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Municipality/Organization: Town of Andover

EPA NPDES Permit Number: MAR041178

MaDEP Transmittal Number: W-041021

Annual Report Number  
& Reporting Period: No. 8: May 1, 2010-April 30, 2011

## NPDES PII Small MS4 General Permit Annual Report

### Part I. General Information

Contact Person: Reginald Stapczynski Title: Town Manager

Telephone #: (978) 623-8225 Email: rstapczynski@andoverma.gov

#### 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: Reginald Stapczynski

Title: Town Manager

Date: 4/29/11

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

The Town of Andover has completed the required self-assessment of the annual compliance review for the Phase II Stormwater Program. In accordance with the NPDES Phase II Stormwater requirements, the following topics were evaluated for the completion of the Annual Report:

1. Compliance with the Phase II Permit Conditions
2. Appropriateness of the Selected BMPs
3. Progress Towards Achieving the Program's Measurable Goals
4. Results of Any Information that has been Collected and Analyzed
5. Activities for the Next Reporting Cycle
6. Changes in Identified BMPs or Measurable Goals

The Town has determined that our municipality is in compliance with all permit conditions.

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

**1. Public Education and Outreach**

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
1A	Develop Stormwater Section of Town Website	Dept. of Public Works/Engineering Dept., Water Dept, and Town Website Manager(s)	Measure number of hits over permit term.	The “Stormwater Management” section of the Town’s website was maintained and updated. Information on stormwater management and illicit discharges, as well as links to other stormwater websites was provided. An advertisement for the Greenscapes workshops outlined in BMP 2E was posted to the Town’s website on April 26, 2011. There were 3,245 visitors to the stormwater section during this reporting period.	Continue to track website hits and update with pertinent information and links.
Revised					
1B	Distribute Brochures and Fact Sheets to Businesses and Residents	Department of Public Works/Engineering Dept., and Water Dept.	Number of articles and copies of materials.	A section on stormwater was published in the “Recycling and Trash Collection Guide for Residents”, which was made available to the public via the Town website. 1,000 additional copies were made available for pickup at various public buildings in June 2010. The publication discussed the Town’s Stormwater Management Program and IDDE program. The Town mailed 15,250 copies of the “2010 Drinking Water Quality Report” to all residents, businesses, and institutions in town on March 16, 2011, which contained a page on stormwater tips. Copies of	Continue mailings as in years past to residents, businesses, and institutions. Continue providing informational brochures and materials for pickup at public locations. Hold the Town Greenscapes program in May 2011 to distribute leaflets, and/or other information. Continue to update and direct interested residents to the Stormwater Management section of the Town website.
Revised				<i>(continued on next page)</i>	

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any) <i>(continued)</i>	Planned Activities – Next Permit Term
1B				<p>EPA's "Make Your Home the Solution to Stormwater Pollution" document were printed and placed in Town Offices for public pickup. The Town participated as a sponsor of the 2010 Greenscapes Massachusetts Program which provides residents with environmentally friendly yard care and landscaping information and services. It also provided 200 small magnets with the Greenscapes Pledge, 200 large magnets with Green Yard tips, and 200 leaflets on conservation, available via displays at the Town Hall and Library.</p>	
IC  Revised	Submit Advertisements/Articles on Stormwater Protection for Local Newspaper	Department of Public Works/Engineering Dept., and Water Dept.	Clippings of articles and advertisements printed in local newspaper.	A press release was published by the Andover Townsman newspaper on July 15, 2010 to publicize the voluntary water restrictions, referencing the Greenscapes Massachusetts Program materials. The Health Division publishes a bi-weekly newspaper article to discuss illicit discharges as outlined in BMP 3E.	Continue to inform residents of upcoming activities in conjunction with Minimum Measures 1 and 2 by publishing articles in the newspaper. Continue to issue press releases and articles in the Andover Townsman and/or Eagle Tribune to publicize the Greenscapes program and other town programs as they become available.

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
2A	Establish a Pesticide Reduction Task Force (PRTF)	Committee of Town Staff, League of Women Voters, and Residents	Copies of mailers, meeting minutes, list of attendees.	The Pesticide Reduction Task Force was joined with the Fish Brook Watershed Advisory Committee (FBWAC) during previous reporting years. The FBWAC created a Pesticide Use Policy that was adopted by the Town to help protect water quality. The Pesticide Use Policy remains in effect and is available from the Health Department and on the Town website. During Permit Year 8, the FBWAC issued its final report as outlined in BMP 2E, and has since disbanded.	Continue to enforce the Pesticide Use Policy under existing regulatory methods. Provide education to residents and businesses about proper pesticide usage and potential water quality impacts under BMP 1B
Revised	Establish a Pesticide Use Policy	Town Departments and Residents	Pesticide Use Policy		
2B	Establish a Stormwater Telephone Hotline	Department of Public Works/Engineering Dept., Water Dept., and Town Website Manager(s)	Record number of phone calls to hotline, copies of articles.	9 calls were received and logged as part of the Stormwater Call Directory as outlined in BMP 4B, set up through the DPW Engineering Division and advertised on the Town website. The bulk of calls pertained to flooding and maintenance complaints, though several complained of a possible illicit discharge. Appropriate actions were taken and documented in the complaint log as part of the process. The log also includes investigation findings, actions taken, and follow-up actions.	Continue to receive complaints and take corrective actions based on calls to the Stormwater Call Directory. Continue to document the complaint in the log including investigation findings, actions taken, and follow-up actions.
Revised	Establish a Procedure to Receive Calls		Record number of calls to each Department		

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
2C  Revised	Establish Classroom Education/Field Trip Program	Department of Public Works/Engineering Dept. Water Dept., and Education Department	Field Trip Curriculum, # of field trips organized each year.	Personal tours are no longer offered due to security issues, however a Virtual Tour is available to schools and other interested parties through the Town's website as of March 2011.	Continue to visit classrooms and encourage utilization of the Virtual Tour. Encourage class projects and activities related to stormwater issues.
2D  Revised	Install Storm Drain Markers or Stencils	Department of Public Works/Engineering Dept, Water Dept., and Volunteers	50% of storm drains marked by year 5 with door hangers placed in associated neighborhoods.	A goal of marking 50% of storm drains was met in year 5. Through collaboration between Town employees and other volunteers, an additional 25% of catch basins were marked in recent years, for a total of 75% by the end of Year 8.	Continue marking storm drains throughout the watersheds and refresh markers as needed through the use of Town personnel and volunteers. Additional marking and door hanger distribution will be performed as volunteers and materials become available in the future.
2E  Revised	Work With Watershed Organizations to Incorporate Stormwater Information into Their Programs	Department of Public Works/Engineering Dept, Water Dept., and Conservation Commission	Document quarterly meeting topics. Agenda, meeting notes, and attendance sheets.	The Town has partnered with the Greenscapes North Shore Coalition, which is currently coordinated by the "Salem Sound Coastwatch", the "Ipswich River Watershed Association", and "Eight Towns and the Bay" watershed organizations. The Fish Brook Watershed Advisory Committee (FBWAC) completed its work in June 2010 and issued its final report providing recommendations for additional actions by the Town to protect drinking water supplies. The Town also participated as a sponsor community for the 2011 Greenscapes program as outlined in  <i>(continued on next page)</i>	Continue working with local watershed groups and residents to discuss stormwater concerns. Encourage additional projects to improve water quality. The amended Fish Brook Watershed Bylaw is now in effect and is enforced by applicable town departments. Review the final FBWAC report and implement recommendations as feasible by current resource constraints. Conduct a Greenscapes 101 presentation on May 4, 2011.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
2E				<p><i>(continued)</i></p> <p>BMP 1B. The Greenscapes North Shore Program hosted a workshop called “Compost Tea” on April 30, 2011, which included a tour of the demonstration rain and native plant gardens and green roof at the Ipswich River Watershed Association headquarters. The Conservation Director has partnered with the Shawsheen River Watershed Association (SRWA) to locate outfalls with excessive sediment flow. Both the director and SRWA met periodically to discuss the overall health of the river and restoration strategies. Watershed association volunteers actively check river outfalls and work to pinpoint areas not in compliance for further investigation by Conservation staff. As part of this project, the Brickstone Square property has voluntarily undertaken a \$1,000,000 renovation project to protect the Shawsheen River from sediment-laden parking lot runoff as outlined in BMP 5E. This project is still ongoing.</p>	

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
3A Revised	Develop Primary Town Storm Drain System Map	Department of Public Works/Engineering Dept., Consultant	90% of system mapped on GIS.	90% of the drainage system was mapped during permit year 1 using existing plans. Through subsequent mapping efforts, 99.6% of the drainage system has now been mapped.	No further activity is required for this task.
3B Revised	Complete Storm Drain System Map	Department of Public Works/Engineering Dept., Consultant	Outfalls map completed.	An additional 14 outfalls were identified on various plans and records, field located, inspected, and mapped with GPS coordinates during this Permit Year. The GIS base map was updated to reflect all newly located outfalls. Approximately 4 outfalls remain to be located and inspected, however all are buried and require excavation. Additional stormwater infrastructure has been added through research of existing records and through field inspections with GPS equipment during Permit Year 8 as follows: 5,616 l.f. of pipe, 41 catch basins, 45 manholes, and 14 inlets.	Continue verifying the location of the drainage system as mapped under BMP 3A and incorporate changes as funds, manpower, and equipment are available. The Town will also update the map as new drainage systems and new developments are constructed.
3C Revised	Develop Illicit Discharge Prohibition Ordinance	Planning Board, Board of Health, and Selectmen	Obtain authorization to control inputs to the municipal drainage system.	Illicit Discharge Rules and Regulations were adopted by the Board of Health on July 9, 2007.	Continue to enforce the Illicit Discharge Rules and Regulations.



BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
3D	Develop Illicit Discharge Detection and Elimination Plan and Implement Activities	Department of Public Works/Engineering Dept., Water Dept., Board of Health, and Consultant	All outfalls examined. Sources traced and results documented within one year of discovery.	An IDDE plan was established in permit year 1. An additional 14 outfalls were located, inspected and mapped during this Permit Year. 1 showed dry weather flow and was sampled for evidence of illicit discharges. Resampling of dry weather flows also continued at 6 previously inspected outfalls. Of the 7 outfalls sampled this year, 2 of these	Continue work on locating the remaining 4 outfalls and inspecting for signs of illicit discharges as funding is available. Continue follow up on suspect outfall locations identified during previous permit years as necessary. Evaluate connections for future dye testing or additional inspection. Perform a study on the sewer

Revised

showed no high bacteria counts, 3 showed inconsistent results, and 2 showed high bacteria. Approximately 4 outfalls remain to be located and inspected, however all are buried and require excavation.

An area near Abbott Bridge Drive was investigated due to a suspected deteriorated sewer main triggered by a call received under BMP 3F. Upon camera inspection, the side of the pipe had deteriorated such that a hole was present. The area was excavated; a PVC sleeve was installed over the sewer main; and encased in concrete. The sewer service for 21 Bartlet Street was found broken, causing effluent to enter a nearby catch basin. The sewer Service was repaired with a new section of PVC pipe and gaskets. During Permit Year 7, a contractor was hired to investigate the drainage system for

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interceptor near Abbott Bridge Drive.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
				<p><i>(continued)</i></p> <p>possible illicit connections in 2 of the suspect locations in the Stratford Road and William Street area by using a remote camera unit. Video review along Stratford Road (upstream of Outfall 690 near #113 Chestnut Street) showed 11 possible house connections, which are currently being investigated; letters were mailed to the homeowners seeking permission to dye test their house: 4 responded, and dye testing was performed at 55 Summer Street, 111 Chestnut Street, 19 and 21 Stratford Road. Results showed no illicit connections from these 4 residences.</p> <p>Video inspection of the storm drain system and sewer in William Street found a blocked sewer which was cleared. However, further sampling continued to show high bacteria counts. A subsequent video inspection on April 4, 2011 identified a leaking sewer main, which will be replaced under an upcoming Summer 2011 contract.</p>	

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
3E Revised	Incorporate Information on Illicit Discharges into Public Education and Outreach Topics	Department of Public Works/ Engineering Dept., Water Dept., and Board of Health	Copies of materials.	General information on illicit discharges is posted on the Stormwater Management section of the Town website as outlined in BMP 1A. A link to an interactive “Illicit Discharge Interactive Demonstration” was also included. A section on IDDE was published in the “Recycling and Trash Collection Guide for Residents” from July 2010 through the end of this reporting period. The guide was made available to residents via the Town website and for pickup as outlined in BMP 1B. The Health Division publishes a newspaper article to discuss illicit discharges as outlined in BMP 1C.	Continue incorporating information on illicit discharge into public education and outreach topics.
3F Revised	Setup and Advertise a Hotline for Illicit Discharges Establish a Procedure to Receive Calls	Department of Public Works/ Engineering Dept., and Board of Health	Log of complaints and actions taken.	3 calls were received involving illicit discharges during Permit Year 8. Calls included complaints of a sewer odor coming from catch basins or outfalls. Calls were logged and appropriate actions were taken as outlined in BMP 3D.	Continue to receive complaints and take corrective actions based on calls to the Stormwater Call Directory outlined in BMP 2B. Continue to document the complaint in the log including investigation findings, actions taken, and follow-up actions.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
4A Revised	Develop Erosion Control Bylaw	Planning Board and Selectmen	Bylaw at Town meeting by year 3.	The Stormwater Management & Erosion Control Bylaw was adopted at the 2008 Annual Town Meeting. The Planning Board adopted the accompanying Stormwater Management Rules and Regulations in February of 2009. No additional work took place during Permit Year 8.	Continue to enforce the Stormwater Management & Erosion Control Bylaw and accompanying Stormwater Management Rules and Regulations.
4B Revised	Establish a Procedure for the Receipt of Information Submitted by the Public.	Planning Board and Department of Public Works/Engineering Dept.	Record number of phone calls, copies of articles.	9 calls were received and logged as part of the Stormwater Call Directory as outlined in BMP 2B, set up through the DPW Engineering Division and advertised on the Town website. The bulk of calls pertained to flooding and maintenance complaints, though several complained of a possible illicit discharge. Appropriate actions were taken and documented in the complaint log as part of the process. The log also includes investigation findings, actions taken, and follow-up actions.	Continue to receive complaints and take corrective actions based on calls to the Stormwater Call Directory outlined in BMP 2B. Continue to document the complaint in the log including investigation findings, actions taken, and follow-up actions.
4C Revised	Develop Guidance for Erosion Controls & Conduct Inspections	Planning Board, Dept of Public Works/ Eng Dept., Conservation Commission, & Consultant	Inspection checklist and documented inspections.	The Stormwater Management & Erosion Control Regulations provide specific guidelines of erosion controls and inspections along with annual reporting.	Continue to abide by the design standards set forth in the Stormwater Management & Erosion Control Regulations when managing erosion controls.

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
5A Revised	Develop BMP Bylaws	Planning Board	Bylaw at Town meeting by year 3.	The Stormwater Management & Erosion Control Bylaw was adopted at the 2008 Annual Town Meeting. The Planning Board adopted the accompanying Stormwater Management Rules and Regulations in February of 2009. No additional work took place during Permit Year 8.	Continue to enforce the Stormwater Management & Erosion Control Bylaw and accompanying Stormwater Management Rules and Regulations.
5B Revised	Develop and Implement Inspection Program	Planning Board, Department of Public Works/ Engineering Dept., Conservation Commission, Selectmen and Consultant	Copies of maintenance reports received annually, plus records of inspections completed and results.	The Conservation Commission required that post construction areas conform to conservation standards for stormwater control annual inspection and maintenance before a Certificate of Compliance is issued. For every Homeowners' Association (HOA) documented, a comprehensive file has been assembled to track HOA BMP inspections and maintenance. Annual inspection reports for four sites were received by the Planning Board for Standard Duplicating, Oriole Drive, Winterberry Lane, and Steeple Court. Outstanding issues such as excess oil and/or sediment accumulation, erosion, clogged structures, or general deterioration was documented for additional follow-up. Repairs were tracked and monitored. Additional letters were sent by the Planner to 18 stormwater BMP owners, reminding of their annual inspection and	Continue to document annual maintenance and inspection of HOA BMPs. Follow-up meetings and reminder letters to the Homeowners' Associations will be necessary on a yearly basis to ensure that the drainage areas are being inspected and maintained and Operation and Maintenance Plans are being followed.

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BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
5B				<p><i>(continued)</i></p> <p>maintenance requirements. Non-complying sites may be subject to enforcement. The Conservation Commission hired a consultant to oversee roadwork at Ames Pond due to close proximity to sensitive environmental resources. This resulted in a relocated stormwater basin to preserve existing wetland features and correcting additional errors that may have adversely affected nearby resources. The Brickstone Square property is installing numerous Stormceptor units at a riverside parking lot designed to remove sand and grit that previously discharged into the river. This \$1,000,000 program will continue over the next 3 years as outlined in BMP 2E.</p>	
5C	Develop BMP Design Standards	Planning Board, Dept of Public Works/ Eng Dept., Conservation Commission, & Consultant	Copy of draft bylaws.	Design standards consistent with the Stormwater Management Handbook were adopted as part of the Stormwater Management & Erosion Control Regulations, adopted in February 2009. No additional work took place during Permit Year 8.	Continue to abide by the design standards in the Stormwater Management Handbook for all BMP designs.
Revised					

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
6A Revised	Sweep Streets in Town	Department of Public Works/Highway Division	Priority plan of sweeping based on water quality impact.	All streets are swept in Town at least annually. Streets in the downtown area are swept approximately twice a week from May through October.	Continue implementing the current street sweeping program.
6B Revised	Clean Catch Basins	Department of Public Works/Highway Division and Consultant	Records of cleaning, inspections and maintenance.	Catch basins are cleaned approximately every other year, with high priority catch basins cleaned more frequently. 1,956 catch basins were cleaned during Permit Year 8. Remaining catch basins will be cleaned when resources are available.	Continue to clean all catch basins in Town approximately every two years, pending available resources and funding. Continue to identify problem areas and modify cleaning frequency as needed.
6C Revised	Develop and Implement an Inspection and Maintenance Plan	Department of Public Works/Highway Division, Plant and Facilities Dept., Water/Sewer Dept.	Written policy. Records of inspections and maintenance.	Inspections and maintenance are performed and procedures are modified as necessary. A standard oil/water separator inspection and maintenance checklist was developed and utilized during inspection and cleaning operations. A total of 15 Plant and Facilities oil/water separators were inspected during Permit Year 8; 4 identified as needing cleaning were cleaned, with the exception of ID # G0S-9 at the High School, which is being scheduled to occur during the upcoming permit year. Stormceptor unit, ID # G0S-19 on River Street was inspected by DPW and cleaned on March 29, 2011. A total of 670 gallons was disposed.	Continue to perform inspection and maintenance of BMPs. Modify maintenance frequency as necessary. Perform cleaning on oil/water separator ID # G0S-9 at the High School.



BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
6D Revised	Berm Sand/Salt Pile and Evaluate Options for Protection	Department of Public Works/Highway Division	Records of modifications, including photos.	A storage shed was constructed in permit year 1 to store the sand/salt pile from runoff. No further action was performed during Permit Year 8.	Continue utilizing the shed for storage of all salt and sand materials.
6E Revised	Store Paving Tools and Equipment Indoors	Department of Public Works/Highway Division	Designated indoor storage area. Record of Memo.	All paving tools and equipment are now stored indoors in designated areas.	Continue to store all tools and equipment indoors in designated areas.
6F Revised	Rinse Marking Paint Buckets to the Sanitary Sewer System and Store Buckets Indoors	Department of Public Works/Highway Division	Designated indoor storage area. Record of Memo.	All marking paint buckets are rinsed to the sanitary sewer system and stored indoors.	Continue to rinse all marking paint buckets to the sanitary sewer system and store indoors.
6G Revised	Implement BMPs to Reduce Sediments Entering the Drainage System	Department of Public Works/Highway Division	Records of sweeping and inspection records.	The paved roadway and catch basins at the DPW Yard were swept and cleaned frequently, particularly during high usage times. Catch basins cleaned on a schedule and as needed/able.	Continue to sweep the paved roadway and clean the catch basins at the DPW Yard on a frequent basis.
6H Revised	Bring Floor Drain System at the Water/Sewer Building into Compliance	Department of Public Works/Engineering Dept.	As-built sketches.	Floor drain was brought into compliance in permit year 1.	No further action is required.
6I Revised	Bring Floor Drain System at the Vehicle Maintenance Building into Compliance	Department of Public Works/Engineering Dept.	As-built sketches.	Floor drain was brought into compliance in permit year 1.	No further action is required.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
6J Revised	Wash Vehicles in Accordance with DEP Regulations	Department of Public Works/Highway Division	Record of Memo.	Vehicles are washed indoors to floor drains that discharge into an oil/water separator and the sanitary sewer system.	Continue washing vehicles indoors.
6K Revised	Implement Stormwater BMPs at the Fueling Station	Plant and Facilities Dept. and Consultant	Repair Records. Better housekeeping for small spills. As-built sketches or plans. Record of memo.	A fully stocked spill kit and disposal containers are maintained onsite to clean up future leaks. Any waste will be disposed of properly.	Continue to keep fully stocked spill kit and disposal container on-site to clean up any future leaks and to dispose of wastes properly.
6L Revised	Develop an Inspection and Maintenance Program for the Liquid Calcium Chloride (CaCl) ASTs.	Department of Public Works/Highway Division	Inspection and Maintenance Plan. As-built sketches or action taken. Record of memo.	An inspection and maintenance plan and procedures for handling significant leaks and spills were completed in permit year 2. The equipment is maintained as needed and no incidents occurred during Permit Year 8. Calcium Chloride tanks are inspected weekly and maintained as needed.	Continue with the current inspection and maintenance program consistent with previous years.
6M Revised	Implement BMPs at the Ledge Road Landfill	Department of Public Works	Complete landfill cap.	A Comprehensive Site Assessment (CSA) was performed during Permit Year 6, as well as the semi-annual groundwater & air sampling. Supplemental human health risk characterization, bioavailability of arsenic in wetlands, sediments and ecological risk assessment of arsenic studies were requested by MADEP and completed. Voters approved a \$7.34M construction bond at the Town Meeting during Permit Year 6.	An extension of Town deadlines has been requested and is currently pending with MADEP. This BMP is anticipated to continue through at least 2012.

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6N Revised	Provide Additional Slope Stabilization at the Snow Dump and Storage Location	Department of Public Works/Engineering Dept. and Highway Division	As-built sketches or plans and photos.	Completed in permit year 1.	No additional work is needed.
6O Revised	Ensure Compliance for Floor Drains and Vehicle Washing Activities at the West Fire Station	Plant and Facilities Dept. and Fire Dept.	Sketches or inspection memos. Record of memo.	Continued washing vehicles indoors.	Continue to prohibit outdoor vehicle washing and wash vehicles indoors.
6P Revised	Ensure Compliance for Floor Drains and Vehicle Washing Activities at the Ballardvale Fire Station	Plant and Facilities Dept. and Fire Dept.	Sketches or inspection memos. Record of memo.	Continued washing vehicles indoors.	Continue to prohibit outdoor vehicle washing and wash vehicles indoors.
6Q Revised	Wash Vehicles at the Approved Vehicle Wash Area at the Police Station (Public Safety Building)	Plant and Facilities Dept. and Police Dept.	Record of memo.	Continued washing vehicles at approved wash areas. Outdoor vehicle washing is prohibited.	Continue to wash all vehicles indoors at approved vehicle wash areas.
6R Revised	Prohibit Vehicle Washing at the Cemetery Buildings	Plant and Facilities Dept. and Fire Dept.	Record of memo.	Continued washing vehicles at approved wash areas. Vehicle washing at the Cemetery Buildings is prohibited.	Continue washing vehicles at approved sites.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
6S Revised	Rinse Marking Paint Buckets to the Sanitary Sewer System at the Park Shop.	Plant and Facilities Dept. and School Dept.	Record of memo.	Continued rinsing all marking paint buckets to the sanitary sewer system.	Continue rinsing all marking paint buckets to the sanitary sewer system.
6T Revised	Ensure Compliance with SPCC Plans for the West, Shawsheen, and Bancroft Elementary Schools	Plant and Facilities Dept. and School Dept.	Record of inspections and activities in accordance with the plan.	Continued inspecting facilities in accordance with the SPCC Plans.	Continue inspecting facilities in accordance with the SPCC Plans.
6U Revised	Use IPM Program for Application of Pesticides in Town	Plant and Facilities Dept.	Copy of "Chapter 85 of the Acts of 2000".	Continued Integrated Pest Management (IPM) Program for application of pesticides (herbicides and insecticides) and fertilizers on Town-owned lands. Abided by the rules contained in Commonwealth of Massachusetts Chapter 85 of the Acts of 2000 (an act protecting children and families from harmful pesticides). A previously developed mosquito control plan was followed and involved treating catch basins for larvae in the Spring. No adult mosquito control program was used during Permit Year 8.	Continue Integrated Pest Management (IPM) Program. Survey the mosquito population to identify potential virus outbreaks of West Nile or Eastern Equine Encephalitis. If a virus outbreak is threatening, the Town will spray for adult mosquitoes.
6V Revised	Use Licensed Applicators for Fertilizers and Pesticides in Town	Plant and Facilities Dept	Record quantities of fertilizers and pesticides purchased annually.	Continued to use licensed applicators to apply fertilizers and pesticides in Town.	Continue to use licensed applicators to apply fertilizers and pesticides in Town.

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6W Revised	Store Road Salt Under Cover and Clean Loading Area	Department of Public Works/Highway Division	Minimize stormwater contact with salt.	Stored all road salt materials under cover at the DPW Facilities Plant and Yard and cleaned loading area on a regular basis.	Continue to store all road salt materials under cover at the DPW Facilities Plant and Yard and clean loading area on a regular basis.
6X Revised	Use Low Salt Applications at Designated Areas	Department of Public Works/Highway Division	Use less salt within the Haggetts Pond watershed, as demonstrated with application rate.	Deicing practices modified during Permit Year 6 to reduce salt application within Haggetts Pond watershed were continued. To maintain safe winter passage, the roads are plowed more frequently. The Water Department and Health Department staff continue to work with the FBWAC, MassDOT, and lawmakers to relocate the MassDOT salt storage shed out of the Fish Brook subbasin in an effort to reduce sodium levels and preserve the quality of the subbasin. Preliminary salt shed relocation drawings have been completed and are currently undergoing review by residents in the proposed neighborhood.	Continue to use low salt applications in the Haggetts Pond watershed for water supply protection. Continue to meet with MassDOT and concerned citizens on shed relocation.
6Y Revised	Ensure Proper Waste Disposal in Town for Hazardous and Special Wastes	Department of Public Works and Consultant	Document quantity of wastes collected annually.	Hazardous household wastes and electronics waste were collected at annual drop-off events. A Household Hazardous Waste (HHW) collection event was held on May 22, 2010 while a collection event for cathode ray tubes (CRTs), batteries, and electronic equipment were held on June 5, 2010. A total of 19.68 tons of material were collected for safe disposal.	Continue to ensure proper waste disposal in Town for hazardous and special wastes as conducted in the past.

6Z	Revised	Ensure Compliance for Snow Disposal in Town	Department of Public Works/Highway Division	Utilize designated snow disposal location.	Continued existing practices for snow disposal activities in Town to ensure surface water quality protection.	Continue existing practices for snow disposal activities in Town to ensure surface water quality protection.
6AA	Revised	Conduct Town Employee Stormwater Training	Town Manager, Department of Public Works, Plant and Facilities Dept., Police and Fire Dept. and Consultant	Attendance sheet and copy of program.	A training seminar for P & F and DPW employees is scheduled to occur on May 5, 2011 for good housekeeping practices. DPW employees also received training on erosion/sedimentation control at various work sites.	Conduct a formal refresher training as in years past, currently scheduled for May 5, 2011. Also conduct informal training at applicable work sites.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Next Permit Term
7A Revised	Develop a Water Quality Strategy for 303d Waters	Town Engineer & Consultant	Summary of pollution prevention efforts, future needs, and responsible parties. Copy of surface water quality strategic plan.	The Town discussed developing a strategy to meet the TMDL considering existing actions under the Phase II stormwater management program and available resources. The next steps for developing a water quality strategy are pending the reissuance of the Phase II Permit.	Once issued, review the Phase II Permit and develop an implementation strategy to meet the TMDL that considers the goals of the TMDL, available resources, actions currently being undertaken by Andover and actions by others under the MA DEP RIA Permit.
7B Revised	Implement BMPs from Water Quality Strategy	Town Engineer, Consultant, & Town Departments (to be determined)	Photographs, logs, and BMP descriptions for completed efforts and water quality improvements.	Progress on this BMP will follow the progress made on BMP 7A.	Progress on this BMP will follow the progress made on BMP 7A.

### **7b. WLA Assessment**

A TMDL was completed for the entire Shawsheen River Basin for pathogens only. The following waterbodies were included in this TMDL and are listed on the 303d list as impaired due to pathogens:

- 1) Unnamed Tributary (8349105)- Also known as Pinnacle Brook- from a small wetland east of Route 93, Andover to the confluence with Meadow Brook in Tewksbury.
- 2) Unnamed Tributary (8349030)- Also known as Fosters Brook- from the outlet of Fosters Pond through River Street Pond to the confluence with the Shawsheen River at Lowell Junction Pond in Andover.
- 3) Rogers Brook from the Outlet of first unnamed pond to the confluence with the Shawsheen River in Andover.
- 4) Shawsheen River from the confluence with Spring Brook in Bedford to Central Street in Andover.
- 5) Shawsheen River from Central Street to the confluence with the Merrimack River in Lawrence.

The TMDL Report set a WLA for fecal coliform standard of 200 organisms/100 mL per outfall. The report also points out that outfalls from Roger's Brook will need a 89.5% reduction in coliform to reach the standard of 200 organisms/100mL at each outfall. To meet these standards the Report suggests the following measures, many of which are already included in Andover's Stormwater Management Plan:

- 1) Implement an illegal connection identification and removal program.
- 2) Collect additional monitoring data to isolate coliform sources.
- 3) Implement more intensive "good housekeeping" practices.
- 4) Assess water quality in response to implementation activities.

The proposed 2010 303d list (list of impaired waters) outlines several waterbodies in Andover that are classified as Category 5, meaning waters in need of a TMDL:

1. Brackett Pond, impaired for turbidity
2. Collins Pond, impaired for noxious aquatic plants and turbidity
3. Frye Pond, impaired for noxious aquatic plants
4. Salem Pond, impaired for turbidity
5. Haggets Pond, impaired for metals
6. Bellardvale Impoundment, impaired for metals, noxious aquatic plants, and exotic species
7. Fosters Pond, impaired for metals, organic enrichment/low DO, and exotic species
8. Hussey Pond, impaired for noxious aquatic plants
9. Poms Pond, impaired for metals and exotic species
10. Rabbit Pond, impaired for turbidity



Once TMDLs are developed for any of the above waterbodies, Section 7 of the annual reports will be updated to reflect changes associated with each TMDL.

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

Copies of all educational materials, newspaper articles, and memos distributed have been kept on file. Meeting memos, phone logs, and website hits have also been kept on file. Locations and physical descriptions of approximately 1053 outfalls have been gathered since Permit Year 1. All outfalls, along with catch basins, manholes, pipes and stormwater BMPs are incorporated into a GIS-based map. To date 99.6% of the system has been mapped. During outfall inspections, each was inspected for potential dry weather flows. 9 illicit discharges have been detected since Permit Year 1. Detailed records of all illicit discharges and follow-up actions are maintained by the DPW. BMP inspections and maintenance activities are tracked and documented.

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

**Programmatic**

Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures	(\$)	\$20,000

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	95%
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	
Household Hazardous Waste Collection Days (including collection events for cathode ray tubes (CRTs), batteries, and electronic equipment)		
▪ days sponsored	(#)	1
▪ community participation	(%)	
▪ material collected	(tons or gal)	19.68 tons
School curricula implemented	(y/n)	yes

**Legal/Regulatory**

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

**Mapping and Illicit Discharges**

Outfall mapping complete	(%)			99.6%
Estimated or actual number of outfalls	(#)			1057
System-Wide mapping complete	(%)			99.6%
<b>Mapping method(s)</b>				
▪ Paper/Mylar	(%)			
▪ CADD	(%)			
▪ GIS	(%)			
Outfalls inspected/screened	(# or %)			1053
Illicit discharges identified	(#)			9 since Permit Year 1
Illicit connections removed	(#)			6 since Permit Year 1
% of population on sewer	(est. gpd)			
% of population on septic systems	(%)			55%
	(%)			45%

**Construction**

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

**Post-Development Stormwater Management**

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

**Operations and Maintenance**

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Once every 2 years
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Once every 2 years
Total number of structures cleaned	(#)	1,956
Storm drain cleaned	(lf or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		
Cost of screenings disposal	(\$)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1/year
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	1/year

Qty. of sand/debris collected by sweeping	(lbs. or tons)
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)
Cost of sweepings disposal	(\$)
Vacuum street sweepers purchased/leased	(#)
Vacuum street sweepers specified in contracts	(y/n)

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

Anti-/De-Icing products and ratios	% NaCl
	% CaCl <sub>2</sub>
	% MgCl <sub>2</sub>
	% CMA
	% Kac
	% KCl
	% Sand
	(y/n)
Pre-wetting techniques utilized	
Manual control spreaders used	(y/n)
Automatic or Zero-velocity spreaders used	(y/n)
Estimated net reduction in typical year salt application	(lbs. or %)
Salt pile(s) covered in storage shed(s)	(y/n) <b>Yes</b>
Storage shed(s) in design or under construction	(y/n) <b>No</b>