

*NHR 041033*



May 1, 2004

New Hampshire Department of Environmental Services  
Water Division  
Wastewater Engineering Bureau  
P.O. Box 95  
Concord, NH 03302-0095

United State Environmental Protection Agency  
Water Technical Unit  
P.O. Box 8127  
Boston, MA 02114

**Subject: Seabrook, NH  
NPDES Phase II Stormwater Management Plan  
Annual Evaluation – Year 2**

Telephone

978-371-4000

Facsimile

978-371-2468

To Permit Reviewers:

On behalf of the Town of Seabrook, we are submitting the following NPDES Phase II Stormwater Management Plan Annual Evaluation as required by the United States Environmental Protection Agency (US EPA) and the New Hampshire Department of Environmental Services (NH DES) for coverage under the US EPA NPDES Stormwater General Permit.

If there are any questions or comments with respect to any of the information contained in the Annual Evaluation or the accompanying detailed plan, please do not hesitate to contact the undersigned.

Very truly yours,

Earth Tech, Inc.

Abigail Charest  
Environmental Engineer

cc: Town of Seabrook w/ attachments



*Annual Report*

**National Pollutant Discharge  
Elimination System (NPDES)  
Phase II Stormwater Management Plan  
2005 Annual Report – Year 2  
NPDES Small MS4 NHR041033**

**Seabrook, New Hampshire**

*Prepared for:*

Town of Seabrook  
Department of Public Works  
P.O. Box 456  
Seabrook, New Hampshire 03874-5942

*Prepared by:*

Earth Tech, Inc.  
196 Baker Avenue  
Concord, Massachusetts 01742

*Reports Submitted to:*

United State Environmental Protection Agency  
Water Technical Unit  
P.O. Box 8127  
Boston, Massachusetts 02114

New Hampshire Department of Environmental Services  
Water Division  
Wastewater Engineering Bureau  
P.O. Box 95  
Concord, New Hampshire 03302-0095

*May 2005*

75727

**Municipality/Organization:** Town of Seabrook

**EPA NPDES Permit Number:** NHR041033

**Annual Report Number  
& Reporting Period:** No. 1: March 04-March 05

## NPDES PII Small MS4 General Permit Annual Report


### Part I. General Information

**Contact Person:** Frederick Welch                      **Title:** Town Manager

**Telephone #:** 603-474-3311

#### Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Signature:** 

**Printed Name:** Frederick Welch

**Title:** Town Manager

**Date:** April 18, 2005

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## 1.0 INTRODUCTION AND BACKGROUND

In 1990, The United States Environmental Protection Agency (EPA) began implementing stormwater management requirements under the NPDES program. These requirements, known as Phase I of the NPDES stormwater program, were intended to reduce pollution in stormwater discharges for large urban areas with populations of 100,000 or greater.

On December 8, 1999, the Phase II Rule of the NPDES stormwater program was published to address Municipal Separate Storm Sewer Systems (MS4s) within urban areas of populations less than 100,000 that were not addressed under the Phase I program. Objectives of the Phase II rule are for the MS4s to develop, implement and enforce a 5-year stormwater program designed to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

On May 1, 2003 the EPA issued the General Permit for Stormwater Discharges from MS4s. The general permit requires that the stormwater program for each MS4 submit an annual evaluation. The following report contains information regarding the activities on the stormwater program for the previous year. The report contains the information required in the general permit as follows: (a) Self-Assessment Review of Compliance with the Permit Conditions; (b) Assessment of the Appropriateness of the selected Best Management Practices (BMPs); (c) Assessment of the Program towards Achieving the Measurable Goals; (d) Summary of the Results of Any Information that has been Collected and Analyzed; (e) Discussion of Activities for the Next Reporting Cycle; (f) Discussion of any Changes in Identified BMPs or Measurable Goals; and (g) Reference any Reliance on another Entity for Achieving any Measurable Goal.

## **2.0 SELF-ASSESSMENT REVIEW OF COMPLIANCE WITH THE PERMIT CONDITIONS**

The Town of Seabrook filed a NPDES Phase II Stormwater Management Plan in March 2003. On August 13, 2003, the EPA sent a letter to the town stating that the stormwater program was currently in compliance with the conditions of the General Permit. On May 1, 2004 the Town submitted the Annual Report for Year 1 to the EPA and the NH DES. The EPA sent a letter of acknowledgement for the annual report on October 6, 2004, included in Attachment A.

The Town of Seabrook has completed the required self-assessment for the Year 2 Annual Report and has determined that the municipality is in compliance with all the permit conditions. The Town of Seabrook worked on several stormwater issues over the past year and achieved many of the goals set for the 2004-2005 Stormwater Year. In addition, the Town continues to work toward the goals for next year. The town will continue to file for grants from various sources, including the New Hampshire Department of Environmental Services (NHDES), subject to availability, to assist in achieving the town's goals for stormwater structure maintenance and mapping.

### 3.0 ASSESSMENT OF THE APPROPRIATENESS OF THE SELECTED BMPS

Most of the best management practices (BMPs) selected for the stormwater program were appropriate for the town of Seabrook. The town reviewed BMPs, reconsidered BMPs and determined that the following should be done to best incorporate public education and site inspection.

#### COMMENTS ON APPROPRIATENESS

<b>BMP ID Number</b>	<b>BMP Description</b>
1.4	Classroom participation – SWTF Tours

The (BMP) for classroom participation was determined to be more appropriate as volunteer work in catch basin stenciling, then as a SWTF tour.

<b>BMP ID Number</b>	<b>BMP Description</b>
1.5	Incorporate back yard clean up into hunter safety course.

The BMP for public educational courses has been expanded to incorporate additional stakeholders in stormwater management. The hunter safety course was provided the Seabrook stormwater brochure and fact sheet, and will continue to obtain copies of all stormwater educational materials. In addition, the educational materials were provided to a citizens group at the Trinity United Church interested in stream cleaning. This BMP was determined to be inappropriate in that it did not incorporate additional stakeholders, so this BMP has been expanded to include public educational courses or groups interested in stormwater.

<b>BMP ID Number</b>	<b>BMP Description</b>
4.3	Site Inspection/Enforcement Procedures

This BMP was moved to the next Stormwater year. The Town will draft Site Inspection/Enforcement Procedures once the Stormwater Ordinances, mapping and prioritization plan are complete.

## 4.0 SUMMARY OF MINIMUM CONTROL MEASURES

The EPA required the town to meet the six control measures. The following outlines the progress of the town in achieving the measurable goals for the second year. The annual evaluation of BMPs is also detailed in Table 4-1, Annual Evaluation. Table 4-1 also discusses activities for the next reporting cycle, and identifies any changes in the identified BMPs or measurable goals.

### 4.1 PUBLIC EDUCATION AND OUTREACH

The Town of Seabrook worked this year with outside consultants and the school system to incorporate public education and outreach into their stormwater program. The town finalized a stormwater fact sheet, brochure and poster; examples are included in Attachment B. The DPW met with the Board of Selectmen (BOS) on April 13, 2005 and gave them a \*.pdf version of the Stormwater poster to be placed on the Town website.

The stormwater poster and several brochures were placed in the Town's Recreation Building, Town Hall and Public Library. The stormwater brochures and flyers were distributed to stormwater stakeholders, such as the hunter's safety course and a citizens group at the Trinity United Church interested in stream cleaning. The materials were also sent to the Planning Board and Conservation Commission. In addition to the stormwater poster described above, the Planning Board also displays a poster entitled, "Stormwater and the Construction Industry" in their office.

In addition, the DPW included a description in the Seabrook Town Report of the town's stormwater work. The Annual Report included information about the Federal Stormwater Mandate, Stormwater Mapping and the 2004 Coastal Grant and excerpts are included in Attachment C. This report is available to town residents in key public buildings, such as the Town Hall.

### 4.2 PUBLIC PARTICIPATION AND INVOLVEMENT

The town continues to solicit stormwater maintenance volunteers by making announcements at public forums and by going to classrooms to ask for help. The Town is active in getting the public involved with catch basin stenciling. Catch basins on the east and west sides of the Caines Brook Watershed were stenciled to read "No Dumping. This Drains to the River."



SEABROOK, NEW HAMPSHIRE  
 NPDES PHASE II STORMWATER MANAGEMENT PLAN  
 ANNUAL EVALUATION OF MINIMUM CONTROL MEASURES

BMP Category in Notice of Intent (NOI)	BMP	Department Responsible for Implementing BMP	Measurable Goals	2nd Year Goals	Progress on Goal(s) - Year 2	3rd Year Goals
<b>Public Education and Outreach</b>						
	Fact Sheets on Town Website	DPW	Complete one new fact sheet	Put on-line	The DPW provided the Stormwater Poster in *.pdf format to the Board of Selectmen (BOS) to be placed on the town website.	Follow up with BOS on website status
	Develop stormwater flyer to businesses with stormwater facilities on site	DPW Consultant	Complete flyer and distribute to all businesses maintaining on-site SW facilities	Finalize draft of Stormwater brochure	The Stormwater brochure was completed and a listing of business addresses were obtained from the Assessor's Office	Review address list from the Assessor's office and determine a mailing list for brochure distribution.
Distribute Information	Include info on benefits of back-yard stream clean-up with West Nile Virus fact sheet	DPW	Send out stream clean-up info		The DPW provided the Stormwater educational materials to the citizens group at the Trinity United Church interested in stream cleaning.	
	Develop pamphlets for distribution at Town Hall, DHS, schools, community events/fairs, as well as mailing lists	DPW Consultant	Distribute to 75% of residents	Distribute	The Seabrook Stormwater Brochure and Fact Sheet were completed and distributed to the Recreation Building, Town Hall and Public Library. In these locations 100% of the residents have access to the information. In addition, the material were distributed to interested stormwater stakeholders.	Continue to display stormwater poster and provide the stormwater brochure and fact sheet.
Public Service Announcement	Town Hall Public Access TV	DPW	Run video during rolling community information	Run video obtained in Year 1 on Public Access TV	The Town completed this goal in Year 1. In addition, the town is considering rerunning the video.	
	Develop stormwater informational Poster Board	DPW Consultant	Develop Poster Board	Finalize and display.		
Community Outreach	Display Poster Board at various local community events	DPW	Show Poster Board at Town Hall, DPW, and community events	Display	The Stormwater poster was finalized and displayed along with stormwater brochures in the recreation building, town hall, and public library.	Continue to display stormwater poster and provide the stormwater brochure and fact sheet.
Classroom Participation	SWTF tours	DPW	Conduct one tour		A high school science class participated in the catch basin stenciling.	The class incorporated stenciling.
Public Educational Courses	Provide Educational Materials to all stakeholders in Stormwater Management	DPW	Provide Materials	Provide Stormwater Brochure and fact sheet to stormwater stakeholders.	The stormwater brochure and fact sheet were distributed to the hunter's safety course and the citizens group at the Trinity United Church interested in stream cleaning.	Continue to provide Stormwater Education Materials to Stormwater Stakeholders, including the hunter safety course. Expand Stormwa
Other	Develop a program to promote, publicize and facilitate public reporting of illicit connections or	DPW Consultant	Information materials distributed.			Develop plan

SEABROOK, NEW HAMPSHIRE  
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<b>Public Involvement and Participation</b>						
Public Volunteers	Solicit Volunteers	SCC	Secure volunteers for public participation events	Implement plan to solicit volunteers	The Conservation Commission continues to publicize the need for public participation at their meetings.	Implement plan to solicit volunteers
Volunteer Monitoring	Involve schools and neighborhood associations in future monitoring projects by SCC	SCC	Acquire volunteers from schools / neighborhood associations for next SCC monitoring project	Develop monitoring plan and introduce	The goals for monitoring have been moved to the next Stormwater year. The monitoring plan will be developed once the mapping and prioritization plan are complete.	Develop monitoring plan and introduce Begin training and monitoring
	Show video on monitoring, produced by SCC during WS	SCC	Show video to volunteers			Show video to trainees
	Promotional Items	SCC	Distribute to volunteers on monitoring projects			Distribute
Volunteer Clean-up	Adopt a Stream / Outfall	SCC	Secure funding and / or volunteers for maintaining a stream / outfall	Carry out recruitment and funding efforts	Stormwater educational materials were provided to a citizens group at the Trinity United Church interested in stream cleaning.	Implement plan
Community Events	Storm Drain Stenciling	SCC	Organize and conduct stenciling / Investigate funding	Conduct meeting with volunteers; carry-out plan	Catch basins on the east and west sides of the Caines Brook Watershed were stenciled to read "No Dumping. This Drains to the River."	
	Wetland Plantings	SCC	Organize and conduct planting			
Other	Post Outfalls	DPW	Mark outfall locations		16 outfalls were located and marking options are being evaluated.	Secure budget to mark outfall locations
<b>Illicit Discharge Detection and Elimination</b>						
Stormwater System Mapping	Map Outfalls	DPW Consultant	Percentage of Total Outfalls	GPS 25% of Outfalls	16 of the 25 outfalls were located using GPS.	GPS 25% of Outfalls
	Map Pipes, Manholes and Catch basins	DPW Consultant	Percentage of Total System	Map 25% of System	2/3 of the Stormwater System have been mapped.	Map 25% of System
	Map Structural BMPs (I.e. Detention Basins, Water Quality Inlets, Etc.)	DPW Consultant	Percentage of Total Structures	Map 25% of Structures	2/3 of the Stormwater Structures have been mapped.	Map 25% of Structures
Rules and Regulations	Strengthen ordinance prohibiting non-storm water discharges into storm sewer system	Planning Board	Development of Ordinance.			Develop Goals for Ordinance.
	Develop enforcement procedures for non-storm water discharges, including illegal dumping	Planning Board	Development of Enforcement Procedures			Develop Goals for Enforcement Procedures
	Detection/Elimination Inspection	Code Enforcement Officer	Identify and train inspection agents. Begin inspections.			Identify Inspector

SEABROOK, NEW HAMPSHIRE  
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BMP Category in Notice of Intent (NOI)	BMP	Department Responsible for Implementing BMP	Measurable Goals	2nd Year Goals	Progress on Goal(s) - Year 2	3rd Year Goals
<b>Construction Site Storm Water Runoff Control</b>						
Regulatory Mechanism	Develop and implement ordinances regulating erosion and sediment control for construction sites utilizing appropriate BMPs	Planning board	Quarterly/annually review of program.	Draft Ordinance	The town worked with Earth Tech to revise the town By-laws to include stormwater management in Stormwater Year 1. The town continues to review the proposed By law revisions from Year 1. In addition, the Town Manager's Office prepared a set of draft stormwater regulations in Year 2. Currently, the DPW, Planning Board and Conservation Commission are comparing and reviewing the two documents in order to provide the Town with the most complete and appropriate set of stormwater regulations.	Finalize ordinance
	Impose Sediment and Erosion Control BMP Requirements	Planning board	Implement for each project	Review BMPs		Incorporate Into Ordinance
	Implement MP rules for vegetative buffers, drainage ways, site coverage, run-off control and erosion sedimentation.	Planning board	Implement for each project	Finalize ordinance		Review Effectiveness of Ordinance and Revise if Necessary
	Evaluate sanctions for enforcement of erosion and sediment controls	Planning board	Implement for each project	Draft Sanctions		Finalize Sanctions
	Develop ordinance requiring a spill control plan	Planning board	Implement for each project	Finalize ordinance		Review Effectiveness of Ordinance and Revise if Necessary
	Develop rules for disposal of waste, construction site debris, unwanted soil, fill, and water.	Planning board	Implement for each project	Finalize ordinance		Review Effectiveness of Ordinance and Revise if Necessary
Site Plan Review Procedures	Pre-Construction Review of Storm Water Pollution Prevention Plan (SWPPP)	Planning board	Implement for each project	Identify Staff		Train staff
	Pre-Construction meetings	Planning board	Implement for each project	Develop Program		Implement Program
Site Inspection/Enforcement Procedures	Conduct construction site inspections	Planning board	Implement for each project	Identify Staff		Train staff
	Develop a procedure for handling reports of non-compliance	Planning board	Development of Procedure	Draft Procedure		Finalize Procedure
<b>Post-Construction Storm Water Management in New Development and Redevelopment</b>						
Regulatory Mechanism	Develop and implement ordinances regulating controls for post-construction runoff utilizing appropriate BMPs	Planning board	Implement for each project.	Develop Goals for Ordinance.	The town worked with Earth Tech to revise the town By-laws to include stormwater management in Stormwater Year 1. The town continues to review the proposed By law revisions from Year 1. In addition, the Town Manager's Office prepared a set of draft stormwater regulations in Year 2. Currently, the DPW, Planning Board and Conservation Commission are comparing and reviewing the two documents in order to provide the Town with the most complete and appropriate set of stormwater regulations.	Draft Ordinance
	Strengthen regulation to protect open spaces and natural vegetation	Planning board	Quarterly/annually review of program.	Develop Goals for Ordinance.		Draft Ordinance
	Mandatory greenbelt for all new construction along Lafayette Road	Planning board	Implement for each project.	Develop Goals for Ordinance.		Draft Ordinance
	Implement Shoreland Protection Ordinance	Planning board	Quarterly/annually review of program.	Develop Goals for Ordinance.		Draft Ordinance
	Zoning Ordinance to allow cluster housing	Planning board	Quarterly/annually review of program.	Develop Goals for Ordinance.		Draft Ordinance
Review BMP Designs	Pre-construction Review for conformance with standards/regulations	Planning board	Implement for each project.			Identify Staff
Site Inspection / Enforcement Procedures	During construction inspect for assurance that BMPs are complaint	Planning board	Implement for each project.			Identify Staff
	Develop Procedure for Operation and Maintenance of					

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<b>Pollution Prevention and Good Housekeeping for Municipal Operations</b>						
Employee Training Program	Training On Spill Reporting and Response Protocols, Hazardous Materials Training, Pesticide and Fertilizer Application	DPW	Annually conduct training	Develop Program	The town is working with T2 Technology Transfer, and the Fire Academy to compile proposed educational materials.	Implement Program
Storm Water System Operation and Maintenance	Storm sewer system and drainage facility inspection program	DPW	Identify substandard catch basins and drainage facilities; develop inspection plan for storm sewer system	Identify and note substandard catch basins and drainage facilities	More than 370 structures were inspected.	Develop plan for regular inspection of remaining drainage facilities and storm sewer system through outside source
	Storm sewer system and drainage facility maintenance and cleaning program	DPW	Fix or replace substandard catch basins and drainage facilities; annually clean percent of system	Implement plan to fix or replace substandard facilities; clean catch basins as required per existing program.	Seven catch basins were replaced in 2004 and the town continues to pursue grants from the NHDES to correct the remaining substandard structures.	Clean catch basins as required per existing program.
	Structural BMP inspection and maintenance program	DPW	Annually inspect and clean percent of system	Implement Record Keeping Procedures	A progress report was completed in December 2004 for the mapping grant. The report contains completed manhole/catch basin forms.	Inspect and clean all Structural BMPs 1 per year
	Maintenance and Repair Programs for Municipal Cars, Trucks and Heavy Equipment	DPW Consultant	Implement Program	Evaluate operations and make recommendations for improvements	These BMPs have been extended until Stormwater year 2005/2006.	Evaluate and Implement 50 percent of Improvements
	Road Salt Storage	DPW Consultant	Implement Program	Evaluate operations and make recommendations for improvements		Evaluate and Implement 50 percent of Improvements
	Vehicle washing controls	DPW	Implement Program			Evaluate operations and make recommendations for improvements
Municipal Industrial Operations	Fueling Operations	DPW Consultant	Implement Program	Implement 50 percent of Improvements	Improvements to the fueling operations were implemented in 2004/2005. Fueling operations at the Town of Seabrook Fire Department have been temporarily suspended, as the old fueling tanks have been removed and will soon be replaced with a new double wall aboveground storage tank.	Evaluate and Implement 50 percent of Improvements
	Wastewater Treatment Facility Control	DPW Consultant	Implement Program	Evaluate operations and make recommendations for improvements	The DPW's Consultant visited the Wastewater Treatment Facility, evaluated the operations and made recommendations for improvements.	Evaluate and complete recommendation report
	Transfer Station Runoff Control	DPW Consultant	Implement Program	Evaluate operations and make recommendations for improvements	The DPW's Consultant visited the Transfer Station, evaluated the operations and made recommendations for improvements.	Evaluate and complete recommendation report
Municipal Roads	Street sweeping	DPW	Frequency of Sweeping in Urbanized Areas with Curbs	Evaluate Effectiveness of Increasing Frequency in Urbanized Areas with Curbs	Street cleaning will be evaluated once the manhole/catch basin inspection have been completed	Evaluate Effectiveness of Increasing Frequency in Urbanized Areas with Curbs

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The DPW continued to work with the Marine Science class for juniors and seniors at Winnacunnet High School. Approximately 75-100 students stenciled drains on the west side of the Caines Brook Watershed in May 2004. All catch basins on Viola Circle, Lakeshore Drive, and Pine Street were stenciled as noted in Attachment D.

The Seabrook Beach Civic Association stenciled the catch basins in coastal area neat the beach. The University of New Hampshire Cooperative Extension Service represented by Julia Paterson sponsored the Beach Streets Stenciling Program. The program was well attended and representatives from the State and DPW were involved.

#### **4.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION**

##### ***Mapping***

The town is progressing on a town wide GIS system. The town received two grants from NHDES to develop the stormwater portion of the mapping system. The town progressed with the GIS map of the system by using a Geographical Position System (GPS) to take the electronic positions of the outfalls for the GIS map. Sixteen of the outfalls were mapped this year and the remaining outfalls will be located by GPS in the 2005-2006 Stormwater year.

Additional field reconnaissance was completed to identify locations where structures were not identified by the Town's 2001 aerial mapping. The Caines Brook watershed was identified as a priority and work was concentrated in this area. Data gaps were identified and characterized and a meeting was then held with the Town to discuss survey needs. More than 370 structures were inspected. During review of the data, over 120 locations were identified where a certain structure, either a catch basin or storm drain manhole, was witnessed in the field, but did not show on the Town's mapping. Excerpts from the December 2004 Final Progress Report for this mapping grant is included in Attachment E.

##### ***Illicit Discharge Detection and Elimination Plan***

The priority areas for illicit discharges will be determined after the town has further developed the stormwater system map and outfall locations have been confirmed. Sixteen of the outfall locations were confirmed this year by using GPS. These locations are shown on the figure included in Attachment F. The field team that located the sixteen outfalls also conducted visual inspections of the outfalls. The outfall inspection forms are included in Attachment G. The visual inspection of these outfalls did not reveal any evidence of contamination.

#### 4.4 CONSTRUCTION SITE RUNOFF CONTROL MEASURES

The town worked with Earth Tech to revise the town By-laws to include stormwater management in Stormwater Year 1. The town continues to review the proposed by law revisions from Year 1. In addition, the Town Manager's Office prepared a set of draft stormwater regulations, included in Attachment H, in Year 2. Currently, the DPW, Planning Board and Conservation Commission are comparing and reviewing the two documents in order to provide the Town with the most complete and appropriate set of stormwater regulations.

#### 4.5 POST-CONSTRUCTION RUNOFF CONTROL MEASURES

The Town Manager's Office prepared a set of draft stormwater regulations included in Attachment H. These regulations include drafting an ordinance for regulating controls for post-construction runoff utilizing appropriate BMPs. These regulations are being reviewed in order to provide the Town with the most complete and appropriate set of stormwater regulations, as indicated in Section 4.4 above.

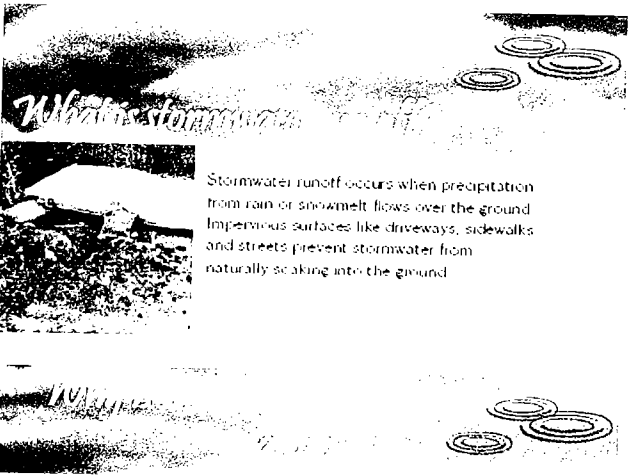
#### 4.6 POLLUTION PREVENTION/GOOD HOUSEKEEPING

##### *Employee Training*

The DPW is working towards several tasks in regards to employee training. The town is working with T2 Technology Transfer, and the Fire Academy to compile proposed educational materials for training on spill reporting and response protocols, hazardous materials training, and pesticide/fertilizer application. The Town Manager requested that the DPW Manager develop a training manual for the Town staff. The DPW is in the process of drafting this manual. And on March 15, 2005 members of the DPW attended a confined space entry class to learn about safety issues concerned with catch basins.

##### *Stormwater System Operation and Maintenance*

A pilot program was developed for the Hampton/Seabrook Harbor beach area for stormwater maintenance. This area was suspected of having substandard catch basins. There were 170 structure inspections and 140 catch basins were found to be substandard. Seven catch basins were replaced in 2004 and the town continues to pursue grants from the NHDES to correct the remaining substandard structures. In addition, a vacuum truck cleaned 20-25% of the town's catch basins. The catch basins were mainly in the beach area.



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks and streets prevent stormwater from naturally soaking into the ground.



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls, and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



### Construction

- Improperly managed logging operations can result in erosion and sedimentation.
- Conduct preharvest planning to prevent erosion and lower costs
  - Use logging methods and equipment that minimize soil disturbance
  - Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor
  - Construct stream crossings so that they minimize erosion and physical changes to streams
  - Expedite revegetation of cleared areas

# Town of Seabrook Stormwater Education Program

## Stormwater Pollution Solutions

### Residential

**Auto care**  
Washing your car and depressing auto parts at home can send detergents and other contaminants through the stormwater system. Dumping auto fluids on the lawn results in stormwater picking them up and carrying them into a local waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water soaks into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

**Septic systems**  
Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

**Pet waste**  
Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Flushing pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

**Residential landscaping**  
Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground, but these surfaces rely on storm drains to divert untreated water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing its treatment need.

**Rain Barrels**—You can collect rainwater from rooftops in non-pool containers. The water can be used for lawn or garden care.

**Rain Gardens and Grass Swales**—Specially designed areas planted with native plants can provide multiple places for water to collect and soak into the ground. Rain gardens and grass swales can be planted in areas that aren't directly under storm drains.

**Vegetated Filter Strips**—Filter strips are areas of native grasses planted along roadways or streams. They trap pollutants and prevent them from flowing across stormways and streets.

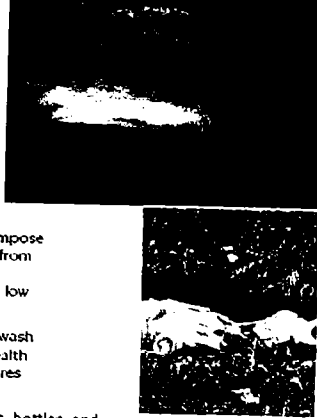


EARTH TECH  
A Tyco Infrastructure Services Company

## The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.



### Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

### Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.





### Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls, and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



### Construction



Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

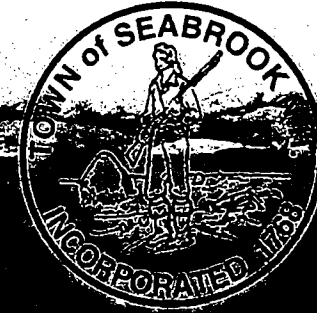


### Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

# Town of Seabrook, New Hampshire



## Stormwater Education Program



A Tyco Infrastructure Services Company



A Tyco Infrastructure Services Company

Providing and leading the way for the planet.  
[www.earthtech.com](http://www.earthtech.com)



**Make your home**



# **The SOLUTION TO STORMWATER POLLUTION!**

## **A homeowner's guide to healthy habits for clean water**

**As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water. By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!**

### **Healthy Household Habits for Clean Water**

#### **Vehicle and Garage**

- Use a commercial car wash or wash your car on a lawn or other unpaved surface to minimize the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.
- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up spilled fluids with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- Recycle used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

#### **Lawn and Garden**

- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select native plants and grasses that are drought- and pestresistant. Native plants require less water, fertilizer, and pesticides.
- Sweep up yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the cool times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. Vegetate bare spots in your yard to prevent soil erosion.



A Tyco Infrastructure Services Company

**ATTACHMENT C**

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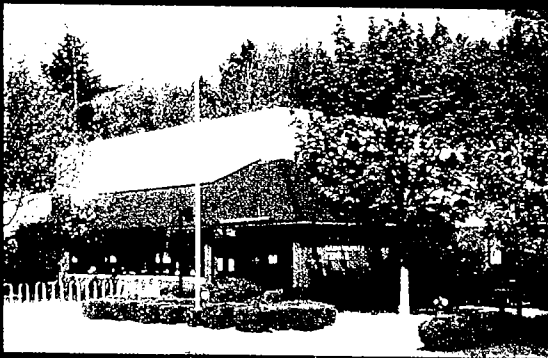
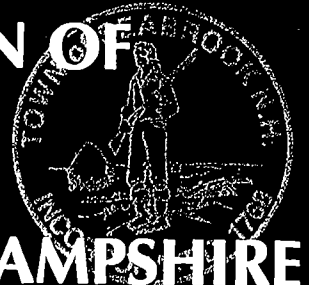
**EXCERPT FROM SEABROOK'S ANNUAL REPORT**

ANNUAL REPORTS OF THE TOWN OF

# Seabrook

NEW HAMPSHIRE

2004



*Incorporated 1768*

**ANNUAL REPORTS OF THE  
TOWN OF SEABROOK**

**NEW HAMPSHIRE**

**For the Year Ending December 31<sup>st</sup>**

**2004**

**As Compiled by the Town Officers**

in the stormwater drainage infrastructure in the Cains Brook watershed.

**PAVING:** A one-inch overlay of Railroad Avenue, Stard Road, Walton Road, and a section of Washington Street was undertaken by Pike Industries. The DPW worked along with the Pike crews filling in shoulders of the road with new gravel as needed.

**2004 COASTAL GRANT:** During November and December the DPW installed 7 new catch basins with this grant: Hudson Street, Ocean Boulevard, Portsmouth Avenue, Atlantic Avenue, and Amesbury Street. The installation is the first step in replacing substandard catch basins with a State of NH standard.

**PARKS:** Major improvements to the Veterans Park hardball field were completed, improvements to the girl's softball field at Veterans Park were substantially completed, debris in the rear parking lot at Veterans Park was addressed and construction on a new concession stand was started in November. General maintenance for use of the fields was ongoing between April and October.

**SIDEWALK CONSTRUCTION:** New sidewalks were constructed on the north side of Railroad Avenue with the workload shared between contractors and the DPW crew. The project started in July and concluded in September.

**MISCELLANEOUS:** \*Constructed building over large pumps located at the Wastewater Treatment Facility between January and April. \*Started construction of a pole barn for storage of winter sand in December. \*Beach street signage and parking pavement markings addressed during the summer to reflect Town ordinances. \*Crack-sealed Lower Collins Street. \*Filled low shoulders on Ledge Road and Batchelder Road. \*Pavement markings and double yellow centerline repainted. \*Replacement of large culvert on Lower Collins Street. \*Fall town-wide cleanup. \*Assisted with the installation of two new flashing school zone lights. \*Maintenance and operation of Welcome Center. \*All concrete sidewalks maintained and treated with double boiled linseed oil. \*Roadside mowing. \*Old Home Day setup and cleanup.

**CEMETERIES:** Stumps for the new section in Hillside were excavated in January and hauled away in February. Parker Survey and DPW set new granite bounds in Hillside Cemetery's new section in April. These new sections opened in May for burials. Loam produced by Trumell Screening was stockpiled for future use of cemetery expansion.

**BEACH MANAGEMENT:** DPW crew and local contractors moved 5,460 cubic yards of dredging from Fish Coop property to Seabrook Beach in an effort to replenish the beach primarily in the area of Sun Valley. A new Ashland Street boardwalk prefabricated during the winter was installed in April. During August an estimated 100 truckloads of debris was removed from the beach and disposed of at our Transfer Station. In October, 4 days of erecting winter fencing completed.

**SECORD'S POND/DAM MANAGEMENT:** The emergency outlet pipe, cited by the State of NH in their deficiency report, was approved for replacement in December 2004 after it was redesigned by SEA Engineers of Concord, NH. The DPW crew will tackle this after the winter.

Respectfully submitted,  
John M. Starkey, DPW Manager



*Lower Collins Street Culvert Replacement*

**ATTACHMENT D**

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**CORRESPONDENCE REGARDING CATCH BASIN  
STENCILING**

- indicate incorporated survey data;
- Developed database of structure attributes, including: unique manhole identifier, x and y coordinates, structure type (manhole or catch basin), structure diameter, structure depth, sump depth, clarity of flowing water, whether catch basin was stenciled or not, evidence of blockage, sediment depth, number and diameter of pipes entering and exiting structure, materials of construction and structural condition;
- Entered data into database; and
- Completed review of data entered into database. Refer to Attachment C for copies of spreadsheets containing output from the database.

## TASK 2 – UPDATE PROGRESS MAPPING

After the fieldwork was completed and the database was updated, two final maps were created. The first map shows the town overall and indicates the extent to which drainage features have been incorporated given the available paper records and field investigations. The second map highlights the Caines Brook watershed area where structure inspections were completed. These maps are attached to this final report (Attachment B). The mapping was developed to suit 1"= 40' scale production, however, for final report purposes the referenced maps have been plotted using different scales. In addition, the data linked to the map was summarized in spreadsheet form. These spreadsheets are also attached to this final report (Attachment C).

Specifically, the following subtasks were completed:

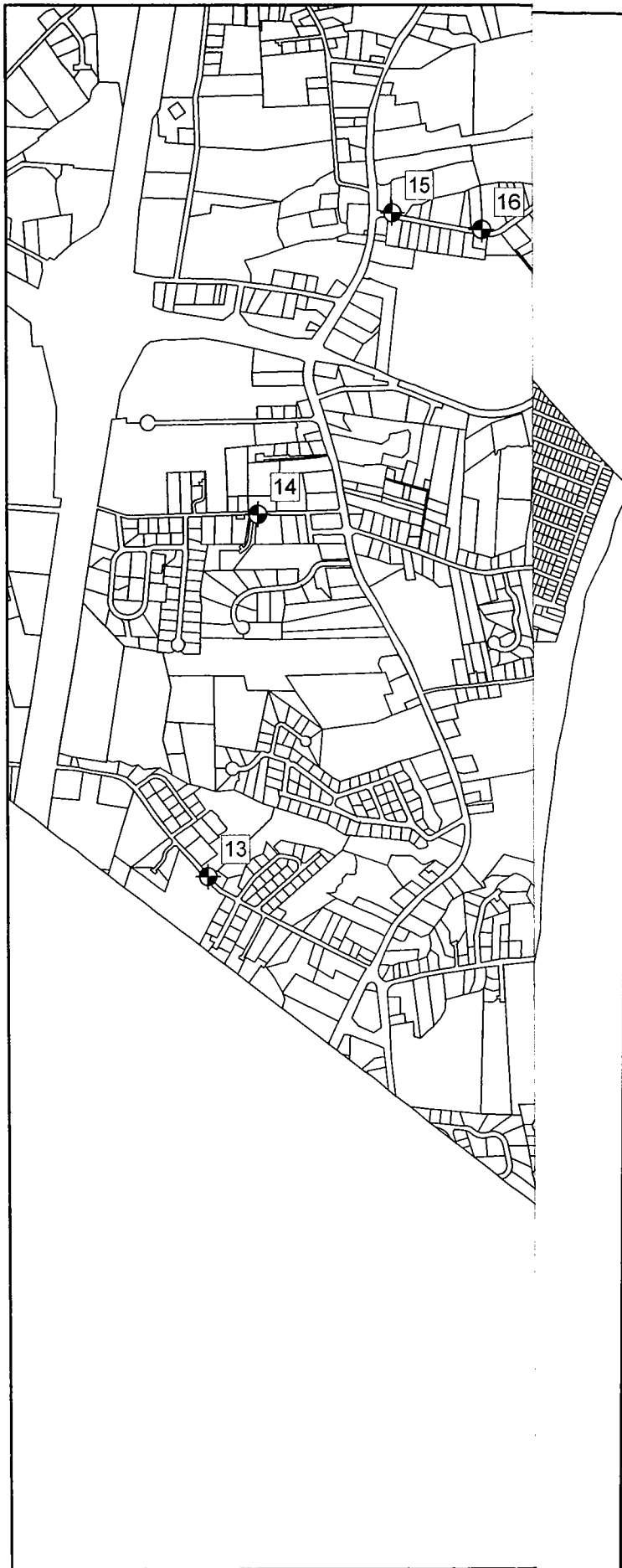
- Obtained electronic mapping coverage from surveyor;
- Obtained electronic database from surveyor;
- Consolidated electronic database from individual entries to a master spreadsheet summarizing all data that was input into the table;
- Incorporated electronic coverage into Town's GIS mapping;
- Interconnected piping between structure locations as provided by the surveyor;
- Reviewed GIS output maps;
- Coordinated with surveyor to obtain missing information and data attributes;
- Revised mapping based on input from surveyor;
- Prepared larger scale map to highlight work completed in Caines Brook watershed area;
- Prepared map of overall Town showing all structure information presently available.



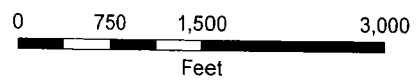
**ATTACHMENT F**

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**GPS OUTFALL LOCATIONS**



## Seabrook, NH



**ATTACHMENT G**

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**OUTFALL SCREENING FORMS**

OUTFALL/MANHOLE NO.: 01

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 01

DATE / TIME: 4/18 - 10:50

WEATHER: SUNNY

FIELD CREW: KW/AC

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS

QUANTITY OF LAST RAIN: ≥0.1 INCH

<0.1 INCH

STREET LOCATION: 1A / Cross Beach Rd

RECEIVING WATER: Ocean

TIDAL IMPACT: YES NO

SAMPLING LOCATION: Outfall No. 01 Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES NO *Use back of form for sketch*

1. Approx Outfall/Pipe Diameter: 2 outfalls - 24" w/ brack flanges covering
  2. Approx Sediment Depth (ft): \_\_\_\_\_
  3. Approx Depth of Water over Sediment (ft): \_\_\_\_\_
  4. Approx Flow Velocity (fps): \_\_\_\_\_
- } N/A - tidal flow

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR: None Musty Sewage Rotten Eggs Sour Milk  
Other: \_\_\_\_\_

COLOR: Clear Red Yellow Brown Green Gray  
Other: \_\_\_\_\_

CLARITY: Clear Cloudy Opaque Suspended Solids

FLOATABLES: None Oily Sheen Garbage Sewage Paper  
Other: \_\_\_\_\_

DEPOSITS/STAINS: None Sediments Oily  
Other: \_\_\_\_\_

STRUCTURAL: OUTFALL: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_

MANHOLE: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: no debris, no obvious  
- some trash downstream

OUTFALL/MANHOLE NO.: 02

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 02

DATE / TIME: 4/18/05

FIELD CREW: KW/AC

WEATHER: Sunny

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS  
<0.1 INCH

QUANTITY OF LAST RAIN: >0.1 INCH

STREET LOCATION: South Main St

RECEIVING WATER: Mansh → culvert under 286

TIDAL IMPACT:  YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED:  YES  NO Use back of form for sketch

1. Approx Outfall/Pipe Diameter: 12"
2. Approx Sediment Depth (ft): 2"
3. Approx Depth of Water over Sediment (ft): 2"
4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<input checked="" type="radio"/> None Other: _____	Musty	Sewage	Rotten Eggs	Sour Milk
COLOR:	<input checked="" type="radio"/> Clear Other: _____	Red	Yellow	Brown	Green Gray
CLARITY:	<input checked="" type="radio"/> Clear Other: _____	Cloudy	Opaque	Suspended Solids	
FLOATABLES:	<input checked="" type="radio"/> None Other: _____	Oily Sheen	Garbage	Sewage	Paper
DEPOSITS/STAINS:	<input checked="" type="radio"/> None Other: _____	Sediments	Oily		

STRUCTURAL:		
OUTFALL:	Normal Other: _____	Cracking Metal Corrosion
MANHOLE:	Normal Other: _____	Cracking Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: Some trash  
\* Works mostly as a culvert  
but attached to a catch basin  
in South Main St

OVER

OUTFALL/MANHOLE NO.: 03

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 03

DATE / TIME: 11:50

FIELD CREW: \_\_\_\_\_

WEATHER: Sunny

TIME SINCE LAST RAIN: \_\_\_\_\_

>72 HOURS

<72 HOURS

QUANTITY OF LAST RAIN: \_\_\_\_\_

≥0.1 INCH

<0.1 INCH

STREET LOCATION: WWTP Road

RECEIVING WATER: March across from WWTP

TIDAL IMPACT: YES NO - none visible, but possible in

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_ future  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES NO Use back of form for sketch

- 1. Approx Outfall/Pipe Diameter: 12"
- 2. Approx Sediment Depth (ft): 1"
- 3. Approx Depth of Water over Sediment (ft): none
- 4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<u>None</u> Other: _____	Musty	Sewage	Rotten Eggs	Sour Milk
COLOR:	Clear Other: _____	Red	Yellow	Brown	Green Gray
CLARITY:	Clear	Cloudy	Opaque	Suspended Solids	
FLOATABLES:	<u>None</u> Other: _____	Oily Sheen	Garbage	Sewage	Paper
DEPOSITS/STAINS:	<u>None</u> Other: _____	Sediments	Oily		

STRUCTURAL: OUTFALL: Normal  
Other: \_\_\_\_\_ Cracking Metal Corrosion

MANHOLE: Normal  
Other: \_\_\_\_\_ Cracking Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: across the street from WWTP  
- dirty - no debris

OUTFALL/MANHOLE NO.: 04

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 04

DATE / TIME: 12:00 4/13

FIELD CREW: DW/AC

WEATHER: Sunny

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS

QUANTITY OF LAST RAIN: ≥0.1 INCH

<0.1 INCH

STREET LOCATION: LDWTP

RECEIVING WATER: \_\_\_\_\_

TIDAL IMPACT: YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES  NO  Use back of form for sketch

1. Approx Outfall/Pipe Diameter: 12"
2. Approx Sediment Depth (ft): none
3. Approx Depth of Water over Sediment (ft): none
4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE # \_\_\_\_\_

ODOR:  None Musty Sewage Rotten Eggs Sour Milk  
Other: \_\_\_\_\_

COLOR:  Clear Red Yellow Brown Green Gray  
Other: \_\_\_\_\_

CLARITY:  Clear Cloudy Opaque Suspended Solids

FLOATABLES:  None Oily Sheen Garbage Sewage Paper  
Other: \_\_\_\_\_

DEPOSITS/STAINS: None Sediments Oily  
Other: \_\_\_\_\_

STRUCTURAL: \_\_\_\_\_

OUTFALL: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_

MANHOLE: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l

Ammonia: \_\_\_\_\_

COMMENTS: dry - next to influent bldg

OUTFALL/MANHOLE NO.: 05

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 05  
DATE / TIME: 4/15/12:05  
WEATHER: Sunny FIELD CREW: RW/AC  
TIME SINCE LAST RAIN: 0 >72 HOURS <72 HOURS  
QUANTITY OF LAST RAIN: 0 ≥0.1 INCH <0.1 INCH

STREET LOCATION: WWTP - behind sludge bldg  
RECEIVING WATER: marsh behind sludge bldg  
TIDAL IMPACT:  YES  NO  
SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES NO Use back of form for sketch

1. Approx Outfall/Pipe Diameter: \_\_\_\_\_
2. Approx Sediment Depth (ft): \_\_\_\_\_
3. Approx Depth of Water over Sediment (ft): \_\_\_\_\_
4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #:

ODOR:	None	Musty	Sewage	Rotten Eggs	Sour Milk	
	Other: _____					
COLOR:	Clear	Red	Yellow	Brown	Green	Gray
	Other: _____					
CLARITY:	Clear	Cloudy	Opaque	Suspended Solids		
FLOATABLES:	None	Oily Sheen	Garbage	Sewage	Paper	
	Other: _____					
DEPOSITS/STAINS:	None	Sediments	Oily			
	Other: _____					

STRUCTURAL:  
OUTFALL: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_  
MANHOLE: Normal Cracking Metal Corrosion  
Other: \_\_\_\_\_

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: under white rock in marsh  
across the waterway  
not GPS'd or located due  
to location

OVER



OUTFALL/MANHOLE NO.: 06

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 06

DATE / TIME: 4/18 - 12:3

FIELD CREW: KW/AC

WEATHER: Sunny

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS  
<0.1 INCH

QUANTITY OF LAST RAIN: ≥0.1 INCH

STREET LOCATION: Adams Ave

RECEIVING WATER: Blackwater River

TIDAL IMPACT: YES NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES NO *Use back of form for sketch*

1. Approx Outfall/Pipe Diameter: 2 outfalls → 30" & 18"
2. Approx Sediment Depth (ft): 2" 2"
3. Approx Depth of Water over Sediment (ft): 2" 1"
4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<u>None</u> Other: _____	Musty	Sewage	Rotten Eggs	Sour Milk
COLOR:	<u>Clear</u> Other: _____	Red	Yellow	Brown	Green Gray
CLARITY:	<u>Clear</u> Other: _____	Cloudy	Opaque	Suspended Solids	
FLOATABLES:	<u>None</u> Other: _____	Oily Sheen	Garbage	Sewage	Paper
DEPOSITS/STAINS:	<u>None</u> Other: _____	Sediments	Oily		

STRUCTURAL:

OUTFALL: Normal \_\_\_\_\_ Cracking \_\_\_\_\_ Metal Corrosion \_\_\_\_\_  
Other: \_\_\_\_\_

MANHOLE: Normal \_\_\_\_\_ Cracking \_\_\_\_\_ Metal Corrosion \_\_\_\_\_  
Other: \_\_\_\_\_

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: green algae & some trash  
bps - paints

OVER

OUTFALL/MANHOLE NO.: 07

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 07

DATE / TIME: \_\_\_\_\_  
WEATHER: \_\_\_\_\_

FIELD CREW: \_\_\_\_\_

TIME SINCE LAST RAIN: >72 HOURS      <72 HOURS  
QUANTITY OF LAST RAIN: ≥0.1 INCH      <0.1 INCH

STREET LOCATION: Viola Circle / Lower Collins St.

RECEIVING WATER: \_\_\_\_\_

TIDAL IMPACT: YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES  NO  Use back of form for sketch

1. Approx Outfall/Pipe Diameter: 2 - 12" ~~18"~~
2. Approx Sediment Depth (ft): none
3. Approx Depth of Water over Sediment (ft): none
4. Approx Flow Velocity (fps): none

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<input checked="" type="radio"/> None Other: _____	Musty	Sewage	Rotten Eggs	Sour Milk
COLOR:	<input checked="" type="radio"/> Clear Other: _____	Red	Yellow	Brown	Green Gray
CLARITY:	<input checked="" type="radio"/> Clear Other: _____	Cloudy	Opaque	Suspended Solids	
FLOATABLES:	<input checked="" type="radio"/> None Other: _____	Oily Sheen	Garbage	Sewage	Paper
DEPOSITS/STAINS:	None Other: _____	Sediments	Oily		

STRUCTURAL: \_\_\_\_\_

OUTFALL:  Normal  
Other: 2-PVC outfalls

MANHOLE: Normal  
Other: \_\_\_\_\_

FIELD ANALYSIS: SAMPLED COLLECTED: YES \_\_\_\_\_ NO \_\_\_\_\_

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: clean, new structures (new subdivision)  
6PS-painted

OVER

\* 93 Viola Cir. Drainage in grass swale

OUTFALL/MANHOLE NO.: 08

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 08  
DATE / TIME: 1:55 - 4/18  
WEATHER: Sunny FIELD CREW: RW/AC  
TIME SINCE LAST RAIN: >72 HOURS <72 HOURS  
QUANTITY OF LAST RAIN: ≥0.1 INCH <0.1 INCH

STREET LOCATION: Causeway St  
RECEIVING WATER: marsh next to pump station  
TIDAL IMPACT: YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES  NO  Use back of form for sketch

1. Approx Outfall/Pipe Diameter: 10"
2. Approx Sediment Depth (ft): 1"
3. Approx Depth of Water over Sediment (ft): none
4. Approx Flow Velocity (fps): none

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<input checked="" type="radio"/> None Other: _____	Musty	Sewage	Rotten Eggs	Sour Milk
COLOR:	<input checked="" type="radio"/> Clear Other: _____	Red	Yellow	Brown	Green Gray
CLARITY:	<input checked="" type="radio"/> Clear Other: _____	Cloudy	Opaque	Suspended Solids	
FLOATABLES:	<input checked="" type="radio"/> None Other: _____	Oily Sheen	Garbage	Sewage	Paper
DEPOSITS/STAINS:	<input checked="" type="radio"/> None Other: _____	Sediments	Oily		

STRUCTURAL:

OUTFALL:  Normal  
Other: Cracking PVC Metal Corrosion

MANHOLE:  Normal  
Other: Cracking Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES  NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: some trash

695 - point 8  
point 7 just make } comments 08  
OVER

OUTFALL/MANHOLE NO.: 09

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 09

DATE / TIME: 4/16 1:10

FIELD CREW: KWAC

WEATHER: SUNNY

TIME SINCE LAST RAIN: <72 HOURS

<72 HOURS

QUANTITY OF LAST RAIN: ≥0.1 INCH

<0.1 INCH

STREET LOCATION: \_\_\_\_\_

RECEIVING WATER: marsh → Blackwater River

TIDAL IMPACT: YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES  NO  Use back of form for sketch

1. Approx Outfall/Pipe Diameter: sq. culvert + cement - 18"
2. Approx Sediment Depth (ft): 3"
3. Approx Depth of Water over Sediment (ft): 3"
4. Approx Flow Velocity (fps): \_\_\_\_\_

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	None	Musty	Sewage	Rotten Eggs	Sour Milk	
Other:	<u>marshy</u>					
COLOR:	Clear	Red	Yellow	Brown	Green	Gray
Other:						
CLARITY:	Clear	Cloudy	Opaque	Suspended Solids		
FLOATABLES:	None	Oily Sheen	Garbage	Sewage	Paper	
Other:						
DEPOSITS/STAINS:	None	Sediments	Oily			
Other:						

STRUCTURAL: \_\_\_\_\_

OUTFALL: Normal  Cracking  Metal Corrosion

MANHOLE: Normal  Cracking  Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES  NO

Surfactants: \_\_\_\_\_ mg/l

Ammonia: \_\_\_\_\_

COMMENTS: some algae growth - water in outfall from marsh

OUTFALL/MANHOLE NO.: 10

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 10

DATE / TIME: 2:15 - 4/18

WEATHER: Sunny

FIELD CREW: KW/AC

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS  
<0.1 INCH

QUANTITY OF LAST RAIN: ≥0.1 INCH

STREET LOCATION: Centennial Rd / Fowler's Brook Rd

RECEIVING WATER: Cams Brook

TIDAL IMPACT: YES  NO

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES  NO  Use back of form for sketch

1. Approx Outfall/Pipe Diameter: 24"
2. Approx Sediment Depth (ft): none
3. Approx Depth of Water over Sediment (ft): 5"
4. Approx Flow Velocity (fps): \_\_\_\_\_

*Flow through - acts as  
culvert connected to drain  
inst.*

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<input checked="" type="radio"/> None	Musty	Sewage	Rotten Eggs	Sour Milk	
COLOR:	<input checked="" type="radio"/> Clear	Red	Yellow	Brown	Green	Gray
CLARITY:	<input checked="" type="radio"/> Clear	Cloudy	Opaque	Suspended Solids		
FLOATABLES:	<input checked="" type="radio"/> None	Oily Sheen	Garbage	Sewage	Paper	
DEPOSITS/STAINS:	<input checked="" type="radio"/> None	Sediments	Oily			

STRUCTURAL:			
OUTFALL:	Normal	Cracking	Metal Corrosion
MANHOLE:	Normal	Cracking	Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES  NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: a lot of flow acts as culvert & drain from Centennial

OVER

OUTFALL/MANHOLE NO.: 11

OUTFALL FIELD SCREENING PROGRAM

OUTFALL/MANHOLE ID: 11

DATE / TIME: 4/18 - 1:30

FIELD CREW: KW/AC

WEATHER: Sunny

TIME SINCE LAST RAIN: >72 HOURS

<72 HOURS

QUANTITY OF LAST RAIN: >0.1 INCH

<0.1 INCH

STREET LOCATION: Centennial

RECEIVING WATER: Cams Brook

TIDAL IMPACT: YES (NO)

SAMPLING LOCATION: Outfall No. \_\_\_\_\_ Manhole No. \_\_\_\_\_ Open Channel \_\_\_\_\_  
Other (Describe): \_\_\_\_\_

FLOW OBSERVED: YES NO *Use back of form for sketch*

1. Approx Outfall/Pipe Diameter: 12"
2. Approx Sediment Depth (ft): 6"
3. Approx Depth of Water over Sediment (ft): none
4. Approx Flow Velocity (fps): none

VISUAL OBSERVATIONS: PHOTOGRAPH # / DISKETTE #: \_\_\_\_\_

ODOR:	<u>None</u>	Musty	Sewage	Rotten Eggs	Sour Milk	
	Other: _____					
COLOR:	<u>Clear</u>	Red	Yellow	Brown	Green	Gray
	Other: _____					
CLARITY:	<u>Clear</u>	Cloudy	Opaque	Suspended Solids		
FLOATABLES:	<u>None</u>	Oily Sheen	Garbage	Sewage	Paper	
	Other: _____					
DEPOSITS/STAINS:	None	Sediments	Oily			
	Other: _____					

STRUCTURAL:

OUTFALL: Normal Cracking Metal Corrosion

MANHOLE: Normal Cracking Metal Corrosion

FIELD ANALYSIS: SAMPLED COLLECTED: YES NO

Surfactants: \_\_\_\_\_ mg/l  
Ammonia: \_\_\_\_\_

COMMENTS: corrugated pipe  
a lot of sediment

OVER