

EcoDistricts

Performance-Based Urban Design

Urban Design and Historic Preservation Division Session

A FOUNDATION FOR THE ECODISTRICT CONCEPT

- > BREWERY BLOCKS PORTLAND OR
 A Private Sector Initiative / Jill Sherman PARTNER, GERDING EDLEN
- > THE SW ECODISTRICT WASHINGTON DC
 A Public Agency Strategy
 Elizabeth Miller FASLA, AICP, NATIONAL CAPITAL PLANNING COMMISSION
 Otto Condon AICP, PRINCIPAL, ZGF ARCHITECTS
- > THE ECODISTRICTS PROTOCOL
 An Organizing Framework / Adam Beck Director of INNOVATION, ECODISTRICTS
- > Q & A

The Pearl District

Portland

A Foundation for EcoDistricts









The Pearl District











What is an EcoDistrict?

- An EcoDistrict includes transportation choices and a mix of uses within a neighborhood.
- > An EcoDistrict includes connected parks, plazas and open spaces for a vibrant, green, and walkable community.
- In an EcoDistrict, strategies for energy reduction, waste and water use go beyond a single building to develop solutions at the block and district scale.
- In an EcoDistrict, neighbors, community institutions and businesses join with city leaders and utility providers to meet environmental and economic goals through shared implementation of innovative projects.

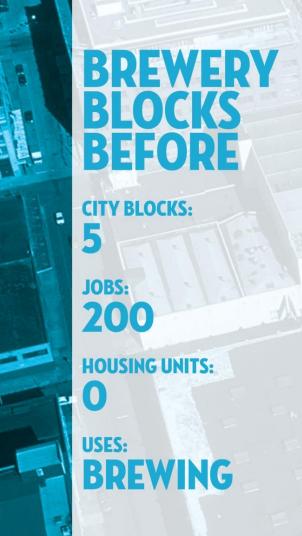


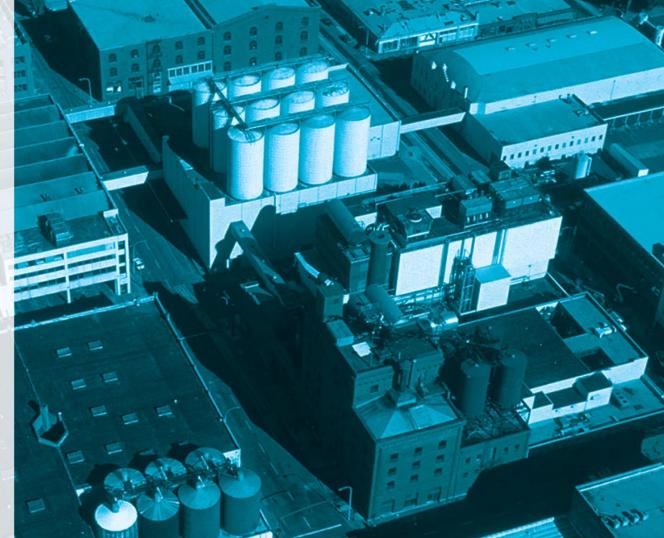


ECODISTRICTS / Our Footprint in Portland's Pearl District

- Brewery Blocks
- Wieden + Kennedy World Headquarters
- Pearl Parking Garage
- Deschutes Brewery
- The Casey Condominiums
- Twelve West
- Meier & Frank Depot / Vestas' North American Headquarters
- = 4 LEED Platinum
 Buildings in the
 Pearl District











[our original goals]

- Livability, Community, Connectivity, Sustainability
- All Buildings LEED Silver Certified
- 20% Energy Efficiency
- 20% Water Efficiency
- 75%+ Construction & Demolition Waste Recycling



OCKS

7,000

400

HOUSING

BREWERY BLOCKS



BREWERY BLOCKS / The Gerding Theater

- Restoration and renovation of historic 1891 Armory into a performing arts center for Portland Center Stage
- First building on National Register of Historic Places to achieve LEED Platinum certification
- First performing arts center to achieve LEED Platinum certification
- 56,000 sq. ft. including 500seat main stage theater and 200-seat black box theater







BREWERY BLOCKS / The Gerding Theater Sustainability Features

- Displacement ventilation in the office, theater and lobby areas
- Chilled beams connected to central chilled water plant for cooling
- Rainwater harvesting and reuse for significant potable water savings
- Skylights allow for daylighting into the office areas







BREWERY BLOCKS / Block 2: Brewhouse and Cellar Building

- Salvaged key historic elements including: the smokestack, weathervane, historic railings and copper flue
- The 8-story smokestack was preserved using 20foot-long steel beams that were lowered into it and positioned and embedded with concrete
- All equipment and tanks associated with the former brewery were salvaged to reduce landfill waste







BREWERY BLOCKS / Activating the Streetscape

- New standard for active streetscapes that include wider sidewalks, curb extensions, planters and seating areas
- Benches face the buildings

 (as opposed to facing the street) with planters
 anchoring each bench
- Customized canopies and storefronts lend unique character and break up the building face and scale







BREWERY BLOCKS / Our Achievements

- Livability, Community,
 Connectivity, Sustainability
- LEED: 1 Platinum, 4 Gold, 1 Silver
- Energy Efficiency:
 20% in Core & Shell
 30% in Residential
 45% in Theater
- Water Efficiency:
 20% in Commercial
 30% in Residential
 40% in Theater
- 90% Construction and Demolition Waste Recycling







ECODISTRICTS / The Brewery Blocks : Annual Savings



4.86 million kwh & \$340,000

Enough energy to power 443 homes.



661 metric tons of CO₂

Equal to taking 135 cars off the road.



3.52 million gallons of water

Enough water for 175,900 showers.

LIVABLE PLACE INDEX / Annual Savings





ENERGY

443 homes

AIR

135 cars

WATER

175,945 showers

LEED

1 Platinum, 4 Gold, 1 Silver



Within 20 Minute Walk

Transport: 50 Options

Portland Streetcar, Flexcars, bus stops and MAX lines

Art & Culture: 25 Venues

Gerding Theater, P.I.C.A. Portland Art Museum,

Education: 22 Schools

Al Portland, PSU

Restaurants & Retail: 750

P.F. Changs, Henrys

Parks & Gardens: 17

Washington Park, North Park Blocks



Jobs Created:

Construction 2,200 Post-construction 2,200 (vs. 200 when it was a brewery)

ECODISTRICTS / Our Achievements: Broader Pearl District

- Energy Strategies: BIPV, Waste Heat Recovery, Chilled Beams, VRF Systems, Displacement Ventilation, Wind Turbines
- · Ecoroofs, Rainwater Reuse
- Streetscape Improvements, Underground Parking
- Transit Options: Bike
 Parking, Streetcar
 & Bus Stops
- District Strategies
- Chilled Water Plant That Also Serves Twelve | West
- Centralized
 Stormwater Treatment









SW Ecodistrict: A Vision Plan for a More Sustainable Future

Monumental Core Framework Plan

National Capital Planning Commission



Political Initiative Strategic Partnerships

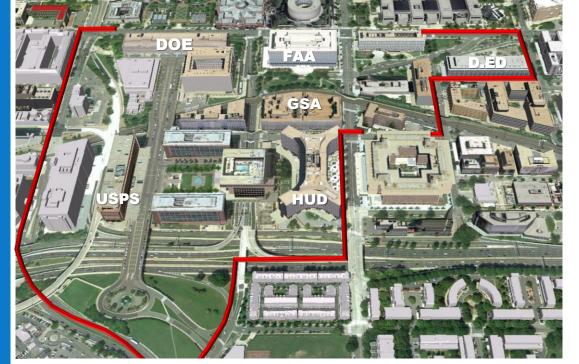
Executive Order 13514 Leadership in Environmental, Energy & Economic Performance

- A transformative shift in how the government does business;
- Makes the reduction of greenhouse gas emissions a priority for Federal agencies;
- It sets targets for energy, water, and waste reduction.





Study Area







Southwest circa 1955



Washington DC

Mid-Century Modern Character



Wilbur Wright Building
Federal Aviation Administration



James Forrestal Building
Department of Energy



Robert Weaver Building
Department of Housing and Urban
Development



Reservation 719 – Banneker Park National Park Service



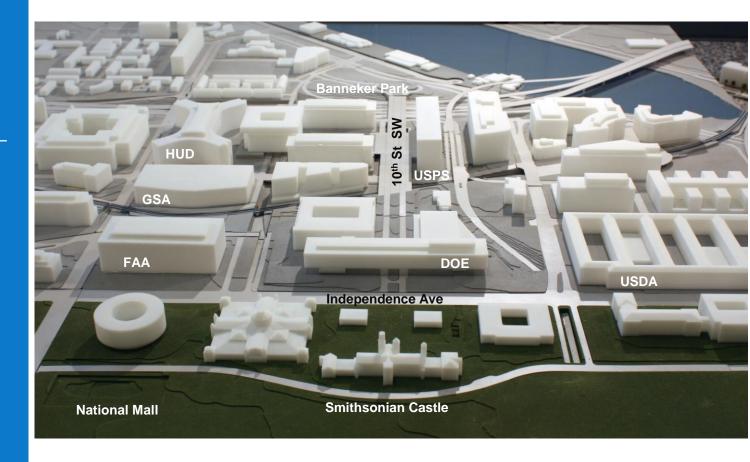
HUD PlazaGeneral Services Administration



Reservation 113 National Park Service

Washington DC

Existing Development



Washington DC

Vision for the Future



The Framework

THE NEIGHBORHOOD FRAMEWORK



Public Spaces & Cultural Facilities



Land Use



Transportation



Street Network, Function & Character

THE ENVIRONMENTAL FRAMEWORK



Energy



Water



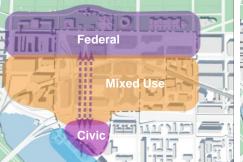
Urban Ecology



Waste

Washington DC

Neighborhood Frameworks



Transformation to Mixed Use Community



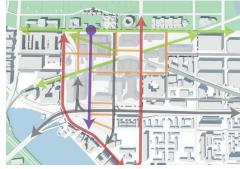
Active Building Frontage The First 30 Feet



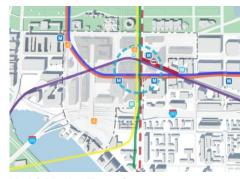
A Sequence of Civic Features and Open Space



Re-Established Street Network

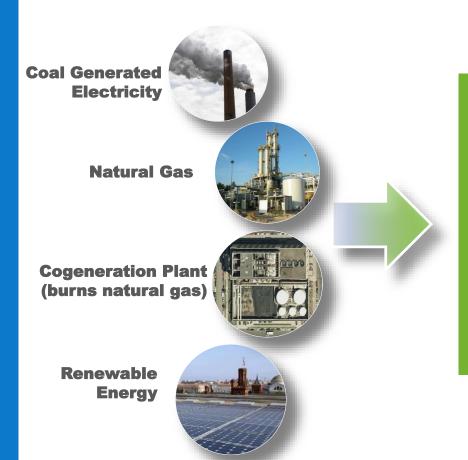


Streets Defined by Character



Multi-Modal Transit

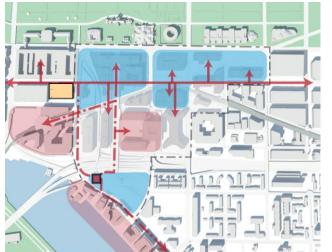
Energy Existing Sources and the Goal



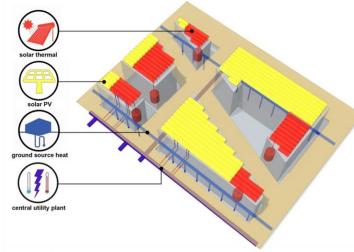
SW Ecodistrict
Goal
Strive for a
zero net
energy district
as measured in
carbon

Washington DC

Environmental Frameworks
Energy at the District and Block Scale



District Energy – Central Plant, MicroGrids, Ground Source, Sewer Mining and PV



Block Scale Energy Network and Renewables

ENERGY

Potential Federal/ Mixed Use MicroGrid

Potential Private MicroGrid

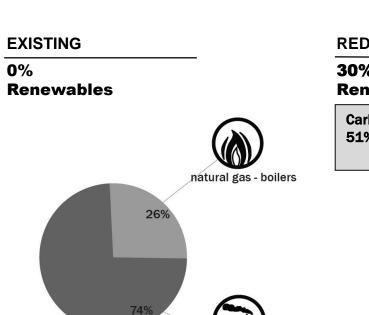
Central Utility Plant

Existing System

Potential Expansion

Sewer Mining -Heat

Energy



CURRENT ENERGY USE: **76.7 KBTU/Year** carbon laden electricity

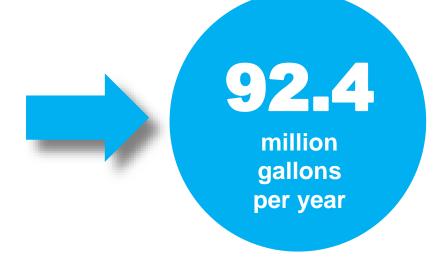
REDEVELOP 30% sewer heat mining Renewables **Carbon Emissions** 51% ground source heat 2% 6% solar PV 15% grid renewable electricity 70% **ATTAINED:** natural gas - CHP

29.7 KBTU/ Year

Water Goals

STORMWATER

Retain/Reuse the rainfall from a 1.7" Storm Event.



POTABLE WATER

Reduce municipal potable water use to 70% of what is used now.

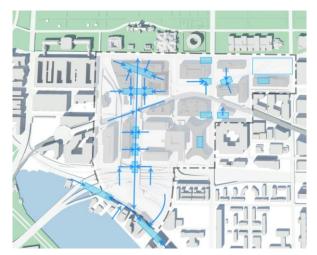


SW Ecodistrict

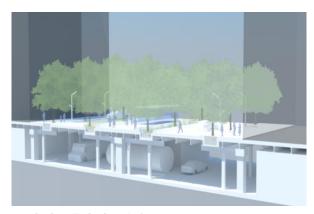
Washington DC

Environmental Frameworks

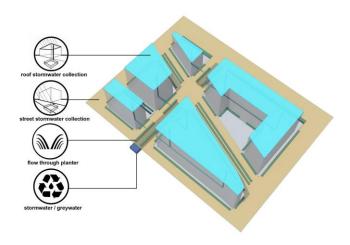
Water Strategies at the District and Block Scale



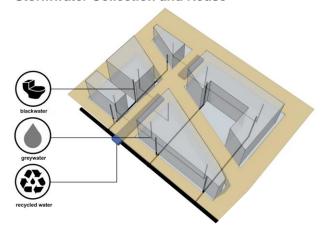
District Water Collection and Reuse



Optimize Existing Infrastructure



Stormwater Collection and Reuse

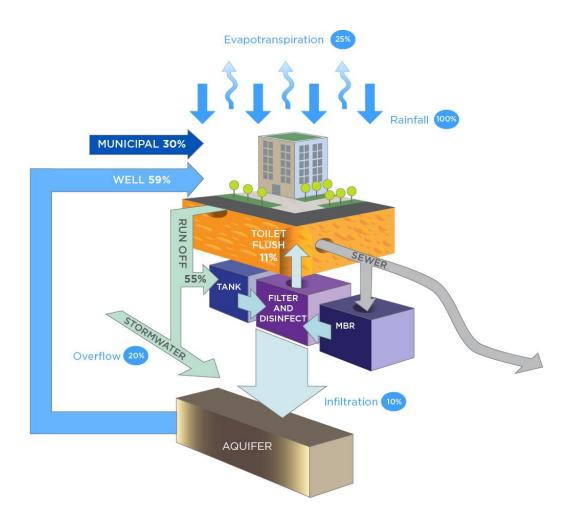


Waste Water Systems

SW Ecodistrict

Washington DC

Water Strategies



The Business Case

Stormwater Infrastructure Study (Return on Investment)

- Treat stormwater and greywater for non-potable water reuse.
- Tap well water for potable water needs and replenish it with stormwater and greywater.
- The system is feasible and has a reasonable payback period.

SITE	70% REDUCTION IN MUNICIPAL WATER	100% REDUCTION IN MUNICIPAL WATER
\$1/SRC	11 Years	16 Years
\$2/SRC	4 Years	5 Years
\$3/SRC	3 Years	3 Years
\$3.50/SRC	2 Years	3 Years

Value of credits will depend on supply and demand RC = DC Stormwater Credit

The Path to Livability and Sustainability

Today



SW Ecodistrict

Washington DC

The Path to Livability and Sustainability

Multiple Development Strategies





The Path to Livability and Sustainability

Guiding Successful Revitalization



Civilizing Transit

L'Enfant Intermodal Transit



Civilizing Transit

L'Enfant Intermodal Transit

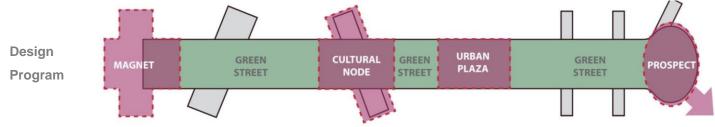


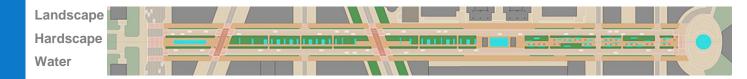
10th Street SW



10th Street SW

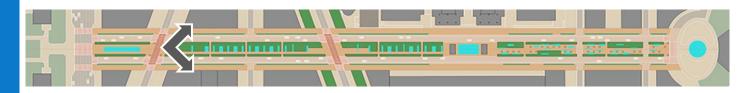


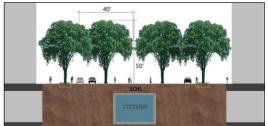




10th Street SW

- An Urban Garden Promenade
- The Linear Garden





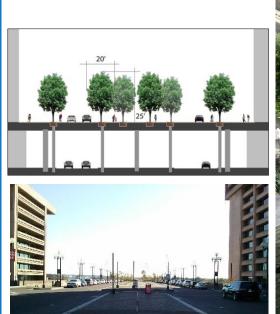




10th Street SW

- An Urban Garden Promenade
- A Series of Garden Rooms







Banneker Park

Connecting the Mall to the waterfront



Banneker Park

Connecting the Mall to the waterfront



Banneker Park Existing



Banneker Park

Interim Improvements



A Comparison

Today and in 2030

















Daily Population 33% Increase (Employees and residents) New Peak Hour Trips 7% Increase (New Metro and auto trips) Mixed Use Development
21%
Increase
(In GSF, including new
residential, hotel, cultural
and commercial)

Energy Use 62% Reduction Potable Water Use 70% Reduction Waste to Landfill 80% Reduction Carbon 51%

51% Reduction

SW Ecodistrict

Washington DC

The Business Case

investments

- Sustainability (Buildings / Utilities)
- Open Space and Streetscapes
- Real Estate and New Development

benefits

- Revenue from sale of excess land for private development.
- Cost savings from energy, water and waste efficiencies.
- Creation of sustainable, mixeduse neighborhood.
- Enhanced opportunities for federal facilities and cultural destinations.

Public and Private Investment Yields Sustainable Benefits



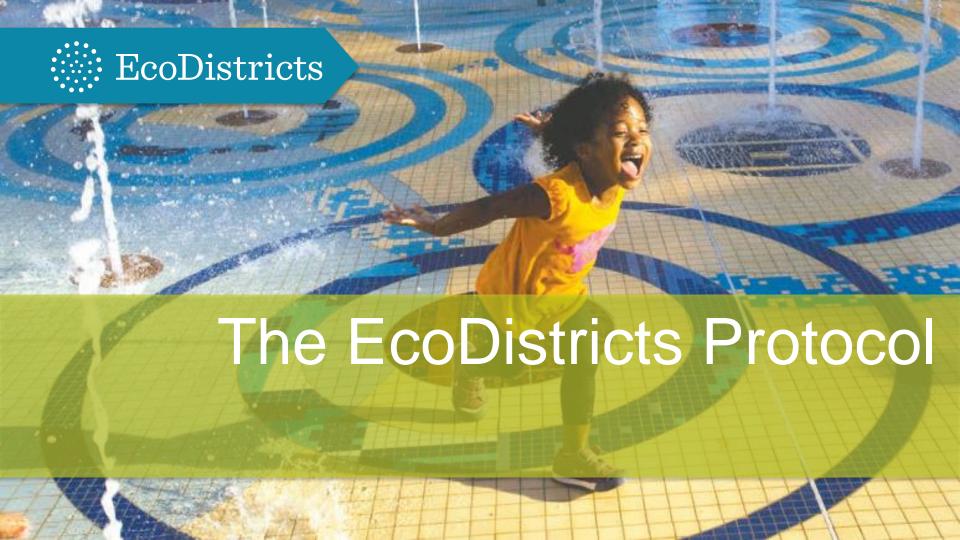


SW Ecodistrict

A Vision Plan for a More Sustainable Future

Elizabeth Miller AICP, FASLA
Director, Physical Planning Division
National Capital Planning Commission
elizabeth.miller@ncpc.gov

Otto Condon AICP Principal ZGF Architects LLP otto.condon@zgf.com



The Challenge

"Many of our urban regeneration challenges involve a diversity of stakeholders, competing forces, entrenched mindsets, institutional agendas, and business-as-usual interests that will often work against positive change.

Making progress will be messy. Failure is guaranteed. The steps we take, both forwards and backwards, need to be within context, and with a common goal of implementation.

We will neither learn, nor improve, unless we implement".



Our Theory of Change

EcoDistricts is defining and promoting a new model of urban regeneration; an approach rooted in authentic collaboration that honors and respects a community's collective wisdom and demonstrably improves the environmental, economic and social well being of the neighborhood and City.







The EcoDistricts Protocol is a set of commitments that we must embrace to build just, sustainable and resilient cities and neighborhoods for all.

These commitments help establish the conditions for implementing integrated district-scale sustainable development investments.

To help build momentum around this critical movement, we will reward, celebrate and share the achievements of urban leaders who register their commitment to the Protocol.



There are three commitments

THE IMPERATIVES, THE OUTCOMES & THE PROCESS

Three EcoDistricts Imperatives

Equitable, climate responsive & resilient neighborhoods are our starting point.

Six Priority Areas

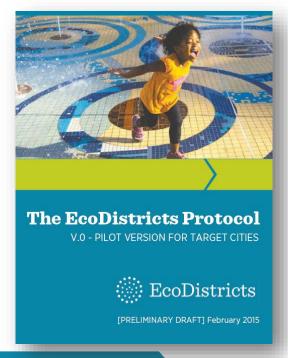
Our way of defining sustainable districts and neighborhoods, the Priority Areas articulate a clear set of goals, objectives and metrics.

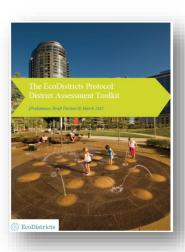
Four Phases to Implementation

Formation, Roadmap, Action and Stewardship – our approach to realizing integrated district and neighborhood scale sustainable development.



The Protocol & an Ecosystem of Resources





Toolkits

- Phase 1 Collaborative Governance
- Phase 2 District Assessment
- Phase 3 District Financing



Templates

District Assessment x7



Case Studies

Engagement Technologies



Guides:

Living Infrastructure





EcoDistricts LIVING INFRASTRUCTURE GUIDE

FEBRUARY 2015

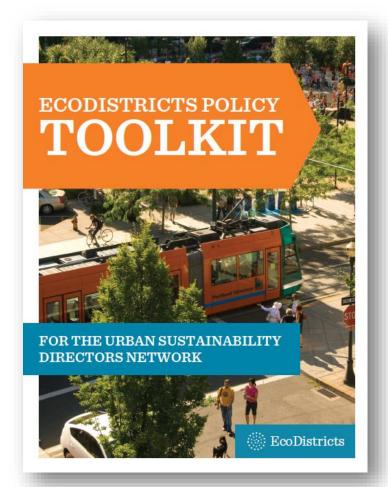
Toolkits & Guides

- Collaborative Governance
- District Assessment
- District Financing
- Living Infrastructure
- Net Zero Districts
- Development Without Displacement



EcoDistricts PolicyToolkit

- Helping City governments establish the conditions favorable for district scale sustainability policy-making
- Strategies to promote internal capacity-building
- Library of policy best practices







Think_Do_Tanks

- Development Without Displacement
- Creative Financing
- District Energy
- Green Infrastructure
- Tactical Urbanism



START

- Our Plan to Change Our Cities
- A New Model for Urban Regeneration
- How the EcoDistricts Protocol Can Help

COMMIT

- Download the Protocol
- Register your commitment to embrace it, report and verify against it

LEAD

- Profile of Committed Projects
- Performance Dashboard Disclosure
- Register of Verified Projects
- EcoDistricts Award Scheme
- Practitioners Register

LEARN

- Articles, Interviews & Profiles
- Toolkits, Guides & Templates
- Policy Marketplace
- Webinars, Video's & Courses
- Thought Leadership Studio



The EcoDistricts Imperatives

Equity

Process Equity: Project planning is community driven

Distributional Equity: Ensures that burdens don't bear disproportionately

Transgenerational: Use the precautionary principle approach by reducing uneven, enduring impacts

Climate Protection

We encourage a pathway to climate positive, which see's our districts and communities generate more energy than they consume

Resilience

Thriving in the face of social, technological, economic, environmental and political stresses.

Risk - focusing on high risks (shocks) as a priority

Resiliency strategy – jointly prepared with the City

Networks - building them strong, and often



The Priority Areas

HEALTH & WELLNESS

Active Living
Wellness
Food Systems

ECOSYSTEM STEWARDSHIP

Air, Water & Land Quality
Habitat Health
Connection with Nature

LIVABILITY

Engagement
Housing
Culture & Identity
Place

CLIMATE PROTECTION & RESOURCE EFFICIENCY

Climate Protection & Energy
Efficiency
Water Efficiency
Solid Waste Management

MOBILITY & CONNECTIVITY

Complete Streets
Information Networks

PROSPERITY

Education
Employment
Innovation



The Four Phases

The EcoDistricts approach to urban redevelopment involves four phases of action, that help build the conditions for implementing district-scale strategies in an integrated way that have the Imperatives and Priority Areas embedded.

PHASE 1: FORMATION

A critical first step, that involves community asset mapping, undertaking strategic engagement, and building a collaborative governance model among key stakeholders who will help deliver projects.

Identifying opportunities within the district or neighborhood to deliver strategies that meet a shared vision and an ambitious set of targets, and documented within an EcoDistricts Roadmap.

PHASE 2:

ROADMAP

PHASE 4: STEWARDSHIP

Establishing a monitoring, reporting and governance framework that allows the community to continually improve and prosper over time.

PHASE 3: ACTION

Building a pipeline of fundable and implementable strategies that are both short term and catalytic in nature, as well as long term impact making.

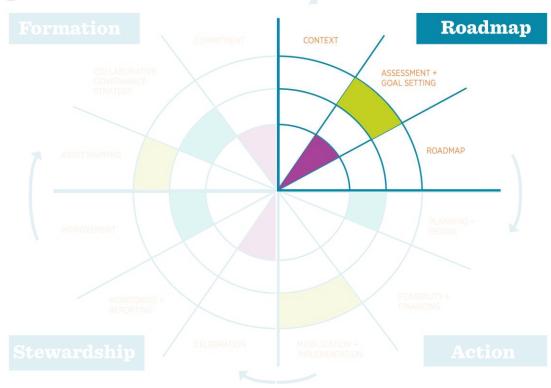


The EcoDistricts Dashboard

The four phases will be presented as a dashboard, to allow self assessment of progress and performance.

Project teams will report their performance, disclosing the dashboard.

The dashboard will have trigger points, indicating when verification can be attained.





Phase 2: ROADMAP Templates

Phase 2 - Template 4: Strategies Palette

Context

PHASE 2: ROADMAP | TEMPLATE 1

Context Setting Canvas

Set Targets



PHASE 2 - TEMPLATE 4 EcoDistricts Strategies Palette FOOD ACCESS Food Roofs Community Orchards

Plaza and Streetscaping Transformations Third Places

⟨∅⟩ EcoDistricts **EcoDistricts Roadmap** Summary of Investments:

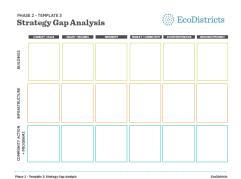
Roadmap

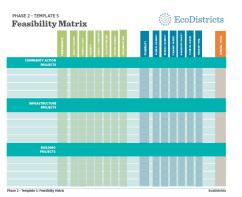
PHASE 2 - TEMPLATE 6

EcoDistricts

RESVATE THREE BARTY

Phase 2 - Template 6: EcoDistricts Roadmap





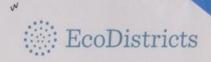




PHASE 2
TEMPLATE 2

10:15 - 12:00PM

Target Setting





PHASE 2
TEMPLATE 3

1:30 - 2:30 PM



Strategy Gap Analysis











CAPITOL HILL ECODISTRICT

ADVANCING NEIGHBORHOOD SUSTAINABILITY

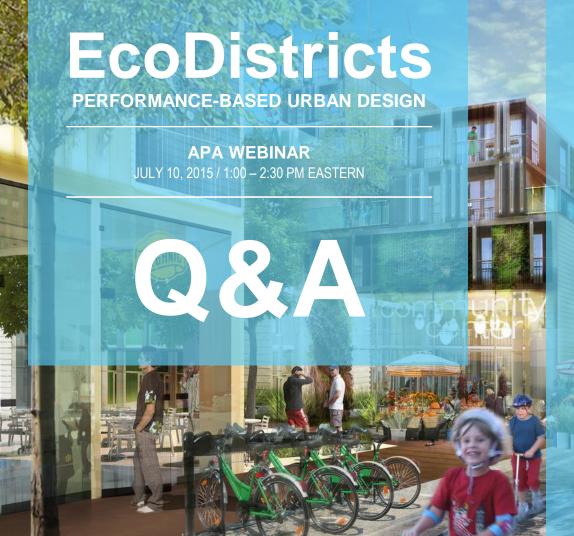


"A RESOLUTION declaring the City of Seattle will support the Capitol Hill EcoDistrict as a framework and agent for advancing City sustainability goals within the EcoDistrict boundaries".

Resolution No. 31562 The City of Seattle – Legislative Department Resolution sponsored by: 1/2 A RESOLUTION declaring the City of Seattle will support the Capitol Hill EcoDistrict as a framework and agent for advancing City sustainability goals within Committee Action: the EcoDistrict boundaries. Recommendation Date Adept 1/23/15 Related Legislation File: To: (committee) Date Introduced and Referred Planning, Land Use, and This file is complete and ready for presentation to Full Council. 1/12/15 MilldaniabiliN To: (committee): Date Re-referred: **Full Council Action:** To: (committee): Date Be-referred Vote Decision Date Date Presented to Mayor. Date of Final Action: 9-0 1/26/15 Adopted 1 27 15 1/26/15 Date Returned to City Clerk: Date Signed by Mayor: 2/2/15 1/30/15 Date Returned Without Concurrence: Published by Title Only ______ Published in Full Text







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