

# Green Infrastructure: A Truly Public Utility

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Serving EPA Region 2

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Cisterns have been around  
for a long time...

What is old is new again...



But this is not your grandma's  
rain barrel...



# Syracuse: A case study

# History

- 1988 – Atlantic States Legal Foundation files lawsuit against County
- 1989 – Litigation settled through METRO consent judgment
- 1998 – METRO consent judgment replaced with Amended Consent Judgment (ACJ)
- 1<sup>st</sup> ACJ amendment May 1998
- 2006 ACJ Amended to include consolidation of ammonia and phosphorus treatment and Harbor Brook conveyances and RTF
- 3<sup>rd</sup> Amendment April 2008 (Extension)
- 2009 ACJ amended to authorize use of Gray and Green infrastructure

## Onondaga Lake Facts

Watershed: 285 Square Miles

1 Mile Wide – 4.6 Miles Long

Average Depth: 35 feet

Max Depth: 63 feet

1940 – Swimming Banned

1970 – Fishing Banned





## Midland Ave RTF

# CSO Storage, Treatment and Conveyance Project



Conveyance project under construction through south side neighborhood  
causing significant disruption





Large diameter conveyance pipeline dwarfs front end loader and operator





CSO 020 and 021

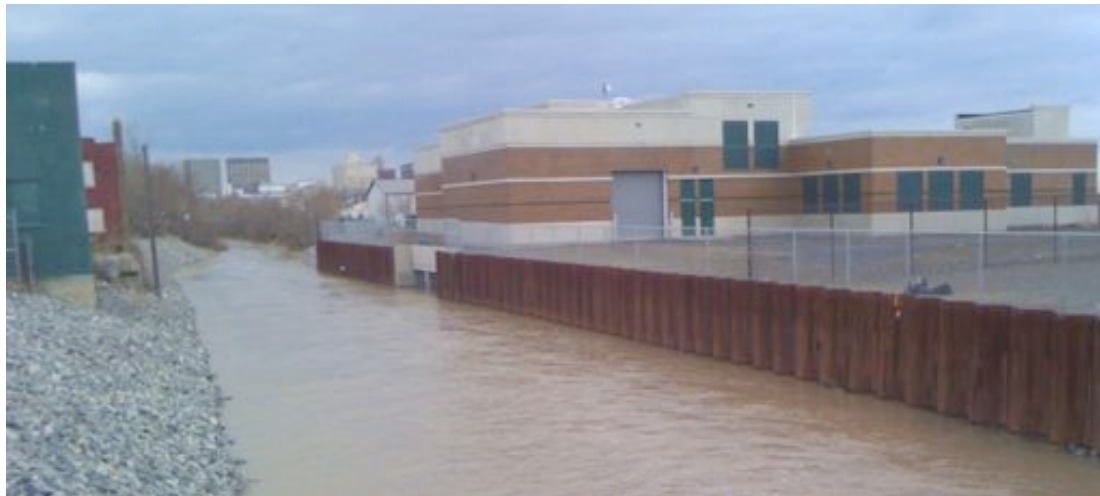


Sewer Separation

# Environmental Justice

*Green Infrastructure means...*

- *Injustice of Midland plant will not be repeated*
- *Onondaga Creek & Harbor Brook will be cleaner*
- *Community investment and beautification instead of further disruption*





# Syracuse would be pioneer in green approach to stormwater management

SYRACUSE, FROM PAGE A-1  
back its construction of concrete-and-steel facilities and place more emphasis on natural systems that use plants and soils.

Going green would cost less, county officials said, but it's unknown how much less.

*"Syracuse will be one of the leaders in the country, easily, if this approach is taken and effectively implemented. It's a big deal."*

— James M. Tierney,

DEC's assistant commissioner for water resources

latest cleanup plan, called on... de... County...

The tanks would be underground or "mostly underground," said engineer Matthew J. Marko, vice president of CH2M Hill, a consultant. The county also would undertake several sewer separation projects and other traditional



## Green Infrastructure

- Solution to capacity problems with underground storage – reduce the rain!

- Proposed by Onondaga Nation

## Victory!! Onondaga County Scraps Sewage Plants in Favor of Green Infrastructure

Lindsay Speer

Change is in the air, and it smells sweet. Onondaga County Executive James Mahoney announced on May 2, 2008 that the County will not award construction bids for the proposed Clinton Regional Treatment Facility (CRTF) in Amherst Square. Instead, it will explore more environmentally and economically sound options with the State of New York, Atlantic States Legal Foundation, City of Syracuse, and, for the first time, the Onondaga Nation and other community stakeholders.

### Persistence Pays Off

Syracuse has an antiquated combined sewer system, in which stormwater runoff is directed into the sanitary sewers. A heavy rainfall results in Combined Sewer Overflows (CSOs), dumping sewage directly into Onondaga Creek. Onondaga County's previous solution was to treat the sewage with chlorine before dumping it into the

creek year-round, not just after storms, calling into serious question the effectiveness of the CRTF's end-of-pipe solution.

### Going Green

In January 2008, the Federal Environmental Protection Agency released a report urging municipalities to use green infrastructure, such as rain barrels, green roofs, and other methods to keep stormwater out of the sewer system. These developments combined with new County and State leadership this year to create a perfect storm for reversing the mandate of the Amended Consent Judgement (ACJ), which dictates the cleanup of sewage pollution in Onondaga Creek and Harbor Brook.

On June 18th, the Partnership for Onondaga Creek gave a presentation to Onondaga County and the NY State Department of Environmental Conservation to outline alternatives to the remaining phase of the Midland plan: a \$37 million, 12



Rain barrels are a simple solution actively recommended for protecting Onondaga Creek and other waterways. Photo: galsky123 on Flickr.com

to capture water using residential rain barrels and green roof installation on commercial buildings. The installation of residential

Partnership for Onondaga Creek  
2010 - lspeer@mrss.com

## *Catch the Rain:*

### **A new strategy for clean waterways in Syracuse**

*Communication and Education Plan Recommendations for the management of stormwater and combined sewer overflows (CSOs) in Onondaga County, New York*

*December 2008*

This document was developed through a collaborative process by the Green Infrastructure Communications and Education Committee. It is intended to provide a guide or road map for Onondaga County and the many others who are collaborating in this effort on how to inform and educate elected officials, local residents and other stakeholders on: 1) what is being done; 2) why it is being done; and 3) who has what role in carrying it out.

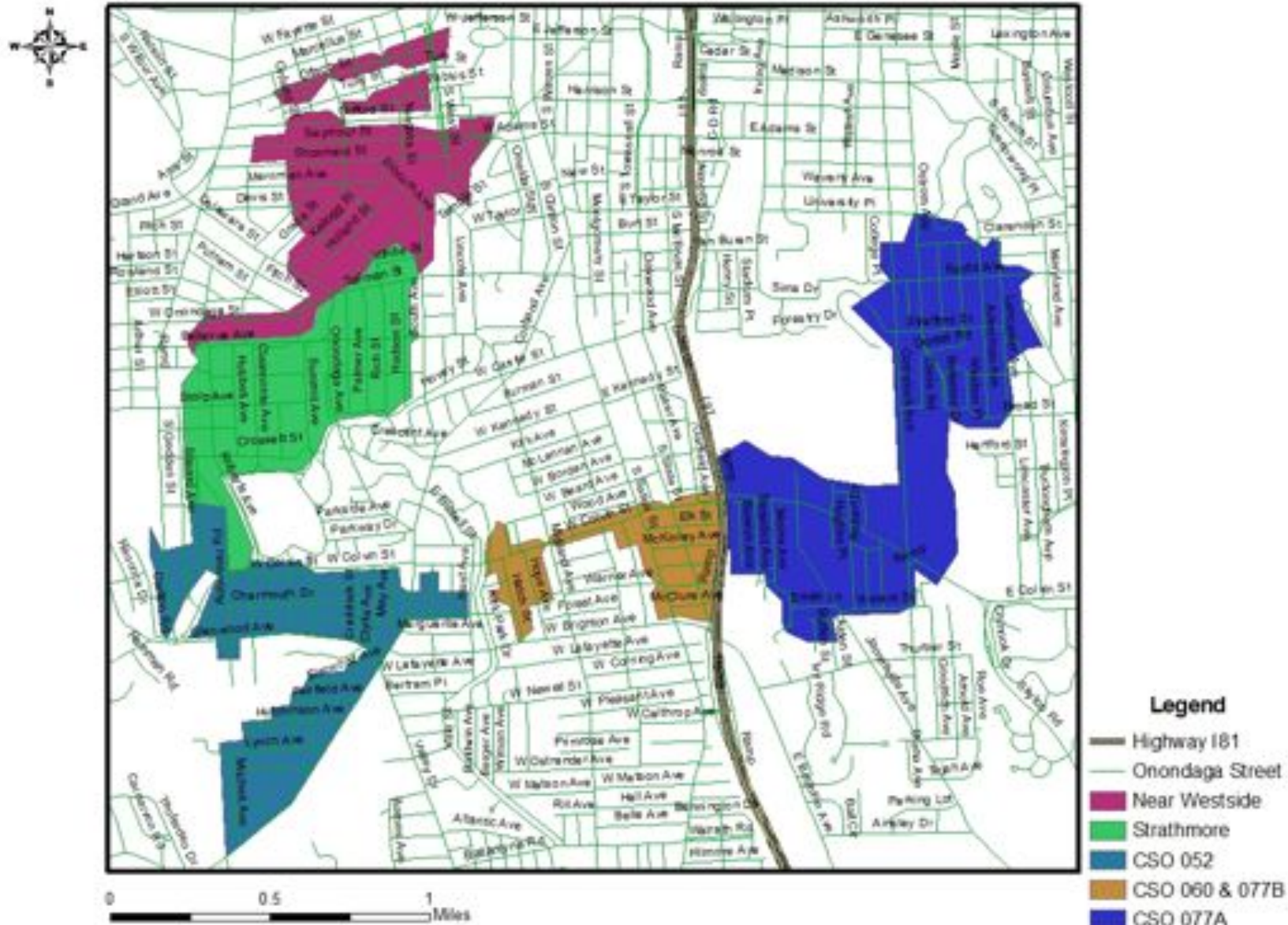
Khris Dodson, Committee Chair, on behalf of the Atlantic States Legal Foundation  
David Coburn, Onondaga County Executive's Office  
Sarah Eckel, Citizens Campaign for the Environment  
Christa Glazier, Office of Congressman Walsh  
Stephanie Harrington, New York State Department of Environmental Conservation  
Jean Kessner, AIDS Community Resources  
Lionel Logan, Partnership for Onondaga Creek  
Andy Maxwell, Community Development, City of Syracuse  
Amy Samuels, Cornell Cooperative Extension  
Lindsay Speer, Environmental Consultant for the Onondaga Nation  
Bruno Takahashi, SUNY ESF/ Atlantic States Legal Foundation  
Melissa Young, Environmental Finance Center, EPA Region 2



- During 2008 and 2009 the POC, Syracuse University and SUNY-ESF cooperated to obtain over 200 surveys among five neighborhoods of the Midland and Clinton Sewershed to assess public attitudes toward Green Infrastructure (GI) Implementation

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# And, the survey says...

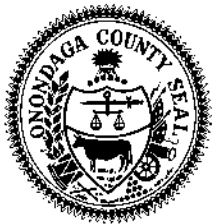
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- People really aren't that into trees!
- Maintenance of rain gardens is a significant barrier
- Education needed on effective rainbarrel use
- If it's free (or less than \$25) than count me in! Otherwise, I'm not so sure why I'd want to do this

# Education & Outreach

Save the Rain





...being enthusiastic!













# Bringing people together...

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# Save the Rain Programs

- Workshops
  - Intro to GI for Businesses
  - GI for New Homeowners
  - Community Workshop
  - Rain Barrel
  - Landscape Professionals
  - Pervious Products
  - GI for Youth
  - GI and Art for Children
  - Nature in the City
  - High school classrooms
  - Exhibiting at Events

Design Charettes  
Demonstration Projects



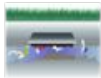


## Water Word Find

**How to play:** The word can be found in the puzzle by looking up, down, backwards, and diagonally.

Q U B Z H U B E V R E S N O C  
M T E S T V E C R U O S X G S  
F R E C H A R G E E U M O D N  
E Z W Q C M E N I R O L H C O  
T T O Q U A L I T Y X L M Y W  
U C D R I N K T P M U P Z B T  
L T P S W I M I C H S E R F B  
L M R I X P T O S E W E R Q I  
O E K E V A P O R A T E G P M  
P K D J A G Z F M G C O X I T  
C A R F Y T I T N A U Q R O R  
K L I Z K L M I R L R U I P E  
Q W V Q T F R E U Z W L X E T  
B P E E M P M D N I E U J E A  
O T R B S E E S A T R A I N W

Chlorine	Lake	Rain	Spring
Conserve	Pollute	Recharge	Swim
Drink	Protect	River	Test
Evaporate	Pump	Sewer	Toilet
Filter	Quality	Snow	Treatment
Fresh	Quantity	Source	Water



Don't put  
trash down  
the drain!



Remember to remind  
Mom and Dad that  
the water from your  
house ends up in  
everyone's lake!

## How to Prevent Water & Storm Sewer Pollution

### Stormwater Pollution

#### What is Stormwater?

Stormwater is water from rain or melting snow that does not soak into ground. It flows from rooftops, over paved areas, bare soil, and sloped terrain. As it flows, stormwater runoff collects and transports soil, animal waste, salt, pesticides, herbicides, oil and grease, debris and other potential pollutants.

#### What is the Problem?

Rain and snowmelt wash pollutants from streets, construction sites, and land into storm sewers and ditches. Eventually, the storm sewers and ditches empty the polluted stormwater directly into streams and rivers with no treatment. This is known as stormwater pollution.

Polluted stormwater degrades our lakes, rivers, wetlands and other waterways. Nutrients such as phosphorus and nitrogen cause the overgrowth of algae resulting in oxygen depletion in waterways. Toxic substances from motor vehicles, and chemical application of pesticides, herbicides, insecticides and salt to lawns and other areas. Risk factors from animal wastes and improper connections to storm sewer systems can make lakes and waterways unsafe for walking, swimming and fish consumption. Eroded soil is a pollutant as well. It clouds the waterway and interferes with the habitat of fish and plant life.

#### Best Management Practices

- Clear and contain topsoil and mulch during construction.
- Plant rain gardens of native drought- and pest resistant plants to collect and filter rainwater.
- Install pervious pavement and gravel driveways to reduce stormwater runoff.
- Do not drain swimming pools into storm drains or road ditches.
- Install vegetative buffers along streams and drainage pathways.
- Compost or mulch leaves and yard debris rather than leaving to rot.
- Direct downspouts away from driveways or storm drains, or install rain barrels to collect roof runoff.
- Maintain septic systems to prevent failure and inspect every 3 years.
- Sweep up litter and debris from driveways and parking lots rather than having debris in storm drains.
- Plant vegetated filter areas or wetlands to trap pollutants along streets and driveways.
- Install and maintain sediment and erosion control measures during soil disturbing activities.
- Reduce amount of paved surfaces.
- Topsoil and recycle empty pesticide and fertilizer containers.
- Use proper spray notification signage and comply with neighbor notification regulations.
- Comply with NYS Department of Environmental Conservation pesticide application regulations.
- Use Integrated Pest Management (IPM) to avoid runoff or leaching from excess chemical applications.
- Avoid using chemicals near waterways or storm drains.
- Dispose of unused or empty pesticides in accordance with NYS DEC and US EPA regulations.
- Fill tanks on a gravel surface, away from storm drains, sewers or ditches.
- Avoid spraying in windy conditions or when rain is in the forecast.
- Provide spill containment at storage facilities and store chemicals away from floor drains.

# Brochures, activity books, bookmarks, and a board game:

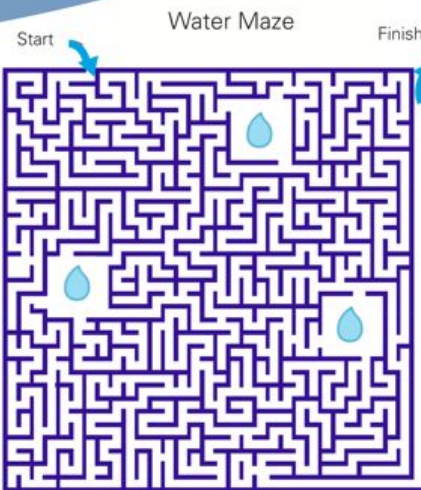
## “Raindrop Run”

Save the Rain

Only Rain in the Drain

Help prevent pollution out of Onondaga Creek and Onondaga Lake? Try these puzzles and look for hints along the way!

What will you pledge to do to help clean up our creek and lake?



Always pick up your  
pet's waste!



Never wash your car  
on pavement!



Check the weather  
and don't fertilize the  
lawn before it rains!

## Residential Rain Gardens



Save the Rain

Everything you need to  
know to build a rain  
garden

Make sure to  
pick up your  
dog's waste!

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It's Your  
Doodie!

Dog waste can  
contaminate our  
lake, our creek,  
and our streams.

Save the Rain



Onondaga County

[www.savetherain.us](http://www.savetherain.us)



Onondaga County

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Save the Rain



# Our many project partners include...

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Save the Rain

# Looking Forward and Beyond

- Moving from CSOs to suburban MS4s
- Demonstration Projects
- Participating in NYS Great Lakes Green Infrastructure communities; soon expanding to additional upstate communities
- Inter-government collaboration; sharing between communities; stormwater coalitions
- New EPA stormwater rule



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Savetherain.us