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Municipality/Organization: Town of North Reading, MA
EPA NPDES Permit Number: MAR041215
MassDEP Transmittal Number: W-041239

**Annual Report Number
& Reporting Period:** Year 8: April 11 – March 12

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2011)**

Part I. General Information

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

Telephone #: 978-357-5226 **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:  _____

Printed Name: Greg Balukonis

Title: Town Administrator

Date: APRIL 29, 2011

Part II. Self-Assessment

The Town of North Reading has completed the required self-assessment and determined that our municipality is in compliance with all permit conditions. The Town has revised the Stormwater Management Rules and Regulations and passed them at Town Meeting. The Town is continuing research into the installation of sanitary sewer in key areas of the Town. Several Town meetings have been held to review the findings of the Comprehensive Wastewater Management Plan, developed by Weston and Sampson, and community input on the possible installation of sanitary sewer in the town.

The Town has been awarded a 319 grant by the State and will address some of the stormwater issues previously identified in the Stormwater Capital Improvement Program Report created by Malcolm Pirnie in 2006. The North Reading Stormwater Infiltration Project: Reaching Out to Absorb Runoff (R.O.A.R.) is an effort to both capture stormwater before it reaches a conveyance system as well as to make sure that those systems are promoting recharge. This project goals center on:

- Infiltration of roadway runoff and sediment reduction through the installation of deep sump catch basins and infiltration chamber;
- Bioswale, infiltration enhancement, rain gardens and outfall rehabilitations to capture roof and parking lot runoff
- Rain garden project, including a Town Common installation and town-wide participatory programs centered on planning and implementing parcel-based rain gardens to promote infiltration;
- Outreach and education via an Elementary School education program and contest, newspaper advertising campaign, Town Hall Low Impact Development (LID) kiosk, Town Library display, Town event outreach and signage.

The town engineer has developed O&M plans for the BMP's installed through the Martins Pond Shoreline Restoration and Sediment Reduction Project (S.H.O.R.E.) from 2008 to 2010.

The Town has begun work on a 604b grant by the State; Entitled Identifying Stormwater Remediation - Upper Ipswich River Basin, this project will assess stormwater conveyance, streambank erosion, sediment erosion, sediment plumes at outfalls and water quality. These grants were developed in thanks to the Martins Pond Associations work with the town to address stormwater issues. The town has installed 6 deep sump catchbasins with CULTEC chambers in areas identified in the grant project as candidates for site remediation.

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 Permit Year 9
1A Revised	Two meetings with Town	DPW/ M. Soraghan	Hold a meeting on stormwater in Town	Held several meetings with Town that including public involvement from Martins Pond Association.	Held several meetings with Town that includes public involvement from Martins Pond Association.
1B Revised	Develop plan for public education	DPW/ M. Soraghan	Identify and develop public education programs.	Continued to coordinate with existing Town agencies/groups including the Martins Pond Association, Reading/North Reading Stream Team, and the Ipswich River Watershed Association.	Continue to coordinate with existing Town agencies and non-profit groups. Martins Pond Association held Winter Festival at the pond and included details on stormwater quality and their on going projects.

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 Permit Year 9
2A Revised	Two meeting with Town	DPW/ M. Soraghan	Number of meetings held.	Held several meetings with Town that including public involvement from WSWAC and Martins Pond Association.	Continue meetings.
2B Revised	Public Participation Plan	DPW/ M. Soraghan	Number of programs developed.	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 stenciling, development of public outreach programs on shoreline restoration and erosion and sediment control.	Continue to coordinate with existing Town agencies/groups including the Martins Pond Association Reading/North reading Stream Team, and the Ipswich River Watershed Association to implement current grant projects.

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 Permit Year 9
3A Revised	Illicit Connection Identification	DPW/ M. Soraghan	# of dry weather outfalls assessed.	In permit year 7 screening occurred at 24 outfalls.	Measureable goals for 2003 permit have been met.
3B Revised	Illicit Source Identification	DPW/ M. Soraghan	# of illicit sources investigated.	In permit year 7 screening occurred at 24 outfalls.	Measureable goals for 2003 permit have been met.
3C Revised	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.	Measureable goals for 2003 permit have been met.
3D Revised	Storm Water map development	DPW& Planning M. Soraghan/S. Murphy	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.	Measureable goals for 2003 permit have been met.

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 Permit Year 9
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 in Permit Year 4.	Measureable goals for 2003 permit have been met.
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 in Permit Year 4. Rules and Regulations adopted in Permit Year 8.	Measureable goals for 2003 permit have been met.
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 in Permit Year 4.	Measureable goals for 2003 permit have been met.
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 Rules and Regulations adopted in Permit Year 8.	Measureable goals for 2003 permit have been met.
Revised					
4E	Formalize Inspection Procedures	DPW/ M. Soraghan	Standard operating procedures on inspection complete.	Storm Water Management Bylaw was approved and became effective in Permit Year 4. Rules and Regulations adopted in Year 8 include inspection requirements.	Measureable goals for 2003 permit have been met.
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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities Permit Year 9
5A Revised	Procedures for long term O& M	DPW/ M. Soraghan	Adoption of procedures by Town.	Storm Water Management Bylaw was approved and became effective in Permit Year 4. Rules and Regulations have been adopted by the Town.	Measurable goals for 2003 permit have been met.
5B Revised	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 Regulations have been adopted by the Town.	Measurable goals for 2003 permit have been met.
5C Revised	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 Rules and Regulations adopted by the Town.	Measurable goals for 2003 permit have been met.
5D Revised	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 in Permit Year 4.	Measurable goals for 2003 permit have been met.

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 Permit Year 9
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	Measurable goals for 2003 permit have been met.
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.	Measurable goals for 2003 permit have been met.
Revised					
6C	Spill Response and Prevention	DPW/ M. Soraghan	Develop procedures.	At Storm Water Management Workshop discussed proper spill response and prevention BMP's in Permit Year 2.	Measurable goals for 2003 permit have been met.
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 modification 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.	Measurable goals for 2003 permit have been met.
Revised					

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<NOT 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
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

During development of the Stormwater Management Rules and Regulations fees have been put in place to offset the cost of administration processing and engineering review of stormwater applications. These fees include an Application Fee (\$500), Review Fee (depending on the complexity of the project) and an Inspection Fee (also depending on the complexity of the project). The Review and Inspection fee will be determined by the Town Engineer. In addition, in-house meetings with departments that deal with development to discuss the upcoming permit and the possibility of establishing a storm water utility have been held.

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, 2009 through March 31, 2010)

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)	N

Legal/Regulatory

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

Mapping and Illicit Discharges

	(Preferred Units)		Response
Outfall mapping complete	(%)		100 ¹
Estimated or actual number of outfalls	(#)		461 ²
System-Wide mapping complete (complete storm sewer infrastructure)	(%)		100
Mapping method(s)			
▪ Paper/Mylar	(%)		100 ³
▪ CADD	(%)		Unknown
▪ GIS	(%)		25 ⁴
Outfalls inspected/screened **	(# or %)		150
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)		100%
Illicit discharges identified **	(#)		0
Illicit discharges identified (Since beginning of permit coverage)	(#)		6

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 **	(#)	1821

Qty. of storm drain cleaned **	(%, LF or mi.)	0
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 vacuor **	(%)	

(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 In mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	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 **	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	60% NaCl 35% Sand 5% CaCl ₂
(also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)		
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. 25% correlated to the percentage of outfalls visited and GPS located.