# Advancing Equity, Health and Resiliency with Stormwater Parks

TOOLBOX: Peer Networking
November 4, 2022

# Stormwater Parks

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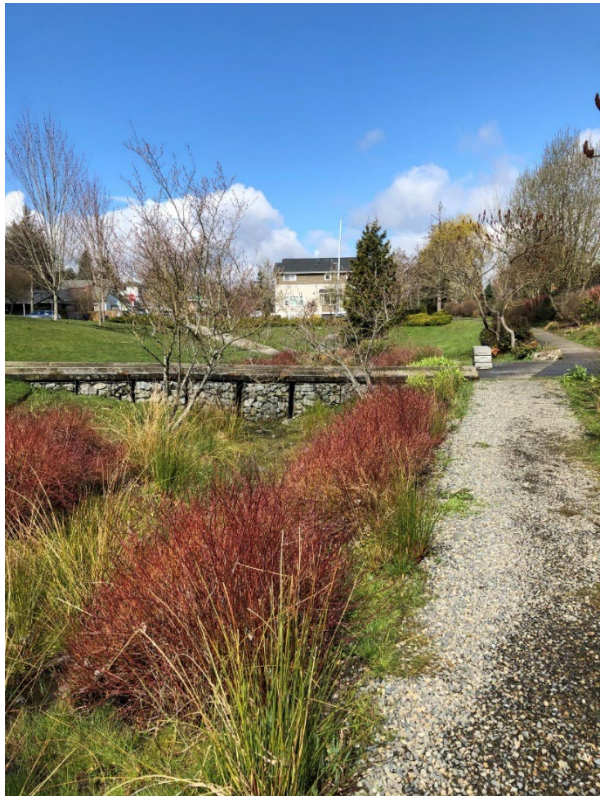
# Stormwater Parks

Stormwater parks can have multiple benefits:

- Provide recreation
- Treat, store, and infiltrate stormwater from hundreds of acres
- Address equity when built areas underserved by parks
- Support Tribal treaty rights
- Add natural features and wildlife habitat to an already built park
- Be funded by multiple sources

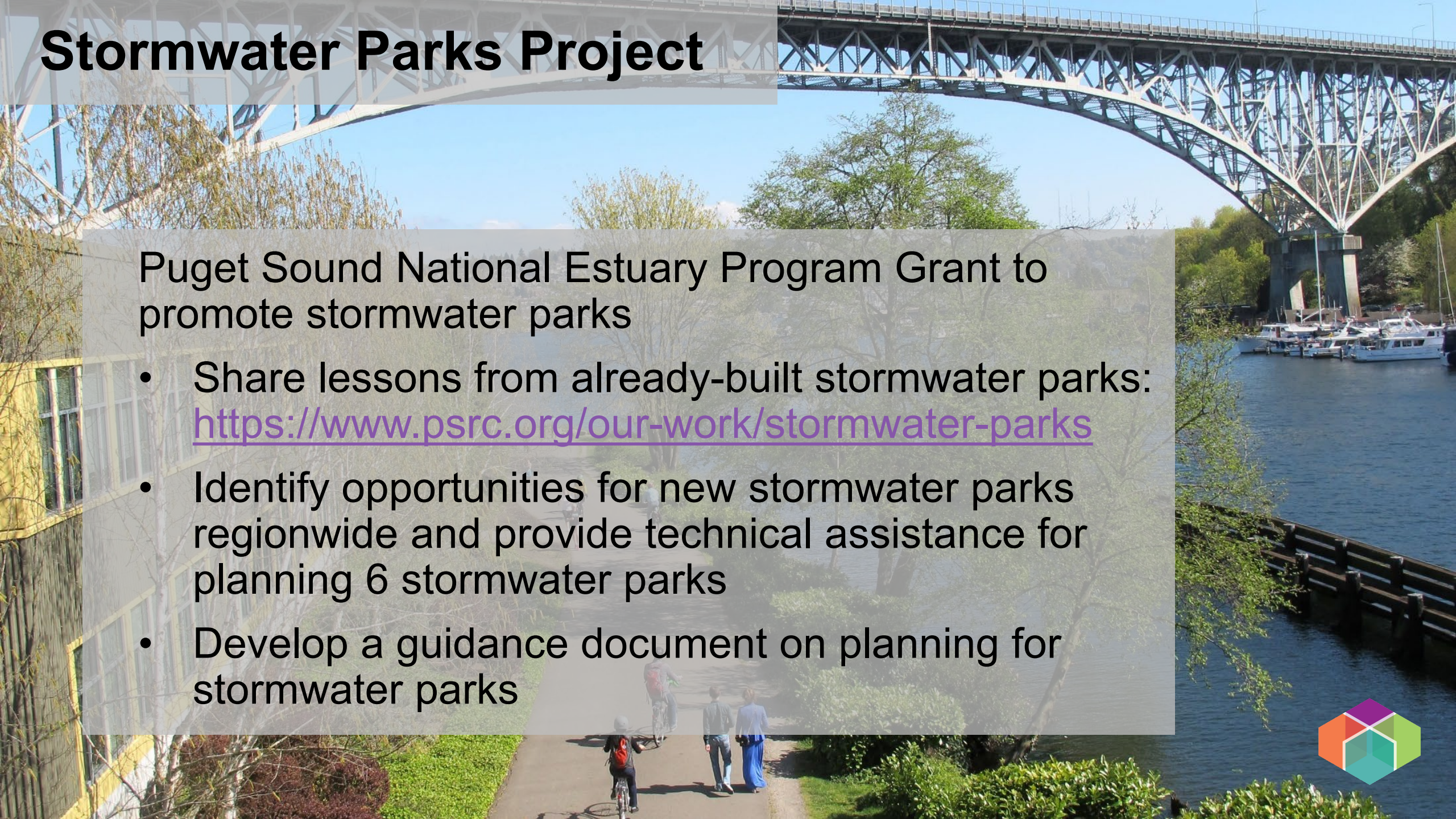


# Multidisciplinary Approach

Some advantages of a multidisciplinary team include:

- Joint planning expedites and improves recreation, stormwater, maintenance, and other components
- Community engagement
- Provisions in functional and comprehensive plans
- Identification of opportunities for stormwater park locations-new and existing park and stormwater facilities

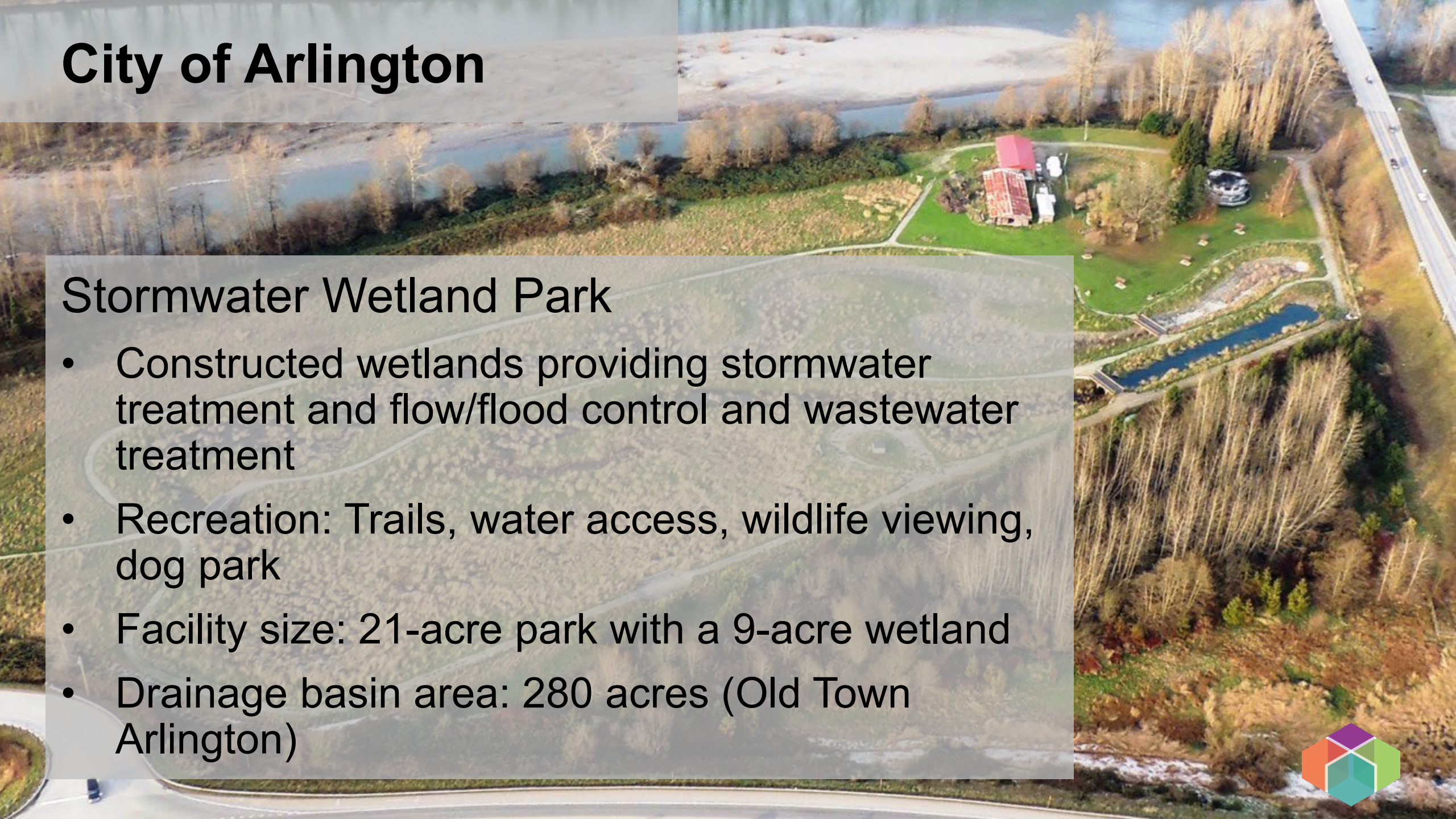
# Stormwater Parks Project



Puget Sound National Estuary Program Grant to promote stormwater parks

- Share lessons from already-built stormwater parks: https://www.psrc.org/our-work/stormwater-parks
- Identify opportunities for new stormwater parks regionwide and provide technical assistance for planning 6 stormwater parks
- Develop a guidance document on planning for stormwater parks

# City of Arlington



## Stormwater Wetland Park

- Constructed wetlands providing stormwater treatment and flow/flood control and wastewater treatment
- Recreation: Trails, water access, wildlife viewing, dog park
- Facility size: 21-acre park with a 9-acre wetland
- Drainage basin area: 280 acres (Old Town Arlington)

# City of Bellevue

## Lakemont Community Park

- Stormwater detention vault and sand filter treatment basins within a larger community park
- Recreation: play area, trails, picnic shelters, tennis courts and more
- Facility size: 5 acres
- Drainage basin area: 215 acres

# Kitsap County


## Manchester Stormwater Park

- Small park with natural and engineered stormwater infrastructure that provides treatment and flood control
- Recreation: community gathering space/lawn, walking paths
- Facility size: 0.5 acres
- Drainage basin area: 100 acres

# City of Poulsbo/Quadrant Homes

## Mountain Aire Stormwater Pond and Trails

- Stormwater pond that provides flow control and treatment
- Recreation: trails, benches, wildlife viewing
- Facility size: 2 acres
- Drainage basin area: 39 acres

# City of Seattle

## Madison Valley Stormwater Improvements

- Two park sites that provide flow/flood control, part of combined sewer system
- Recreation: trails, gathering spaces, play areas
- Facility size: 0.84 acre

# City of Shoreline

## Cromwell Park

- Constructed wetland added to an existing park during major renovation, provides treatment and flow/flood control
- Recreation: trails, wildlife viewing
- Facility size: 1.33 acres in a 9-acre park
- Drainage basin area: 109 acres

# City of Tacoma/Metro Parks Tacoma

## Point Defiance Stormwater Treatment Facility

- Provides stormwater treatment and visual interest in a park
- Recreation: Walking paths
- Facility size: 5,500 SF
- Drainage basin area: 754 acres

# City of Portland

## Tanner Springs Park

- Constructed wetland, cistern, and bioswales provide treatment
- Recreation: paths, art, waterscapes
- Facility size: .92 park
- Drainage basin area: 109 acres

Photo: GreenWork PC

# Artful Stormwater Parks

Stormwater Park (Qunli, China)

Water Circle (Normal, Illinois)

# Lessons Learned

- Can achieve **multiple benefits** when well sited and designed
- Find opportunities through working with **other departments** and **partners**
- Early **public engagement** leads to greater acceptance
- Having a **project champion and political support** is needed
- Consider **maintenance needs** in project design
- Factor **climate change** impacts into design
- **Vary greatly** in size, function, and cost; **many opportunities** to develop stormwater parks throughout the region

# Stormwater Parks Criteria

Criteria for Selecting Sites for Technical Assistance

- Need for equitable access to open space
- Salmon and water quality benefit
- Pollutant loading
- Community engagement and support
- Land ownership

Guidance document on planning for stormwater parks:
www.psrc.org/our-work/stormwater-parks

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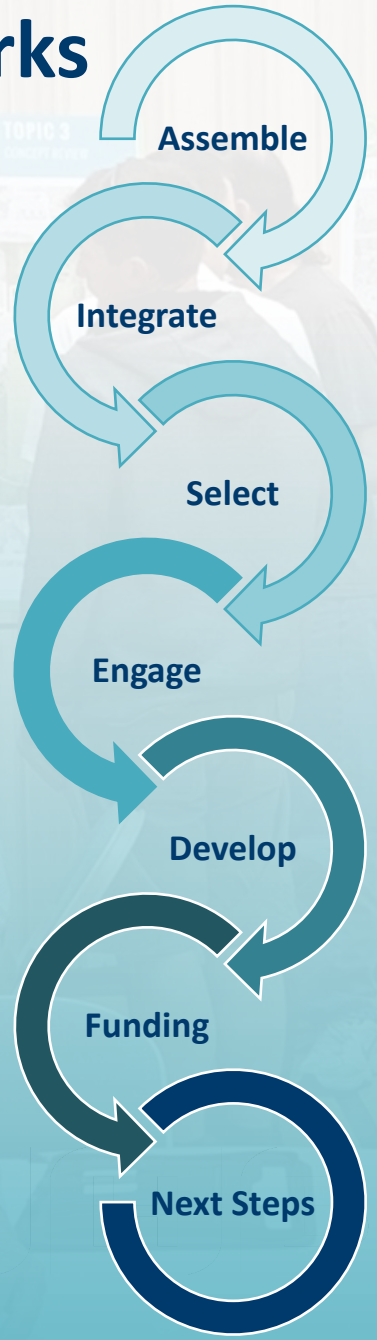
# Planning for Stormwater Parks




Assemble interdisciplinary project team

Integrate equity

Select site

Engage the community

Develop alternatives and designs

Funding sources

Next steps

# Lessons Learned

- Bring stakeholders to kickoff meeting
- Confirm goals with stakeholders
- Confirm acceptable stormwater solutions from a long-term O&M perspective
- Allow float time in schedule to account for delays that may come up
- Confirm project meets the definition for the grant

132nd Square Park rendering

# Lynnwood

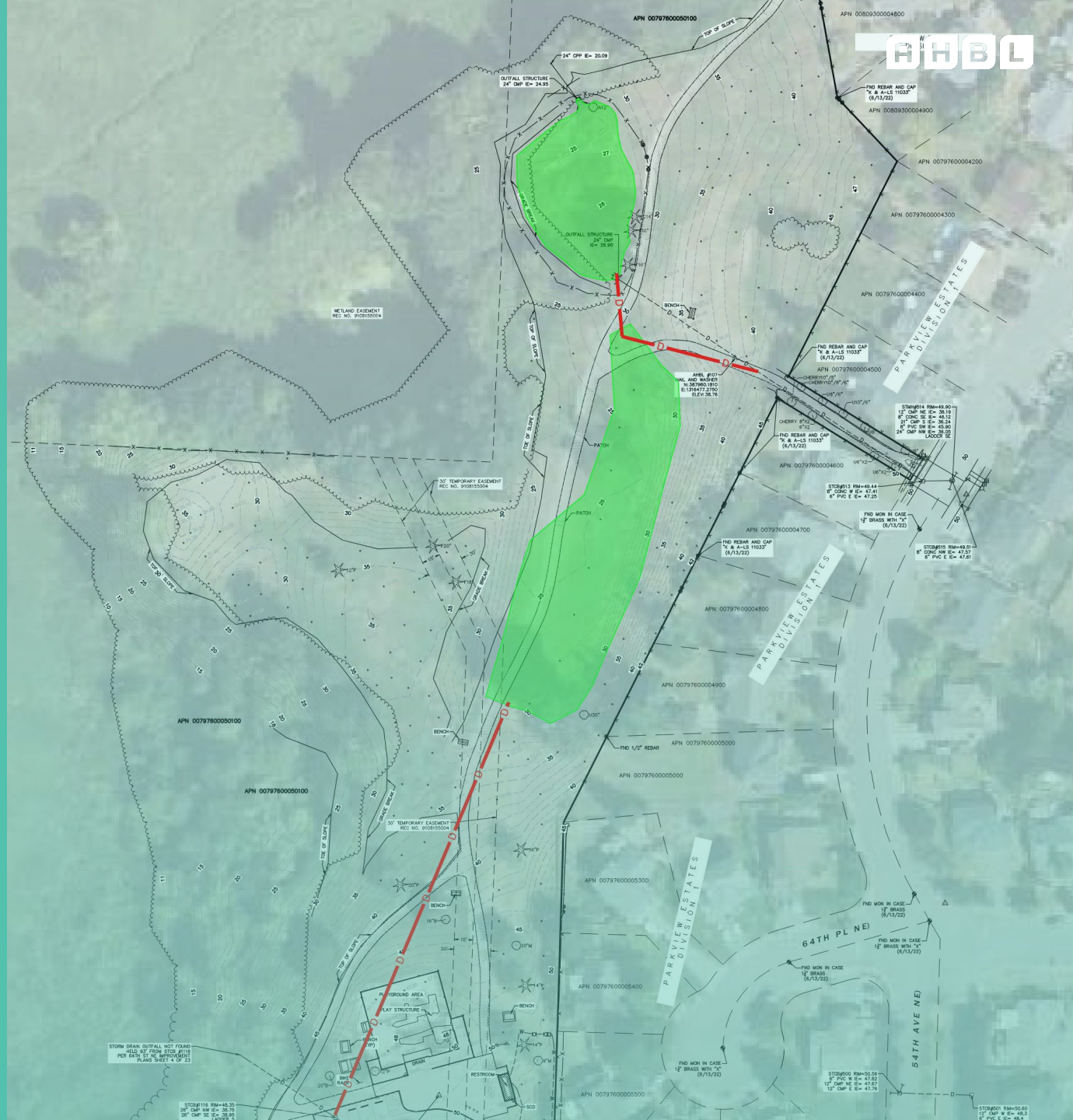
Technical Assistance

- Upstream Tributary Area = 20.20 acres
- Flow Control Volume Provided = 6.87 acres
- Runoff Treatment Provided = 20.20 acres
- Stormwater Solution Provided = Chambers with Modular Wetland Vault
- Park Design Provided = New playground, picnic shelter, paved trail connecting entrances. Accessibility improvements
- Additional Information = Existing Pond with playground built inside the pond. Flooding and accessibility issues.

# Marysville

Technical Assistance

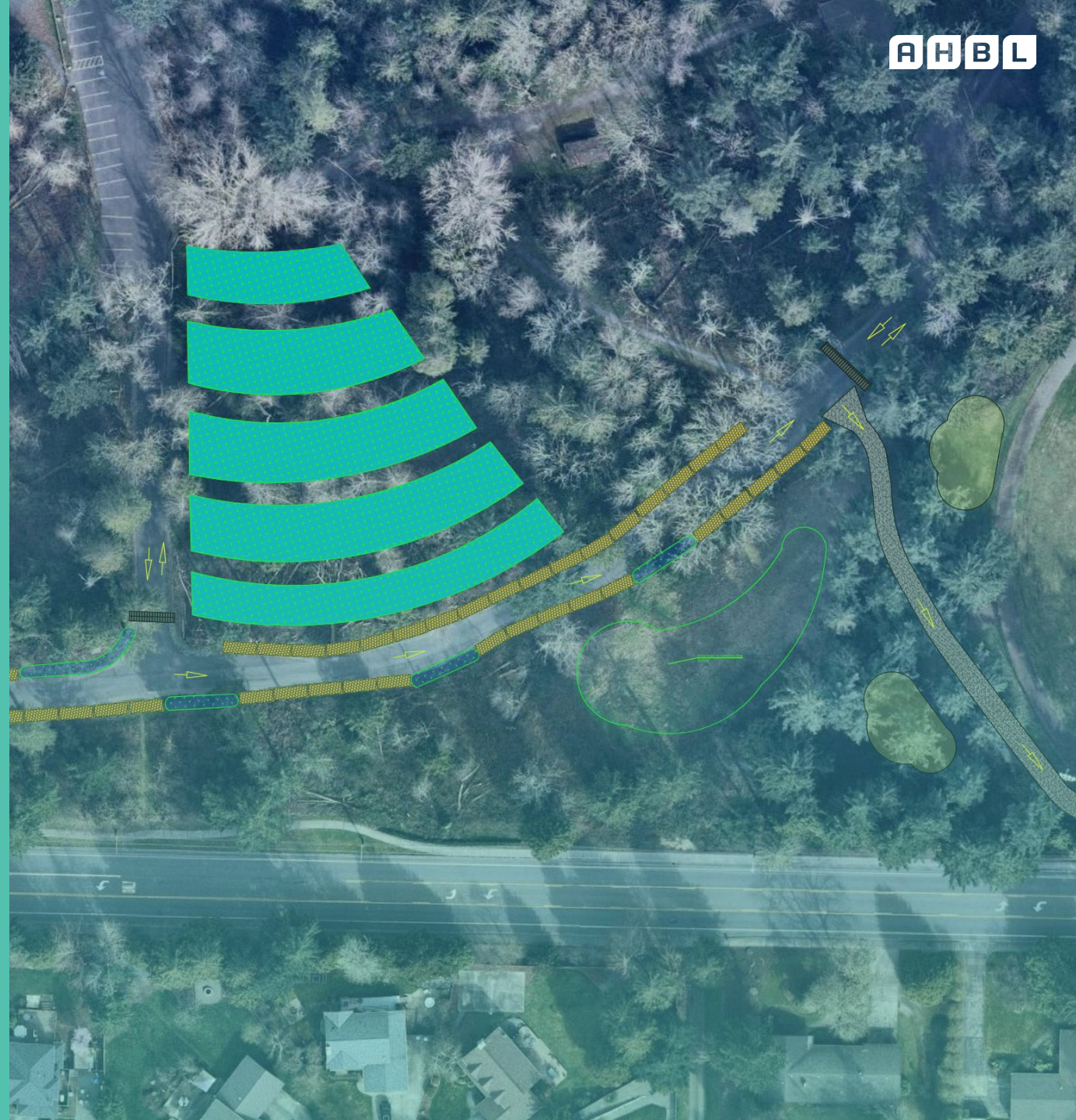
- Upstream Tributary Area = 118.9 acres
- Runoff Treatment Provided = 40.4 or 118 acres
- Stormwater Solution Provided = Bioretention Cells or Boxless Biopod
- Park Design Provided = Interpretive signage, decorative bridge, plantings
- Additional Information = Existing park with an existing non-effective pond/biofiltration swale.



# Puyallup

Technical Assistance

- Upstream Tributary Area = part of a 700-acre basin
- Runoff Treatment Provided = 13 acres
- Stormwater Solution Provided = Bioretention swales along drive and down hillside in steps
- Park Design Provided = Added 58 parking stalls and master planning for nature play areas.
- Additional Point of Interest = Existing park. System provides treatment swap area for roadway improvements to the west in addition to providing treatment for existing areas not being redeveloped.



# Woodinville

Technical Assistance

- Upstream Tributary Area = 122.56 acres
- Runoff Treatment Provided = 122.56 acres
- Stormwater Solution Provided = Modular Wetland
- Park Design Provided = Bike Park, Pickleball Courts, Trails, Lawn
- Additional Information = Existing park with old tennis courts and basketball courts. Under utilized. Adjacent wetlands and Woodin Creek. Discharges to Sammamish River

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# North Rose Hill Open Space Stormwater Park

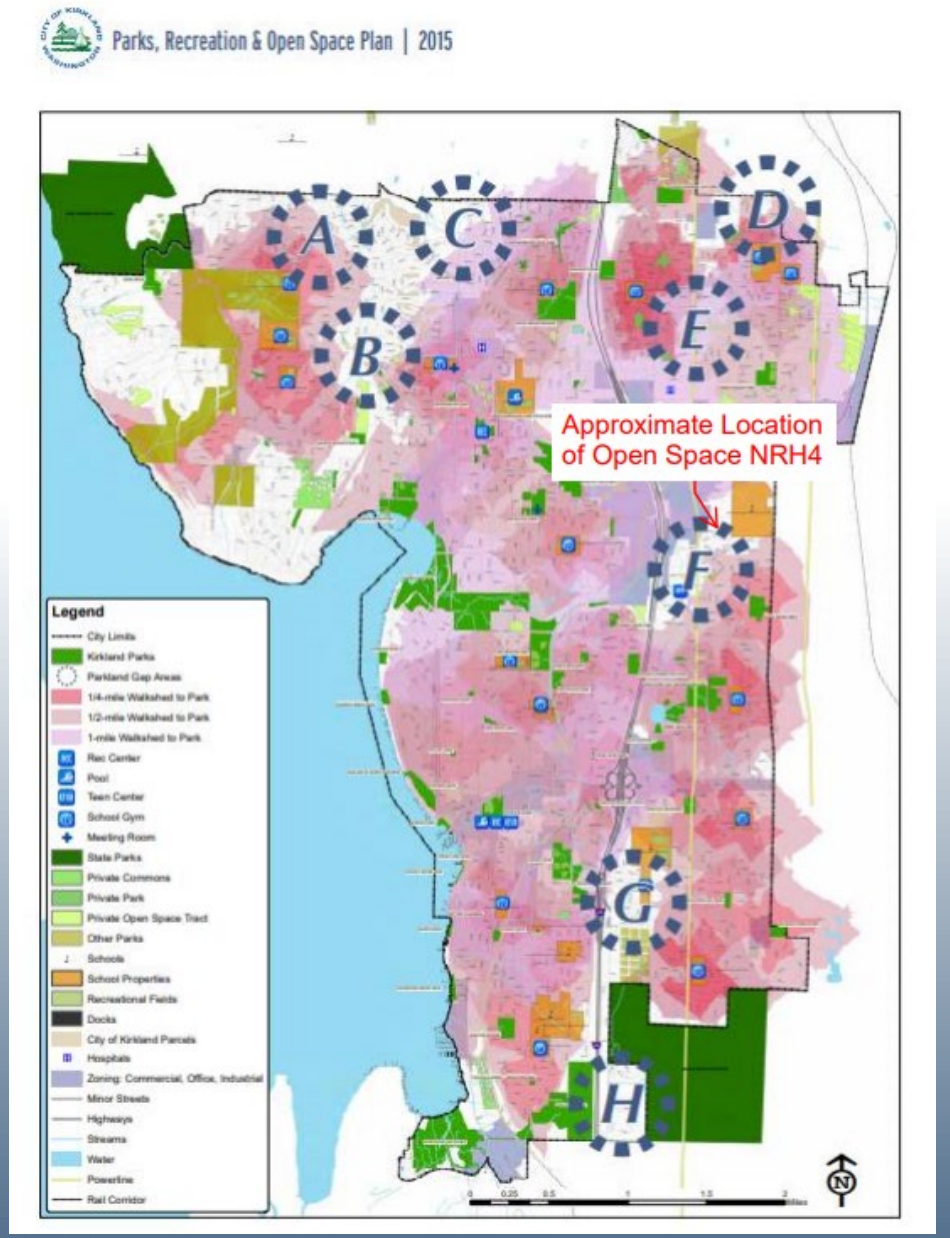
CITY OF KIRKLAND WASHINGTON

Puget Sound Regional Council

# Intro to North Rose Hill Stormwater Park

Parks:

- Identified gap in PROS plan
- Citywide trail connection




DEPARTMENT OF ECOLOGY
State of Washington

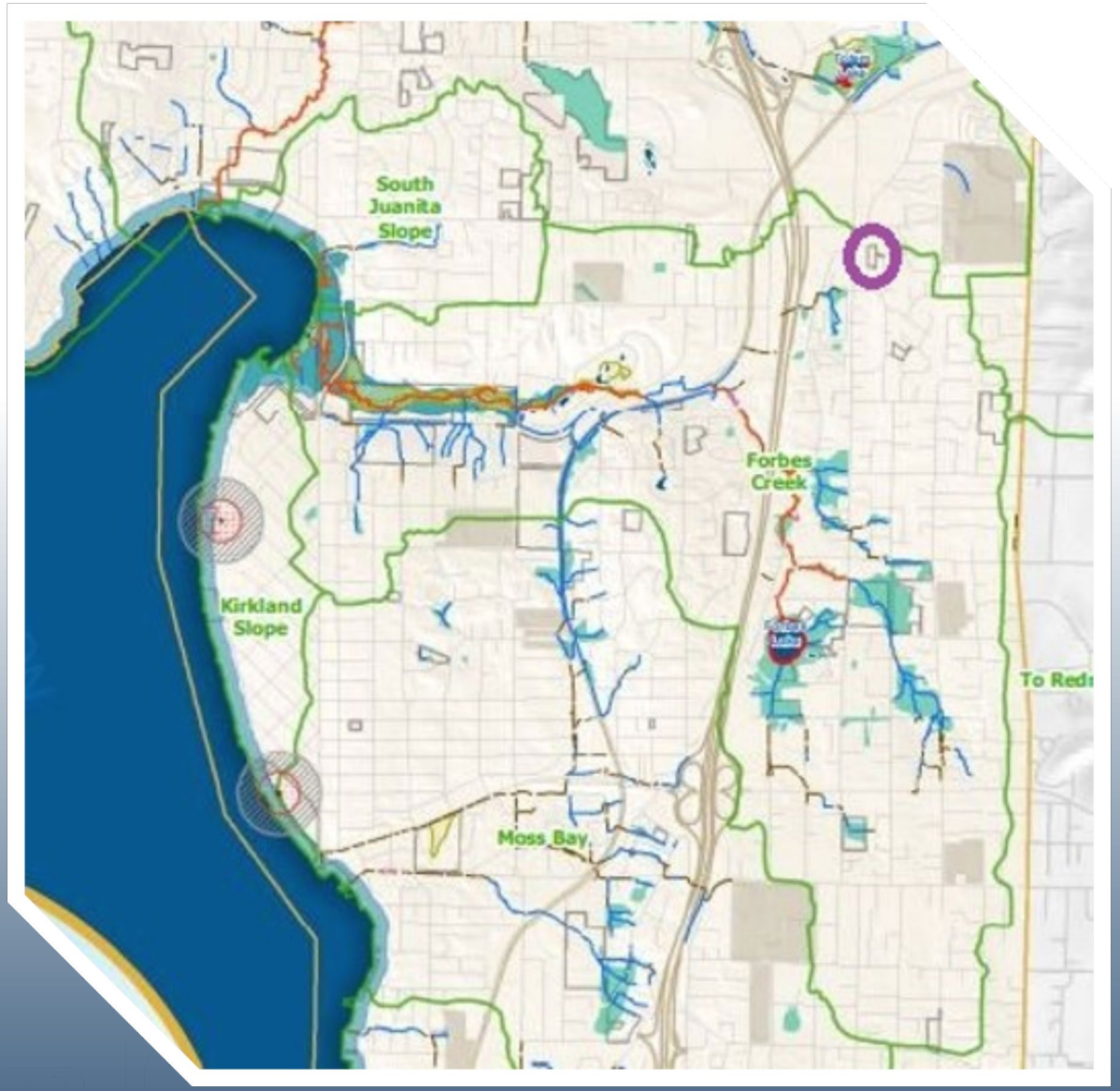
Puget Sound Regional Council

# Intro to North Rose Hill Stormwater Park

Stormwater:

Identified via Ecology/NEP stormwater planning grant because:

- Drains to Forbes Creek
- Upstream not likely to redevelop
- 18 acres of upstream area
- Soils might infiltrate




DEPARTMENT OF ECOLOGY
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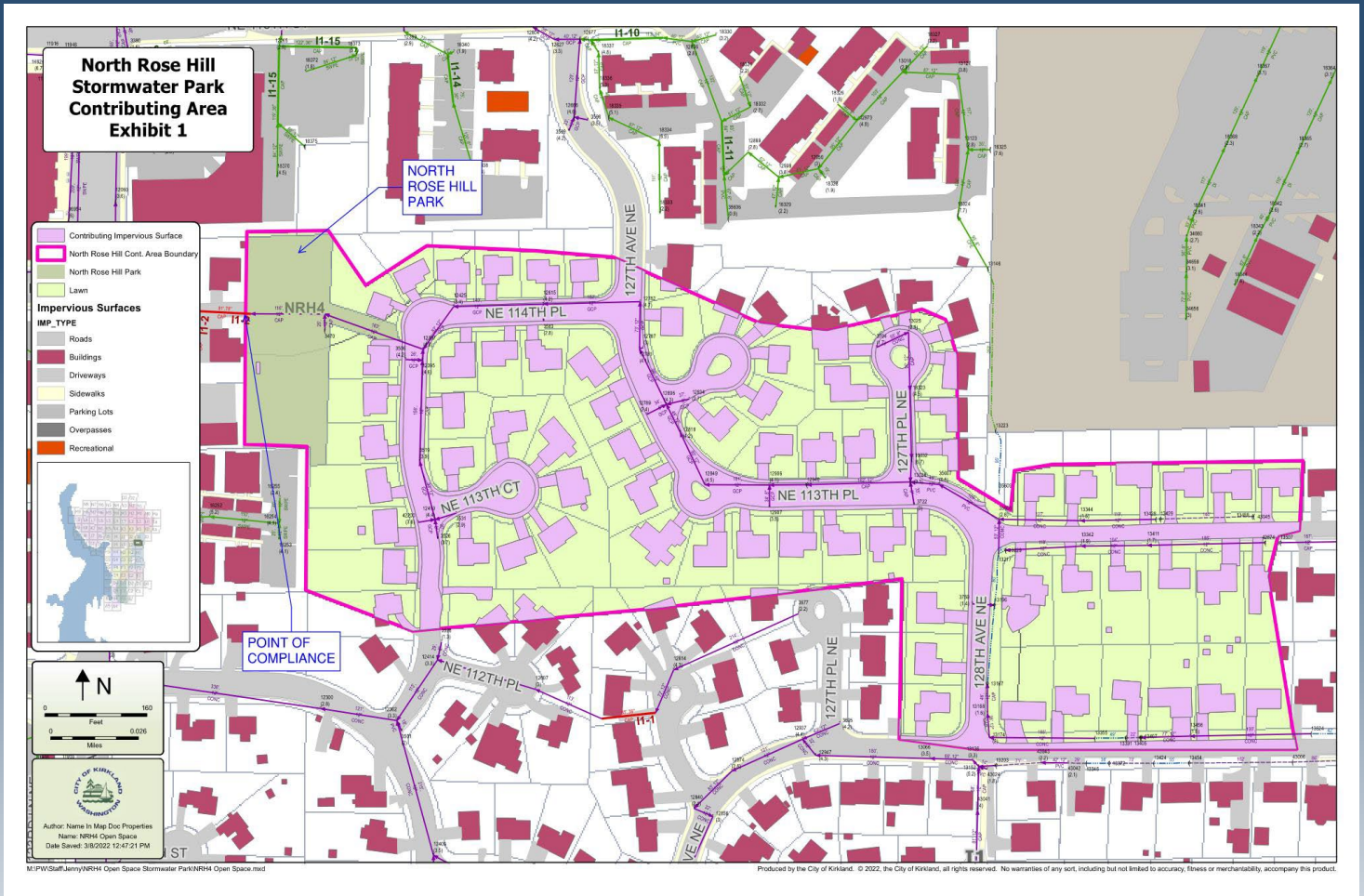
# Intro to North Rose Hill Stormwater Park

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# Existing Conditions

- Overrun with invasive plants (blackberry)
- No large trees
- Encroachments
- Rockery on northern extent
- Aging/failing storm drainage and sewer from 126th Ave NE to 124th Ave NE
- Seattle City Light overhead power (easement)
- Existing trail to south
- Vehicle access via private street to west


Puget Sound Regional Council

# Existing Conditions

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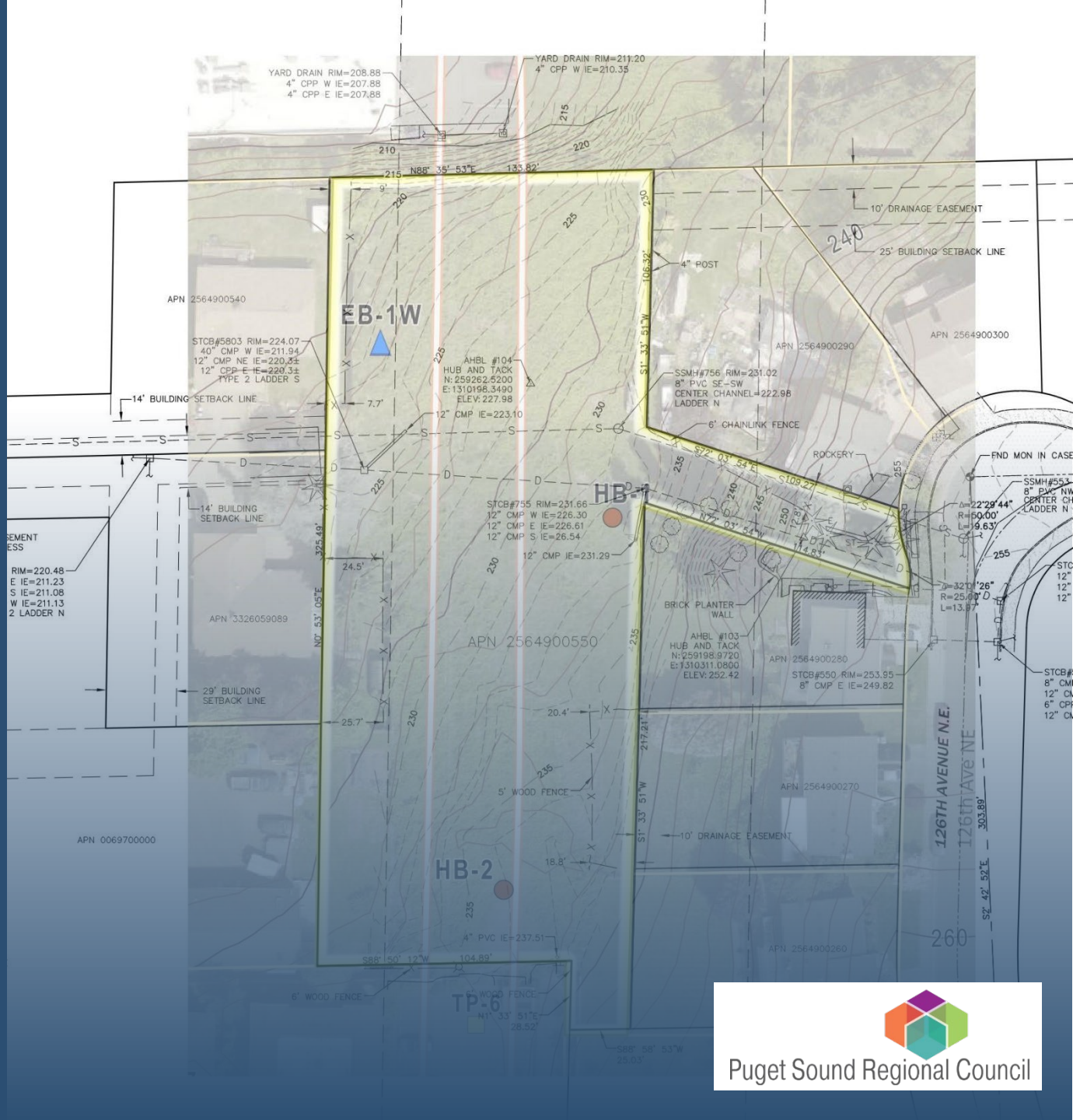
# Technical Assistance Provided

- **Geotechnical Evaluation**
  - Determined infiltration not feasible
- **Topographical Survey**
  - Excluding some areas of private encroachment
- **Preliminary Engineering/Landscape Design and Cost Estimating**

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# Park Opportunities

- Stormwater runoff treatment of 17.97 acres in biorentention cells
- Extend an existing trail from south side
- Maintenance access from west
- Interpretive signage
- Benches
- Native Plantings that encourage pollinators


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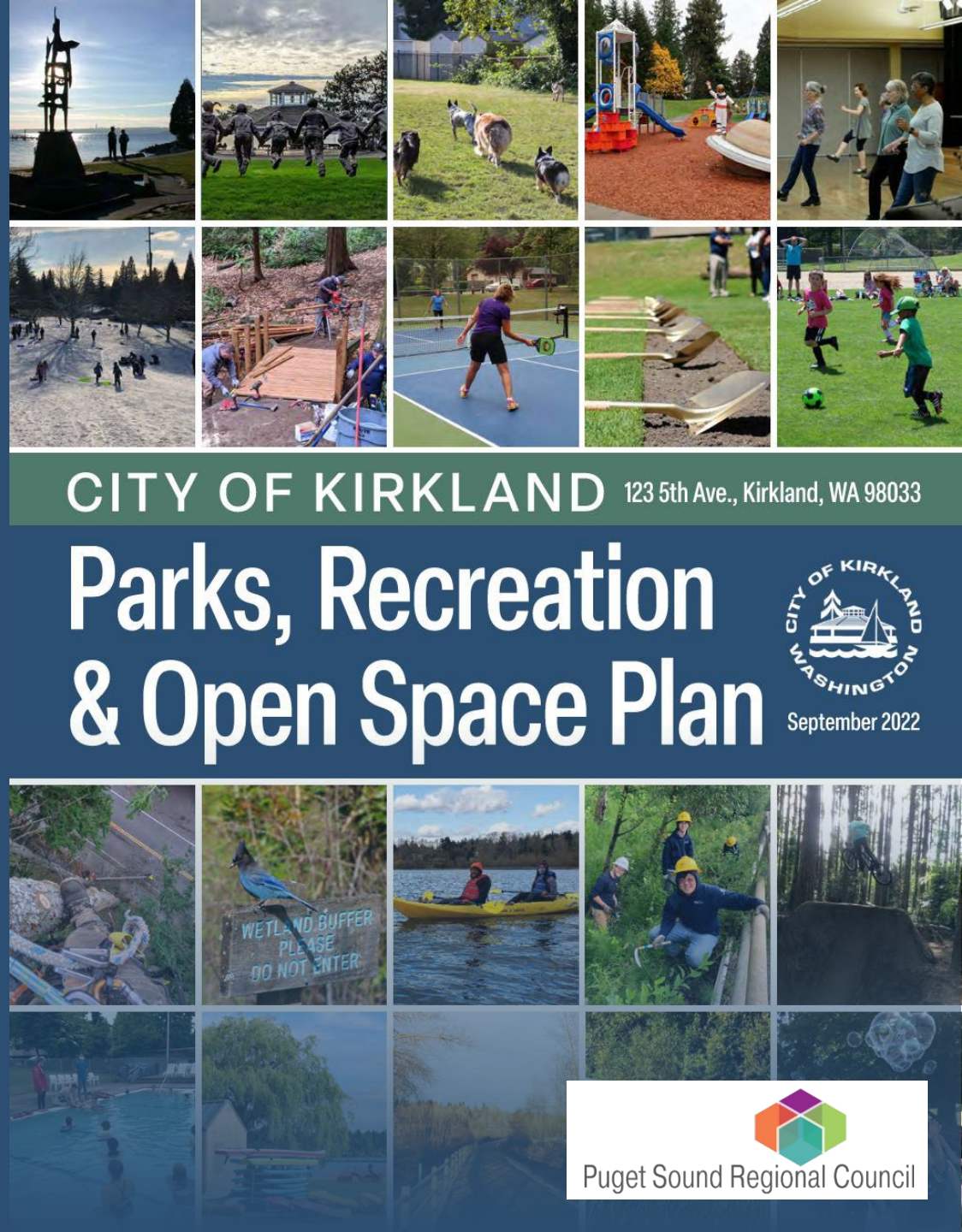
# Lessons Learned

ID of Sites:
- Let Parks lead

- ID stormwater priorities early and often – be ready to adjust to Parks planning outcomes

Site-Specific Design:
- Early Geotech information is extremely helpful

Funding:
- Advocate for matched park and stormwater funding?




# Jenny Gaus

## Surface Water Strategic Advisor

## City of Kirkland

## JGaus@kirklandwa.gov


CITY OF KIRKLAND WASHINGTON

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# Next Up:

## Michelle Perdue

## Kitsap County Stormwater Program Manager

CITY OF KIRKLAND WASHINGTON

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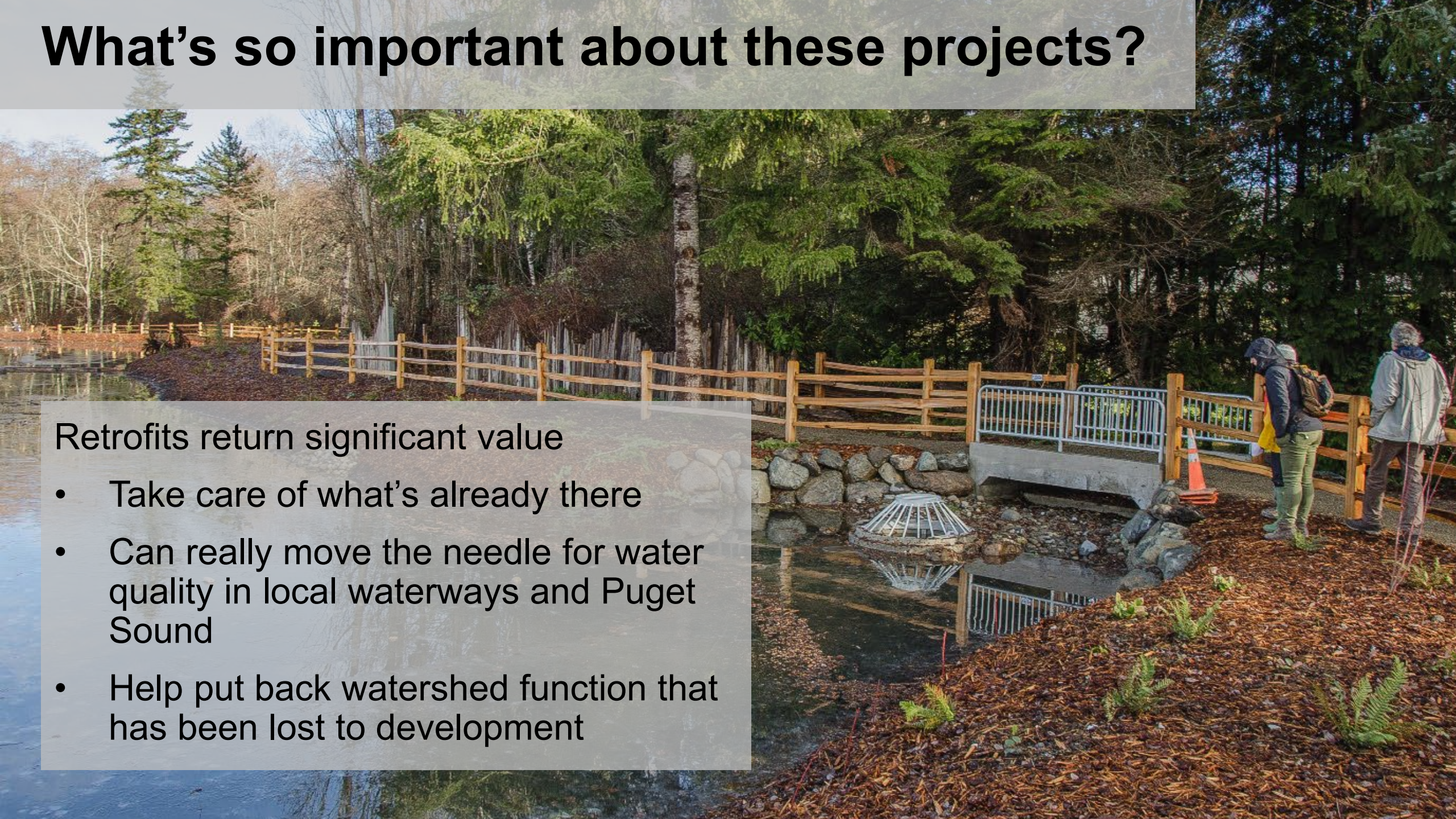
# Kitsap County – A new view

A shift in focus – from simply addressing drainage to creating solutions for sustainable growth

- Green Stormwater Infrastructure
- Watershed and community-based planning
- Multifunctional/multi-benefit stormwater systems

# What's so important about these projects?



Retrofits return significant value

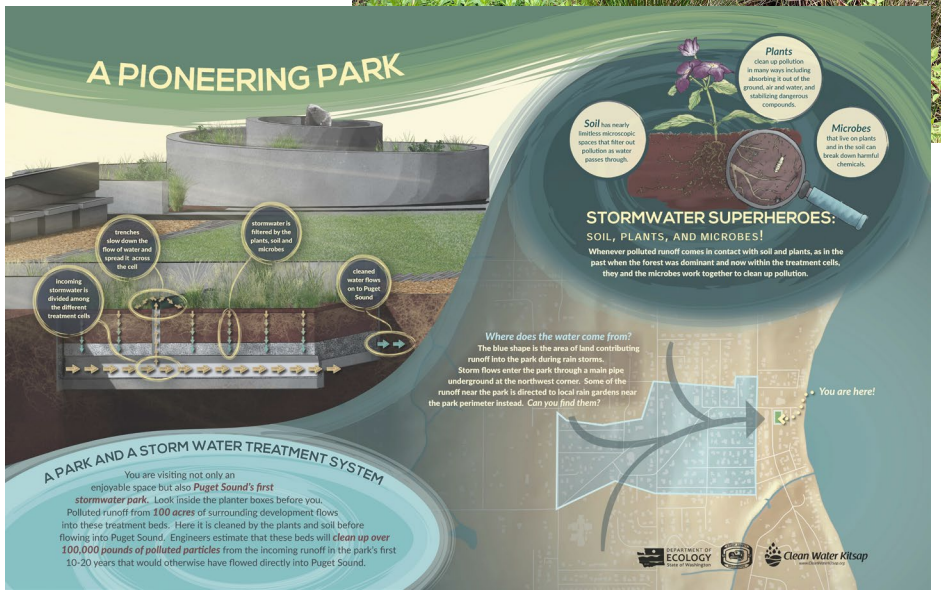
- Take care of what's already there
- Can really move the needle for water quality in local waterways and Puget Sound
- Help put back watershed function that has been lost to development

# Why multifunctional/multi-benefit facilities?

Moving beyond just drainage

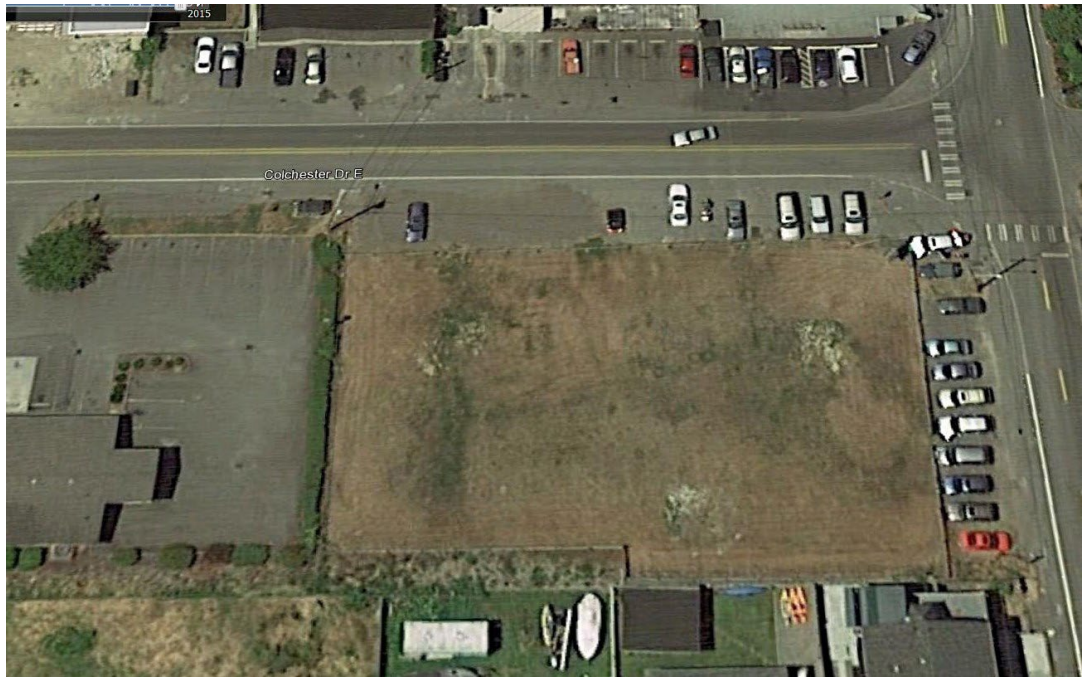
- Environmental benefits
- Human benefits
- Community benefits

Overall – ‘puts back more’ than was there before




# Our first official stormwater park

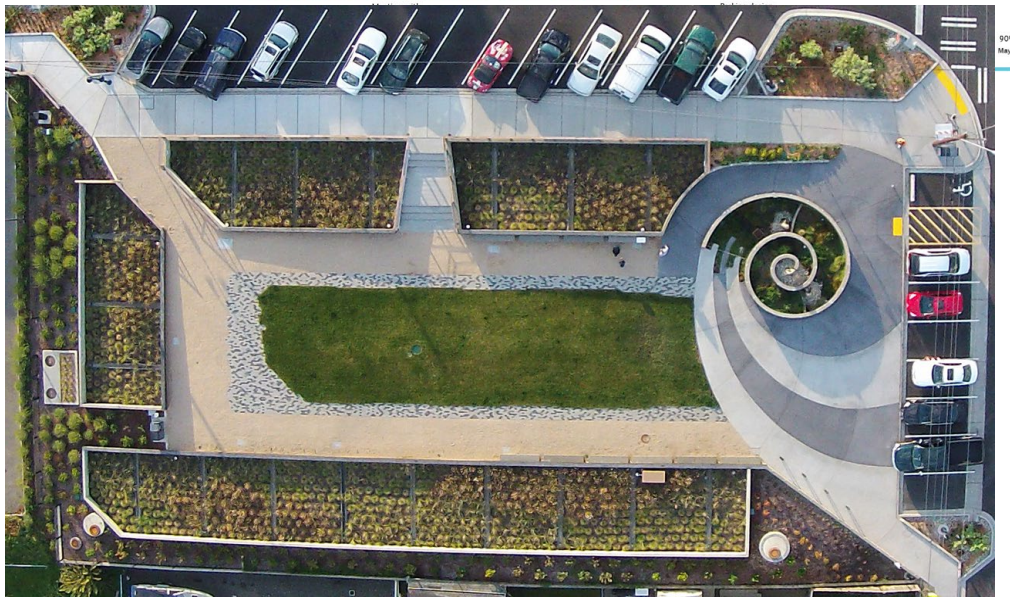
- A shift in philosophy – holistic approach
- Challenge – treat as much as we can and still make it beautiful



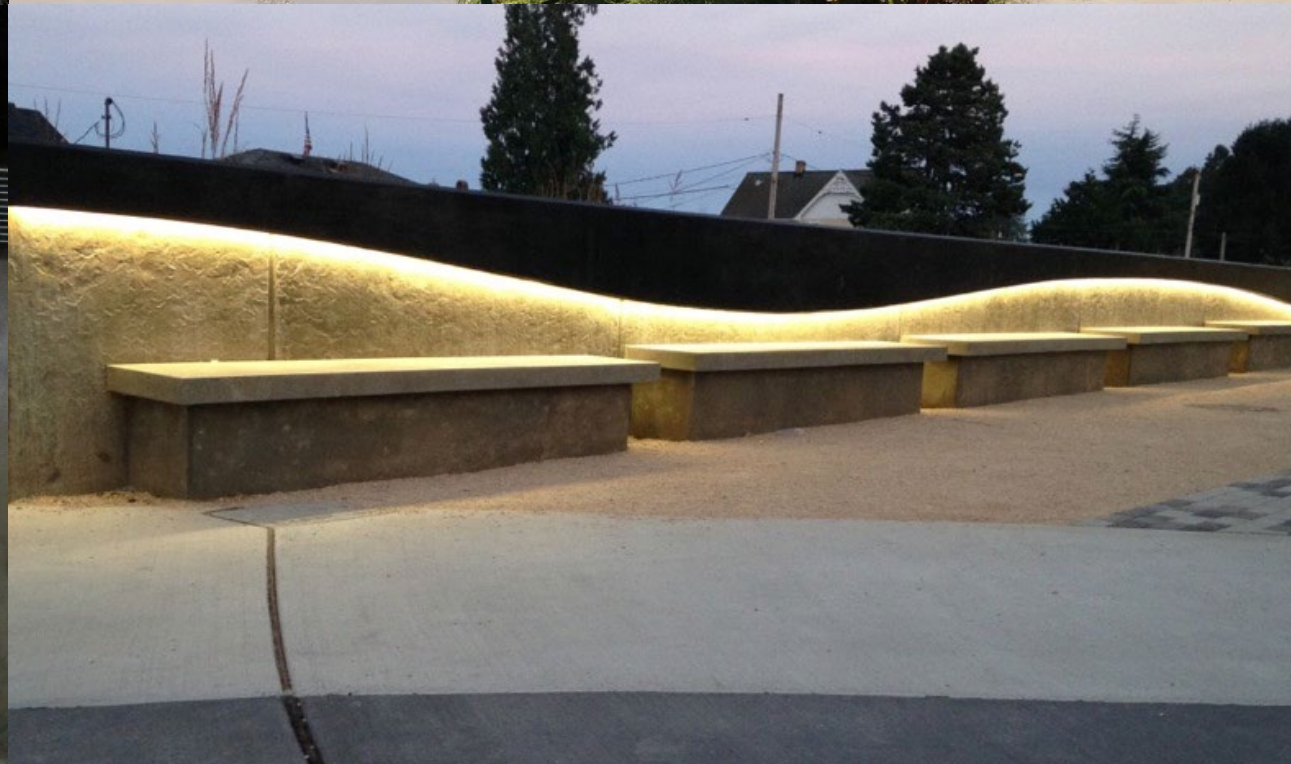

*The good, the bad…and the ugly!  Before the project.*

# Manchester Stormwater Park

- 8 potential alternatives
- Substantial community involvement = a sense of ownership
- Cutting edge at the time
- Set the stage for future projects of this type
- Built staff skills and knowledge, as well as public and official support

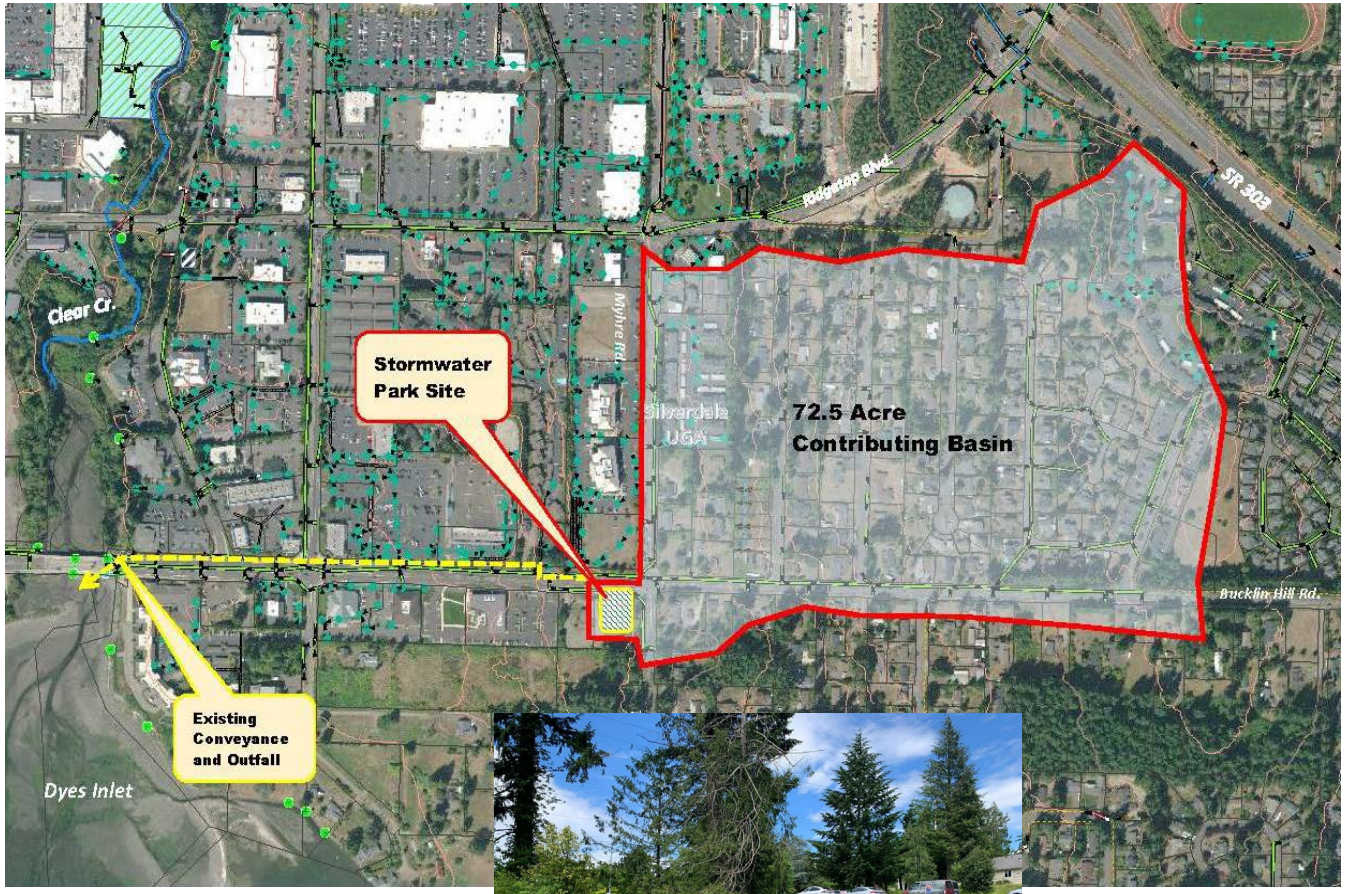




TODAY
Manchester Farmers
FRIDAY 4 to 7pm



# The next candidate project

- County-owned, vacant - 0.82 acres
- Drainage basin of ~72.5 acres.
- Vulnerable priority watershed
- Little stormwater treatment within contributing basin
- Existing adjacent stormwater utilities
- Connectivity to existing trail and non-motorized system
- Adjacent to residential neighborhoods and commercial core
- Coordinates with goals of Comprehensive Plan and Silverdale Design Standards

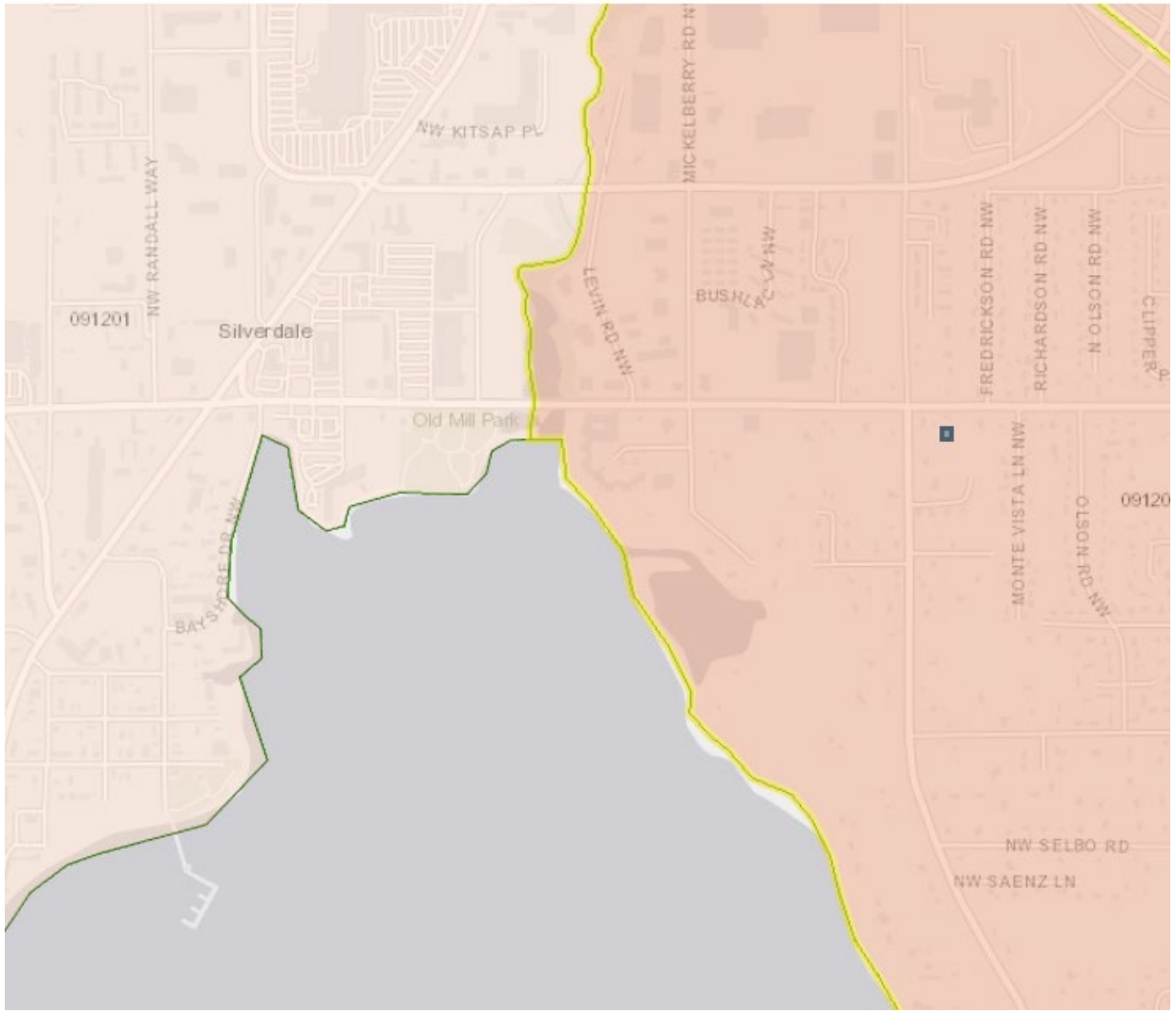


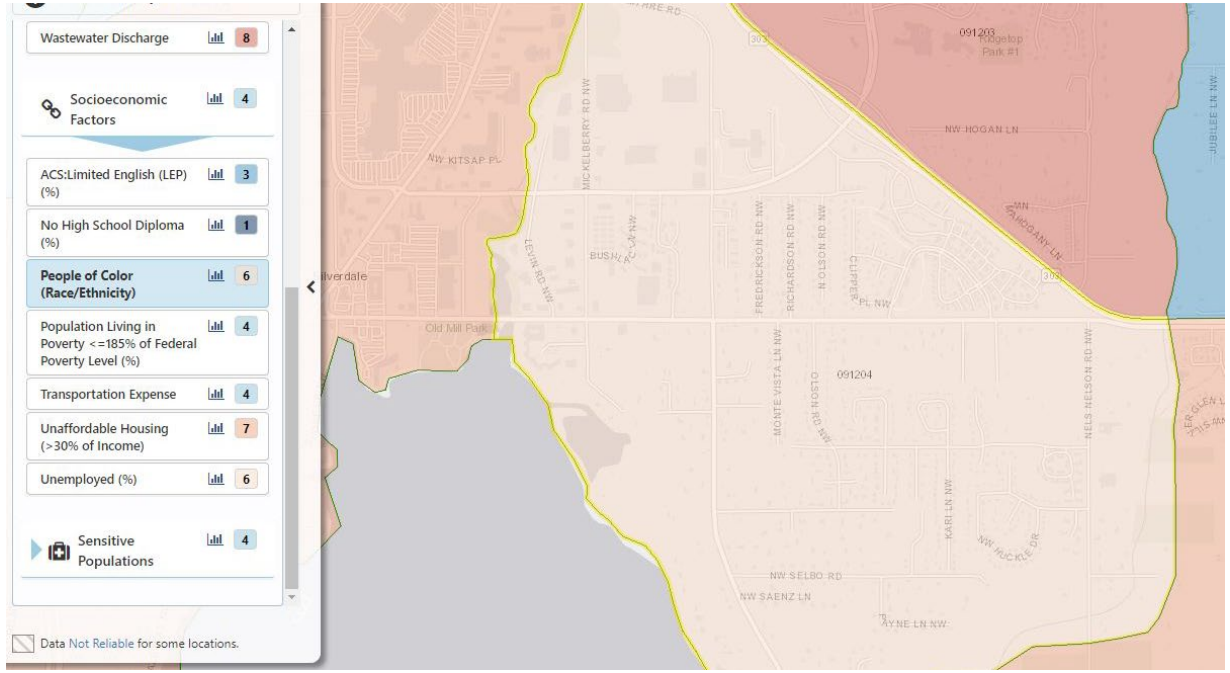

ington State Department of Health

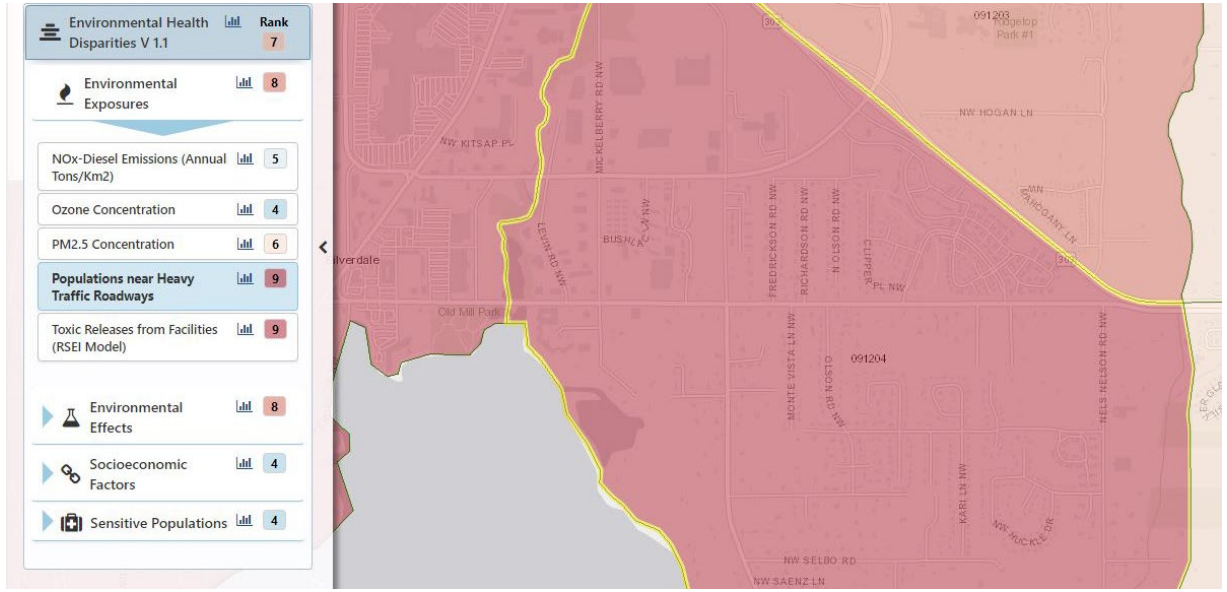
**Selection:**

**Legend: (High)** 10 9 8 7 6 5 4 3

# Environmental Health Disparities




animals allow pick wanted top five also allow multiple Road around already corner kept nice
will trails great playground garbage DOG county homeless paths need choice
top Thank open walking path open play space benches
stormwater park area maybe space think parking views
question survey allow trees pet waste stations use play
trees vegetation important love better walk item bike much
picnic tables live Please etc survey gathering selection sure project community
Question allowed one choice idea love see take allow select one make

# Design principles and major themes

- Preservation of existing trees
- Maximizing the area for bioretention (nature-based stormwater systems)
- Usable green/recreation space
- Driveways at locations as far away from the intersection as feasible
- Walking trails in the site
- Covered structures for shade and rain protection
- Parking for at least 4 cars
- Vegetated buffers between adjacent parcels
- Environmental Education

# Concept Design

- Preserved many mature trees
- Meandering driveway
- Bicycle rack
- Green roof shade structure
- Benches & picnic tables
- Buffers to adjacent properties
- Refuse cans and “Mutt Mitt” stations
- Wildflower gardens
- Environmental education interpretive signage

# Lessons learned

- Create a fertile environment where staff can innovate
- Needs high level support that values and invites innovation and a leader with a vision for multi-benefit solutions
- Challenge staff to think about full span of community needs and potential opportunities
- Find ways to coordinate with other plans for expanded benefits
- Engage with the community often and early

# Lessons learned

- Consider O&M from the start
- Useful to have someone ‘creative’ on the team
- Consider potential limitations – space, funding, community desire, technical needs
- Look forward, not just at today – what challenges can you solve for the future?
- There’s more than one way to do it.  If you can’t go huge, start small.


# Thank you!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Questions?
www.psrc.org/our-work/stormwater-parks