



Green Infrastructure Strategies to Reduce Combined Sewer Overflows

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American Rivers**



Disconnected downspouts, Portland Bureau of Environmental Services



American Rivers



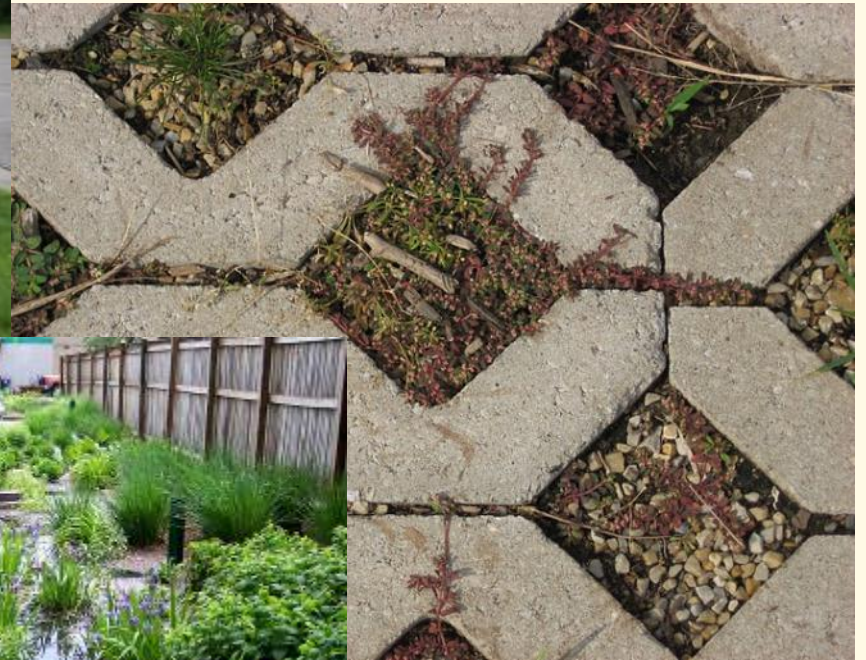
Columbia River



Green Infrastructure



Protect



Restore



Replicate



Toledo, Ohio



BANKING ON GREEN:

A Look at How Green Infrastructure Can Save Municipalities Money and Provide Economic Benefits Community-wide

Banking on Green

- **Joint report with ASLA, the Water Environment Federation, and ECONorthwest**
- **Examining the economic benefits of green infrastructure**
 - Provides cost savings
 - Reduces current and projected energy expense
 - Mitigates flooding and helps reduce damage costs
 - Reduces bacteria and pollutant loads to lower healthcare costs

A Joint Report by American Rivers, the Water Environment Federation, the American Society of Landscape Architects and ECONorthwest

April 2012

Green Roof, © Portland Bureau of Environmental Services

Philadelphia in 2025

An aerial photograph of a city block in Philadelphia, illustrating a vision for 2025. The image shows a dense urban area with numerous buildings. Many of the flat roofs are covered in lush green vegetation, representing green roofs. A central courtyard features a paved area with a geometric pattern and some trees. The surrounding streets are lined with trees and have cars parked along the sides. The overall scene depicts a more sustainable and green urban environment.

*photo courtesy of Howard Neukrug,
City of Philadelphia*



Beyond Clean Water: Benefits to Communities

Reduced
energy
costs



Beating the heat in Chicago: green roof vs. conventional roof



Reducing flooding in
Ohio: Rain gardens in
Cuyahoga Falls

Flood
mitigation

Increased energy efficiency

Urban Heat Island mitigation

Improved air quality

Increased green space



Table 2: Case Studies and Common Policy Approaches

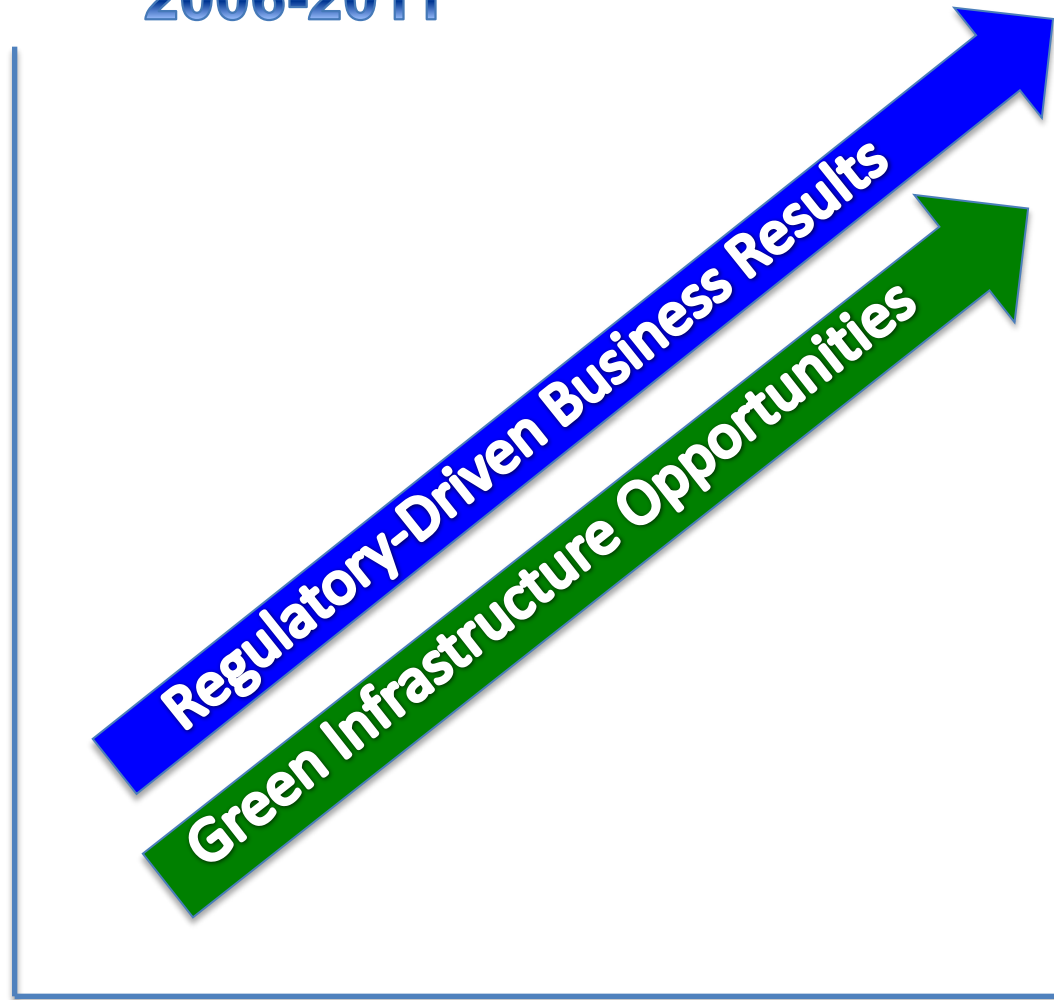
City	Public					Private			
	Demonstration projects	Street retrofits	Capital projects	Local code review	Education & outreach	Stormwater regulation	Stormwater fee	Fee-based incentives	Other incentives
Alachua County, FL	X		X			X			
Philadelphia, PA	X	X	X	X	X	X	X	X	
Portland, OR	X	X	X	X	X	X	X	X	X
Seattle, WA	X	X	X	X	X	X	X	X	X
San Jose, CA	X	X		X		X			
Santa Monica, CA		X	X	X	X	X	X		X
Stafford County, VA	X			X		X			
Wilsonville, OR	X	X	X	X		X			
Olympia, WA	X	X		X	X	X	X		
Chicago, IL	X	X	X	X	X	X			X
Emeryville, CA	X	X		X		X	X		
Lenexa, KS	X	X	X		X	X	X		
Total	11	10	8	10	7	12	7	3	4

Impacts on Business
Stormwater Maintenance, LLC
2006-2011

Employees + 417%

Revenues + 540%

Profits + 395%



ASLA Case Study: Target Center Green Roof Minneapolis

- Fifth largest extensive green roof in North America (113,000 sq. ft)
- Most cost effective and ecologically sound option over the life of the roof
- Over a 20 year study period green roof is cheaper
- Building owner receives approximately \$9,000 a year in annual stormwater credits
- Retains over a million gallons of annual stormwater runoff on site





“The problem with a traditional pipes and plants approach is that the public doesn’t get any direct enjoyment with this type of hidden infrastructure... **You can’t hold a picnic or a tailgate party in a Deep Tunnel...**”



Milwaukee Mayor, Tom Barrett



Representative Edwards and Mayor Kearns test out the permeable pavement on Edmonston's green street.



**For more information, please
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