TOWN OF ANDOVER, MASSACHUSETTS

JACK PETKUS, P.E.
DIRECTOR

1178

TELEPHONE
(978) 623-8350

FAX
(978) 623-8359

DEPARTMENT OF PUBLIC WORKS
WATER TREATMENT PLANT
397 LOWELL STREET 01810-4416

05

April 29, 2005

U. S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114

Re: NPDES Stormwater General Permit
2004-2005 Annual Report
Town of Andover, MA

To Whom It May Concern:

Enclosed for your records is the NPDES Stormwater General Permit 2004-2005 Annual Report for the Town of Andover, MA. The Annual Report has simultaneously been filed with the Massachusetts DEP.

If you have any questions or require any additional information, please do not hesitate to call me at 978-623-8350 ext. 520 or our Consultant, Rebecca Balke with Comprehensive Environmental Inc. at (800)725-2550 ext. 308.

Sincerely,

Town of Andover, Massachusetts

Brian Moore

Brian Moore, P.E.
Town Engineer

cc: Massachusetts Department of Environmental Protection, Worcester Office
Rebecca Balke, Comprehensive Environmental Inc.

Enclosure – NPDES Phase II Small MS4 General Permit 2004-2005 Annual Report

Printed on 100% Recycled Paper with 30% Post Consumer Waste.

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DEPARTMENT OF PUBLIC WORKS
WATER TREATMENT PLANT
397 LOWELL STREET 01810-4416

April 29, 2005

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street
Worcester, MA 01608

Re: NPDES Stormwater General Permit
2004-2005 Annual Report
Town of Andover, MA

To Whom It May Concern:

Enclosed for your records is the NPDES Stormwater General Permit 2004-2005 Annual Report for the Town of Andover, MA. The Annual Report has simultaneously been filed with the U.S. Environmental Protection Agency.

If you have any questions or require any additional information, please do not hesitate to call me at 978-623-8350 or our Consultant, Rebecca Balke with Comprehensive Environmental Inc. at (800)725-2550 ext. 308.

Sincerely,

Town of Andover, Massachusetts

Brian Moore

Brian Moore, P.E.
Town Engineer

cc: U. S. Environmental Protection Agency, Boston Office
Rebecca Balke, Comprehensive Environmental Inc.

Enclosure – NPDES Phase II Small MS4 General Permit 2004-2005 Annual Report

Printed on 100% Recycled Paper with 30% Post Consumer Waste.

Municipality/Organization: Town of Andover

EPA NPDES Permit Number: MAR041178

MaDEP Transmittal Number: W- 041021

Annual Report Number
& Reporting Period: No. 1: May 1, 2004-April 30, 2005

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Reginald Stapczynski Title: Town Manager

Telephone #: (978)623-8350 Email:

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: Reginald S. Stapczynski

Printed Name: Reginald Stapczynski

Title: Town Manager

Date: 4/29/05

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. The Town received a letter on April 21, 2005 from the Massachusetts Historical Commission stating that existing stormwater outlet structures do not have any adverse effects on historic places within Town.

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
1A	Develop Stormwater Section of Town Website	Department of Public Works/Engineering Dept., Water Dept, and Town Website Manager(s)	Measure number of hits over permit term.	Andover has developed a web page with stormwater information and links to other useful sites.	Measure hits to the website.
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.	• The Town mailed 10,300 copies of the 2004 Drinking Water Quality Report that contained a page on stormwater facts to residents and businesses. 400 additional copies were made available in public buildings. • An educational brochure, "Beautiful Lawns" was distributed to Town residents during information forums and citizens meetings. The brochure was also made available in public buildings.	Continue mailings.
Revised					
1C	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.	Articles were published in the local paper on stormwater issues facing Fish Brook, particularly elevated sodium levels. The article also mentioned the 8th Grade Expeditionary Learning Project (see 2C).	Continue to inform residents of upcoming activities under the participation and involvement program. Use information from brochures and fact sheets for articles and direct the public to the stormwater section of the Town website.
Revised					

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
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.	Monthly meeting were held. The PRTF has been merged with the Fish Brook Initiative (see 2E). One thousand signs were purchased to give to residents wishing to declare their lawns "pesticide free".	Continue holding meetings and encouraging new residents and business owners to attend.
Revised					
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.	A telephone hotline system is under development and is expected to be operational by May 2005.	• Begin logging the calls and responses after the system is installed and functioning. • Advertise the number and include a descriptive pamphlet about illicit discharges in utility bills. • Provide a section on the Town's stormwater website discussing how people can use the hotline
Revised					
2C	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.	Twenty tours were given for about 200 residents and students. Three classroom visits were completed and an Expeditionary Learning Project was established with the 8th Grade class that included outdoor monitoring of Fish Brook. Stormwater information was incorporated into field trips and classroom visits.	Continue to visit classrooms and hold annual field trips for science classes to visit the Town's water treatment plant. Encourage class projects and activities related to stormwater issues.
Revised					

2D	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.	• Stormdrain markers and door hangers are scheduled for installation in subwatersheds L and K in spring/summer 2005 by Eagle Scout volunteers. • Stormdrain markers have been scheduled for installation along Fish Brook by students of the Woods Hill School in May 2005.	Continue marking storm drains in the highest priority watersheds.
Revised					
2E	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.	The Town participated in establishing the Fish Brook Initiative, a watershed protection committee that meets monthly. A Watershed Scientist was hired as the Director for the Conservation Department. The Director has met with the Fish Brook Initiative Committee and the Shawsheen River Watershed Association.	Continue working with local watershed groups to discuss stormwater concerns.
Revised					

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
3A	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.	No further activity is required for this task.
Revised					

3B Revised	Complete Storm Drain System Map	Department of Public Works/Engineering Dept., Consultant	All outfalls mapped by year 4. Copy of storm drain map.	• Continued to locate and verify storm system outfalls. • Continued to locate and field verify unknown drainage areas. • Added outfall information to existing GIS base map. • The location of approximately 238 outfalls were entered into the GIS drainage map. About 200 of these outfalls have been located using GPS.	Continue verifying the location of the drainage system as mapped under 3A and incorporate changes as needed. Time and manpower available may not allow for all outfalls to be located by Year 4.
3C Revised	Develop Illicit Discharge Prohibition Ordinance	Planning Board, Board of Health, and Selectmen	Obtain authorization to control inputs to the municipal drainage system. Bylaw at Town meeting by year 3.	Rules & Regulations are 95% complete. Proposed amendments anticipated to be adopted by June 2005.	The illicit discharge prohibition ordinance will be drafted after the Subdivision Rules and Regulations have been developed to ensure consistency.
3D Revised	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 by year 4. Sources traced and results documented within one year of discovery.	• IDDE plan was established in permit year 1. During ongoing outfall inspections two illicit discharge were discovered. The sources were found and removed from the stormwater system. • Monthly sampling at Fish Brook commenced.	Continue conducting outfall inspections and looking for signs of illicit discharges in priority subwatersheds. Seek sources of discovered illicit discharges one by one and work towards elimination.

3E	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.	• Stormwater fact sheets were made available for residents at the water treatment plant and illicit discharge information was discussed during tours of the facility. • Weekly broadcasts began on the local cable channel about healthy lawns and pesticide use. • Presentation given on environmental pollutant's impact on Fish Brook as part of the Public Health Week activities. • Held Title V seminar for general public including protocol systems design basics with video & questions.	Continue incorporating information on illicit discharge into public education and outreach topics.
Revised					
3F	Setup and Advertise a Hotline for Illicit Discharges	Department of Public Works/ Engineering Dept., and Board of Health	Log of complaints and actions taken.	A telephone hotline system is under development and is expected to be operational by May 2005 (see 2B).	• Identify department to receive calls. • Advertise who to call to report dumping or other inappropriate inputs to the MS4. • Develop a protocol for addressing complaints. • Keep records of complaints and actions taken.
Revised					

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
4A	Develop Erosion Control Bylaw	Planning Board and Selectmen	Bylaw at Town meeting by year 3.	As part of the proposed Rules and Regulations amendments, the section pertaining to soil erosion and sedimentation control has been made more specific and detail oriented.	Upon adoption of amendments to the Rules and Regulations, Town staff will incorporate similar language into the Erosion Control By-Law.
Revised					

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.	The Conservation Commission presently responds to all inquiries or site inspections within their jurisdiction. The Town's Construction Inspector and the Planning Division monitor sites that lie outside of their jurisdiction. Upon receipt of site specific complaints by residents, a determination is made as to which regulatory department could best respond. The Town is looking into hiring additional staff to oversee inquiries, complaints and enforcement of sites that would fall outside of the Conservation Commission's jurisdiction.	• Look into hiring staff to address public inquiries and comments. • Advertise who to call to report erosion or runoff concerns at construction sites in town. • Develop a protocol for addressing inquires or complaints. • Keep records of complaints and actions taken.
4C Revised	Develop Guidance for Erosion Controls & Conduct Inspections	Planning Board, Department of Public Works/ Engineering Dept., Conservation Commission, and Consultant	Inspection checklist and documented inspections.	• Areas under Conservation's jurisdiction are required to have an erosion control plan that meets the State's stormwater standards and that is recorded at the registry of deeds. Periodic inspections of erosion controls are conducted by outside independent engineers under a Town program. Applicants that fail to follow approved plans are issued warnings and if necessary fines. • Regulations are in the process of being revised/adopted to include more site specific detail oriented requirements pertaining to erosion control at all construction sites.	• Develop an inspection checklist. • Develop guidance outlining specific erosion control requirements desired by Andover. • Set up a tracking program. • Conduct inspections of erosion controls at all sites • Adopt more specific erosion control regulations

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
5A	Develop BMP Bylaws	Planning Board	Bylaw at Town meeting by year 3.	Amendments to Subdivision Rules & Regulations to comply with Phase II are 95% complete. Proposed amendments anticipated to be adopted by June 2005.	Adopt amendments to Subdivision Rules and Regulations.
Revised					
5B	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.	• Program has been delayed until proposed amendments to Subdivision Rules and Regulations are adopted and until additional staff requests are granted. • Outside independent engineers periodically inspected construction projects within areas under the Conservation's jurisdiction. A Certificate of Compliance is provided when construction sites are stabilized.	• Identify specific O&M requirements desired by Andover and reference in the new bylaw. • Identify the department(s) who will perform inspections. • Require operation and maintenance plan of developers. • Set up permit program and maintenance tracking program that requires annual submittal of maintenance report by owner.
Revised					
5C	Develop BMP Design Standards	Planning Board, Department of Public Works/ Engineering Dept., Conservation Commission, and Consultant	Copy of draft bylaws.	• Design standards have been worked into regulatory amendments and are currently being updated by Consultant. The Town is evaluating how best to include these design standards. • BMPs for runoff and sedimentation control are required in areas under the Conservation's jurisdiction. The Commission began working on establishing a comprehensive sediment control guide.	Incorporate design standards into bylaw/regulations by reference.
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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
6A	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. The downtown area was swept twice per week except during the winter.	Continue street sweeping program.
Revised					
6B	Clean Catch Basins	Department of Public Works/Highway Division and Consultant	Records of cleaning, inspections and maintenance.	Approximately 1400 catch basins were cleaned. Problem areas were cleaned more often.	Continue to clean all catch basins in Town at least once every two years. Modify cleaning frequency as needed once inspection and maintenance plan is completed.
Revised					
6C	Develop and Implement an Inspection and Maintenance Plan	Department of Public Works/Highway Division	Written policy. Records of inspections and maintenance.	No written policy was completed in Permit Year 2; however, the Engineering Staff continues to report maintenance problems to the Highway Department found during the outfall inspection program.	• Develop a written inspection/maintenance schedule for structural BMPs throughout Town. • Perform inspection and maintenance, modifying frequency as necessary • Develop an in-house policy for disposing of maintenance generated wastes.
Revised					
6D	Berm Sand/Salt Pile and Evaluate Options for Protection	Department of Public Works/Highway Division	Records of modifications, including photographs.	Shed was constructed in permit year 1 to store sand/salt pile from runoff. No further action is needed.	No further action is required.
Revised					

6E	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 stored indoors in designated areas.	Continue to store all paving tools and equipment indoors.
Revised					
6F	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.
Revised					
6G	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 frequently swept/cleaned. • Re-established drainage swale and constructed a sediment basin sump at 303 Lowell Street.	Continue to sweep the paved roadway and clean the catch basins at the DPW Yard on a frequent basis.
Revised					
6H	Bring Floor Drain System at the Water/Sewer Building into Compliance	Department of Public Works/Engineering Dept.	As-built sketches.	Floor drain has been brought into compliance in permit year 1.	No further action is required.
Revised					
6I	Bring Floor Drain System at the Vehicle Maintenance Building into Compliance	Department of Public Works/Engineering Dept.	As-built sketches.	Floor drain has been brought into compliance in permit year 1.	No further action is required.
Revised					
6J	Wash Vehicles in Accordance with DEP Regulations	Department of Public Works/Highway Division	Record of Memo.	Vehicles are washed indoors to floor drains that discharges into an oil/water separator and the sanitary sewer system.	Continue washing vehicles indoors.
Revised					

6K	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.	• BMPs and a covering were evaluated to reduce stormwater contact with fueling area.	Continue to keep fully stocked spill kit and disposal container on-site to clean up any future leaks and to dispose of wastes properly.
Revised					
6L	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 in-house plan for addressing inspections and maintenance issues including procedures for handling significant leaks and spills was established. • Containment options were evaluated for the CaCl ASTs to contain leaks and large releases. • A memo was sent to employees discussing the inspection and maintenance plan for the CaCl ASTs.	Continue program.
Revised					
6M	Implement BMPs at the Ledge Road Landfill	Department of Public Works	Complete landfill cap.	• The design of a landfill cap has been completed and is being reviewed by the DEP. • The stockpiles were incorporated into the current landfill capping design.	Continue with landfill capping process.
Revised					
6N	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.
Revised					
6O	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.
Revised					

6P	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.
Revised					
6Q	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.	Continue to wash all vehicles indoors at approved vehicle wash areas.
Revised			New sink for rinsing and verbal instructions to employees.		
6R	Prohibit Vehicle Washing at the Cemetery Buildings	Plant and Facilities Dept. and Fire Dept.	Record of memo.	Continued washing vehicles at approved wash areas.	Continue washing vehicles at approved sites.
Revised					
6S	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.
Revised					
6T	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.	Same as Year 2.
Revised					

6U	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).	Same as Year 2.
Revised					
6V	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.	Same as Year 2.
Revised					
6W	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 as needed.	Same as Year 2.
Revised					
6X	Use Low Salt Applications at Designated Areas	Department of Public Works/Highway Division	Use less salt within the Haggets Pond watershed, as demonstrated with application rate.	Used low salt applications in the Haggetts Pond watershed for water supply protection.	Same as Year 2.
Revised					

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.	• Bi-annual household hazardous waste collection events were held.
				• Encouraged residents to bring household mercury- containing thermometers and thermostats to the Water Treatment Plant or the Board of Health.
				• Held three collection events for cathode ray tubes (CRTs), batteries, and electronic equipment.
				• Allowed residents to take waste motor oil to the North Andover DPW Garage on the first and third Saturday of each month.
				• Advertised events with mailers to every household and emphasize the need to collect wastes to avoid improper disposal and the resulting pollution.
				• New recycling programs were implemented for the following items:
				  o Cell Phones
				  o Rechargeable batteries and button batteries
				  o Toner cartridges
				  o inkjet cartridges
				  o fluorescent tube collection and recycling
					Same as Year 2.

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.	Same as Year 2.

6AA	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.	Training was provided for Plant & Facilities and Highway Dept. employees by a consultant on pollution prevention and good housekeeping practices.	Conduct refresher training.
Revised					

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
7A	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.	Not planned for Year 2.	Planned for permit year 5.
Revised					
7B	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.	Not planned for Year 2.	Planned for permit year 5.
Revised					

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) Asses water quality in response to implementation activities.

Part IV. Summary of Information Collected and Analyzed

Locations and physical descriptions of about 238 outfalls have been gathered since Permit Year 1. Copies of all educational materials and memos distributed have been kept on file. Meeting memos and phone logs have also been kept on file.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	**No**
Annual program budget/expenditures	($)	**$49,500**

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		
▪ days sponsored	(#)	**2**
▪ community participation	(%)	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	**Yes**

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	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

Outfall mapping complete	(%)	**95%**
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete	(%)	**95%**
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	**90%**
Outfalls inspected/screened	(# or %)	**238**
Illicit discharges identified	(#)	**2 since Permit Year 1**
Illicit connections removed	(#) (est. gpd)	**2 since Permit Year 1**
% of population on sewer	(%)	**55%**
% of population on septic systems	(%)	**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	(#)	**1400**
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 % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized	(y/n)	
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)	**Yes**
Storage shed(s) in design or under construction	(y/n)	