Bridging the Divide

Developing Partnerships in Business, Faith and Environmental Groups to Incorporate Climate Change Literacy into Stormwater Design

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Introduction

What does climate change mean for Vermont?
Climate change models predict an increase in rainfall events in the Lake Champlain basin within the next century.

Increased precipitation will lead to an increase in surface runoff, stream channel instability, flooding, pollutant loading, and altered aquatic ecosystems. Engineering design specifications for culverts are inadequate to handle predicted rainfall intensities. There is a consensus for the need to reduce stormwater flows.

What did this project do?
Lake Champlain Sea Grant sought to inform local businesses and community leaders, residents and students about how predicted local climate changes can affect local communities and inform them of the adaptation tools available to respond.

This project worked with three categories of landowners to implement stormwater best management practices onsite: churches, local small businesses and medical parks.

Education and demonstration was used for each category of landowner.

Methods

- All demonstration sites located within impaired watersheds.

- All volunteers and landowners took part in discussions with Sea Grant about climate change in Vermont and how stormwater plays a role.

- Worked with a Lutheran church that had an existing conservation group (Care for Creation Committee) that was already seeking a hands-on project to protect water.

- Leveraged education program by recruiting college students from the Community College of Vermont's Botany and River Ecology class for the installation of a rain garden and discussion of applying this knowledge after graduation.

- Utilized participatory design. Each demonstration project was designed and installed with the input of property owners and students.

- Partnered with Rutland Natural Resource Conservation District to maximize outreach and volunteer resources.

Results

3 Demonstration Projects:

- Rain Garden: Majestic Car Rental
  Rutland, VT
  - Serves as a model for the community and for other property managers. As early adopters, the owner is promoting the use of storm-water management techniques within the local business community.

- Rain Garden: Ascension Lutheran Church
  South Burlington, VT
  - Twenty members of a congregation educated on rain garden design and installation and now serve as a model for other houses of worship in the area by promoting the adoption of stormwater best management practices.

- Wetland Swale: Rutland Primary Care
  Rutland, VT
  - Planted 550 native wetland plants to help absorb and slow the flow of stormwater from a medical park's 6,930 square foot parking lot. For a 1 inch rainstorm, this area creates 4,226 gallons of water. The wetland swale will significantly reduce the volume reaching an impaired brook.

Results

- Two rain gardens will infiltrate a combined 3,000 gallons of water for each 1 inch rainstorm.

- Fifty college students and twenty congregation members educated on stormwater best management practices, rain garden design and installation, and climate change in Vermont.

Conclusion

Climate change adaptation is most effective when framed in a local context. This framing is important to 1) engage local communities in the conversation; 2) establish early adopters for the promotion of adaptation strategies; and 3) create greater sense of place and call to action.