# **EcoDistricts**

PERFORMANCE-BASED URBAN DESIGN

APA WEBINAR JULY 10, 2015 / 1:00 – 2:30 PM EASTERN



### **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 Portland



# 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.



### GERDINGEDLEN PEOPLE-PLANET-PROSPERITY

# ecodistricts

# brewery blocks

THE PARTY

#### 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



# BREWERY BLOCKS BEFORE

**CITY BLOCKS:** 

-

5

JOBS: 200 HOUSING UNITS: 0 USES: BREWING



# ecodistricts

# [our original goals]

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



#### 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 CO<sub>2</sub>

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



PLANET	တို PEOPLE
ENERGY	Within 20 Minute Walk
4.8 MIL KWH	<b>Transport: 50 Options</b> Portland Streetcar, Flexcars, bus stops and MAX lines
443 homes	<b>Art &amp; Culture: 25 Venues</b> Gerding Theater, P.I.C.A. Portland Art Museum,
1.4 MIL LBS CO2	Education: 22 Schools Al Portland, PSU
135 cars	Restaurants & Retail: 750 P.F. Changs, Henrys
3.5 MIL GAL	<b>Parks &amp; Gardens: 17</b> Washington Park, North Park Blocks
175,945 showers	PROFIT
LEED 6 BLDGS. 1 Platinum, 4 Gold, 1 Silver	Jobs Created: Construction <b>2,200</b> Post-construction <b>2,200</b> (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







## GERDINGEDLEN PEOPLE-PLANET-PROSPERITY

Jill Sherman Partner Jill.Sherman@gerdingedlen.com



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

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- 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



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 Plaza General Services Administration

**Reservation 113** National Park Service

Existing Development



Vision for the Future





#### The Framework



Public Spaces & Cultural Facilities

Land Use



Transportation



Street Network, Function & Character

#### THE ENVIRONMENTAL FRAMEWORK





Urban Ecology



#### 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** 

12-12-11 12 26 31 1-



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



#### 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





**Central Utility Plant** 



Existing System



Detential Evacuaia



Potential Expansion

Sewer Mining – Heat

## SW Ecodistrict

Washington DC

Energy





Water Goals

## STORMWATER

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



**92.4** million gallons per year

### **POTABLE WATER**

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



 $22 \Rightarrow 6$ gallons / sf / yr


#### 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



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





#### The Path to Livability and Sustainability

Multiple Development Strategies

> Light rehab Full rehab Repurpose Infill Redevelopment Park Space Central Utility Plant Solar canopy



The Path to Livability and Sustainability

Guiding Successful Revitalization





## Civilizing Transit

L'Enfant Intermodal Transit





## Civilizing Transit

L'Enfant Intermodal Transit





**10th Street SW** A High-Performance Street





### **10th Street SW** A High-Performance Street









# 10th Street SW

A High-Performance Street

- An Urban Garden
  Promenade
- The Linear Garden









## 10th Street SW

A High-Performance Street

- 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



(Employees and residents)

(New Metro and auto trips)

(In GSF, including new residential, hotel, cultural and commercial)



### 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 EcoDistricts Protocol**

# 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".

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The EcoDistricts Protocol, 2015

# 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



#### The EcoDistricts Protocol V.0 - PILOT VERSION FOR TARGET CITIES

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[PRELIMINARY DRAFT] February 2015



#### **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 Policy Toolkit

- 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

## **Climate Protection**

## Resilience

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

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

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	LIVABILITY	MOBILITY & CONNECTIVITY
Active Living	Engagement	Complete Streets
Wellness	Housing	Information Networks
Food Systems	Culture & Identity	
	Place	
ECOSYSTEM STEWARDSHIP	CLIMATE PROTECTION & RESOURCE EFFICIENCY	PROSPERITY
	Climate Protection & Energy	Education
Air, Water & Land Quality	Chillate I foteetion & Energy	
Air, Water & Land Quality Habitat Health	Efficiency	Employment
	0.	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.

#### PHASE 2:

#### ROADMAP

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 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.

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### Phase 2: ROADMAP Templates

#### Context



template 2 ot Setting	EcoDistricts	PHASE 2 - 1	
A CITY GON. BEITRICT POTENTIAL BECONSTRUCT BOAL BE	ECCHHENDED STRATEORIS RECOMMENDED SOAL		SAF
		LIVABILITY + PLACE	HEALTH
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т <mark>и</mark>			сон
M N		IT BEING	сони
E YY		HEALTH + WELLBEING	HOUS
plate 2: Target Setting	EcoDitricts	HEA	SOCIA

Set Targets

#### PLATE 4 ies Palette

Phase 2 - Template 4: Strategies Palette

	STRATEGY	COMMUNETY PROGRAMS + PROJECTS	ERILLEVINGS	INFRASTRUCTURE (NARD + SOFT)
	SAFE ENVIRONMENT	Community Policing, Neighborhood Watch Groups, Disester Relief Trials	Pop-Ups in Vacant Buildings. Beautification, Murals on Vacant Buildings	Grime Prevention Through Environmental Design
LIVABILITY + PLACE	HEALTHY COMMUNITY DESIGN	Playborhood/Play Steads Programs, Evants to Connact Residents to Healthy Opportunities in the Built Environment	Cohousing, Universal Design Policies	Complete Neighborhoods, Bite and Padastrian Infrestructure, Sefa Streets to Docrease Traffic Injeries, Green Streets
	WELLNESS	Commenity Exercise Programs, Healthy Cooking Demonstrations, Air Quality Honitoring, Health Impact Assessments	Community (Health) Centers	Parks and Playgrounds, Commected Tmil System
2	FOOD ACCESS	Urban Agriculture, Nobile Fermers Markets, Fresh Food in Convenience Stores, SNAP Banefits Doubling at Farmers Markets	Food Roofs	Community Orcherds
	COMMUNITY IDENTITY	Intersection Repair, Street Feativels, Cultural Events, Branding Com- paign, Wayfincing Signage, Percent for Art programs	Activated Building Frontages, Historic Preservation Policy, Demolition Reviews, Foçade Improvements	Plaza and Streetscaping Transformations
	COMMUNITY ENGAGEMENT	Interactive Public Art, Mobile City Holl, Interactive Online Platforms, Neighborhood Leader Training, Block Leader Programs	Community Meeting Speces	
	HOLSING OPTIONS AND LOCATIONS	Inclusionery Zoning, Linkago Feos, Housing Trest Fund	Commentity Land Trusts, Access ory Dwolling Units, Universal Design Policies, Transit Crianted Development	
	SOCIAL CONNECTEDNESS	Block Parties, Small Community Grants, Community Driven MicroGranting Dinners		Third Places

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# Roadmap



Phase 2 - Template 6: EcoDistricts Roadmap

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PHASE 2 - TEMPLATE 3 Strategy Gap Analysis

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# Los Angeles, CA

Little Tokyo

# 10:15 - 12:00PM

#### 

# **Target Setting**

N

EcoDistricts





# Cambridge, MA

Kendall Square

# Ottawa, ON

Zibi



## Seaholm Ecodistrict

ECC

**Mest Ave Lofts** 

New Central

Library

GreenWater

# CAPITOL HILL ECODISTRICT

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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

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. TP

Re

Date Introduced and Referred	Planning, Land Use, and Sustainability
Date Re-referred:	To: (committee):
Data Ba-referred	To: (committee):
Date of Final Action:	Date Presented to Mayor.
1/26/15	1 27 15
Date Signed by Mayor:	Date Returned to City Clerk:
1/30/15	2/2/15
Published by Title Only	Date Returned Without Concurrence:

Date	Committee Action: Recommendation	Vote
1/23/15	Adopt	3-0 (MOB, SC, NL
This file is com	plete and ready for presentation to Full C	ouncil.
Dete	Full Council Actio	DN: Vote
Date 1/2/0/15	Full Council Action	DN:

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# **EcoDistricts**

PERFORMANCE-BASED URBAN DESIGN

#### APA WEBINAR JULY 10, 2015 / 1:00 – 2:30 PM EASTERN



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