

2009 Best Management Practice Site Visit Summary Report



Improving and protecting water quality in New Hampshire's watersheds



*Funding for this project was provided by the US Environmental Protection Agency under
Section 319 of the Clean Water Act*

Introduction

Each year the Environmental Protection Agency provides states with grant funding to address nonpoint source pollution issues through Section 319 of the Clean Water Act. Since 1993, the New Hampshire Department of Environmental Services has provided financial and technical support to local organizations that wish to implement nonpoint source related Best Management Practices (BMP's). The BMP's are designed to improve and/or maintain the water quality of a water body and ultimately the entire watershed that the water body lies within. BMP's may be behaviors or on the ground structures designed to reduce the amount of nonpoint source pollution entering a water body. The functions of BMP's include but are not limited to; reducing the amount of sediment, nutrients, bacteria or pollutants entering a water body, erosion control or reducing the volume of runoff entering a water body.



Rip rap swale along road to dissipate stormwater volume, reduce erosion and stop harmful pollutants and nutrients from entering the surface water.

In 2008 the NH DES Watershed Assistance Section began conducting BMP site visits as part of the implemented Section 319 projects. The purpose of a site visit is to monitor the success of structural BMP's and track any required maintenance and repairs. In addition, site visit results will aid in future BMP selection decisions. The 2008 methodologies were revised during the 2009 field season to include a standard operating procedure (SOP), improving site maps and photo point descriptions to increase the accuracy and efficiency of site visit replication.

2009 Site Visit Results

During the 2009 field season, 19 BMP project sites were visited (see figure 1). The field technician found five sites that will require maintenance on catch basins or other types of sediment collection basins. The following issues were the most frequent/severe found during the spring and summer 2009 inspections.

The field technician found many catch basins that appear to be neglected and not maintained. Several catch basins were full to the invert of the outlet pipe and some contained larger rocks and debris in addition to sediment accumulation. Many others were nearly full, had covers that were paved shut, broken, missing or had other indications that that they were not routinely maintained.

Crushed stone and larger stepping stones have proven troublesome in some high traffic areas and areas prone to vandalism. Alternatives might be smaller gravel particles or mulch that would be less likely to be picked up and thrown or more secured types of impervious surfaces such as grass, pervious cement or pervious asphalt which would remain in place in high traffic areas

The field technician noted some issues with erosion on slopes, whether it be a steep hill located next to the BMP or the inside of a drainage ditch. Such slopes would not be problematic if vegetation or some other stabilizing BMP was implemented. However, many of these slopes were bare and easily eroded by rain events, nearby vehicle traffic or by various other factors.

Sediment accumulation was found to be a reoccurring problem at infiltration basins, swales, ditches, level spreaders and various other BMP's designed to hold and/or channel water. While this often indicates that a BMP is working by trapping sediment and filtering runoff, too much sediment buildup will effectively render it useless. Similar to the observed catch basins this year, sediment accumulation in these types of BMP's is due to lack of maintenance.

The field technician concluded that most problems with BMP's were due to lack of maintenance. The most common issue was sediment accumulation in catch basins, rip rap swales, retention gardens or other constructed BMP's. This highlights the need for careful consideration of maintenance requirements when developing operation and maintenance plans. DES and the grantees should attempt to improve ongoing communication between project stakeholders and those responsible for the maintenance of these BMP's. Setting maintenance schedules and plans with 319 grantees would greatly improve the function of select BMP's.

In conclusion, site visits revealed several BMP's functioning fair or poor due to lack of maintenance. These issues are temporary and should be fixed after contact is made with the appropriate town or organization. Overall, no pervasive issues or problems exist with the 19 BMP's visited in 2009. Continued inspections of BMP's and maintaining working relationships with towns and organizations will ensure that implemented BMP's continue to function properly.

BMP Examples



Rain garden



Healthy vegetation buffer

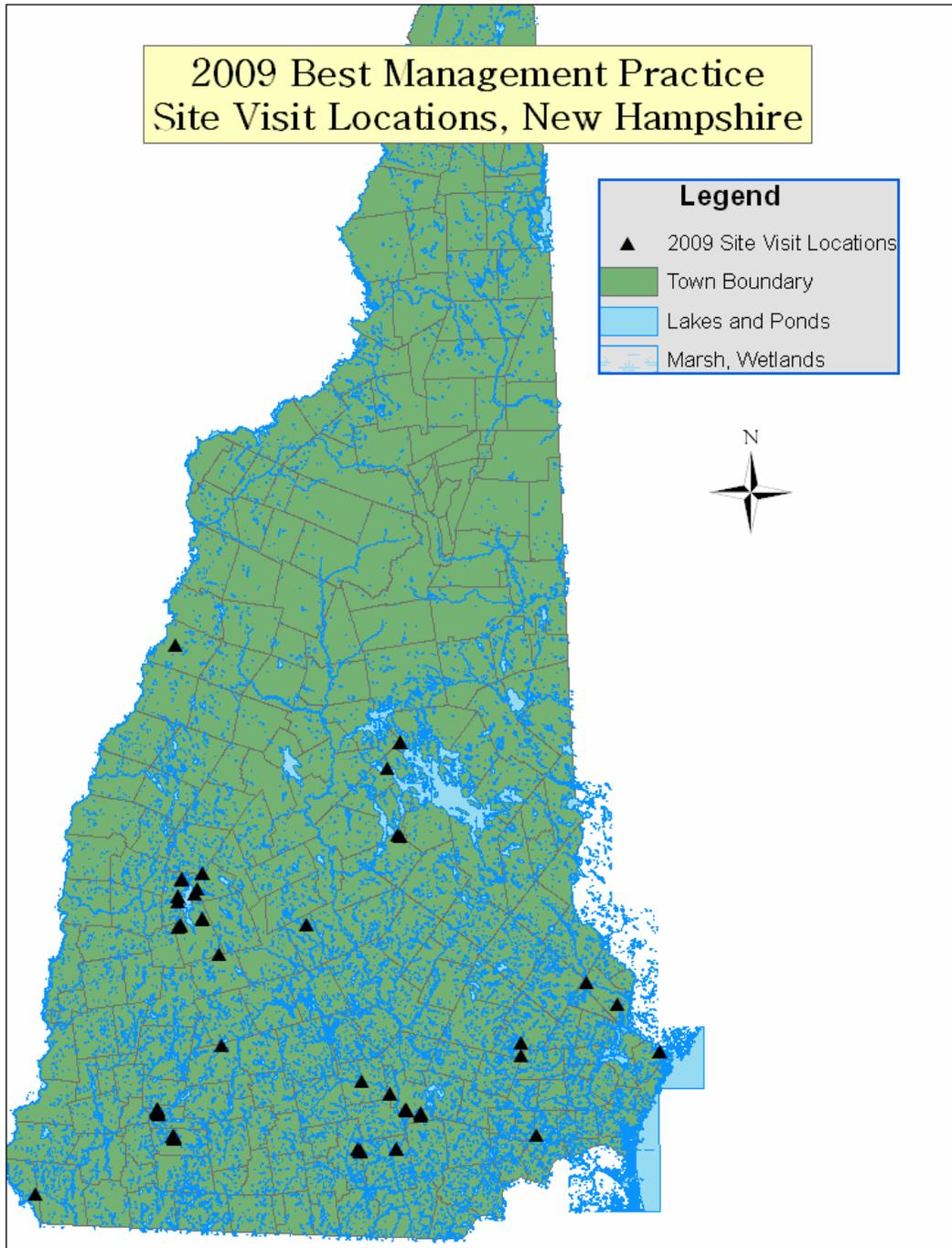


Vegetated Swale



Pervious paver boat ramp

Figure 1.



2009 Project Site Visits

Coastal Watershed

| Project Number | Project Name | BMP Type | Town |
|----------------|--|---|------------|
| B-98-C-05 | Dover Water Quality Protection and Enhancement Project | Grade Stabilization Structure | Dover |
| R-01-C-09 | Strafford County Canoe Launch | Recreation Area Improvement | Dover |
| R-02-C-03 | Pierce Island Shoreline Stabilization Phase II | Streambank and Shoreline Protection, Recreation Trail and Walkway | Portsmouth |
| R-05-C-03 | Pawtuckaway Lake Watershed Improvement Project | Road Ditch Creation/Improvements, Vegetated Swales | Nottingham |

Connecticut Watershed

| Project Number | Project Name | BMP Type | Town |
|----------------|--|--|---------------------|
| B-99-CT-02 | Winnepesaukee River Clean Up | Critical Area Planting | Laconia |
| B-99-CT-09 | Beck Brook Runoff Response Program | Grade Stabilization Structure | Newbury |
| R-00-CT-09 | McGoldrick Dam Removal Project | Stream Channel Restoration (Dam Removal) | Hinsdale |
| B-03-CT-01 | Sunapee Roadways NPS Reduction, Phase II | Stream Channel Restoration, Urban Catch Basin, Ditch Stabilization, Urban Infiltration Basin | Newbury and Sunapee |
| B-05-CT-04 | Silver Lake Stormwater Management | Ditch Stabilization | Harrisville |

Merrimack Watershed

| Project Number | Project Name | BMP Type | Town |
|----------------|---|--|---------------|
| B-98-M-01 | Sunapee Watershed NPS Reduction Program | Ditch Stabilization, Vegetated Swales, Wetland Enhancement, Vegetative Barrier, Stream Channel Stabilization | Newbury |
| R-99-M-03 | NPS Pollution Reduction for Center Harbor Bay, Lake Winnepesaukee | Grassed Waterway, Urban Catch Basin, Porous Pavement | Center Harbor |
| R-99-M-04 | Depot Street Stormwater Runoff Project | Critical Area Planting, Urban Grassed Swale | Merrimack |
| R-00-M-01 | The Waterfront at Glen Lake | Grade Stabilization Structure | Goffstown |
| R-00-M-06 | Watershed Sensitive Parking Area and Educational Kiosk | Urban Porous Pavement, Kiosk | Manchester |
| R-00-M-08 | Stormwater Infiltration Trench, Meredith | Urban Infiltration Trench | Meredith |
| B-01-M-13 | Chalk Pond Sediment and Erosion Control Plan and Outreach Program | Kiosk, Ditch Stabilization | Newbury |
| R-02-M-04 | Crystal Lake Water Quality Improvement Projects | Urban Catch Basin, Urban Grassed Swale, Urban Filtration Basin | Manchester |
| B-02-M-05 | Dublin Lake Shoreline Erosion Control Project | Critical Area Planting, Recreation Trail and Walkway, Grade Stabilization Structure | Dublin |
| R-02-M-11 | Breezy Point Shoreline Stabilization | Grade Stabilization Structure | Antrim |
| R-05-M-01 | Nutts Pond Watershed Improvement Project | Sediment Forebay, Water and Sediment Control basin, Urban Stormwater Wetland, Water and Sediment Control Basin | Manchester |

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| R-05-M-05 | Baboosic Lake Stormwater Management | Urban Infiltration Trench, Ditch Stabilization | Amherst |
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