Connecting Community with Environmental Education

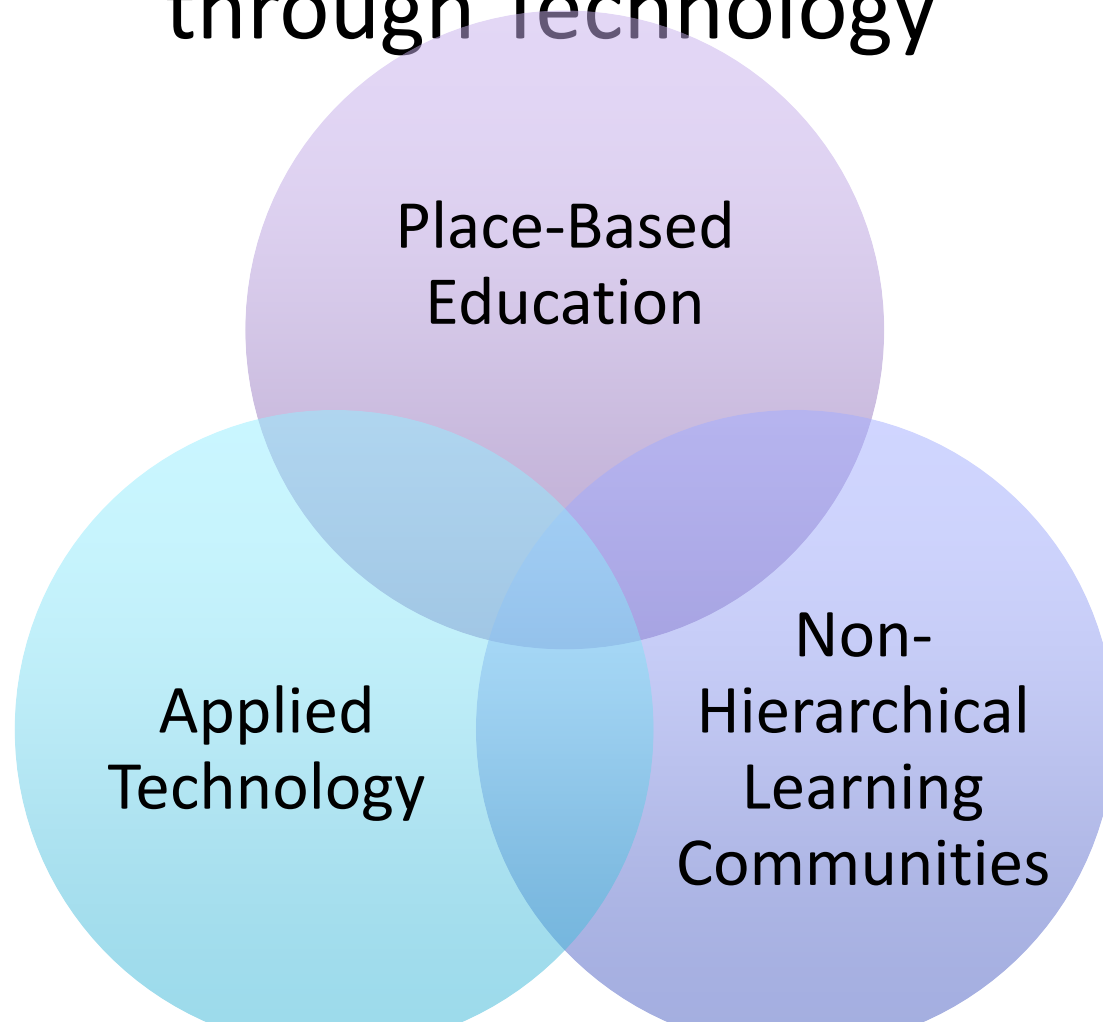**Ruth Kermish-Allen**
Education Director

Suzanne MacDonald
Community Energy Director
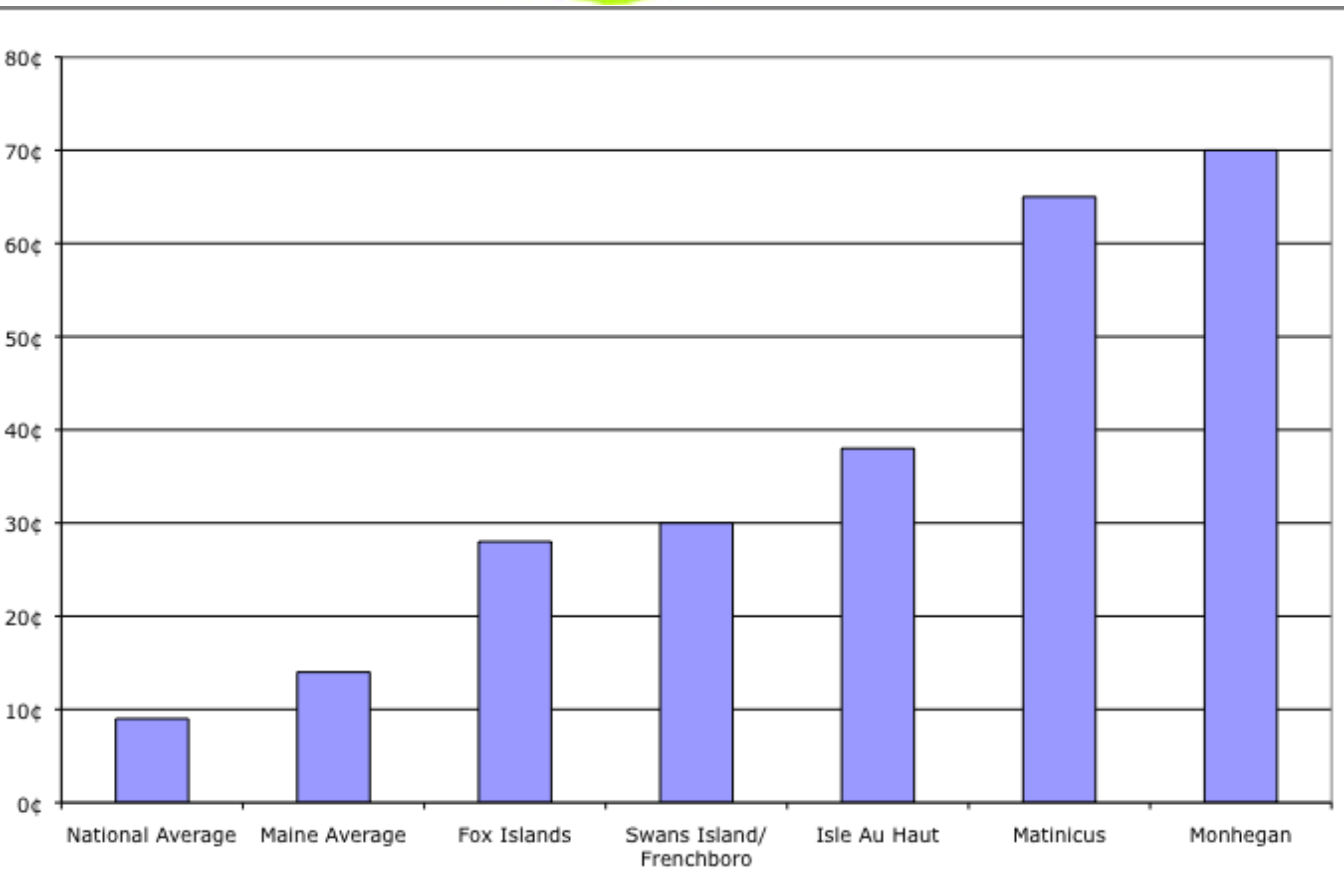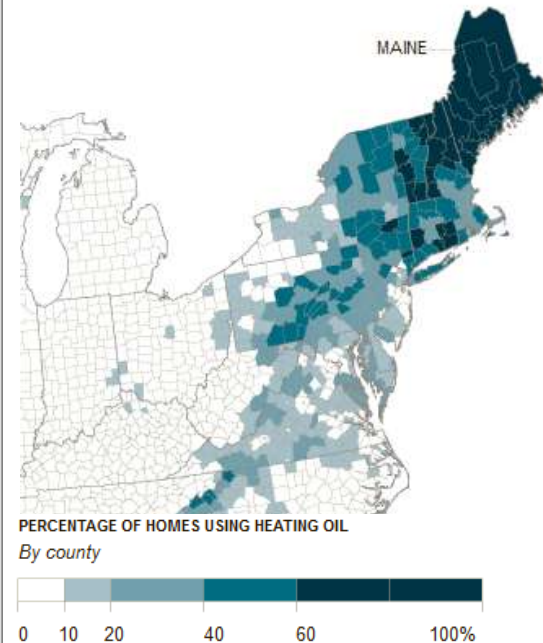
What We Do

Empowering Students to Find Creative Solutions for Community Questions through Technology

Place-Based Education

Applied Technology

Non-Hierarchical Learning Communities

energy for me
leadership | science | technology

2008 Electric Rates

PERCENTAGE OF HOMES USING HEATING OIL
By county

0   10   20   40   60   100%

New York Times:
"High Heating Oil Costs Hurt
More in Northeast"

ISLAND INSTITUTE

Project Goals

- Increase home and school energy efficiency

- Provide training and resources for students to become active in deciding their energy future

- Increase awareness of STEM careers

- Increase understanding of energy concepts and real-time data analysis

- Integrate technology into the classroom

Project Elements

- Energy for ME Curriculum and Activities
- **Community Energy Competition**
- Professional Development
- Career Awareness Events
- Monthly Energy Quests
- Annual Energy Fair
- Summer Institutes

School Facility Managers

They hold the KEYS to our schools!

- Facility manager training sessions
- Support for additional trainings and certifications
- Facilitating connections with students, teachers and administrators
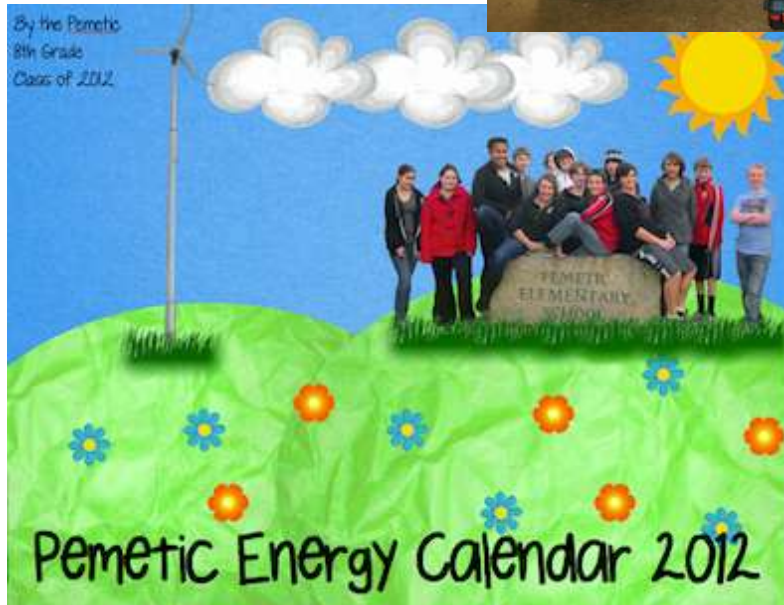- Focus on savings for schools

Industry and Community Partnerships

- More than **50 industry partners,** including First Wind, ReVision Solar, Evergreen Home Performance, Habitat for Humanity, Green Sneakers, ESRI, DeepCWind Consortium and Efficiency Maine

- **10 Community Organizations**

- Monthly Energy Quests

- Annual Energy Fair

School Projects
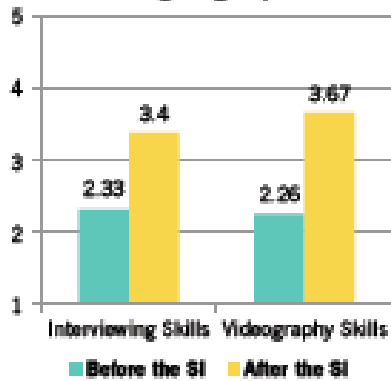
How do you evaluate EE?

Key Questions:
- What are students learning?
- How are community members involved?
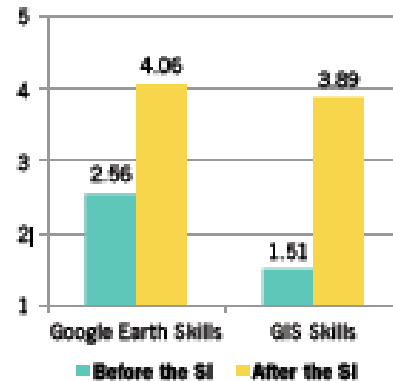- How does it influence student motivation?

Methodology:
- Performance-based assessments
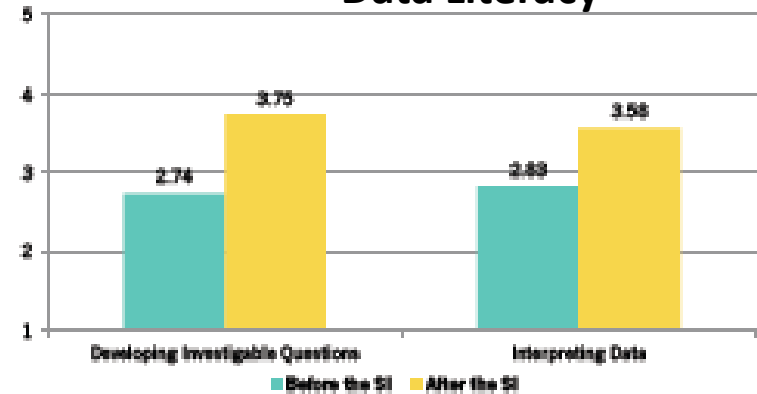- Pre/post surveys
- Interviews

Results To Date

Data Literacy

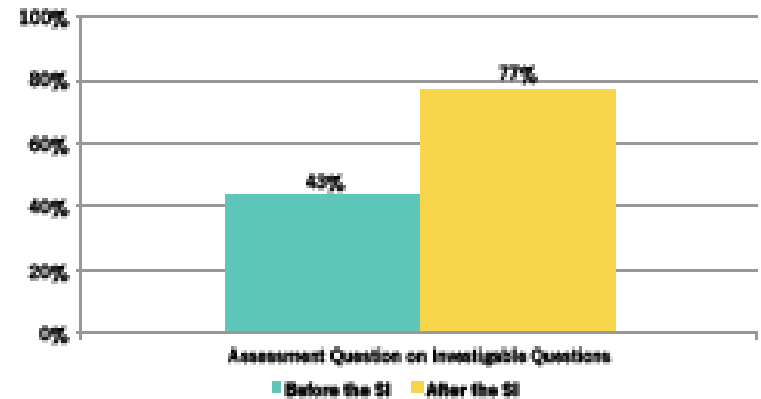## Ethnography Skills

Interviewing Skills: Before the SI 2.33, After the SI 3.4
Videography Skills: Before the SI 2.26, After the SI 3.67

GE and GIS Skills

Google Earth Skills: Before the SI 2.56, After the SI 4.06
GIS Skills: Before the SI 1.51, After the SI 3.89

Participants reported statistically significant gains in their technology-related s...

Developing Investigable Questions: Before the SI 2.74, After the SI 3.75
Interpreting Data: Before the SI 2.89, After the SI 3.58

Self-report data show statistically significant gains in data-related knowledge.

Assessment Question on Investigable Questions: Before the SI 43%, After the SI 77%

Assessment results support self-reported gains.

ISLAND INSTITUTE

Impacting Change?

E4ME students

community think ideas
recommendations
help try lower
energy might save likely giving
money
listen people

Non-E4ME students

no follow through
not open to change don't care
adults don't listen to kids

Lessons Learned

- **No add-ons**: Make the curriculum and trainings flexible enough to fit into any existing class

- **EE for everyone**: Inter-disciplinary teams

- **Make change at home:** Locally relevant questions, resources, and solutions

- **Make it worth the effort:** Demonstrate benefits of project partnerships to industry and local partners

Thank You!

http://www.islandinstitute.org/energyforme.php
http://dev.intellergy.us/islandinstitute/dashboard.php

https://www.facebook.com/energyforme

Ruth Kermish-Allen
Education Director
rallen@islandinstitute.org

Suzanne MacDonald
Community Energy Director
smacdonald@islandinstitute.org

Support Provided by:

Growing Green Streets & Neighborhoods: A Community-Based Approach

Tory Syracuse
Associate Director
Watershed Management Group

Watershed Management Group

EPA Webinar: Community-Based
Environmental Education
July 24, 2012

Overview
- Introduction: Watershed Management Group
- Context: Green Infrastructure in Arid Environments
- Case Studies: WMG Neighborhood Leaders Program
    - Successes
    - Challenges
    - Lessons Learned

Mission:
WMG develops and implements community-based solutions to ensure the long-term prosperity of people and health of the environment.

We provide people with the knowledge, skills, and resources for sustainable livelihoods.

WMG Programs

- Local/Regional
  - Demonstration Sites
  - Co-op
  - School Yard Program
  - Green Streets/Green Neighborhoods
  - Soils Education
  - Water Harvesting Certification & Watershed Technical Trainings
  - Conserve to Enhance
- International
  - Rainwater for Potable Uses
  - Sanitation – www.tippytap.org
  - Soil Conservation

Grassroots Model:

Teach through actual implementation & empower everyday citizens

What is Water Harvesting?

- Capturing rainwater to put it to beneficial use in the landscape

Passive Water Harvesting

What is Water Harvesting?

- Capturing rainwater to put it to beneficial use in the landscape

Active Water Harvesting

The Problem: Grey Infrastructure

Stormwater – Quantity & Quality

The problem

Drought - natural and artificial

The problem

Community livability

The problem

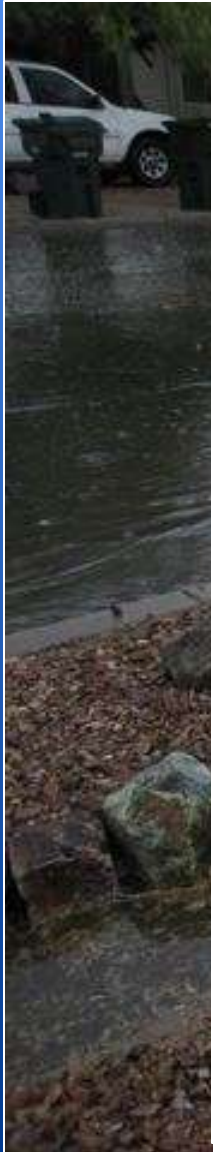# Green Infrastructure:
An Integrated Solution

Green infrastructure (GI) refers to constructed features that use living, natural systems to provide environmental services, such as:

- Capturing, cleaning and infiltrating stormwater
- Creating wildlife habitat
- Shading and cooling streets and buildings
- Calming traffic
- Creating pedestrian-, bicycle, and nature-friendly neighborhoods
- Building community

Right-of-way green infrastructure

Right-of-way green infrastructure

*Right of way in front of Brad Lancaster's home
Author of Rainwater Harvesting for Drylands
Tucson, Arizona*

Green Streets - Green Neighborhoods Program

How we work:

- – Use green infrastructure to address disparate neighborhood problems

- – Build neighborhood leadership capacity

- – Promote volunteerism

- – Empower residents with hands-on skills and understanding of issues

Neighborhood Leaders Program – Training Sessions

Neighborhood Leaders Program – Implementation Workshops

Barrio Hollywood

Sunnyside – Apollo Middle School

# Neighborhood Leaders Program – Implementation Workshops

Palo Verde

# Neighborhood Leaders Program – Successes

- ## Educational
  Overall increase in knowledge of environmental problems related to urban watersheds and increase in skills to address them

- ## Environmental
 *Implementation of 2-3 demonstration sites per neighborhood*

Do you know what non-point source pollution is?

	Yes	No	Not Sure
Before	43%	14%	43%
After	73%	13%	13%
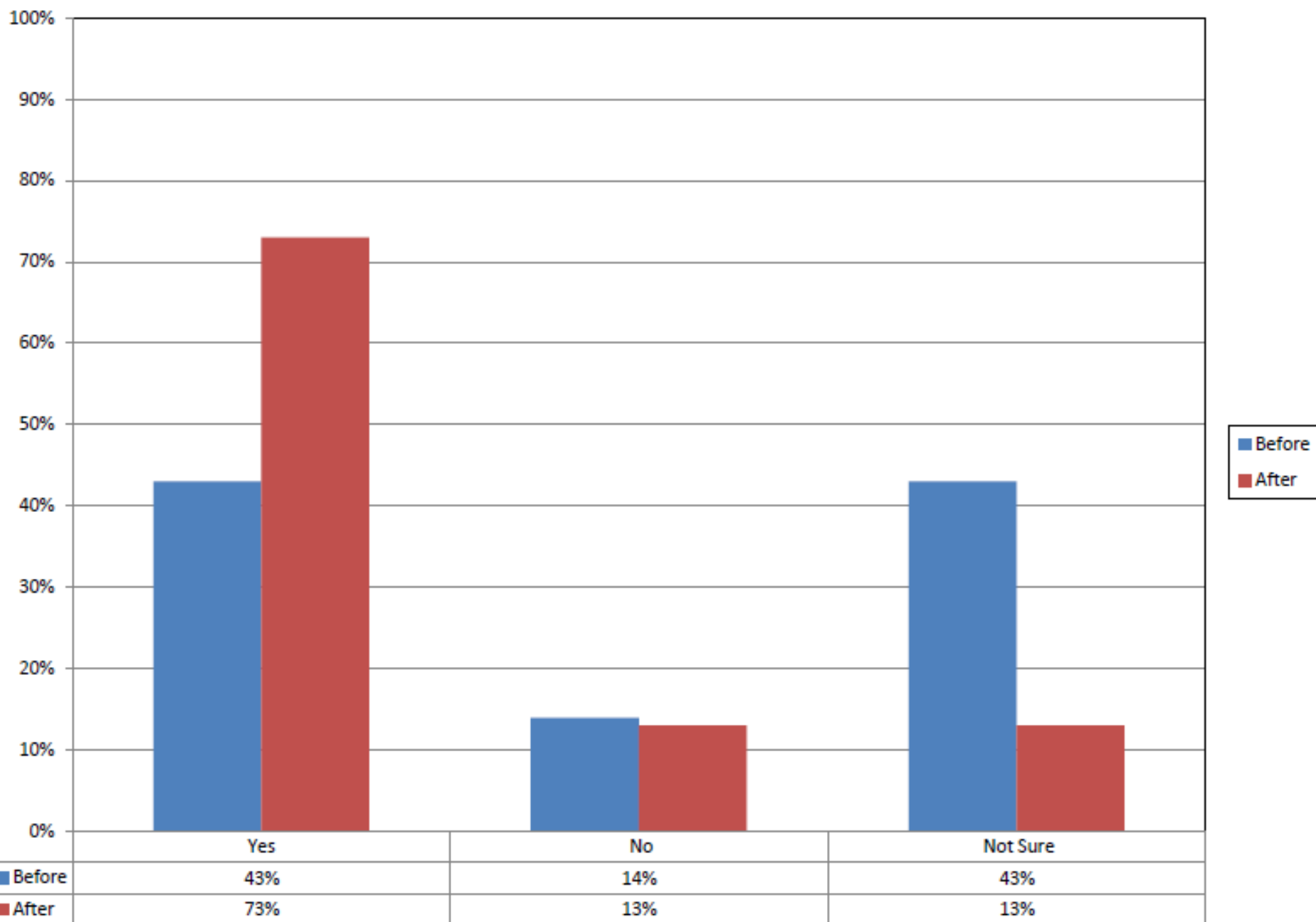
When you make decisions regarding improvements to outside landscape how often do you create rain gardens/water harvesting basins to capture water from rooftops, parking lots, streets, or properties?

	Always	Sometimes	Never	Not applicable
Before	27%	73%	0%	0%
After	67%	33%	0%	0%
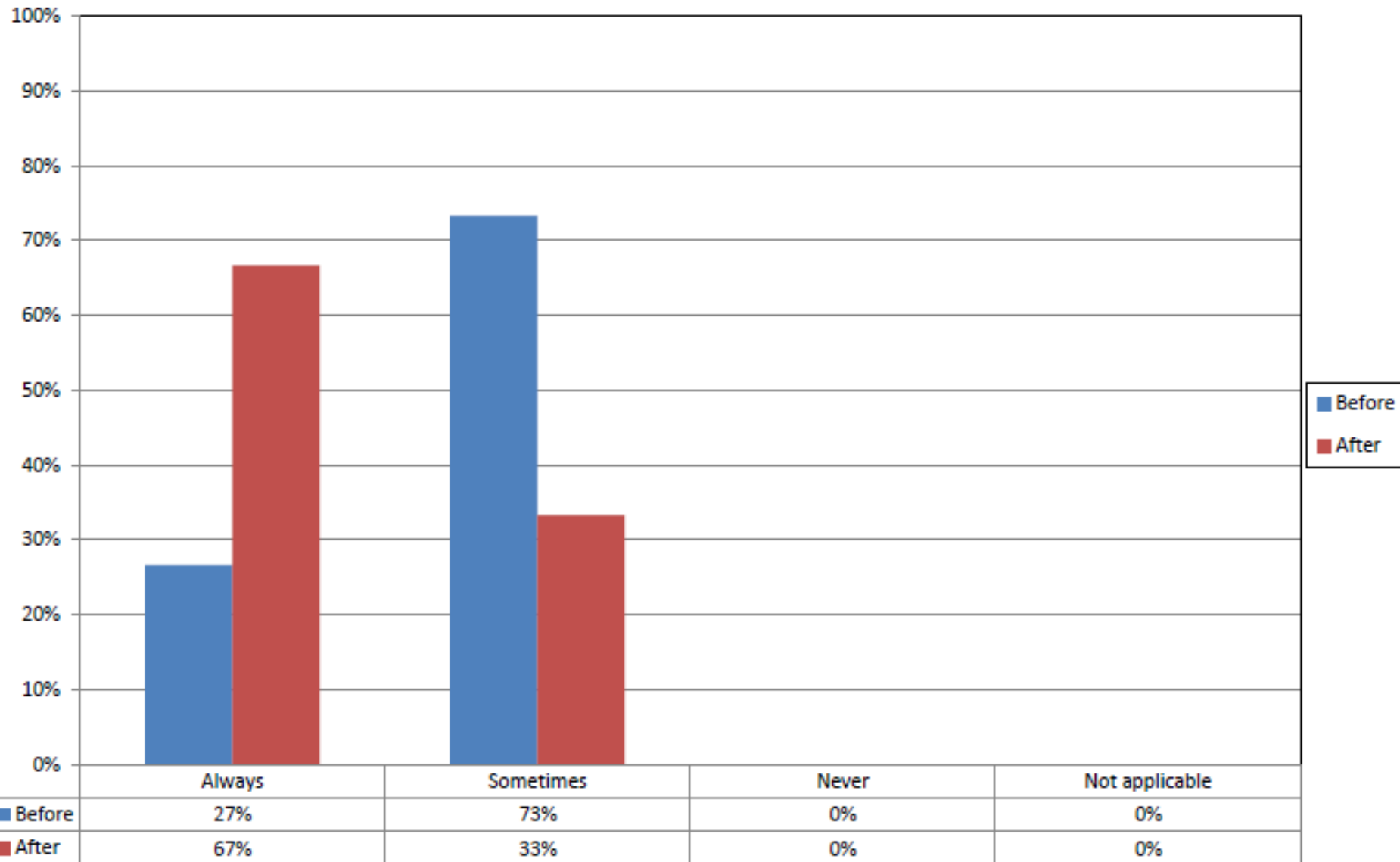
I have the skills and knowledge to take action to improve environmental conditions in my neighborhood
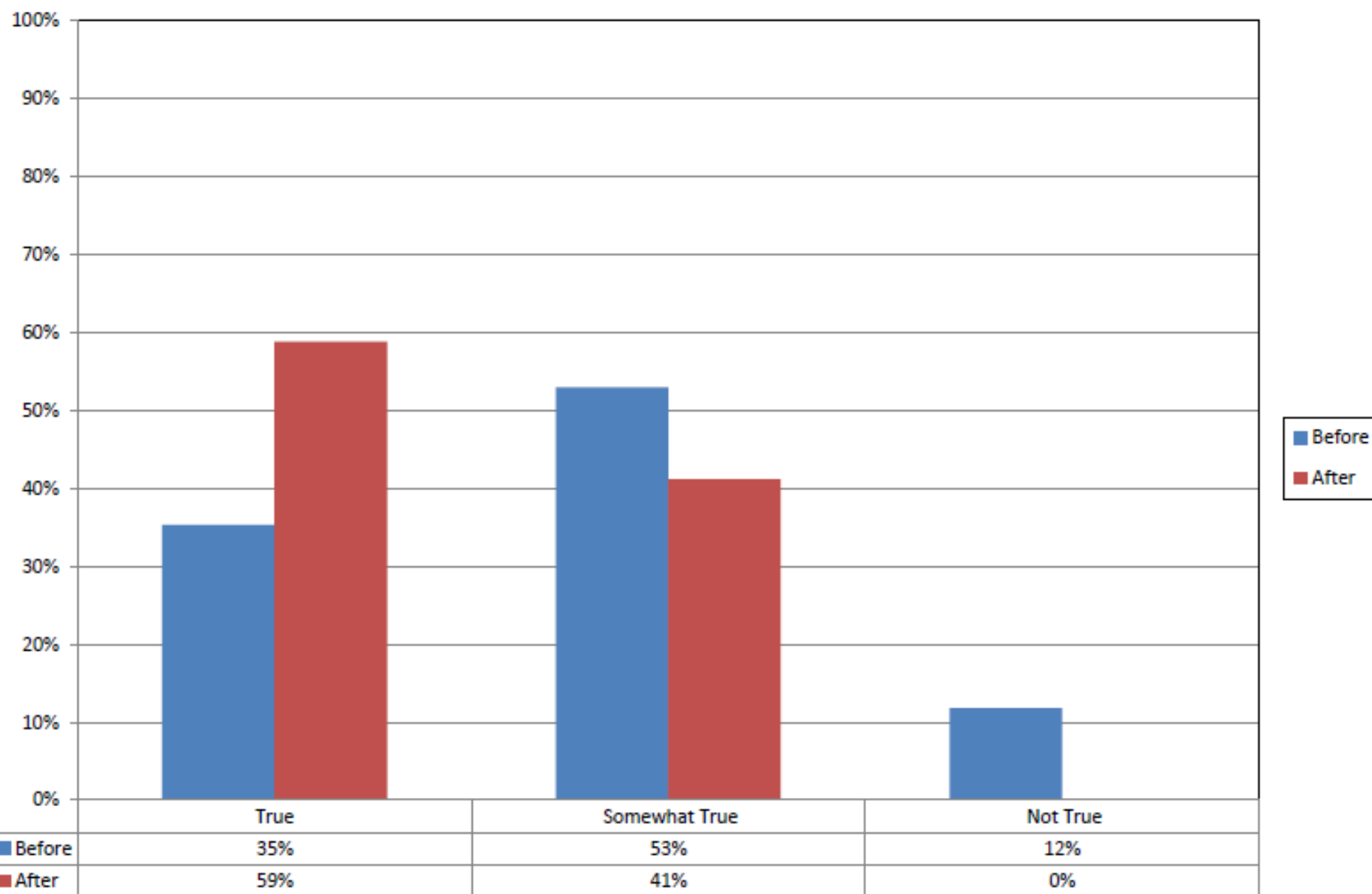
	True	Somewhat True	Not True
Before	35%	53%	12%
After	59%	41%	0%

Neighborhood Leaders Program – Challenges

- Participation
- Site Constraints – Retrofits
- Maintenance

Neighborhood Leaders Program – Lessons Learned

1. Motivation must come from the community – not from outside it
2. The more ownership participants have over projects, the more sustainable they are
3. Technical aspects of training are challenging
4. Plan for maintenance from the beginning – otherwise projects that should be assets can easily become liabilities

5. Hands-on community involvement leads to the best results and most sustainable outcomes!

Thank you!

Tory Syracuse

Associate Director

520-396-3266

tsyracuse@watershedmg.org

www.watershedmg.org