The Movement Towards Neighborhood Sustainability

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Why Neighborhood Sustainability?

GLOBALLY, WE FACE A CLIMATE CHANGE CRISIS WHICH IS AN ENERGY CRISIS

2001-2005 MEAN SURFACE TEMPERATURE ANOMOLY (°C)

Source: NASA

Increasing Melt Area on Greenland

Satellite-era record melt of 2002 was exceeded in 2005.
GREENLAND ICE SHEETS MELT AT RECORD RATE IN 2010

INTERNATIONAL BUSINESS TIMES

70 meters thinning in 5 years
Environment: Dying Oceans, Poisoned Seas
Monday Nov 08, 1971

In 1942, when French Undersea Explorer Jacques Cousteau explored the Sargasso Sea, he could see underwater for about 300 ft. Today, he reports, the visibility has shrunk to barely 100 ft. When he first started diving in the Mediterranean 25 years ago, it was filled with life. Today? "You can hardly see a fish 3 in. long." What has happened is that pollution has caught up with the seas' and oceans' ability to cleanse themselves. Cousteau estimates that the vitality of the seas, in terms of fish and plant life, has declined some 50% to 50% in the past 20 years.

Pakistan - 2010

Increase in annual temperature – 2°F by 2020, 3.2°F by 2040, 5.3°F by 2080
April 1 snowpack to decrease 25% by 2020, 40% by 2040, 59% by 2080
Area burned by fire – double by 2040, triple by 2080

Global Warming to Bring More Intense Storms....
North Cascades Park has lost half its ice area in the past Century
Seattle Times January 4, 2010

How can the way we create and recreate our communities begin to address these challenges?

The EcoDistricts™ Framework
Building Blocks of Sustainable Cities
A Groundbreaking high-performance building district in Downtown Seattle

U.S. Energy Consumption by Sector (Historic / Projected)

Seattle Energy Consumption by Sector
2008 Seattle Community Greenhouse Gas Inventory

By 2035: A Historic Opportunity

Seattle Building Energy Consumption by Fuel Type
2008 Seattle Community Greenhouse Gas Inventory
The first high-performance urban building district

Performance Targets

The 2030 Challenge for Planning
Existing Buildings

The 2030 Challenge for Planning
New Construction

Performance Targets

The 2030 Challenge for Planning
Existing Buildings

The Regulatory Prefect Storm

US Conference of Mayors (USCM) Resolution
#50 for all Cities
• June 2006
Calls for all new buildings and renovations (in all cities) to meet the 2030 Challenge.

Seattle City Council
• A 2010 priorities was to adopt a carbon neutral goal for Seattle with specific milestones and implementation steps, along with a plan for adaptation to the effects of climate change.
The Regulatory Prefect Storm

State of Washington
- Legislation SB 5854
  Energy Code reductions to 70% by 2030

City of Seattle
- Ordinance CB 116731
  Public energy disclosure

Replication Opportunities

- Elliott Bay
- Seattle
- A Common Vision
  - City of Seattle Disclosure Ordinance
  - City of Seattle Sustainable Development Policy update
  - Community Power Works
  - Emerald Cities
  - King County
  - Municipal Retrofit IDT
  - Seattle Climate Partnership
  - Yesler Terrace redevelopment

![EPA Climate Wise Districts](Image)
Performance Targets

Performance Targets - Energy

Performance Targets - Water

Performance Targets – Transportation CO2

Seattle 2030 District Profile

Roadmap to 2030 / Existing Buildings

Seattle 2030 District Energy Efficiency Contracting Services

Training and Education

Preferred Purchasing

New Construction

Case Studies
A Groundbreaking high-performance building district in Downtown Seattle
building blocks of sustainable cities

ECODISTRICTS

A neighborhood committed to improving its sustainability performance over time with:

1. GREEN BUILDINGS
2. SMART INFRASTRUCTURE
3. BEHAVIOR & CHOICE

Districts are an important scale to accelerate sustainability — small enough to innovate quickly and big enough to have a meaningful impact.

drivers

ECODISTRICTS

- Jobs
- Carbon
- Urban form
- Growth management
- Smart infrastructure
- Mobility
- Resilience
- ROI
value proposition
ECODISTRICTS

- TEST BED for building, infrastructure, and demand management solutions
- INNOVATION – Support the growth of clean tech and green development cluster
- TRIPLE BOTTOM LINE ROI supporting economic, environmental and equitable outcomes
- POLICY – Align and accelerate local public policies – link to state and federal agendas (e.g. HUD-DOT-EPA)
- BRAND cities sustainability leadership
- RESEARCH partnership with local universities

value proposition
ECODISTRICTS

- Public private partnerships that link:
  - Real estate development
  - Infrastructure projects
  - Demand management projects
- Vehicle to recruit consortium of companies and researchers to participate
- Vehicle for supporting tech commercialization

value proposition
ECODISTRICTS

Grey to Green

- $63M savings ($11M investment)
- Achievement of watershed goals
- Improved placemaking
- Enhanced property values
- Local job generation

HOW

framework
ECODISTRICTS

process
ECODISTRICTS

Five Step EcoDistricts Implementation Process
initiative roadmap

**ECODISTRICTS**

- Program/Concept Development
- Program Implementation
- Training & Curriculum Development
- Policy Recommendations & Advocacy
- Research Initiatives
- Economic Development Strategy

| Year 1 | Year 2 | Beyond |

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district assessment

**ECODISTRICTS**

**Assessment Method**

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**ASSESSMENT**

- Energy Resource Flows
- Sustainable University Sustainable Master Plan

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**Energy Resource Flows**

- Existing Building Efficiencies
- Building PV Potential Demand Reduction
- Energy Efficiency Savings
- WW & Dashboard

- On-site Energy Reduction Potential
- Off-site Energy Reduction Potential

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**EcocDistricts**

- Energy Area Stakeholders

- Year 1
- Year 2

- Active Solar PV
- Combined Heat & Power
- Demand Management
- Natural Ventilation
- Solar Hot water
- Waste-to-Energy
- Energy Retrofits
Identifying the Opportunity

Building District City

Performance, Cost, Regulations, Finance, Ownership, Risk, and Partnerships

Types of Projects

GREEN BUILDINGS SMART INFRASTRUCTURE BEHAVIOR & CHOICE

Smart Infrastructure Strategy

Objective:
- Create district infrastructure strategy and roadmap to leverage public and private investments to catalyze EcoDistrict development.

Scope:
- Establish infrastructure concepts for energy, water, transportation and waste management.
- Create district performance specification (“performance spec”)
- Develop a “unified CIP” to guide public infrastructure improvements (cross bureau integration)
- Identify potential 3rd party infrastructure opportunities
- Develop and test business model scenarios for implementation
ECODISTRICTS
Behavior & Choice

KNOWLEDGE + GOALS + PROJECTS + INCENTIVES = ACTION

CITY LEADERSHIP

CLIMATE ACTION

PORTLAND PLAN

HEALTHY CONNECTED CITY

POLICY & CODE