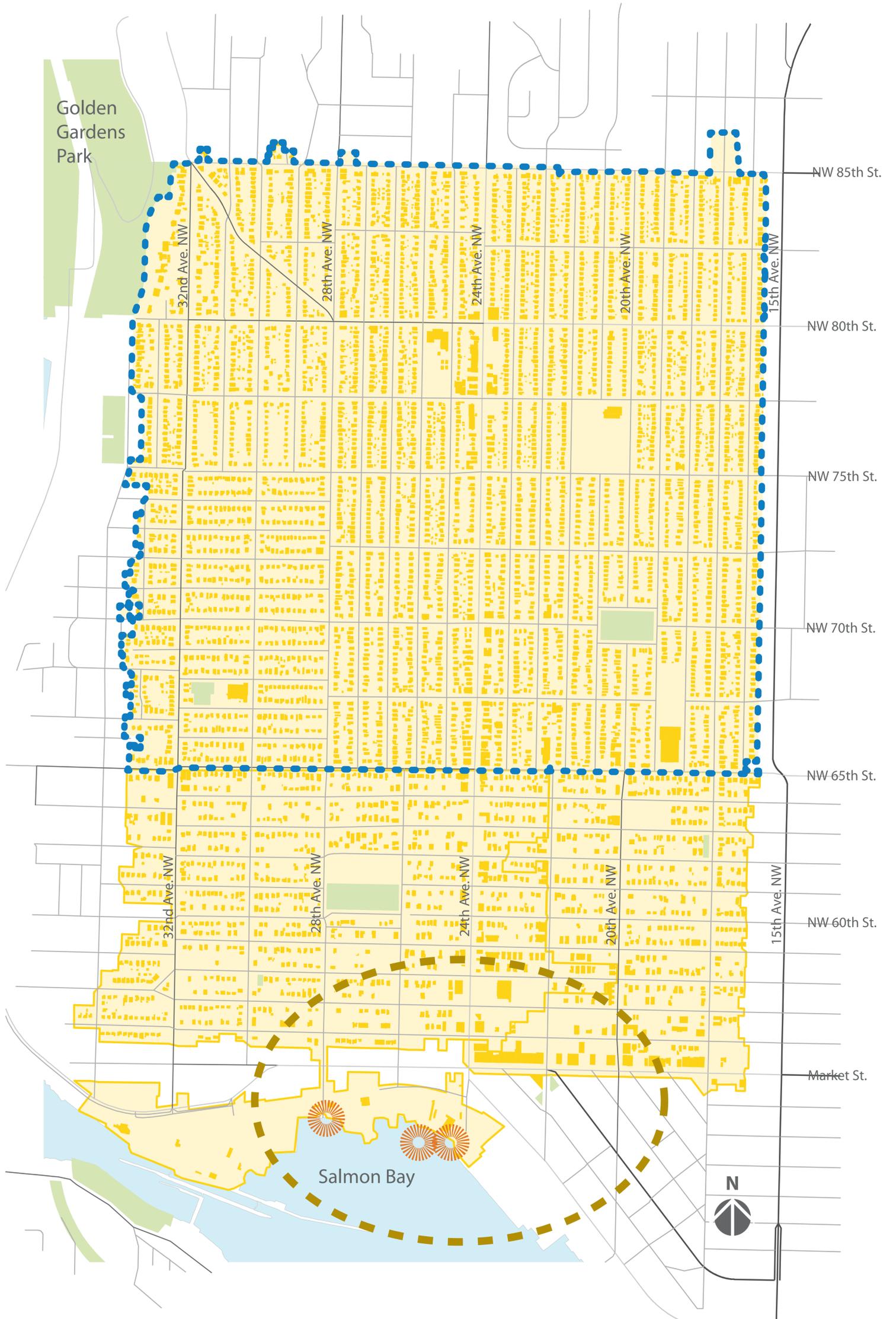
- Call 206-386-1501
- E-mail: shanti.colwell@seattle.gov
- www.seattle.gov/cso/ballard



Ballard Neighborhood Improvements

Project Area

-  RainWise Eligible Area
-  Potential Roadside Raingardens Project Area
-  Potential Underground Storage
-  CSO Outfall



Next Step: Soil Testing

In October, crews will collect soil samples on the streets shown on this map. At many of these locations, groundwater monitoring wells will also be installed and remain in place for approximately one year. Soil testing and groundwater monitoring helps us understand where soil and groundwater conditions are most appropriate for roadside raingardens.

Soil testing and monitoring on these streets does not mean Seattle Public Utilities will build roadside raingardens on the street. Locations for roadside raingardens will be identified later, and the community will be invited to participate in the street selection and design process.

Soil Testing Locations



What is glacial outwash soil?

Glacial outwash soils are ideal for roadside raingardens because they are more porous allowing water to seep in quickly.

What can you expect?

- Trucks, like the one shown in the photo, will drill small holes in the parking strip.



- All soil testing will be done in parking strips, which are part of the public right-of-way.
- Holes will be patched in paved areas or replanted in grassy areas.
- All work will occur on weekdays during daytime hours
- Testing will take about a half a day at each location
- Short-term parking limitations near testing locations
- Increased noise near testing locations (only during testing)

Questions?

Contact Shanti Colwell
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Natural Drainage Solutions: A Closer Look

How does it work?

Natural drainage solutions help our city's drainage system work more like a forest by slowing and cleaning polluted stormwater runoff and allowing it to soak into the ground.



Soak in



Slow



Clean



Evaporate



Store + reuse

When Seattle was mostly forest, there were a lot of places for rain to soak into the ground.

As Seattle grew, our forests were replaced with paved roads and buildings, leaving fewer places to absorb the rain.

Natural drainage solutions keeps some stormwater from entering the system. The less stormwater that enters the sewer system, the less likely it is that an overflow will occur!



Why use natural drainage solutions?

- Reduces demand on existing pipes and sewage treatment facilities
- Avoids having to build new storage facilities (or build smaller facilities)
- Saves energy & operating costs. Stormwater does not need to be pumped to the treatment plant
- Provides opportunities for neighborhood improvements such as attractive landscaping or pedestrian and bicycle safety projects



Address stormwater here
so we don't have to treat it here



Where has it been done?

Venema Natural Drainage System Project, 2012
In Progress



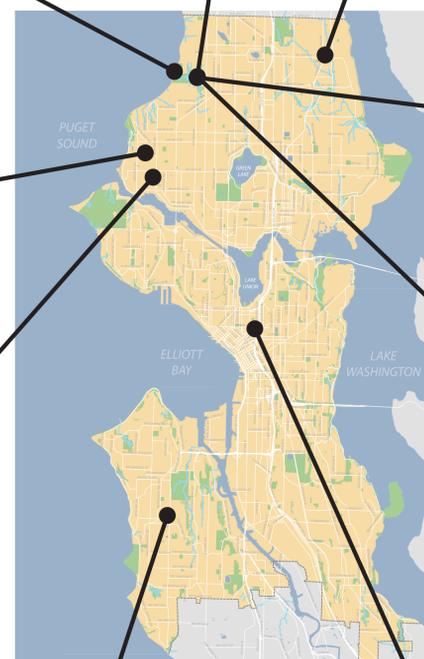
SEA Streets, 2000



Pinehurst Green Grid, 2004



RainWise, 2010 (ongoing)



Carkeek Cascade, 2003



Ballard Roadside Raingardens, 2012



Broadview Green Grid, 2004



Highpoint Redevelopment, 2005-2009



Swale on Yale, 2012 (In Progress)