



WELCOME!

BUILDING HEALTHY PLACES INTEREST FORUM

May 2, 2017 | Seattle, WA



Urban Land
Institute

Building Healthy
Places Initiative

SELF INTRODUCTIONS

Michael Horst

BUILDING HEALTHY PLACES AT ULI

Rachel MacCleery
Senior Vice President, Content, ULI

ULI BUILDING HEALTHY PLACES INITIATIVE



Leveraging the power of **ULI's global networks** to shape **projects and places** in ways that improve the **health of people and communities**.



Goals:

- Raising **awareness**
- Defining the **approach**
- Exploring the **value proposition**
- Advancing the **state of practice** and **policy**

Starting in FY18, Building Healthy Places will be part of the revamped Center for Sustainability and Economic Performance.

ULI MEMBERS ARE CORE



- The Building Healthy Places Initiative advances the ULI mission and promotes **healthy, thriving communities** by **engaging, informing, and inspiring** ULI members.
- ULI members promote health:
 - Through their **organizations**
 - Through their **investment** and project **decisions**
 - Through their influence in **communities**

BHP PARTNERS & FUNDERS

Mr. Randall Lewis



The Colorado Health Foundation™

THE KRESGE FOUNDATION

Expanding opportunities in America's cities

LEICHTAG
FOUNDATION



Robert Wood Johnson Foundation

PROJECTS & PROGRAMS

- **Member and Partner Engagement**
 - ULI Health Leaders Network
 - ULI/Randall Lewis Health Mentorship program
 - Product Council Joint Projects
 - Forums
 - Call to Action
- **Shaping Cities and Regions**
 - Healthy Corridors Project
 - Healthy City Impact Campaign
- **Influencing and Informing Development Practice**
 - BHP Toolkit
 - Healthy Housing
 - Food & Real Estate Project
 - Creative Placemaking Project
 - Active Transportation & Real Estate Project

ULI HEALTH LEADERS NETWORK



TAKE YOUR PASSION FOR HEALTH TO THE NEXT LEVEL!

- This program will empower real estate and land use professionals with the skills, knowledge, and networks to improve health outcomes in their professional practice and communities.
- Approximately 35 Health Leaders will be selected to take part in the program.
- Activities will include two in-person forums focused on leadership development and network building, and five interactive webinars exploring topics such as cross-sector partnerships, demographics, environmental health, and more.
- Applications are due on June 2, 2017.
- Learn more at: www.uli.org/healthleaders.

ULI is grateful to the Robert Wood Johnson Foundation, the Colorado Health Foundation, and Randall Lewis for their support of this program.

ULI/RANDALL LEWIS HEALTH MENTORSHIP PROGRAM



INSPIRE THE NEXT GENERATION OF ULI MEMBERS!

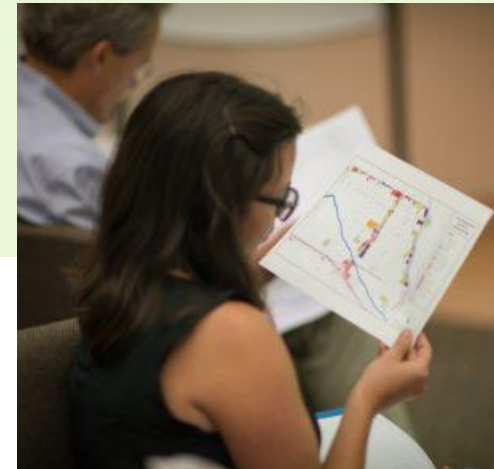
- This program will pair urban planning, architecture, and real estate graduate students with ULI members working at the intersection of health and the built environment and support their participation in ULI's 2017 Fall Meeting in Los Angeles.
- If you are is interested in serving as a mentor and receiving a complimentary Fall Meeting registration, please contact us via health@uli.org.
- Applications are due from students on June 2, 2017.
- Learn more at: www.uli.org/healthmentors.

ULI is grateful to Randall Lewis for his support of this program.

PRODUCT COUNCIL/JOINT BHP ACTIVITY

ENGAGE YOUR FELLOW PRODUCT COUNCIL MEMBERS AROUND HEALTH!

- BHP will work with two ULI Product Councils to craft white papers or other communications exploring topics that intersect with Product Council interests, human health, and real estate performance.
- Statements of Interest are due on June 2, 2017.
- Learn more at: www.uli.org/bhpcouncilresearch.



CREATIVE PLACEMAKING



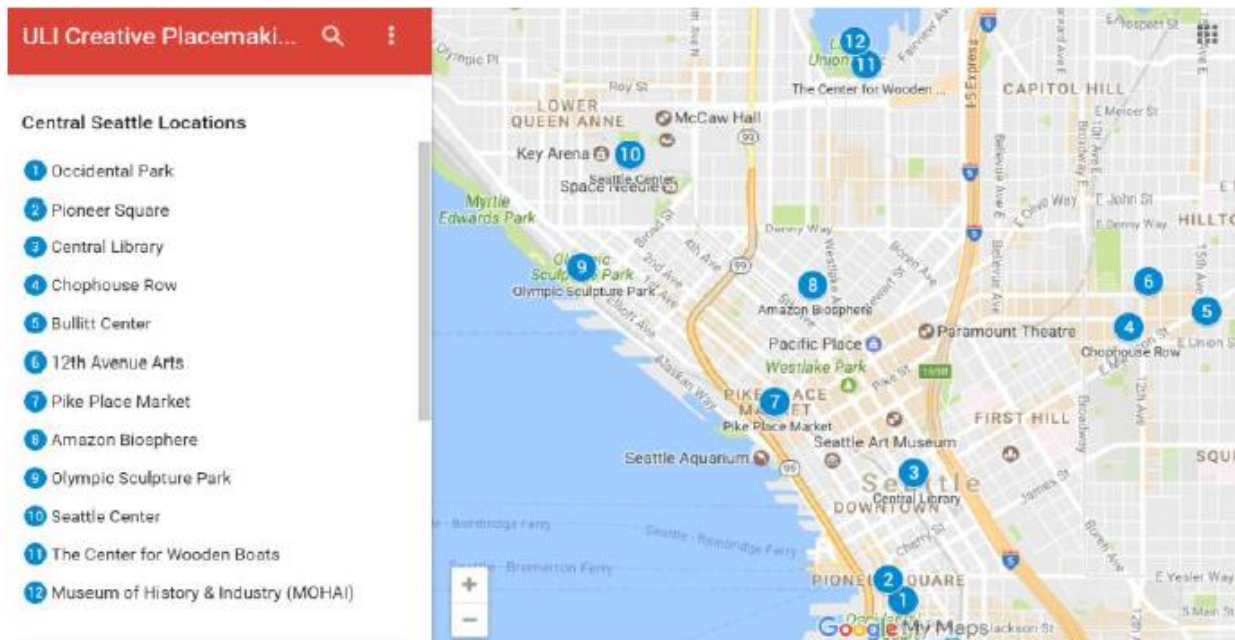
New Brochure!

Implementing Creative Placemaking in Real Estate

examines opportunities and benefits associated with integrating arts and culture into real estate projects. The brochure lays out ten best practices in creative placemaking and four inspirational case studies.

ULI is grateful to the Kresge Foundation for its support of this program.

CREATIVE PLACEMAKING



ULI Creative
Placemaking
Self-Guided Tour of
Seattle

<https://goo.gl/vCPf2X>

And in the Events App

ULI is grateful to the Kresge Foundation for its support of this program.

BHP INTEREST FORUM GOALS

1

Provide a place for ULI members who are passionate about health and development to engage with each other and focus on health and real estate

2

Offer a chance for ULI members to share knowledge and insights about projects

3

Update forum participants about the latest work that is being done at ULI and other organizations on health and real estate.

BHP INTEREST FORUM AGENDA

8:00 – 9:30 am	Breakfast, tour of Bullitt Center Presentation by Denis Hayes, Deborah Sigler, Rob Peña
9:30 – 10:30 am	Bus to High Point
10:30 – 11:45 am	Self-Introductions; Updates from ULI
11:45 – 12:00 pm	Lunch served
12:00 – 1:00 pm	Presentation – Reflections on Health Professor Andrew Dannenberg Joanna Frank, Center for Active Design, Moderator
1:00 – 2:00 pm	Panel – Water and Health Today Katharine Burgess, ULI Mami Hara, Seattle Public Utilities Jalonne White-Newsome, Kresge Foundation, Moderator
2:00 – 2:30 pm	Presentation – Overview of High Point development Tom Phillips, Peg Staeheli, George Nemeth
2:30 – 4:00 pm	Tour of High Point
4:00 – 5:00 pm	Bus to Mithun
5:00 – 7:00 pm	Reception at Mithun

THANK YOU!



Presentation

REFLECTIONS ON HEALTH

Andrew Dannenberg

Professor, University of Washington

Joanna Frank

Executive Director, Center for Active Design (moderator)

Connecting Health and the Built Environment

Andrew L. Dannenberg, MD, MPH

Affiliate Professor

Dept. of Environmental and Occupational Health Sciences
and Dept. of Urban Design and Planning

University of Washington

adannen@uw.edu

Building Healthy Places Interest Forum

Urban Land Institute

Seattle, May 2, 2017

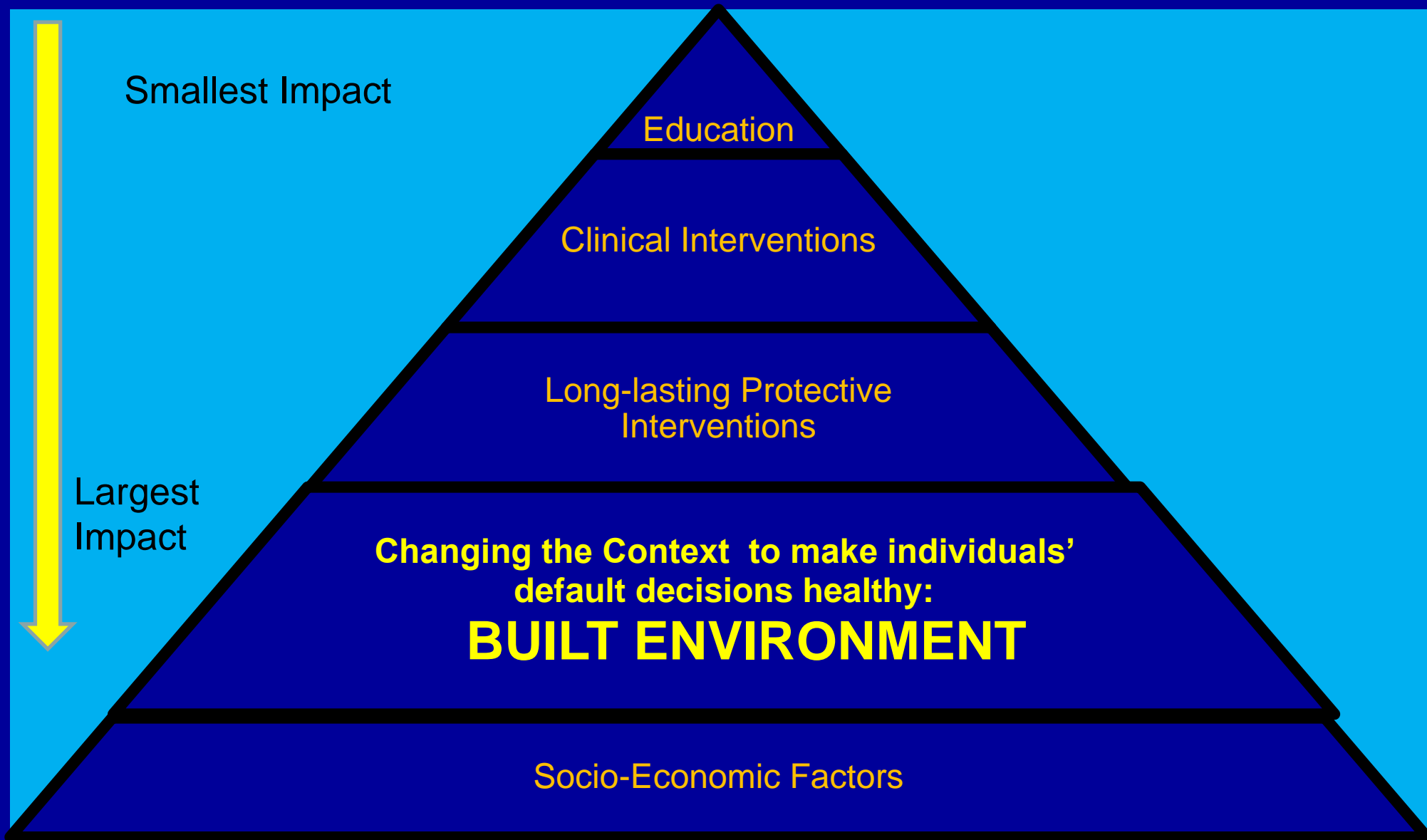
What is Health?

- *“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”*
 - World Health Organization

- Physical health
- Mental health
- Well-being
- Livability



Factors that Affect Health



Community Design and Health

Related to land use

- Obesity, physical activity, CVD
- Water quantity and quality
- Access to healthy food

Related to automobile dependency

- Air pollution and asthma
- Climate change contribution
- Car crashes
- Pedestrian injuries

Related to social processes

- Mental health impact
- Social capital
- Environmental justice

Physical Activity

A sedentary lifestyle increases the risk of

- overall mortality (2 to 3-fold)
- cardiovascular disease (3 to 5-fold)
- some types of cancer, including colon and breast cancer

The effect of low physical fitness is comparable to that of hypertension, high cholesterol, diabetes, and even smoking.

Wei et al., *JAMA* 1999;
Blair et al., *JAMA* 1996



Determinants of Physical Activity

More likely to exercise if:

- Walking trails, parks and gyms accessible
- Sidewalks present and scenery enjoyable
- Many people exercising
- Friends available with whom to exercise

Less likely to exercise if:

- Too little time
- Too tired
- Unmotivated
- Perceived traffic, crime or danger
- Long distance to exercise location



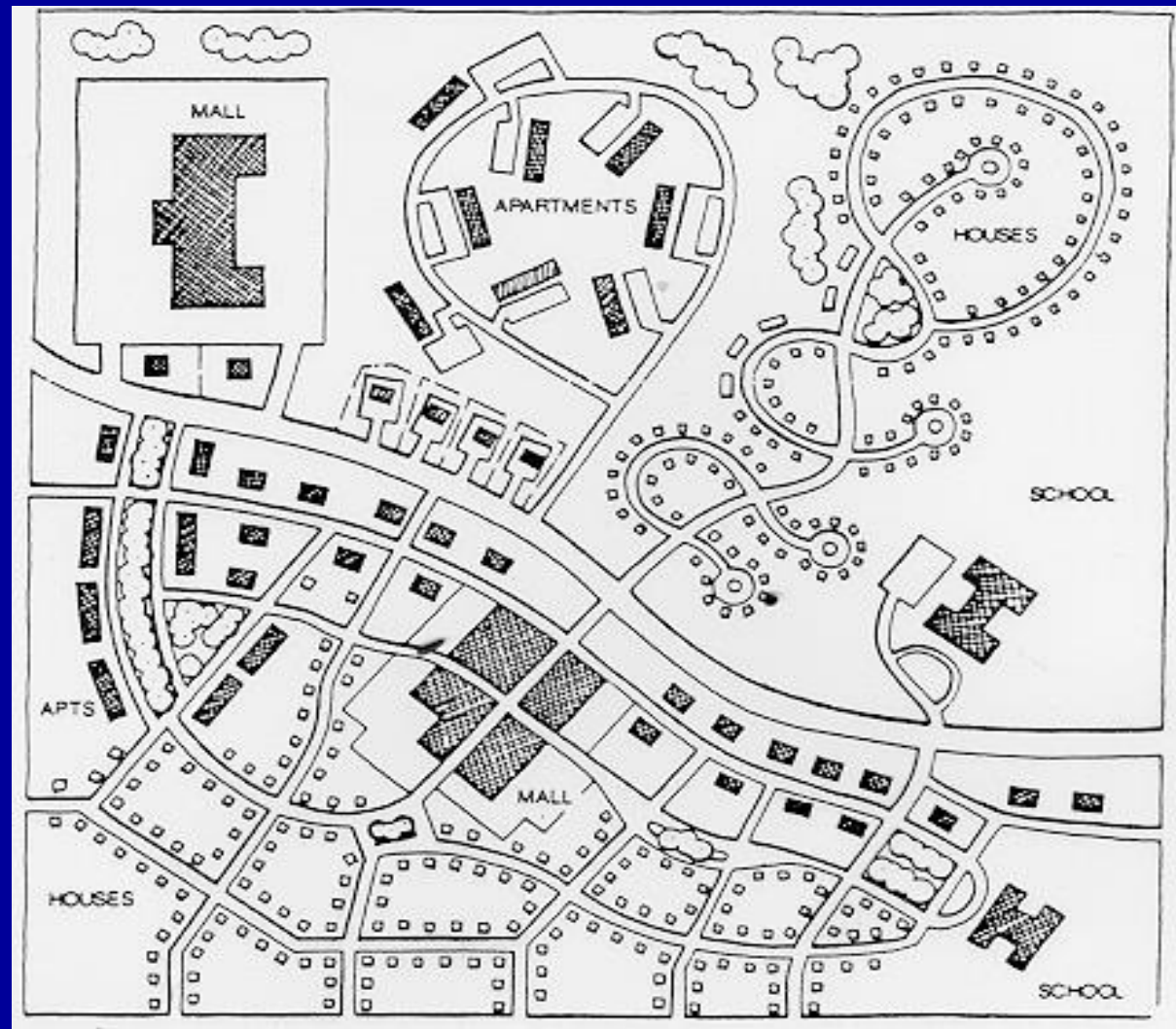
- Source: Brownson RC et al, *AJPH* 91:1995, 2001
 - HealthStyles Survey, 1999

Walkable Community Designs: Connectivity and Physical Activity

Suburban
Development



Traditional
Neighborhood



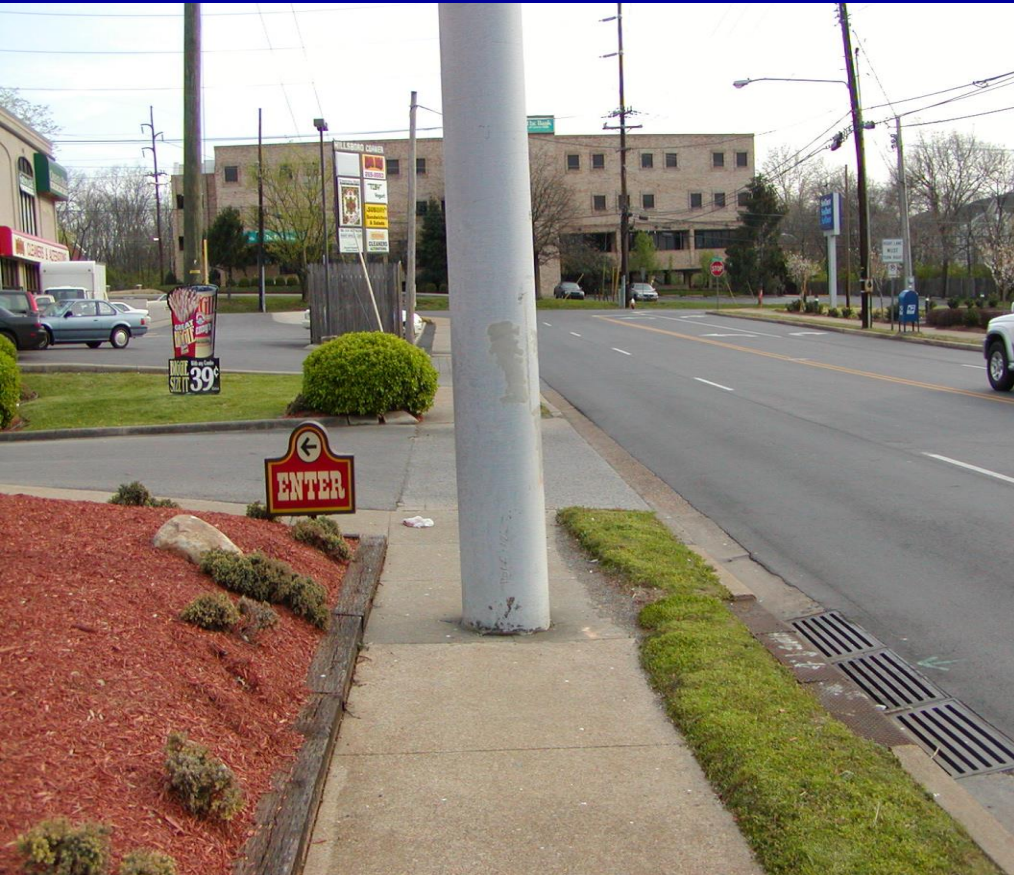
Drawing by Duany Plater Zyberk,
in ITE Journal 1989;59:17-18





Durham, NC

Transportation Design to Discourage Physical Activity



Transportation Design to Encourage Physical Activity



Cooper River Bridge, Charleston, SC

Asthma and Air Pollution

- Natural experiment during 1996 Summer Olympic games in Atlanta
- Peak morning traffic decreased 23% and peak ozone levels decreased 28%
- Asthma-related emergency room visits by children decreased 42%
- Children's emergency visits for non-asthma causes did not change during same period



Water Quality

- Water run-off from roads and parking lots can pollute water supplies with possible impact on human health
- Increased erosion and stream siltation causes environmental damage and may affect water treatment plants



Deaths and Injuries to Motor Vehicle Occupants and Pedestrians

- Leading cause of deaths among persons 1-34 years old
- Annual toll from motor vehicle crashes in United States:
 - 34,000 deaths
 - 2.4 million nonfatal injuries
 - \$100 billion in costs

Sources: NHTSA 2010; USDOT 2008;
Naumann 2010



Mental Health Issues that may Relate to Community Design

- Depression
 - Relieved by physical activity and social interaction
- Stress
 - Aggravated by long commutes
- Attention Deficit-Hyperactivity Disorder
 - Greenspace may improve function in ADHD
- Violent Behavior – Impulse Control
 - Example: road rage

Social Capital

- Defined as social networking, civic engagement, trust and reciprocity
- Decreased by long commutes



Community Design and Income Inequality



Design Principles to Address Climate Change



- Transportation alternatives
- Density
- Mixed land use
- Parks and green spaces
- Energy efficient buildings

Urban Planning to Promote Health

- Design *Safe Routes to School* to encourage children to walk or bike to school



Urban Planning to Promote Health

- Create *Complete Streets* to accommodate pedestrians, bicyclists, transit, and motor vehicles



Urban Planning to Promote Health

- Place parks in easy walking distance of housing



Urban Planning to Promote Health

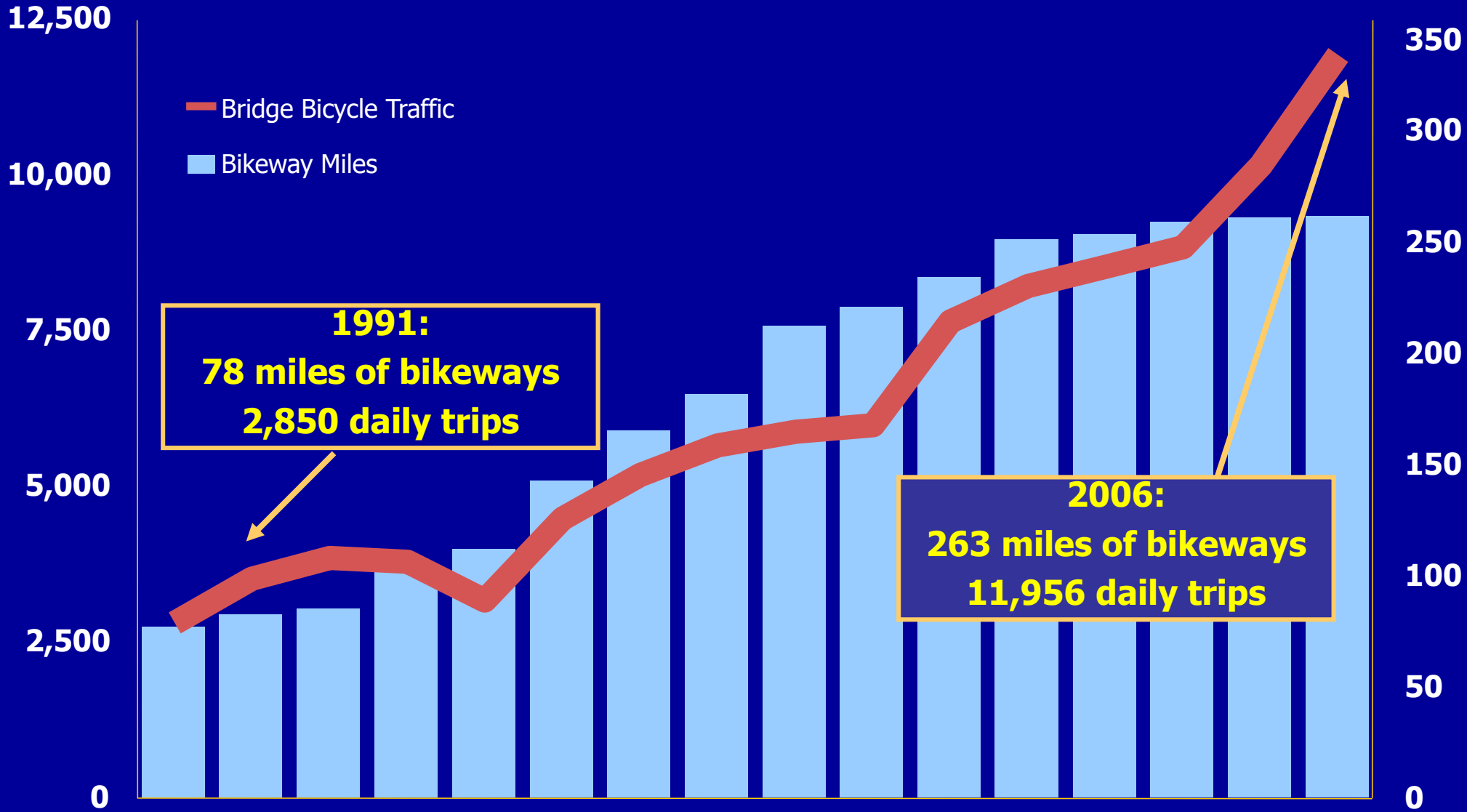
- Convert abandoned rail lines to trails for recreation and transportation



Increasing Bicycle Use, Portland, OR

Cyclists Per Day

Bikeway Miles



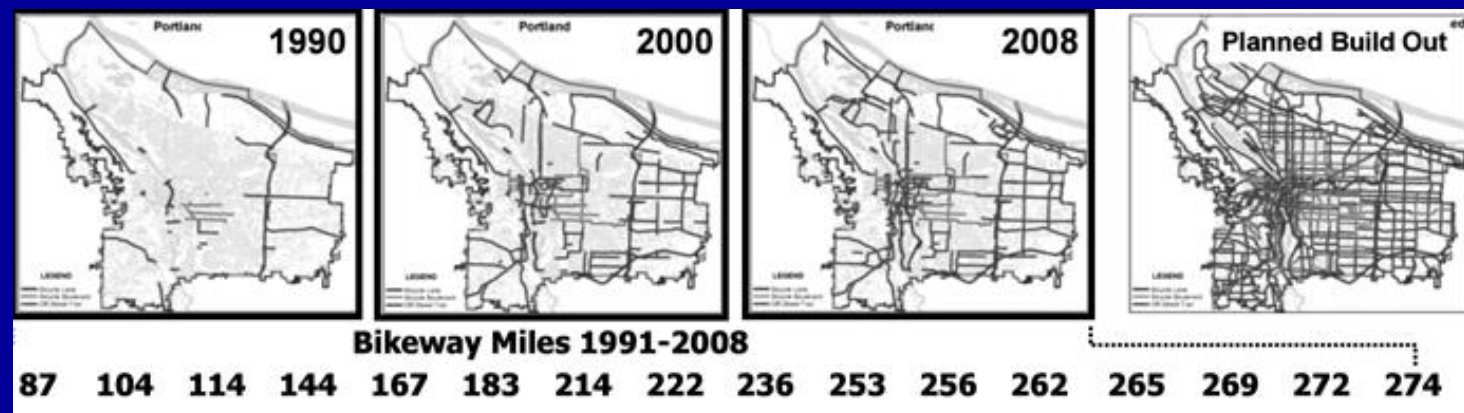
Year: 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006

Bridge Bicycle Traffic	2,850	3,555	3,885	3,830	3,207	4,520	5,225	5,690	5,910	6,015	7,686	8,250	8,562	8,875	10,192	11,956
Bikeway Miles	78	83	86	103	113	144	166	183	213	222	235	252	254	260	262	263

Costs and Benefits of Bicycling Investments in Portland, Oregon

- By 2040, investments of \$138-\$605 million will result in:
 - Health care cost savings of \$388-\$594 million
 - Fuel savings of \$143-\$218 million
- Benefit-cost ratios are between 3.8 and 1.2 to 1

Gotschi T. *J Phys Activ Health* 2011, 8(Suppl 1), S49-S58



Public Transit and Physical Activity



- Transit users walk a median of 19 minutes daily to and from transit
- 29% of transit users exceed 30 minutes of walking daily to and from transit

Besser LM, Dannenberg AL
Amer J Prev Med 29:273, 2005

USDOT 2001 National Household
Travel Survey; 3312 transit users

Policy: Shared Use Agreements

Schools that share their grounds with community members on evenings and weekends increase places available for physical activity



Policy: Unbundling Parking

- Separate the price of living unit from the price of parking space



Brownfield Redevelopment

Disease Prevention
AND
Health Promotion



Source: Smart Growth and
Neighborhood Conservation,
Maryland

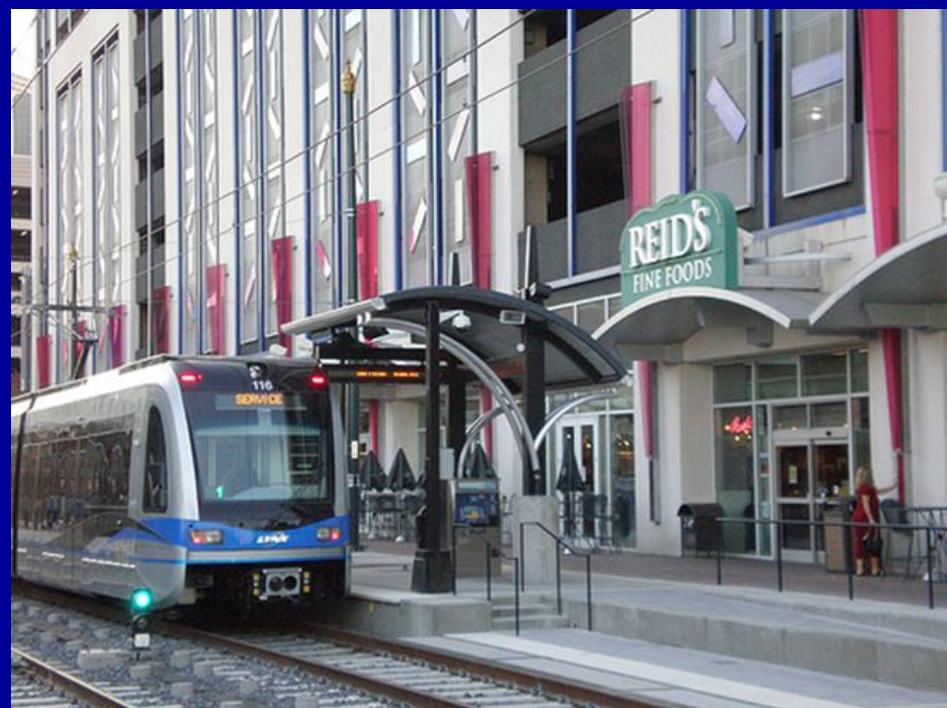
Zoning Laws to Promote Health

- *Accessory Dwelling Units* can provide housing for an elderly parent or a student



Design to Promote Health

- Create *Transit-Oriented Development* to encourage walking and transit use



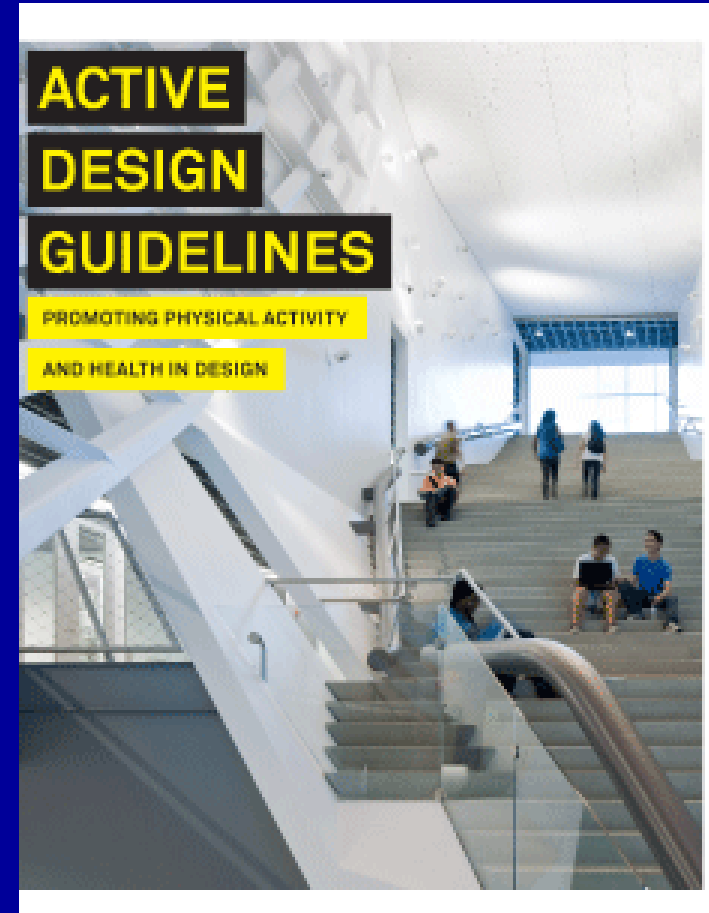
Make the healthy choice the easy choice



Active Design Guidelines

Provide architects and urban designers with strategies for creating healthier buildings, streets, and urban spaces, including

- Urban design strategies for creating neighborhoods, streets, and outdoor spaces that encourage active transportation and recreation.
- Building design strategies for promoting active living—for example, through the placement and design of stairs and indoor and outdoor spaces.
- Discussion of synergies between active design and sustainable design initiatives



www.nyc.gov/adg

Tools: www.Walkscore.com



Walk Score®

Find a Walkable Place to Live.

[Rankings](#) | [Walkable Neighborhoods](#) | [How It Works](#) | [Walk Score On Your Site](#) | [Blog](#)

Type an Address: 2800 East Roy Street Seattle WA

Go

Walk Score

74

Out of 100

Very Walkable

2800 E Roy St Seattle

Overview

Customize Map

Commute

Capitol Hill

Restaurants

Cafe Flora 0.1mi

Coffee

My Coffee House 0.09mi

Groceries

Village Mart 0.13mi

Shopping

Missi Lu 0.11mi

Schools

The Valley School 0.31mi

Parks

Prentis I Frazier P 0.3mi

Books

City of Seattle: Ma 0.92mi

Bars

Bottleneck Lounge 0.45mi

Entertainment

Washington Ensemble 0.52mi

Post Offices

Postal Plus 0.8mi

[View more amenities](#)

[Something missing?](#)



Public Transportation

Transit Score™ **60** Good Transit ?

9 nearby routes: 9 bus, 0 rail, 0 other

.1 mi - 11

.1 mi - 84

.15 mi - 8

.28 mi - 43

.28 mi - 48

.51 mi - 12

Compare Your Walk Score

Seattle top 10%: 99

Your score: 74

60% of Seattle residents have a higher Walk Score.

Walkscore can be Added to Real Estate Listings to Assist Homebuyer Decisions



Walkscore 0-10
Few destinations



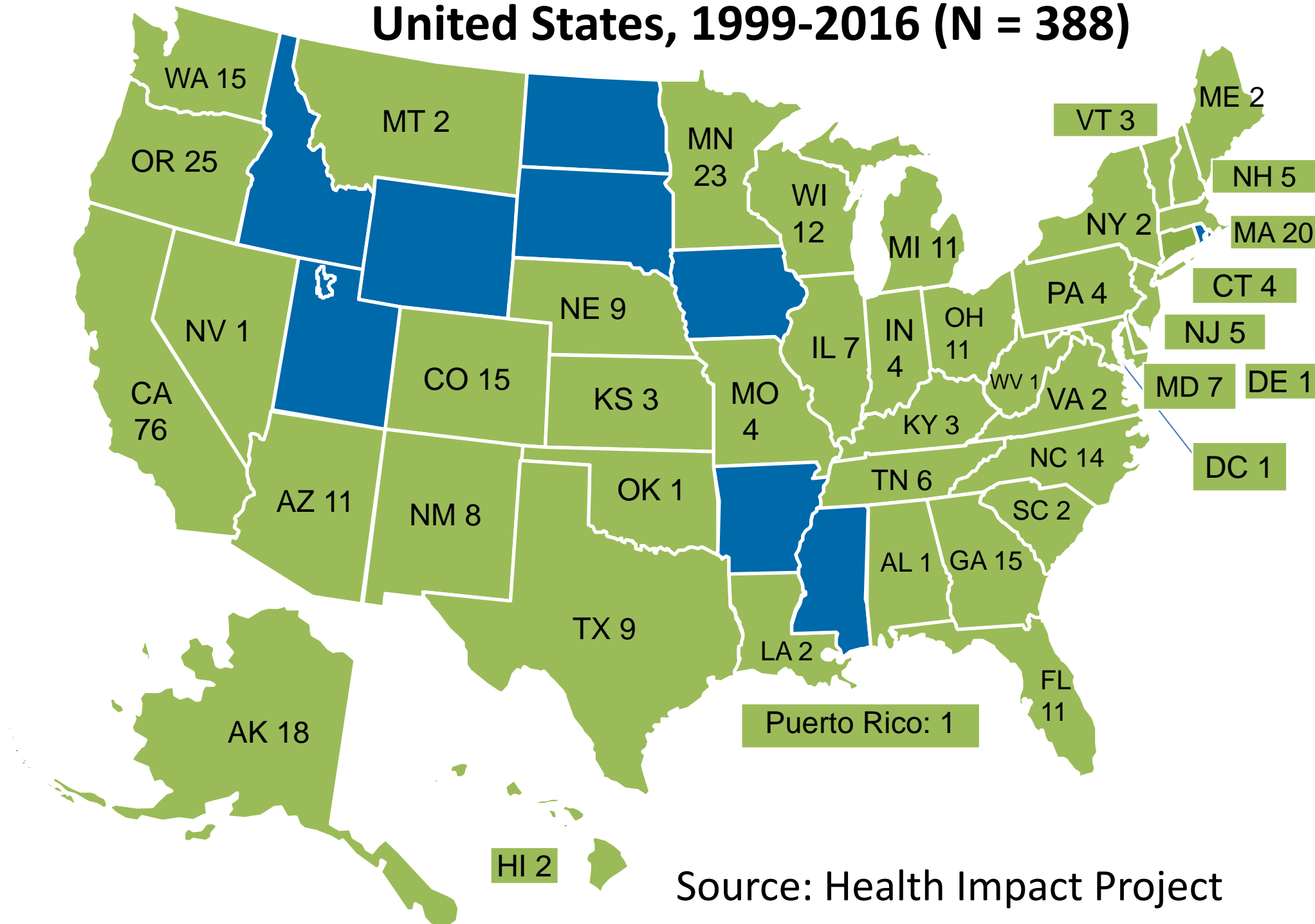
Walkscore 80-90
Many destinations

Health Impact Assessment

- A tool to increase partnerships and communication between public health professionals and planners and other decision-makers



Completed and In Progress HIAs United States, 1999-2016 (N = 388)



Source: Health Impact Project

HIA of Trinity Plaza Housing Redevelopment

San Francisco Health Department

- 360 unit low-income apartments to be demolished to build new 1400 unit market-rate condominiums
- HIA found effects on housing affordability, stress, displacement of residents, food insecurity, and segregation
- After negotiation, developer received building permit and agreed to build one-for-one replacement units for low-income families being displaced



LEED for Neighborhood Development Rating System

UNDERSTANDING THE RELATIONSHIP BETWEEN
PUBLIC HEALTH AND THE BUILT ENVIRONMENT

A REPORT PREPARED FOR THE LEED-ND CORE COMMITTEE



- Integrates the principles of smart growth, urbanism, public health, and green building into the first national standard for neighborhood design

FITWEL

Healthy building certification

- Designed to support the wellbeing of building occupants and to support healthy communities
- Health impact categories
 - Increase physical activity
 - Social equality for vulnerable populations
 - Reduce morbidity + absenteeism
 - Impact on community health
 - Instill feelings of well-being
 - Promote occupant safety
 - Provide healthy food options

<https://fitwel.org>

WELL Building Standard

- Takes a holistic approach to health in the built environment addressing behavior, operations, and design
- Categories available now or in pilot phase
 - Commercial office buildings
 - Retail
 - Multifamily residential
 - Education
 - Restaurant
 - Commercial kitchen



<http://delos.com/about/well-building-standard/>

Making Healthy Places: Designing and Building for Health, Well-Being, and Sustainability



**MAKING HEALTHY
PLACES** Designing and Building for Health,
Well-being, and Sustainability



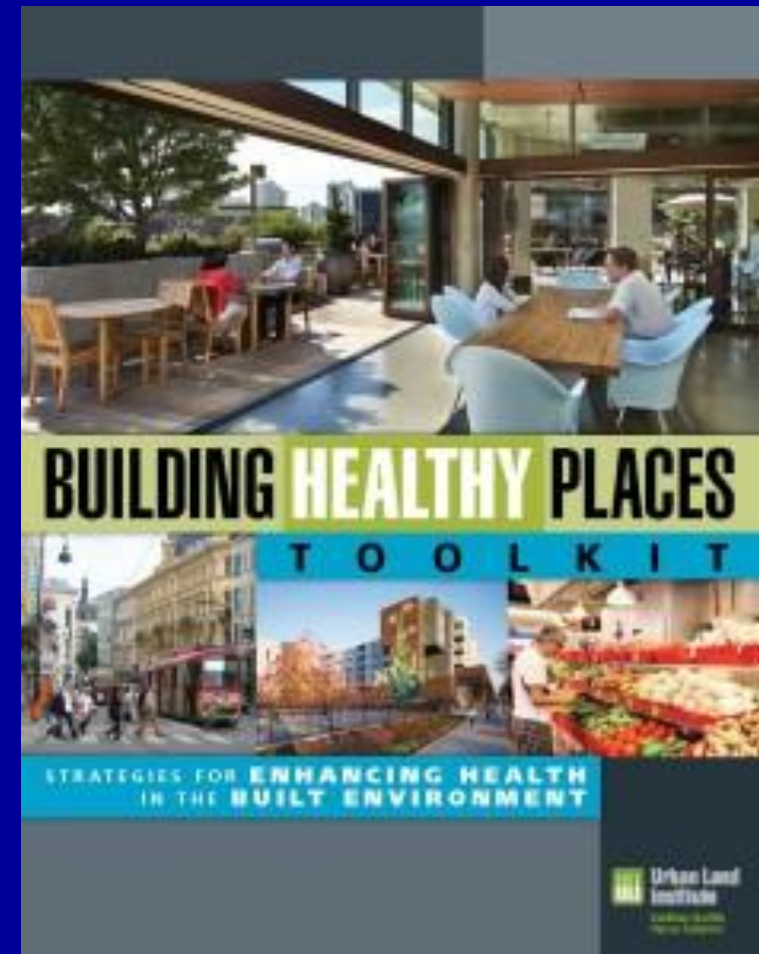
Andrew L. Dannenberg, Howard Frumkin, and Richard J. Jackson

Andrew Dannenberg, MD, MPH
Howard Frumkin, MD, DrPH
Richard Jackson, MD, MPH
Island Press, 2011

www.makinghealthyplaces.com

ULI Toolkit for Promoting Healthy Design

- Evidence-based opportunities for enhancing health outcomes in real estate developments
- 21 recommendations at the building or project scale in
 - Physical Activity
 - Healthy Food and Drinking Water
 - Healthy Environment and Social Well-Being



Final Thoughts

- Developers and planners influence the health of their communities
- Business model for promoting healthy design: stay compatible with market forces
- Millennials want walkable healthy communities
- Healthy design can help address equity issues
- Co-benefits: healthy design is compatible with sustainability and climate change benefits



Goal:

**Make health-promoting design
as routine and desirable as
green design**



**www.aia.org/topics/31-design-and-health
www.cdc.gov/healthyplaces**

Discussion Panel

WATER AND HEALTH

Katharine Burgess

Senior Director, ULI

Mami Hara

Director, Seattle Public Utilities

Jalonne White-Newsome

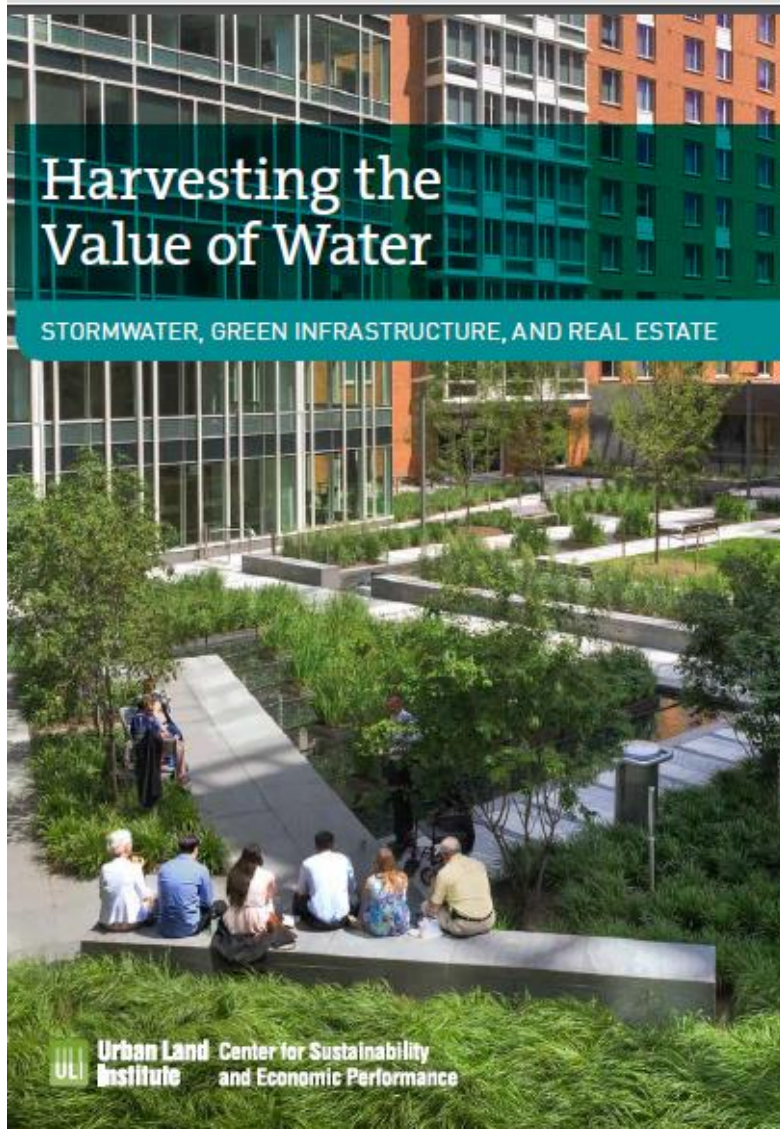
Senior Program Officer, Environment, Kresge Foundation
(moderator)

Harvesting the Value of Water

STORMWATER, GREEN INFRASTRUCTURE, AND REAL ESTATE



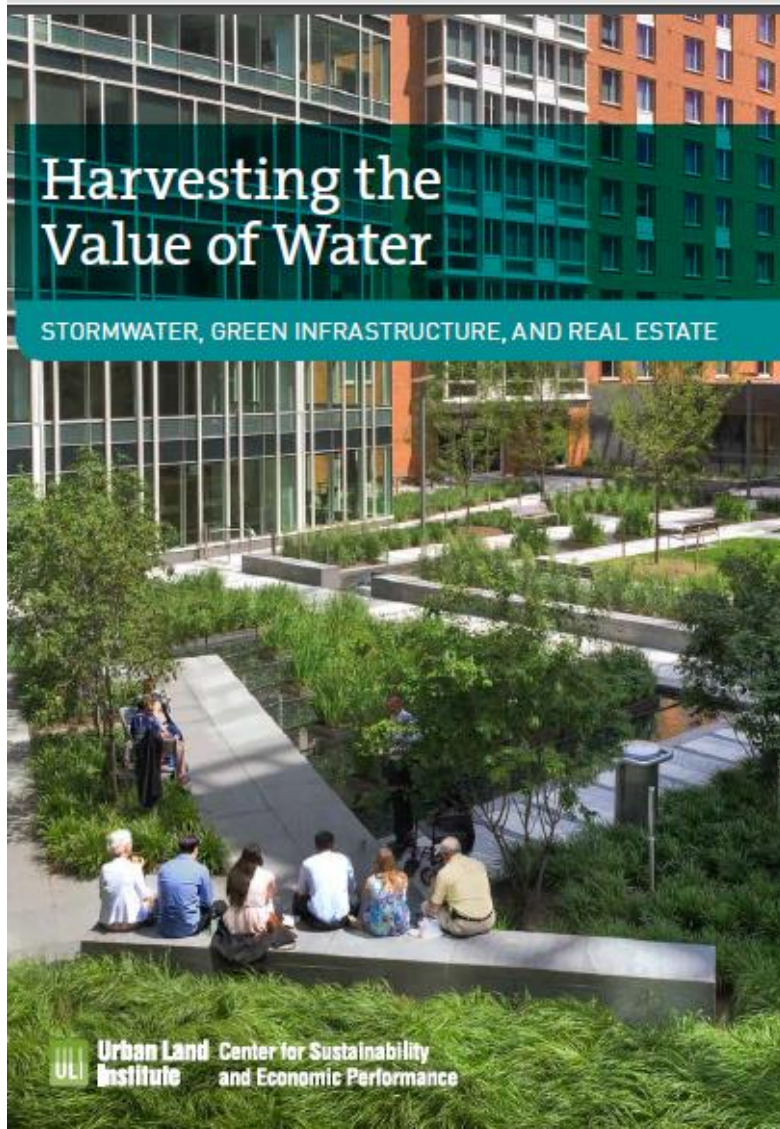
This new report is released today!



THANK YOU to all contributors including:

- Sustainable Development Council
- Responsible Property Investment Council
- Center for Sustainability + Economic Performance Advisory Board
- Reviewers including Michael Bloom
- Interviewees: developers, policymakers and designers, incl. many ULI members
- ULI staff team

This new report is released today!



- Outreach to District Councils will commence this summer
- Please follow up for more information or to share any ideas for local events, project promotion and/or continued research: Katharine.burgess@uli.org
- Report can be accessed at: <http://www.uli.org/stormwater>

A Perfect Storm

- Urbanization, impervious surfaces and the American legacy of car-centric planning
- Failing infrastructure: 700+ EPA Consent Decrees
- Strapped municipal budgets
- Climate change & likelihood of increased precipitation & number of extreme storm events



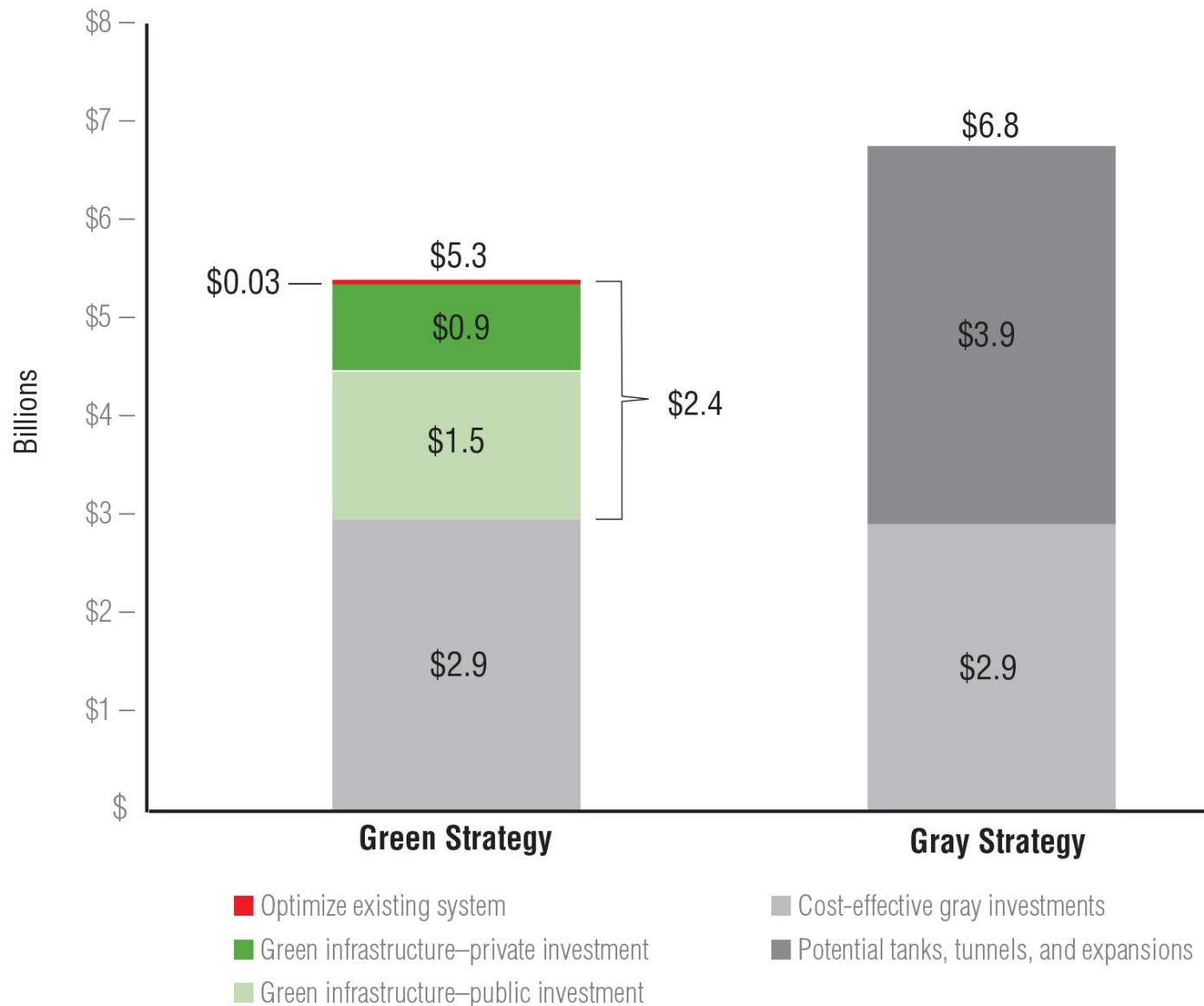


Key themes: Policy Shifts

- Cities are prioritizing green infrastructure over gray infrastructure, due to costs and opportunities for co-benefits, including co-benefits related to public health.
- The private sector is expected to play an increasingly prominent role in stormwater management and the implementation of green infrastructure.

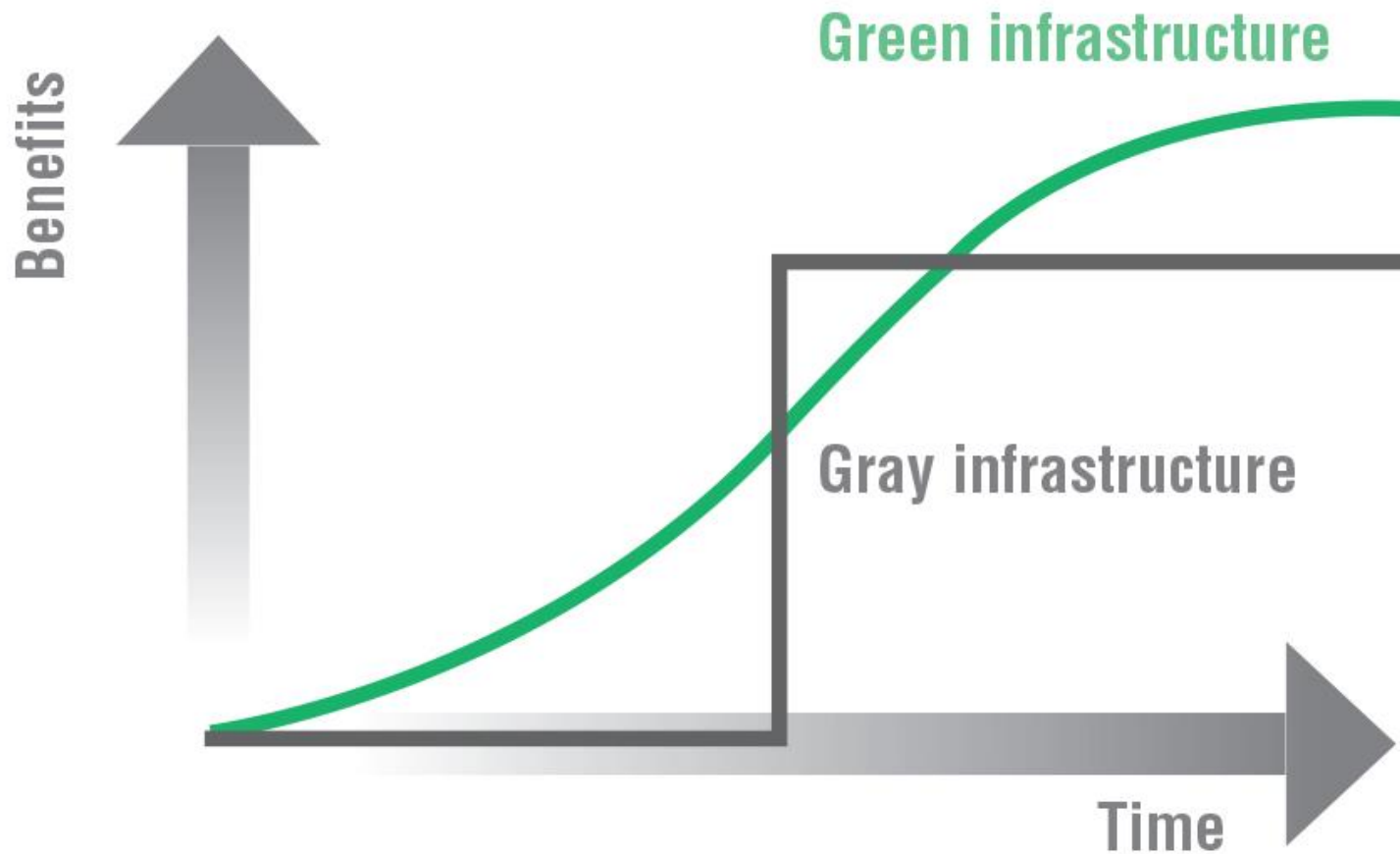


Green vs. Gray Infrastructure Costs



*NYC Green
Infrastructure
Plan: CSO Cost
Scenarios*

Infrastructure Costs + Benefits



NYC Green Infrastructure Plan

Green Infrastructure Benefits

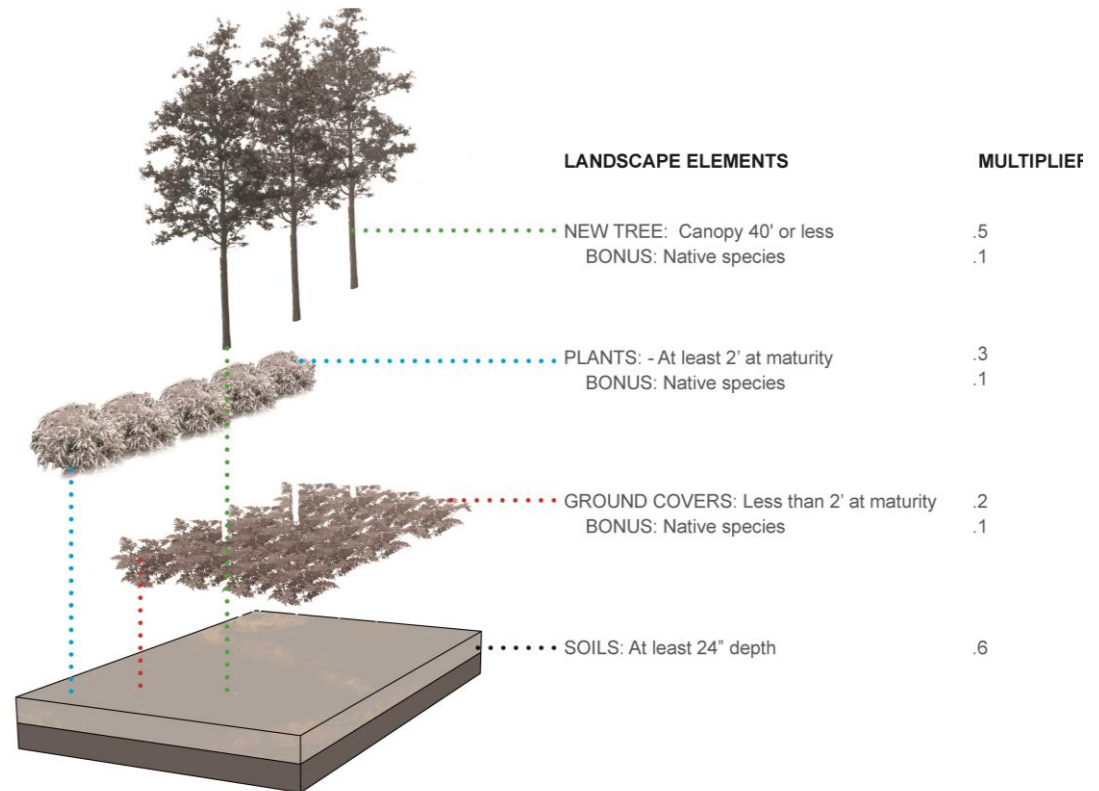
- Improved water quality
- Flood risk mitigation
- Resilience to climate change impacts
- Wildlife habitat
- Reduced temperatures in developed areas
- Recreation opportunities
- Enhanced community aesthetics
- Increased property values
- ... many more



Canal Park, photo courtesy Bruce Damonte

City Policies & Tools Profiled

- On-site water retention requirements
- Credit-trading schemes
- Green Area Ratios
- Development incentives
- Fee structures
- Implementation of Total Maximum Daily Loads
- Community grant programs
- Design frameworks & LID toolkits
- Design competitions



Washington D.C. Green Area Ratio, courtesy D.C. Department of Energy and the Environment

Water Management Tools Profiled

- Rainwater harvesting
- Bioswales, rain gardens & natural drainage systems
- Green roofs & blue roofs
- Cisterns
- Stormwater vaults
- Permeable surfaces
- Tree pits
- Monitoring systems
- Efficient fixtures
- Dry wells
- Many combinations of the above



Lessons Learned

- The emerging range of policies and design tools can be effective in many different markets, contexts, climates and densities.
- Green infrastructure not only offers the opportunity for environmental, social and health benefits but also presents opportunities for value generation.



USC Village, photo courtesy USC/Harley Ellis Deveraux

Value Proposition: Development Yield

- Increased developable land
- Smooth permitting process



Encore!, photo courtesy Tampa Housing Authority

Value Proposition: Development Yield

- Increased developable land
- Smooth permitting process



Market at Colonnade, photo courtesy Regency Centers

Value Proposition: Design + User Experience

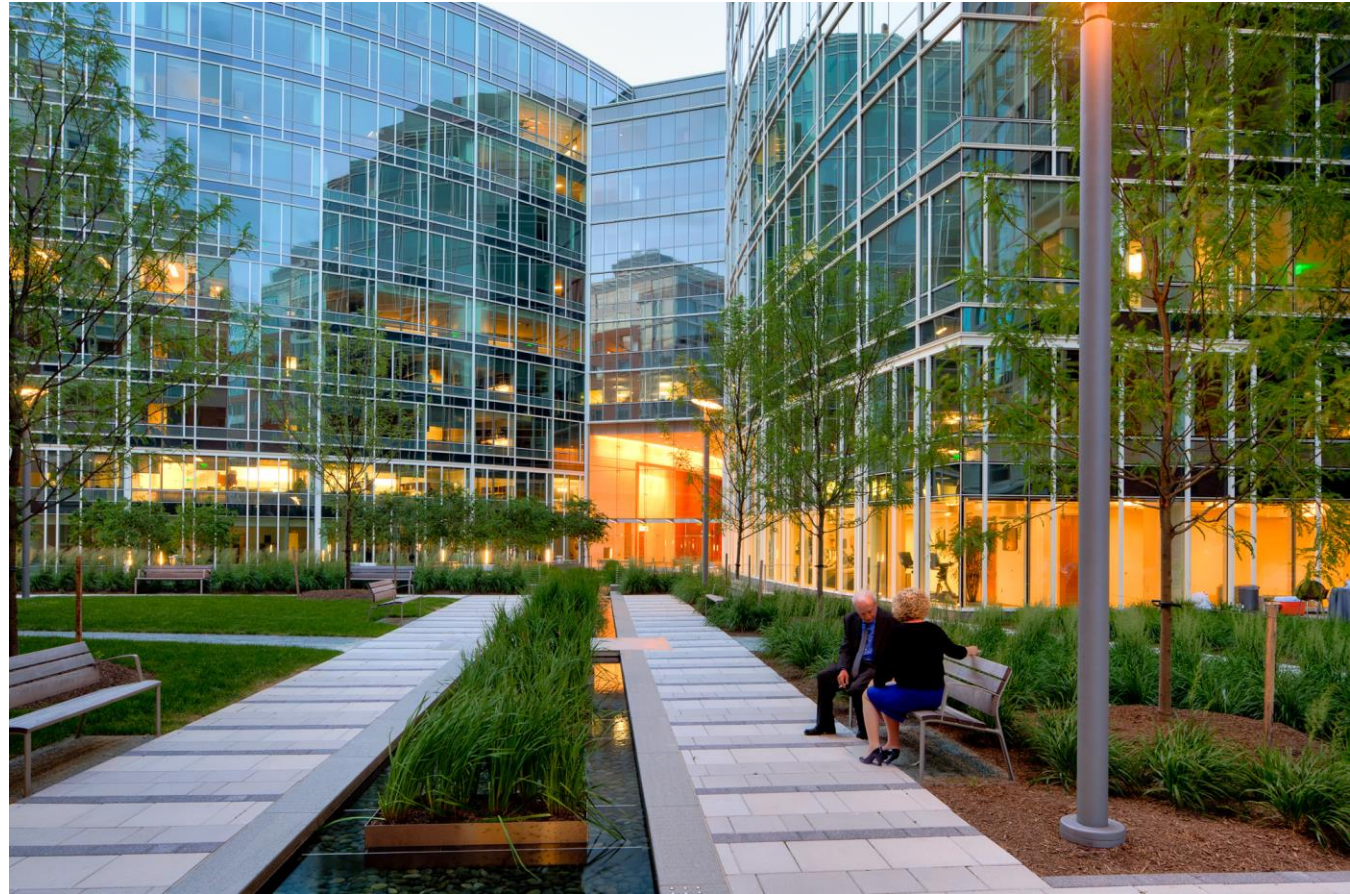
- Increased market value, e.g. the “sustainability premium”
- Place-making, marketing, amenity value and improved building user experience



Burbank Water + Power, photo courtesy Helio 135

Value Proposition: Design + User Experience

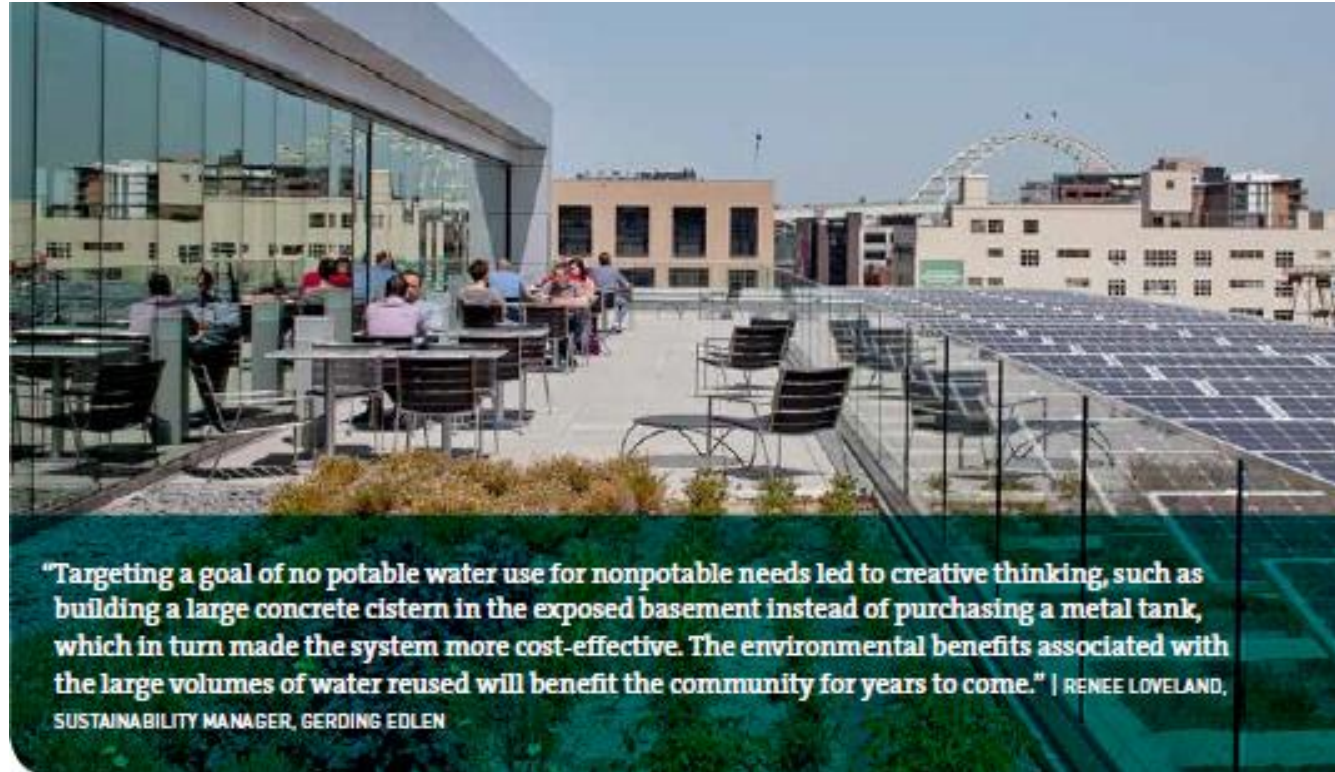
- Increased market value, e.g. the “sustainability premium”
- Place-making, marketing, amenity value and improved building user experience



The Avenue, photo courtesy Sasaki

Value Proposition: Operational Efficiencies

- Opportunities to reduce potable water usage, achieve long-term savings
- Importance of monitoring systems



*Meier Frank Delivery Depot, photo courtesy
Jeremy Bitterman*



Value Proposition: Resilience to extreme events

- Increased preparedness for major storms and events, as well as ability to better manage water scarcity/drought



Stonebrook Estates, courtesy Terra Visions LLC

Other Lessons Learned

- Strong opportunities for public/private partnerships
- Need to accommodate a learning curve
- Many opportunities for community engagement





Thank you!

www.uli.org/stormwater

Katharine.burgess@uli.org



Urban Land Institute
Center for Sustainability
and Economic Performance



WATER + HEALTH
UTILITY PERSPECTIVES
May 2, 2017

Mami Hara
General Manager
Seattle Public Utilities



Infrastructure can be defined as the basic physical and organizational structures needed for the operation of a society or enterprise.

Viewed functionally, infrastructure ***facilitates*** the production of goods and services.....

Wikipedia

Infrastructure can also be defined as
entailing:

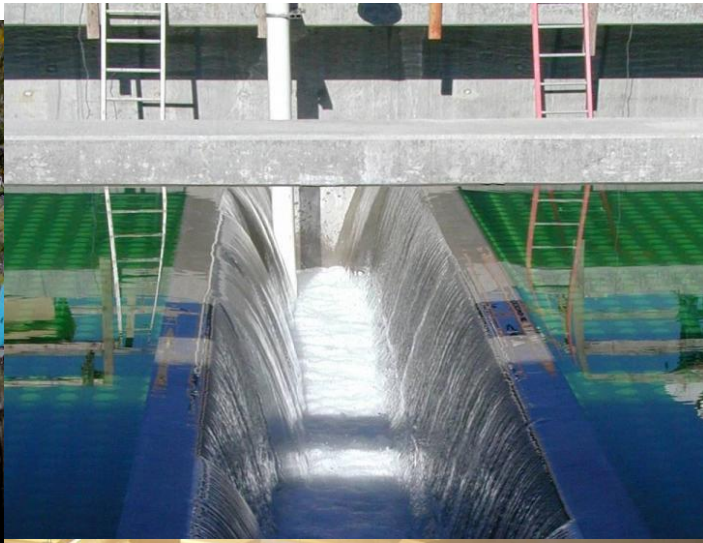
Commons management
Government intervention

Positive externalities / **large *social
surplus***

(the amount by which the social value exceeds the private value)

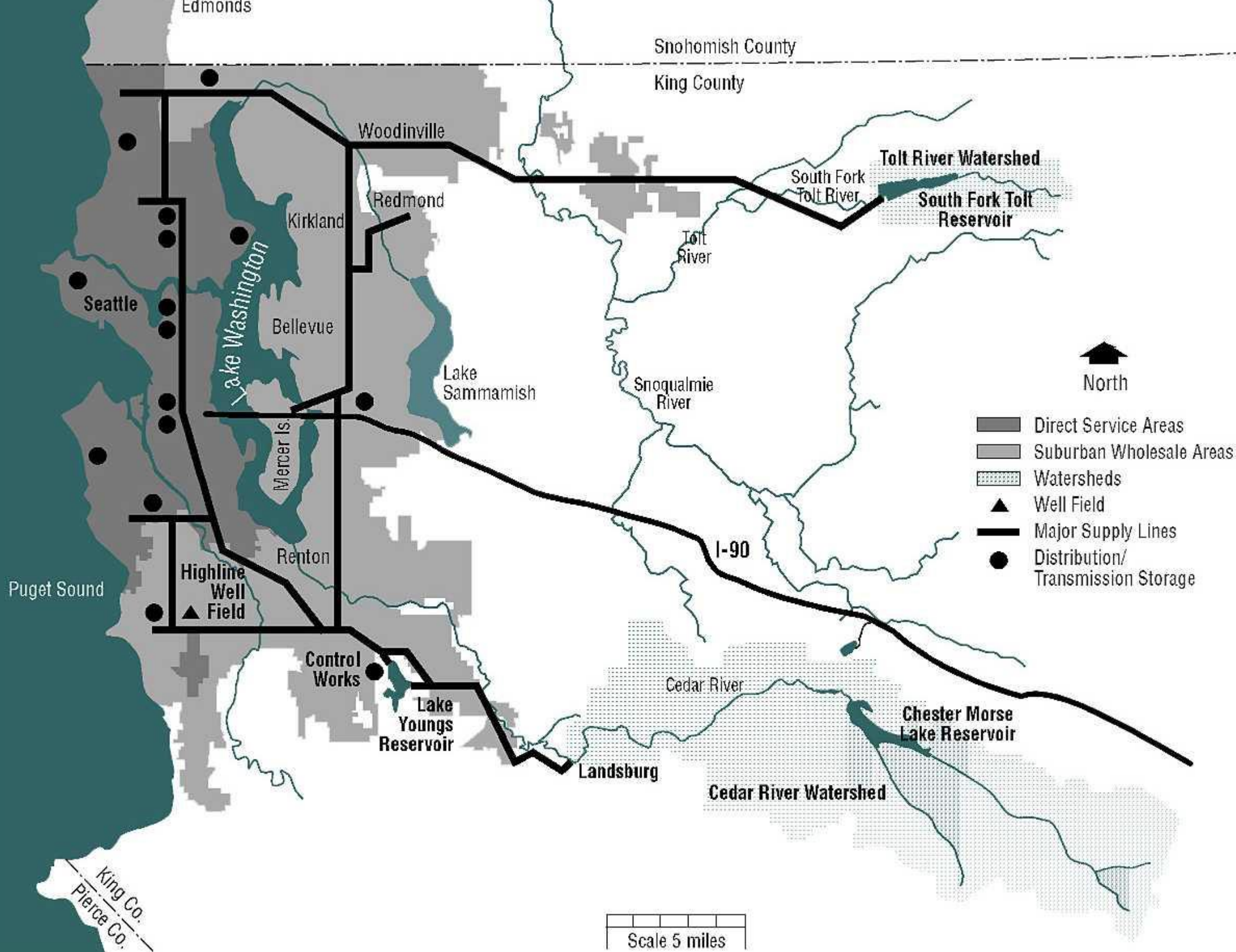
- Brett Frischmann

Done right, it can be the **platform** for **public health, social cohesion, cultural production, cultural identity, security** and a wide range of other social, environmental and economic benefits.





Looking east over the Masonry Pool towards Ches







ENVIRONMENT

Clean Air

Healthy Watersheds

Robust Habitat

Hospitable Climate

ECONOMY

Efficient Energy Use

Valuable Properties

Productive Land Use

Competitive Economy

QUALITY OF LIFE

Convenient Recreation Access

Fresh, Local Produce

Healthy Residents

Strong, Safe Neighborhoods





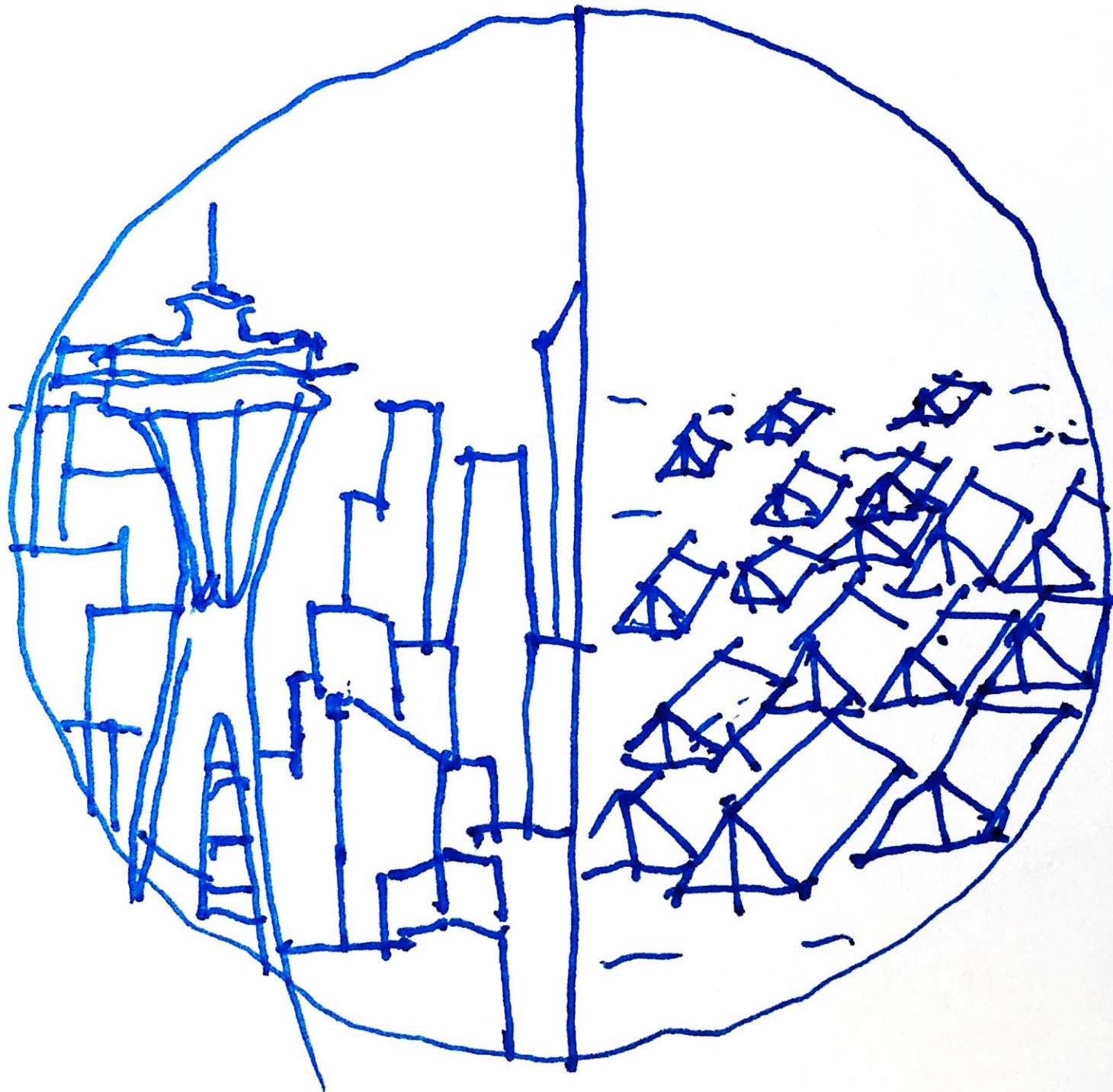




RainWise
TAKE ONE

RainWise
I'm This property manages rainwater at home
RainWise!
www.columbiacountyfla.gov







Community Centered Investment

- Organizing appropriate workgroups around place/community
- Making our services accessible, and integrated
- Making our rates as affordable as possible and making discount program design and enrollment as accessible as possible
- Advancing service equity
- Seeking multiple benefits from our work, including community benefits
- Making communities our true partners – as educators, advocates, innovators, adopters, stewards
- Developing programs - such as public art or GSI programs - that enhance and empower communities
- Designing projects for placemaking and local identity

Leveraging investments

Examples of economic benefits to local community

New community jobs

Activism, planning, design, construction, maintenance, education

New utility jobs

Monitoring, enforcement, program management, community engagement, apprenticing through programs such as PowerCorpsPHL

New tools and targets

- Project Labor Agreements (local, apprentice, women + minority support)
- Community benefit agreements
- Expanded participation goals and programs

New locally-based green industry

- Business advocacy and advisory groups
- Local and disadvantaged business training and participation
- Business attraction
- Expanded demand





PowerCorpsPHL team at Passyunk Ave and 61st Street



LIBERTY
EQUIPMENT
888-872-5...

Equity + Water

Affordability

Service Equity

Workforce Equity and Inclusion

Business Participation

Community Empowerment, Resilience, Engagement + Planning

Community benefits

Environmental Justice

- Planning and design of programs + projects for EJ and public health
- Aligning funding, financing and expenditures with EJ
- Addressing a changing climate and its impacts
- Addressing regional, state and federal funding formulae



SPU Vision Plan + Master Plan for Drainage + Wastewater

Beyond regulation: One Water

Community centered

Forward looking

Designed to engage imagination and action

Comprehensive and sustained engagement

Integrated, holistic planning approach

3-4 year process

50 year planning horizon, immediate investments



THANK YOU



Discussion Panel: Water & Health Today

Dr. Jalonne L. White-Newsome
The Kresge Foundation

Urban Land Institute
Building Healthy Places Interest Forum
May 2, 2017 - Seattle, WA



- National private foundation
- Goal: Expanding opportunities in America's cities
- \$3.6 billion endowment
- Funded through grants and social investments
- Six program areas and two practices



Environment

Helping cities implement comprehensive climate-resilience strategies grounded in equity

Our Starting Point



- Climate change is occurring, is human caused, and requires response.
- Climate change fundamentally affects opportunity for low-income people.
- Low-income people and communities of color remain under-represented in climate-resilience decision making.
- Equity in addressing the causes and impacts of climate change is not a given.
- Cities are central to action on climate change.

Kresge's Environment Program Strategy (as of March 2017)



Building
capacity &
commitment
of urban
leaders



Strengthen
the evidence
base and
develop
tools



Transform
key urban
systems

Kresge's vision for a climate resilient, equitable water system

- Is integrated, nimble and responsive to climate change
- Manages water supply, storm water, and wastewater in an equitable way
- Engages low income, and other marginalized communities in large scale water planning
- Provides multiple benefits to water users - economic, social, and health related
- Creates the path for a variety of investments – grants, social investments and market rate investments - to enhance and/or build new physical water infrastructure where the need is greatest
- Processes and distributes water in an energy efficient manner
- Embeds climate change considerations into the capital planning processes



To reflect the needs and priorities of low-income communities by advancing a water equity agenda that:

- Supports solutions to address the climate related impacts on water systems (floods and storms), and
- Enhances climate resilience planning at the local level to support integrated water management practices

Support and nurture a new cadre of water leaders to help amplify marginalized voices and strengthen climate vulnerable regions and water systems.

Define and promote a framework for addressing climate resilience and equity in the water sector.

Advance non-traditional approaches to finance, operations, and community participation that produce multiple community benefits.



Kresge Foundation

Water Capital Scan

February 2017

MISSIONPOINT
PARTNERS

CEA CALIFORNIA
ENVIRONMENTAL
ASSOCIATES



NatureWORKS is a national urban green infrastructure workforce study.

It aims to better understanding urban green infrastructure installation, maintenance and inspection jobs and careers.

Project funded by the USDA Forest Service National Urban and Community Forestry Program and the Kresge Foundation

<http://www.jff.org/publications/exploring-green-infrastructure-workforce>



OUR IMPACT



MERCURY

- 5,000 hospitals and 23 states
- 14 pharmacy chains
- 28 European countries
- 5,600 developing country hospitals
- Global Treaty



MEDICAL DEVICE REPROCESSING

- Becoming industry standard
- Grew market from \$100 million to \$500 million growing at 12% per year



MEDICAL INCINERATORS

- 4,500 in 1995; 83 in 2006
- Created demand for reprocessing



RENEWABLE ENERGY/CLIMATE CHANGE

- Hospitals reduced energy use by an aggregate 2.5% over three years, eliminating 73,600 metric tons in greenhouse gas emissions, the equivalent of removing 15,600 vehicles annually from US roads



FOOD

- \$72 million redirected to local/sustainable foods
- Created market for antibiotic-free meat in hospitals



GREEN BUILDINGS

- Developed LEED certified standard for hospitals in US; Australia and China adopted as national guidelines
- Enlisted 300 hospital architectural projects onto the framework
- Impacted 40 million square feet of health care construction



HEALTH CARE CLIMATE COUNCIL

- Organized 16 leading US health systems representing \$100 billion in revenue
- Council accelerates investment in renewable energy, scales the sector's adoption of resiliency programs and advocates for policies that promote healthy communities



HEALTHIER FURNISHINGS

- Built \$50 million worth of market demand for healthier furnishings in health care


[JOIN NETWORK](#)

Adaptation Equity Portal

Two of the biggest challenges facing the United States - and the world - are the growing inequalities that unfairly disadvantage large segments of the population, and climate change, which exacerbates existing risks in our communities. The effects of climate change including rising temperatures, more polluted air, and more frequent and intense extreme storms, will disproportionately affect already poor and disenfranchised people. Policymakers must find ways to focus not only on the physical impacts of climate change, but also on the ways that policies can have a differential impact on certain individuals and communities. In this portal we will refer to people facing disproportionate climate impacts as **'frontline communities'** since these are groups that are on the *frontlines* of impacts from climate change.

[READ MORE](#)

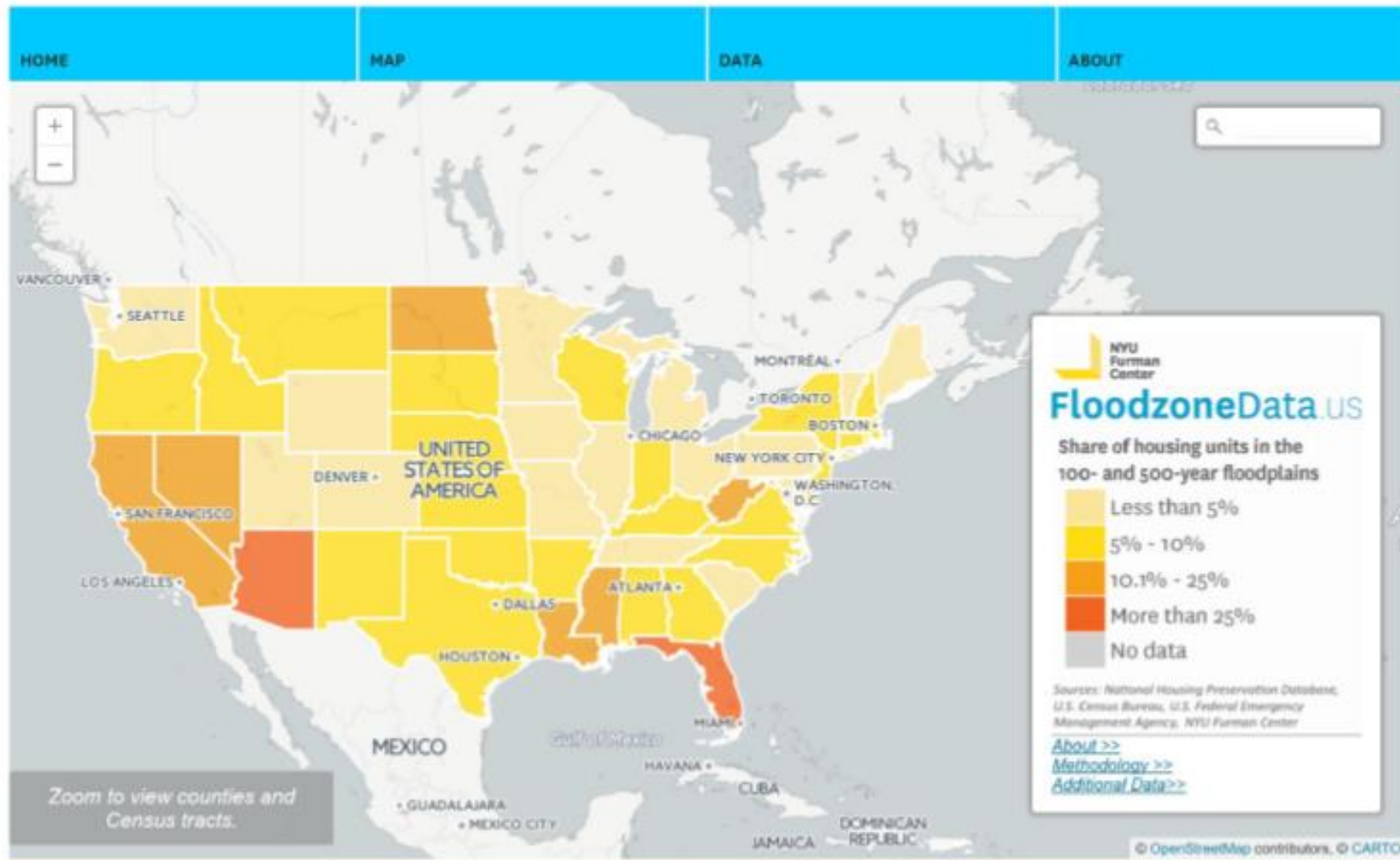
Put the Power of the Adaptation Clearinghouse to Work for You

- Customize the Adaptation Clearinghouse to meet your needs
- Receive updates about new resources that match your interests
- Connect with other professionals

[BECOME A MEMBER](#)
[LOGIN](#)

FloodzoneData.us

A project of the NYU Furman Center, FloodzoneData.us describes the people and housing located in the U.S. floodplain.



WATER IS LIFE**WESTERN WATER, CLIMATE CHANGE,
AND PUBLIC HEALTH****FLOODS**

Severe wildfire damages soil's ability to absorb precipitation, leading to post-fire flooding and debris flows. This debris clogs reservoirs and can lead to increased power and water treatment costs.



When urban flooding occurs, systems can fail, vector-borne diseases can proliferate, structures are damaged, and public health is put at risk from contaminated and uncertain water supply.

DROUGHT

Less surface water means an increased reliance on groundwater. Low-income communities are often forced to choose between clean water and other life essentials.



Dust from dry land is blown far and wide, spreading valley fever, diminishing air quality, and shutting down public transit. This disproportionately affects low-income communities.

MEGA-WILDFIRES

Air pollution skyrockets after a major wildfire event. Increased levels of particulate matter, smoke, chemicals and toxins exacerbate asthma/respiratory problems.



Wildfires take lives and destroy structures, including homes and places of work. Displacement creates stress - financial, mental, and physical.

HEAT

Rising water temperatures lead to an increase in toxic algal blooms which put species at risk of extinction and impacts the health of human water supply.



Urban heat islands increase risks of dehydration, heart attacks, and heat strokes for urban dwellers, with some of the most direct impacts on low-income communities.

LAND-BASED CULTURES & COMMUNITIES

Sacred water sites are being devastated by climate change, which can lead to loss of identity and negative impacts on mental health.



Displacement robs land-based cultures of their traditional subsistence methods, leading to reliance on government-subsidized foods high in sugar and fat, increasing rates of diabetes.

Carpe Diem West

- A network of western water leaders dedicated to addressing the climate impacts on western water
- Engages water managers, local and state agencies, social justice activists, climate scientists, and western health sector leadership in developing a common policy and research agenda

Common Motivators:

Water sector leaders & real estate/urban development professionals

Find solutions instead of shutting off water

Lila Cabbil, Steve Burrington and Diana Toledo 11:55 p.m. ET April 29, 2017



(Photo: Getty Images, Sean Gallup)

STORY HIGHLIGHTS

- Lila Cabbil is a member of the People's Water Board.
- Steve Burrington is executive director of Groundwork USA.
- Diana Toledo is leadership development director the River Network.

Nearly 18,000 Detroit households face water shutoffs — joining thousands of their neighbors who struggle to live without running water.

Losing access to water takes a dreadful toll on health and human dignity. Researchers found that shutoffs in Detroit are [linked](#) to skin and gastrointestinal infections that are more typical in the developing world. When the taps run dry, children stay home because they are embarrassed to go to school unwashed. And parents lose their kids to foster care when homes without water are declared unfit for habitation.

Sadly, the people of Detroit are not alone. From Baltimore to California's Central Valley, poverty and systemic racism combine with other structural problems to place safe water out of reach for many. The challenges are huge: Our nation's water infrastructure is aging, and the cost of repairs could top [\\$1 billion in the next 20 years](#). Bills skyrocket as utilities raise rates to make up for declining federal investment. From lead-tainted water in older cities to

fertilizer runoff in rural areas, contaminated water threatens health, while the regulations that protect water quality are under attack. And climate change brings new problems — from devastating droughts to supercharged storms — that affect water quantity and quality.



- Respect the role of physical infrastructure
- Recognize the importance of bringing the impacted community to the table
- Opportunity to improve public health & other community benefits
- Manage water for the public good
- Peer learning & collaboration
- Appreciate the benefits of climate, resilient infrastructure

The Detroit Free Press, April 30, 2017

Thank you for your time!

Presentation/Panel

HIGH POINT

Tom Phillips

Former High Point Redevelopment Manager, Seattle Housing
Authority

Peg Staeheli

Principal Landscape Architect, MIG | SvR

George Nemeth

Senior Housing Developer, Seattle Housing Authority

High Point, Seattle

A Mixed - Income Green Redevelopment



High Point: *Then and Now*

Then

- 1942 Temporary Housing
- 716 Low Income Rental Homes

Now

- 120 acres
- ± 1600 **Mixed Income** Homes
- Model **Green** Community
- Rental and For-Sale Homes



Green Strategies

- **Neighborhood Pattern & Design**
- **Compact & Healthy Development (Open Space)**
- **Skinny Streets**
- **Integrated Natural Drainage System**
- **Affordable Green Housing**
- **Breathe-Easy Homes (Asthma)**



Mixed Income Housing



High Point Redevelopment

Seattle Housing Authority / Mithun / SvR Design

Diversity of Housing Types



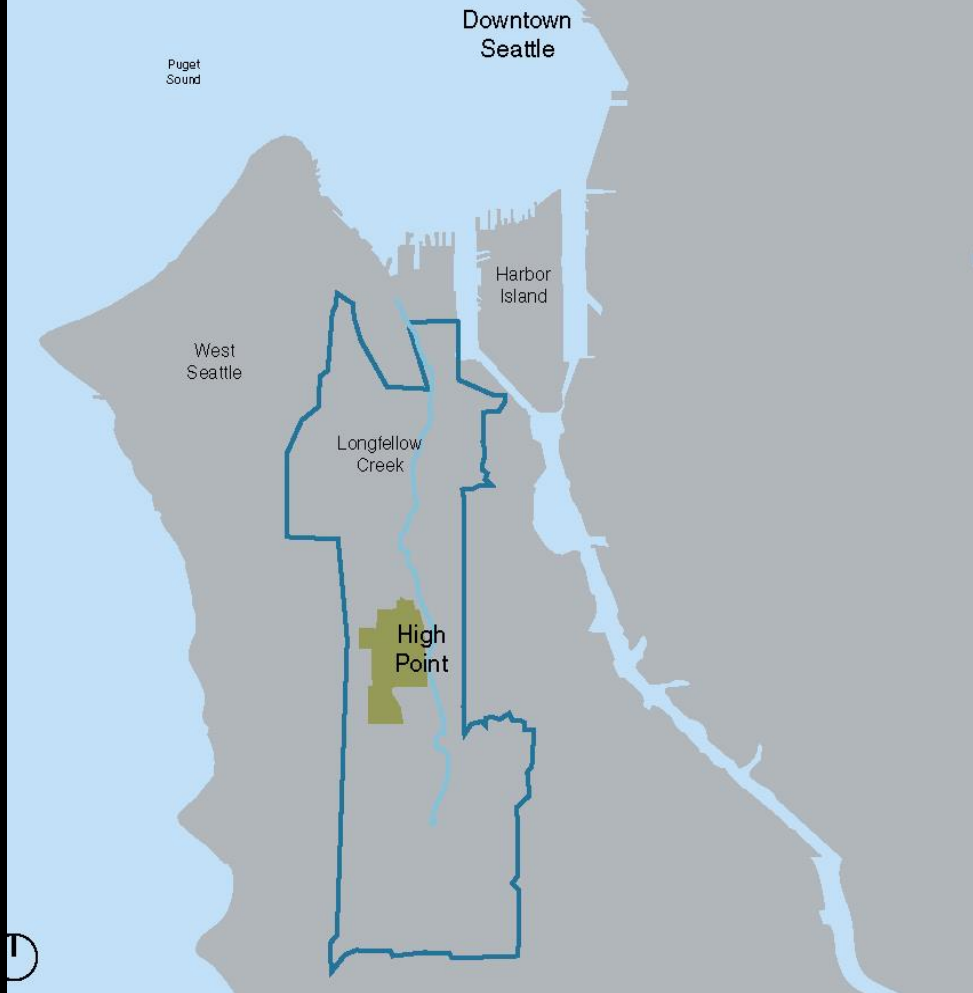
Re-Integrated With West Seattle

**Streetscape Network
Building Character
Park Connections**



Integrated Natural Drainage System System

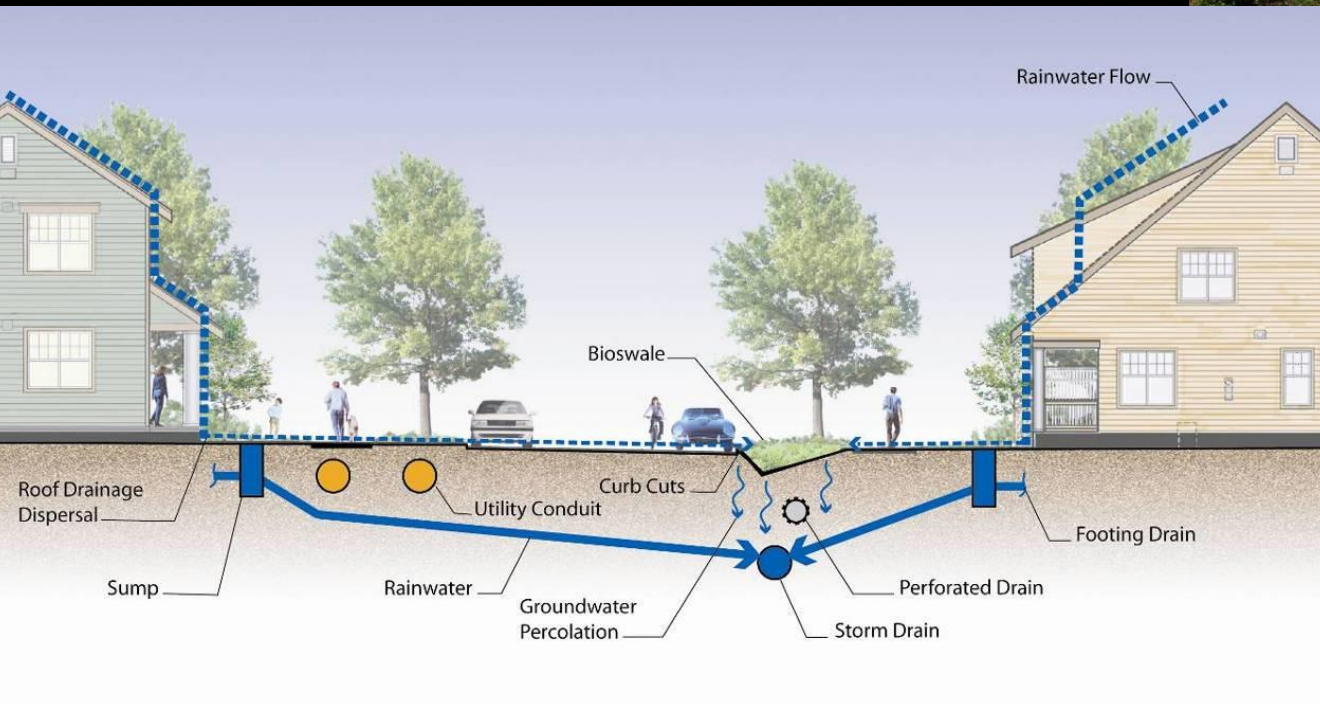
**Longfellow Creek Drainage Basin:
High Point is 10% of entire basin.**



Natural Drainage System

"Cleaning with Swales"

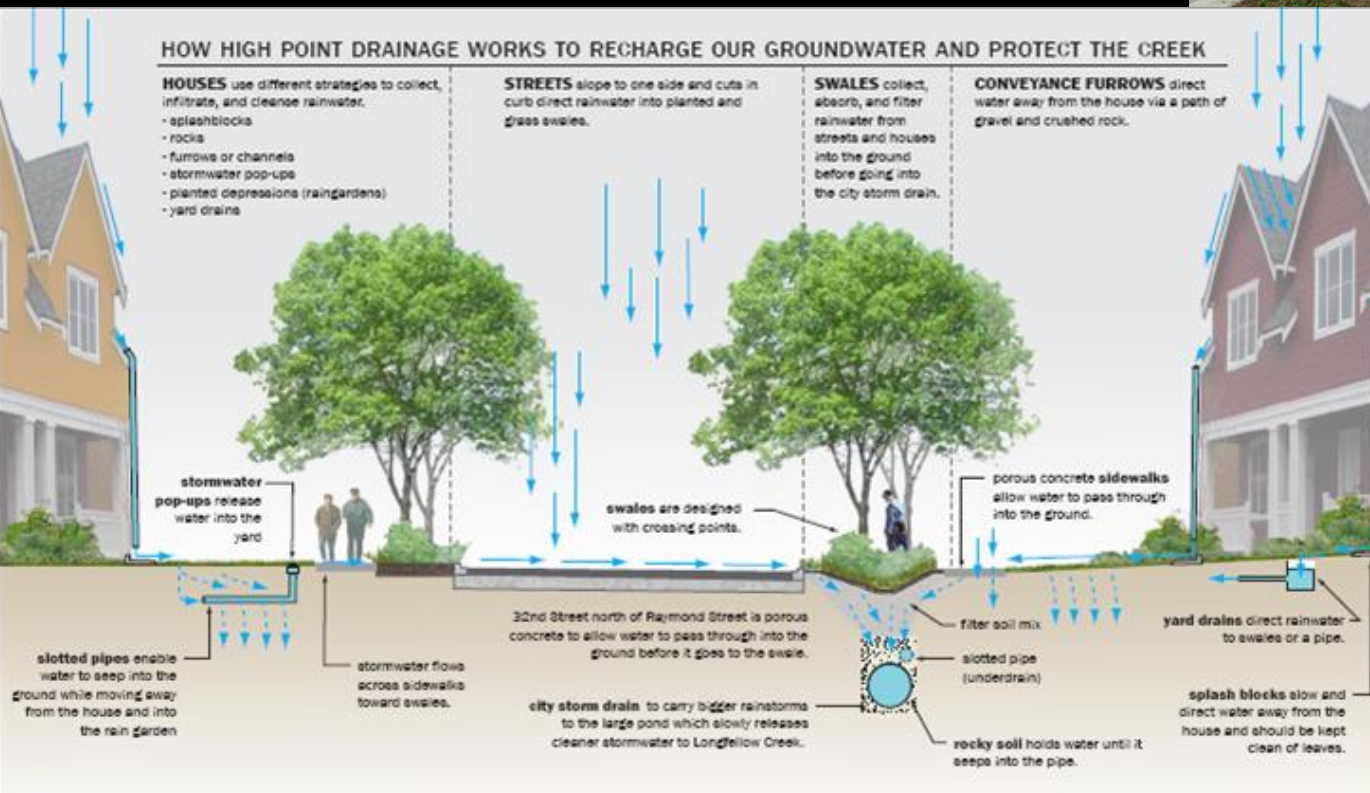
- Filtering and Bio-remediation -- Improve Water Quality Treatment
- Streets and Landscape Drain to Swales
- Mimics Natural Drainage
- Classic Neighborhood Streetscape



Natural Drainage System

"Holding – Flow Attenuation"

- Maximize Infiltration of Water into Ground
- Minimize Impervious Paving (<60% coverage)
- Maximize Drainage into Natural Landscaping
- Mimics Natural Meadow
- Many Tools to Maximize Infiltration



Natural Drainage System

“Cleaning with Swales”

- Swales On Every Street -- Vegetated or Grass
- 3 Miles of Swales throughout Community
- One Single Neighborhood System



Natural Drainage System

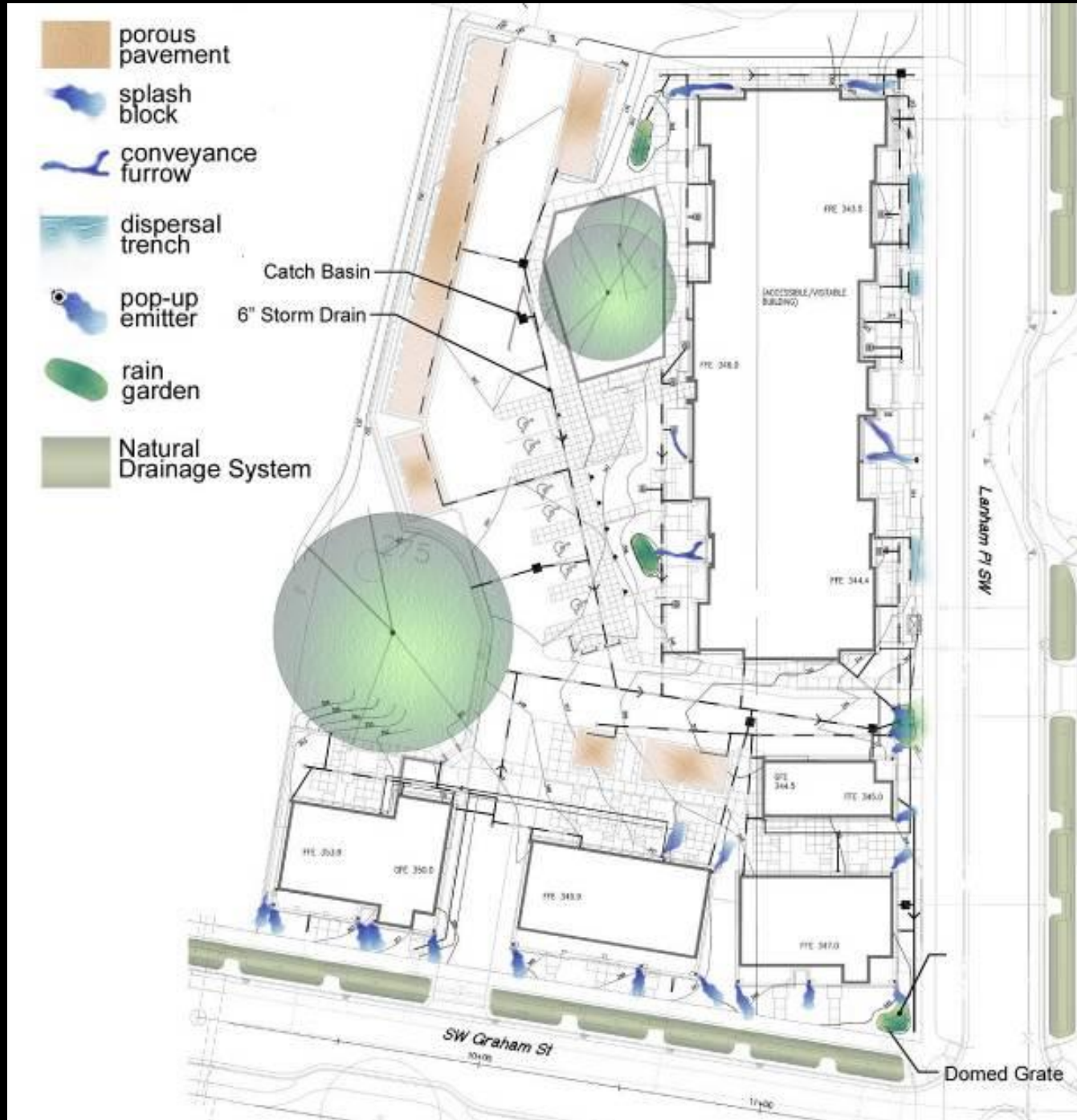
“Holding – Block Design”

Requirements

- Each block uses site-specific drainage strategies.
- 62% – 70% allowable impervious
- 50% of roof area drainage dispersed

Tools

- Porous pavement
- Splash blocks
- Conveyance furrow
- Dispersal trench
- Pop-up emitters
- Rain gardens
- Adjacent Swales





Bioswale Construction



High Point Natural Drainage Strategies

“Holding” – Flow Attenuation : Permeable Paving / Gravel Parking Lot

SHA / Mithun / SvR Design

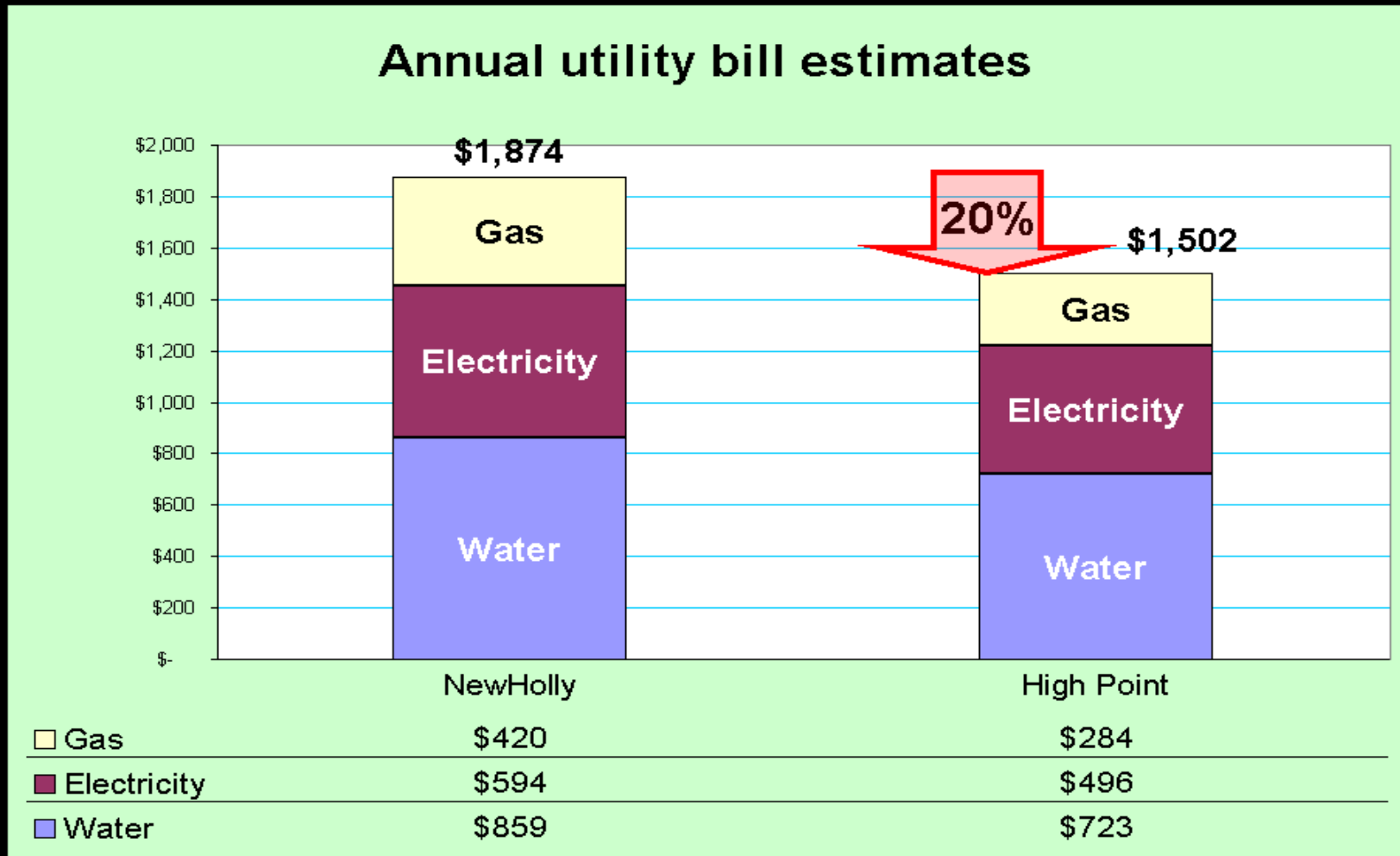


The Pond: An Asset, Not a Liability

“Holding” – Flow Attenuation : Pond “Holds” Excess Water for 100 year storm events

Green Building: Energy Savings

GOAL: 20% reduction in utilities compared with NewHolly.



Estimated annual savings for 4-person household in 3-bedroom unit: \$371

“Breathe-Easy Homes”

Healthy Homes – Healthy Communities

- 35 “Breathe-easy” homes decrease risk factors for childhood asthma
- Holistic environmental outreach by resident youth & adult teams
- Low-emission paint & construction materials in all rental housing
- High-efficiency hydronic heating
- Green approach to parks & open space maintenance

***Early Findings: Significant Reduction in
Emergency Room visits and home attacks.***



Healthy Environment: *Tree Preservation Plan*

Conserving 123 trees worth \$1.5 million

Adding approximately 2,500 trees

Modify Site and Street Layout to Save Trees

Protect During Construction



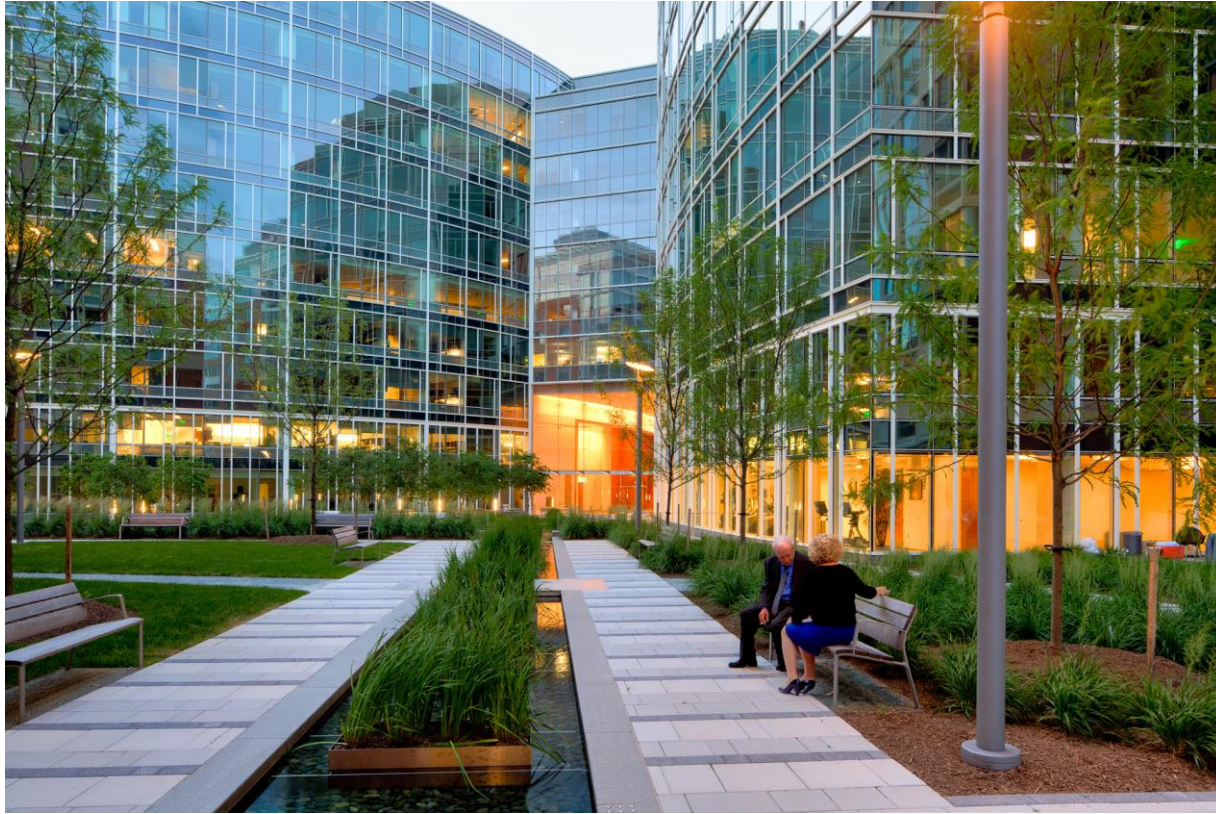
123
Gray Birch
Betula Populafolia

Appraised Value:
\$10,869

TREE PROTECTION FENCE

NO TRESPASSING ON CRITICAL ROOT ZONE
OF THIS TREE WITHOUT DIRECT APPROVAL
OF OWNER'S REPRESENTATIVE.
WORK WITHIN THE CRITICAL ROOT ZONE
SHALL RESULT IN A FINE OF \$1,500
OR THE APPRAISED LANDSCAPE VALUE,
WHICHEVER IS GREATER.





**THANK YOU! SEE YOU NEXT TIME!
ON TO MITHUN!**

May 2, 2017 | Seattle, WA

 **Urban Land
Institute** **Building Healthy
Places Initiative**