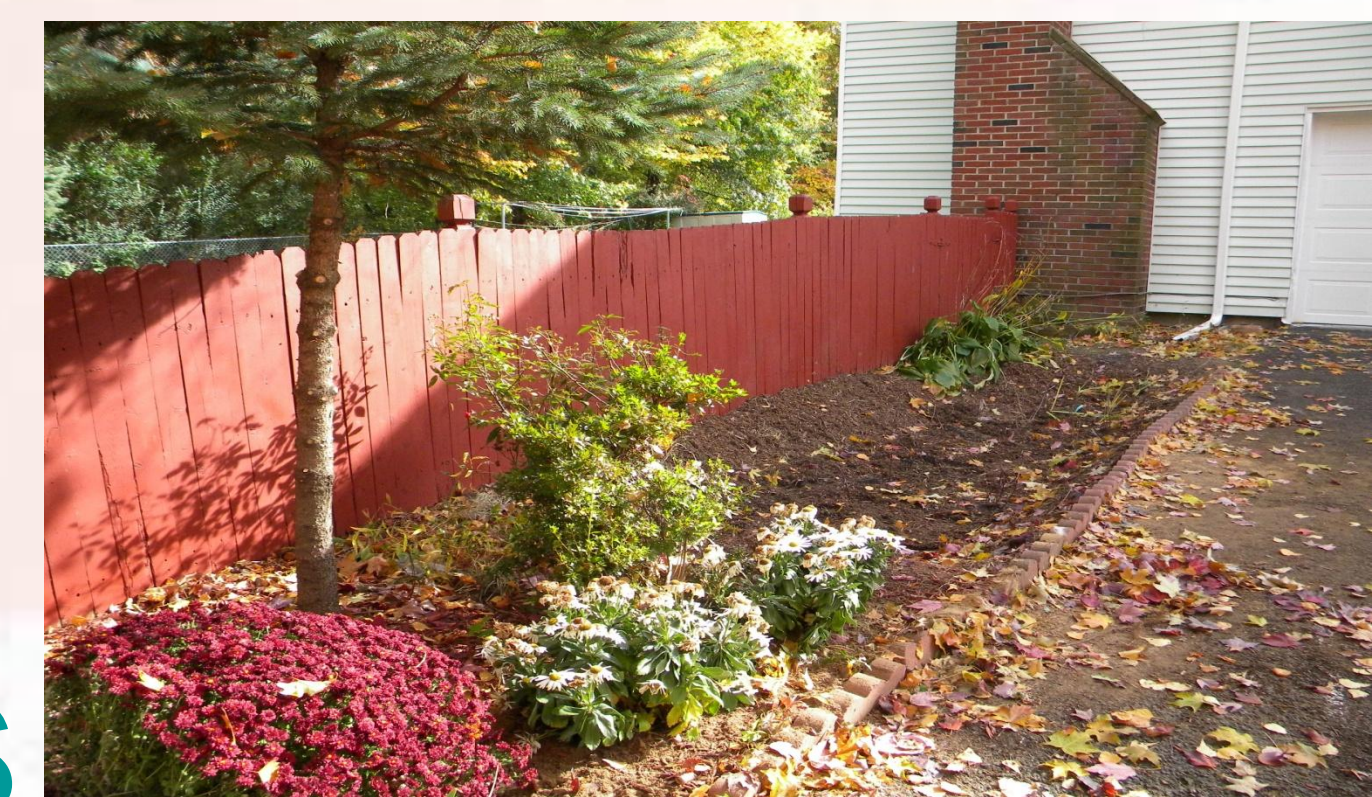


# Implementing the Troy Brook Stormwater Management Plan- Cluster Rain Gardens.

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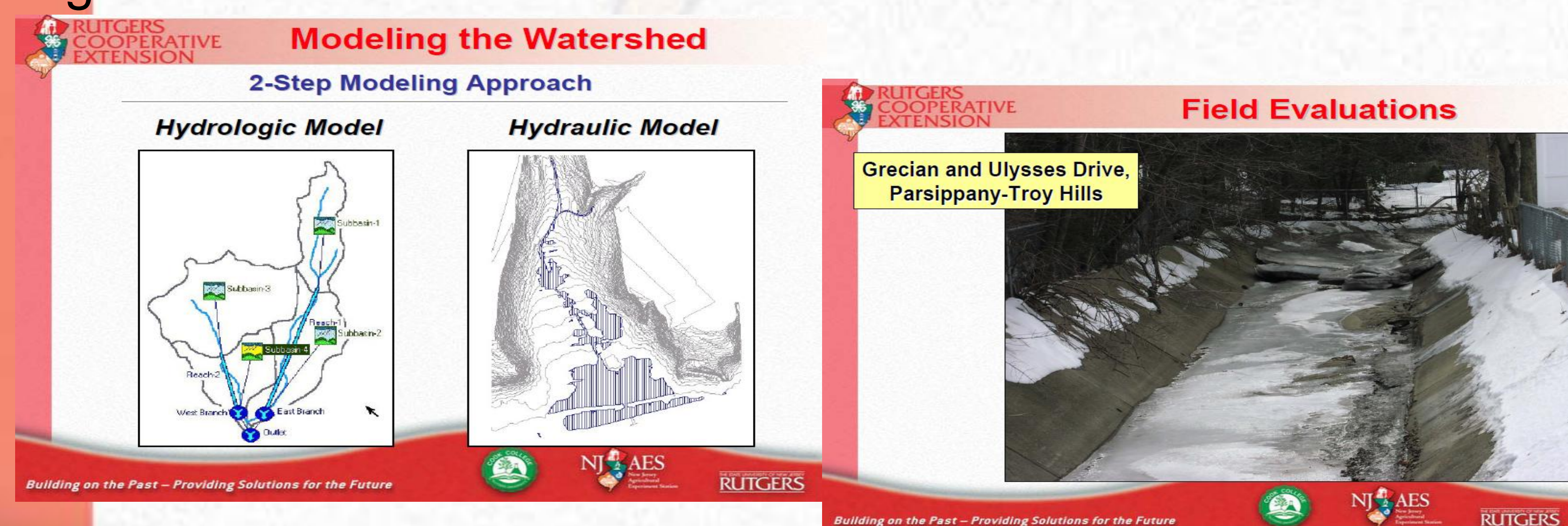


## ABSTRACT

In 2005 Rutgers Cooperative Extension developed a Regional Stormwater Management Plan (RSWMP) for the Troy Brook Watershed (Obropta and Goodrow) which included a Regulatory component under NJ Stormwater Rules and a voluntary component consisting of Best Management Practices (BMPs) and educational strategies. Disconnection of impervious surfaces in a sub-basin that was modeled to have high pollutant loadings was attained through an educational effort in the Hills of Troy neighborhood and ultimately the installation of five rain gardens clustered in a residential area. Approximately 43,280 gallons of water were disconnected/year from the Troy Brook. This project is one of 6 on-going, prioritized projects to reduce stormwater runoff in the Troy Brook watershed.

## TROY BROOK REGIONAL STORMWATER PLAN

This project is one of 6 low-impact development projects being implemented as part of the Troy Brook Regional Stormwater Management Plan to reduce stormwater runoff in the Troy Brook watershed. This neighborhood was identified both through modeling and field evaluations as a high pollutant loading area and an area with significant flow issues (Obropta and Goodrow 2005). Implementation of residential rain gardens in a cluster within a neighborhood is a demonstration in NJ.



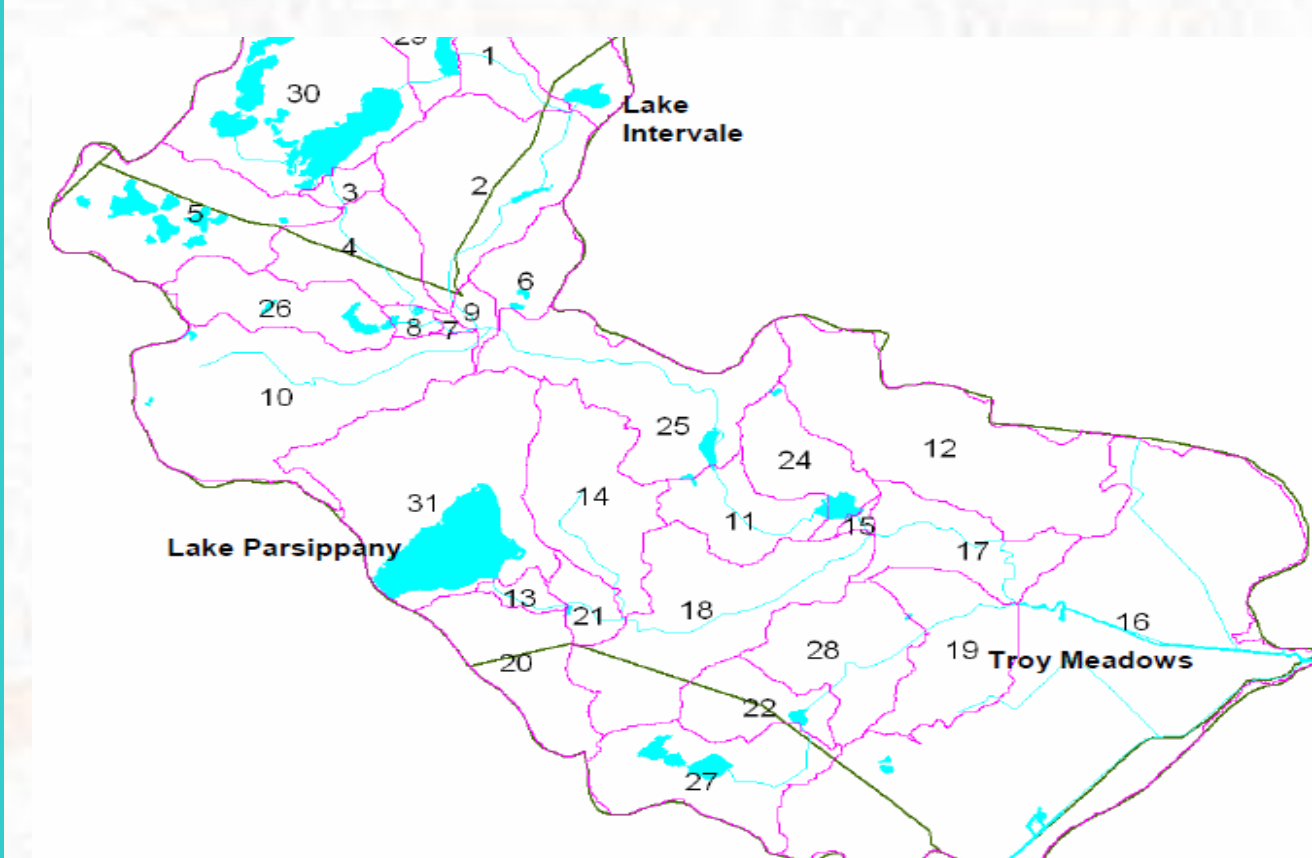
Models were run for the Troy Brook RSWMP (Obropta and Goodrow 2005).

Field evaluations conducted as a component of the RSWMP (Obropta and Goodrow 2005).

## METHODS

Plan → Implementation

Determine the site:



Disconnection of impervious surfaces in a sub-basin that was modeled to have high pollutant loadings was attained through:

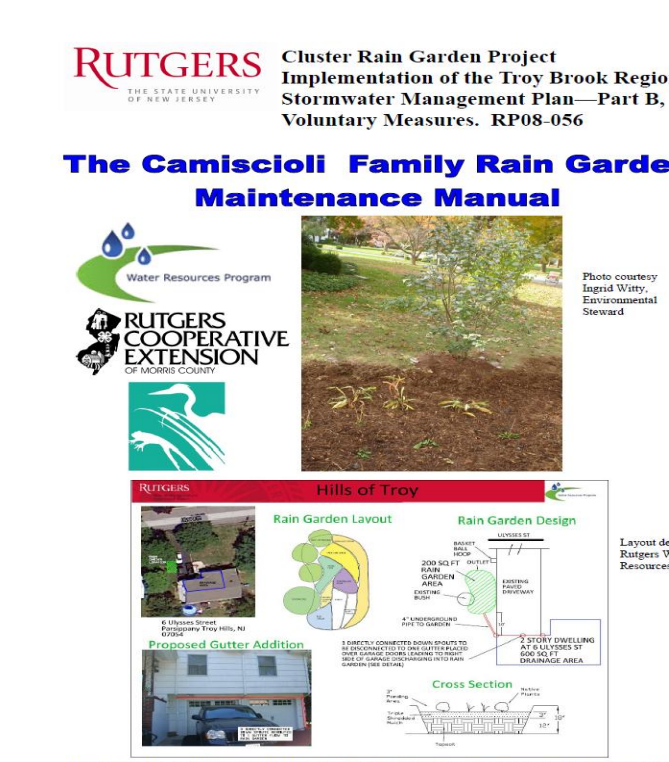
- Educational canvassing effort in the Hills of Troy neighborhood
- Assistance from an Environmental Steward volunteer who earned volunteer hours to complete certification
- Media coverage included website coverage on both homeowner association and municipal website and local newspaper coverage
- Flyers were developed to provide information on stormwater runoff, the Troy Brook RSWMP and Rain Gardens to 196 homeowners
- Rutgers Extension Environmental Agent and volunteer Environmental Steward spoke in depth to 58 homeowners.
- Follow up meetings were conducted to assess level of interest and conduct a preliminary site assessment.
- For select homeowners engineers from Rutgers Water Resources Program conducted survey measurements
- Gardens were designed and homeowner approval was gained.
- NJ Tree Foundation's Back to work Program installed 5 Rain gardens by hand to avoid heavy equipment on residential lawns.
- Gutters were realigned to drain to the gardens as necessary.



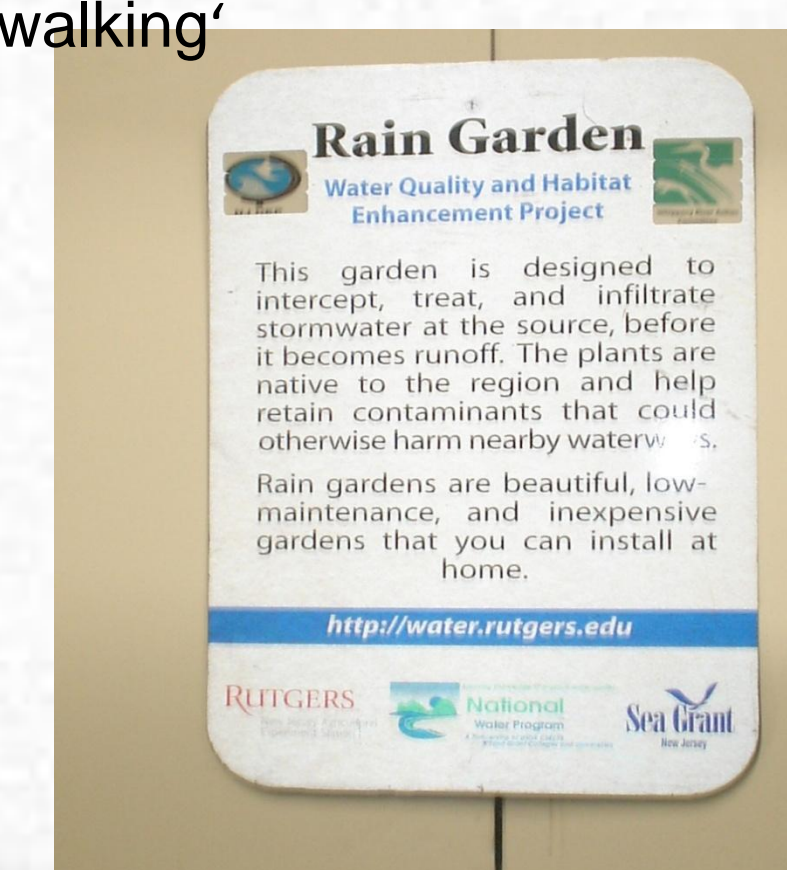
## OUTCOMES/MPACTS

- 196 homeowners in the Hills of Troy neighborhood were introduced to stormwater runoff and impacts on Troy Brook and the benefits of rain gardens and disconnection through flyers, personal conversations, newspaper articles, municipal website and homeowner website.
- 5 rain gardens installed in their neighborhood with educational signs visible from the street.
- Five rain gardens were installed reducing 43,280 gallons (203 ft<sup>3</sup>) of stormwater runoff to the Troy Brook annually
- Five homeowners received in-depth education on rain gardens and stormwater runoff.
- Approximately 0.012 lbs of total phosphorus (TP) is reduced from the Troy Brook,
- A template for a residential maintenance manual was developed.
- A curriculum based on case study providing how-to focus a neighborhood and achieve a cluster rain garden project in a residential area. Curriculum includes flyer template, pictorial book with script, press release, preliminary site assessments, follow up survey, Maintenance manual template, follow up maintenance sheets, and lessons learned.

Education continues. Signs are visible from the street at all 5 locations in this "walking" neighborhood.



50- pp Maintenance Manual specific to each of the 5 homes, includes their plants and layouts, percolation test results and a mail-in maintenance sheet.



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