Greater Baltimore Wilderness: Green Infrastructure, Resiliency, and Equity

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Green Infrastructure Definitions

An interconnected network of natural areas and other open spaces that conserves natural ecosystem values and functions, sustains clean area and water, and provides a wide array of benefits to people and wildlife.

Mark A. Benedict and Edward T. McMahon, Green Infrastructure: Linking Landscapes and Communities, Island Press, 2006

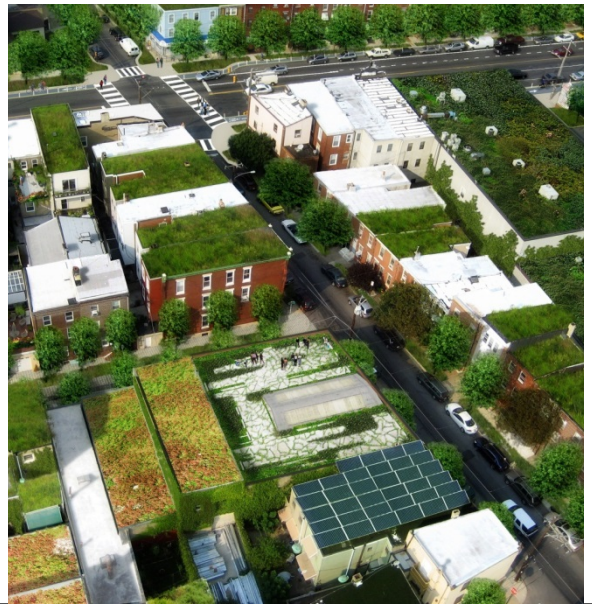
Systems and practices that use or mimic natural processes to infiltrate, evapotranspirate, or reuse stormwater on the site where it is generated.

U.S. Environmental Protection Agency

Green Infrastructure Definitions

Green infrastructure as landscape…the physical manifestation of processes that connect the built and natural environments, performing multiple functions and yielding associated benefits for the health and well-being of people and wildlife.

PAS Report 571, Green Infrastructure: A Landscape Approach, p. 11



Examples Across Scales

Regional Scale

- Regional parks and nature preserves
- River corridors and greenways
- Working farms and forests

City Scale

- Urban forest / tree canopy
- Urban parks
- Parkways and boulevards

Examples Across Scales

Neighborhood Scale

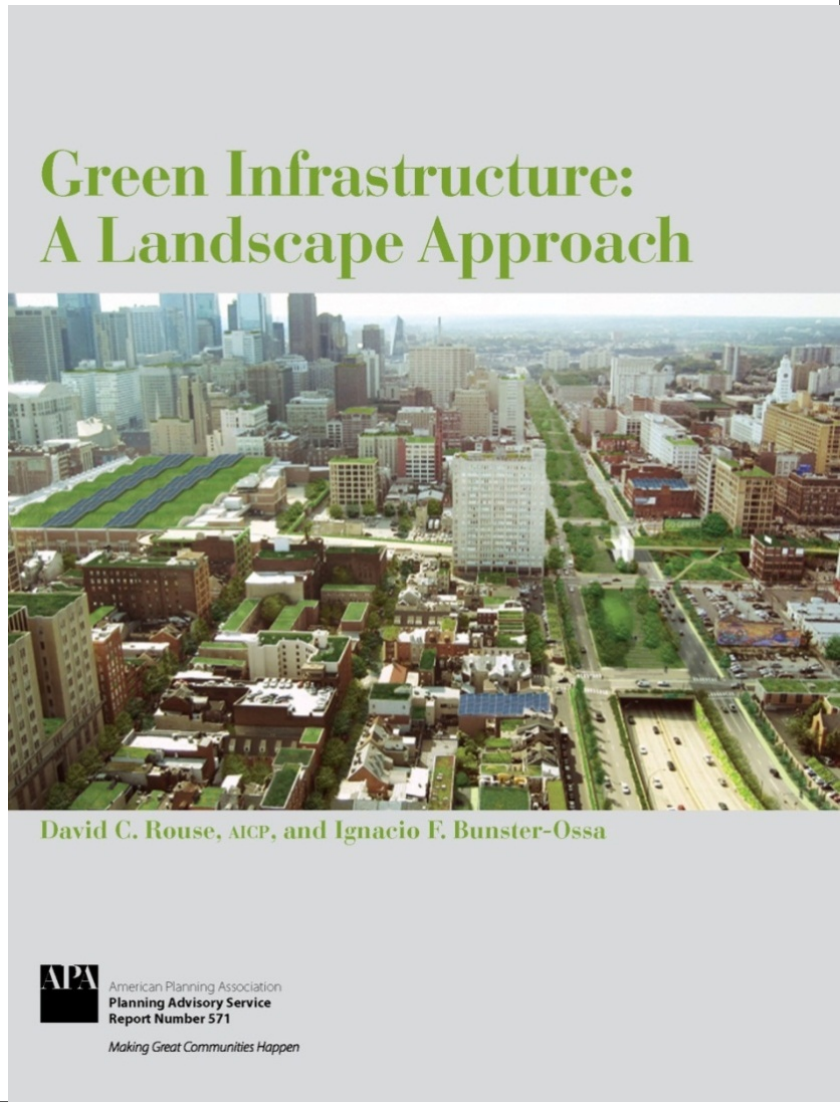
- Local parks
- Constructed wetlands
- Green streets

Site / Building Scale

- Stormwater planters
- Rain gardens
- Green roofs

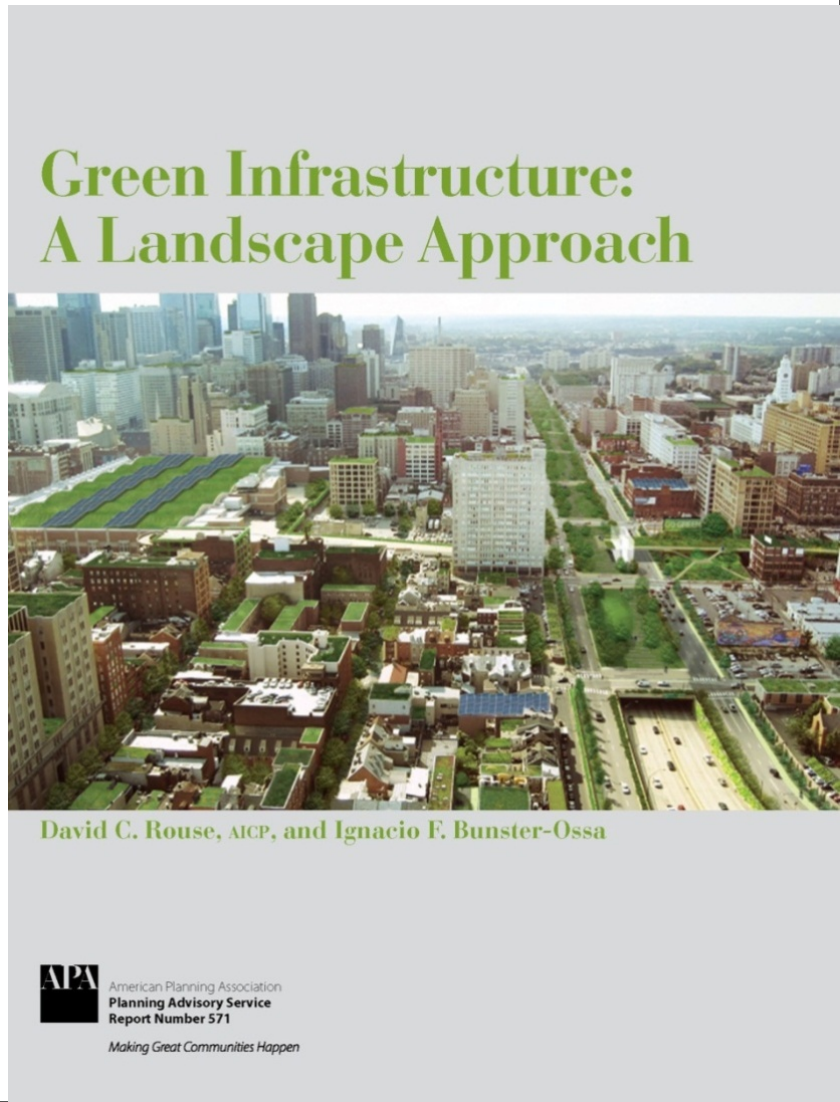
Principles for Planning Practice

1. Multi-Functionality
2. Connectivity
3. Habitability
4. **Resiliency**
5. Identity
6. Return on Investment



Resiliency Principle

Increase the capacity of communities to recover from or adapt to disturbance and change.



Green Infrastructure and Natural Disasters

- Natural habitats significantly reduce damage from storm surge and flooding.
- Distributed green infrastructure reduces damage in urban areas.

"Natural" Green Infrastructure

- 16% of U.S. coastline (1.3 million people and $300 billion in residential property) is in high hazard areas.
- 67% is protected by natural habitat, which if lost would double the number of poor families, elderly people, and total property value at highest risk.
- Sea level rise will increase these figures by 30-60% by 2100.

Source: The Natural Capital Project and the Nature Conservancy, 2013

"Distributed" Urban Green Infrastructure


Stormwater Wetland


Community Garden


Green Schoolyard


Green Roof

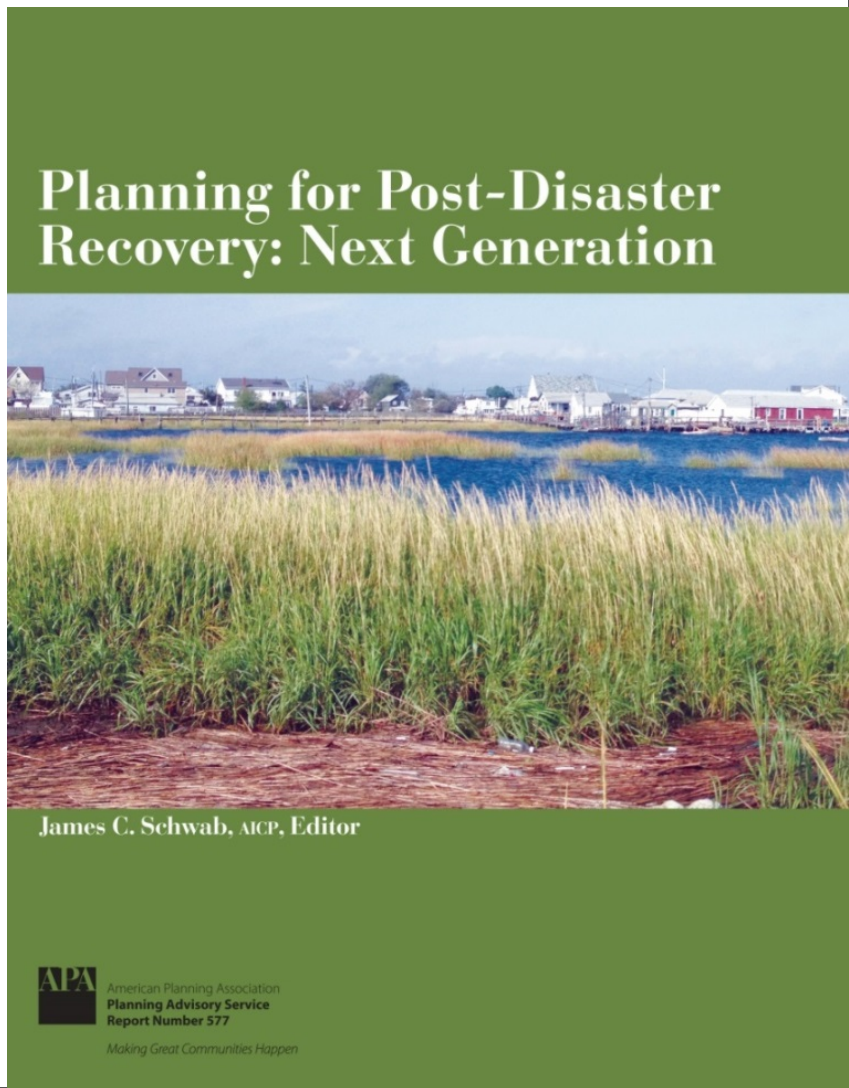

Pervious Pavement


Green Street

Source: Philadelphia Water Department

Green Infrastructure and Natural Disasters

- Green infrastructure should combined with gray infrastructure to effectively reduce damage.
- Green infrastructure provides multiple co-benefits that increase community resilience.



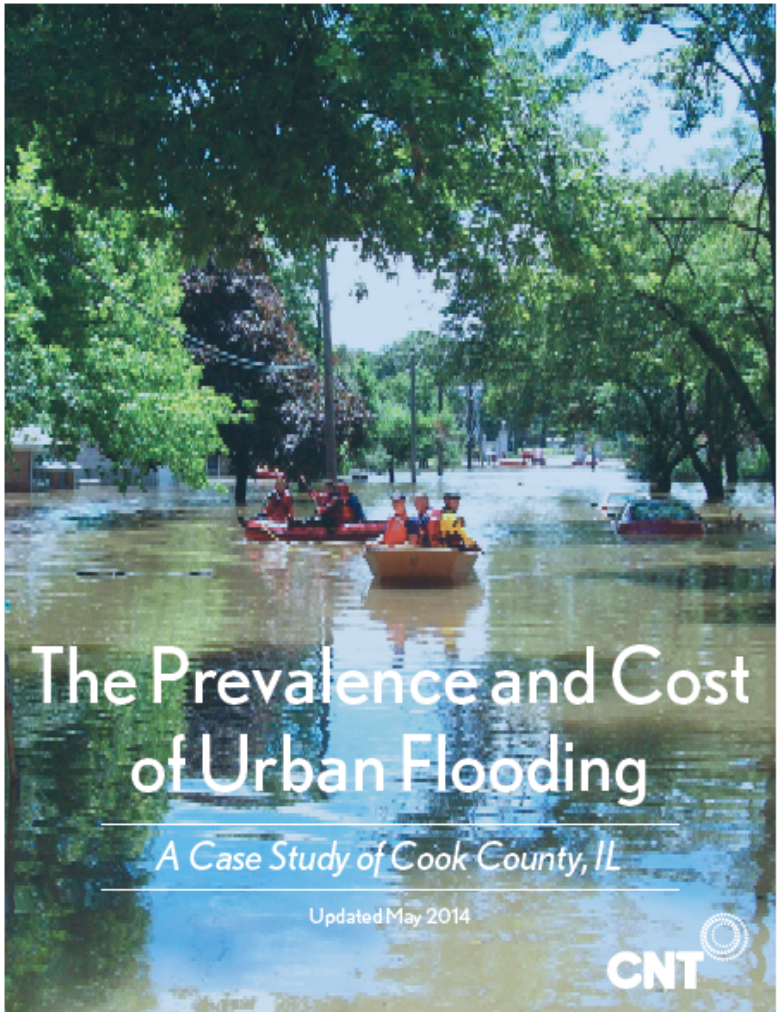
Equity and Natural Disasters

Interwoven Equity Principle:

Ensure fairness and equity in providing for the housing, services, health, safety, and livelihood needs of all citizens and groups.

Equity and Natural Disasters

- Poor and underserved communities often bear a disproportionate burden.
- A study of Cook County, IL by CNT found that flooding is chronic and systemic, and that low-income ZIP codes were the most affected.
- Green infrastructure can help, but is gentrification an issue?



Green Infrastructure and Equity

Green infrastructure can provide "exceptional benefits for the urban poor":

- Improved air and water quality
- Improved public health
- Enhanced aesthetics and safety
- Green job opportunities
- Increased food security

Source: Dunn, 2010

…all of which contribute to increased resiliency.

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