

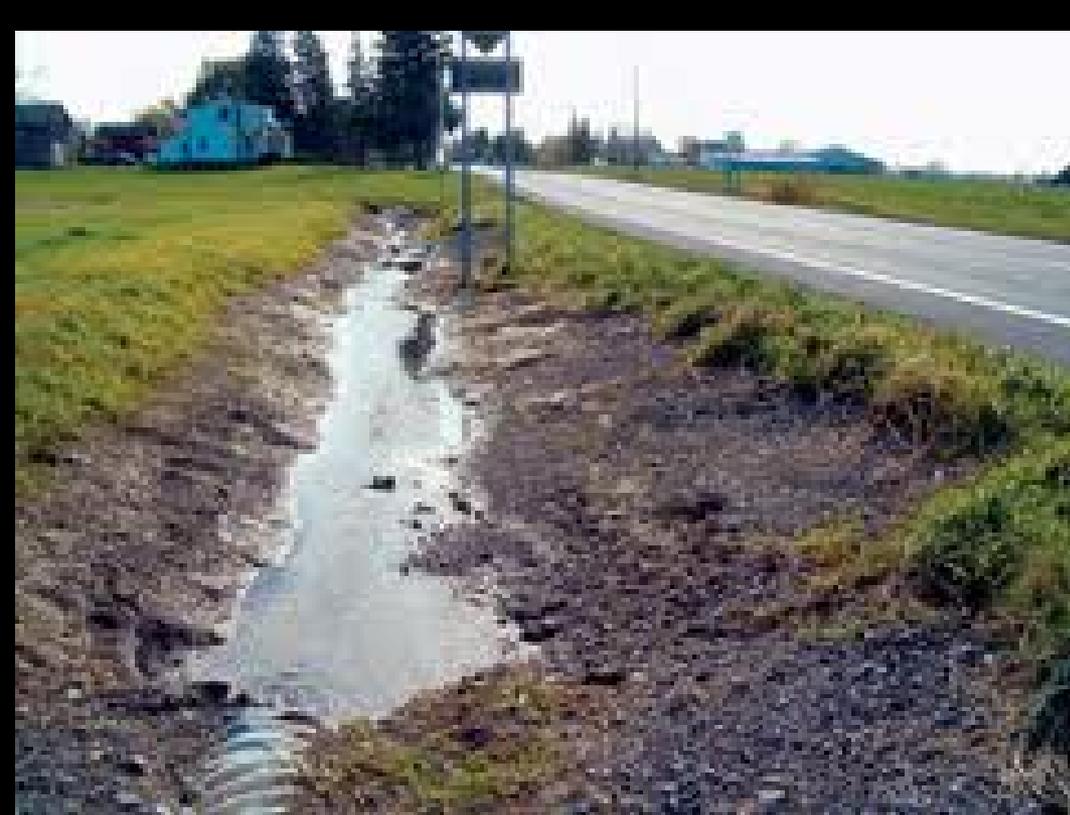
Financing GI



Khris Dodson
Environmental Finance Center

What's the cost of not?













The benefit(s) of funding GI

- The ancillary benefits may outweigh the stormwater benefits
 - Improved streetscapes
 - Increased capacity, or upgraded infrastructure
 - Inter-departmental ‘co-funding’ (combining Parks, schools, libraries, DPW, USPS and other funding streams to create a mutually beneficial project)
 - Increased property value and/or investment
 - Economic Development
 - Quantifying ‘ecosystem services’

Public-Private Partnerships

Onondaga County Save the Rain Green Improvement Fund (GIF)



Never been advertised!

130 applications since
March 2010

83 projects completed; 35
projects under contract or
in implementation phase

50+ million gallons to be
captured annually from
projects





Skiddy Park B-ball courts with the Boeheim Foundation Courts 4 Kids program



Connective Corridor

337 East Water Street



Exit Street View



East Water Street

© 2013 Google

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Google earth

43°03'01.81"N 75°05'55.94"W elev. 426 ft

Eye alt. 413 ft

Report a problem





Residential Demonstration Project, Syracuse



Tools to Plan

www.epa.gov/greeninfrastructure

The screenshot displays the EPA's Green Infrastructure website. At the top left is the EPA logo and the text 'United States Environmental Protection Agency'. Navigation tabs include 'LEARN THE ISSUES', 'SCIENCE & TECHNOLOGY', 'LAWS & REGULATIONS', and 'ABOUT EPA'. A search bar with 'Advanced Search' and 'A-Z Index' is on the right. The main heading is 'Water: Green Infrastructure'. Below it, a breadcrumb trail reads 'You are here: Water » Water Infrastructure » Green Infrastructure'. A secondary navigation bar contains 'Home', 'Basics', 'Tools', 'Case Studies', 'Research', 'Library', and 'Contacts'. The central graphic consists of five hexagons: 'Energy' (a red plug), 'Habitat' (a yellow flower), 'Community' (two children playing), 'Water' (a water tap), and 'Green Infrastructure' (a central green hexagon). A 'Features' box on the right contains two news items: 'EPA Announces Recipients of \$950,000 in Technical Assistance' and 'EPA Releases Green Infrastructure Permitting and Enforcement Series'.

- General & Technical Information
- Key Resources
- Case Studies
- Guidance
- Partnership Contacts

Models and Calculators

- Natural Resources Defense Council (NRDC), 2006, 2011
Rooftops to Rivers Green Strategies for Controlling Stormwater and Combined Sewer Overflows
<http://www.nrdc.org/water/pollution/rooftops/contents.asp>
- EPA Sites:
 - Municipal Handbook: Funding Options
 - EPA Green Infrastructure Models and Calculators
 - [Financing Alternatives Comparison Tool \(FACT\)](#)
- [Green Values Stormwater Toolbox](#), *Center for Neighborhood Technology*
- <http://www.stormwatercenter.net/>
- Onondaga County's [Save the Rain](#) program

Municipal Handbook

A series of guidance documents to help implement green infrastructure. Modules include:

- Rainwater Harvesting Policies
- Green Streets
- Funding Options
- Retrofit Policies
- Municipal Incentives



Green Values® Calculator

Estimates green infrastructure's financial and hydrologic effect on a single lot or across a neighborhood.

Compares green and 'gray' infrastructure life cycle costs including GI's economic, environmental, and social benefits

Adaptable for local ordinance verification

<http://greenvalues.cnt.org>

The screenshot shows the Green Values Calculator interface. At the top, there is a navigation menu with links: "What is Green Infrastructure?", "Landscapes", "Run the Calculator", and "Resources". A "GREEN INFRASTRUCTURE VALUATION" logo is on the left, and a "GREEN INFRASTRUCTURE CALCULATOR" logo with a calculator icon is on the right. Below the navigation is a "Calculator" section with two main parts: "Green Interventions" and "Site Statistics".

Green Interventions:

- 1 Roof Drains to Rain Gardens at All Downspouts:
- 2 Half of Lawn Replaced by Garden with Native Landscaping:
- 3 Porous Pavement used on Driveway, Sidewalk and other non-street pavement:
- 4 Green Roofs:
- 5 Provide Tree Cover for an Additional 25% of Lot:
- 6 Use Drainage Swales instead of Stormwater Pipes:

Site Statistics:

- 1 Select a scenario: New Development, Suburban
- 2 Is this an existing site:
- 3 Total size of site: 40 acres
- 4 Number of lots: 80
- 5 Average Roof Size, including Garage: 1200 ft²
- 6 Average Number of Trees on Lot: 0
- 7 Average Driveway Area: 400 ft²
- 8 Average Impervious patio, deck, alley or parking lot: 100 ft²
- 9 Sidewalk Width: 5 ft
- 10 Average Street Width: 32 ft
- 11 Soil Type: C
- 12 Average Slope: 1%
- 13 Real Discount Rate: 3.1 %
- 14 Life Cycle in Years: 100

A large "CALCULATE" button is at the bottom of the form.

Results

The difference between the conventional system and the green intervention(s) you chose **decreases** the total 100 year life cycle costs and **increases** benefits by \$962,481! This strategy reduces peak discharge by 11%.

Hydrologic Results

Lot Level Improvements:	Conventional	Green	Reduction
Lot Discharge (cf)	1,968	1,521	23%
Lot Peak Discharge (cfs)	17	13	24%

Total Site Improvements:

Total Peak Discharge (cfs)	Conventional	Green	Reduction
Total Peak Discharge (cfs)	42	37	11%

Detention Size Improvements:

Total Detention Required (ft ³)	Conventional	Green	Reduction
Total Detention Required (ft ³)	85,123	66,505	22%

Annual Discharge Improvements:

Average Annual Discharge (acre ft)	Conventional	Green	Average Annual Ground Water Recharge Increase:
Average Annual Discharge (acre ft)	28.84	25.60	2.02

At the bottom of the page, there is a copyright notice: "© Copyright 2004-2005 Center for Neighborhood Technology."

See how **you can** make a difference...
every drop counts.

Save the Rain

- ABOUT
- NEWS
- GREEN PROGRAMS
- COMMUNITY
- BLOG
- RESOURCES
- CONTACT

The "Save the Rain" program is a comprehensive stormwater management plan intended to reduce pollution to Onondaga Lake and its tributaries. During wet weather events, stormwater flows into the local sewer system, causing heavy flow periods that can overload the system.



Onondaga County Executive Featured on Municipal Sewer & Water Magazine September 2012 Cover

September 2012

October

30TH: Community Meeting - W. Onondaga Green Corridor Project

Time: 06:00 PM

Location: Southwest Community Center

The West Onondaga Green Corridor project consists of a road narrowing from Onondaga Creek to...[\(read more\)](#)

Project:	Arbor Day Tree Plantings at Hughes Magnet School
Project Owner:	Syracuse City School District
Project Location:	Hughes Magnet School
Sewershed:	Midland
GI Technology:	Tree Plantings
Runoff Reduction:	20,000 gal/yr
Year Completed:	2012
Construction Cost:	\$0
Primary Contractor:	City/County Arborist

Funding to Support GI

File Edit View Insert Format Tools Actions Help

Reply Reply to All Forward Print Attachments Delete Undo Redo Font Color Help

From: Amy Cornett [suny@easypeasy.com]

To: jezter@email.unc.edu

Cc:

Subject: FREE Grant Money For You

Qualifying for a free cash grant is easy!

- ***\$10,000 to over \$500,000 in FREE Grant Money is Available NOW!***
- ***Never Repay***
- ***No Credit Checks***
- ***No Interest Charge***

To see if you meet the requirements,
please visit our web site: [CLICK HERE NOW!](#)

With best regards,

The Grant Giveaway Team

Not a good
source of
funding!!!

Also not recommended...



**GUIDANCE FOR
MUNICIPAL
STORMWATER FUNDING**

Prepared by National Association of Flood and Stormwater
Management Agencies

Under Grant Provided by Environmental Protection Agency

January 2006

Free guide that discusses sources of funding, legal implications, and implementation. Also has case studies.

<http://www.nafsm.org/Guidance%20Manual%20Version%202X.pdf>

Funding Stormwater Programs

EPA 901-F-09-004

April 2009

Executive Summary

This document is intended to assist local stormwater managers to alleviate the significant expense of construction, operation and maintenance of a municipal separate storm sewer system (MS4). The costs of stormwater programs, increased by regulatory requirements (stormwater Phase I or Phase II), flooding concerns, water quality issues (including total maximum daily loads, or TMDLs) and population growth, may be subsidized through a stormwater utility or various other methods detailed in this document.

Stormwater management can be costly, but it is a good investment. There are new stormwater management techniques, referred to as low impact development (LID), that infiltrate, evapotranspire and reuse stormwater, thereby, preventing polluted runoff from happening. This helps to reduce the high costs of cleaning up the water quality impairments from the polluted runoff. Additional benefits from these techniques include increased ground water recharge, flood control, and healthy aquatic ecosystems through maintenance of base flow for streams. LID techniques need to be sited and designed carefully, and used in conjunction with traditional stormwater management techniques.

This fact sheet includes information on various stormwater funding mechanisms and types of stormwater utilities; it also describes how to create a stormwater utility and provides a list of resources.

New England Case Studies

More than 800 communities or districts across the country have adopted a stormwater utility to help fund the costs of stormwater programs, including the costs of regulatory compliance, planning, maintenance, capital improvements, and repair or replacement of infrastructure. Examples of utilities from two New England cities are discussed below.

South Burlington, Vermont

<http://www.sburlstormwater.com>

The South Burlington Stormwater Utility is the first of its kind in Vermont. Six streams in and around South Burlington are impaired from stormwater, resulting in water pollution, erosion, flooding, and unstable streambanks. The utility was established in 2006 to help mitigate the increasingly complex issues associated with stormwater management, including failing septic systems in older developments and phosphorus runoff polluting Lake Champlain, which is the primary source of drinking water for the Burlington area.

The municipal Stormwater Services Division administers the utility, which pays for system maintenance, capital project construction, enforcement, and customer outreach and assistance.



An example of a capital project construction (a gravel wetland) that was paid for by the stormwater utility in South Burlington, Vermont.

User fees are based on the amount of impervious area on a property. The monthly fee per equivalent residential unit (ERU) was set using a scientific process. This process determined that a typical single-family home in South Burlington had 2,700 square feet of impervious surface. A single-family home is assessed a fee of \$4.50 per month, whereas duplexes and triplexes are assessed fees of \$2.25 and \$1.50 per month, respectively. All other properties are assessed a fee depending on the amount of impervious surface. The utility funds a comprehensive program bringing in more than \$1 million annually.

Cities in New England with Stormwater Utilities

- Chicopee, Massachusetts
- Lewiston, Maine
- Newton, Massachusetts
- Reading, Massachusetts
- South Burlington, Vermont

(as of December 2008)

- Property Taxes/General Fund
- Special Assessment Districts or Regional Funding Mechanisms
- Service Fees (including stormwater utilities)
- System Development Charges (SDCs)
- SDCs (also known as connection fees or tie-in charges)
- Grants and Low-Interest Loans
- Types of Stormwater Utilities

<http://www.epa.gov/region1/npdes/stormwater>

Questions?

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