New Jersey Rain Garden Rebate Program:
Fostering the Adoption of Stormwater Management Practices
Our Mission is to identify and address community water resources issues using sustainable and practical science-based solutions.

The Water Resources Program serves all of New Jersey, working closely with the County Extension Offices.
Extension Model

• Conduct needs assessment of local stakeholders to identify problems
• Assemble the best available science to address these problems
• Develop and deliver educational and outreach programs to provide solutions to stakeholders
• Work with local stakeholders to implement the necessary solutions
• Measure impacts and adapt programs to enhance impacts
Assessing the Need

- Informal meetings with local stakeholders – residents, community groups, watershed groups, NJ Department of Environmental Protection, New Jersey Water Supply Authority
Statement of Problem

Reduce stormwater runoff from directly entering the Raritan River by providing incentives and technical assistance to homeowners to better manage stormwater.
Assembling the Best Available Science to Find a Solution
What is Stormwater?

Stormwater is the water from rain or melting snows that can become “runoff,” flowing over the ground surface and entering lakes and streams.
To minimize impact of stormwater runoff, you must control runoff from impervious surfaces.
Lots of impervious surfaces in the study area
The Impact of Development on Stormwater Runoff

more development → More impervious surfaces → more stormwater runoff
We must deal with impacts from impervious cover

Are there impervious surfaces that you can eliminate?

If we can't eliminate it, can we reduce it?

If we can't eliminate or reduce it, can we disconnect it?

Are there impervious surfaces that you can harvest rainwater for reuse?

Are there conveyance systems that can be converted to bioswales?
Connected or Disconnected?
The Solution...

PLACE A RAIN GARDEN BETWEEN TWO IMPERVIOUS SURFACES

REDUCE THE AMOUNT OF RUNOFF ENTERING STORM SEWERS
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
Develop and deliver educational and outreach programs to provide solutions to stakeholders.
Program Details

• Partnered with New Jersey Water Supply Authority
• Focused on Bridgewater, Raritan Borough, and Somerville
• One educational session (1-1/2 hours)
• One-on-one technical sessions (30 minutes per homeowner)
• Rebates of $3 per square foot of garden
• Inspections of completed gardens
• Evaluation of impact
Educational Sessions

Photo courtesy of: NJWSA
Pre/Post Survey
Q: A typical ponding depth for a rain garden?

Pre Survey

- Correct: 4%
- Incorrect: 27%
- Blank: 69%

Post Survey

- Correct: 16%
- Incorrect: 5%
- Blank: 79%
Q: A rain garden should be sized based upon?

A: A. Amount of impervious area draining to it
   B. Target water quality volume
   C. Depth of surface storage
   D. Soil percolation
   E. All of the above
   F. Not sure
Take Home Handouts
CHECK YOUR SOIL

• Infiltration/Percolation Test
  1. Dig a hole in the proposed rain garden site (12” deep, 4-6” wide)
  2. Fill with water to saturate soil and then let stand until all the water has drained into the soil
  3. Once water has drained, refill the empty hole again with water so that the water level is about 1” from the top of the hole
  4. Check depth of water with a ruler every hour for at least 4 hours
  5. Calculate how many inches of water drained per hour
RAIN GARDEN DESIGN FORM

HOW BIG DO YOU WANT YOUR RAIN GARDEN TO BE?

_________________ FEET LONG X __________________ FEET WIDE

WHAT ARE THE GARDEN SITE'S CONDITIONS?

- **SUN**
  - [ ] Full shade
  - [ ] Partial shade
  - [ ] Sunny

- **SOIL**
  - [ ] Sandy soil
  - [ ] Loam soil
  - [ ] Clay soil

- **DRAINAGE**
  - [ ] Well drained
  - [ ] Poorly drained
  - [ ] Compacted

- **SLOPE**
  - [ ] Flat
  - [ ] Slight
  - [ ] Steep
HOW MUCH OF YOUR PROPERTY IS MADE UP OF IMPERVIOUS SURFACES?

SQ. FT

WHAT IS THE DRAINAGE AREA OF YOUR PROPOSED RAIN GARDEN SITE?

SQ. FT

DO YOU HAVE A BASEMENT?

[ ] YES

[ ] NO

LANDSCAPE DESIGN PLAN

Draw a plan of your Rain Garden location, including the maximum area you are willing to dedicate to the garden. Please also attach a photo or two of the proposed area and mark on the plan where each photo was taken and the view it shows. Consider and include these details in your sketch on the graph paper below.

- Activities in your yard (i.e. kids playing, grilling, washing your car):

- Irrigation zones if applicable (i.e. sprinkler systems, drip irrigation):

- Sun/shade, wet/dry, steep slope, drainage patterns:

- Color preference for plants:

- Plant height restrictions:

- Block and hatch existing plants you want to keep
Block and hatch existing plants you want to keep.
Technical Support Sessions
Program Summary

• Attend an educational workshop or 1:1 educational meeting to learn about rain gardens
• Rain garden design and size must be developed by RCE WRP at technical support session or approved by RCE WRP.
• Native plants are preferred. Installed plants must not be an invasive species
• Renters need a signed written agreement from the homeowner/property manager prior to participation
• Participants must pledge to maintain their rain garden for at least five (5) years
Rebate Summary

- All rain gardens installed must pass inspection by RCE WRP or NJWSA
- Visa™ gift card for $3 per square foot of rain garden
- up to $450 per property
- Minimum size: 25 square feet
Work with local stakeholders to implement the necessary solutions
125-Roof Runoff

Design

Installed Rain Garden
8-Roof, Sump Pump and Driveway Runoff

Design

Installed Rain Garden
966-Roof Runoff

Design

Installed Rain Garden
406-Driveway Runoff

Design

Rain Garden Installed
5-Driveway Runoff

Design

Installed Rain Garden
240-Roof Runoff

Design

Installed Rain Garden
23-Garage Roof Runoff and Rain Barrel Overflow
Measuring impacts and adapting programs to enhance impacts
PRIOR TO INSTALLATION WHERE DID THE ROOF LEADER(S) DRAIN?

- Driveway
- Vegetation
- Piped to street
How much did the rebate influence your decision to install a rain garden?

- Completely: 33%
- Somewhat: 67%
- Not at all: 0%
How much did the design support influence your decision to install a rain garden?

- Completely: 58%
- Somewhat: 42%
What was your primary reason for installing a rain garden?

- To reduce stormwater runoff
- To direct water away from my house
- To increase the beauty of my yard
- To be environmentally friendly
- To increase groundwater recharge
- Other
NEW JERSEY RAIN GARDEN REBATE PROGRAM

- Educated about rain gardens
- Received personalized rain garden designs
- Installed a rain garden

Anticipated installations
Lessons Learned

• Design assistance was a primary influence for individuals to install a rain garden not the rebate!

• Local projects integrated into the educational program appears to increase participation (limit technical information and show examples!)

• Need to find assistance for those unable to physically do it themselves
34 projects eligible for a rebate
14 rain gardens installed

35% installation rate*
*Two participants installed two rain gardens
Program Funding Provided by

New Jersey Water Supply Authority