Town of North Reading
Massachusetts

Department of Public Works

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5/1/08

May 1, 2008

Ann Herrick
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023

RE: Year 5 (April 1, 2007 to March 31, 2008) Annual Report for the NPDES Phase II Permit
Town of North Reading, Massachusetts
EPA NPDES Permit Number: MAR041215

Dear Ms. Herrick:

Enclosed please find the Year 5 Annual Report for the NPDES Phase II Small MS4 General Permit with an original certification signature page for the Town of North Reading.

If you have any questions or require any additional information, please do not hesitate to contact me at (978) 664-6060.

Very truly yours,

Town of North Reading

Michael P. Soraghan, P.E.
Town Engineer

cc: Fred Civian, MADEP
D. Hanlon, Town of North Reading
J. Lachmayr, Malcolm Pirnie Inc.

235 North Street, North Reading, MA 01864 ... 978/664-6060 – FAX 978/664-1713

Municipality/Organization: Town of North Reading, MA

EPA NPDES Permit Number: MAR041215

MassDEP Transmittal Number: W-041239

Annual Report Number
& Reporting Period: No. 5: April 1, 2007 – March 31, 2008

8
5/1/08

NPDES PII Small MS4 General Permit Annual Report
(Due: May 1, 2008)

Part I. General Information

Contact Person: Michael P. Soraghan, P.E. Title: Town Engineer

Telephone #: ~~978-664-6060~~ 978-357-5260 Email: msoraghan@northreadingma.gov

Mailing Address: Town of North Reading, 235 North Street, North Reading, MA 01864

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: ATA FOR

Printed Name: Greg Balukonis

Title: Town Administrator

Date: April 30, 2008

Part II. Self-Assessment

The Town of North reading has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions.

The schedule modifications based on the Year 3 Annual Report Schedule for some of the best management practices (BMPs) include the following:

- **BMP 3B and 3D (Illicit Discharge Detection and Elimination) – extended schedule through Permit Year 6. The Town is expected to investigate the 24 suspect outfalls found during the illicit connection identification program and identify the source of the connection based on recommended methods identified in the Town's *Storm Water Capital Improvement Report*. The Town recently passed the Storm Water Management Bylaw that includes Article I, Non-Storm Water Discharges that gives the Town the authority to require residents and businesses to eliminate any illicit connections they have to the storm drainage system. The Town completed mapping of storm water system in Permit Year 3, and is expected to continue updating GIS as needed based on as-built submissions and field work through Permit Year 6.**
- **BMPs 4A and 4B (Construction Site Stormwater Runoff Control) and BMP 5D (Post-Construction Stormwater Management in New Development and Redevelopment) – extended schedules through Permit Year 6. Town has met the original measurable goals; the Storm Water Management Bylaw was approved at Fall 2006 Town Meeting and became effective March 1, 2007 with the Attorney General Office's approval. The Bylaw identifies the Building Inspector to be the Enforcement Officer for Article II, Construction and Post Construction Storm Water Management of New Developments and Redevelopments. The Town is working towards finalizing the Rules and Regulations for Article II in Permit Year 6.**
- **BMPs 6B and 6D (Pollution Prevention and Good Housekeeping in Municipal Operations) – extended schedule through Permit Year 6. Since the Town purchased a mechanical sweeper in 2005, street sweeping occurs on a more frequent basis in prioritized areas and will continue through Permit Year 6. The Town is expected to solicit price quotes for purchasing a vactor truck in Permit Year 6, in addition to scheduling and prioritizing catch basin cleaning based on recommendations provided in the *Storm Water Capital Improvement Report*.**

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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
1A Revised	Two meetings with Town	DPW/ M. Soraghan	Hold a meeting on storm water in Town.	WSWAC held several meetings to act as a forum for public input on storm water management issues in the Town.	WSWAC to continue to hold regular meetings to act as a forum for public input on storm water management issues in the Town.
1B Revised	Develop plan for public education	DPW/ M. Soraghan	Identify and develop public education programs.	WSWAC continued to coordinate public outreach activities. Activities included: coordination with the Reading/North Reading Stream Team, Headwaters Stream Team, Ipswich River Watershed Association, and the Martins Pond Association; development of public outreach materials including local newspaper advertisements, storm water information and links on Martins Pond's website; and programs for storm drain stenciling and river clean-ups.	Continue to coordinate public outreach activities.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
2A Revised	Two meetings with Town	DPW/ M. Soraghan	Number of meetings held.	Held several meetings with the Town that included public involvement from the WSWAC and Martins Pond Association. Continued Ipswich River Park clean-up day & BBQ sponsored by the Reading/North Reading stream team.	If funds are available continue the Ipswich River Park clean-up day.
2B Revised	Public Participation Plan	DPW/ M. Soraghan	Number of programs developed.	WSWAC continued to coordinate with existing Town agencies/groups including the Martins Pond Association, Reading/North Reading Stream Team, and the Ipswich River Watershed Association to conduct three programs: stenciling, development of public outreach materials, and an outreach program on shoreline restoration and erosion and sediment control.	Continue with public outreach activities.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
3A	Illicit Connection Identification	DPW/ M. Soraghan	# of dry weather outfalls assessed.	524 out of 524 outfalls have been assessed in Permit Year 3.	No action anticipated.
Revised					
3B	Illicit Source Identification	DPW/ M. Soraghan	# of illicit sources investigated.	Outlined a program in the Town's *Storm Water Capital Improvement Program Report* that includes field investigation methods to identify illicit discharge locations in Permit Year 3. Article I, Non-Storm Water Discharges of the Storm Water Management Bylaw gives the Town the authority to have residents and businesses disconnect (or eliminate) any illicit connections to the drainage system.	Conduct investigations on illicit connections at 24 suspect outfalls
Revised					
3C	Ordinance development to prohibit non-storm water flows	DPW/ M. Soraghan	Bylaw/Ordinance adopted by Town.	Storm Water Management Bylaw was approved and became effective in Permit Year 4.	No action anticipated.
Revised					
3D	Storm Water map development	DPW &Planning/ M. Soraghan and K. Honetschlager	Map completed showing outfalls.	Completed mapping of storm water system that included outfalls, drainage piping, catch basins, and manholes in Permit Year 3. Updated GIS as needed based on as-built submissions and field work.	Update GIS as needed based on as-built submissions and field work.
Revised		DPW &Planning/ M. Soraghan and S. Murphy			

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
4A	Ordinance development for waste control	DPW/ M. Soraghan	Recommend ordinance/bylaw language at Town Meeting.	Storm Water Management Bylaw was approved and became effective, and Rules and Regulations were drafted for review and approval in Permit Year 4.	Finalize Rules and Regulations and implement with Bylaw.
Revised					
4B	Formalize site plan review procedures	DPW/ M. Soraghan	Site plan review procedures document complete.	Storm Water Management Bylaw was approved and became effective, and Rules and Regulations were drafted for review and approval in Permit Year 4.	Finalize Rules and Regulations and implement with Bylaw.
Revised					
4C	Revised ordinance to address storm water pollution	DPW/ M. Soraghan	Recommend ordinance/bylaw language at Town Meeting.	Storm Water Management Bylaw was approved and became effective, and Rules and Regulations were drafted for review and approval in Permit Year 4.	Finalize Rules and Regulations and implement with Bylaw.
Revised					
4D	BMP Manual	DPW/ M. Soraghan	Handbook completed and adopted by Town.	The Town of North Reading's BMP Manual was reviewed and finalized in Permit Year 3. Manual is referenced in the draft Rules and Regulations.	No action anticipated.
Revised					
4E	Formalize Inspection Procedures	DPW/ M. Soraghan	Standard operating procedures on inspections complete.	Storm Water Management Bylaw became effective in Permit Year 4. Draft Rules and Regulation include inspection requirements.	Finalize Rules and Regulations and implement with Bylaw.
Revised					

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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
5A	Procedures for long-term O&M	DPW/ M. Soraghan	Adoption of procedures by Town.	Storm Water Management Bylaw was approved and became effective, and Rules and Regulated were drafted for review and approval in Permit Year 4.	Finalize Rules and Regulations and implement with Bylaw.
Revised					
5B	Site plan review procedures for water quality impacts	DPW/ M. Soraghan	Adopt procedures.	Storm Water Management Bylaw was approved and became effective in Permit Year 4. Rules and Regulated were drafted for review and approval in Year 4.	Finalize Rules and Regulations and implement with Bylaw.
Revised					
5C	BMP Handbook	DPW/ M. Soraghan	BMP Handbook.	The Town of North Reading's BMP Manual was reviewed and finalized in Permit Year 3. Manual is referenced in the draft Rules and Regulations.	No action anticipated.
Revised					
5D	Revise ordinance to address storm water pollution	DPW/ M. Soraghan	Recommend ordinance/bylaw language at Town Meeting.	Storm Water Management Bylaw was approved and became effective, and Rules and Regulations were drafted for review and approval in Permit Year 4.	Finalize Rules and Regulations and implement with Bylaw.
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 5 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 6
6A	Employee Training	DPW/ M. Soraghan	# of employees trained.	Conducted Storm Water Management workshop with Town departments including the DPW in Permit Year 2. Eighteen (18) employees were trained. No action taken.	No action anticipated.
Revised					
6B	Prioritized Street Sweeping	DPW/ M. Soraghan	Schedules and prioritized street sweeping.	The Town purchased a mechanical sweeper in 2005 and has since increased street sweeping on a more frequent basis in prioritized areas.	Continue to conduct Town-wide street sweeping. In prioritized areas conduct more frequent sweeping.
Revised					
6C	Spill Response and Prevention	DPW/ M. Soraghan	Develop procedures.	At Storm Water Management Workshop discussed proper spill response and prevention BMPs in Permit Year 2. No action taken.	No action anticipated.
Revised					
6D	Prioritized Catch Basin Cleaning	DPW/ M. Soraghan	Schedules and prioritizes cleaning.	Outlined recommendations in the Town's *Storm Water Capital Improvement Program Report* that includes modifications to the Town's current catch basin cleaning program in Permit Year 3. Considered changes to the catch basin cleaning program based on prioritization and cleaning equipment recommendations.	Make changes to the catch basin cleaning program based on prioritization and cleaning equipment recommendations. Solicit price quotes for purchasing a vactor truck.
Revised					

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

- NOT APPLICABLE -

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

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, 2006 through March 31, 2007)

Programmatic

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

Education, Involvement, and Training

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

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				**N/A**	
▪ Erosion & Sediment Control				**X**	
▪ Post-Development Stormwater Management				**X**	

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	**100**[1]
Estimated or actual number of outfalls	(#)	**524**[2]
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	**100**
Mapping method(s)		
▪ Paper/Mylar	(%)	**100**[3]
▪ CADD	(%)	**Unknown**
▪ GIS	(%)	**100**[4]
Outfalls inspected/screened **	(# or %)	**0**
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	**524 or 100%**
Illicit discharges identified **	(#)	**0**
Illicit discharges identified (Since beginning of permit coverage)	(#)	**24**
Illicit connections removed **	(#); and (est. gpd)	**0**
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	**0**
% of population on sewer	(%)	**1**

% of population on septic systems	(%)	**99**

Construction

	(Preferred Units)	Response
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 (for proper BMP installation & operation) completed **	(# or %)	
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	
Low-impact development (LID) practices permitted and encouraged	(y/n)	

Operations and Maintenance

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 **	(#)	**1,821**
Qty. of storm drain cleaned **	(%, LF or mi.)	**0 (unless clogged)**
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	**Beneficial use**

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	($)	
• Hourly or per basin contract rate **	($/hr or $ per basin)	
• Disposal cost**	($)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vactor **	(%)	

	(Preferred Units)	Response
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)	**Beneficial use**
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**[5]
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	**N**
• % Roads swept with rotary brush sweepers **	%	**100**
• % Roads swept with vacuum sweepers **	%	**0**

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	**60% NaCL** **35% Sand** **5% CaCL2**
Pre-wetting techniques utilized **	(y/n or %)	**Y**
Manual control spreaders used **	(y/n or %)	**Y**
Zero-velocity spreaders used **	(y/n or %)	**N**
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	**100**
Storage shed(s) in design or under construction	(y/n or #)	**N**
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	**Y**

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
• Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	

Notes:

1. **Based on available mapping of outfalls.**
2. **Updated based on revised mapping and outfall assessments conducted.**
3. **100% of all new and existing outfalls have drainage plans filed with Town.**
4. **100% correlates to the percentage of outfalls visited and GPS located.**
5. **One mechanical sweeper purchased in 2005.**

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Watershed Management

BRP WM 08A NPDES Stormwater General Permit Notice of Intent for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)

F. Storm Water Management Program TIME FRAMES

Transmittal Number W 041239

Facility ID (if known)

	PERMIT YEAR ONE				PERMIT YEAR TWO				PERMIT YEAR THREE				PERMIT YEAR FOUR				PERMIT YEAR FIVE				PERMIT YEAR SIX			
BMP ID #	Spring 03	Summer 03	Fall 03	Winter 03-04	Spring 04	Summer 04	Fall 04	Winter 04-05	Spring 05	Summer 05	Fall 05	Winter 05-06	Spring 06	Summer 06	Fall 06	Winter 06-07	Spring 07	Summer 07	Fall 07	Winter 07-08	Spring 08	Summer 08	Fall 08	Winter 08-09
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Revision Date: April 25, 2008