

**Municipality/Organization**                      **North Andover, MA**  
\_\_\_\_\_  
**EPA NPDES Permit Number:**              **MAR041214**  
\_\_\_\_\_  
**MassDEP Transmittal Number:**        **W-034970**  
\_\_\_\_\_  
**Annual Report Number**                      **Year 12**  
**& Reporting Period:**                      **April 1, 2014 – March 31, 2015**  
\_\_\_\_\_

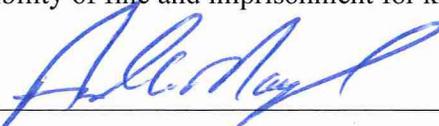
**NPDES PII Small MS4 General Permit  
Annual Report  
(Due: May 1, 2015)**

**Part I. General Information**

**Contact Person:** Eugene P. Willis, P.E.              **Title:** Town Engineer  
\_\_\_\_\_  
**Telephone #:** (978) 685-0950                      **Email:** gwillis@townofnorthandover.com  
\_\_\_\_\_  
**Mailing Address:** 384 Osgood Street, North Andover, MA 01845  
\_\_\_\_\_

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:** Andrew W. Maylor  
\_\_\_\_\_  
**Title:** Town Manager  
\_\_\_\_\_  
**Date:** \_\_\_\_\_

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

In Permit Year 12 (April 1, 2014 through March 31, 2015), the Town of North Andover continued to implement its Stormwater Management Program. As part of developing the Annual Report, the Town evaluated compliance of the Stormwater Management Program with the conditions of the NPDES General Permit for Stormwater Discharges from Small MS4s, effective May 1, 2003, as required by Part II.D.1 of the permit. As of the end of Year 12, the Town has achieved nearly all of the measurable goals for the BMPs selected in the 2003 Notice of Intent and those added in subsequent years to reflect unplanned stormwater activities by the Town.

As part of the Annual Report development, the Town also evaluated the appropriateness of all BMPs in efforts towards achieving the defined measurable goals. In previous years, some BMPs and measureable goals were improved. This year, BMPs and measureable goals continue to be appropriate.

Stormwater management activities and accomplishments to note include:

- The Town submitted a letter to EPA in January of 2015 regarding the investigation of outfall “Sutton 06,” which had received a NOV in August of 2013. The investigation included a refined catchment map, a nonpoint source pollution assessment of the drainage area including an evaluation System Vulnerability Factors, visual inspections of the outfall and drainage system to identify possible dry weather flow, and observations of the outfall and sampling during wet weather events. Additionally, the Town has rehabilitated a portion of the sewer in the NOV catchment area. The Town will continue to work with EPA regarding the “Sutton 06” outfall investigation.
- The NPDES Subcommittee, which is comprised of members of the Planning, Conservation, Water & Sewer, Engineering, Facilities, GIS, Community Development, and School Department, continued to meet in Permit Year 12.
- North Andover Public Works, Engineering, and Conservation Commission staff are participating in multiple stormwater-related subcommittees as a part of Merrimack Valley Planning Commission regional efforts, including attending regular meetings and stormwater training workshops.

Planned activities for the next permit term have not been designated unless a BMP under this permit was not completed or is still under progress for completion. Once the reissued General Permit is available from EPA, the Town will prepare and submit a Notice of Intent to MassDEP and EPA for compliance with the new General Permit requirements.

**Part III. Summary of Minimum Control Measures**

**1. Public Education and Outreach**

<b>BMP ID#</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measureable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities</b>
1a	Air stormwater messages on local cable	Division of Public Works	Air one new message for two weeks quarterly	The Town has 11 stormwater messages to air on the local cable access channel and the school channel. These 11 messages are broken down into 1 to 2 public service announcements which air throughout the day. The cable access channel, North Andover CAM Access, and school channel, CAM-Ed, continued to air these messages periodically during Permit Year 12. The messages, which are targeted at homeowners, inform homeowners what they can do to prevent nonpoint source pollution, including reporting illicit discharges.	<p>Measurable goals for 2003 General Permit have been met.</p> <p>The Town plans to continue airing the nonpoint source pollution public service announcements on the local cable access channel and school channel in Permit Year 13.</p>

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
1b	Add stormwater information to Town's website	Division of Public Works	Complete update by end of second permit year	Links to information about stormwater included on the Town website during Permit Year 1 were maintained throughout Permit Year 12. This includes a webpage of stormwater tips that provides information on illicit discharges and non-point source pollution. This information is directed at adults, educators, and kids, and also includes information about local watershed associations. Information about protecting lakes from nonpoint source pollution included during Permit Year 1 also remains on the Town website. The stormwater messages that were prepared for the local cable access channel and were added to the Town website in Year 3 were maintained throughout Year 12. The North Andover Annual Water Quality Report provides information on the proper disposal of dog waste. The Annual Report was mailed out to all businesses and residents in the Town and is also available on the Water Treatment Plant's webpage.	Measurable goals for 2003 General Permit have been met.  Outreach through website and other media (as discussed herein) will be maintained and updated as needed.
1c	Distribute/post non-point source pollution posters	Community Development & Schools	Post in all school and Town-owned buildings	Posters were distributed to and posted in the Town Library, Office of Community Development, Town Hall, and the Water Treatment Plant during Permit Year 1. The Town continued to display <i>Maintain Your BMPs</i> and <i>Stormwater and the Construction Industry</i> posters at the DPW and Community Development Offices during Permit Year 12.  In Permit Year 10, the North Andover School Department developed a stormwater public education and	Measurable goals for 2003 General Permit have been met.

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
1c (cont'd)				<p>participation program. The program involved displaying posters in the schools, providing students with stormwater crossword puzzles, and distributing stormwater stickers, bookmarks and brochures. Messages are distributed though the classroom, bulletin boards and on the local cable channels.</p> <p>The Town recently paid to join Greenscapes, a group promoting water conservation and protection. Greenscapes conducted a presentation on native plantings and wetland buffers at the library in March 2014.</p> <p>The Town conducted a storm drain marking program at the high school with the school's Environmental Club on September 25, 2014. It was publicized in the October 2014 issue of the <i>Community and Business Newsletter</i>. See also BMP 2d.</p> <p>The Town installed six dog waste stations during Permit Year 12. Two of the dog waste stations were installed on the Shawsheen River Walk, with one at each end of the trail. The July 2014 issue of the <i>Community and Business Newsletter</i> included information about animal waste (pets and waterfowl) and water quality in North Andover's waterways and provided detailed information about recently installed dog waste stations.</p>	

<b>BMP ID#</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measureable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities</b>
1d	Inform Residents of Town's recycling programs/schedules	Division of Public Works	Distribute information to all residents by website, mailings, etc.	<p>The Town's website contains information on Town's recycling programs and schedules. Mixed stream, curbside pickup has been available throughout the Town since June 2009. The TBI facility accepts drop off of recyclables with the exception of waste oil.</p> <p>North Andover Public Schools offer an extensive recycling program. More information available on the Town website.</p> <p>In Permit Year 8 the Town implemented a rain barrel program, which has been ongoing since the program's inception.</p> <p>North Andover public schools participate in the Green Team program sponsored by the Massachusetts EOEEA and MassDEP.</p>	Measurable goals for 2003 General Permit have been met.

## 2. Public Involvement and Participation

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
2a	Collect household hazardous waste from residents	Division of Public Works	Hold household hazardous waste collection day twice per year.	North Andover held Household Hazardous Waste Collection Days twice in Permit Year 12 on April 19, 2014 and again in October 18, 2014 from 9 a.m. to 1 p.m. at the TBI recycling facility.	The North Andover Household Hazardous Waste Collection Day will be held in both April and October, 2015.
2b	Collect & Recycle waste oil	Division of Public Works	Collect waste oil from residents twice per month	The DPW collects waste oil for recycling on the first and third Saturday of every month from 9 a.m. to noon at the DPW garage.	North Andover continues to collect waste oil from residents twice per month.
2c	Develop Stormwater Hotline	Division of Public Works	Create phone number(s) & inform residents of hotline	The Town continued to promote reporting of illegal dumping, with information including a phone number on the Town website and cable TV. Residents are able to call either the Town Engineer or Conservation Agent and obtain information, ask questions, provide feedback, and report illegal dumping.	Measurable goals for 2003 General Permit have been met.  North Andover continues to promote reporting of illegal dumping and illicit discharges.

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2d	Coordinate an annual, voluntary waterways cleanup day	Division of Public Works/ Con Com	Hold waterways cleanup day once per year beginning in the Spring of 2005 (Permit Year 3)	<p>North Andover held their Annual Town-wide Earth Day Clean-up Event on May 3, 2014 from 8:30 a.m. to 2:00 p.m. Residents volunteered to pick up litter in a part of Town of their choosing.</p> <p>Friends of North Andover Trails held a clean-up event on the Shawsheen River Trail on September 6, 2014 from 9 a.m. to noon.</p> <p>The Town conducted a storm drain marking program at the high school with the school's Environmental Club on September 25, 2014. See also BMP 1c.</p>	<p>Measurable goals for 2003 General Permit have been met.</p> <p>The next North Andover Annual Town-wide Earth Day Clean-up will be held in early May 2014.</p> <p>A storm drain marking program will be conducted at the middle school in Permit Year 13, pending the durability of the markers at the high school over the winter.</p>
2e	Make SWMP available for public review/comment	Division of Public Works	Post SWMP on Town website, in library, in Division of Public Works office	<p>Copies of the SWMP created for the Town were placed in the Town Library, at the DPW office, and the SWMP was posted on the Town website during Permit Year 1. The SWMP remained available at these locations through Permit Year 5 and is still available on the Town's website.</p>	<p>Measurable goals for 2003 General Permit have been met.</p>

### 3. Illicit Discharge Detection and Elimination

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
3a	Map outfalls, receiving waters and storm drains	Division of Public Works	Complete mapping by end of fourth permit year	<p>Outfall mapping in urbanized areas was completed in 2008.</p> <p>As part of the NOV investigation, an in-depth inspection of the “Sutton 06” catchment area allowed the Town to refine the drainage system connectivity in the area. The GIS mapping was updated to reflect field observations.</p>	<p>Measurable goals for 2003 General Permit have been met.</p> <p>The Town continues to refine mapping of the drainage system as needed.</p>

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
3b	Develop illicit discharge detection & elimination plan	Division of Public Works	Make recommendations for proposed plan	<p>The Final IDDE Plan was completed in October 2010 by a working group comprised of multiple Town departments. The plan establishes actions, procedures, and a timeline for IDDE activities to comply with both the 2003 General Permit and many of the anticipated 2012 North Coastal Small MS4 General Permit requirements.</p> <p>In-stream water quality sampling continues to be conducted at several brooks discharging into Lake Cochichewick for parameters including total coliform, ammonia, and phosphorus.</p> <p>The “Sutton 06” outfall was investigated during Permit Years 11 and 12 for an illicit discharge per EPA’s NOV. One section of sewer in the catchment area on School Street was replaced due to continuous surcharging. At this time, there is no evidence of a direct illicit connection to the MS4, and the Town continues to work with EPA to resolve the NOV.</p> <p>No other illicit discharges were found during Permit Year 12.</p>	Measurable goals for 2003 General Permit have been met.
3c	Review existing bylaws and regulations	Division of Public Works	Determine whether existing bylaws/ regulations are adequate	The Town finished reviewing their existing regulations with regard to illicit discharge detection and elimination in the third permit year.	Measurable goals for 2003 General Permit have been met.

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3d	Develop/modify general illicit discharge bylaw	Division of Public Works	If necessary, propose recommendation for bylaw updates.	<p>The Town developed a general illicit discharge bylaw that meets USEPA requirements during the fourth permit year. The Stormwater Management &amp; Erosion Control Bylaw was adopted on May 12, 2009, which also adopts MA Stormwater Standard 10 to prohibit illicit discharges by reference.</p> <p>The Conservation Commission also required 9 applicants to include a “Prevention of Illicit Discharges Statement” in their Stormwater Report during Permit Year 12.</p>	Measurable goals for 2003 General Permit have been met.
3e	Present bylaw for Town meeting action	Division of Public Works	Make presentations for Town meeting action, if necessary.	North Andover adopted the Stormwater Management & Erosion Control Bylaw on May 12, 2009. The Regulations were adopted on February 15, 2011.	Measurable goals for 2003 General Permit have been met.

#### 4. Construction Site Stormwater Runoff Control

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
4a	Review existing bylaws and regulations	DPW/ Planning/Con Com	Determine whether existing bylaws/ regulations are adequate	The Town finished reviewing the relevant sections of their Rules and Regulations governing the Subdivision of Land and the Zoning Bylaws in the fourth year of the permit.	Measurable goals for 2003 General Permit have been met.
4b	Develop/modify bylaws for construction site runoff	DPW/ Planning/Con Com	If necessary, propose recommendations for bylaw updates	In the fourth year of the permit, the Town completed the development of a bylaw for the control of construction site runoff. The Town adopted the Stormwater Management & Erosion Control Bylaw on May 12, 2009. The Regulations were adopted on February 15, 2011.	Measurable goals for 2003 General Permit have been met.
4c	Present bylaw for Town meeting action	DPW/ Planning/Con Com	Make presentations for Town Meeting action, if necessary.	See BMP 4b above.	Measurable goals for 2003 General Permit have been met.
4d	Review existing site inspection practices	DPW/ Planning/Con Com	Determine whether existing practices are adequate	<p>During the fourth permit year, the Town completed the development of a bylaw for the control of construction site runoff, including requirements for construction period site inspections.</p> <p>In Permit Year 12, North Andover Conservation Commission and Planning Board inspected 38 sites for erosion and sedimentation control. There were a total of 3 stop work orders and 1 fine collected. Inspection reports for every construction site larger than one acre in Permit Year 12 are maintained by Conservation Commission.</p>	Measurable goals for 2003 General Permit have been met.

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4e	Develop/modify site inspection practices	DPW/ Planning/Con Com	If necessary, make recommendations for updating existing practices	<p>During the fifth permit year, the Town made some changes to their erosion/sedimentation control and drainage submittal requirements, as well as their site inspection practices.</p> <p>The Conservation Commission maintains records of all inspections in their individual project files.</p>	Measurable goals for 2003 General Permit have been met.

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

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
5a	Review existing bylaws and regulations	DPW/ Planning/Con Com	Determine whether existing bylaws/ regulations are adequate	<p>The Town finished reviewing the relevant sections of their Rules and Regulations governing the Subdivision of Land and the Zoning Bylaws during the third permit year.</p> <p>The Town adopted Regulations for the Stormwater Management &amp; Erosion Control Bylaw on February 15, 2011. The Town continues to require operations and maintenance plans for post-construction stormwater treatment systems, and requires sites to keep five-year monitoring records for review.</p> <p>The Town also encourages and keeps track of sites that utilize Low Impact Development techniques.</p>	Measurable goals for 2003 General Permit have been met.

<b>BMP ID#</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measureable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities</b>
5b	Develop/modify bylaws for post-construction runoff	DPW/ Planning/Con Com	If necessary, propose recommendation for bylaw updates	<p>During Permit Year 4, the Town developed a post-construction stormwater management bylaw that met EPA requirements and references MA Stormwater Management Standards. This post- construction stormwater management bylaw was presented for Town Meeting action. However, the bylaw did not pass.</p> <p>During the fifth permit year, the bylaw was revised and selected information was pulled out to include in a separate regulation. The bylaw was revised with input provided from the Planning Department and Conservation Commission.</p>	Measurable goals for 2003 General Permit have been met.
5c	Present bylaw for Town meeting action	DPW/ Planning/Con Com	Make presentations for Town meeting action, if necessary	The Town adopted the Stormwater Management & Erosion Control Bylaw on May 12, 2009. The Regulations were adopted on February 15, 2011. The Town posted the Stormwater Management & Erosion Control Bylaw and Regulations on the Town's website in April 2011.	Measurable goals for 2003 General Permit have been met.
5d	Review existing site inspection practices	DPW/ Planning/Con Com	Determine whether existing practices are adequate	<p>During the fourth permit year, the Town completed review of their existing site inspection and maintenance practices to determine whether they comply with EPA's stormwater management plan requirements.</p> <p>The Planning Board approved the first Land Disturbance Permit in August 2011.</p>	Measurable goals for 2003 General Permit have been met.

<b>BMP ID#</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measureable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities</b>
5e	Develop/modify site inspection practices	DPW/ Planning/Con Com	If necessary, make recommendations for updating existing practices	<p>During the fifth permit year, the Town made any necessary changes to their existing site inspection and maintenance practices to bring them into compliance with the EPA's stormwater management plan requirements.</p> <p>The Planning Board and the Conservation Commission now require applicants to provide a calculation of total square footage of increased impervious area as part of the as-built submission.</p>	Measurable goals for 2003 General Permit have been met.

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

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
6a	Sweep streets	Division of Public Works	Sweep all Town streets once per year; Stevens Pond 2/yr.	During Permit Year 12, all Town roads were swept and Stevens Pond roads were swept twice.	Continue to sweep all Town streets once per year and Stevens Pond two times per year.
6b	Clean catch basins	Division of Public Works	Develop & implement cleaning schedule; Stevens Pond 1/yr.	During Permit Year 12, the Town continued to clean catch basins mechanically. Material from the catch basin cleaning is disposed of at the Cyr Recycle Center on Sharpener's Pond Road.	Continue to clean catch basins.
6c	Train municipal employees at each facility	Division of Public Works	Target all applicable municipal facilities	<p>The Town started to annually train employees at all applicable municipal facilities during the fourth permit year. Municipal employees from the Fire Department, School Department, Conservation, Planning, Department of Public Works, and Youth Services have been/are invited to specific trainings as necessary.</p> <p>The Town has formed a NPDES Subcommittee, which is comprised of members of the Planning, Conservation, Water &amp; Sewer, Engineering, Facilities, GIS, Community Development, and School Department. The subcommittee met during Permit Year 12.</p> <p>During Permit Year 12, Town staff from multiple departments, including DPW, Facilities, Conservation, Planning, and Building, attended multiple Merrimack Valley Stormwater Collaborative training workshops, as follows:</p>	<p>Measurable goals for 2003 General Permit have been met.</p> <p>During Permit Year 12, Town staff will attend a Merrimack Valley Planning Commission workshop: Stormwater Management Workshop Series: Stormwater Management and Infrastructure Maintenance, April 10, 2015 from 8:00 to 11:00 a.m.</p>

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
				<ul style="list-style-type: none"> <li>• Stormwater Management Workshop Series: Parks and Recreation, March 10, 2015 from 8:00 to 11:00 a.m.</li> <li>• Stormwater Management Workshop Series: Buildings, Facilities, Vehicle, and Equipment Maintenance, March 20, 2015 from 8:00 to 11:00 a.m.</li> </ul> <p>The Conservation Administrator participated in a webcast presented by the Center for Watershed Protection during Permit Year 12.</p>	
6d	Perform follow-ups to ensure required practices are met	Division of Public Works	Target all applicable municipal facilities	Engineering monitors practices at municipal facilities through day-to-day activities and communications.	Through the NPDES Subcommittee, continue to periodically check with the Fire Department, School Department, Department of Public Works, and Youth Services to ensure that applicable stormwater best practices are being adhered to.

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
6e	Public Works Facility Good Housekeeping	Division of Public Works	Implement procedures and best management practices to prevent stormwater pollution	<p>In Permit Year 9, the Town hired a consultant to perform an environmental compliance assessment at the Department of Public Works Facility on Osgood Street. As a result, the Town prepared a Stormwater Pollution Plan (SWPPP) and an Oil Spill Prevention Control and Countermeasure (SPCC) Plan for the facility in June 2012. DPW and Facilities staff have been trained.</p> <p>There are Standard Operating Procedures for all municipal buildings that require the use of environmentally friendly cleaners by custodial staff and require waste from school chemistry labs to be pre-treated prior to discharge into the public sewer system.</p>	The Town will continue to implement these Plans.

## 7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

BMP ID#	BMP Description	Responsible Dept./Person Name	Measureable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
TMDL-1	Check current impairments	Division of Public Works	Check current MA Integrated List of Waters each year for newly listed or delisted receiving waters in North Andover	<p>The Fecal Coliform TMDL for the Shawsheen River Basin (MA83-01-2002-24) has been in effect since September 2002. See WLA Assessment below for BMPs that will reduce North Andover’s bacteria contribution to the watershed.</p> <p>Other water in North Andover listed as Category 5 on the MA 2012 Integrated List of Waters include:</p> <ul style="list-style-type: none"> <li>• Salem Pond (turbidity)</li> <li>• Lake Cochichewick (mercury in fish tissue)</li> <li>• Stevens Pond (mercury in fish tissue)</li> <li>• Merrimack River (<i>E. coli</i>, PCBs in fish tissue, total phosphorus)</li> <li>• Shawsheen (dissolved oxygen, fecal coliforms)</li> </ul> <p>Note: Mercury and PCBs are legacy pollutants and not considered stormwater pollutants.</p>	<p>Measurable goals for 2003 General Permit have been met.</p> <p>The Town will continue to monitor the status of receiving waters and pursue projects that aid the reduction of pollutants of concern, particularly bacteria levels in the Shawsheen River.</p>

### 7b. WLA Assessment

The Report “Bacteria TMDL for the Shawsheen River Basin: Report MA83-01-2002-24” (August 2002) is final and was approved in 2002. There was only one monitoring station indicated for the Town of North Andover – Shawsheen River station SH17.8. The Shawsheen River is just downstream of Massachusetts Avenue and had high fecal coliform counts during both dry & wet weather sampling in 1997.

The TMDL sets allowable bacteria levels for urban runoff and point sources equivalent to the water quality standard; for sewer leaks, sanitary sewer overflows, illicit connections, and failing septic systems are set equal to zero.

The TMDL does not dictate or require any specific individual controls at a particular outfall or site in North Andover.

The following activities and BMPs will help reduce North Andover’s bacteria contribution to the Shawsheen watershed and meet WLAs:

- Street Sweeping and Catch Basin Cleaning.
- Municipal Pollution Prevention Trainings.
- Pet Waste Signage.
- Illicit Discharge Investigation and Elimination.

The following table summarizes the WLA for the Shawsheen River:

**Fecal Coliform Wasteload Allocations (WLAs) and Load Allocations (LAs) for the Shawsheen River and Identified Tributary Streams**

<b>Bacteria Source Category</b>	<b>WLA (organisms/100ml)</b>	<b>LA (organisms/100ml)</b>
Point Source	Geomean $\leq$ 200 10% $\leq$ 400	
Sewer leaks	0	0
Sanitary Sewer Overflow	0	0
Illicit Sewer Connections	0	
Failing Septic Systems	0	0
Direct Wildlife		Geomean $\leq$ 200 10% $\leq$ 400
Urban Stormwater Runoff	Geomean $\leq$ 200 10% $\leq$ 400	Geomean $\leq$ 200 10% $\leq$ 400

**Part IV. Summary of Information Collected and Analyzed**

N/A

**Part V. Program Outputs & Accomplishments (OPTIONAL)**

(Since beginning of permit coverage unless specified otherwise by a \*\*, which indicates response is for period covering April 1, 2014 through March 31, 2015.)

**Programmatic**

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	n
Annual program budget/expenditures **	(\$)	\$81,000
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc.)		General Fund and Enterprise Fund

**Education, Involvement, and Training**

	(Preferred Units)	Response
Estimated number of property owners reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	y
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	y
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
<ul style="list-style-type: none"> <li>• days sponsored **</li> </ul>	(#)	2
<ul style="list-style-type: none"> <li>• community participation **</li> </ul>	(# or %)	
<ul style="list-style-type: none"> <li>• material collected **</li> </ul>	(tons or gal.)	
School curricula implemented	(y/n)	y

## Legal/Regulatory

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X")					
• Illicit Discharge Detection & Elimination					X
• Erosion & Sediment Control					X
• Post-Development Stormwater Management					X
Accompanying Regulation Status (indicate with "X")					
• Illicit Discharge Detection & Elimination					X
• Erosion & Sediment Control					X
• Post-Development Stormwater Management					X

## Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	905
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
• Paper/Mylar	(%)	%
• CADD	(%)	
• GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	5
Illicit connections removed **	(#); and	5
Illicit connections removed (Since beginning of permit coverage)	(#); and	
% of population on sewer	(%)	70%
% of population on septic systems	(%)	30%

## Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	16
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100
Site inspections completed **	(# or %)	100
Tickets/Stop work orders issued **	(# or %)	3
Fines collected **	(# and \$)	1 - \$500
Complaints/concerns received from public **	(#)	1

## Post-Development Stormwater Management

	(Preferred Units)	Response
Estimated percentage of development/redevelopment projects adequately regulated for post-construction	(%)	100%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	y
Low-impact development (LID) practices permitted and encouraged	(y/n)	y

## Operations and Maintenance

	(Preferred Units)	Response
Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr.)	1
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr.)	1
Qty. of structures cleaned **	(#)	300
Qty. of storm drains cleaned **	(%, LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill
Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment) **	(\$)	
• Hourly or per basin contract rate **	(\$/hr. or \$/basin)	
• Disposal cost **	(\$)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	0
• Vacuum trucks specified in contracts	(y/n)	

	(Preferred Units)	Response
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vector **	(%)	
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr.)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr.)	1
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment) **	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln. mi.)	
• Disposal cost **	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	100%
• % Roads swept with vacuum sweepers **	%	
Reduction (since beginning of permit coverage) in application on public land of: (“N/A” = never used; “100%” = elimination)		
• Fertilizers	(lbs. or %)	N/A
• Herbicides	(lbs. or %)	N/A
• Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	y
<i>Northeast Massachusetts Mosquito Control and Wetland Management District</i>		
Average Ratio of Anti-/De-Icing products used **	% NaCl	100% CaCl <sub>2</sub> (see note)
<i>(also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)</i>	% CaCl <sub>2</sub>	
Pre-wetting techniques utilized **	(y/n or %)	y
Manual control spreaders used **	(y/n or %)	6
Zero-velocity spreaders used **	(y/n or %)	0
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs./ln. mi. or %)	-10%
Estimated net reduction or increase in typical year sand application rate **	(±lbs./ln. mi. or %)	-100% (see note)
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	100%

	(Preferred Units)	Response
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	Y

### Water Supply Protection

	(Preferred Units)	Response
Storm water outfalls to public water supplies eliminated or relocated	# or y/n	N/A
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	N/A
<ul style="list-style-type: none"> <li>• Treatment units induce infiltration within 500-feet of a wellhead protection area</li> </ul>	# or y/n	N/A

**Note:** While the Town has moved to 100% CaCl<sub>2</sub> for deicing, this year they did not realize the intended 100% reduction sand use due to a salt shortage and it was necessary to use some sand late in the winter.