

RUTGERS

THE STATE UNIVERSITY
OF NEW JERSEY

Milltown Borough Parkview Elementary School

Rain Garden Installation and Education

Presented at

Fixing Flooding One Community at a Time Conference

Sayreville, NJ

February 26, 2016



Statement of Problem

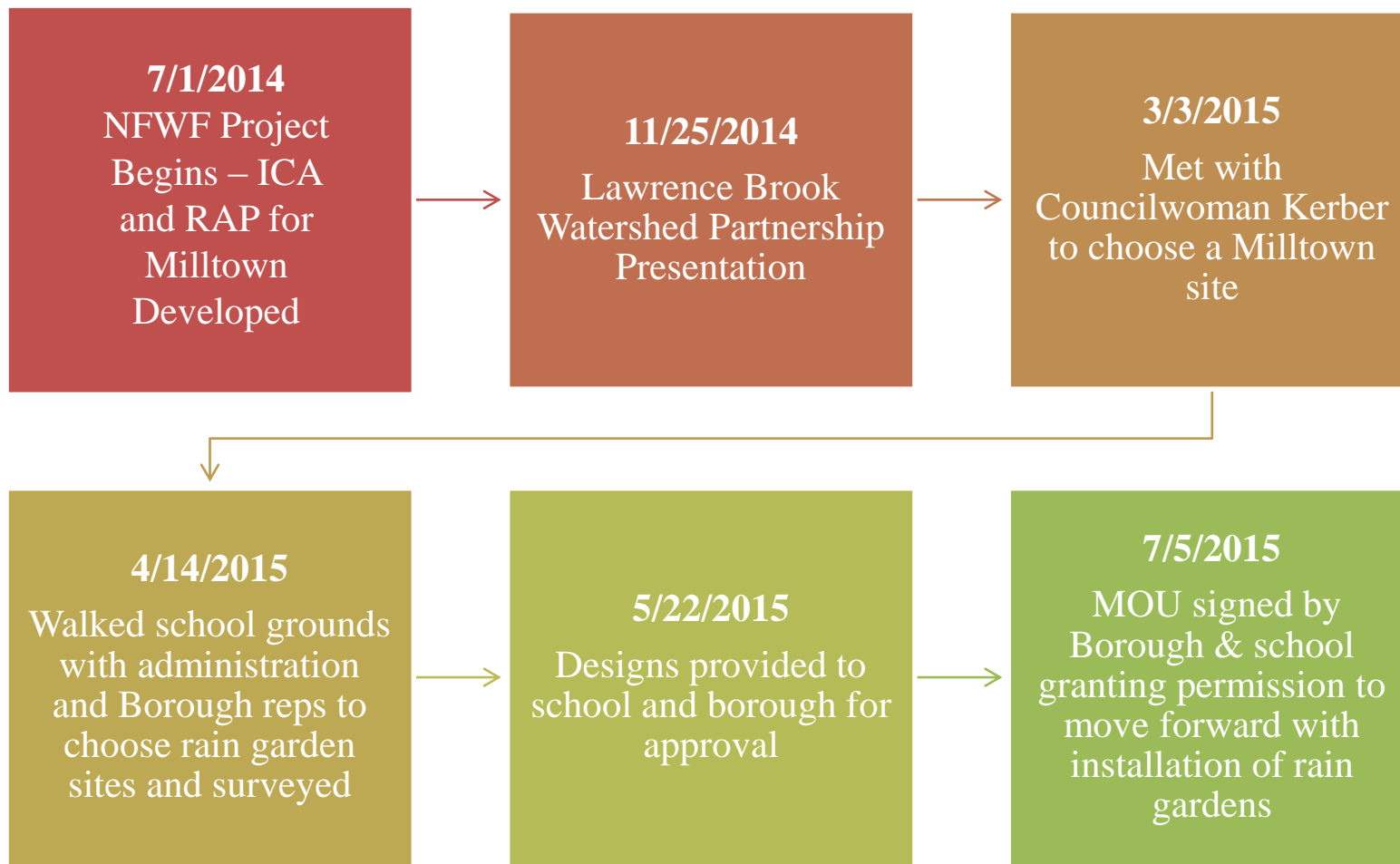
Reduce impervious cover and help alleviate flooding within Milltown Borough.



Aftermath of Hurricane Irene August 2011

Images courtesy of StephanieNJRealtor

Timeline of Process

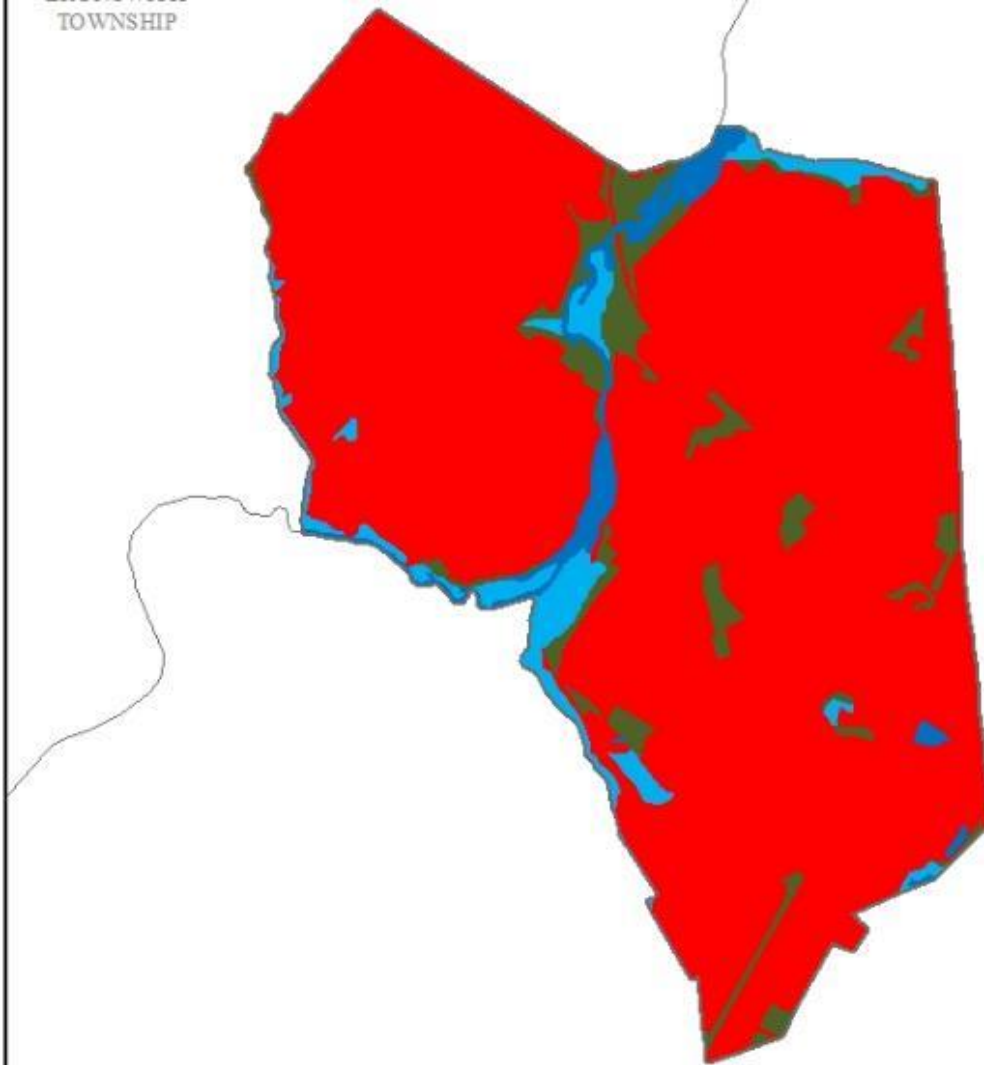


Milltown Borough Impervious Cover Assessment (ICA)

Land Use Types for Milltown Borough

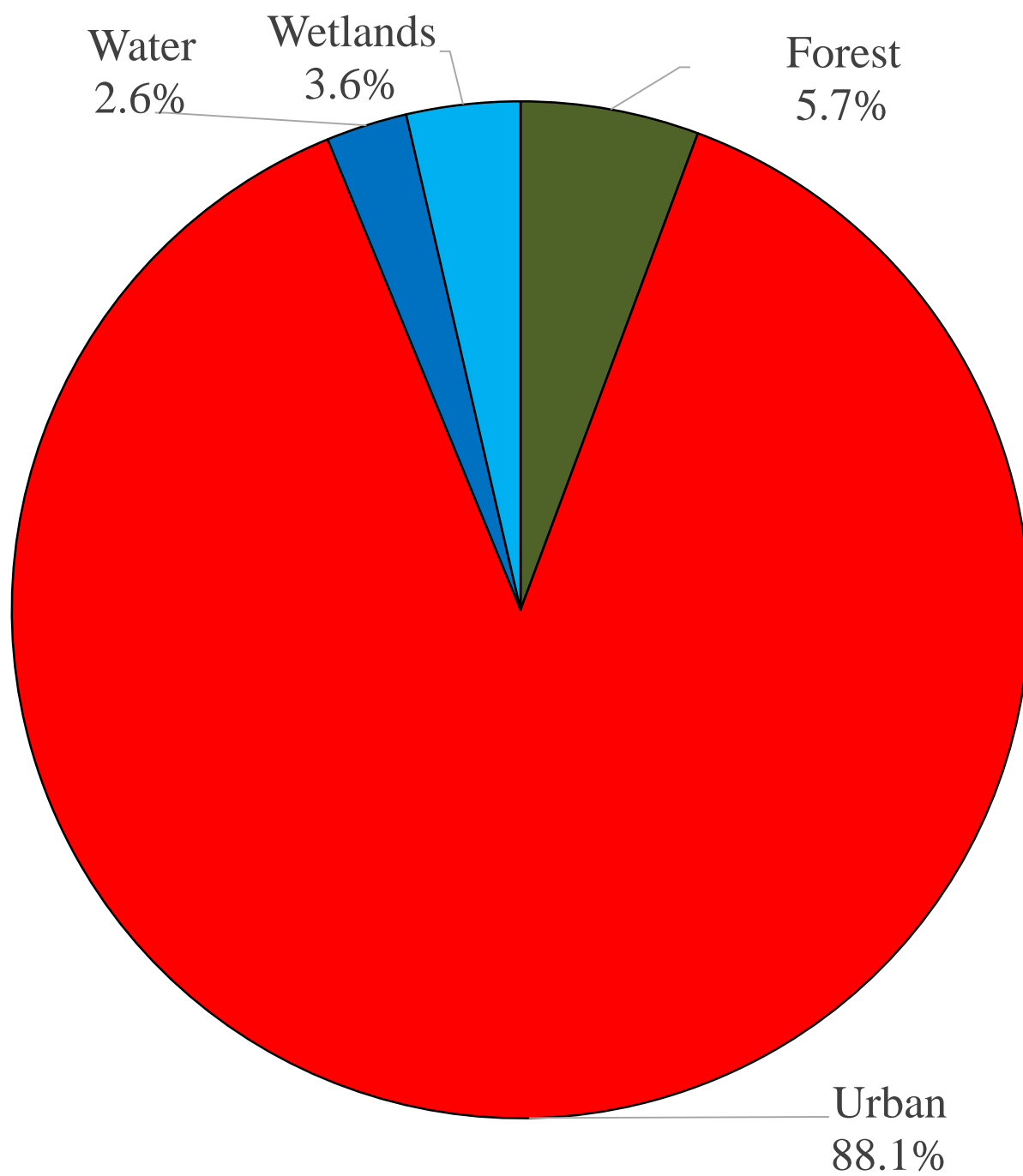
NORTH
BRUNSWICK
TOWNSHIP

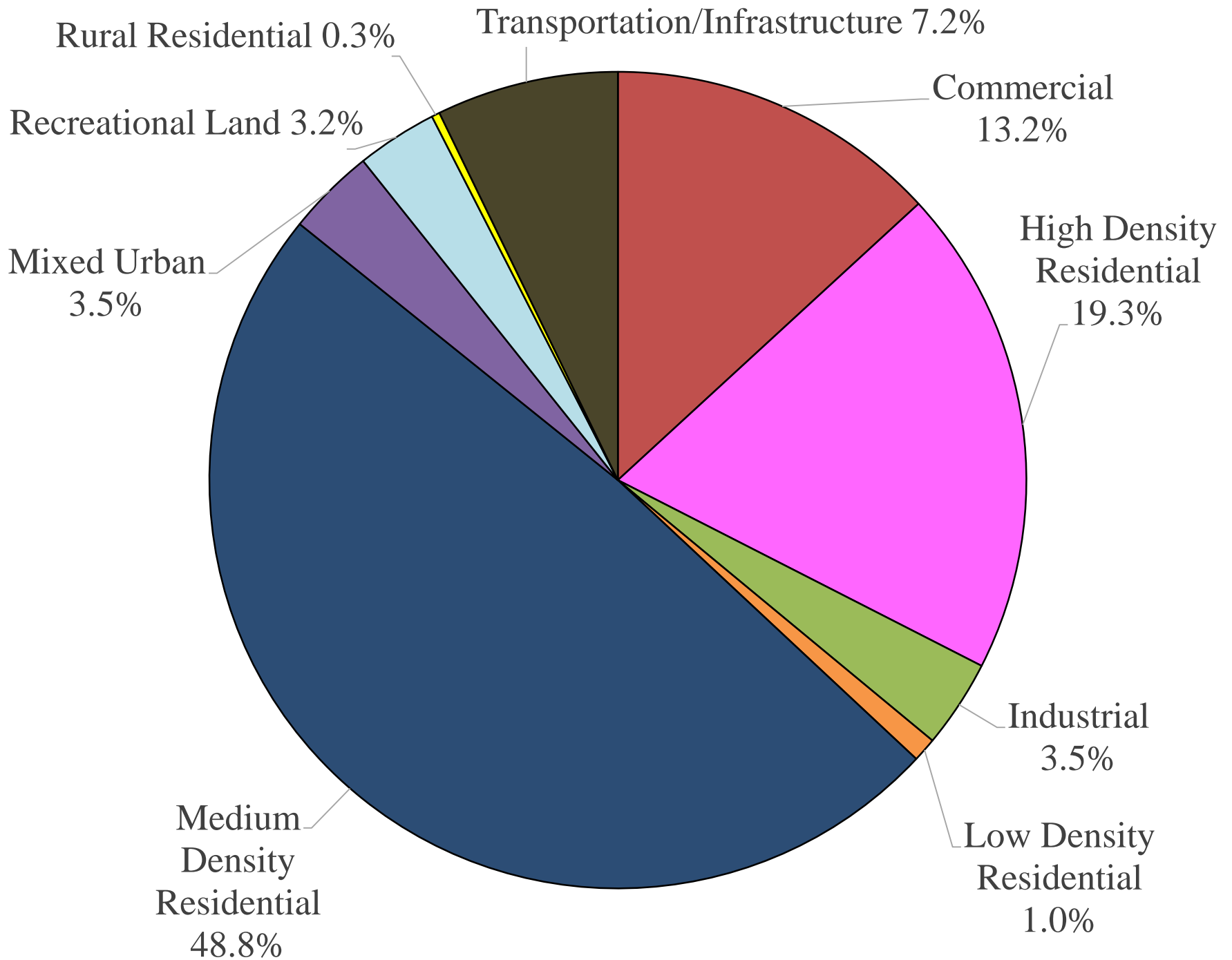
EAST
BRUNSWICK
TOWNSHIP



0 0.125 0.25 0.5 Miles







Subwatersheds of Milltown Borough


NORTH
BRUNSWICK
TOWNSHIP

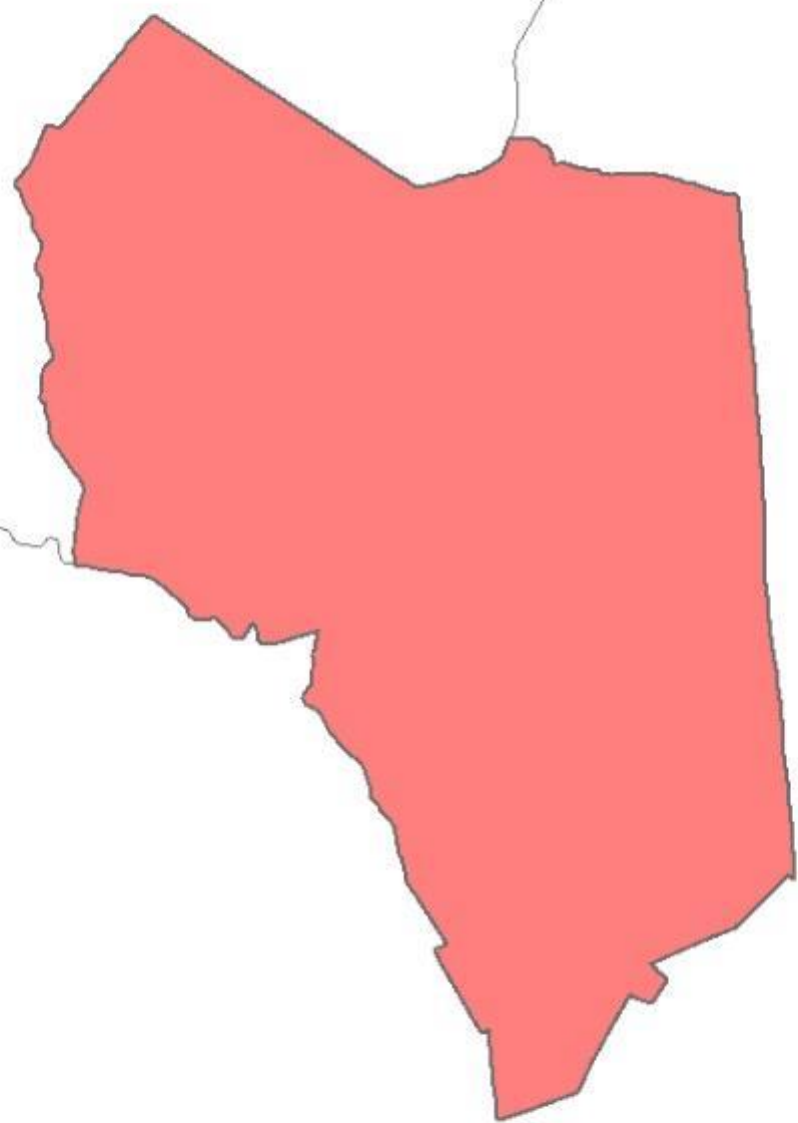
EAST
BRUNSWICK
TOWNSHIP



0 0.125 0.25 0.5 Miles



 Lawrence Brook



Watershed	Total Area (ac)	Impervious Cover (ac)	%
Lawrence Brook	1021.2	406.6	40.9%
Total	1021.2	406.6	40.9%

Subwatershed	NJ Water Quality Storm (MGal)	Annual Rainfall of 44" (MGal)	2-Year Design Storm (3.3") (MGal)	10-Year Design Storm (5.0") (MGal)	100-Year Design Storm (8.2") (MGal)
Lawrence Brook	13.8	485.8	36.4	56.3	94.9
Total	13.8	485.8	36.4	56.3	94.9

NJ Water Quality Storm - If this 13.8 MGal of runoff was captured and cleaned, it could provide enough water for **126 homes in Milltown Borough** for an entire year!

Milltown Borough Impervious Cover Assessment *Parkview Elementary School, 80 Violet Terrace*

PROJECT LOCATION:



SITE PLAN:



- 1 BIORETENTION SYSTEMS:** These rain gardens will capture, treat, and infiltrate runoff from the grass and paved areas around the school. The existing catch basins will handle any overflow from the gardens. The rain gardens will reduce sediment and nutrient loading to the local waterway while providing beautiful landscaping to the school grounds. The gardens will also provide habitat for birds, butterflies, and pollinators. They also can be incorporated into the elementary school science curriculum.
- 1a TRENCH DRAIN:** A trench drain will carry stormwater from Violet Terrace into bioretention system 2 & 5 for treatment.
- 2 POROUS ASPHALT:** Porous pavement promotes groundwater recharge and filters stormwater and will help capture runoff from the parking lot and surrounding walkways.
- 3 EDUCATIONAL OPPORTUNITY:** The RCE Water Resources Program, *Stormwater Management in Your Schoolyard*, can be delivered at Parkview Elementary School to educate the students about stormwater management.

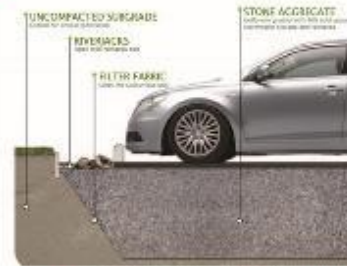
1 BIORETENTION SYSTEM



1a TRENCH DRAIN



2 POROUS ASPHALT



3 EDUCATIONAL PROGRAM

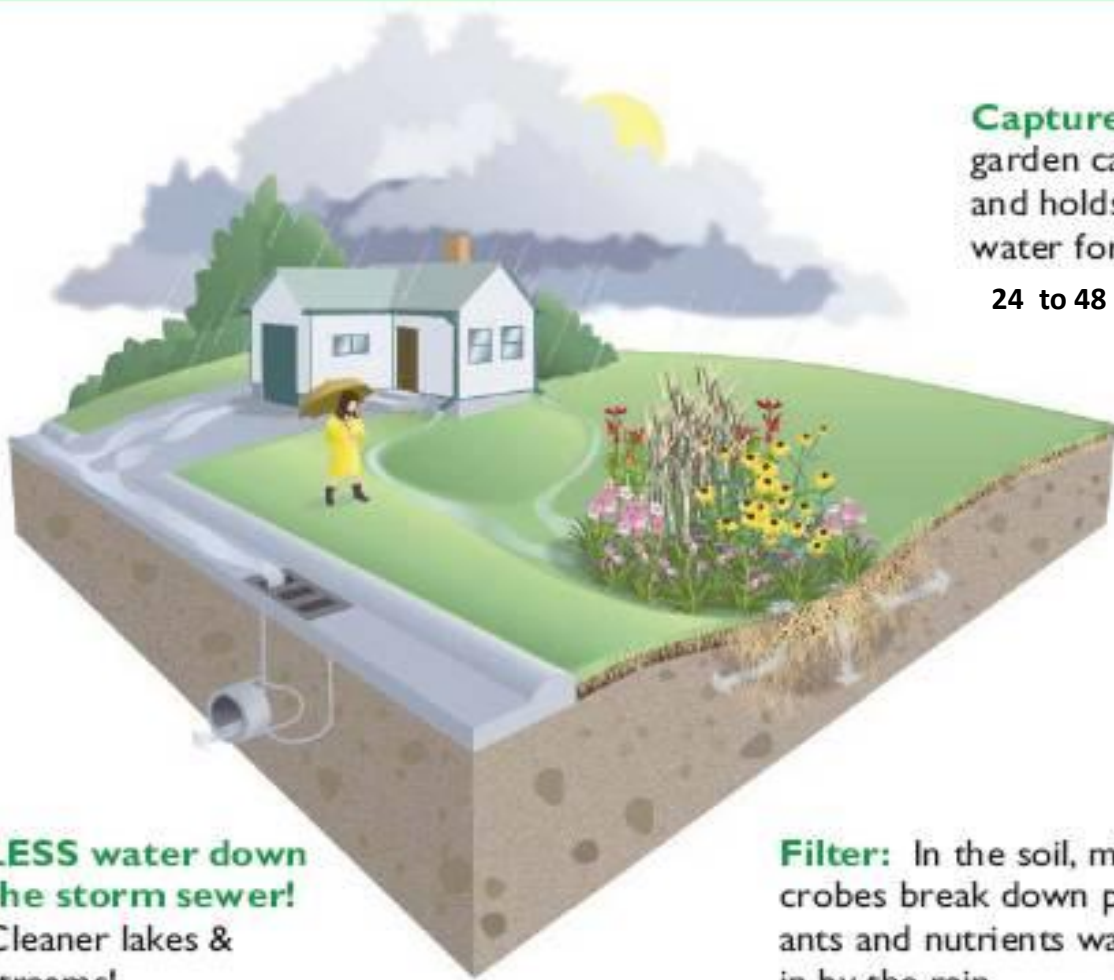


Rain Gardens

A rain garden is a landscaped, shallow depression that is designed to intercept, treat, and infiltrate stormwater at the source before it becomes runoff. The plants used in the rain garden are native to the region and help retain pollutants that could otherwise harm nearby waterways.



Rain Gardens



Capture: A rain garden catches runoff and holds standing water for no more than 24 to 48 hours.

Soak: Deep-rooted plants loosen the soil, creating a sponge zone. Water soaks in and groundwater aquifers are recharged.

LESS water down the storm sewer!
Cleaner lakes & streams!

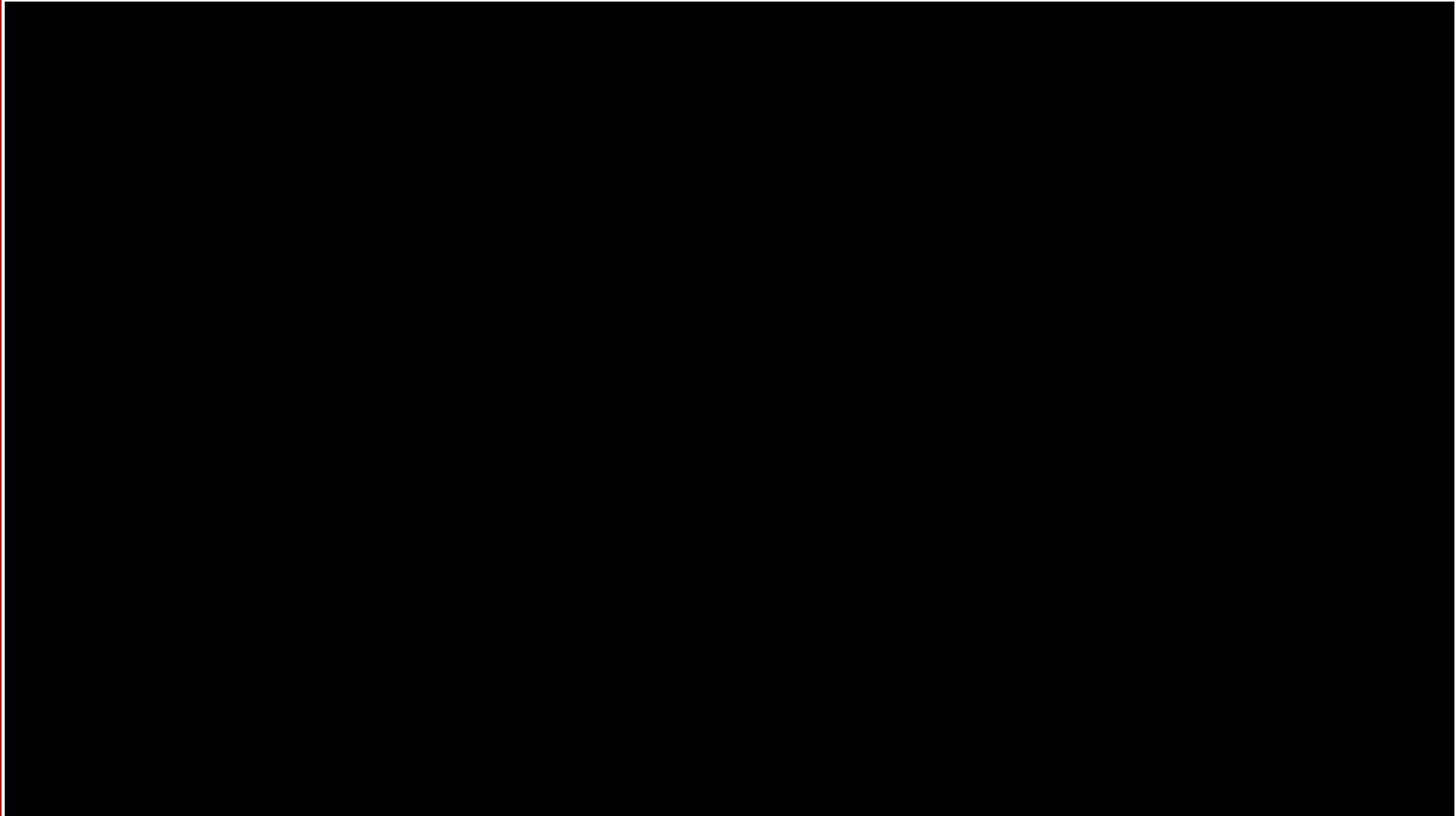
Filter: In the soil, microbes break down pollutants and nutrients washed in by the rain.

Courtesy of City of Maplewood, MN



Next Steps

- Councilwoman Doriann Kerber's persistence
- Met with Milltown School District personnel and Borough to determine best location for rain gardens
- RCE Water Resources Program surveyed site, compiled design, provided construction documents to Enviroscaapes
- Entered Memorandum of Understanding with Milltown Borough and Milltown School District
- Rain gardens were installed by Enviroscaapes, with technical oversight by RCE Water Resources Program



Parkview Elementary School Milltown, NJ



April 2015



August 2015

Parkview Elementary School Milltown, NJ



June 2015



August 2015

Installation

- Began 8/5/2015



- Complete 8/19/2015



Parkview Elementary School Milltown, NJ



April 2015



August 2015

EDUCATIONAL PROGRAM

October 14-15, 2015

RUTGERS
New Jersey Agricultural
Experiment Station



Educated 236 1st - 3rd Graders



Visual, Hands on Lesson



Educated 15 Middle Schoolers



Lessons Learned

- Make a connection with a “doer” engaged in the community – Thank you Doriann and the Milltown Borough School District

Program Funding Provided by

National Fish and Wildlife Foundation



Michelin Field Impervious Surface

- Reaching out to the community and surrounding organizations, we are on a quest to take this large impervious surface and make this a more pervious community area for the Borough. In addition, our Borough Employees will assist us with our project once we decide what to do with this space
- Goals: reach out to Rutgers Cooperative Extension, Milltown Green Team, Milltown School District Green Teams, local businesses and volunteers for this project.

Michelin Park



Michelin Park



Ideas?

- Community Wild Flower Garden
- Vegetable Garden
- Outdoor Exercise Equipment
- Maybe a fun exploring or adventure to spark creativity
- Who knows, once we get the ideas going we will create something spectacular