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Jeffrey Marcoux

*N.H. Department of Environmental Services*

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# 2005 Coastal Municipal Stormwater Infrastructure Mapping Project

# **2005 COASTAL MUNICIPAL STORMWATER INFRASTRUCTURE MAPPING PROJECT**

## **A Final Report to The New Hampshire Estuaries Project**

Submitted by

Jeffrey Marcoux  
N.H. Department of Environmental Services  
29 Hazen Drive  
Concord, New Hampshire 03301

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## **EXECUTIVE SUMMARY**

The New Hampshire Department of Environmental Services (DES) received funds in 2005 from the New Hampshire Estuaries Project (NHEP) to provide assistance to coastal communities to develop storm sewer infrastructure maps. This final report describes the grant projects completed in Rye and Seabrook.

NHEP chose to fund stormwater infrastructure mapping projects for a number of reasons. Primarily, this grant was established in order to fulfill one of the water quality action plans identified in the NHEP Management Plan. In addition, the Coastal/Piscataqua watershed has been identified by DES as a priority watershed in need of restoration. Updated and comprehensive maps are a valuable tool for identifying pollution sources in the storm drainage system. Finally, the communities that were awarded grants are regulated as small municipal separate storm sewer systems (MS4s) under the Phase II federal stormwater regulation. The financial assistance the municipalities received has helped them comply with one of the requirements of the Phase II regulations.

## **INTRODUCTION**

This final report describes the grant program funded by NHEP and administered by DES. A memorandum of agreement (MOA) between NHEP and DES created a grant program to provide assistance to coastal communities to develop storm sewer infrastructure maps. A total of \$60,000 was made available for assisting municipalities with illicit discharge correction and storm sewer mapping projects. DES issued a request for proposals (RFP), chose grant recipients, and managed the grant agreements. This report provides details on the grant projects completed by Rye and Seabrook. The deadline for completion of all grant activities was December 31, 2006.

## **PROJECT GOALS AND OBJECTIVES**

The goal of the project was to provide financial and technical assistance to coastal municipalities to map their storm drainage systems. The project's objective is derived from one of the Action Plans identified in the NHEP Management Plan relating to water quality. Action WQ-4B aims to assist Seacoast communities in completing and maintaining maps of sewer and stormwater drainage infrastructure maps. The grant summarized in this report was established to help carry out this action plan.

## **METHODS**

On June 22, 2005, the Governor and Executive Council approved a MOA between the University of New Hampshire and DES to implement several NHEP actions to improve the environmental quality of the state's estuaries, including funding for municipal stormwater infrastructure mapping.

DES issued an RFP to all communities within the coastal watershed, announcing the availability of funding for storm drainage system mapping. The requirements for the use of the grant funds were as follows:

1. Maps should show catch basins, underground and above ground storm drainage, direction of flow, and outfall locations.
2. Maps must have the ability to be stored electronically, using a system that is compatible with the computer mapping system the municipality uses. Ideally, the system would also be compatible with the NH GRANIT system, so that regional planning commissions and other interested parties can use the data.
3. The proposed project meets the program criteria, as specified in the RFP. The criteria are listed below. The criteria include a 50% local (non-federal) match.
4. All projects must be completed by December 31, 2006.
5. All projects must be within the coastal watershed.

DES reviewed the proposals and assessed their merit based on the following criteria:

1. Proposals were submitted by eligible municipalities (NH coastal watershed).
2. Maps should be available in an electronic form consistent with the municipality's GIS system. It is encouraged that the mapping format be compatible with regional planning commissions and the NH GRANIT system.
3. Maps should ideally show all of the following details:
  - catch basins
  - underground and above-ground (ditches, swales) storm drainage
  - direction of flow
  - outfall locations
4. If the town lies on the Coastal/Merrimack watershed boundary, NHEP funding will only apply to the part of town that drains into the Coastal watershed.

The Rye and Seabrook grant applications were deemed to be eligible and acceptable. Grant Agreements were developed for the project and approved by the city managers, the DES commissioner, and the NH Governor and Executive Council.

## **RESULTS AND DISCUSSION**

The outcomes of the activities performed as part of the grant are discussed in this section.

### **Rye Mapping**

The town of Rye's mapping project Grant Agreement was approved by the Governor and Executive Council on December 5, 2005. Mapping services were provided by OEST Associates working with Town staff. This storm drainage system mapping project resulted in updated maps that show catch basins, underground and above-ground storm drainage, direction of flow, and outfall locations. The town of Rye collected and reviewed all existing data on storm drainage features within the town, and completed inspections using Global Positioning Systems (GPS) to field-locate storm drain structures in areas of the town that were lacking information. The data collected were used to update storm drainage system maps in an AutoCAD electronic format that

is compatible with existing town maps, Rockingham Planning Commission maps, and NH GRANIT. The total project cost was \$6,600.00. This grant provided \$3,300.00 and the town of Rye documented \$3,300.00 in cash and in-kind match.

**Seabrook Mapping**

The town of Seabrook’s mapping project Grant Agreement was approved by the Governor and Executive Council on December 21, 2005. Seabrook is in the process of implementing its 5-year Phase II Stormwater Management Plan. This project represented the final stages of an ongoing stormwater infrastructure mapping project. The intent of this project was to field-locate any remaining stormwater drainage structures for which information is missing or incomplete. Earth Tech was contracted by the town to complete the project work. Attribute information, including elevation and location, was collected using Global Positioning Systems (GPS). During the project, personnel completed structure inspections on 460 structures, including 165 that had not been located on town maps in the past. The collected information was added to the town’s maps and spreadsheets with all of the attribute data were created. The total project cost was \$25,000.00. This grant provided \$12,500.00 and the town of Seabrook documented \$12,500.00 in cash and in-kind match.

**CONCLUSIONS AND RECOMMENDATIONS**

This grant program has assisted the communities in complying with federal Phase II stormwater requirements, and has alleviated some of the strain on municipal budgets. The products of the grant projects will allow the municipalities to increase pollution source reduction by removal of illicit discharges that are found through investigations using the improved tool of up-to-date and accurate storm drain infrastructure maps. DES and coastal municipal staff rely on these maps during illicit discharge detection surveys. Efficiency during the investigations is improved using the new maps that show the infrastructure components and flow patterns.

Table 1: 2005 Mapping Project costs

<b>Project</b>	<b>Grant</b>	<b>Match</b>	<b>Total</b>
Rye Mapping	\$3,300.00	\$3,300.00	\$6,600.00
Seabrook Mapping	\$12,500.00	\$12,500.00	\$25,000.00
<b>Total</b>	<b>\$15,800.00</b>	<b>\$15,800.00</b>	<b>\$31,600.00</b>