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2004 Coastal Illicit Connection Identification and Elimination Grant  
Project

# **2004 COASTAL ILLICIT CONNECTION IDENTIFICATION AND ELIMINATION GRANT PROJECT**

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

Submitted by

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## **EXECUTIVE SUMMARY**

The New Hampshire Department of Environmental Services (DES) received funds in 2004 from the New Hampshire Estuaries Project (NHEP) to administer grants to coastal municipalities to eliminate illicit discharges into their storm drainage systems. This final report describes the two projects that were funded under this grant. Projects in Dover, and Portsmouth involved eliminating sewage discharges into storm drainage systems from houses, apartment buildings, and commercial buildings. All of these efforts helped improve water quality in the coastal area by reducing pollution.

NHEP chose to fund illicit discharge detection and elimination projects for a number of reasons. Primarily, this grant was established in order to fulfill several 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. DES has worked in the coastal watershed since 1996 to reduce bacteria inputs that cause the closure of shellfish beds. 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 these municipalities received has helped them comply with one of the requirements of these regulations.

## **INTRODUCTION**

This final report describes a 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 identify and eliminate illicit discharges into the storm drain system. A total of \$50,000 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 illicit discharge detection and elimination projects completed by Dover, and Portsmouth. The deadline for completion of all grant projects was December 31, 2005.

## **PROJECT GOALS AND OBJECTIVES**

The goal of the project was to provide financial and technical assistance to coastal municipalities to identify and eliminate illicit discharges into the storm drainage system.

The project's objectives are derived from several Action Plans identified in the NHEP Management Plan relating to water quality and shellfish resources. One overall goal of the Management Plan is to ensure that New Hampshire's estuarine waters and tributaries will meet standards for pathogenic bacteria including fecal coliform, *E. coli*, and enterococci. Action WQ-4C aims to eliminate illicit connections in Seacoast communities, and Action WQ-7 aims to provide incentives to fix or eliminate illegal direct discharges such as grey water pipes, failing septic systems, and agricultural runoff. Lastly, Action SHL-2 is to identify sources of, and reduce or eliminate, contaminants in the estuaries watersheds. The grant summarized in this report was established to help carry out these action plans.

## METHODS

On February 11, 2004, the Governor and Executive Council approved an MOA between the New Hampshire Office of State Planning and DES to implement several NHEP actions to improve the environmental quality of the state's estuaries, including funding for illicit discharge remediation projects.

DES issued a request for proposals (RFP) to all communities within the coastal watershed, announcing the availability of funding for illicit connection remediation. The requirements for the use of the NHEP funds were as follows:

1. The proposed project will eliminate an illicit discharge to a storm drainage system. Remedial activities can include:
  - Removing an illicit connection from the storm drainage system,
  - Reinstalling plumbing to a residence or commercial establishment, and/or
  - Rerouting pollutant discharge to an adequate treatment facility.
2. The proposed project meets the eligibility criteria (see below).
3. Funding must be matched by an equal local (non-federal) share in cash or in-kind services.
4. All projects must be completed by December 31, 2005.

Proposals were received from Dover, and Portsmouth. DES reviewed the proposals and assessed their merit based on the following criteria:

- Locations of illicit connections are known.
- Illicit connections discharge into a storm drainage system that discharges into State surface waters within the coastal watershed.
- Elimination of the identified illicit connections is supported by town/city officials.
- Property owners are likely to cooperate.
- Practical solutions can be implemented.
- Results can be achieved.

The applications from Dover, and Portsmouth were accepted using these criteria.

## RESULTS AND DISCUSSION

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

### Dover

Over the past few years, Dover has been finding and fixing illicit discharges at a rapid pace. The City has attempted to fix all illicit discharges prior to resurfacing many downtown streets. The DES Watershed Assistance Section has collected numerous bacteria samples from the Dover storm drainage system, and DES staff has worked with the city to focus efforts in areas of suspected sewage discharges.

This grants purpose was to eliminate three suspected sources of sewage into the storm drainage system, conduct dye and smoke testing at other possible sources, and to complete additional fixes as time and budget allowed. Table 1 below shows buildings at which connections were made to the municipal sanitary sewer. There was also a project Task which involved the collection of data which would be used to develop a maintenance program and

drainage system update plan. This part of the project had to be postponed after the Town discovered an additional existing illicit discharge that would need to be corrected as soon as possible.

The Dover Department of Public Works crews performed investigative work at a suspected site on Court Street as a result of crews finding sanitary waste in the drainage system. Illicit connections were found at 32-34 Court Street, and 36 Court Street. City crews performed the remediation work in October for these two properties.

Central Avenue was slated to be repaved during the summer. As the catch basin structures were being raised in preparation of paving, it was discovered that the sewer service for an office building at 45 Central Avenue was connected to the storm drainage system.

A fourth property was identified as directly discharging into the Cocheco River via the storm drain in downtown Dover. Following some investigative work the source was identified as a retail jewelry store. The problem was corrected utilizing the services of a local plumber who performed plumbing modifications inside the building; and extensive work by Public Works crews outside of the building to redirect the sewer service from the storm water drain into the sanitary sewer collection system.

**Table 1. Summary of Activities in Dover, NH, 2004 Illicit Connection Identification and Elimination Grant**

<b>Illicit discharge eliminated</b>	<b>Cost</b>
36 Court Street	\$4,105.85
32-34 Court Street	\$4,409.81
45 Central Avenue	\$1,827.91
382 Central Avenue	\$4,668.67
<b>Total</b>	<b>\$15,012.24</b>

The original grant amount for this project was \$24,410.00. The cost of completing the corrections was \$15,012.24. The cost of the other Tasks associated with the project was \$710.50. With Dover providing 50% match, the total grant funding used was \$7,861.37.

## **Portsmouth**

The City of Portsmouth has located and repaired an illicit connection at Buzy’s Truck Stop on Business Route 1. Outfalls below this area had tested high in E-coli, had a notable odor, and foaming. Extensive fieldwork was required to determine the source of the discharge. Sampling, televising, and dye testing were employed to try to pinpoint the source of this flow. The illicit connection was made at the truck stop’s kitchen grease trap. Corrections were completed and post remediation sample results have been clean.

Extensive televising of the City’s storm drainage system was required to find this connection. The City reports that in addition to allowing them to find this connection, the televising has provided them with information that will be valuable in future stormwater infrastructure work in the area. Additionally, while conducting field work in connection with the IDDE survey City staff discovered a discharge of truck washing fluids to a stormdrain. The Portsmouth City Attorney issued a letter to the owners of the Truck Stop to end this discharge.

Due to the difficulty in finding the source of the discharges at this location, the City ran out of

time and was not able to survey as many areas as they had initially planned. The project ended under budget. Total grant funds expended were \$10,470.00.

**Table 2. Summary of Activities in Portsmouth, NH, 2004 Illicit Connection Identification and Elimination Grant**

<b>Activity</b>	<b>Cost</b>
Televising Stormdrains	\$9,750.00
Sample analysis	\$720.00
Other Labor and Equip.	\$10,841.00
<b>Total</b>	<b>\$21,311.00</b>

The original grant amount for this project was \$15,590. The cost of completing the project was \$21,311. With Portsmouth providing approximately 50% match, the total grant funding used was \$10,470.

### **CONCLUSIONS AND RECOMMENDATIONS**

Each of the grant recipients was able to utilize the NHEP grant funding to pinpoint illicit discharge sources, or make significant progress toward those goals during the project period. Additionally, Portsmouth was able to perform televising of the stormdrain lines that will be used to further the investigation for illicit discharges in the Route 1 area. Although DES has not measured the changes in receiving waters, we are encouraged by the progress these municipalities have made towards improving water quality. The grants described in this final report complemented DES's efforts and helped foster a partnership between DES and the communities in order to solve some of the water quality problems in the Coast. Table 3 summarizes the final project costs under this grant.

**Table 3. 2004 Coastal Illicit Connection Identification and Elimination Grant Amounts**

<b>Grant</b>	<b>Grant amount</b>	<b>Match amount</b>	<b>Total project cost</b>
Dover	\$7,861.37	\$7,861.37	\$15,722.74
Portsmouth	\$10,470.00	\$10,841.00	\$21,311.00
<b>Total</b>	<b>\$18,331.37</b>	<b>\$18,702.37</b>	<b>\$37,033.74</b>

Continued funding for illicit discharge remediation is recommended. Significant progress has been made toward eliminating illicit discharges with the help of this grant, however there is still a lot of work to be done. We are aware that there are several towns that still have suspected, or known, cross-connections that have not yet been repaired due to time or cost constraints.