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Stormwater Management BMP Report and Website: Innovative Stormwater Treatment Technologies BMP Manual

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Innovative Stormwater Treatment Technologies BMP Manual

A Final Report to

The New Hampshire Estuaries Project

Submitted by

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New Hampshire Estuaries Project

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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EXECUTIVE SUMMARY

The New Hampshire Department of Environmental Services (DES) received money in 2001 from the New Hampshire Estuaries Project (NHEP) to create a manual and a website of Innovative Stormwater Treatment Technology Best Management Practices. The money was used to partially fund an intern position dedicated to the project and printing of the manual. The result of this project is an accessible resource to assist communities and developers in the selection of the best available stormwater treatment retrofits.

The NHEP funding was made available to address Activities 1 & 2, of Water Quality Action 7 identified in the NHEP Management Plan. DES's Watershed Management Bureau also identified the need to compile, evaluate, and distribute information on innovative stormwater best management practices. The grant described in this final project report complemented DES's efforts and reinforced the existing partnerships realized through NHEP related activities.

INTRODUCTION

On November 11, 2001 the Governor and Council approved an amendment to Memorandum of Agreement (MOA) between the New Hampshire Office of State Planning (OSP) NHEP and DES to implement several actions to improve the environmental quality of the state's estuaries, with a focus on water quality and shellfish resources. The MOA established a 1 year grant to DES to develop a manual and a website of Innovative Stormwater Treatment Technology Best Management Practices. DES received $3500 from NHEP to implement the grant. This report summarizes the project.

PROJECT GOALS AND OBJECTIVES

The goal of the project derived from an Action Plan identified in the NHEP Management Plan (Draft, 2000). Action WQ-7, Activities 1 and 2 recommended to research the effectiveness of innovative stormwater treatment technologies for existing urban areas in New Hampshire, and communicating these results to developers and communities.

The project objectives were to create a manual and a website of Innovative Stormwater Treatment Technology Best Management Practices. The grant summarized in this report was established to meet to carry out the NHEP action plan and the above referenced project objectives.

METHODS

This section will discuss the process used to implement the grant. The Results and Discussion section describes details related to the project objectives.

In November 2001, DES hired Jillian Jones to research innovative stormwater treatment technology BMPs, and create an Innovative Stormwater Treatment Technologies BMP Manual and web site. The project started with the collection of information on thirty innovative stormwater treatment BMP products for 11 treatment types including; product description, specifications, installation requirements, applications, pretreatment, performance, maintenance, relative cost, and manufacturer information. Research also included NH installation information and contacts for reference of product success in NH.

A recommendations and review committee (Committee) was established to aid in document content and format including representatives from DES, USDA/NRCS, NHEP, UNH CICEET, UNH T2, OSP/Coastal Program, and local conservation districts. On December 4, 2001, the Committee held a meeting at the DES Pease Field Office. Information was presented pertaining to project purpose and background and information gathered to date. The Committee discussed ideas for format and content of the manual. Appendix A contains the meeting minutes.

DES used the comments from the December 2001 Committee meeting to create the draft Innovative Stormwater Treatment Technologies BMP Manual. This draft was extensively reviewed and commented on by members of the Committee, as well as additional agency, municipal and private sector contributors. The following individuals reviewed and commented on various drafts of the manual:

Cynthia Carlson, Camp, Dresser, and McKee
Dave Fluharty, P.E., UNH T^2
Sue Hoey, U.S. Dept. of Agriculture/NRCS
Andrea LaMoreaux, NH DES
Steve Landry, NH DES
Joanne McLaughlin, OSP/ Coastal Program
Ed Minnick, P.E., Rockingham CCD
Sally Soule, NHEP
Steve Couture, NH DES
Andrea Donlon, NH DES
Steve Jones Ph.D., University of New Hampshire
Natalie Landry, NH DES
Richard Langan Ph.D., CICEET
Bambi Miller, Strafford CCD
Amy Smagula, NH DES
Paul Susca, NH DES

RESULTS AND DISCUSSION

Manual

The manual was published in July of 2002. The original project budget only allowed for the printing of 90 copies, however, DES contributed an additional $3,000 to the project budget to increase the total number of printed publications to 215.

A copy of the manual was distributed to each member of the manual's Committee, Regional Planning Commissions, and NHEP communities. In addition each New Hampshire municipality received a written notice of the publication's availability (Appendix B). This notice included the website address as well as the procedure for obtaining a hard copy through NHDES.

Website

The manual is on the NHDES website. Each section of the manual is available as a separate pdf file, as well the complete document. The manual is located at http://www.des.state.nh.us/wmb/was/manual/.

CONCLUSIONS AND RECOMMENDATIONS

The information in the Innovative Stormwater Treatment Technologies BMP Manual is a good starting point for municipalities reviewing proposed stormwater treatment designs and in considering retrofits to improve existing BMPs. However, the number, treatment focus, and available third party data for the innovative technologies are constantly increasing. Thus, the manual will need to be updated on a biannual basis to make it a relevant resource for the coastal communities and other interested parties.

APPENDIX A
Recommendations and Review Committee: December 4, 2001 Meeting Minutes

Innovative Stormwater BMP Manual
Committee Meeting
December 4, 2001

In Attendance: Jillian Jones, NHDES
Steve Couture, NHDES
Ed Minnick, P.E., RCCD
Richard Langan, UNH CICEET
Sally Soule, NHEP
Natalie Landry, NHDES
Sue Hoey, USDA-NRCS
Bambi Miller, SCCD
Joanne McLaughlin, NHEP/OSP

Project Background:

Jillian Jones began the meeting by presenting the background of the project and its current status. The Innovative Stormwater BMP Manual seeks to address Action WQ-7, Activities 1&2, identified in the NHEP Management Plan. To date, Jillian has received information regarding 29 different technologies, with 16 of the 29 including varying degrees of third party data. A spreadsheet summarizing the research to date was passed out to the committee members, as well a print out of the EPA Region 1 Center for Environment, Industry, and Technology (CEIT) Virtual Technology Trade Show.

Group Discussion:

Upon reviewing the CEIT handout, committee members agreed that the content was valuable, but did not fully address the needs of the projects target audience. The committee felt that DPWs were the primary target audience, but that the manual and web site should be formatted in a manner that would be useful to watershed organizations. In order to reach those audiences the committee felt the manual should contain similar information as the CEIT site, but include or expand on a decision matrix, a maintenance section, a ranking system, contacts and descriptions of NH installations, and mention that Low Impact Development (LID) options are the first line of defense.

The decision matrix was primarily discussed in the context of the project web site, however, there was support to include it in the manual. The committee believed that developing a decision matrix would be an extremely useful tool. The discussion focused mainly on what should be included with target pollutants and drainage area characteristics (including flow and land use) being recommended as the primary constituents. The committee envisions the decision matrix as an interactive database that will allow users to narrow the BMP field to only BMPs that are suitable to their site-specific requirements or other decision factors. Other decision factors could include the to be determined rating system, and whether there is already an installation in the state.

The committee felt that the maintenance section should answer how to perform maintenance on a given BMP and what would be needed for that maintenance. More specifically, it should include:

- What equipment is needed
- Hours of manpower needed
- How often maintenance is needed

- How maintenance contracts are available

The committee discussed including the location and contacts for NH installations and mentioning that LID as the first line of defense. They felt both would be important components of the manual/web site.

A ranking system for the technologies was discussed. The committee felt it would be difficult to develop criteria for ranking third party data, so instead a simplified version should be developed. Some ideas included a five star type system, which would start with BMPs without third party verification and perhaps end with technologies that have been tested according to USEPA Environmental Technology Verification protocols.

The committee was also questioned whether or not a web site and a written report were necessary. While a web site might not be accessible by all of the target audience at the present time, it was felt that it would be a useful tool now and in the future as web accessibility improves.

Once a draft outline of the BMP manual is developed, the committee felt that focus stakeholder groups should review the document. The focus groups mentioned by the committee included Regional Planning Commissions, Conservation Districts, and the T2 Center at UNH. All Committee members were willing to provide contacts for the focus groups.

Action Items:

- Jillian will develop a draft outline of the BMP manual for distribution to focus groups.
- Committee members will develop a contact list for inclusion in the focus groups.
- Richard Langan would contact Tom Ballestero to determine if he would help in the development/review of the manual.

APPENDIX B
Municipal Notification

Announcement

Innovative Stormwater Treatment Technologies Best Management Practices Manual

The New Hampshire Department of Environmental Services (NH DES), in conjunction with the New Hampshire Estuaries Project and the Office of State Planning, has recently completed an **Innovative Stormwater Treatment Technologies Best Management Practices (BMP) Manual**.

The purpose of this manual is to provide innovative stormwater treatment information for developed areas within New Hampshire. The technologies included in this manual are primarily for use in already-developed urban areas where traditional stormwater treatments cannot be used due to space constraints.

The manual provides general stormwater information to answer the questions:

- **What is stormwater and why is it a problem?**
- **What are common stormwater pollutants?**
- **Why is there a need for innovative stormwater treatment technologies?**
- **What technologies are currently available?**
- **What criteria should be considered to determine the most efficient BMP system for specific site conditions?**

For each technology, this manual provides a general description of the BMP and information on the BMP's target contaminants, applications, installation and maintenance considerations, relative cost, performance, existing installations located in New Hampshire or New England, and manufacturer contact information.

Anyone interested in obtaining a copy of the **Innovative Stormwater Treatment Technologies Best Management Practices Manual** can download it from the NH DES website at http://www.des.state.nh.us/wmb/was/manual/ , or can purchase a hard copy for $10.00 by contacting the NH DES' Public Information Center at (603) 271-2975.