

**Municipality/Organization:** Town of Durham, NH

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**EPA NPDES Permit Number:** NHR041006

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**MaDEP Transmittal Number:** W-

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**Annual Report Number  
& Reporting Period:** No. 9: May 1, 2012 to April 30, 2013

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## 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: 

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Printed Name: David Cedarholm

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Title: Town Engineer

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Date: May 1, 2012

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## **Part II. Self-Assessment**

The Town of Durham, New Hampshire (Town) has continued to work toward meeting goals set for 2011-12 and proceed into an unexpected 10<sup>th</sup> 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 2011 and 2012, 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 of Durham teamed up with the Oyster River School District and NH Coast to construct a 1,000 square foot (SF) rain garden in the front yard of Oyster River High School. It is situated in front of the school within an existing depressed grassy strip located between a main town road and the school parking lot. The rain garden will filter and treat stormwater runoff from approximately 12,000 SF of parking lot. This rain garden was constructed using materials, plants and monetary donations from numerous local business and community members. The Town of Durham is contributed labor and materials including gravel and piping. The Environmental Science classes from the High School will contribute time by planting and learning about the positive impacts that rain gardens can have on stormwater management and treatment. Other school and community group will also contribute labor in the planting effort. This rain garden will continue to be monitored and maintained to ensure that it is operating most effectively.

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 demonstration rain garden which was installed at Durham Public Works in 2007 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. The Town Engineer has been working directly with the UNH EcoSystems Task Force to develop an Integrated Watershed Management Plan for the Oyster River watershed. This plan takes a comprehensive approach to compliance with the Town's and UNH's federal Clean Water Act obligations and will focus on reducing non-point source pollution initially within the Town of Durham (Durham's MS4 area is at the outlet of the Oyster River watershed) and eventually extend out to other town's in the upper reaches of the watershed.

The Town Engineer continues to support the Durham Planning Board with the Site Plan Review (SPR) Regulations, relative to stormwater management, which was officially adopted in July 2010, and the benefits of adopting a future stormwater ordinance for illicit discharge detection and elimination (IDDE). Presentations were broadcast repeatedly on the local cable access television channel.

**Public Participation/Involvement** – The “Project Stormdrain - Online Stormwater Observation Form” webpage continues on 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 and 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. In 2011, the Oyster River was officially designated in the New Hampshire Rivers Management and Protection Program under RSA 483 and as a result a local advisory committee was formed which includes representatives from both Durham and UNH.

**Illicit Discharge Detection and Elimination (IDDE)** – On Monday April 16, 2012, Durham Public Works staff were alerted to a possible illicit discharge at a catch basin near a local restaurant. Upon investigation it was determined that this restaurant was illegally dumping food waste down the storm drain. The Town notified the Code Enforcement Officer and NHDES who then talked to the owner of the property and helped to coordinate remedial action. The owner immediately hired an environmental cleanup crew to remediate the problem within 72 hours. Luckily, there had not been any recent rain events so the impact to the environment was kept to a minimum.

Durham annually updates the Town-wide GIS stormwater management system map. This is an ongoing project and will continue to be a priority for the Town. 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 Town continues to advance the development of a stormwater ordinance to address potential IDDE issues during 2011 and 2012. 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 initially released in December 2008 and final issuance is still pending.

The Durham Assistant Town Engineer remains active with 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. 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 Stormwater Runoff Control** – During the 12 months prior to April 2012, there was only one development that created 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. The Town's newly updated Site Plan and Subdivisions regulations require ALL developments to provide up-to-date stormwater management facilities that do not create or contribute to water quality impairments. These new regulations have significantly advanced the incorporation of low impact development practices into all proposed site plans. 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. Training of Town staff on BMPs and proper implementation of stormwater controls is ongoing. Durham's newly adopted stormwater update to the Site Plan Review Regulations, will help to comply with the 2008 proposed Draft MS4 Permit requirements, which includes detailed requirements to implement adequate water quality related stormwater runoff controls for all development related construction projects.

**Post-Construction Runoff Control** – As stated above, current Town regulations require ALL developments to provide adequate up-to-date stormwater management facilities and the Planning Board is diligent at ensuring that proposed developments maintain high standards relative to low impact development design of permanent stormwater management systems and BMPs. Durham continues to work with area stormwater professionals including 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.

As stated above, the newly adopted stormwater update to the Site Plan Review Regulations will help Durham comply with the Post-Construction Runoff control MS4 requirements.

**Pollution Prevention/Good Housekeeping** – 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 catch basins are cleaned and maintained each year.

Approximately 1/3 of all of catch basins in the Town are cleaned every year. A minimum of 175

catch basins are scheduled to be cleaned in 2012. The Town is actively developing a stormwater management system Master Plan Capital Improvement Plan (CIP) as we identify and prioritize the portions of the system in greatest need of improvement. Data that was collected during 2011, and 2012 is being incorporated into the Stormwater Master Plan CIP program. 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. The Town also approved the purchase of a new street sweeper which will replace the older model that the town currently uses. 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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Person</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) for 2011 – 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities for 2012-2013</b>
1 ----- Revised X	Develop Educational Resources	Town Engineer and Public Works Director	Provide new information and educational opportunities.	DPW Publishes information on stormwater issues and provides opportunities for area residents to participate in the construction of demonstration rain gardens.	Provide more opportunities for area residents to participate in the construction of rain gardens. Publish more information on the benefits and uses of rain gardens and rain barrels.
2 ----- Revised X	Implement Educational Activities	Public Works Director	Broadcast Stormwater related program on local cable TV network	The Town Broadcasted the Planning Board meetings and public hearings relative to developments proposing and implementing innovative stormwater BMPs.	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 X	Presentations	Town Engineer	Integrated Watershed Management Plan	The Town Engineer has given numerous public presentations promoting the benefits of developing and implementing an integrated watershed management plan.	Coordinate to promote the commission's recommendations.



## 2. Public Participation/Involvement

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2011 – 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2012-13
1 ----- Revised X	Create Citizen Committee/ Organization	Assistant Town Engineer and Town Engineer	Actively participate on local Watershed Associations	Actively participate in numerous local Citizen Groups, Assistant Town Engineer is involved in NH Seacoast Stormwater Coalition (NHSSC).	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	DPW and Local High School teamed with “NH Coast” to construct a 1000 SF rain garden at the Oyster River High School.	Coordinate more stormwater activities and programs for public participation and encourage attendance at other related programs.
3 ----- Revised X	Public Meeting – Town Council or Board Presentation	Town Engineer	Town Board Presentation	The Town Engineer has given numerous public presentations promoting the benefits of developing and implementing an integrated watershed management plan.	With Town Council’s support proceed with developing and implementing an integrated watershed management plan for the Oyster River Watershed.
4 ----- Revised X	Community Watershed Monitoring Clean-ups	Public Works Director and other public officials	Coordinate watershed walks and clean-ups, and participate in watershed management planning efforts.	On a monthly basis the ORWA performs river walks along some portions of the Oyster River in an effort to monitor conditions. River and coastal clean-ups sponsored by various groups are held as annual events. The recently formed Oyster River Local Advisory Committee (established in 2011 under RSA 483) includes community members committed to promoting Durham’s non-point source management efforts.	Continue to support local organizations sponsoring watershed management of non-point source pollution.

### 3. Illicit Discharge Detection and Elimination

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Person</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) for 2011 – 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities for 2012-13</b>
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.	Public Works Department will begin to examine each catch basin within the system to determine condition and rim/invert elevations. The GIS system will continue to be updated and improved upon.
2 ----- Revised X	Stormwater Regulations	Town Engineer and Town Planner	Develop new Stormwater Regulations for adoption.	Site Plan and Subdivision Stormwater Regulations were adopted in 2010.	Final adoption of a separate stormwater ordinance by the Town Council to address IDDE.
3 ----- Revised X	Implement an Information Management System for Tracking Illicit Discharges	Town Engineer	Complete stormwater infrastructure inventory through development of a stormwater CIP and track illicit discharges through GIS system	A stormwater Capital Improvements Plan (CIP) is under development to prioritize problems areas and continued tracking for signs of illicit discharges. In addition, observations made during system maintenance and catch basin cleanings and management. Stormwater quality system condition data is 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 X	Training of Employees	Town Engineer and Assist. Director of DPW Operations	BMP implementation training of staff	Town Staff participate in an actual remediation of a nel 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**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Person</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) for 2011 – 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities for 2012-13</b>
1 ----- Revised X	Maintain Ordinance / Regulatory Information	Town Engineer and Town Planner	New Stormwater Regulations were adopted in 2010	The stormwater regulations were adopted by the Planning Board for compliance with Draft Small MS4 Permit Requirements.	Monitor the activities related to the stormwater regulation by the Planning Board.
2  Revised X	Informational Management System	Town Engineer and Assistant Engineer	Maintain and update GIS based mapping and track catch basin cleaning and street sweeping, and continue developing a stormwater Capital Improvements Plan (CIP).	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.
3 ----- Revised X	Finalize Ordinance/Regulatory Mechanism	Engineering, Code Enforcement, and Planning Departments	Adopt new IDDE specific regulations or ordinance.	Regulations specific to monitoring and control of IDDE are actively being developed.	Final adoption of the stormwater ordinance for IDDE controls by the Town Council.
4 ----- Revised X	Staff Training	Town Engineer and Assistant Engineer	DPW, Code Enforcement, and Planning Staff to attend training/ workshops on stormwater Management	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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Person</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) for 2011 - 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities for 2012-13</b>
1 ----- Revised X	Identification of BMPs	Town Engineer and Assistant 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, Assistant Engineer, and Town Planner	Durham's new stormwater regulations and development review process produces developments with stormwater systems designed with surprisingly high standards	The new Durham Site Plan Review Regulations require ALL proposed development to provide "adequate" stormwater management facilities related to water quality.	Monitoring stormwater regulations by Public Works.
3 ----- Revised X	New Ordinance / Regulatory Information	Town Engineer and Town Planner	Adopted new Stormwater Regulations in 2010.	The new stormwater regulations include details on the required post-construction stormwater management controls/BMPs, encouraging LID practices for compliance with Draft Small MS4 Permit Requirements.	Monitoring stormwater regulations by Public Works.

## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2011 – 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2012-13
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.	<ul style="list-style-type: none"> <li>• Clean all catch basins on a three year rotation.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Install another rain garden at one of the municipal facilities to improve the management of stormwater from impervious surfaces.</li> <li>• Continue rotational catch basin cleaning schedule.</li> <li>• Utilized the UNH Stormwater Center for assistance in developing formal Pollution Prevention Plan for all municipal operations.</li> </ul>
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. Constructing the new rain garden this spring at the local high school was key training activity for DPW staff.	Take advantage of local 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 using newly developed stormwater CIP.	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. Continue to update the GIS database based on field studies within the stormwater network.

BMP ID #	BMP Description	Responsible Person	Measurable Goal(s)	Progress on Goal(s) for 2011- 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities for 2012-13
4 ----- Revised X	Employee Training	Town Engineer	Provide staff with more educational opportunities	DPW also continued to provide Town staff with ongoing in-house staff training on BMP installation and effectiveness. Town DPW staff attended seminars and workshops Low Impact Development. Constructing the new rain garden this spring at the local high school was key training activity for DPW staff.	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 <i>NEW</i>
▪ Illicit Discharge Detection & Elimination		X	X	<i>almost</i>
▪ Erosion & Sediment Control	X	X	X	<i>complete</i>
▪ Post-Development Stormwater Management	X	X	X	<i>complete</i>
Accompanying Regulation Status (indicate with "X")				
▪ Illicit Discharge Detection & Elimination		X	X	<i>almost</i>
▪ Erosion & Sediment Control	X	X	X	<i>complete</i>
▪ Post-Development Stormwater Management	X	X	X	<i>complete</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
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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)
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▪ 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 <sub>2</sub> % MgCl <sub>2</sub> % 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