One Seattle
Comprehensive Plan

Stormwater Planning

City of Seattle

Integrating Stormwater into One Seattle Comprehensive Plan

Patrice Carroll, Strategic Advisor
Seattle Office of Planning and Community Development

DRAFT One Seattle Comprehensive Plan

Introduction

- Core Values
- Key Moves
- Trends and Challenges
- State and Regional Framework
- Planning Process
- Implementation and Accountability

Elements

- Community Involvement
- Growth Strategy
- **Land Use**
- **Transportation**
- Housing
- **Capital Facilities**
- **Utilities**
- Economic Development
- **Climate & Environment**
- **Parks & Open Space**
- Arts and Culture

Subarea Plans

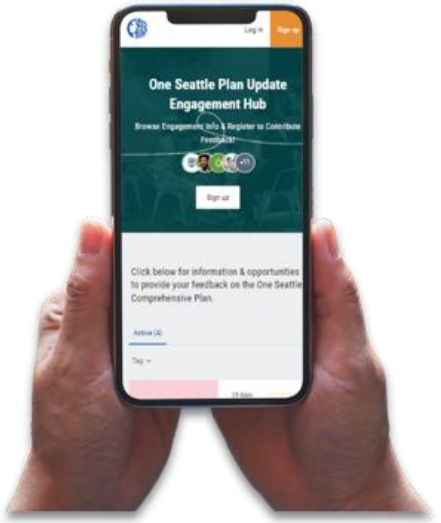
- Regional Growth Centers
- Manufacturing /Industrial Centers

Appendices

- Technical Appendices
- Urban Center Profiles

Themes from Community Engagement

More….	Less….	Concerns about….
• greenspace, tree canopy • water reuse, grey water • green infrastructure, natural rainwater treatment • sustainable design • healthy habitat	• impervious surface	• heavy rain and flooding • water scarcity • sea-level rise, water table rise • water pollution • ocean acidification



City Planning Requirements

Executive Order 2023-03: One Seattle Tree Plan: Growing and Fostering an Equitable Tree Canopy on Public Land, March 2023

- Target new tree plantings in areas with low canopy cover, specifically BIPOC communities and communities most impacted by urban heat islands and unmitigated stormwater

Council Resolution 32059: Address climate change and improve resiliency as part of the One Seattle update to the Comprehensive Plan, July 2022

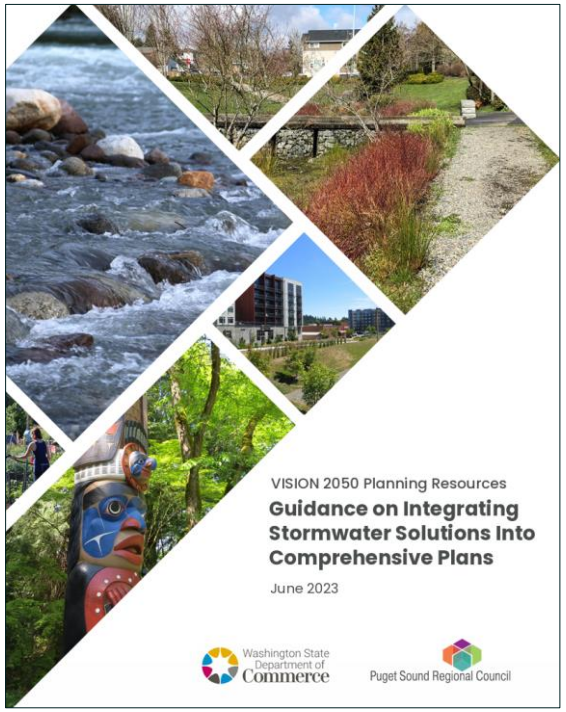
- Consider natural areas and infrastructure that may be vulnerable to changing environmental conditions

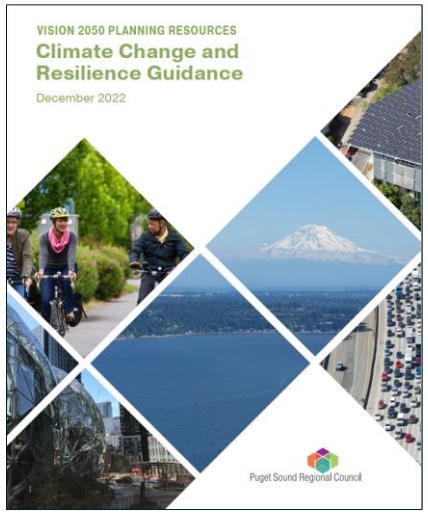
State and Regional Planning Requirements

PSRC Vision 2050	• Enhance urban tree canopy to manage stormwater • Reduce stormwater impacts from transportation and development through watershed planning, redevelopment and retrofit projects, and low impact development.
King County Planning Policies	• Reduce stormwater pollution from transportation facilities • Enhance the urban tree canopy to manage stormwater • Manage natural drainage systems to moderate peak stormwater runoff rates.
HB 1181 – adds climate change to GMA planning framework	• Includes a climate resilience subelement • Include green infrastructure in Capital Facilities element • Include a tree canopy analysis in Parks and Open Space element

Guidance

- **PSRC Guidance on Integrating Stormwater Solutions, June 2023**
- WA Dept Commerce Climate Element Planning Guidance, June 2023
- King County Climate Collaborative (K4C) Guidance, Dec 2022
- PSRC Climate Change and Resilience Guidance, Dec 2022





Centering Equity

Interdepartmental Coordination

Comprehensive Plan / STP Joint Interdepartmental Team

- 40+ members
- City and external
- Point of contact
- Share info + gather feedback
- Quarterly Meetings

- Growth & Land Use Workgroup
- Housing Workgroup
- Transportation Workgroup
- Climate Workgroup
- Capital Facilities and Utilities Workgroup
- Community Involvement Workgroup

- 3-10 members
- City staff
- Policy discussion
- Review and draft policies
- 4 to 5 meetings

DRAFT EIS Thresholds of Significance

Surface Water	• Impervious surface expansions that would increase runoff flow volumes and durations to streams by magnitudes resulting in bank scour and erosion; • Increases in amount of pollutants to receiving waters that would impair their designated uses (such as human contact and fish habitat).
Ground Water Water	• Impervious surface expansions that would decrease groundwater recharge beyond designated limits and increases in amount of pollutants discharged to levels that would contaminate groundwater supplies
Climate Change	• Growth focused into areas that are reasonably expected to be at risk for future flooding and landslides or future sea-level rise.
Utilities	• Impacts that would be inconsistent with plans for future utility improvements, development, or growth OR that would require major unplanned capital improvements for the utility to serve new developments or additional growth

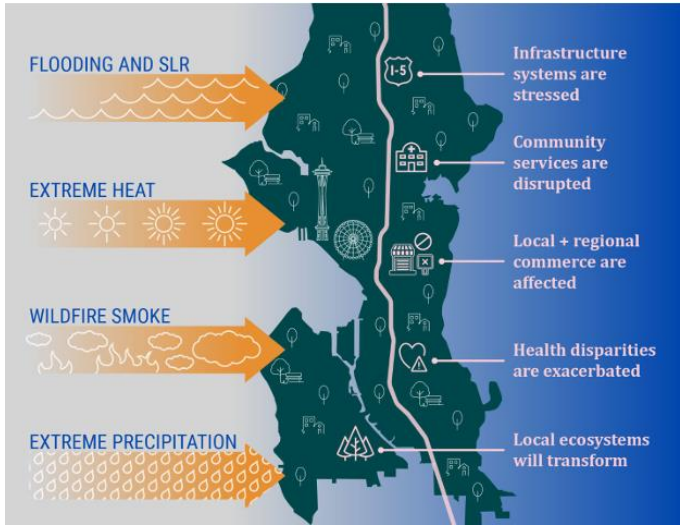
Climate Vulnerability Assessment

June 2023

Seattle's drainage and wastewater infrastructure system is **moderately vulnerable** to flooding associated with sea level rise and extreme precipitation

- Heavy and extreme precipitation
- Landslides
- Riverine flooding
- Excess sediment, particulates and pollutants
- Warmer water bodies with less oxygen
- Sea-level rise affects nearshore habitat

Also mapped vulnerable census tracts based on socioeconomic data



Utilities Element – Water System

Goal

Water in all its forms is valued, protected, and carefully managed to support healthy natural systems and communities.

DRAFT Policy Examples

Element	Policy
Land Use	Use tree and landscaping requirements to preserve and enhance the City's physical, aesthetic, and cultural character, including Indigenous heritage, and to enhance the value of trees and landscaping in addressing stormwater management, pollution reduction, heat island mitigation, and other issues.
Transportation	Design and implement new and retrofitted transportation facilities with water quality and quantity stormwater system improvements to reduce roadway runoff pollution into natural drainage systems and the waters of the Puget Sound.
Capital Facilities	Manage existing facilities with a resource-conservation approach to reduce energy use, water use, stormwater impacts, and utility costs.
Utilities	Minimize the impacts of flooding from the public drainage and wastewater system backups into private property, especially in neighborhoods that have experienced historical disinvestment.
Climate and Environment	Prioritize green infrastructure solutions that mitigate climate impacts and provide co-benefits to the community including equity, living wage jobs, and social connectedness.
Climate and Environment	Treat stormwater runoff, especially runoff from roadways and other high pollutant generating surfaces, using green stormwater infrastructure and other best management practices.
Parks and Open Space	Design public spaces to provide multiple benefits, such as providing a variety of recreational uses and environmental functions, such as with stormwater capture.

Examples of Implementing Plans and Programs

SPU

- Shape Our Water
- Drainage Program
- Strategic Business Plan
- Natural Drainage Program
- Capital Improvement Program

Parks

- Strategic Plan
- Parks and Open Space Plan
- Climate Resilience Plan
- Seattle Parks District Financing Plan
- Green Seattle Partnership

SDOT

- Seattle Transportation Plan
- Seattle Streets Illustrated
- Street Tree Program
- Transportation Levy

Beyond this Major Update

- Fully implement HB 1181 requirements
- Connect to Seattle Hazard Mitigation Plan policies and actions
- Update to Shoreline Master Plan; updated guidance to reflect sea-level rise

Key Stormwater Strategies

Sherell Ehlers, P.E., Stormwater Policy Advisor
Seattle Public Utilities

One Seattle Comprehensive Plan

Community-Centered Partnerships

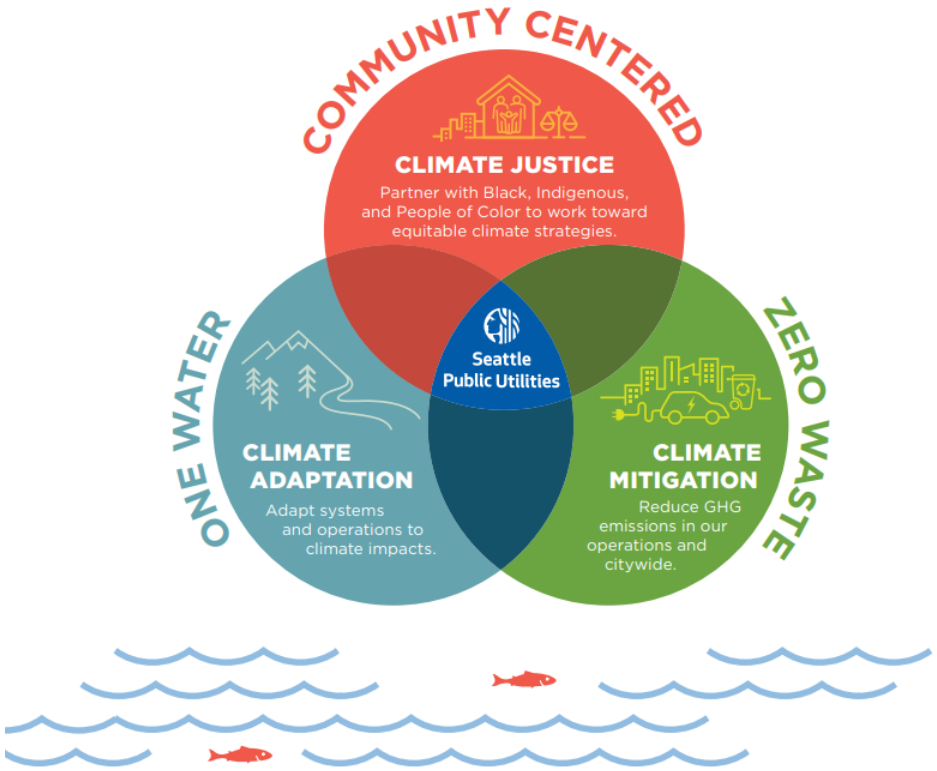
Comprehensive Plan - Implementation Tools

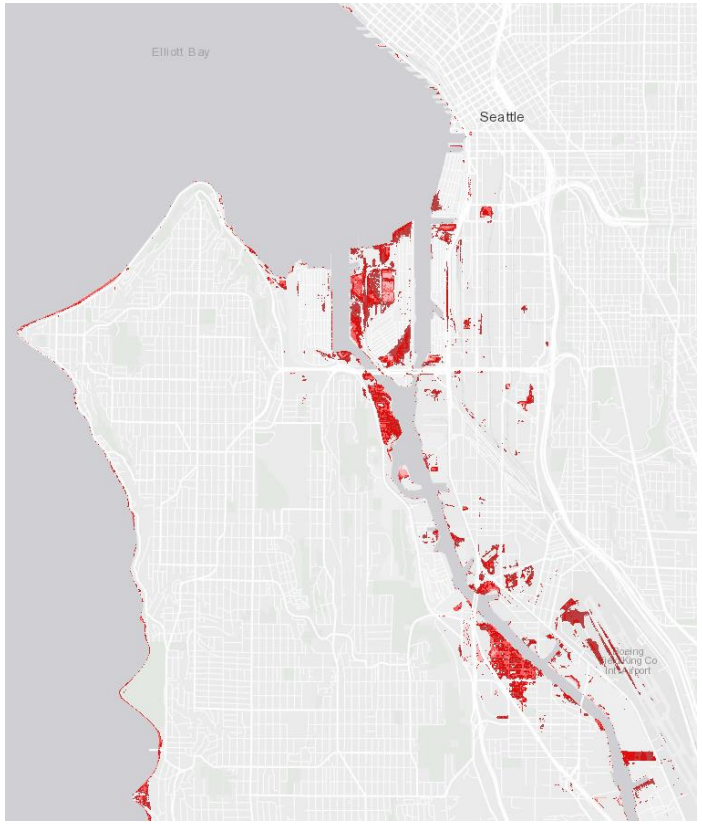
- Pedestrian Master Plan
- Bicycle Master Plan
- Transit Master Plan
- Freight Master Plan
- Move Seattle Action Plan
- Consolidated Plan for Housing and Community Development
- Parks Legacy Plan
- SPU Stormwater Management Plan
- SPU Solid Waste Plan
- City Light Strategic Plan
- My Library Strategic Plan
- Climate Action Plan

- Land Use Code
- Stormwater Code
- Environmentally Critical Areas (ECA) Code
- Historic Preservation
- Environmental Protection
- Street and Sidewalk Use
- Parks and Recreation

- Move Seattle Levy
- Housing Levy
- Seattle Park District
- Seattle Homeowner Stabilization Program
- Multifamily Property Tax Exemption (MFTE) Credit Program
- Neighborhood Matching Fund
- City Light Appliance Rebate Program
- Public Art Program
- Green Stormwater Infrastructure Program

Climate Action Plan





https://www.seattle.gov/utilities/protecting-our-environment/community-programs/climate-change

Shape Our Water

www.shapeourwater.org

Analysis

Identify current and future risks and opportunities citywide

Prioritize drainage and wastewater risks and opportunities

Visioning

Cultivate a wide range of stakeholders to participate in the process

Collaboratively set vision, goals, objectives, and guiding principles

Planning

Brainstorm solutions and develop alternatives with stakeholders

Evaluate alternatives against social, environmental, affordability, and resilience goals set during visioning

Select preferred alternative with stakeholders

Implementation

Pilot new approaches throughout the process

Implement preferred alternative with partners

Internal and external training and workforce development

Monitor and manage adaptively, stay accountable to stakeholders

Equity in Analysis

www.shapeourwater.org

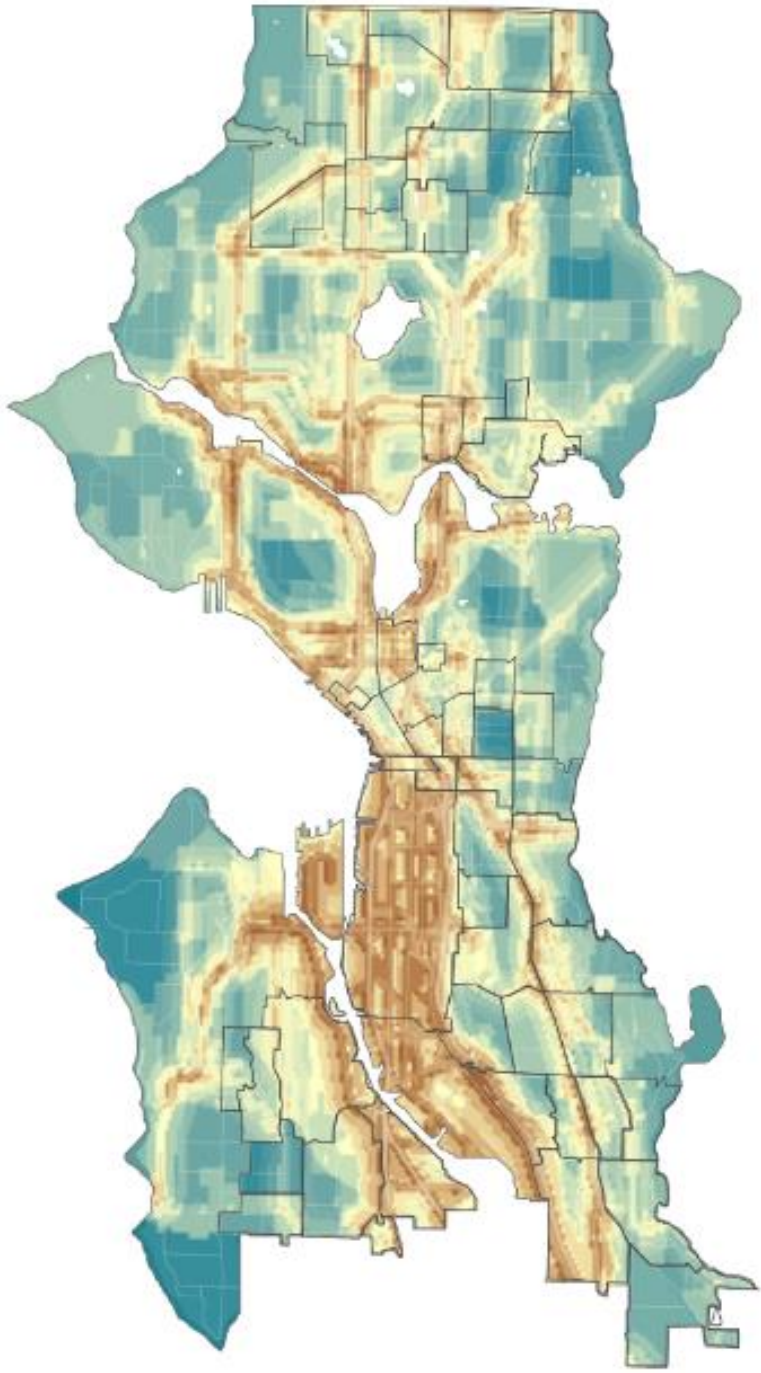
A Complaint-based approach is inequitable. Instead, we:

- Used models to identify risks citywide
- Focused outreach to ID problems in equity priority areas
- Incorporated racial and social equity into our prioritization process
- Studied the social and environmental context of our work through a racial equity lens

So that we can…

…give a voice to historically underrepresented communities, and ultimately

…distribute SPU investment more equitably



Land Use Code

- Green Factor
  - Trees / Plantings
  - Bioretention Facilities
  - Vegetated Roofs / Walls
  - Permeable Pavement
  - Structural Soil Systems

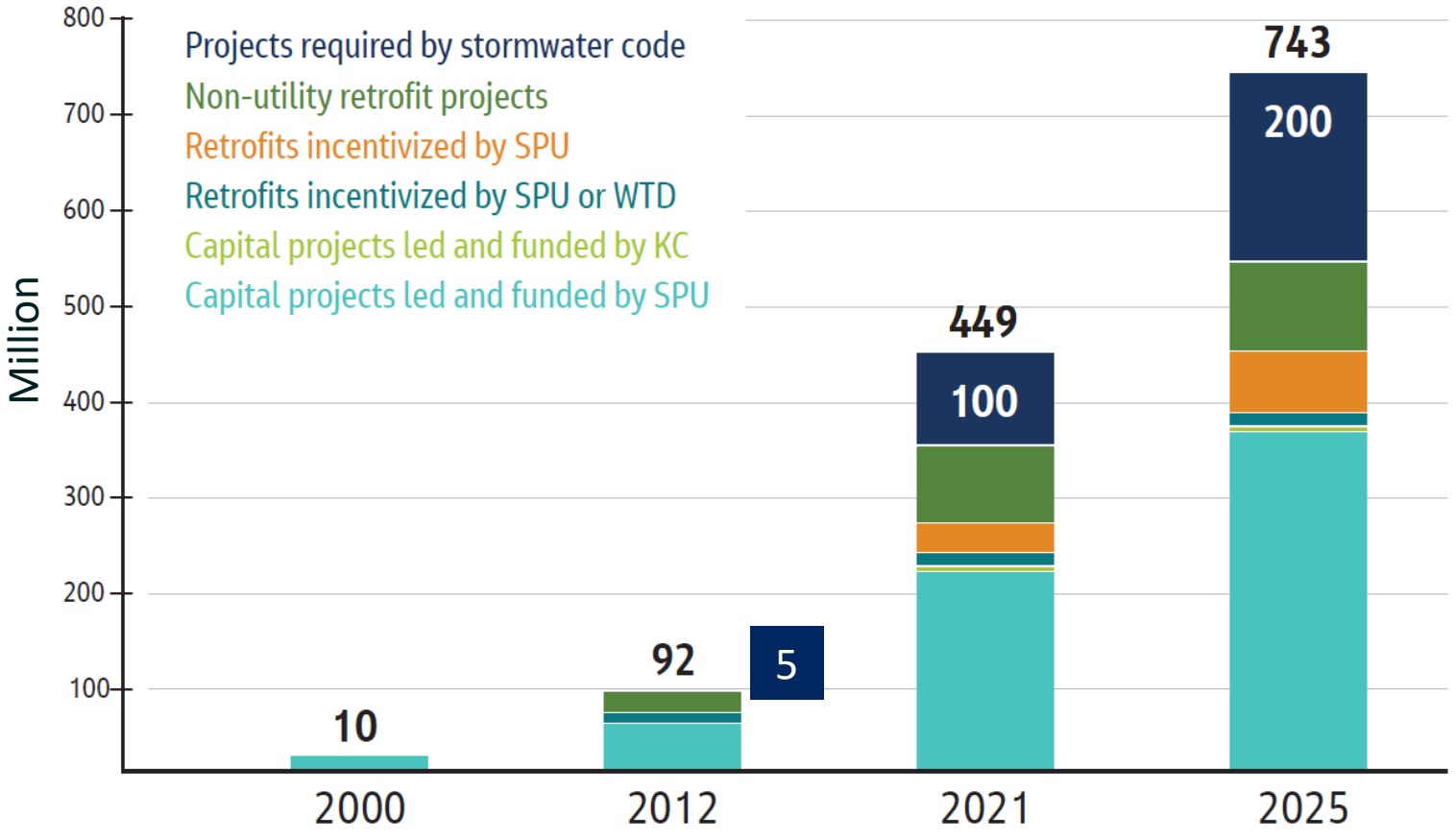
Green Factor Scoresheet PAGE 1 — SEATTLE×green factor

Project title:

	Landscape Elements**	Totals calculate automatically from Green Factor Worksheet		Factor	Total
		Enter sq ft of parcel		SCORE	#DIV/0!
		Parcel size: 0			
A	**Planted areas**		0 square feet	0.6	0
1	Planted areas with a soil depth of 24" or greater				
2	Bioretention facilities		0 square feet	1	0
B	**Plantings (credit for plants in landscaped areas from Section A)**				
1	Mulch, ground covers, or other plants less than 2' tall at maturity		0 square feet	0.1	0
2	Medium shrubs or perennials 2'-4' tall maturity - calculated at 9 sq ft per plant (typically planted no closer than 18" on center)	0 plants	0	0.3	0
3	Large shrubs or perennials 4'+ at maturity - calculated at 36 sq ft per plant (typically planted no closer than 24" on center)	0 plants	0	0.3	0
4	**Small Trees** Tree canopy for "Small Trees" or equivalent (canopy spread of 8' to 15') - calculated at 75 sq ft per tree	0 trees	0	0.3	0
5	**Small/Medium Trees** Tree canopy for "Small/Medium Trees" or equivalent (canopy	0 trees	0	0.5	0

Stormwater Code

Gallons of Stormwater Managed Per Year with GSI



Timeline of Code-Related GSI Growth

1999 Start of Seattle's GSI Program

2009 Seattle begins requiring GSI and Low Impact Development (LID) as part of stormwater code

2012 5MG managed by stormwater code, 92MG managed in total

2013 Official Start of the 700MG Program (began accounting for projects built in 2000 and later)

LID now required by Washington State Department of Ecology

2015

2020 UW Health Sciences Education Building and Aurora Bridge GSI projects enter into Beyond Code Partnership with Seattle

2021 GSI growth accelerated through implementing the 2021 stormwater code updates

100MG managed by stormwater code, 450MG managed in total

Seattle's GSI Asset Management Charter lays foundation for comprehensive planning and longterm ownership of GSI assets

2025 (Projected) 200MG managed by stormwater code

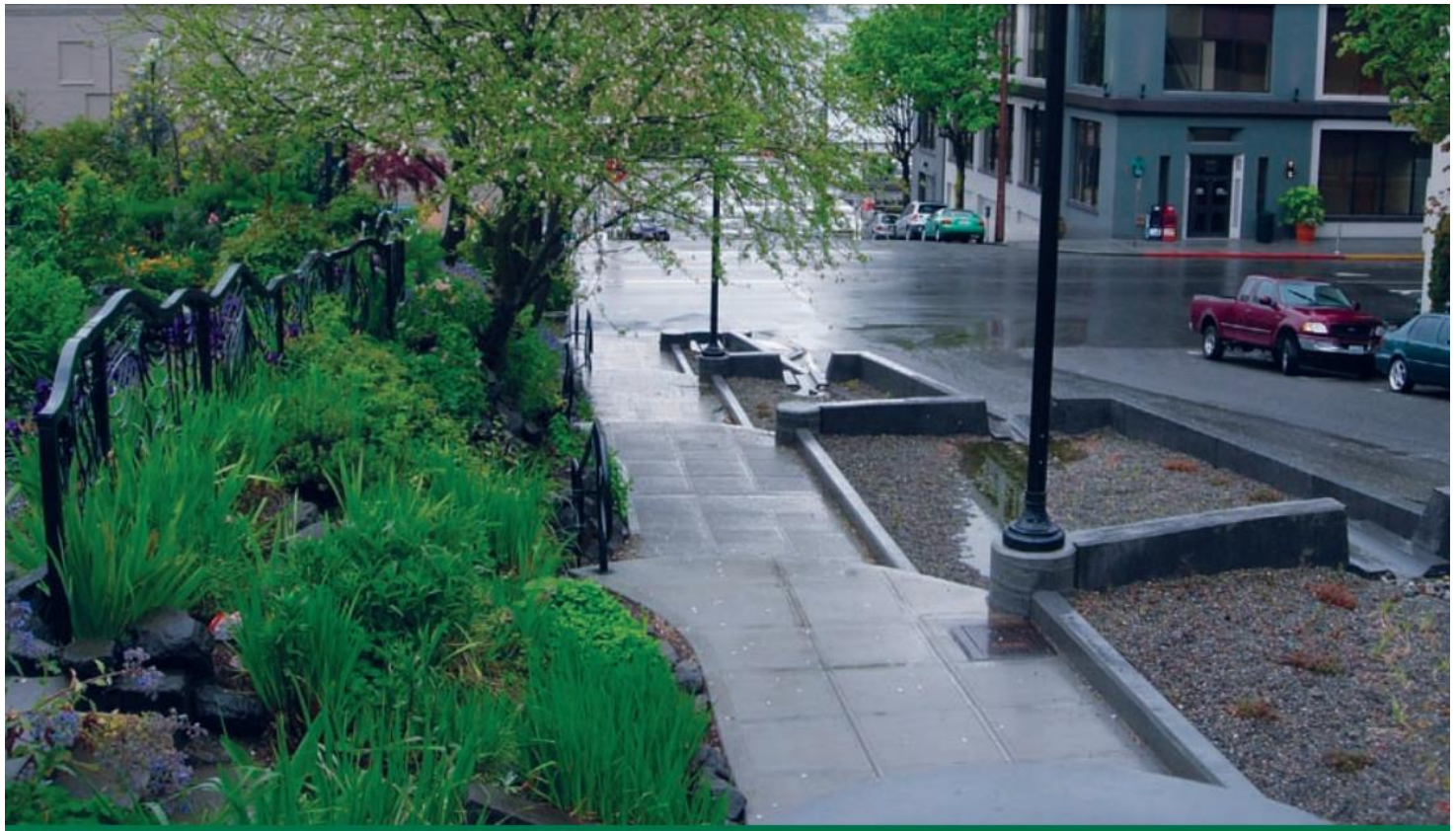
End goal of managing 700MG of stormwater annually

BEYOND 2025 - Work continues to grow GSI across Seattle

Natural Drainage Systems

[Street Edge Alternatives Project (SEA Streets)]

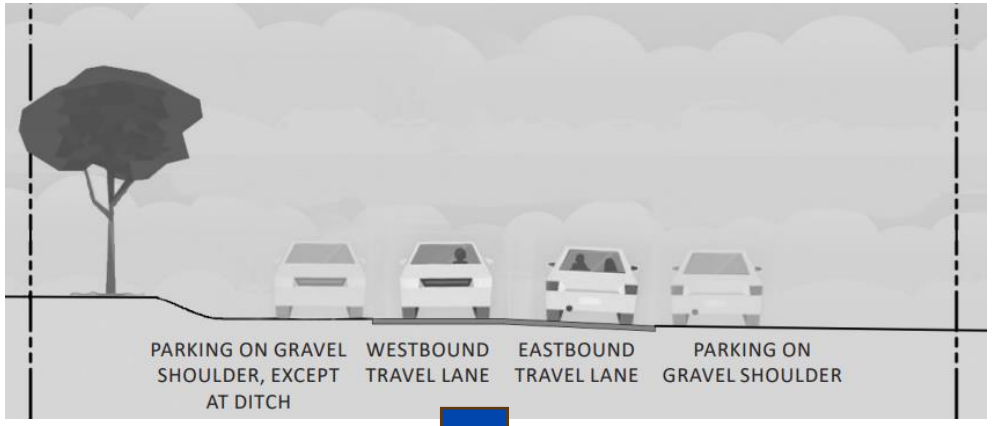
Natural Drainage Systems

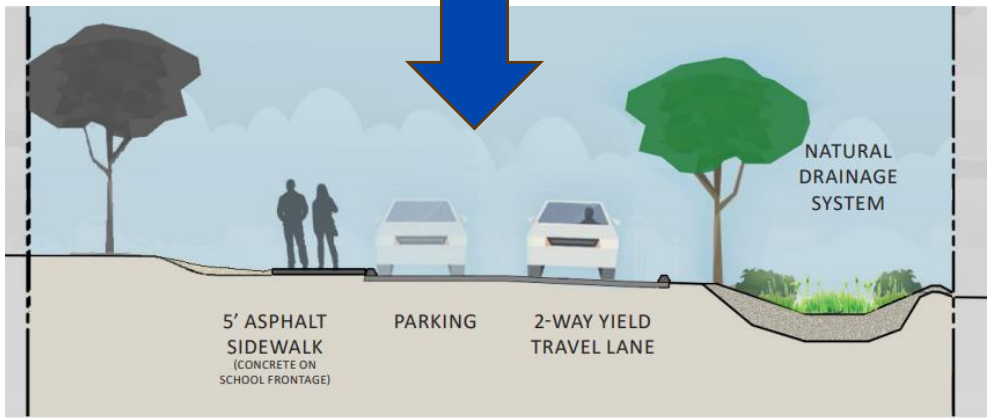


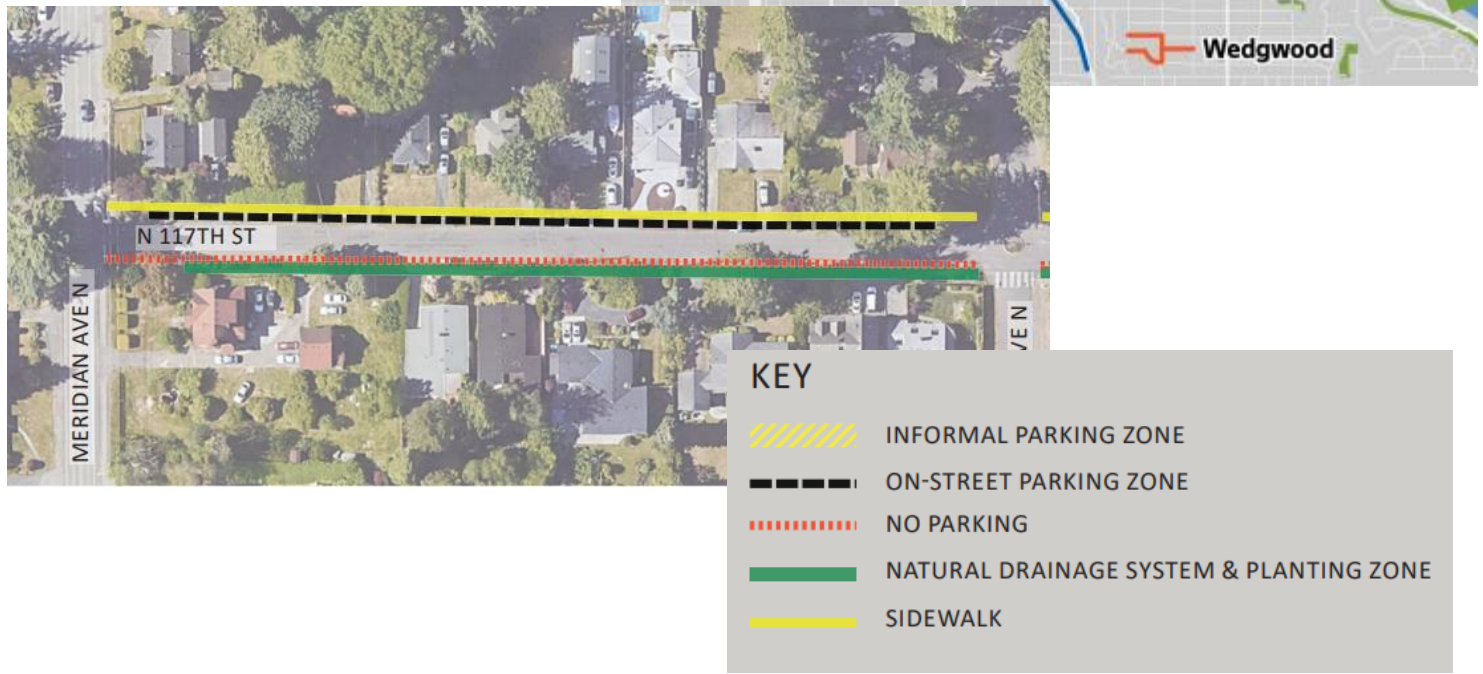
Vine Street Cascade in downtown Seattle

Below: 30th Avenue NE in Seattle's Lake City neighborhood

Sidewalks & Natural Drainage Systems

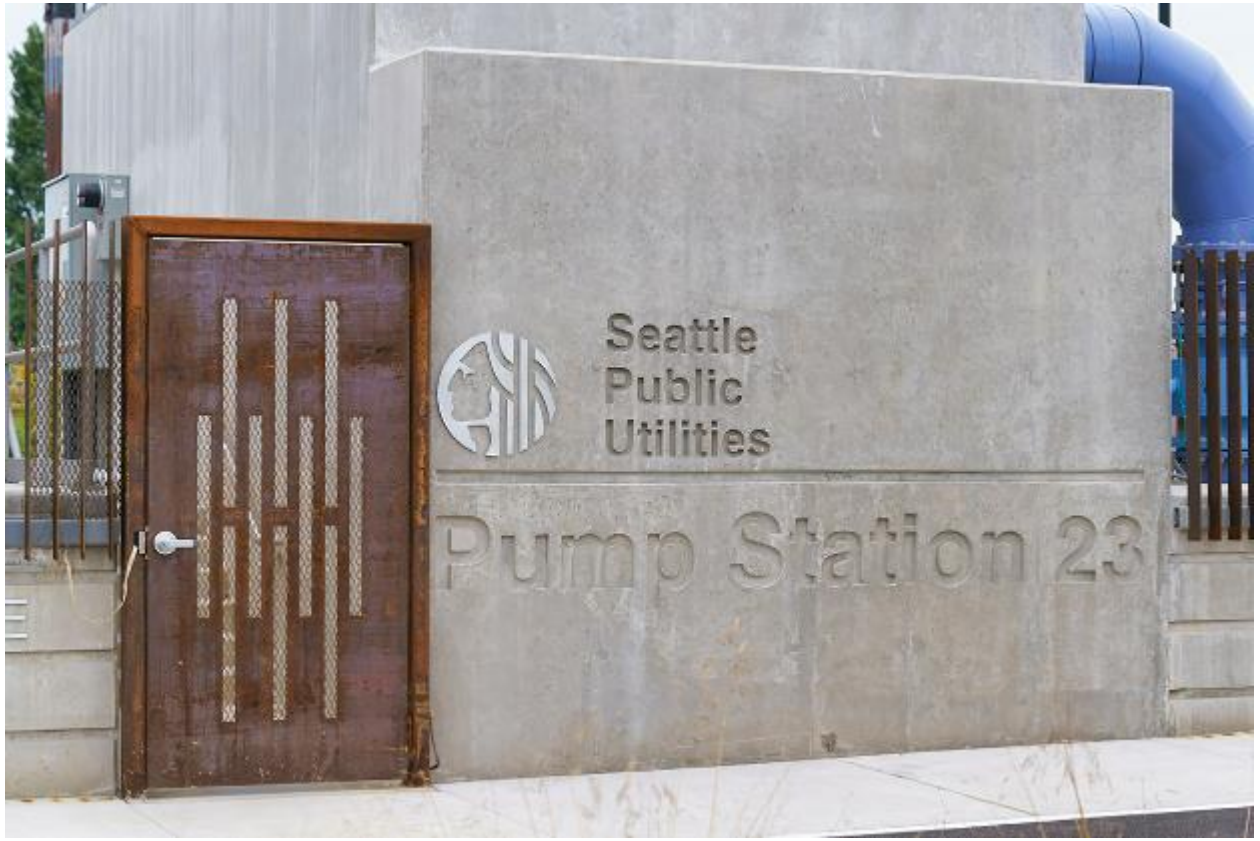






https://www.seattle.gov/documents/Departments/SPU/EnvironmentConservation/ThorntonNDS_Factsheet.pdf

Flood Prevention



South Park Pump Station

Midvale Pond

Sidewalks & Natural Drainage Systems

30th Ave NE Sidewalk and NDS Project

SDOT and SPU partnership project

30th Ave NE Sidewalk and NDS Project

Purpose-Built Stormwater Parks

- Madison Valley Stormwater Improvements
- Thornton Creek Water Quality Channel
- Meadowbrook Pond

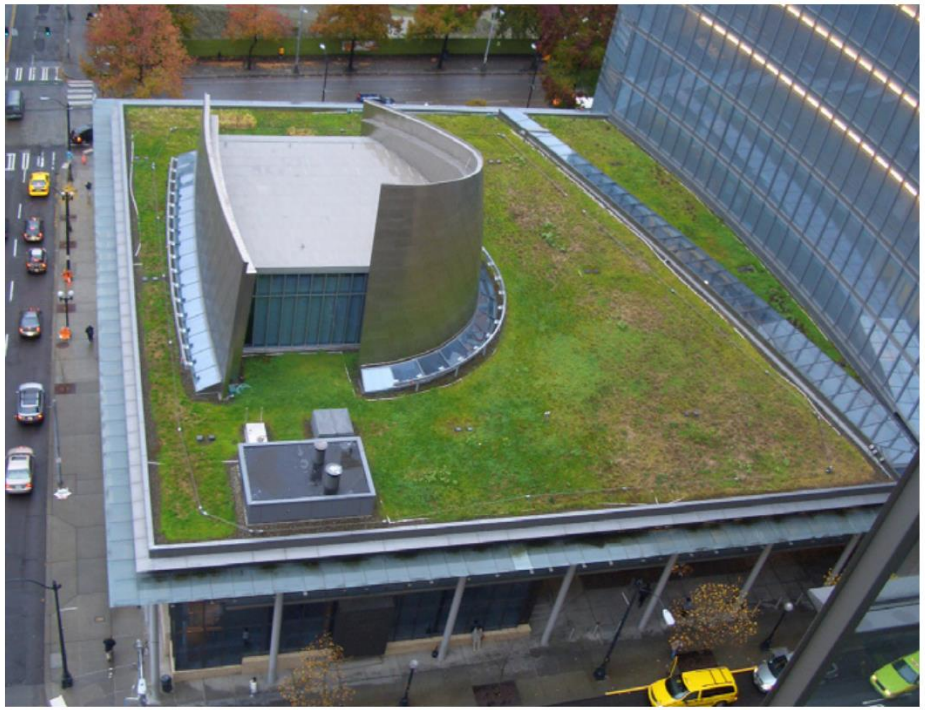
Parks & Open Space

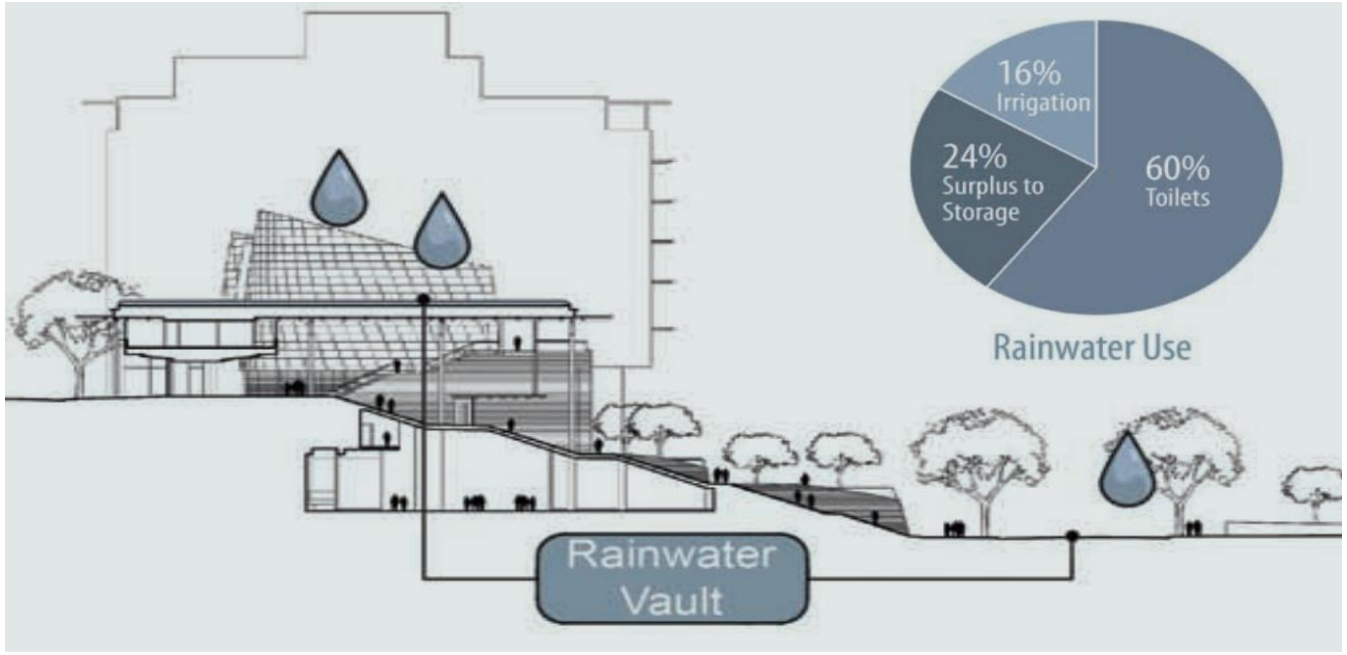
North Henderson Combined Sewer Overflow Reduction

Thornton Creek Confluence

Capital Facilities

- The Sustainable Buildings and Sites Policy

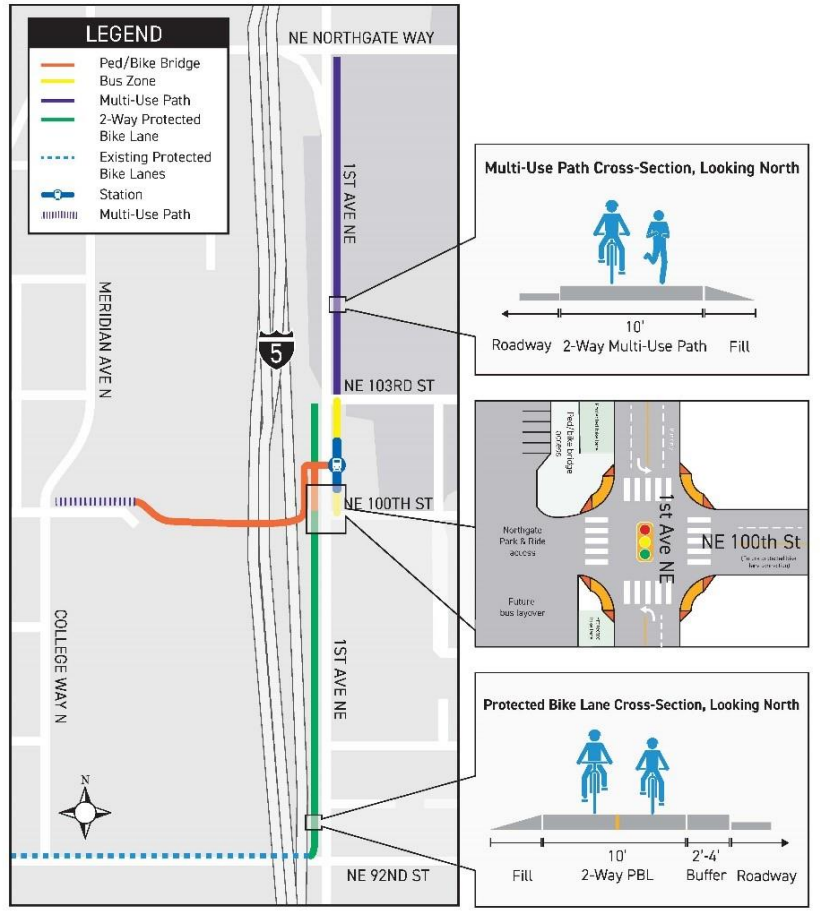




Public Transportation Options

NORTHGATE PED/BIKE BRIDGE

1ST AVE NE PROTECTED BIKE LANE AND MULTI-USE PATH



www.seattle.gov/transportation/NorthgatePedBridge

Seattle Department of Transportation

MOVE SEATTLE

Public Private Partnerships

High Point Natural Drainage Systems

Public Private Partnerships

Capital Hill Water Quality Facility

Photo credits: Vulcan Real Estate

Public Private Partnerships

RainCity Partnerships

New Green Infrastructure Project Delivery Approach

Scale

- Phase I - Up to 5 years, $15M
- Phase II- Up to 20 years, $100M (projected)

Mechanism

- Performance-based P3 contract
- All benefits roll up into one unit price, per managed impervious acre
- Utility pays only for completed projects
- "Community-driven" is clearly defined and resourced

Project Type

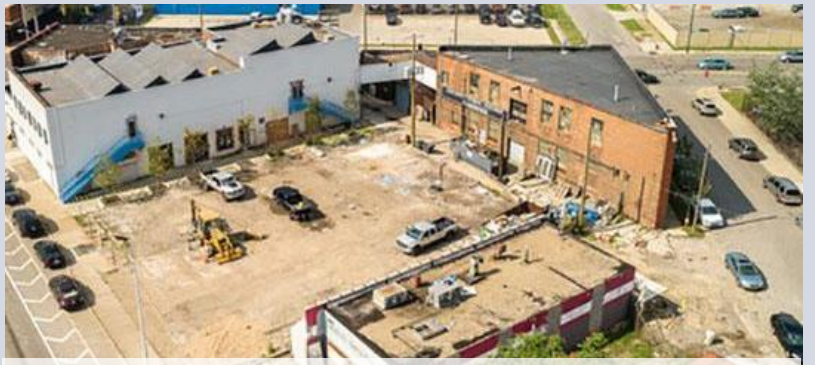
- Voluntary GSI retrofits on parcels using a range of best management practices
- Minimum of 5000 sq. ft. of impervious managed per project site
- Eligible area for Phase I: high priority basins clipped to top two Race and Social Equity Index areas and non-SFR land use

Minimum Environmental, Social, and Health Benefits

- 25 acres of impervious surface on parcels in high priority basins retrofitted to voluntarily manage runoff with green stormwater infrastructure (GSI), up to a defined performance standard
- 12 firms/community organizations mentored in the design, construction, and/or maintenance of green infrastructure retrofit projects
- 40% local hire + WMBE/MBE targets
- 10 community-driven projects
- 1 acre of riparian area restoration
- *Optional incentive to leverage $1-4M of additional funding for holistic community-driven projects, to cover components the Utility cannot fund*

Seattle Public Utilities Program Manager: Shelly.Basketfield@Seattle.gov

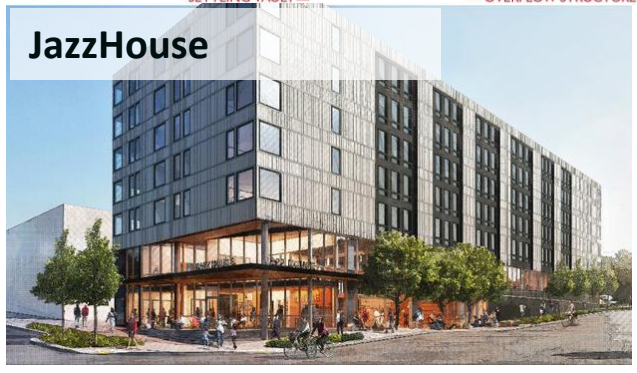
ONE PERFORMANCE-BASED CONTRACT

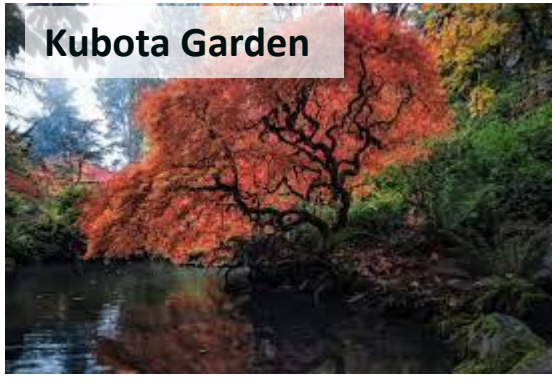


Plan + Design Portfolio of Projects

Construct/Implement Portfolio of Projects

Commission Full Set of Projects





Beyond Code GSI Partnership Program

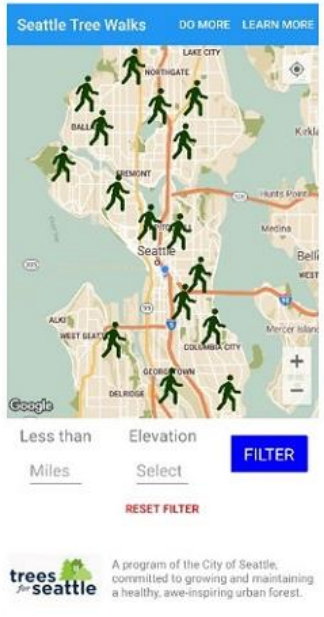
- Northlake Commons (Latona Station) – Redevelopment of the Dunn Lumber site at 3800 Latona Ave NE; constructing a regional biofiltration swale on the parcel to treat nearly two acres of contributing area.
- JazzHouse – A mixed-use, 130-unit affordable housing development and performing arts hub supporting youth music education in Mt. Baker. The project will construct bioretention cells along 22nd Ave S and S Hill S to treat ~10K square feet of road runoff.
- Queen Mary Rowhouses – A 20-unit redevelopment in Crown Hill that is constructing bioretention and conveyance to manage ~17K square feet of road runoff from the upstream block, decreasing flood risks.
- Kubota Garden – Parks is redeveloping the main parking lot at Kubota Garden; SPU is partnering with Parks and SDOT to design bioretention both in the parking lot and along 55th Ave S to treat road runoff before it enters Mapes Creek and/or Lake Washington.

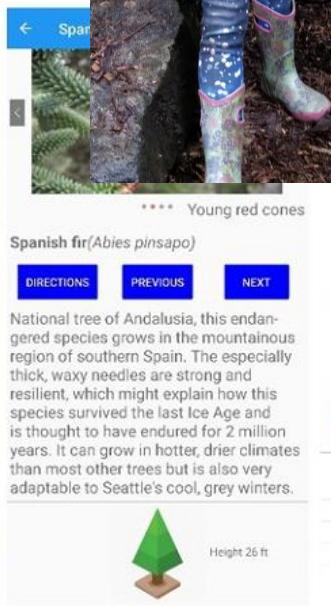
RainWise

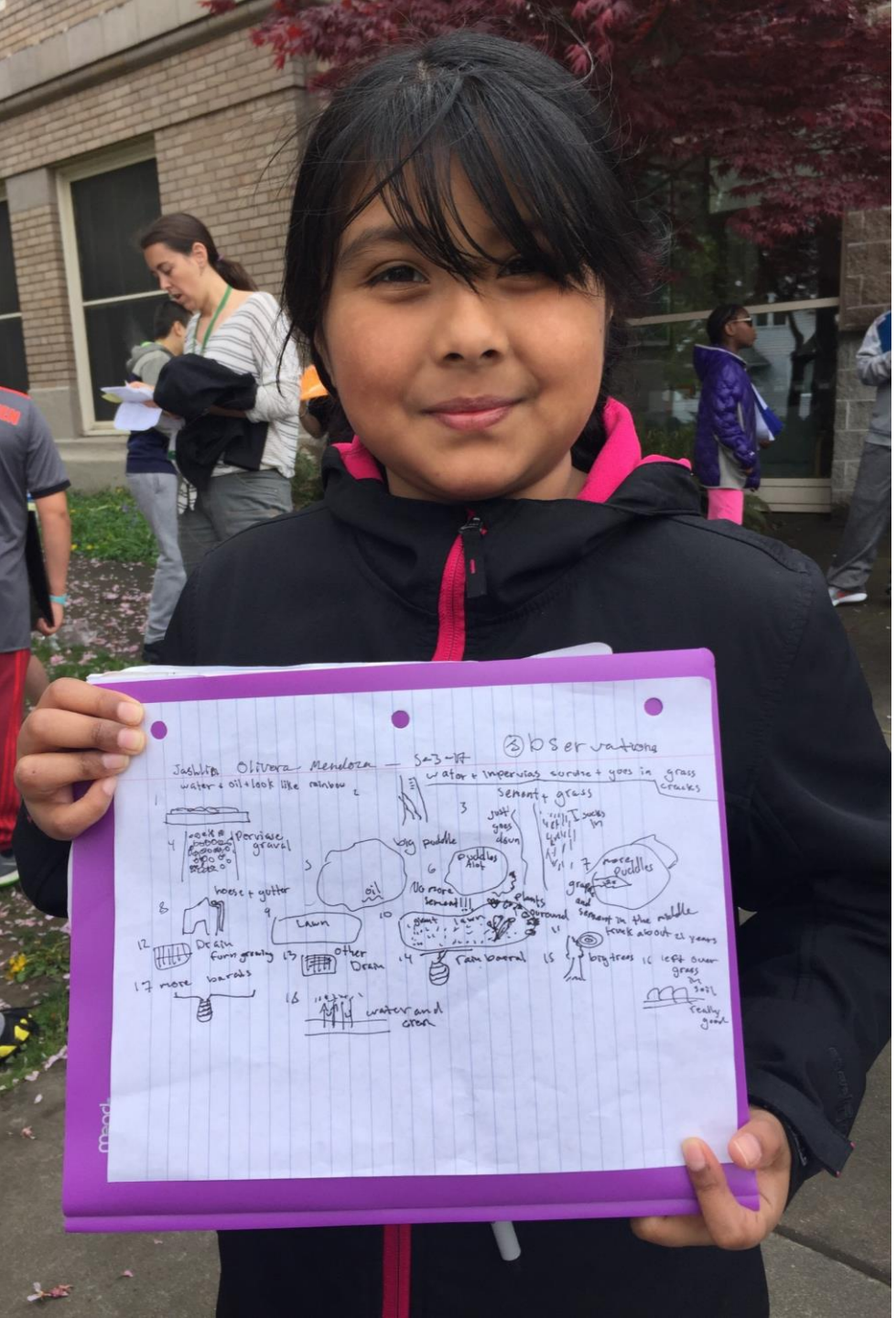
- City target: use GSI to manage 700 million gallons of polluted water annually
- RainWise for homeowner & community engagement
- Rebates for rain garden and cistern installations
- Contractor training
- Diverse contractor and participant recruitment

Trees for Seattle

- Volunteer stewardship
- Trees for Neighborhoods planting
- Tree Walks guides, mobile app







K-12 Youth Stormwater Education

- Salmon in the Schools
- Stormwater curriculum
- Duwamish boat trips

SALMON IN THE SCHOOLS SEATTLE

Salmon in the Schools-Seattle

2022-2023 Teacher Handbook

Welcome aboard Seattle Salmon in the Schools (SIS-SEATTLE)! Whether this is your first year or your fifteenth as a salmon teacher or tank volunteer, this handbook is your go-to resource for the entire experience.

Shape Our Water

- CREATING A WATER-RESILIENT FUTURE - Together


Thank you!