

Town of Groton

Stormwater Management Plan

July 2004

*Final SWMP*

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# Executive Summary

This document presents the Stormwater Management Plan (SWMP) for the Town of Groton.<sup>1</sup> The SWMP was developed to meet requirements of the Connecticut Department of Environmental Protection's (CT DEP) General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s). The DEP developed this general permit for the State of Connecticut to comply with the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Phase II stormwater regulations. Appendix A includes a map showing the Town of Groton, the City of Groton, and Groton Long Point. Appendix B includes the CT DEP general permit.

## ES.1 Background on the Phase II Program

In 1987, the Environmental Protection Agency (EPA) amended the Clean Water Act to require a two-phased national program to address water pollution from stormwater. Phase I, promulgated in 1990, addressed stormwater discharges in approximately 900 of the nation's largest cities.

Phase II of the stormwater program was published in the Federal Register on December 8, 1999. The Phase II regulations require operators of MS4s located in urbanized areas with populations of fewer than 100,000 people to obtain a permit for their stormwater discharges. In Connecticut, permits are issued by the CT DEP. A map in Appendix A shows the urbanized and non-urbanized portions of the town.

As determined by the 2000 census, much of the Town of Groton is in an urbanized area and therefore, the town must submit a two-part registration for coverage under the general permit. Part A is due April 9, 2004 and provides general information about the municipality and names of the receiving waters to which the storm sewer system discharges. Part B is due July 9, 2004 and includes a stormwater management plan that describes best management practices (BMPs) and measurable goals for each of six minimum control measures. At least thirty days prior to submitting Part B of the registration (June 9, 2004) the town must make a draft copy of the Stormwater Management Plan available for public review and comment.

## ES.2 Stormwater Management Plan

The central focus of the DEP General Permit for the Discharge of Stormwater from MS4s is the Stormwater Management Plan (SWMP). In order for the town to meet the regulations it must develop a SWMP. Each permittee designs its own SWMP with the goals of reducing the discharge of pollutants from the MS4 to the maximum extent practicable to protect water quality.

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<sup>1</sup> The City of Groton, Groton Long Point, federal and state properties maintain stormwater infrastructure in their geographical area and therefore are not covered by this plan.

To meet the “maximum extent practicable” standard, the Town must develop and implement best management practices (BMPs) for the following six minimum control measures:

- Public Education and Outreach
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention/Good Housekeeping for Municipal Operations

The BMPs are the core of the SWMP and are described in Sections 1 through 6 of this document. A summary of the BMPs in the SWMP is included later in the report in Table 8-1.

### **ES.3 Executing the Stormwater Management Plan**

This document describes the stormwater best management practices that the Town of Groton will complete during the next five years, through January 8, 2009. After the Town submits its registration to the DEP, the Town must begin implementing the plan. Because the SWMP includes modifications to current municipal practices, coordination among several Town Departments and interaction with the public, activities will be implemented over the 5-year permit term.

The Director of Public Works or his/her designee will be the “stormwater coordinator” for the Phase II SWMP. Responsibilities include coordinating tasks among Town departments, completing the annual report to DEP, and generally making sure that the BMPs listed in the SWMP are completed. It is important to note that the Town is legally required to complete all the BMPs listed in the general permit registration. The Town may be considered to be in violation of its permit if it fails to complete any of the BMPs.

### **ES.4 Existing Stormwater Programs in the Town of Groton**

The Town of Groton has many existing stormwater programs and BMPs that can be used to fulfill the Phase II requirements. These include:

- Public education and outreach – mailings regarding Household Hazardous Waste Collection Days and transfer station information; some posted signs at road/water crossings; a “pooper scooper” station at one Town park

- Public Participation and Involvement – host a Household Hazardous Waste Collection Day in Groton annually, host free week at the transfer station where residents can dispose of most items accepted by the transfer station for free, and participation in annual Earth Day Festival when held by Groton Utilities
- Illicit discharge detection and elimination – drainage structures mapping during summer 2003; existing ordinance requiring a permit to connect sanitary drains to the sanitary sewer, and allowing Town right of access to homes to investigate the presence of illicit sewer connections
- Construction site runoff control – the Town of Groton Zoning Regulations require an Erosion and Sediment Control Plan based on the “Connecticut Guidelines for Soil Erosion and Sediment Control” for disturbances of ½-acre of land or more to be submitted with the site plan. The zoning regulations also require an erosion and sediment control plan for any building construction that disturbs more than ½-acre. The Building and Zoning Officials review all construction plans, from large new commercial buildings to a deck or shed at a single residence for compliance with the State of Connecticut Building Code and the Town of Groton Zoning Regulations. In addition, the Groton Inland Wetlands Agency actively reviews all site plans within its jurisdiction and the Planning staff inspect all construction sites that require a planning or wetlands permit, for erosion and sediment control.
- Post-construction runoff control – the Planning Commission has required stormwater BMPs in recently built subdivisions; the Town of Groton Zoning Regulations have specific landscaping requirements to prevent erosion and excessive stormwater runoff on developed areas.
- Pollution prevention/good housekeeping – the Town sweeps all streets at least twice per year; in the spring to remove road sand and in the fall; stores all road salt under cover; properly disposes of snow away from water bodies and other sensitive areas; minimizes chemical and hazardous waste use in the vehicle maintenance facility, DPW yard and other municipal facilities; cleans storm drains as needed, based on reported problems; has a program to revegetate bare areas in parks and on town property; plants 20 to 30 trees a year in addition to those required by site plan regulations; maintains a pooper scooper station in one park; stores motor oil in contained areas that is removed periodically by a licensed hauler; holds “free week” twice per year at the transfer station; and is part of a Regional Household Hazardous Waste Collection Day program which holds eight collection days a year that town residents can go to; one of which is located in Groton.

## **ES.5 Reporting and Record Keeping Requirements**

The CT DEP requires the permittee to keep records required by this permit for at least 5 years after the permit expiration, or longer at the Commissioner’s request. An annual report must be submitted to the DEP by January 1<sup>st</sup> of every year of the permit

term, commencing January 1, 2005. This annual report has to include status of compliance, an assessment of appropriateness of the identified best management practices and progress towards achieving the implementation dates and measurable goals, a summary of stormwater activities to be undertaken during the next year, changes in any identified measurable goals, and monitoring results from six representative outfalls.

## **ES.6 Registration**

The following pages are the registration that will be filed with the DEP. The form for Part A is due on April 9, 2004. Part B is due on July 9, 2004. These forms summarize the SWMP, and are the only paperwork required by the CT DEP.



# Part A - General Permit Registration Form for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)

Please complete this form in accordance with the general permit (DEP-PED-GP-021) in order to ensure the proper handling of your registration. Print or type unless otherwise noted. You must submit the *Permit Application Transmittal Form* (DEP-APP-001) and the registration fee along with this form.

DEP USE ONLY	
Application No.	_____
Permit No.	_____
Town ID	_____

## Part I: Registration Type

Check the appropriate box identifying the registration type.

<p>This registration is for (check one):</p> <p><input checked="" type="checkbox"/> A <i>new</i> registration</p> <p><input type="checkbox"/> A <i>modification</i> of an existing registration</p>	<p>Please identify any previous or existing permit/authorization/registration number in the space provided.</p> <p>Existing permit or registration number: _____</p>
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## Part II: Fee Information

A fee of \$250.00 is to be submitted with this registration. The registration will not be processed without the fee.
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## Part III: Registrant Information

1. Name of Town/City: <b>Town of Groton</b>	
Name of Chief Elected Official (CEO) or Principal Executive Officer (PEO):	
<b>Mark R. Oefinger</b>	Title: <b>Town Manager</b>
Mailing Address: <b>45 Fort Hill Road</b>	
City/Town: <b>Groton</b>	State: <b>CT</b> Zip Code: <b>06340</b>
Business Phone: <b>860-441-6630</b>	ext.      Fax: <b>860-441-6638</b>
Contact Person: <b>Gary J. Schneider</b>	Title: <b>Director of Public Works</b>
<input type="checkbox"/> Check here if there are adjacent towns or other entities with which you will be coordinating implementation of your Stormwater Management Plan for a portion of your MS4 (See Section 6(b)(3) of the general permit). If so, label and attach additional sheet(s) with the required information as supplied above.	
2. List primary contact for departmental correspondence and inquiries, if different than the CEO/PEO	
Name: <b>Gary J. Schneider</b>	
Mailing Address: <b>134 Groton Long Point Road</b>	
City/Town: <b>Groton</b>	State: <b>CT</b> Zip Code: <b>06340</b>
Business Phone: <b>860-448-4083</b>	ext.      Fax: <b>860-448-4094</b>
E-Mail: <b>pworks@town.groton.ct.us</b>	
Contact Person: <b>Gary J. Schneider</b>	Title: <b>Director of Public Works</b>

### Part III: Registrant Information (cont.)

3. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration.

Check here if additional sheets are necessary, and label and attach them to this sheet.

Name: **Camp Dresser & McKee Inc. (CDM)**

Mailing Address: **100 Great Meadow Road; Suite 104**

City/Town: **Wethersfield**

State: **CT**

Zip Code: **06109**

Business Phone: **860-529-7615**

ext.

Fax: **860-529-8102**

E-Mail: **oramnm@cdm.com**

Contact Person: **Nancy M. Oram, P.E.**

Title: **Project Manager**

Service Provided: **Assisted in permitting and development of SWMP**

### Part IV: Watershed Information

Watershed information is available at the local libraries through the Atlas of Public Water Supply Drainage Basins.

Complete the following for each receiving stream, watershed or waterbody to which the MS4 discharges.

1. Name of receiving stream, watershed or waterbody: **Bindloss Brook**

Drainage basin number: **2106**

2. Name of receiving stream, watershed or waterbody: **Birch Plain Creek**

Drainage basin number: **2000**

3. Name of receiving stream, watershed or waterbody: **Edge Pond**

Drainage basin number: **2106**

4. Name of receiving stream, watershed or waterbody: **Fort Hill Brook**

Drainage basin number: **2000**

5. Name of receiving stream, watershed or waterbody: **Great Brook**

Drainage basin number: **2107**

6. Name of receiving stream, watershed or waterbody: **Haleys Brook**

Drainage basin number: **2105**

Check here if there are more receiving watersheds and attach an additional sheet listing them with the required information as supplied above.

### Part V: Supporting Documents

- Check the box as verification that an 8 1/2" X 11" copy of the relevant portion of a USGS Quadrangle Map indicating the town/city boundaries and limits of its separate storm sewer system(s) has been submitted with this registration. Indicate the quadrangle name on the map, and be sure to include the name of the town/city. (A copy of the relevant USGS Quadrangle Map may be available at your town hall or by calling DEP Maps and Publications Sales at 860-424-3555.)

**Part VI: Registrant Certification**

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute.

I certify that this general permit registration is on complete and accurate forms as prescribed by the commissioner without alteration of the text."



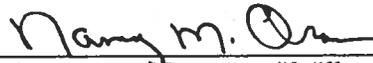
4/5/04

Signature of CEO/PEO or designee  
[as specified in RCSA Section 22a-430-3(b)(2)(B)]

Date

Gary J. Schneider  
Name of CEO/PEO or designee (print or type)

Director of Public Works  
Title (if applicable)

  
Signature of Preparer (if different than above)

March 19, 2004  
Date

Nancy M. Oram, P.E.  
Name of Preparer (print or type)

Project Manager  
Title (if applicable)

Check here if additional signatures are necessary.  
If so, please reproduce this sheet and attach signed copies to this sheet.

Note: Please submit the Permit Application Transmittal Form, Registration Form, Fee, and USGS Quadrangle Map to:

CENTRAL PERMIT PROCESSING UNIT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
79 ELM STREET  
HARTFORD, CT 06106-5127

## Town of Groton Receiving Waters

<u>Name of receiving stream, watershed, or waterbody</u>	<u>Drainage Basin Number</u>
Hatching House Brook	2107
Hempstead Brook	2107
Lambs Pond	2107
Long Island Sound (incl. West and Palmer Coves)	2000
Mystic River	2106
Poquonock River	2107
Thames River	3000
West Branch Red Brook	2105
Whitford Brook	2104
YMCA Pond (Latham Lake)	2107

PROVIDE SEPARATE STORM SEWER SYSTEM



CITY OF GROTON

GROTON LONG POINT

USGS Topographic Map  
 New London, Mystic, Old Mystic, Uncasville,  
 CT Quad (#s 102, 103, 88, 87)

Figure No. 1  
 Town of Groton MS4 Limits





# Part B - General Permit Registration Form for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)

Please complete this form in accordance with the general permit (DEP-PED-GP-021) in order to ensure the proper handling of your registration. Print or type unless otherwise noted.

<b>DEP USE ONLY</b>	
Application No. _____	_____
Permit No. _____	_____
Town I.D. _____	_____

## Part I: Registrant Information

1. Name of Town/City: **Town of Groton**  
 Name of Chief Elected Official (CEO) or Principal Executive Officer (PEO):  
**Mark R. Oefinger** Title: **Town Manager**  
 Mailing Address: **45 Fort Hill Road**  
 City/Town: **Groton** State: **CT** Zip Code: **06340**  
 Business Phone: **860-441-6630** ext. Fax: **860-441-6638**  
 Contact Person: **Gary J. Schneider** Title: **Director of Public Works**

Check here if there are adjacent towns or other entities with which you will be coordinating implementation of your Stormwater Management Plan for a portion of your MS4 (See Section 6(b)(3) of the general permit). If so, label and attach additional sheet(s) with the required information as supplied above.

2. List primary contact for departmental correspondence and inquiries, if different than the CEO/PEO  
 Name: **Gary J. Schneider**  
 Mailing Address: **134 Groton Long Point Road**  
 City/Town: **Groton** State: **CT** Zip Code: **06340**  
 Business Phone: **860-448-4083** ext. Fax: **860-448-4094**  
 E-Mail: **pworks@town.groton.ct.us**  
 Contact Person: **Gary J. Schneider** Title: **Director of Public Works**

3. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration.  
 Check here if additional sheets are necessary, and label and attach them to this sheet.  
 Name: **Camp Dresser & McKee Inc. (CDM)**  
 Mailing Address: **100 Great Meadow Road; Suite 104**  
 City/Town: **Wethersfield** State: **CT** Zip Code: **06109**  
 Business Phone: **860-529-7615** ext. Fax: **860-529-8102**  
 E-Mail: **oramnm@cdm.com**  
 Contact Person: **Nancy M. Oram, P.E.** Title: **Project Manager**  
 Service Provided: **Assisted in permitting and development of SWMP**

## Part II: Site Information

1. Is there any activity included in your Stormwater Management Plan that would adversely affect properties listed or eligible for listing in the National Register of Historic Places?  Yes  No

If yes, the registrant must be in compliance with requirements of the National Historic Preservation Act and must coordinate with the appropriate State Historic Preservation Officer to avoid or minimize impacts from any necessary activities.

2. Is there any activity included in your Stormwater Management Plan that is located within the coastal boundary as delineated on DEP approved coastal boundary maps?  Yes  No

If yes, and this application is for a new authorization or for a modification of an existing permit, you must submit a *Coastal Consistency Review Form* (DEP-APP-004) with your application as Attachment A.

For forms or assistance, please call the Permit Assistance Office at 860-424-3003.

3. Is there any activity included in your Stormwater Management Plan that is located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"?  Yes  No

Date of Map: July 2002

If yes, complete and submit a *Connecticut Natural Diversity Data Base* (CT NDDDB) *Review Request Form* (DEP-APP-007) to the address specified on the form.

When submitting this permit application, please include copies of any correspondence to the NDDDB, including copies of the completed CT NDDDB Review Request Form, any field surveys, and any other information which may lead you to believe that endangered or threatened species may or may not be located in the area of your existing or proposed permitted activity, as Attachment B.

Has a field survey been conducted to determine the presence of any endangered, threatened or special concern species?  Yes  No If yes, provide:

Biologist's Name:

Address:

and submit a copy of the field survey with your application as an Attachment as specified above.

## Part III: Supporting Documents

Please check the attachments submitted as verification that *all* applicable attachments have been submitted with this application form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include the applicant's name as indicated on the *Permit Application Transmittal Form*.

- Attachment A: Coastal Consistency Review Form: Activities within the state's coastal area, which includes the coastal boundary, must be consistent with the Connecticut Coastal Management Act (Sections 22a-90 through 22a-112 CGS). You may be required to complete a *Coastal Consistency Review Form* (DEP-APP-004) to demonstrate that the activity is consistent with the standards and policies of the Connecticut Coastal Management Act.
- Attachment B: CT NDDDB Information: Submit copies of any correspondence provided to or received from the CT NDDDB program, including a copy of a completed *CT NDDDB Request Form* (DEP-APP-007) and copies of any field surveys previously conducted to determine the presence of any endangered, threatened or special concern species.

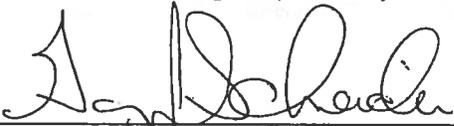
### Part IV: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this permit registration is on complete and accurate forms as prescribed by the Commissioner without alteration of the text.

I also certify under penalty of law that I have read and understand all requirements of the General Permit for the Discharge of Stormwater from a Municipal Separate Storm Sewer System issued on January 9, 2004 and that all requirements for authorization under the general permit are met and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit for the municipality. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements."



Signature of CEO/PEO or designee  
[as specified in RCSA Section 22a-430-3(b)(2)(B)]

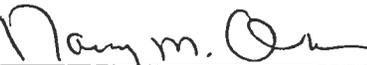
7/2/04  
Date

**Gary J. Schneider**

Name of CEO/PEO or designee (print or type)

**Director of Public Works**

Title (if applicable)



Signature of Preparer (if different than above)

July 2, 2004  
Date

**Nancy M. Oram, P.E.**

Name of Preparer (print or type)

**Project Manager**

Title (if applicable)

Check here if additional signatures are necessary.  
If so, please reproduce this sheet and attach signed copies to this sheet.

Note: Please submit the Registration Form and all Supporting Documents to:

STORMWATER PERMIT COORDINATOR  
BUREAU OF WATER MANAGEMENT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
79 ELM STREET  
HARTFORD, CT 06106-5127

Part V: Best Management Practice List (BMP)

BMP ID	Public Education	Responsible Dept. or Person	Measurable Goal
1-1	Article/brochure about stormwater in an annual mailing	Dep't. of PW	Article distributed
1-2	Stormwater information provided on local cable access	Dep't. of PW	Program aired
1-3	Stormwater information provided on town website	Dep't of PW	Website updated annually
1-4	Educate dog owners about picking up dog waste	Dep't of PW	Fact sheet distributed
1-5	Install & maintain no dumping signs at coastal access areas	Dep't of PW	Number of signs installed
1-6	Annual update of SWMP to Town Council	Dep't of PW	Town Council updated
1-7			
1-8			
1-9			
1-10			
BMP ID	Public Participation	Responsible Dept. or Person	Measurable Goal
2-1	Develop public involvement/participation program	Dep't of PW	Public workshop held, # in attendance
2-2	Comply with state and local public notice and FOI requirements	Dep't PW & OPD	Notices posted
2-3	Stormwater Committee Meeting	Town depts.	Number of meetings held
2-4	Sponsor community participation event	Dep't of PW	Number of events held, # people participating
2-5			
2-6			
2-7			
2-8			
2-9			
2-10			
BMP ID	Illicit Discharge Detection & Elimination	Responsible Dept. or Person	Measurable Goal
3-1	Map outfalls greater than 15" in Urbanized Area (Year 2)	Dep't of PW	Complete GIS layer and create map
3-2	Map outfalls greater than 15" in town-wide (Year 3)	Dep't of PW	Complete GIS layer and map
3-3	Map outfalls greater than 12" in Urbanized Area (Year 4)	Dep't of PW	Complete GIS layer and map
3-4	Develop program to detect and eliminate illicit discharges	Dep't of PW	Number of illicit connections found
3-5	Develop illicit discharge ordinance	Dep't of PW	Ordinance developed & presented to Town Council
3-6	Conduct dry weather outfall screening	Dep't of PW	Percent of outfalls screened
3-7	Evaluate procedures for inspecting new construction for correct connection to Sanitary Sewer	Building Official	Inspection procedures reviewed & changed if necessary
3-8			
3-9			
3-10			

BMP ID	Construction Site Runoff Control	Responsible Dept. or Person	Measurable Goal
4-1	Review land use regulations to meet requirements of MS4 permit and E&S Guidelines	OPD	Review exstg regs,
4-2	Require a waste mgmt plan at construction sites >1acre	OPD	Draft regs developed
4-3	Notify construction site operators of the requirements for Geopervment for Constc	OPD	Developers notified
4-4	Consideration of public input for projects >1acre	OPD	List of bldg permits made available
4-5	Inspect erosion and sediment controls	OPD	Developed insp. procedures
4-6			
4-7			
4-8			
4-9			
4-10			
BMP ID	Post Construction Runoff Control	Responsible Dept. or Person	Measurable Goal
5-1	Review land use regulations to meet requirements of MS4 permit and E&S Guidelines	OPD & DPW	Regs. reviewed/BMP manual Selected
5-2	Develop post-construction ordinance or regulation	OPD & DPW	Ordinance developed and presented to Town Council
5-3	Develop and implement post-construction BMP strategy	OPD & DPW	Strategy & ordinance dev
5-4	Develop program to ensure long-term operation and maintenance of BMPs	OPD	Ordinance developed and presented to Town Council
5-5			
5-6			
5-7			
5-8			
5-9			
5-10			
BMP ID	Good Housekeeping	Responsible Dept. or Person	Measurable Goal
6-1	Develop training program for municipal employees	Dept of PW	Training session developed
6-2	Sweep streets at least once a year as soon as possible after snowmelt	Dept of PW	Percent of streets swept
6-3	Evaluate Urbanized Area for possible sweeping more than once a year	Dept of PW	Percent swept more frequently
6-4	Develop program to evaluate and clean stormwater structures at least once a year	Dept of PW	No. of structures cleaned
6-5	Develop program to evaluate and prioritize system for upgrade and/or repair	Dept of PW	Feet of pipe, no. of structures repaired
6-6	Minimize impacts from municipal vehicle washing	Dept of PW	Records of semi-annual inspections
6-7	Minimize impacts from municipal vehicle maintenance	Dept of PW	Waste determinations completed
6-8	Public grounds maintenance	Bd. of Ed, DPW,	Amount of herbicides/fertilizer used
6-9	Pooper scooper stations and signs	DPW & Parks & R	No. of signs posted, no. Stations installed
6-10	Training other municipal operators in good housekeeping	Dept of PW	Number of newsletters distributed
BMP ID	Monitoring	Responsible Dept. or Person	Measurable Goal
S-1	Sample 6 outfalls once a year	Dept of PW	6 outfalls sampled
S-2			

Part VIA: Best Management Practice Timeline

BMP ID	Permit Year One			Permit Year Two			Permit Year Three			Permit Year Four			Permit Year Five			Next Permit					
	Spring 2004	Summer 2004	Fall 2004	Winter 2004-05	Spring 2005	Summer 2005	Fall 2005	Winter 2005-06	Spring 2006	Summer 2006	Fall 2006	Winter 2006-07	Spring 2007	Summer 2007	Fall 2007		Winter 2007-08	Spring 2008	Summer 2008	Fall 2008	Winter 2008-09
<b>Public Education</b>																					
1-1					X				X				X				X				
1-2						X				X				X				X			
1-3							X				X				X						
1-4						X								X				X			
1-5																					
1-6				X																	X
1-7																					
1-8																					
1-9																					
1-10																					
<b>Public Participation</b>																					
2-1	X		X																		
2-2																					
2-3		X																			
2-4			X																		
2-5																					
2-6																					
2-7																					
2-8																					
2-9																					
2-10																					
<b>Illicit Discharge Detection &amp; Elimination</b>																					
3-1																					
3-2																					
3-3																					
3-4																					
3-5																					
3-6																					
3-7																					
3-8																					
3-9																					
3-10																					

..... Work in Progress

X Task Completed as a One-time Event During that Quarter

Done

Task Completed

BMP ID	Permit Year One			Permit Year Two			Permit Year Three			Permit Year Four			Permit Year Five			Next Permit					
	Spring 2004	Summer 2004	Fall 2004	Winter 2004-05	Spring 2005	Summer 2005	Fall 2005	Winter 2005-06	Spring 2006	Summer 2006	Fall 2006	Winter 2006-07	Spring 2007	Summer 2007	Fall 2007		Winter 2007-08	Spring 2008	Summer 2008	Fall 2008	Winter 2008-09
<b>Construction Site Runoff Control</b>																					
4-1																					
4-2																					
4-3																					
4-4																					
4-5																					
4-6																					
4-7																					
4-8																					
4-9																					
4-10																					
<b>Post Construction Runoff Control</b>																					
5-1																					
5-2																					
5-3																					
5-4																					
5-5																					
5-6																					
5-7																					
5-8																					
5-9																					
5-10																					
<b>Good Housekeeping</b>																					
6-1																					
6-2	X																				
6-3																					
6-4																					
6-5																					
6-6	X																				
6-7																					
6-8																					
6-9																					
6-10																					
<b>Monitoring</b>																					
S-1																					
S-2																					

# Section 1

## Control Measure 1: Public Education and Outreach

To comply with Control Measure 1, the Town must "implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on waterbodies and the steps that the public can take to reduce pollutants in stormwater runoff."<sup>1</sup>

Educating the public about the importance of stormwater management can help lead to greater support for and compliance with the Stormwater Management Plan.

The Town's 2002 Plan of Conservation and Development notes that "Protection of water quality is Groton's most important natural resource preservation priority." The plan identifies resources to be preserved and conserved, consisting almost entirely of watercourses, wetlands, coastal flood hazard areas and slopes in excess of 15 percent. Recommended actions include implementing educational programs for Groton residents, monitoring and protecting water quality, preserving and/or acquiring extensive wetland and streambelt systems, incorporating storm water management plans into zoning regulations, retrofitting outdated/problematic storm water systems, instituting best management practices (BMPs), etc. The Plan of Conservation and Development discusses land use decision-making and such specifics as preserving open space, protecting water quality and coastal water quality, and encouraging more scenic roads. Public input is encouraged while updating this plan.

The following public education/outreach best management practices (BMPs) will be implemented to fulfill the requirements of Control Measure 1.

### **BMP #1-1: Article/brochure about stormwater in an annual mailing.**

*Description:* Include a short article or brochure discussing stormwater management issues with one of the existing mailings or mail separately to every household in the town each year. Currently the town has annual mailings discussing Household Hazardous Waste Collection Days and transfer station drop-off information. Potential topics include a description of the hydrologic cycle, the impacts of increased development, pollutants from developed areas (including lawns), and impacts to local water bodies from stormwater pollution. In accord with Control Measure 3, one of the article/brochure topics will inform the public about the hazards associated with improper waste disposal and illegal discharges to the MS4.

*Measurable goal:* Article/brochure distributed annually to all households.

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<sup>1</sup> General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, January 9, 2004, page 8.

*Schedule:* By the end of the first permit year, prepare article/brochure (research the internet and other resources for ready-made generic articles). Distribute article/brochure second quarter of permit years 2 through 5.

*Responsible person/department:* Department of Public Works

*Cost:* 40 hours of staff time for initial year for development costs and discussion on topics to be included in subsequent articles, 40 hours of staff time per year for preparing article and \$0.17 per brochure (tri-fold and color) for printing (17,000 households - \$2,900 per year), and \$0 to \$0.37 per brochure for mailing (\$0 to \$6,300 per year).

### **BMP #1-2: Stormwater information provided on local cable access.**

*Description:* A program discussing stormwater management will be aired on the local cable access channel twice annually. Potential topics to air include a description of the hydrologic cycle, the impacts of increased development, pollutants from developed areas (including lawns), and impacts to local water bodies from stormwater pollution. The Nonpoint Education for Municipal Officials (NEMO) website has a video, "Luck Isn't Enough: The Fight for Clean Water", that covers stormwater management topics pertinent to the coastal towns along Long Island Sound.

*Measurable goal:* Program on local cable access channel aired twice annually.

*Schedule:* By the end of the first permit year, select a video or develop a program to air on the local cable access channel. Air the program, beginning in the second year at least twice annually.

*Responsible person/department:* Department of Public Works

*Cost:* 32 hours during the initial year for viewing and selecting appropriate video(s) and/or preparing a program for local cable access, 10 hours per year for coordinating with local cable company, and \$75 initial cost for videos [\$10 for "Luck Isn't Enough: The Fight for Clean Water" [www.nemo.uconn.edu/publications](http://www.nemo.uconn.edu/publications); \$15 for "Storm on the Horizon" (Trout Unlimited, Ken Johnson (715) 386-5299); \$19.95 for "After the Rain - Urban Runoff and \$29.95 for "We All Live Downstream" (Oregon State videos, [steven.dodrill@oregonstate.edu](mailto:steven.dodrill@oregonstate.edu))]

### **BMP #1-3: Stormwater information provided on town website**

*Description:* Include discussion of stormwater management issues on the town's existing website. Website updates will be performed annually. Potential topics include a description of the hydrologic cycle, the impacts of increased development, pollutants from developed areas (including lawns), and impacts to local water bodies from stormwater pollution. In accord with Control Measure 3, the website will inform

the public about the hazards associated with improper waste disposal and illegal discharges to the MS4.

*Measurable goal:* Website updated annually.

*Schedule:* By the end of the first permit year, develop the website and update it annually after that.

*Responsible person/department:* Department of Public Works

*Cost:* 100 hours of staff time during initial year for developing website. 40 hours per year for updating website

### **BMP #1-4: Educate dog owners about picking up dog waste.**

*Description:* Distribute a fact sheet with every dog license in Groton. Fact sheets will be included with each dog license issued by the Town Clerk's office (1,967 dogs are licensed in Groton, as of June 1, 2002). The fact sheet will mention that dog waste should not be disposed of in catch basins and that dog waste should be picked up in all areas, including Town parks and public areas.

*Measurable goal:* Pet waste fact sheets distributed to all dog owners with annual dog license.

*Schedule:* Develop the fact sheet by the end of the first permit year. Include the fact sheet with the dog licenses beginning in the second permit year (June 2005) and annually thereafter.

*Responsible person/department:* Department of Public Works

*Cost:* 16 hours of staff time per year to prepare the fact sheet and \$100 copying costs per year.

### **BMP #1-5: Install and maintain no dumping signs at coastal access areas.**

*Description:* Make and install signs telling people not to dump at coastal access points.

*Measurable goal:* Number of signs installed, number of signs inspected.

*Schedule:* Begin installing new signs in public areas by June 2005. Install at least 5 signs a year until all access areas have signs. Inspect all signs and repair them as necessary during each spring and fall of the permit term.

*Responsible person/department:* Department of Public Works

*Cost:* 80 hours in year 1 to design signs; 4 hours of staff time per sign and \$125 per sign to make signs; 12 hours of staff time per year to install signs; 8 hours of staff time per year for inspection and repairs.

**BMP #1-6: Annual update of the Stormwater Management Plan to the Town Council.**

*Description:* Annually, the Director of Public Works will provide an informational update to the Town Council on the Stormwater Management Plan. Topics will include ongoing and upcoming events.

*Measurable goal:* Annual update of the SWMP at a Town Council's meeting.

*Schedule:* December of each permit year to coincide with submittal of annual report to DEP

*Responsible person/department:* Department of Public Works

*Cost:* 32 hours of staff time to prepare and present the Stormwater Management Plan update.

## Section 2

# Control Measure 2: Public Participation and Involvement

To comply with Control Measure 2, the Town must comply with applicable State and local public notice and Freedom of Information requirements when implementing a public participation and involvement program. A public participation/involvement program that includes the public in developing, implementing, and reviewing the town's stormwater management program must be developed.<sup>1</sup> A draft copy of Part B of the registration for the general permit and a draft copy of the annual report must be available for public review and comment at least thirty days prior to the submittal to the DEP. Part B of the registration must be available no later than June 9, 2004 and the annual report must be available by December 1<sup>st</sup> each year for a timely submission to the DEP. The following public participation best management practices (BMPs) will be implemented to fulfill the requirements of Control Measure 2.

### **BMP #2-1: Stormwater Committee Meetings** (BMP 2-3 in Part B Registration to DEP)

*Description:* The Town will form a Stormwater Committee to coordinate activities and monitor progress of the Stormwater Management Plan. The Committee will be made up of staff representatives from the Department of Planning and Development Services, Ledge Light Health District, Parks and Recreation, Board of Education, and the Department of Public Works. The Stormwater Coordinator (the Director of Public Works or his/her designee) will chair the committee and be responsible for ensuring the Town stays on schedule with the various BMPs listed in the Stormwater Management Plan. The committee will meet to discuss progress and changes to the plan.

*Measurable goal:* Form committee within six months of submission of Part B of the registration. Number of meetings held.

*Schedule:* Form committee and hold at least one meeting during first year, hold two meetings per year thereafter.

*Responsible person/department:* Town departments forming committee.

*Cost:* 300 hours of staff time in year 1, 180 hours in year 2, 120 hours in year 3, and 60 hours per year thereafter.

### **BMP #2-2: Comply with state public notification guidelines.**

*Description:* Follow public notification guidelines. Inform the public about availability of the annual reports and Part B of the registration for the general permit and public

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<sup>1</sup> General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, January 9, 2004, pages 8-9.

workshops and meetings. Post notices announcing upcoming meetings and report availability in the current locations of Town Hall, Town Hall Annex and the local newspapers. *Notices of upcoming meetings & report availability are posted in The Day & on the town's website. There is no place to post at Town Hall or the Annex.*  
*Measurable goal:* Notices posted in the two locations and the newspaper.

*Schedule:* Ongoing throughout permit term.

*Responsible person/department:* Department of Public Works and Office of Planning and Development

*Cost:* Approximately 8 hours a year of staff time and \$1,000 a year to put notices in newspaper.

### **BMP #2-3: Involve the public in developing and implementing the draft Stormwater Management Plan and in reviewing the Annual Report.** (BMP 2-1 in Part B Registration to DEP)

*Description:* Post notices announcing the availability of the draft plan and the annual reports for review and hold a public workshop to discuss the Plan and take comments. Hold annual public workshops prior to the annual update to the Town Council (BMP#1-6), and prior to annual budget development.

*Only got 5 citizens attending the first public workshop. The Town attendance now posts notices in The Day & the town's website that the annual report is available for review at the Annex & the Library in December.*

*Schedule:* Post notices at least 30 days prior to submittal of Part B of the registration for the general permit and 30 days prior to submittal of the annual report each year. Hold first workshop prior to July 2004 when the plan must be submitted to DEP. Hold subsequent workshops annually, prior to the annual update to the Town Council in late fall

*Responsible person/department:* Department of Public Works

*Cost:* 100 hours of staff time per workshop for preparation and reviewing comments from workshop and \$3,500 per year for consulting fees.

### **BMP #2-4: Sponsor community participation event.**

*Description:* The town will hold two community participation events a year. Existing or new events will be held annually. The town currently participates in the following events:

- Annual Earth Day Festival held at the reservoir during April - The Town sets up a display on waste disposal and on household hazardous waste collection. Other displays typically set up at this event include topics on energy conservation, composting, and equipment. Waterworks tours are also held.

- Regional Household Hazardous Waste Collection Days - The Town helps plan and organize the collection days. Town residents can go to any of the eight regional household hazardous waste collection days held annually within the Southern Connecticut Resource Recovery Association (SCRRA) member towns. One of the eight collection days is held in the Town of Groton.
- "Free Week" at the transfer station - Residents can dispose of most wastes accepted by the transfer station for free during "free week" which is typically held twice a year. The transfer station accepts bulky waste including construction and demolition debris, appliances and scrap metal, brush and yard debris, waste oil, antifreeze, oil filters, consumer electronics and tires.

These events help reduce illegal dumping by giving residents a place to dispose of wastes. Brochures discussing stormwater management will be distributed during at least two of these events per year. Depending on funding and participation, alternative events may be developed and held.

*Measurable goal:* Number of events held. Number of residents participating.

*Schedule:* Two events will be held each year of the permit term.

*Responsible person/department:* Department of Public Works

*Cost:* 24 hours of staff time for Household Hazardous Waste Collection Days, 8 hours for Earth Day Festival and 480 hours for free week annually.

## Section 3

# Control Measure 3: Illicit Discharge Detection and Elimination

To comply with Control Measure 3, the Town will need a program that:

- Develops an ordinance or other regulatory mechanism prohibiting non-stormwater discharges (illicit discharges) into the separate storm sewer system (except those exempted in the general permit, specified below) and develop sanctions to ensure compliance, to the extent allowable under state and local law (required throughout Town)
- Informs public employees, businesses, and the general public about hazards associated with illegal discharges and improper disposal of waste (can be part of Control Measure 1) (required throughout Town)
- Creates a storm sewer system map (minimum scale of 1"=2,000' and a maximum scale of 1"=100') showing the location of all outfalls (pipe or conduit of a certain size listed below), the type, material and size of the conveyance, outfall or channelized flow, names and Surface Water Quality Classification of immediate or nearest surface waterbody or wetland that the outfall discharges to, and the name of the watershed in which the discharge is located
  - By the end of the second year of the general permit (January 8, 2006) the map must show all outfalls from pipes or conduits 15" or greater in the urbanized area
  - By the end of the third year of the general permit (January 8, 2007), the map must include all outfalls from pipes and conduits 15" or greater in the entire town.
  - By the end of the fourth year of the general permit (January 8, 2008), the map must identify all outfalls 12" or greater that are located in the urbanized area.
- Develops, implements and enforces a plan to detect and eliminate existing illicit discharges to the storm sewer system (required within urbanized area)
- Develops and implements a plan to detect and address future non-stormwater discharges, including illegal dumping to the storm sewer system (required within urbanized area)
- As discussed in Section 3 (a) (2) of the general permit, the town believes they have the following non-stormwater discharges which the permit authorizes:
  - Landscape irrigation

- Uncontaminated ground water discharges such as pumped ground water, foundation drains, water from crawl space pumps and footing drains
- Irrigation water
- Lawn watering runoff
- Residual street wash water
- Discharges or flows from fire fighting activities (except training), and
- Naturally occurring discharges such as rising ground waters, uncontaminated ground water infiltration, springs, diverted stream flows and flows from riparian habitats and wetlands

The town believes these non-stormwater discharges are not contaminated and are appropriate for the MS4.

The following best management practices (BMPs) will be implemented to fulfill the requirements of Control Measure 3. Note that BMP #1-1 and 1-3 will be used to fulfill the public information program requirement of this control measure, and BMP #6-1 will be used to educate Town staff about the hazards associated with illegal discharge and improper disposal of hazardous waste into the MS4.

**BMP #3-1: Conduct dry weather outfall screening.** (BMP 3-6 in Part B Registration to DEP)

*Description:* Evaluate all stormwater outfalls, which were mapped as part of BMP #3-2, during dry weather. If outfalls have flow during dry weather then that may be evidence of illicit connections to the storm drainage system. Make water quality observations at flowing outfalls for evidence of contamination. Based on water quality observations, rank outfalls to determine priority for further investigations to search for illicit connections in storm drains tributary to the outfalls.

Visual inspections and field test kits will be used to determine the water quality of the flow. Flow during dry weather inspections may be uncontaminated groundwater from infiltration; uncontaminated flow from a culverted stream; or contaminated flow from illicit connections. To distinguish these sources, scent and visual clues such as the presence of unusual sediment, toilet paper, or excess vegetation will be used to determine if the flow is contaminated. As necessary, the following field test kits will be used to help confirm and prioritize the visual observations:

- Ammonia is found in sewage, but also in stormwater runoff containing animal waste.

- Temperature of flows containing wastewaters tends to be higher than groundwater and surface water flows, unless the wastewater discharge has been in the pipe for some time.
- Dissolved oxygen tends to be lower in wastewater due to biological processes; however groundwater can have low dissolved oxygen too.
- Specific conductivity tends to be higher in wastewater than in naturally occurring waters.

In industrial areas where local industry processes are known, chemicals indicative of those processes within the drainage area may also be performed.

The ultimate purpose of outfall screening at the level described here is to flag sections of pipe that require further investigation - investigation in the system, including manhole inspections and dye testing to pinpoint the location and nature of the pollutant source. See BMP #3-3 for identifying and removing illicit connections.

*Measurable goal:* Percent of outfalls screened.

*Schedule:* Dry weather screening will be conducted by the fall of 2005 on approximately 220 outfalls (includes ends of outfalls (pipes and conduits) with 12" diameter or greater and discharges (12" diameter or greater) into interconnecting systems (State, City, and Navy storm sewer systems) at the closest manhole at the town boundary). Prioritize outfalls requiring additional investigation by fall 2006. Since flow from illicit connections can be intermittent and is highly variable, follow-up dry weather screening is required. Dry weather field screening will be conducted again in ~~2005~~ the next 5 year permit term.

*Responsible person/department:* Department of Public Works

*Cost:* 320 hours of staff time (or a consultant's time) for each round of dry weather screening (20 days of field work for a 2-person field crew and time for data analysis and record keeping). \$0.60 per sample for ammonia test strips, \$25-\$50 per day for a dissolved oxygen/specific conductivity/temperature meter, 60 hours to prioritize outfalls

### **BMP #3-2: Map stormwater collection system, outfalls and receiving waters.** (BMP 3-1, 3-2, & 3-3 in Part B Registration to DEP)

*Description:* The Town of Groton is currently developing maps of their stormwater system and is in the process of developing a Geographical Information System (GIS) database of their drainage system through the use of as-built drawings and field inspection. The town will locate outfalls by fall 2005 and add to the existing map and database of the manholes, catch basins, and pipes in the town's system. Approximately 60 manholes and 1450 catch basins were inspected by field crews in

summer 2002 and 2003. The field crews visually inspected and collected structural information to build the GIS database for the entire drainage system owned and operated by the Town. Outfalls and receiving waters will be added to the existing GIS layers containing the stormwater collection system. As-built information from subdivisions will also be added as necessary.

*Measurable goal:* Complete GIS layer and create map.

*Schedule:* The stormwater collection system (manholes, catch basins, and pipes) was mapped in 2003. All outfalls (with a diameter 12 inches or greater) in the Town will be located by the fall of 2005. A layer will be added to the Town's GIS showing all outfalls, receiving waters, and watersheds by the end of the second permit year.

*Responsible person/department:* Department of Public Works

*Cost:* 150 hours of staff time for obtaining outfall locations and 80 hours per year to update the GIS with new drainage data. Incurred costs to date are 280 hours of staff time and \$80,965 for GIS/database development and \$72,350 for inspections and other fieldwork

**BMP #3-3: Develop, implement and enforce a plan to identify and remove existing illicit discharges to the MS4.** (BMP 3-4 in Part B Registration to DEP)

*Description:* Based on prioritized results from BMP #3-1 and complaints, inspect storm drainage systems with evidence of contamination. Before conducting detailed and costly inspections, survey the area for obvious signs of contamination. Determine a method and staffing for bottom-up inspections of storm drain lines (start inspections at outfalls and proceed upstream), develop notification and funding procedures for removing illicit connections, and develop and maintain a database showing illicit connections identified, located, and removed.

*Measurable goal:* Number of illicit connections found and removed.

*Schedule:* By the end of the fourth permit year (January 1, 2008), prioritize outfalls as discussed in BMP#3-1, evaluate funding sources for removing illicit connections, and develop a system for maintaining electronic records of the program in GIS. Conduct field investigations of prioritized outfalls and associated watershed areas to locate and remove illicit connections within two years of each round of dry weather field screening conducted as part of BMP #3-1.

*Responsible person/department:* Department of Public Works

*Cost:* It is not possible to estimate the cost of illicit connection removal prior to investigating the extent of the problem. As a benchmark, other communities have estimated that it costs as much as \$18,000 to locate an illicit connection (including dry

weather field screening and field inspections), and \$6,000 to remove and reconnect to the sewer.

**BMP #3-4: Evaluate and change procedures if necessary for inspecting new construction for correct connection to the sanitary sewer.**

*Description:* Currently, property owners are required to obtain a permit to connect a building drain (sewer in house) from their property to the town's sanitary sewer under current town ordinances. The definitions in the ordinance describes the building drain as the pipe inside the building connecting to the building sewer; once the pipe is outside the building it is referred to as building sewer up until the point it connects with the public sewer. Under Chapter 15, Section 15-123 of the town ordinance, the town building official must approve the building's plumbing prior to connection to the public sewer. Evaluate current procedures followed by the Building Official for reviewing construction plans and inspecting each step of new construction. Continue inspections to ensure that the sanitary sewer is correctly connected to the Town's sewer line. If an illicit connection to the storm drain is found, the dwelling cannot be inhabited until the connection is redirected to the sewer.

*Measurable goal:* Inspection procedures reviewed and changed, if necessary, to check for sanitary sewer connections.

*Schedule:* Review inspection procedures by the end of the first year of the permit term. Begin inspections following new procedures during year two of the permit term.

*Responsible person/department:* Building Official (Planning Department)

*Cost:* 80 hours of staff time to review regulations and inspection procedures; estimated 40 hours per year for house inspections.

**BMP #3-5: Develop an ordinance to prohibit non-stormwater discharges**

*Description:* Develop an ordinance that prohibits illicit connections and illegal dumping to the storm sewer system. Include enforcement actions for illicit connections that are found.

*Measurable goal:* Ordinance developed and presented to Town Council.

*Schedule:* Develop ordinance by the end of the first year of the permit term. Present to Town Council annually thereafter until passed.

*Responsible person/department:* Department of Public Works

*Cost:* 250 hours of staff time to develop a draft ordinance; 140 hours of staff time to present to Town Council.

**BMP #3-6: Monitor six representative outfalls.** (BMP S-1 in Part B Registration to DEP)

The DEP requires the evaluation of 6 representative outfalls annually starting in 2004. The same outfalls have to be monitored every year unless a written request is submitted to the Commissioner describing an alternate sampling plan of equivalent or greater scope.

*Description:* Evaluate and select six representative outfalls to monitor based on drainage area of the outfall. Two outfalls for each primarily industrial development, commercial development, and residential development will be monitored annually as required by the general permit. Grab samples from the outfalls will be taken during the first 6 hours of a rain event of at least 0.1 inches and tested for pH, hardness, conductivity, oil and grease, chemical oxygen demand, turbidity, total suspended solids, total phosphorous, ammonia, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, and E. coli. Uncontaminated rainfall pH will be measured when the runoff sample is taken. Date, temperature, time of start of discharge, time of sampling, and inches of rain will be recorded.

*Measurable goal:* Six outfalls monitored annually

*Schedule:* Annually, starting in 2004, during a 0.1-inch rain event occurring at least 72 hours after any previous storm.

*Responsible person/department:* Department of Public Works

*Cost:* 8 hours of staff time to select 6 representative outfalls, 16 hours of staff time to collect samples, and \$140 of lab costs per outfall per year (\$840 annually).

## Section 4

# Control Measure 4: Construction Site Runoff Control

The Town is required to “develop, implement, and enforce a program, or modify an existing program, to reduce pollutants in any stormwater runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre.”<sup>1</sup> Construction activity on sites disturbing less than one acre must be included in the program if the construction activity is part of a larger common plan to disturb one acre or more.

The program for this control measure must include:

- An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions for non-compliance (fines, permit denials, non-monetary penalties, etc.) to the extent allowable under state or local law
- Procedures for notifying construction site developers and operators of the requirements to register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities
- Requirements for construction site operators to implement appropriate erosion and sediment control BMPs in association with the Connecticut Guidelines for Soil Erosion and Sediment Control (Guidelines)
- Requirements for construction site operators to control waste at the site (discarded building material, concrete truck washouts, chemicals, litter etc.) that may cause adverse impacts to water quality
- Procedures for site plan review by the MS4 operator that incorporate consideration of potential water quality impacts
- Procedures for receipt and consideration of information submitted by the public
- Procedures for site inspection and enforcement of control measures by the MS4 operators

The following best management practices (BMPs) for construction sites will be implemented to fulfill the requirements of Control Measure 4. Note that most of the above requirements are already met by the town.

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<sup>1</sup> General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, January 9, 2004, pages 9-10.

### **BMP #4-1: Review land use regulations to meet requirements of MS4 permit and E&S Guidelines. Erosion control plan for construction sites 1 acre in area.**

*Description:* The existing Town of Groton Zoning Regulations include a section listing requirements of an Erosion and Sediment (E&S) Control Plan. These regulations cover development of ½ acre or more and state that the E&S plan be based on the Guidelines and submitted with the site plan. Only E&S plans for projects subject to site plan review are reviewed and inspected by the Planning Commission. Site plan review is required for development resulting in a more intensive use of the property (additional residential units, additional employees, additional clientele or customers, additional floor space for sales and service, or additional required parking). Existing site plan review requirements include review of erosion and sediment controls and potential water quality impacts. Site plan approval is not required for detached one or two family dwellings according to the zoning regulations.

The Groton Inland Wetlands Agency actively reviews all site plans within their jurisdiction and the Planning Staff inspects all construction sites for erosion and sediment control. In addition to the Planning Commission and the Inland Wetlands Agency reviewing many developments in the Town of Groton, any building construction needs a building permit and the Zoning Official requires an Erosion and Sediment Control Plan when more than ½-acre is disturbed. The Zoning Official reviews all construction plans, from large new commercial buildings to a deck or shed at a single residence, for compliance with the State of Connecticut Building Code and the Town of Groton Zoning Regulations, (which requires an E&S Plan).

Based on a review of the current zoning regulations, minor revisions will be made to ensure that all projects that disturb greater than or equal to one acre prepare an E&S Plan.

The Zoning Commission and Inland Wetlands Agency have the power to enforce zoning and wetland regulations based on Town ordinances, but cannot levy a fine. Regulations including provisions for enforcement and penalties for non-compliance covering all construction equal to or greater than 1 acre will be developed.

*Measurable goal:* Review existing regulations for erosion and sediment control requirements for all construction disturbing 1 acre or greater and also review the sanctions for non-compliance (to the extent allowable under local and state law). Revise regulations as necessary.

*Schedule:* Review regulations by the end of the second year. Revise regulations and hold public hearings as necessary. Continue with enforcement as allowed under the existing regulations. If revised regulations need to be developed, begin enforcement once regulation is approved.

*Responsible person/department:* Office of Planning and Development

*Cost:* 160 hours of staff time to review existing regulations; additional time for revising regulations and holding a public hearing if necessary. Enforcement time and costs are variable, an additional 80 hours per year is estimated for review and enforcement.

**BMP #4-2: Require a waste management plan at construction sites larger than one acre. Add requirement to zoning regulations.**

*Description:* Building materials and other construction site wastes must be properly managed and discarded to reduce the risk of stormwater pollution. Routine practices such as trash disposal, recycling, proper material handling, and spill prevention and clean-up can reduce amount of construction site wastes in stormwater and prevent the contamination of surface and/or groundwater. Develop a requirement in the zoning regulations requiring submittal of a waste management plan (or amend existing Town of Groton Zoning Regulations, section 6.11, E&S Control Plan, to include this).

*Measurable goal:* Draft requirement in zoning regulations developed. Number of waste management plans submitted and reviewed for each construction site larger than one acre.

*Schedule:* Revise the zoning regulations to require developers to submit a waste management plan by the end of the fourth year. Begin review of waste management plans in the fifth year of the permit term, pending approval of revised regulations.

*Responsible department/person:* Office of Planning and Development

*Cost:* 100 hours of staff time for preparing regulation; 70 hours for presenting at a public hearing; 1 to 2 hours of staff time for review of each waste management plan.

**BMP #4-3: Notify construction site operators of the requirements for registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.**

*Description:* When the town comments on the E&S Control Plan, a flyer notifying developers that they must submit a registration for the CT DEP general permit for construction sites larger than 5 acres will be included.

*Measurable goal:* Notification of developers of large construction sites once E&S Plan is reviewed.

*Schedule:* As needed throughout permit term.

*Responsible department/person:* Office of Planning and Development

*Cost:* Estimated 4 hours per year.

#### **BMP #4-4: Consideration of public input for projects 1 acre or greater.**

*Description:* Currently any project requiring approval by the Planning Commission or Inland Wetlands Agency is presented at a public meeting. For projects not presented at a public meeting, make a list of building permit applications available at the Town Hall Annex. Develop procedures for handling public input on stormwater management during the planning phase of construction projects that disturb one or more acres.

*Measurable goal:* List of building permits made available to public. Notice of availability (existence) of list published on town website or newspaper or brochure once a year. Procedures for handling public comment developed.

*Schedule:* By the end of the second permit year, develop a procedure for handling public comments.

*Responsible person/department:* Office of Planning and Development

*Cost:* 80 hours to revise regulations; variable amount of staff time for reviewing comments submitted by the public (estimated 20 hours per year).

#### **BMP #4-5: Inspect erosion and sediment controls.**

*Description:* Conduct Town inspections of construction sites at the beginning and end of construction, and after erosion and sediment controls have been installed. The Town Planning staff currently inspects all sites that have a wetlands or land use approval. The Building Official inspects all sites for which he has issued a building permit for E&S Controls. The Office of Planning and Development staff will inspect sites greater than or equal to 1 acre which do not fall under the above-mentioned inspections.

*Measurable goal:* Developed inspection procedure, Number of inspections conducted

*Schedule:* Develop a procedure for conducting Town inspections for all sites equal to or greater than 1 acre in size by the end of the second year, including a formal inspection checklist. Begin inspections following new procedures in the third year of the permit term. For sites not already required to submit an E&S Plan, inspections cannot begin until BMP#4-1 is completed.

*Responsible person/department:* Office of Planning and Development

*Cost:* 180 hours of staff time to develop an inspection procedure and checklist; 2 hours of staff time per Town inspection (3 inspections per project), estimated 60 hours per year for inspections.

## Section 5

# Control Measure 5: Post-construction Stormwater Management in New Development and Redevelopment

To comply with the requirements of Control Measure 5, the Town must:

- “Develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale that discharge into the MS4 or directly to the waters of the State. This program shall ensure that controls are implemented to require appropriate infiltration practices, reduction of impervious surface, creation of or conversion to sheet flow, measures and/or structures to reduce sediment discharge and any other innovative measures that will prevent or minimize water quality impacts;
- Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for your municipality;
- Use an ordinance or other regulatory mechanism to address the elements of the first bullet item above regarding post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law; and
- Ensure adequate long-term operation and maintenance of BMPs”<sup>1</sup>

“Redevelopment” refers to property alterations that change the footprint of a site or building and result in the disturbance of one or more acres. Redevelopment is not intended to include activities such as exterior remodeling.

The following best management practices (BMPs) for new development and redevelopment will be implemented to fulfill the requirements of Control Measure 5.

Note that BMPs 5-1, 5-2, and 5-3 all require development and implementation of an ordinance. These three BMPs can all be addressed as parts of a single ordinance for stormwater management in new development and redevelopment.

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<sup>1</sup> CT DEP General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, January 9, 2004, pg. 10.

**BMP #5-1: Develop an ordinance to apply requirements of the Connecticut Stormwater Quality Manual to the entire Town.**

**Present the ordinance to Town Council.** (BMP 5-2 & 5-3 in Part B Registration to DEP)

*Description:* Develop and present an ordinance to Town Council to apply the requirements of the Connecticut Stormwater Quality Manual to the Town of Groton. The ordinance will specify which Town department will have responsibility for enforcement. The development of the ordinance will address post-construction BMP strategies such as details of enforcement, tracking BMPs installed, administrative and plan review procedures. The ordinance will be presented annually to Town Council until passed.

*Measurable goal:* Ordinance developed and presented to Town Council each year until passed. Implementation of ordinance and strategies will be continual thereafter.

*Schedule:* Develop an ordinance by the end of the third year (Jan. 2007). Present annually to Town Council until passed, and begin enforcement after the ordinance has been passed.

*Responsible person/department:* Office of Planning and Development and DPW

*Cost:* 250 hours of staff time to develop a draft ordinance; 140 hours to process through Town Council per year until passed.

**BMP #5-2: Specify a stormwater BMP manual to be used for consistent design and performance standards.** (BMP 5-1 in Part B

Registration to DEP)

*Description:* As part of the ordinance described above, specify a technical stormwater BMP reference to be used for design and performance standards of all stormwater BMPs in the Town (the Connecticut Guidelines for Soil Erosion and Sediment Control and the Connecticut Stormwater Quality Manual are recommended).

*Measurable goal:* BMP manual selected.

*Schedule:* Specify a stormwater BMP manual to be included in an ordinance by the end of the second permit year.

*Responsible person/department:* Office of Planning and Development

*Cost:* 16 hours of staff time to evaluate different BMP manuals.

**BMP #5-3 Ensure long-term maintenance of private structural BMPs.** (BMP 5-4 in Part B Registration to DEP)

*Description:* As part of the ordinance described above, require project proponents to submit to the Town a description of all new BMPs, including location, design and installation plans, vendor and manufacturer, and maintenance requirements. Require the project proponent to be responsible for future maintenance, or set up a trust fund to pay the Town to conduct maintenance.

*Measurable goal:* Ordinance developed and presented to Town Council.

*Schedule:* By the end of the third permit year, include provisions in the ordinance for long-term BMP maintenance. After the ordinance is passed, begin BMP maintenance as required.

*Responsible person/department:* Office of Planning and Development

*Cost:* 100 hours to develop as part of ordinance in BMP #5-1. Maintenance and enforcement is variable, depending on the number and type of BMPs.

## Section 6

# Control Measure 6: Pollution Prevention/Good Housekeeping for Municipal Operations

Control Measure 6, Pollution Prevention/Good Housekeeping for Municipal Operations, requires the Town to meet the following requirements, which are included within the general permit:

- Develop and implement an operation and maintenance program that includes a training component for municipal employees and contractors and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations;
- Employees shall be trained to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. Training materials from the EPA, the State, or other organization should be used.
- A program to sweep all streets at least once a year (soon after snowmelt) shall be developed and implemented. For streets within the urbanized area of town, a program shall be developed and implemented to evaluate and prioritize streets that may require sweeping more than once a year.
- A catch basin evaluation and cleaning program shall be developed and implemented. Catch basins and other stormwater structures throughout the MS4 should be evaluated at least once a year and cleaned if necessary; if sediment has accumulated. Include provisions to identify and prioritize structures that require cleaning more than once a year.
- Develop and implement a program to evaluate and, if necessary, prioritize conveyances, structures and outfalls for repairing, retrofitting, or upgrading.<sup>1</sup>

The following pollution prevention/good housekeeping best management practices (BMPs) will be implemented to fulfill the requirements of Control Measure 6. Good housekeeping practices are also included in the Stormwater Pollution Prevention Plan (SWPPP) and the Spill Prevention Control and Countermeasure (SPCC) plan developed for the Public Works Complex, the SWPPP for the landfills and transfer station and the SWPPP and SPCC for the Water Pollution Control Facility (WPCF). These measures will continue to be followed.

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<sup>1</sup> General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, January 9, 2004, pages 10-11.

### **BMP #6-1: Develop training session within the Town.**

*Description:* Develop a training segment to be added to training that Public Works operations staff currently receives discussing sensitive receptors (such as wetlands, beaches, and rivers). Discuss the need for special protection and their location compared to the stormwater outfalls. Invitations to the training sessions will be extended to members of other municipal operations, contract employees and contractors working at municipal facilities.

*Measurable goal:* Training session developed, staff trained.

*Schedule:* During winter of the second permit year, develop the training session and give Public Works staff a 30-minute training session during their annual SWPPP training about the location of sensitive receptors, and why special protection is needed.

*Responsible person/department:* Department of Public Works

*Cost:* 40 hours of staff time to prepare training segment (including printing stormwater system map); 11 hours of staff time to prepare and give the training session, training time for attendees will be absorbed in current annual training required by the SWPPP.

### **BMP #6-2: Street sweeping.** (BMP 6-2 & 6-3 in Part B Registration to DEP)

*Description:* Sweep all Town maintained streets each spring and fall to remove accumulated sand. The first sweeping shall be scheduled to occur as soon after snowmelt as possible. Maintain records of sweeping schedule and daily volume of residuals collected.

*Measurable goal:* Percent of streets swept once a year, twice a year, more than twice a year.

*Schedule:* Spring of each permit year, as soon after last snowfall as possible and a second time as required.

*Responsible person/department:* Department of Public Works

*Cost:* As currently budgeted (estimated 500 hours per year), with an additional 24 hours of staff time per year to maintain records.

### **BMP #6-3: Minimize impacts from municipal vehicle washing.** (BMP 6-6 in Part B Registration to DEP)

*Description:* Wash all town maintained vehicles indoors and in compliance with the General Permit for the Discharge of Vehicle Maintenance Wastewater. The town has recently completed modifications to meet the requirements of the aforementioned general permit including installation of a sewer system to the Public Works Complex. Part of a 20-bay garage is currently used for vehicle washing. This area was curtained

off and modified to improve the vehicle washing area. Inspect and clean oil/water separator that collects washwater.

*Measurable goal:* Records of semi-annual inspections and cleaning of oil/water separator

*Schedule:* Inspect oil/water separator semi-annually. Clean by a certified waste hauler as necessary.

*Responsible person/department:* Department of Public Works

*Cost:* \$750,000 for installation of sewer pump station and force main; 16 hours for record keeping and inspections

**BMP #6-4: Minimize impacts from municipal vehicle maintenance.** (BMP 6-7 in Part B Registration to DEP)

*Description:* Continue minimizing the use of hazardous materials through employee training and maintaining a materials inventory. Waste determinations on all waste streams at the Vehicle Maintenance Facility, Parks Maintenance Facility, and Golf Course Maintenance Facility are conducted annually and records are kept for at least 3 years as part of the Hazardous Materials Management Plan at each facility. In addition to waste determinations, <sup>quarterly</sup> ~~weekly~~ inspections are conducted to meet the requirements of the Hazardous Materials Management Plan. <sup>for storage + containment areas</sup> ~~Monthly inspections are conducted for spill kits.~~ Continue to practice good housekeeping measures such as: covering dumpsters when not in use; having spill containment readily available in various areas of the Public Works Complex; using drip pans when changing fluids; properly managing and disposing of waste fluids; using spigots or funnels to minimize drips when transferring fluids; storing oily wastes separate from other wastes; storing dirty rags in a covered container; changing all fluids indoors; storing all drums and used pallets under cover; and inspecting above and underground storage tanks regularly for signs of leakage or corrosion.

*Measurable goal:* Waste determinations on waste streams completed annually. Weekly inspections of storage areas recorded. Inventory updated.

*Schedule:* Conduct waste determinations on waste streams annually; continue employee training annually; update inventory semi-annually during comprehensive site compliance evaluation, which is required by the SWPPPs for the Public Works Complex, transfer station, and WPCF.

*Responsible person/department:* Department of Public Works

*Cost:* 50 hours per year

### **BMP #6-5: Catch basin cleaning and storm drain maintenance.**

(BMP 6-4 in Part B Registration to DEP)

*Description:* Inspect oil/water separators, stormceptors, catch basins, drain manholes, leak offs, paved waterways, and other drainage structures at least annually. Evaluate, and if necessary, clean catch basins and other stormwater structures at least annually. Clean drain pipes as necessary. Keep records of catch basin residual volumes collected on a daily basis. Make a note of catch basins with exceptionally large residual volumes; these basins will be prioritized for more frequent cleaning.

*Measurable goal:* Report number of catch basins and other stormwater structures cleaned annually and amount of material collected. Condition of basins and other drainage structures recorded.

*Schedule:* Cleaning will occur annually throughout permit term beginning in the first year of the permit.

*Responsible person/department:* Department of Public Works

*Cost:* As currently budgeted, plus 24 hours per year staff time for records maintenance. \$180,000 to purchase a catch basin cleaning vehicle in spring 2003, and 500 hours/year for personnel to operate.

### **BMP #6-6: Storm drain maintenance.** (BMP 6-5 in Part B Registration to DEP)

*Description:* Develop a program to inspect the storm drain system and if necessary prioritize areas requiring repair, retrofitting or upgrading. The town is responsible for 24.6 miles of storm drain pipes. The town will repair deficient items that are noted during the catch basin cleaning program.

On an annual basis the town reconstructs and paves approximately 3 miles of road. Catch basin tops and manhole rims, if necessary, are currently replaced when the road is re-paved.

*Measurable goal:* Feet of pipe or number of structures repaired, retrofitted or upgraded.

*Schedule:* Contingent and based on road repaving schedule and reporting of structures in poor condition.

*Responsible person/department:* Department of Public Works

*Cost:* 24 hours of staff time per year for record keeping and prioritizing areas. Costs do not include cost of repairing/replacing storm drains (estimated 100 hours per year).

**BMP #6-7 Public grounds maintenance.** (BMP 6-8 in Part B Registration to DEP)

*Description:* Train staff to minimize application of herbicides, pesticides, and fertilizers. Test the soil to determine the proper amount of fertilizer. Keep maintenance records.

*Measurable goal:* Amount of herbicides/fertilizers used.

*Schedule:* Conduct training during winter of second permit year, test soil during the second year of the permit, and then practice green landscaping continually throughout permit term.

*Responsible person/department:* Board of Education, Department of Public Works & Department of Parks and Recreation

*Cost:* 16 hours per year for record keeping, in addition to the current budget. 1 hour of staff time per person for training. 24 hours for soil testing and \$12 per soil test.

**BMP #6-8: Pooper Scooper stations and signs.** (BMP 6-9 in Part B Registration to DEP)

*Description:* Prioritize parks and public areas and install pooper-scooper stations. Install "No Dumping" signs in coastal access areas. (Refer to BMP #1-4 and BMP #1-5). The first signs and pooper scooper stations should be installed at parks near West and Palmer Coves, the Thames River Estuary, Mumford Cove, the Mystic River Estuary, and the Poquonock River Estuary which are in the 303(d) list for high indicator bacteria. Maintain records of number of stations installed, clean-out dates and quantities of material collected.

*Measurable goal:* Number of signs posted; number of pooper-scooper stations installed and quantity of waste collected.

*Schedule:* Install 5 stations in years 2 through 5 at parks and public areas and maintain stations thereafter. (Signs installation is included in BMP #1-5)

*Responsible person/department:* Department of Public Works & Department of Parks and Recreation

*Cost:* \$1,000 for stations; 40 hours of staff time to install stations; 8 hours of staff time per year for inspection and repairs; 1 to 2 hours per week to maintain stations (will vary depending on number installed and pet owners' use of the stations). Expenses for sign installation are included in BMP #1-5.

**BMP #6-9: Training other municipal operators in good housekeeping.** (BMP 6-10 in Part B Registration to DEP)

*Description:* The Public Works Complex has several good housekeeping measures in place already. The good housekeeping practices at the Public Works Complex will be conveyed to other municipal employees through a newsletter. A good housekeeping practice will be highlighted periodically. Good housekeeping measures currently in place at the Public Works Complex include: sweeping after loading and unloading from the salt/sand sheds; inspecting fueling areas for signs of spills or leaks; checking drum and storage tank containment areas for leaks; keeping hydraulic equipment in good repair; cleaning oil/water separators at least yearly by a certified waste hauler; cleaning up spills immediately; keeping paved ditches and swales clear of material and equipment; maintaining spill response kits; keeping containers closed and sealed except when filling or emptying; covering dumpsters except when they are being used; training employees on pollution prevention and why it is important; and conducting facility inspections for leaks, spills, maintenance and good housekeeping practices.

*Measurable goal:* Number of newsletters distributed, at least one topic run per year.

*Schedule:* Begin highlighting stormwater management issues and good housekeeping practices in year 1.

*Responsible person/department:* Director of Public Works

*Cost:* 60 hours in initial year to coordinate newsletter distribution; 20 hours per year thereafter to prepare a brief summary of a good housekeeping practice.

**BMP #6-10: Develop procedures with the water companies for hydrant flushing.**

*Description:* Hydrant flushing is not an authorized non-stormwater discharge. Coordinate efforts between the town DPW and the water companies to sweep streets prior to flushing. The town will inform the private water companies that they should dissipate chlorine when flushing hydrants and that appropriate erosion control measures are to be implemented if flushing water is directed to and erodes vegetated areas.

*Measurable goal:* Notification procedures discussed. Private water companies informed to dissipate chlorine. Streets swept when town is notified of hydrant flushing.

*Schedule:* Discuss notification procedures and chlorine dissipation with private water companies in year 2. Sweep streets when notified of hydrant flushing

*Responsible person/department:* Director of Public Works

*Cost:* 120 hours

## Section 7

# Permit Eligibility

This section assesses the Town of Groton's DEP General Permit eligibility with respect to endangered species, historic places, coastal management, and impaired waters.

The Phase II rule, and subsequently the CT DEP general permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, prohibits stormwater discharges (or discharge-related activities) that will threaten any species listed as endangered or threatened under Section 26-306 of the Connecticut General Statutes or result in the adverse modification or destruction of habitat that is designated as essential to these species. The rule also prohibits discharges that adversely affect properties listed (or eligible to be listed) on the National Register of Historic Places unless the registrant is in compliance with requirements of the National Historic Preservation Act and has coordinated with the State Historic Preservation Officer. The stormwater discharge also has to meet applicable goals and policies of the Coastal Management Act, and not cause adverse impacts to the coastal resources.

In addition, if a permittee initiates, creates, or originates a discharge of stormwater less than 500 feet from a non-fresh-tidal wetland, the discharge shall be retained in a system designed to retain the volume of stormwater runoff generated by the first 1 inch of rainfall on that watershed. Also, if the permittee initiates, creates or originates a discharge of stormwater below the high tide line into coastal, tidal or navigable waters, additional permits are required from the DEP Commissioner.

If a municipality does not meet these requirements, it must apply for the more stringent individual permit, rather than the general permit.

When the exact locations of the outfalls are obtained, determination on impacts to endangered species, historic sites, and coastal areas will be assessed. To the best of our knowledge, the Town meets the eligibility requirements for the general permit.

### 7.1 Endangered Species

According to the United States Environmental Protection Agency's (USEPA) county atlas, two endangered species are found in New London County. The Indiana bat (*Myotis Sodalis*) and the Piping Plover (*Charadrius Melodus*) inhabit New London County. The "State and Federal Listed Species and Significant Natural Communities" map was checked and there are many shaded areas representing a potential conflict with a listed species. The Connecticut Natural Diversity Data Base (NDDB) was contacted to determine if species listed as endangered or threatened pursuant to Section 26-306 of the Connecticut General Statutes are affected. A response received from them stated that State Threatened Atlantic Sturgeon are in the Thames River. The letter is included in Appendix C. Existing discharges are not likely to jeopardize endangered species. No construction or new discharges should be added within

threatened species areas prior to contacting the NDDB and DEP – Fisheries Division and completing a NDDB Request Form.

## 7.2 Historic Places

The Town of Groton has four properties registered on the National Register of Historic Places. These places are:

- Burnett’s Corner Historic District - Along Packer Road, South of Rte. 184, listed 12/4/97
- Pequot Fort - addresses restricted/unknown, listed 1/19/90
- Jabez Smith House - North Road, listed 5/15/81
- Edward Yeomans House - Brook Street, listed 12/22/78

No adverse consequences from stormwater are expected on these historic properties.

## 7.3 Coastal Management

The Town of Groton has approximately 75 outfalls in the coastal area as delineated by the Coastal Area Management zone. The SWMP is consistent with the goals of the Coastal Management Act because both have the goals to improve water quality. If new outfalls are added or construction takes place in the coastal area, DEP requirements must be followed and a Coastal Consistency Review Form must be completed.

## 7.4 Impaired Waters

Six water bodies that lie within or border the Town of Groton are listed on the Proposed 2004 List of Connecticut Waterbodies Not Meeting Water Quality Standards (303(d) list). These are:

- West and Palmer Coves, as enclosed by a line drawn between Groton Long Point to Morgan Point, Noank, for indicator bacteria (possibly from marinas, onsite wastewater systems (septic tanks), urban runoff/storm sewers, waterfowl)
- Thames River Estuary, areas adjacent to Navy sub base in Groton, Horton Cove in Montville, and lower section of river, Gold Star bridge to mouth, for indicator bacteria (potentially from collection system failures, combined sewer overflows, industrial point sources, marinas, municipal point sources, urban runoff/storm sewers, waterfowl)
- Mumford Cove and offshore waters for indicator bacteria (potentially from marinas, urban runoff/storm sewers, waterfowl)

- Long Island Sound East - Offshore\_01 - the offshore portion of Long Island Sound in Southeast Coastal, Thames River and Connecticut River Major Basins off shore to 50 foot contour for indicator bacteria, (possibly from combined sewer overflows, municipal point sources, recreation and tourism activities (other than boating), urban runoff/storm sewers, and waterfowl)
- Mystic River Estuary north of a line drawn between Morgan Point, Noank and Mason's Island for indicator bacteria (possibly from marinas, municipal point sources, septic systems, urban runoff/storm sewers, and waterfowl)
- Poquonock River Estuary, Baker Cove and Pine Island Bay plus offshore area from Bushy Point Beach and Bluff Point for indicator bacteria (potential sources include: marinas, municipal point sources, urban runoff/storm sewers, and waterfowl)

When a TMDL is approved for any water body in the municipality, then the permittee must include BMPs that will specifically address the impaired water body and be consistent with the TMDL. However, TMDLs have not been developed for the impaired water bodies in Groton. Note that bacteria may be caused by illicit connections to storm drains, pet waste, and wildlife populations.

The following BMPs will help mitigate against the priority pollutants listed above:

- BMP #1-1: Article/brochure about stormwater in an annual mailing
- BMP #1-2: Stormwater information provided on local cable access
- BMP #1-3: Stormwater information provided on town website
- BMP #1-4: Educate dog owners about picking up dog waste
- BMP #1-5: Install and maintain "No Dumping" signs at coastal access areas
- BMP #3-1: Conduct dry weather outfall screening
- BMP #3-2: Map stormwater collection system, outfalls and receiving waters
- BMP #3-3: Develop, implement and enforce a plan to identify and remove existing illicit discharges to the MS4
- BMP #3-5: Develop an ordinance to prohibit non-stormwater discharges
- BMP #4-1: Erosion control plan for construction sites 1 acre in area
- BMP #4-2: Require a waste management plan at construction sites larger than one acre. Add requirement to zoning regulations

- BMP #6-8: Pooper Scooper stations and signs

# Section 8

## Receiving Waters

One of the goals of the SWMP is to protect water quality in the MS4's receiving waters. This section lists the receiving waters in Groton. The BMPs in the Stormwater Management Plan will help protect these receiving waters. Table 8-1 summarizes the BMPs and estimated additional resources required for implementation, above and beyond existing stormwater practices in the Town of Groton.

### 8.1 Receiving Waters

Groton's MS4 discharges stormwater to the following receiving waters, based on GIS mapping:

- Bindloss Brook
- Birch Plain Creek
- Edge Pond
- Fort Hill Brook
- Great Brook
- Haleys Brook
- Haleys Pond
- Hatching House Brook
- Hempstead Brook
- Lambs Pond
- Long Island Sound (including West and Palmer Coves)
- Mystic River
- Poquonock River
- Thames River
- West Branch Red Brook
- Whitford Brook
- Latham Lake (YMCA Pond)

All of these water bodies are in the Southeast Coastal and Thames River Basins.

Table 8-1  
 Summary of BMPs and Anticipated Costs (Person-Hours) for Stormwater Management Plan Implementation

BMP ID	BMP	Responsible Department	Estimated Hours Required					Total	Other Estimated Future Costs/Comments
			Year 1 2004	Year 2 2005	Year 3 2006	Year 4 2007	Year 5 2008		
	<b>Public Education:</b>								
	Annual report to DEP	Dept. of Public Works	120	80	80	80	80	440	
1-1	Article/brochure about stormwater in an annual mailing	Dept. of Public Works	40	40	40	40	40	200	\$0.17 per brochure for printing (\$2,900) and \$0.37 for mailing (\$6,300) per year (Years 2 - 5)
1-2	Stormwater information provided on local cable access	Dept. of Public Works	32	10	10	10	10	72	\$75 video costs (Year 1)
1-3	Stormwater information provided on town website	Dept. of Public Works	100	40	40	40	40	260	
1-4	Educate dog owners about picking up dog waste	Dept. of Public Works	16	2	2	2	2	24	\$100 copying costs (Years 2-5)
1-5	Install and maintain no dumping signs at coastal access areas	Dept. of Public Works	80	40	40	40	40	240	\$2,500 for materials to make signs
1-6	Annual update of SWMP to the Town Council	Dept. of Public Works	32	32	32	32	32	160	
	<b>Public Participation:</b>								
2-1	Stormwater Committee Meetings	Planning & Development, Ledge Light Health District, Parks & Rec, Dept. of Public Works	300	180	120	60	60	720	
2-2	Comply with state public notification guidelines	Dept. of Public Works & Office of Planning and Development	8	8	8	8	8	40	\$1,000 a year
2-3	Involve the public in developing and implementing the draft SWMP and Reviewing the Annual Report	Dept. of Public Works	100	100	100	100	100	500	\$3,500 consulting costs per year
2-4	Sponsor community participation event	Dept. of Public Works	480	480	480	480	480	2400	
	<b>Illicit Discharge Detection &amp; Elimination:</b>								
3-1	Conduct dry weather outfall screening	Dept. of Public Works	320	60	60	60	320	700	Costs of field test kits (\$0.60 for ammonia test strips, \$25-\$50 per day for DO/specific conductivity/temperature meter) plus consultant's fee
3-2	Map stormwater collection system, outfalls and receiving waters	Dept. of Public Works	150	80	80	80	80	390	Incurred costs to date are \$153,315 and 280 hours for mapping completed in Fall 2003 in anticipation of this permit
3-3	Develop, implement and enforce a plan to identify and remove existing illicit discharges to the MS4	Dept. of Public Works				240	120	V	Variable; could be \$6,000 to remove an illicit connection
3-4	Evaluate and change procedures if necessary for inspecting new construction for correct connection to the sanitary sewer	Building Official	80	40	40	40	40	240	Variable, estimate 2 hours of time per inspection
3-5	Develop an ordinance to prohibit non-stormwater discharges	Dept. of Public Works	250	140	V	V	V	390	140 hours every year to present to Town Council until ordinance is passed
3-6	Monitor six representative outfalls	Dept. of Public Works	24	16	16	16	16	88	\$140 per outfall per year for lab costs (\$840 annually)
	<b>SUBTOTAL</b>		1,662	1,678	1,148	1,268	1,468	7,224	

M = minimal cost

V = variable cost; will depend on the number of projects, employees, etc.

Table 8-1 (Continued)  
 Summary of BMPs and Anticipated Costs (Person-Hours) for Stormwater Management Plan Implementation

BMP ID	BMP	Responsible Department	Estimated Hours Required					Other Costs/Comments	
			Year 1 2004	Year 2 2005	Year 3 2006	Year 4 2007	Year 5 2008		Total
	<b>Construction Site Runoff Control</b>								
4-1	Review land use regulations. Erosion control plan for construction sites 1 acre in area	Office of Planning and Development		160	80	80	80	400	Enforcement costs variable (estimate 80 hours/year)
4-2	Require a waste management plan at construction sites larger than one acre. Add requirement to zoning regulations	Office of Planning and Development				170	80	250V	One to two hours for review of each plan.
4-3	Notify construction site operators of the requirements for registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities	Office of Planning and Development	4	4	4	4	4	20	Copying costs of a flyer
4-4	Consideration of public input for projects 1 acre or greater	Office of Planning and Development		80	20	20	20	140V	Variable amount of time for reviewing public comments (estimated 20 hours/year).
4-5	Inspect erosion and sediment controls	Office of Planning and Development		180	60	60	60	360V	6 hours of inspection time per project, estimate 60 hours/year
	<b>Post Construction Runoff Control:</b>								
5-1	Develop an ordinance to apply CT Guidelines and CT Stormwater Quality Manual to the entire Town. Present to Town Council				390	M	M	390/M	140 additional hours per year until passed; begin enforcement once ordinance is passed
5-2	Specify a stormwater BMP manual to be used for consistent design and performance standards			16				16	
5-3	Ensure long-term maintenance of private structural BMPs.				100	40	40	180V	Hours shown in year 3 are for ordinance development; BMP maintenance is variable, depending on number and type of BMPs (Estimate 40 hours/year)
	<b>Good Housekeeping</b>								
6-1	Develop training session within the Town	Dept. of Public Works		40	11	11	11	73	Training time of staff will be absorbed into current training
6-2	Street sweeping	Dept. of Public Works	524	524	524	524	524	2620	Estimate 500 hours/year for sweeping plus 24 hours/year for record keeping
6-3	Minimize impacts from municipal vehicle washing	Dept. of Public Works	16	16	16	16	16	80	Incurred costs to date: \$750,000 for installation of sewer pump station and foremain and \$100,000 to upgrade vehicle washing area
6-4	Minimize impacts from municipal vehicle maintenance	Dept. of Public Works	50	50	50	50	50	250	
6-5	Catch basin cleaning and storm drain maintenance	Dept. of Public Works	524	524	524	524	524	2620	\$180,000 for catch basin cleaning vehicle
6-6	Storm drain maintenance	Dept. of Public Works	124	124	124	124	124	620V	24 hours for maintaining records, cost of repairs and employee time will vary (estimate 100 hours/year)
6-7	Public grounds maintenance	Board of Ed., Dept. of Public Works & Recreation		40	16	16	16	88	\$12 per soil test to determine fertilizer and pH adjustment required, 1 hour/person training
6-8	Proper scooper stations and signs	Department of Parks and Recreation		40	100	120	120	380	Employee time for installing stations; \$1,000 per station, assume 1 to 2 hours per week of maintenance time
6-9	Training other municipal operators in good housekeeping	Director of Public Works	60	20	20	20	20	140	
6-10	Develop procedures with the water companies for hydrant flushing	Director of Public Works		120					
	<b>TOTAL COSTS</b>		<b>2,964</b>	<b>3,616</b>	<b>3,187</b>	<b>3,047</b>	<b>3,157</b>	<b>15,971</b>	

M = minimal cost  
 V = variable cost; will depend on the number of projects, employees, etc.