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Water Quality Outreach

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WATER QUALITY OUTREACH

A Final Report to

The New Hampshire Estuaries Project

Submitted by

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Executive Summary

The Town of Exeter was interested in creating an education program for nonpoint source pollution. Exeter was not designated as a small municipal separate storm sewer system (MS4) with the first group of Seacoast towns, but realized we had some of the same concerns and may be designated in the future. We partnered with other seacoast towns to create a video on storm water runoff. The video is an excellent tool for storm water education. We wanted to supplement the video with a hands-on activity. Storm drain stenciling created an excellent opportunity to get the public involved.

The grant provided an opportunity for the town to initiate an outreach and education program. It not only provided funding, it connected us with Julia Peterson, UNH Sea Grant Program. Julia provided an excellent education program to supplement the stenciling activity.

Exeter completed three very successful stenciling activities and plans to continue the program, extending out from the downtown area.

Introduction

The Town of Exeter, NH is located in southeastern Rockingham County within 10 miles of the Atlantic Ocean. It is situated on both the Exeter and Squamscott Rivers. The Squamscott River is one of the major tributaries to the Great Bay estuary and the Exeter River is an important contributor to the municipal water supply. The health of these waterways is very important to the town.

Nonpoint source pollution is the nation's largest source of water quality problems. Exeter wanted to implement an outreach program to educate the community on nonpoint source pollution. Research has shown that a stenciled message at storm drains can generate awareness among citizens about storm water pollution and its effects on local surface water quality.

The Exeter Public Works Department partnered with Julia Peterson, UNH Sea Grant, to conduct three storm drain stenciling events in Exeter. Julia also had a grant from the NHEP to conduct storm drain stenciling in the Seacoast area. She brought an excellent education program and experience in stenciling storm drains.

Project Goals and Objectives

The goal of this project was to initiate a water quality outreach program to address nonpoint pollution and polluted runoff. We chose storm drain stenciling as a means to educate and promote voluntary action for pollution prevention.

Our objective was to raise public awareness of storm drains and their direct connections to local waterways and ultimately the Great Bay Estuary. Stenciling the message “Don’t Dump, Drains to River”, would alert the community to the fate of runoff water and the pollution carried with it from streets, parking lots, lawns, driveways and other areas of concern.

Methods

We chose storm drain stenciling as our method to achieve “Water Quality Awareness.” Other communities have found that people appear to be more likely to change their behavior and to prevent pollution once they understood the storm water runoff destination.

Storm drain stenciling is a great method to achieve awareness because it uses volunteers for the stenciling activity. After the stenciling event, volunteers have a better understanding of storm water runoff and how they can prevent pollution in their everyday lives. They become ambassadors for the program, sharing the information they have acquired.

While some volunteers are stenciling, others are placing door hangers at homes and businesses. The door hangers describe what the volunteers are doing in the area and ways homeowners and businesses can reduce pollution entering the storm drains.

The stenciled message is bright, informative, and noticed by the general public, residents, and businesses, and continues to educate long after the event.

Results and Discussion

This project was very successful and initiated a Water Quality Outreach program for the Town of Exeter, NH. We used storm drain stenciling as a means to educate and promote voluntary action for pollution prevention.

Storm drains are located throughout Exeter. We want the residents and businesses in Exeter to understand what happens to storm water as it runs along the gutters and disappears down storm drains. We believe that most people understand that storm drains are designed to direct water away from homes and businesses as quickly as possible to prevent flooding. However, many do not realize that the storm drains empty into our waterways with no treatment. We also want homeowners and businesses to understand that they may contribute to storm water pollution and educate them on ways to prevent polluted runoff.

We partnered with Julia Peterson of UNH Sea Grant. Julia provided excellent storm water education, helped recruit volunteers, and assisted with organizing and accomplishing our stenciling events.

We completed three stenciling activities in high pedestrian traffic areas. The first stenciling activity took place along Swasey Parkway, an area widely used by the general public. The parkway is ½ mile in length and runs along the Squamscott River. The parkway has 28 catch basins with direct piping to the river. The parkway hosts many local events including the Alewife Festival, the Revolutionary War Festival, summer farmer's market, and other activities that offer opportunity for the general public to read the messages stenciled next to the catch basins. We also chose the parkway for our first event because we could close the entire area to traffic. The stenciling took place May 4, 2002, with volunteers from the Exeter River Local Advisory Committee (ERLAC) and students and teachers from Exeter High School. We had a beautiful morning with a total of 28 volunteers. Julia started the morning with an overview of the Great Bay Estuary watershed and explained how storm water runoff from Exeter contributes to water quality and natural resources throughout the coastal watersheds. After educating the volunteers on storm water pollution and providing information on how to protect water quality, Julia explained how to use the stencil.

We worked in groups of four, using yellow latex paint, disposable stencils and paint brushes. The town purchased a five gallon container of paint which we distributed in smaller buckets at the event. The paint was somewhat difficult to work with. One of our ERLAC volunteers went to a local hardware store and purchased foam brushes which seemed to work a little better than the bristle brushes. It took approximately two hours to complete the stenciling. Some of our volunteers distributed door hangers to the downtown area. The door hangers explained the stenciling activity, who was participating, and informed others how they could reduce pollutants in storm water runoff.

The volunteers were rewarded for their participation with t-shirts. The t-shirts were purchased through the grant. A logo was designed for our storm water program depicting a neighborhood, a catch basin, and a waterway with fish. The slogan read, "RUNOFF RETURNS – Clean Storm Drains = Clean Water." We printed the logo on the t-shirts and flyers. Flyers were printed to educate the community on storm water runoff. Information includes ways to protect water quality and ways to control runoff. Water bottles and a snack were also provided for the volunteers.

Another reason for selecting the parkway was for the upcoming Alewife Festival, which took place on May 18, 2002. We anticipated many festival goers reading the newly painted messages. Unfortunately, it snowed and attendance was minimal.

The second stenciling activity took place on April 16, 2003. This stenciling activity used student and teacher volunteers from Phillips Exeter Academy. The 16th of April is an environmental day for the school. The area chosen for this stenciling event is an active pedestrian and traffic area through the campus and extending into the downtown area. It is a high visibility area for students, teachers, residents, and the general public. Many people pointed out that the stencil in front of the post office got their attention.

Once again the morning started with Julia providing education on non point source pollution to the students and teachers at their dormitory. Followed by an explanation of how to place the stencil for visibility and painting a trial stencil. There was a lot of activity on the morning of the stenciling. The entire campus was outside picking up litter, raking, and general clean up around campus and other parts of town. Our activity seemed to be the most popular and our team of student volunteers seemed proud of their project. Seven students and two teachers stenciled 150 catch basins in two hours. For this stenciling event, we chose a plastic stencil (\$15 ea) that we could use with spray paint. Spray paint was much faster than the brushes and buckets of paint. However, the sprayed stencils may not be holding up as well as the stencils painted with the brushes.

The third stenciling event took place on May 10, 2003. This stenciling event included volunteers from Exeter Rotary and Exeter High School. Once again, we had beautiful weather. We met at Swasey Parkway around 8:30, Saturday morning. Once again Julia provided an excellent overview of storm water pollution. We had eight adults. Each adult teamed with two students. We prepared maps of the areas to be stenciled and provided them to each team. Each team had 20-25 catch basins in their area. Each team received two cans of spray paint, a stencil, gloves, a wisk broom, safety cones, safety vests, water and a garbage bag. Another successful stenciling event was completed in about two hours.

Conclusions

Storm drain stenciling was a very successful outreach program. We completed three stenciling events, with 64 volunteers, and stenciled messages on 340 storm drains.

We concluded that spray paint and plastic stencils are the best choice. The stencil is easy to use, and the spray paint is quick to apply and fast drying. In most instances, the storm drains are close to traffic, so it is important to quickly complete the stencil. In areas, such as Swasey Parkway, where traffic can be eliminated or is minimal, the hand painted stencil could be used and may last longer. However, the paint was difficult to use and had to be purchased in a large quantity. The plastic stencils were \$11 dollars more than the disposable stencil, but can be used for our next event. The disposable stencil required a foam board border to hold it in place. The cost of the foam board brought the cost of the \$4 stencil up to \$10.90, or only \$4.10 less than the plastic stencil. We plan use spray paint and plastic stencils in our future events.

It is important to prepare maps for the volunteers. We prepared a large map of the entire area to be stenciled and each team area was assigned a color. Each team received a smaller version of the large map, plus a larger map of their color coded area. This made it easy for each team to locate their area and understand which drains to stencil.

We wanted to enhance the storm water outreach program with a display at the local Alewife Festivals. We prepared a display showing volunteers stenciling storm drains, the Town GIS storm drainage mapping system, and crews cleaning catch basins. We wanted to provide information to the general public about storm water, what the town is doing to prevent storm water pollution, and ways individuals can prevent pollution. We provided litter bags to encourage proper trash disposal, pocket ashtrays to provide an alternative to throwing cigarettes on the ground, and a flyer to provide information on ways to protect water quality and control runoff. The 2003 Alewife Festival was a successful event with many people attending. In addition to providing flyers at the festival, we distributed 300 flyers to six downtown restaurants. In the grant application, we planned to create an educational placemat. After discussion with restaurants, it was decided a flyer would be more accepted.

Our storm drain stenciling activity was greatly enhanced by partnering with Julia Peterson, UNH Sea Grant.