

Municipality/Organization: Town of Durham, NH

EPA NPDES Permit Number: NHR041006

MaDEP Transmittal Number: W-

**Annual Report Number
& Reporting Period:** No. 5: May 1, 2008 to April 30, 2009



NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: David Cedarholm **Title:** Town Engineer

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Certification:

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

Signature: 

Printed Name: David Cedarholm

Title: Town Engineer

Date: April 29, 2009

Part II. Self-Assessment

The Town of Durham, New Hampshire (Town) has made a concerted effort to continue goals set for 2007-08 into this unexpected 6th year of the permit. The following is an overview of the efforts performed by the Town to satisfy the Phase II requirements for all six minimum control measures.

Public Education and Outreach – In 2008 and 2009, the Town continued to take an active role in educating local government officials, municipal staff, and citizens about stormwater management and the community's responsibilities with regard to Stormwater II regulations. The Town published and distributed informational materials about important stormwater related impairment and the possible sources of these impairments. The Town continued to promote the demonstration rain garden that was constructed on Town Property in 2007 using mostly volunteer labor and material donations by the local garden club as a way to promote innovation and simple methods of stormwater management. Local residents were informed about various local stormwater programs using Town list-server which sends out weekly emails to more than 1,500 area residents. The performance of the rain garden continues to impress residents who visit the rain garden as the flowering perennials and ornamental grasses continue to flourish. The Town of Durham is the host community to the University of New Hampshire (UNH), and the Town continues to coordinate with UNH on the distribution of public information, and educating residents and the student populations through our biannual newsletter. The Town Engineer gave more power point presentations to both the Durham Planning Board and the Durham Town Council about the importance of stormwater management and the benefits of adopting a stormwater ordinance, and presentations were broadcast repeatedly on the local cable access television channel. The new documentary "Liquid Assets" was broadcast numerous times on the cable access television channel to help educate local residents on the need to pay more attention to upgrading old stormwater, water, and wastewater infrastructure.

Public Participation/Involvement – The new "Project Stormdrain - Online Stormwater Observation Form" webpage was added to the Town's website enabling residents to easily report personal observations of the condition of stormwater system and report any water quality or system problems. This webpage is a fully functioning online form can be accessed at the following URL: <http://ci.durham.nh.us/SERVICES/projectstormdrain/projectstormdrain2.php>. This webpage gives area residents an easy opportunity to be actively involved in protecting the local waterways. Town staff and various active Town Board/Committee members and resident volunteers continue to be involved with local watershed associations, committees, conservation commissions, and regional planning commissions that review and report on conditions and status of stormwater management within the Town and region. These groups are instrumental in monitoring the watersheds that encompass the Town and promoting responsible stormwater management. The demonstration rain garden described above continues to be successful as the word spreads and more members of the community learn about it and come visit it. In August of 2008, the Town Engineer presented at an all day conference in a neighboring Town promoting responsible stormwater management through innovative land use entitled "Weathering the Storm with Low Impact Development (LID)". The conference was organized and sponsored by the NH Estuaries Project, USEPA, the University of New Hampshire (UNH) and others, and advertising was focused on encouraging local decision makers to participate.

Illicit Discharge Detection and Elimination (IDDE) – Durham annually updates the Town-wide GIS stormwater management system map and more resources were again devote to this task in 2008. An engineering technician worked full time all summer and part time through the year focusing on this effort. In 2008 the Town mapped and conducted a physical assessment of all culverts within the Town using a grant provided by the New Hampshire Estuaries Project. The culvert assessment revealed some culverts that need attention, but no obvious signs of IDDE activity. The Town advanced the development of a stormwater ordinance to address potential

IDDE issues during 2008 and 2009. The proposed stormwater ordinance passed the review of the Durham Planning Board and the Town's legal counsel, and is under consideration by the Durham Town Council. In the meantime, the ordinance is being re-reviewed in relation to the proposed requirements in the EPA's Draft Small MS4 Stormwater Permit which was released in December 2008. The Durham Town Engineer remains in the position as the Chairman of the New Hampshire Seacoast Stormwater Coalition (NHSSC), which is a regional association of municipal stormwater system managers that meets monthly to exchange information and share/participate in stormwater educational opportunities. Through a collective effort from all members of the NHSSC and the NHDES's NH Estuaries Project, the publication of "Guidelines and Standard Operating Procedures: Illicit Discharge Detection and Elimination and Pollution Prevention/Good House Keeping for Stormwater Phase II Communities in New Hampshire" (Guidelines) was completed and hard copies were produced and distributed to all participants. A digital version of the Guidelines document is now available to all New Hampshire communities through the NHDES website. As described above, Durham has implemented an online report form which is accessed through the Town of Durham's website (visit this link: <http://ci.durham.nh.us/SERVICES/projectstormdrain/projectstormdrain2.php>). The online form provides a real-time opportunity for area residents to electronically report personal observations on illicit discharges immediately to Town staff.

Construction Site Storm Water Runoff Control – Town regulations require ALL developments to provide adequate stormwater management facilities. The Town Code Enforcement Officer and the Town Engineer regularly monitor the conditions of construction sites to ensure that stormwater runoff is properly managed and adequate best management practices (BMPs) are implemented. During the 12 months prior to April 2009, there was not any soil disturbance greater than 1 acre associated with construction activity, and very limited smaller area disturbance associated with the construction of isolated single family homes and municipal projects. Training of Town staff on BMPs and proper implementation of stormwater controls is ongoing. Durham's proposed stormwater ordinance, which is being re-reviewed for compliance with the proposed Draft MS4 Permit requirements, includes detailed requirements to implement adequate stormwater runoff controls for all construction projects.

Post-Construction Runoff Control – As stated above, current Town regulations require ALL developments to provide adequate stormwater management facilities and the Planning Board is diligent at ensuring that proposed developments maintain high standards relative to the design of permanent stormwater management systems and BMPs. Durham continues to work with the stormwater professionals from the UNH Stormwater Center (a local academic stormwater management research facility), who regularly assist the Town on the evaluation of the performance of proposed developments. The local developers and design engineers consistently propose innovative stormwater systems with extremely high standards.

Pollution Prevention/Good Housekeeping – The Town is beginning to develop a stormwater management system Capital Improvement Plan (CIP) as we identify and the prioritize the portions of the system in greatest need of improvement. Data that was collected during the 2007 stormwater outfall assessment and the 2008 culvert assessment is being incorporated into the Stormwater CIP program. The Durham Department of Public Works (DPW) continues to follow through with the three year rotational maintenance plan, in which approximately one-third of our stormwater collection system is cleaned and maintained each year. Approximately 175 catch basins were cleaned in 2006 and another 175 were cleaned in 2007. A minimum of 175 catch basins are scheduled to be cleaned in 2008. The Town maintains an aggressive street sweeping program in which all downtown streets are swept at least weekly and other areas are swept at least quarterly. In addition, all repairs and maintenance of stormwater structures within the MS4 area are performed with updated BMPs and modern materials.

Part III. Summary of Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 – 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 Revised X	Develop Educational Resources	Town Engineer and Public Works Director	Provide	DPW Publishes information on stormwater issues and provides opportunities for residents to participate in the construction of demonstration rain gardens.	Publish more information and provide more opportunities for residents to participate in the construction of rain gardens and installation of rain barrels.
2 Revised	Implement Educational Activities	Public Works Director	Broadcast Stormwater related program on local cable TV network	The Town Broadcast the “Liquid Assets” documentary on the local TV cable access channel	Continuation of public programs and continue publishing stormwater tips and program updates in DPW Newsletters
3 Revised X	Storm Drain Stenciling	Public Works Director	Apply medallions near catch basins.		The Town plans to install more medallions on catch basins throughout Town.
4 Revised	Stormwater II Informational Flier	Public Works Director	Stormwater article as part of newsletter	A regular column entitled “Stormwater Tips” now appears in the newsletter published by the Public Works and sent out to all Town residents at least 2 times per year	Continue to publish “Stormwater Tips” in the DPW Newsletter.
5 Revised X	Stormwater Related Programs Broadcast on Town’s Cable Channel	Town Engineer	Broadcast Stormwater related program on local cable TV network	Stormwater related documentary “Liquid Assets” was broadcast on the local cable access channel during a single round of showings that last approximately 2 weeks	Continue to broadcast TV programs over the next year and seek out new programs.

2. Public Participation/Involvement

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 – 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 Revised X	Create Citizen Committee/ Organization	Town Engineer	Actively participate on local Watershed Associations	Town Engineer actively participates in numerous local Citizen Groups, is the Chair the NH Seacoast Stormwater Coalition (NHSSC), and is a Commissioner on NH State Stormwater Study Commission.	Continue to play active roles in local organizations.
2 Revised X	Maintain a Cooperative Relationship with UNH and the Community	Public Works Director and Town Engineer	Work with UNH and residents on stormwater related issues	Local decision makers were encouraged to attend the “Weathering the Storm with Low Impact Development” Conference.	The Town plans to coordinate more stormwater activities and programs for public participation and encourage attendance at other related programs.
3 Revised X	Establish Public Storm Water Literature for Public Distribution	Town Engineer	Stormwater article as part of newsletter	As described in Table 2, the Town published information about its rain garden program in addition to stormwater tips and program updates	Continuation of public programs and regular publishing of stormwater tips and program updates in DPW Newsletters
4 Revised X	Public Meeting – Town Council or Board Presentation	Town Engineer	Town Council Presentation	The Town Engineer gave more stormwater presentations to the Town Planning Board and Town Council this year	Organize more presentations in the coming year.
5 Revised	Community Watershed Monitoring Clean-ups	Public Works Director	Coordinate watershed walks and clean-ups	On a monthly basis the ORWA performs river walks along some portion of the Oyster River in an effort to monitor conditions. River and coastal clean-ups sponsored by various groups are held as annual events.	Continue to support local organizations that sponsor cleanups.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 – 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 ----- Revised X	Stormwater Mapping	Town Engineer	Complete map implement within GIS system.	This goal is 100% complete. All catch basins and outfalls located within the MS4 area are located in the Townwide GIS system. The Town also mapped and evaluated all culverts in 2008.	Continue to locate and map stormwater system connecting piping.
2 ----- Revised X	Stormwater Ordinance	Town Engineer and Town Planner	Durham has developed a Stormwater Ordinance that is nearing final adoption.	The proposed stormwater ordinance has passed Planning Board and legal review and awaits adoption by the Town Council.	Final adoption of the stormwater ordinance by the Town Council.
3 ----- Revised X	Implement an Information Management System for Tracking Illicit Discharges	Town Engineer	Complete stormwater mapping inventory and track illicit discharges through GIS system	A stormwater culvert survey was conducted for signs of illicit discharges, in addition to observation made during system maintenance and catch basins cleanings and management. Stormwater quality system condition data was also collected through a new "Online Storm Drain Report" form available on the Town Website.	Continue updating data and tracking the stormwater system's condition and visually monitoring the quality of local drainage ways.
4 ----- Revised	Training of Employees	Town Engineer and Assist. Director of DPW Operations	BMP implementation training of staff	Training programs were taken advantage for Town personnel on the implementation of stormwater BMPs and illicit discharge detection methods.	Attend new workshops offered through NHDES, the UNH Stormwater Training Center, and other regional organizations to educate Town personnel.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 – 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 Revised X	Collect Ordinance / Regulatory Information	Town Engineer and Town Planner	Durham has developed a Stormwater Ordinance that is nearing final adoption.	The proposed stormwater ordinance awaits adoption by the Town Council and review of compliance with Draft Small MS4 Permit Requirements.	Final adoption of the stormwater ordinance by the Town Council.
2 Revised	Informational Management System	Town Engineer	Maintain and update GIS based mapping and track catch basin cleaning and street sweeping.	Expanded data input to Town system regarding catch basins cleaning and maintaining construction based stormwater BMPs.	Use GIS system to track construction based stormwater management BMPs.
2 Revised X	Finalize Ordinance/Regulatory Mechanism	Town Engineer and Town Planner	Durham has developed a Stormwater Ordinance that is nearing final adoption.	The proposed stormwater ordinance awaits adoption by the Town Council and review of compliance with Draft Small MS4 Permit Requirements.	Final adoption of the stormwater ordinance by the Town Council.
4 Revised	Staff Training	Town Engineer	DPW, Code Enforcement, and Planning Staff to attend training/ workshops on stormwater	Town staff annually attends stormwater education workshops and seminars as well as informing staff of information received.	Continue to educate Town staff and local government officials to stay current with new developments in stormwater management.

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 - 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 Revised X	Identification of BMPs	Town Engineer	Develop possible BMPs for use within the Town	Implemented a variety of BMPs on municipal projects and continued evaluating the efficiency of each item.	Continue to evaluate BMPs that are effective in our geographical area.
2 Revised X	Existing Ordinance / Regulatory Information	Town Engineer and Town Planner	Durham's existing stormwater regulations and development review process produces developments with stormwater systems designed with surprisingly high standards	The existing Durham Site Plan Review Regulations require ALL proposed development to provide "adequate" stormwater management facilities. This requirement continues to effectively require developments to include stormwater management systems designed to meet or exceed the requirements of the State of NH.	Final adoption of the stormwater ordinance by the Town Council.
3 Revised X	New Ordinance / Regulatory Information	Town Engineer and Town Planner	Durham has developed a Stormwater Ordinance that is nearing final adoption.	The proposed stormwater ordinance, which includes details on the required permanent stormwater management controls/BMPs, awaits adoption by the Town Council and review of compliance with Draft Small MS4 Permit Requirements.	Final adoption of the stormwater ordinance by the Town Council.

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008 – 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
1 Revised X	Develop Pollution Prevention Plan	Town Engineer and Public Works Director	Assess and evaluate all Town Facilities and methods of operations relative to Stormwater management.	• Clean all catch basins on a three year rotation. • Frequency of sweeping the MS4 area was increased from twice a year to at least quarterly and weekly in the more heavy used downtown areas.	• Continue rotational catch basin cleaning schedule. • Utilized the UNH Stormwater Center for assistance in developing formal Pollution Prevention Plan for all municipal operations. • Install another raingarden at one of the municipal facilities to improve the management of stormwater from impervious surfaces.
2 Revised X	Employee Training Materials	Town Engineer and Assist. Director for DPW Operations	Provide staff with educational opportunities relevant information	Town Engineer worked directly with DPW's Highway and Grounds Division crews to employ more effective BMPs in general stormwater system repairs and maintenance. DPW also continued collecting and distributing stormwater information.	Take advantage of local to training opportunities and obtain and distribute up-to-date materials through suppliers, NHSSC, the UNH Stormwater Center, and provide Town staff with stormwater BMP information.
3 Revised X	Informational Management Systems	Town Engineer	Maintain and updated GIS base mapping, track structure maintenance of operations.	Data input to our system was expanded this year with the help of a GIS consultant. Information relative to municipal operations was updated and expanded.	Continue to use GIS to record critical stormwater system data, and add location of system problems.

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2008– 09 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2009-10
4 Revised X	Employee Training	Town Engineer	Provide staff with more educational opportunities	Town DPW staff attended seminars and workshops Low Impact Development. DPW also continued to provide Town staff with ongoing in-house staff training on BMP installation and effectiveness.	Take advantage of local training opportunities available to town Staff.

Part IV. Summary of Information Collected and Analyzed

Data specific to the physical condition of the stormwater system discharge Town owned outfalls and culverts within the MS4 area were assessed and evaluated for signs of illicit discharges and general deterioration. No signs of illicit discharges were observed.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	n
Annual program budget/expenditures	(\$)	15,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	80 %
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	N
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y Not logged
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	1
▪ community participation	(%)	70+ house holds
▪ material collected	(tons or gal)	Not available
School curricula implemented	(y/n)	N

Legal/Regulatory

Regulatory Mechanism Status (indicate with “X”)	In Place Prior to Phase II	Under Review	Drafted	Adopted NEW
▪ Illicit Discharge Detection & Elimination		X	X	<i>almost</i>
▪ Erosion & Sediment Control	X	X	X	<i>almost</i>
▪ Post-Development Stormwater Management	X	X	X	<i>almost</i>
Accompanying Regulation Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination		X	X	<i>almost</i>
▪ Erosion & Sediment Control	X	X	X	<i>almost</i>
▪ Post-Development Stormwater Management	X	X	X	<i>almost</i>

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	60
System-Wide mapping complete (catch basins, outfalls, and culverts)	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	0
▪ CADD	(%)	0
▪ GIS	(%)	100
Outfalls inspected/screened	(# or %)	100
Illicit discharges identified	(#)	0
Illicit connections removed	(#) (est. gpd)	0
% of population on sewer	(%)	30
% of population on septic systems	(%)	70

Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100
Site inspections completed	(# or %)	8
Tickets/Stop work orders issued	(# or %)	0
Fines collected	(# and \$)	0
Complaints/concerns received from public	(#)	0

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100
Site inspections completed	(# or %)	5
Estimated volume of stormwater recharged	(gpy)	+100,000

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	1/3 of all CBs each yr
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1 /yr
Total number of structures cleaned	(#)	120
Storm drain cleaned	(LF or mi.)	200 LF
Qty. of screenings/debris removed from storm drain infrastructure	(lbs. or tons)	90
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		beneficial use
Cost of screenings disposal	(\$)	N/A

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	4+
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	40
Qty. of sand/debris collected by sweeping	(lbs. or tons)	Not available
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	beneficial use
Cost of sweepings disposal	(\$)	N/A
Vacuum street sweepers purchased/leased	(#)	1 owned
Vacuum street sweepers specified in contracts	(y/n)	

Reduction in application on public land of: (“N/A” = never used; “100%” = elimination)		
▪ Fertilizers	(lbs. or %)	0
▪ Herbicides	(lbs. or %)	0
▪ Pesticides	(lbs. or %)	0

Operations and Maintenance (continued)

Anti-/De-Icing products and ratios	% NaCl % Sand % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl	10 90 Note: little to no salt is used on roads in the winter within the Durham MS4 area.
Pre-wetting techniques utilized	(y/n)	N
Manual control spreaders used	(y/n)	N
Automatic or Zero-velocity spreaders used	(y/n)	Y
Estimated net reduction in typical year salt application	(lbs. or %)	Not available
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	Y