Easygrants ID: 39274

National Fish and Wildlife Foundation NFWF Project ID: 1401.13.039274

LI Sound Futures Fund 2013 - Clean Water, Habitat Restoration, and Species Conservation - Submit Final Programmatic Report (New Metrics)

Grantee Organization: Town of Oyster Bay

Project Title: Western Waterfront Rain Garden Planting/Training Program (NY)

Project Period	10/01/2013 - 11/30/2014
Project Location Description (from Proposal)	Waterfront Center Parking Lot, Oyster Bay, NY.
Project Summary (from Proposal)	Build a 500 square foot rain garden and install 60 square feet of permeable pavement and two 50 gallon rain barrels to capture and treat storm water runoff from a 5,000 square foot parking lot and adjacent building.

Summary of Accomplishments

At the completion of this project, the Town of Oyster Bay is proud to note that over 100 employees and residents who attended educational seminars and planting demonstrations were interested in learning and disseminating information about the benefits of installing rain gardens in both public and private property. The Town initially estimated a 500 square foot rain garden, but after further review of the location an additional 700 square feet to the rain garden was added for a total of 1,200 square feet to capture rainwater from the nearby buildings, walkways, and parking lot and still come in under budget. When it rains, the first ¼" of the 2,634 sq. ft. pervious area will soak into the ground and the rest will head over to rain garden; plus the rain garden handles the balance of the 1.6" rain from the pervious grass area. The rain garden captures a 1.6" rain event from a 4,080 sq. ft. impervious area and 2,634 sq. ft. from two pervious grass areas (1,134 sq. ft. and 1,500 sq. ft.) meaning approximately 4,488 gallons or 600 cu. ft. of water will be treated.

Lessons Learned

There were many aspects of designing the gardens such as maintaining a safe distance from a basement (residential or commercial) to prevent flooding or testing the potential garden site with a percolation test. For these reasons and many more, the services of Rusty Schmidt came in handy. With his expertise in the area of rain garden design, we were able to learn about the different types of rain gardens (visually appealing vs. highly functioning), maintenance and the best spots to actually create a garden to optimize its effect. The Town also recognizes that it picked plants that may have ruined the garden or caused additional maintenance. For best results, determine what the rain garden is supposed to do, then form a design that will extenuate these goals.We also have learned that as a first step, a study is needed to assess the best places for implementing Green Infrastructure in a watershed and in order to be duplicated on residential properties, municipally-owned land, and corporate and college campuses. A proper demonstration would be to take back an impermeable area like a concrete driveway, concrete walkway and utilize signage to inform the public of the project and its benefits.

Activities and Outcomes

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # people reached
Description: Enter the number of people reached by outreach, training, or technical assistance activities
Required: Recommended
people reached - Current: 0
people reached - Grant Completion: 116
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # gov't entities participating
Description: Enter the number of municipalities or local governments participating in the project
Required: Recommended
gov't entities participating - Current: 1
gov't entities participating - Grant Completion: 3
Notes:

Funding Strategy: Habitat Management
Activity / Outcome: LISFF - BMP implementation for stormwater runoff - Volume stormwater prevented
Description: Enter the volume (in gallons) of stormwater prevented from entering water body
Required: Recommended
Volume stormwater prevented - Current: 0
Volume stormwater prevented - Grant Completion: 124000
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # people with knowledge
Description: Enter the number of people demonstrating a minimum level of knowledge, attitudes, or skills
Required: Recommended
people with knowledge - Current: 90
people with knowledge - Grant Completion: 116
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # of edu signs installed
Description: Enter the number of educational signs installed by project
Required: Recommended
# of edu signs installed - Current: 0
# of edu signs installed - Grant Completion: 30
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Volunteer participation - # volunteers participating

Description: Enter the number of volunteers participating in projects
Required: Recommended
volunteers participating - Current: 0
volunteers participating - Grant Completion: 89
Notes:

Funding Strategy: Habitat Management
Activity / Outcome: LISFF - BMP implementation for stormwater runoff - Acres under BMPs
Description: Enter the number of acres under Best Management Practices (BMPs)
Required: Recommended
Acres under BMPs - Current: 0
Acres under BMPs - Grant Completion: 1
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # websites, social media tools
Description: Enter the number of websites and other social media tools used to disseminate information about the project
Required: Recommended
websites, social media tools - Current: 0
websites, social media tools - Grant Completion: 6
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # people targeted
Description: Enter the number of people targeted by outreach, training, or technical assistance activities
Required: Recommended
people targeted - Current: 90
people targeted - Grant Completion: 116
Notes:

Funding Strategy: Capacity, Outreach, Incentives
Activity / Outcome: LISFF - Outreach/ Education/ Technical Assistance - # workshops, webinars, meetings
Description: Enter the number of workshops, webinars, and meetings held to address project activity
Required: Recommended
workshops, webinars, meetings - Current: 5
workshops, webinars, meetings - Grant Completion: 11
Notes:

The following pages contain the uploaded documents, in the order shown below, as provided by the grantee:

Other Documents
Other Documents
Other Documents
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Photos - Jpeg
Other Documents
Final Report Narrative - Standard

The following uploads do not have the same headers and footers as the previous sections of this document in order to preserve the integrity of the actual files uploaded.

Final Programmatic Report Narrative

Instructions: Save this document on your computer and complete the narrative in the format provided. The final narrative should not exceed ten (10) pages; do not delete the text provided below. Once complete, upload this document into the on-line final programmatic report task as instructed.

1. Summary of Accomplishments

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

At the completion of this project, the Town of Oyster Bay is proud to note that over 100 employees and residents who attended educational seminars and planting demonstrations were interested in learning and disseminating information about the benefits of installing rain gardens in both public and private property. The Town initially estimated a 500 square foot rain garden, but after further review of the location an additional 700 square feet to the rain garden was added for a total of 1,200 square feet to capture rainwater from the nearby buildings, walkways, and parking lot and still come in under budget. When it rains, the first ¼" of the 2,634 sq. ft. pervious area will soak into the ground and the rest will head over to rain garden; plus the rain garden handles the balance of the 1.6" rain from the pervious grass area. The rain garden captures a 1.6" rain event from a 4,080 sq. ft. impervious area and 2,634 sq. ft. from two pervious grass areas (1,134 sq. ft. and 1,500 sq. ft.) meaning approximately 4,488 gallons or 600 cu. ft. of water will be treated.

2. Project Activities & Outcomes

Activities

- Describe and quantify (using the approved metrics referenced in your grant agreement) the primary activities conducted during this grant.

In order to complete this project successfully, the Town had to accomplish certain actions as described in the grant agreement. These actions included: creating a rain garden with the help of a qualified consultant, conducting educational seminars for the public and municipal employees regarding green infrastructure, working with several community organizations to bolster support for the program and utilizing different social media outlets in order to disseminate information.

Outreach/Education/Technical Assistance:

The Town's Jaime VanDyke of the Environmental Resources division was essential to completing the development of this project along with Rusty Schmidt; the rain garden expert on Long Island who has built thousands of rain gardens and is highly experienced in training others about these gardens. With their combined knowledge, they created educational pamphlets (uploaded to the easygrants system) regarding the benefits of installing these water quality protecting gardens. Along with printing educational materials, several outreach programs or training sessions were presented to both Municipal

workers and residents alike to help promote these gardens being built on both public and private property. Topics such as proper plant selection, planting techniques and reference materials were made available. Utilizing the Town's website and the several community based organizations such as the Friends of the Bay to spread the word about this program, the Town successfully conducted 11 separate rain garden training sessions.

Number of people targeted: 116
Number of workshops, webinars, meetings: 11
Number of people with knowledge: 116

In order to help residents learn more about the plants that are used in these types of gardens, the Town created educational signage that has been posted in/around the garden. These signs point out different species of indigenous flora that were used to optimize the amount of rain water collected from impervious surfaces while still aesthetically appealing to the residents.

Number of educational signs installed after grant completion: 30

The Town has published information regarding rain gardens on their website at http://oysterbaytown.com/departments/environmental-resources/environmental-planning/. This information is very basic but brings to light the efforts of both volunteer organizations as well as the Town to promote the construction of rain gardens as a viable way to create better drainage from otherwise impervious areas, which effectively reduces storm water pollution, flooding, and erosion by allowing the rain water to soak into the ground naturally. Besides the Town posting on their website, partnering community and volunteer groups also utilized their own websites to promote the project such as the Nassau County Soil and Water District and the Cold Spring Harbor Protection Committee. The Town was also mentioned in local newspaper articles touting the program's successes (these articles were uploaded to the easygrants system) as well as through the "Greening the Apple" Environmental Protection Agency's New York City Blog.

Number of websites, social media tools: 6

One of the most important aspects of this project was to not only disseminate information to the public but also create a aesthetically pleasing demonstration rain garden that would help stop storm water runoff from entering nearby water bodies; essential leading to the Long Island Sound. Upon completion of the project, a 1,200 square foot rain garden was constructed with a variety of different plants and through the hard work and determination of both residents and municipal workers. The rain garden captures a 1.6" rain event from a 4,080 sq. ft. impervious area and 2,634 sq. ft. from two pervious grass areas (1,134 sq. ft. and 1,500 sq. ft.) meaning approximately 4,488 gallons or 600 cu. ft. of water will be treated.

Acres under Best Management Practices: 1
Volume of Storm Water prevented: 4,488 Gallons/1.6" Rain Event or estimated 161,568 gallons/year.

The Town was very lucky to partner with several local community groups that focus on protecting the water quality of all watersheds surrounding Long Island. Prior to the application of this grant funded project, representatives from the Town reached out to the Town of Huntington, Village of Laurel Hollow,

Oyster Bay/Cold Spring Harbor Protection Committee, Nassau County, Nassau County Soil and Water Conservation District, Village of Centre Island, Village of Lattingtown and Friends of the Bay. Throughout the entire project members of these committees and municipal groups were active participants. Copies of the educational rain garden brochures were also made available for any residents within these areas.
Number of Government Agencies participating: 3

- Briefly explain discrepancies between the activities conducted during the grant and the activities agreed upon in your grant agreement.

One of the differences between the activities conducted during the grant and the activities agreed upon in the grant agreement would be the volume of storm water prevented from entering surrounding water bodies due to the installation of the rain garden. It should be mentioned that when originally planning this rain garden prior to the application (in order to get an estimate for budgetary purposes); we imagined a 500 sq. ft. garden. However, after reviewing the location of the garden and unforeseen issues after breaking ground, it was decided to remove certain aspects of the project (permeable pavers and all necessary materials to install it) and enlarge the garden. This resulted in collecting almost double the amount of gallons previously estimated. Though the Town was disappointed that permeable pavers were not deemed appropriate for the site, this additional volume of storm water that will be deterred from entering the Long Island Sound was seen as a huge benefit to the project. The Town will make efforts in the future to install permeable pavers where possible.

Another difference was the amount of people targeted, number of people who gained knowledge and the number of workshops, meetings and training seminars that were conducted. The Town is happy to report that it was able to host more residents than originally targeted, which is significant because the more residents that show interest in these types of program help shape future programs of a similar nature. If more residents want these seminars, more will be conducted; facilitating best management practices that can be shared within the community. However, the amount of municipal workers attending was much less. The Town suggested that it would have 40 Town employees donating 640 hours of time to train and help construct the garden. At that end of the program, the Town was only able to produce 184.5 hours. This significant drop in hours was unfortunately due to much tighter budget at the Town and the inability to pull staff away from their regular duties.

The amount of social media tools that were used in order to promote the rain garden program did not match our estimate prior to the grant application. During this project, the Town and other partnering agencies used their homepage's to promote information about the rain gardens as well as by word of mouth. Many of the partnering community groups that were involved with the project told their members about the plantings and other events which helped make the training and educational portion of the project an even greater success than initially expected. This was accomplished in spite of using few social media outlets. Other ways that the Town promoted the program was by creating brochures

and alerting local news outlets about the project. These are essential tools to creating a more successful project and will be utilized to their full extent in future endeavors.

The last discrepancy found when conducting activities as described in the grant was how many municipalities would be participating in this project. When the Town applied for this grant, several letters of support were received from various government agencies as well as community supported organizations. During the actual implementation phase of this project the Town of Oyster Bay was the only government agency involved. The Town partnered with various groups such as the Oyster Bay-Cold Spring Harbor Protection Committee (OB-CSHPC), Nassau County Soil & Water Conservation District (NCSWCD), and the Friends of the Bay, Inc. (FOB) and Sustainable Long Island however they are not municipalities nor are they local governments. They are non-profit community organized groups who are committed to protecting all aspects of the environment, but focusing on the Long Island Sound. The Town did work closely with these organizations during the planting and design process of this project. With the success of this program and the lessons learned, the Town is better equipped to work with other municipalities to demonstrate green infrastructure and best management practices.

Outcomes

- Describe and quantify progress towards achieving the project outcomes described in your grant agreement. (Quantify using the approved metrics referenced in your grant agreement or by using more relevant metrics not included in the application.)

At the completion of this project, the Town of Oyster Bay had several key components that it wanted to complete in order to call this project a success; Create a functioning 500 sq. foot demonstration rain garden using indigenous plants, create a garden that people would want replicated on their property as well as on public property, educate both municipal workers and residents about the importance of rain gardens and how and give them the ability/knowledge to create and maintain them properly. To this extent and utilizing the metrics shown in previous answers, the Town feels that this project was a success.

Anticipated Results

Number of people targeted: 90
Number of educational signs installed after grant completion: 29
Number of websites, social media tools: 6
Acres under Best Management Practices: 1
Number of workshops, webinars, meetings: 5
Number of Government Agencies participating: 14
Number of people with knowledge: 90
Volume of Storm Water prevented: 56,953 gallons/year.

Actual Outcome

Number of people targeted: 116

Number of educational signs installed after grant completion: 30
Number of websites, social media tools: 6
Acres under Best Management Practices: 1
Number of workshops, webinars, meetings: 11
Number of Government Agencies participating: 5
Number of people with knowledge: 116
Volume of Storm Water prevented: 4,488 Gallons/1.6" Rain Event or estimated 124,000 gallons/year.

At the completion of the project, the Town had installed a 1,200 square foot rain garden to capture rainwater from the nearby buildings, walkways, and parking lot. Now when it rains, the first ¼" of the 2,634 sq. ft. pervious area will soak into the ground and the rest will head over to rain garden; plus the rain garden handles the balance of the 1.6" rain from the pervious grass area. The rain garden captures a 1.6" rain event from a 4,080 sq. ft. impervious area and 2,634 sq. ft. from two pervious grass areas (1,134 sq. ft. and 1,500 sq. ft.) meaning approximately 4,488 gallons or 600 cu. ft. of water will be treated. Based upon National Weather Service information, Long Island experienced approximately 40-50 inches of rainfall in 2012 while 90% of rain events equal approximately 1.2". Using this data, it is estimated that the rain garden will help prevent 124,000 gallons of storm water from entering surrounding waterbodies annually.

- Briefly explain discrepancies between what actually happened compared to what was anticipated to happen.

One of the differences between the outcomes realized at the completion of the grant versus the estimated results would be the volume of storm water prevented from entering surrounding water bodies due to the installation of the rain garden. It should be mentioned that when originally planning this rain garden prior to the application (in order to get an estimate for budgetary purposes), we imagined a 500 sq. ft. garden. However, after reviewing the location of the garden and unforeseen issues after breaking ground, it was decided to remove certain aspects of the project (permeable pavers and all necessary materials to install it) and enlarge the garden. This resulted in collecting almost double the amount of gallons previously estimated. Though the Town was disappointed that permeable pavers were not deemed appropriate for the site, this additional volume of storm water that will be deterred from entering the Long Island Sound was seen as a huge benefit to the project. The Town will make efforts in the future to install permeable pavers where possible.

Another difference was the amount of people targeted, number of people who gained knowledge and the number of workshops, meetings and training seminars that were conducted. The Town is happy to report that it was able to host more residents than originally targeted, which is significant because the more residents that show interest in these types of program help shape future programs of a similar nature. If more residents want these seminars, more will be conducted; facilitating best management practices that can be shared within the community. However, the amount of municipal workers attending was much less. The Town suggested that it would have 40 Town employees donating 640 hours of time to train and help construct the garden. At that end of the program, the Town was only

able to produce 184.5 hours. This significant drop in hours was unfortunately due to much tighter budget at the Town and the inability to pull staff away from their regular duties.

The amount of social media tools that were used in order to promote the rain garden program did not match our estimate prior to the grant application. During this project, the Town and other partnering agencies used their homepage's to promote information about the rain gardens as well as by word of mouth. Many of the partnering community groups that were involved with the project told their members about the plantings and other events which helped make the training and educational portion of the project an even greater success than initially expected without using as many social media outlets. Other ways that the Town promoted the program was by creating brochures and alerting local news outlets about the project. These are essential tools to creating a more successful project and will be utilized to their full extent in future endeavors.

When the Town applied for this grant, several letters of support were received from various government agencies as well as community supported organizations. During the actual implementation phase of this project the Town of Oyster Bay was the only government agency involved. The Town partnered with various groups such as the Oyster Bay-Cold Spring Harbor Protection Committee (OB-CSHPC), Nassau County Soil & Water Conservation District (NCSWCD), and the Friends of the Bay, Inc. (FOB) and Sustainable Long Island however they are not municipalities nor are they local governments. They are non-profit community organized groups who are committed to protecting all aspects of the environment, but focusing on the Long Island Sound. The Town did work closely with these organizations during the planting and design process of this project. With the success of this program and the lessons learned, the Town is better equipped to work with other municipalities to demonstrate green infrastructure and best management practices.

- Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.

The Town employees responsible for shaping not only the grant application but the entire project as a whole learned quite a few valuable lessons that others trying to replicate the gardens may heed. When first writing the grant, many of us had only preliminary information as to what a rain garden was, let alone how to properly create one. There were many aspects of designing the gardens such as the maintaining a safe distance from a basement (residential or commercial) to prevent flooding or testing the potential garden site with a percolation test. For these reasons and many more, the services of Rusty Schmidt came in handy. With his expertise in the area of rain garden design, we were able to learn about the different types of rain gardens (visually appealing vs. highly functioning), maintenance and the best spots to actually create a garden to optimize its effect. While writing the application we researched a lot of information online that was not specific to our area so that when we originally wrote the application we picked plants that may have ruined the garden or caused additional maintenance. For best results, determine what the rain garden is supposed to do, then form a design that will extenuate these goals. His help was invaluable and more importantly, the residents recognized him as a

knowledgeable leader in the field. They soaked in all the information he provided and will hopefully not only build rain gardens on their property, but encourage even more to do the same.

3. Lessons Learned

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt their projects to build upon some of these key lessons about what worked best and what did not?

We have learned that as a first step, a study is needed to assess the best places for implementing Green Infrastructure in a watershed and in order to be duplicated on residential properties, municipally-owned land, and corporate and college campuses. A proper demonstration would be to take back an impermeable area like a concrete driveway, concrete walkway and utilize signage to inform the public of the project and its benefits.

One of the largest discrepancies between the original work plan and the ultimate end results was the removal of the porous pavement portion of the grant. While the Town of Oyster Bay and its partner agencies strongly desired a porous pavement demonstration to augment the Green Infrastructure initiatives, the rain garden location did not prove to be a viable area to achieve these goals. This is a fact that unfortunately was not realized until formally working with Rusty Schmidt; an expert in rain garden design who was hired as a consultant and helped organize this project. Upon breaking ground for the project, multiple obstacles were found such as buried railroad ties and irrigation lines we did not have records of. It was also thought that running the permeable pavement through the garden may hinder the ability of the garden to function as it should with this construction. It was also ultimately thought to be a hazard to the public as it could be tripped upon and promote people to walk through the actual garden; stepping on and killing plants.

The Town also had to adjust the original plant list based on Rusty's experience. Much of the information that was found online while preparing the application was not specific to our area and therefore had plants that would not thrive in our community nor appeal to our residents. For example, the Virginia Mountain Mint could go in a rain garden, but would overtake the entire rain garden and perhaps other parts of the yard. The resident would not achieve their aesthetic vision and would have created another problem that likely would have created additional unnecessary expenses and frustration.

4. Dissemination

Briefly identify any dissemination of lessons learned or other project results to external audiences, such as the public or other conservation organizations.

The Town of Oyster Bay is proud to report that over 100 employees and residents attended several of the informational seminars that were hosted by Jaime VanDyke of the Town's Environmental Resources Department and Rusty Schmidt, Rain Garden expert. At these training seminars, individuals were given an in-depth introduction to the many sources of pollution that are entering major waterbodies (such as

the Long Island Sound and its estuaries) and the environmentally sound ways residents and eco-conscious business owners can help. The main technique that was discussed in these training seminars was how to successfully design, install and maintain a lush rain garden. At these seminars, Rusty presented a slideshow and handed out copies of the educational brochures. Copies of the brochures were also left at both Town Hall South and Town Hall North where there is heavy foot traffic by both residents and of course municipal workers. The Town and other partnering agencies used their homepage's to promote information about the rain gardens as well as by word of mouth. Many of the partnering community groups that were involved with the project told their members about the plantings and other events which helped make the training and educational portion of the project an even greater success than initially expected.

There were several news articles that were written about the rain garden as well. On November 7, 2014 there was an article in the Oyster Bay Guardian as well as in the November 12, 2014 Oyster Bay Enterprise Pilot. The articles, each of which have been uploaded with this final report, speak about many of the same things that were discussed in the seminars such as how rain gardens work, why they are beneficial and debunking certain myths associated with rain gardens (such as being a haven for mosquitos). There was also a blog written by the EPA which is called the Greening the Apple Blog which highlights some of the key aspects of the project. The most important aspect of these documents is it gives the reader a contact in case they are interested in pursuing a rain garden of their own.

Signs have also been placed at the rain garden that give basic information about the garden and the variety of plants that were used.

5. Project Documents

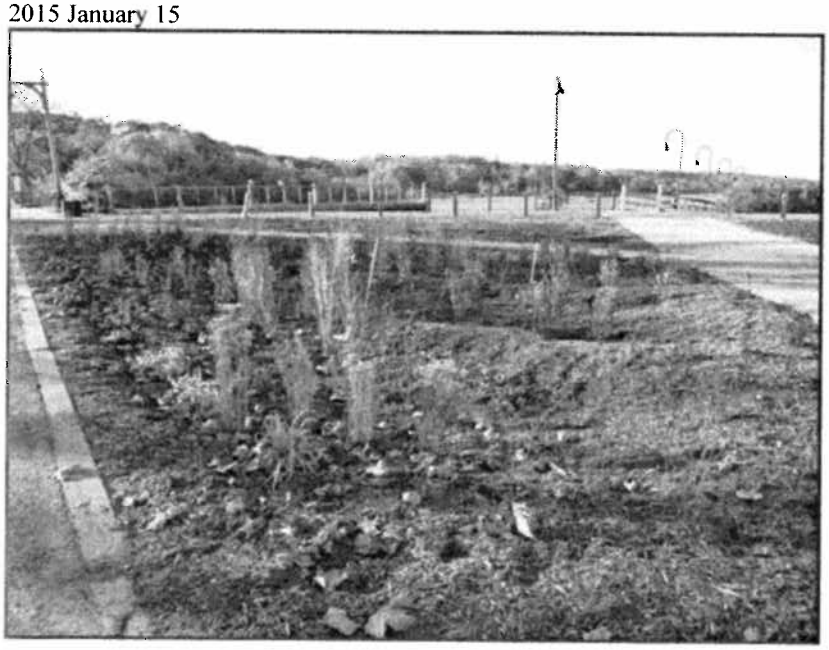
Include in your final programmatic report, via the Uploads section of this task, the following:

- 2-10 representative photos from the project. Photos need to have a minimum resolution of 300 dpi and must be accompanied with a legend or caption describing the file name and content of the photos; 8 total uploaded.
- report publications, GIS data, brochures, videos, outreach tools, press releases, media coverage; 11/12/14 & 11/7/14 New Articles Uploaded, Brochure Uploaded, Greening The Apple Blog Uploaded.
- any project deliverables per the terms of your grant agreement.

POSTING OF FINAL REPORT: *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as "PROTECTED" and provide an explanation and complete citation to the statutory or regulatory source for such protection.*

Oyster Bay Goes Green with New Rain Garden

2015 January 15



The newly installed rain garden at Oyster Bay's Western Waterfront will capture, treat, and infiltrate polluted stormwater runoff before entering nearby Oyster Bay, and eventually Long Island Sound. Photo credit: Amy Mandelbaum, New York Sea Grant/ Long Island Sound Study.

By Amy Mandelbaum and Mark A. Tedesco

Did you ever stop to think where water goes after it leaves your downspout? If you're like most people, once stormwater is out of sight, it's out of mind. Most likely, the stormwater rushes down your driveway, onto the street, and to the nearest storm drain. If you don't live in the Big, I mean, *Green* Apple, then that drain goes directly to your local waterway, whether it be a lake, creek, river, bay, estuary, or even the ocean. So, what's the big deal?

Well, that stormwater isn't so clean by the time it makes it to your local waterway, as it picks up litter, nutrients, and plenty of other things along the way. This polluted stormwater runoff goes directly into the water without having a chance to be cleaned.

So, what can we do about it? That's where green infrastructure comes into play. Green infrastructure is essentially mimicking what nature did before we started building gray infrastructure, such as gutters, roads, pipes, etc. Out of the many green infrastructure practices, one of the best for filtering polluted stormwater runoff is a rain garden: a shallow, vegetated basin that captures, treats, and infiltrates polluted stormwater runoff within a day. It is designed to treat the first inch of rain, which is the most polluted, and the plants, soil, and mulch filter the polluted stormwater runoff before it enters your local waterway.

The Town of Oyster Bay realized the need to redirect the polluted stormwater runoff from the roadway along the waterfront before going into nearby Oyster Bay, a Long Island Sound Stewardship Area, and eventually Long Island Sound. The Town sought and received a Long Island Sound Futures Fund grant to install a rain garden, all while educating the local community. The rain garden was installed in October, with assistance from other local organizations and volunteers. As part of the project, a corresponding rain garden training program is also offered for homeowners, municipal officials, and landscape professionals. This rain garden now serves as a demonstration to the local community and its visitors of a green infrastructure practice that can be easily incorporated into the landscape.

So, the next time it rains, I hope you take a closer look at your downspout.

If your town would like assistance mitigating the effects of stormwater runoff, contact your local Nonpoint Education for Municipal Officials (NEMO) office in New York or Connecticut.

About the Authors: Amy Mandelbaum is the New York Outreach Coordinator for the Long Island Sound Study. She works for New York Sea Grant in Stony Brook, NY. She received her Ed.M. in science education in 2012 and a B.S. in environmental science in 2007 from Rutgers University.

Mark Tedesco is director of the United States Environmental Protection Agency's Long Island Sound Office. Mr. Tedesco is responsible for supporting implementation of a Comprehensive Conservation and Management Plan for Long Island Sound, approved in 1994 by the Governors of New York and Connecticut and the EPA Administrator, in cooperation with federal, state, and local government, private organizations, and the public. Mr. Tedesco received his M.S. in marine environmental science in 1986 and a B.S in biology in 1982 from Stony Brook University.

Editor's Note: The opinions expressed here are those of the author. They do not reflect EPA policy, endorsement, or action, and EPA does not verify the accuracy or science of the contents of the blog.

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Tags: green infrastructure, rain garden, stormwater, stormwater runoff, water

from → Greening the Apple

One Response leave one →

1. Bill Britton permalink
January 18, 2015

I believe you mean "The newly installed rain garden at Oyster Bay's Western Waterfront will capture, treat, and FILTER . . ."; "infiltrate" means to permeate.

Reply

Leave a Reply

Name: (required):

Email: (required):

Comment:

Note: You can use basic XHTML in your comments. Your email address will **never** be published.

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A Special Garden At The Waterfront

By GARY SIMEONE
OYSTERBAY@ANTONNEWS.COM

It was all about the environment late last month and early this month at the western waterfront as national storm water and rain garden expert Rusty Schmidt helped to construct a rain garden. Schmidt worked with the Town of Oyster Bay's Environmental Resources and Parks staff along with partner agencies through a Long Island Sound Futures Fund grant on the project. Department of Environmental Resources Community Relations spokesperson

See GARDEN on page 5

Volunteers hard at work last month at the waterfront.

GARDEN from page 1

Jaime Van Dyke was also involved in the project. Several civil engineers, master gardeners and local residents also came down to assist in the effort.

"It is kind of serendipity after (Superstorm) Sandy," said Van Dyke. "The ultimate goal with these types of gardens is to filter storm water near the shore before it hits our streams and open harbors and inland we want to filter pollution before it hits our drinking water."

Rain gardens, which let water flow through them and are concave as opposed to a standard convex garden, fall under the umbrella of green infrastructure, according to Van Dyke.

"They are in the same realm as permeable pavement, grass parking lots, pavers, green roofs, bioswales and other forms of green infrastructure," she said.

Van Dyke helped build the first rain garden on Long Island at the Town of Oyster Bay Animal Shelter in Syosset in 2010. She has built several others since, including two at the Jericho Preserve and one in September at Town Farm in Oyster Bay Cove.

She collaborated with the National Fish & Wildlife Foundation, National Soil Water Conservation District, Oyster Bay-Cold Spring Harbor Protection Committee, Hempstead Harbor Protection Committee and Sustainable Long Island on recent rain garden installation at the waterfront.

Schmidt, who hails from the Midwest, helped form multiple rain gardens in Oregon, Ohio, Minnesota and cities such as Kansas City and Seattle.

"These gardens are the best way to clean water," said Schmidt. "Instead of going into storm drains, water soaks into these concave bowls into the ground two feet under the soil. They can be used to filter water from a house, driveway and in this case off of roads and sidewalks in the park."

He said that after 20 years of instituting rain gardens throughout the country and making them the norm, he finds this a great opportunity to make them more prevalent on Long Island.

"Rain gardens are starting to come around and with advocates like Jaime I'm hoping to make them more prevalent here on Long Island. I want people to think that instead of just putting in a regular garden that maybe they can add a rain garden which is great for the environment."

Schmidt will be hosting several rain garden workshops at the waterfront this month. The workshops will be held on Wednesday, Nov. 12 from 7 to 9 p.m., Nov. 19 from 9:30 to 11:30 a.m. and Nov. 20 from 2 to 4 p.m. The cost is $10 for residents and municipal staff and $25 for landscape professionals.

To register contact: Nassau County Soil & Water Conservation District by phone: 516-364-5860 or email: nassauswcd2@optonline.net.

Rusty Schmidt gives instructions for constructing the rain garden.

Despite the weather, volunteers showed up to help.

Volunteers plant vegetation at for the rain garden.
(Photos by Jaime Doran)

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A new kind of garden restores its environment

By George Wallace
newsroom@oysterbayguardian.com

A little falling rain can't deter a determined group of rain garden enthusiasts from their work. At least not in Oyster Bay.

All morning long last Saturday, a crew of ecologically-minded gardening enthusiasts at the Oyster Bay WaterFront Center ignored wet conditions to create one of the region's first rain gardens, under the supervision of Minnesota native Rusty Schmidt.

A guru of the rain garden movement nationwide, storm water expert and author, who wrote one of the seminal books on the subject of rain gardens, Schmidt has recently begun working with the Town of Oyster Bay's Environmental Resources and Parks staff — along with partner agencies through a Long island Sound Futures Fund grant — to familiarize the Oyster Bay community with rain gardens.

A rain garden is a shallow depression that is designed to capture rainwater and allow it to soak into the ground within a 24-48 hour period. By capturing surface water and allowing it to slowly soak into the ground, a rain garden mimics natural systems that have historically purified waters through a process of filtering underground, said Schmidt, who has moved to Long Island and is now a Northport resident.

According to Jaime Van Dyke of the TOB Department of Environmental Resources, and chair of Nassau County's Soil and Water Conservation District Board, rain gardens have many beneficial properties. In addition to filtering runoff pollution, they

(Continued on page 3)

Photos by Elisa Dragotti

Michael Ramirez, from Oyster Bay's Boy Scout Troop 299, braved a cold, windy rainy day to help plant a rain garden at the WaterFront Center.

A new kind of garden restores its environment

(Continued from page 1)

recharge groundwater, improve water quality, capture and remove standing water, reduce potential of home flooding and create habitat for birds and butterflies.

The gardens use native plants, or cultivated varieties of these plants, said Schmidt. "That way you utilize their deep root systems and help to deliver water deep into the ground so that it can be cleaned naturally," he noted.

As planted last weekend, the WaterFront Center's new rain garden, situated near a little storm water runoff pipe, is composed of such native species as Turtlehead, New York Aster, Brown-eyed Susan, False Blue Indigo, Arrowood shrubs, Columbine and "a cultivar of switchgrass that doesn't spread like the true native one," said Van Dyke.

While they're not a cure-all for runoff pollution, ("a rain garden is not a silver bullet, but it's a silver BB," said Schmidt back in 2008), they are part of what people can do to prevent rainwater polluted by lawn fertilizers and chemicals from flowing into the street and storm sewers and ending up in the harbors.

And if you think they might be a place for mosquitoes to breed, you're wrong, says Schmidt. "The water drains quickly and through filtration, it is drinkable two feet down," he notes. "A rain garden actually acts as a mosquito trap."

Though Oyster Bay is proud owner of one of Schmidt's first Long Island rain gardens, it won't be the only one, predicts Schmidt — in fact, he hopes Oyster Bay's is just the first of many rain gardens for the region.

"I've built over 1,000 rain gardens in Minnesota and other locations, and Long Island is perfect for them," he said. "People may not know about them much around here yet, but I have a long term plan to familiarize the region with them."

How long? "A 20 year plan."

Rusty Schmidt will be giving classroom rain garden workshops at the WaterFront Center on Nov. 12 from 7 to 9 p.m., Nov. 19 from 9:30 to 11:30 a.m. and Nov. 19 from 2 to 4 p.m.

What is a Rain Garden?

Rain gardens are where form meets function and the gutter meets the ground. Simply put, rain gardens are gardens that are specifically designed to soak up rain water, mainly from roofs, but also from driveways and patios. Rain gardens look like regular flower gardens but they are more. When it rains, a rain garden fills with a few inches of water and allows the water to slowly filter into the ground rather than running off to the storm drains. Compared to a patch of lawn, rain gardens allow about 30% more water to soak into the ground! They also add beauty to neighborhoods

Plan

Choosing a Spot

Rain gardens can be designed to catch water from a roof or even a driveway. When choosing a location for your garden, pick an area that is relatively flat or has a slight depression. Keep the following considerations in mind:

- Rain gardens are **NOT** a solution to wet areas! The garden must have good drainage so that water can soak in within 24 hours after a rainfall. This will also prevent your garden from becoming a mosquito haven.
- The garden should be at least 10 feet away from the house. Use a gutter lead or build a swale to direct rainwater from roof gutter or driveway to garden.
- The garden should receive full or partial sunlight.
- Avoid the area over a septic system.
- The garden must include an overflow outlet that will transport excess rainfall to a proper location (not your neighbor's lawn!)

Call before you dig
Dig Safe NY
(1-800-962-7962)
to locate any under-ground utility lines!

Prepare

How Big?

The size of your garden will depend upon 3 main factors:

1. *The size of the drainage area*
2. *The type of soils on the site*
3. *The depth of the garden*

A typical residential rain garden ranges from 100 to 300 square feet. For advice on calculating the dimensions of your garden, call the phone number on the back of this brochure.

Ready to Dig?

- Use string to outline the shape of your garden.
- On a slope, more digging will be required on the uphill side. Use extra soil to build a berm on the downhill side.
- The bottom of the garden must be flat and level.
- Don't' forget to make an overflow for heavy rain events!

Plant

Plant Selection

Choose plants that have a variety of heights, textures, and bloom times. Native perennial plants are recommended. It is important to select plants that can tolerate both wet and dry conditions, and that are suited to the sun/shade exposure of your garden.

Tip: Dig each hole 2x the width of the plant rootball. The hole should be deep enough so that the top of the plant's rootball is level with the ground.

Garden for Cleaner Water

What is stormwater runoff?
Stormwater runoff is the water that runs over and off the land during a rainstorm or snowmelt, rather than soaking in.

What's the problem?
As stormwater runs over streets, parking lots, and lawns it can pick up many kinds of materials that get washed into nearby streams and lakes. This leads to stormwater pollution!

Where do these pollutants come from?
Stormwater picks up many contaminants that come from all of us:

- Fertilizers
- Pesticides
- Bacteria from pet waste
- Eroded soil
- Road salt
- Grass clippings
- Litter

...just to name a few!

Rain gardens capture and filter stormwater

Rain gardens are a beautiful and beneficial addition to any landscape. By capturing rain water, they help to reduce stormwater pollution and protect local streams, lakes, rivers and watersheds.

ENCOURAGE RAIN-WATER TO INFILTRATE INTO THE GROUND

Plant a Rain Garden of Your Own!

- Add beauty & interest to your yard.
- Contribute to cleaner water.
- Increase groundwater recharge.
- Provide habitat for butterflies & wildlife.

This brochure was developed by Cornell Cooperative Extension of Onondaga County.

Garden designed by: Nassau County Soil and Water Conservation District—516-364-5860

Plants supplied by: Nassau County Soil and Water Conservation District and Long Island Native Grass Initiative

NASSAU COUNTY SOIL & WATER CONSERVATION DISTRICT

For more information about rain gardens, or how to design and construct one for your own yard, contact:

Nassau County Soil & Water Conservation District at 516-364-5860

An Introduction to Rain Gardens

Nassau County's First Rain Garden Is Located At Town Of Oyster Bay's Animal Shelter 150 Miller Place in Syosset, New York

This rain garden captures runoff from adjacent parking lots and rooftops which helps to prevent stormwater from polluting the surrounding environment.