Municipality/Organization: **Northborough, Massachusetts**

EPA NPDES Permit Number: MAR041143

MassDEP Transmittal Number: **W- 035921**

Annual Report Number & Reporting Period: **Year 11**
April 1, 2013 – March 31, 2014

NPDES PII Small MS4 General Permit Annual Report
(Due: May 1, 2014)

Part I. General Information

Contact Person: Frederic E. Litchfield Title: Town Engineer

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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: Frederic E Litchfield

Printed Name: Frederic E. Litchfield

Title: Town Engineer

Date: 4/28/2014

Part II. Self-Assessment

The Town of Northborough has completed the required self–assessment and has determined our municipality is in compliance with all permit conditions, except for the following provisions:

Part 1.1c Due to continued budget constraints the Auto Repair Shop brochures were not mailed to each of the local impacted businesses, although additional information regarding auto repairs have been posted on the Town website.
Part 1.1g The Stormwater Flyer was not distributed to the businesses within the municipality due to continued budget constraints, however, the flyer has been posted on the Town website.
Part 1.1h The Stormwater Media information packet has not been completed due to continued budget constraints, but additional links have been added to the Town website.
Part 3.3a 72% of all outfalls and receiving waters within the Town have been field verified. Field verification of the remaining outfalls is ongoing and all outfalls are expected to be field verified during calendar year 2014. A meeting about the status of outfall mapping is scheduled for May 2014.
Part 7.7a 99% of all outfalls within the Town which contribute to the Assabet River have been verified. The goal is to continue field verifying the remaining outfalls as resources are available.

Notable Accomplishments/Improvements in Permit Year 11:

In Permit Year 11, the Town of Northborough joined the Central Massachusetts Regional Stormwater Coalition (the Coalition). The Coalition consists of 30 communities in central Massachusetts, including 13 communities that formed the Coalition during the previous year (Auburn, Charlton, Dudley, Holden, Leicester, Millbury, Oxford, Paxton, Shrewsbury, Spencer, Sturbridge, Webster, and West Boylston) plus 17 new "Expansion" Towns (including Boylston, Grafton, Hardwick, Hopkinton, Monson, Northbridge, Northborough, North Brookfield, Palmer, Rutland, Southbridge, Sterling, Upton, Uxbridge, Ware, Westborough, and Wilbraham) that work to collectively address municipal stormwater management issues. Northborough has received a tablet and educational resources from the Coalition to help meet NPDES permit requirements in Town.

In Year 11, the Coalition was funded by a $115,000 fiscal year 2013 (FY2013) Community Innovation Challenge (CIC) grant from the Massachusetts Executive Office of Administration and Finance. This grant was supplemented by a contribution of approximately $2,800 from each of the 30 Towns, including Northborough. FY2013 work included numerous technical tasks focused on compliance with the 2003 Massachusetts MS4 Permit, although much of the Coalition's work prepares the communities to comply with requirements anticipated

in the pending 2014 Massachusetts MS4 Permit. The Coalition's FY2013 efforts were facilitated by the consulting firms of Tata & Howard, Inc., and Verdant Water, supported by vendor PeopleGIS. However, the Coalition members themselves are responsible for putting the tools developed by the Coalition to use.

The FY2013 effort included monthly meetings of the Coalition Steering Committee, four formal training workshops, and other presentations. Northborough participated in three (3) training workshops, reviewed deliverables, and served other key roles as further described in the Coalition's Annual Report (See Attachment A for a Summary of Activities for Northborough).

The Town's stormwater webpage has been updated and now includes links to the following videos, handouts and posters:

- After the Storm – EPA brochure
- Construction Best Practices
- Protecting Water from Urban Runoff, Solution to Pollution – EPA brochure
- Think Green with your Stormwater Habits
- Water Efficient Landscaping

The Engineering, DPW and Planning Department web pages now have links to the Town's stormwater webpage.

The Town of Northborough hosted "Big Truck Day" on June 15th, 2013. Big Truck Day is a town-wide educational event where residents can bring their families to learn about DPW equipment and how it works. Stormwater educational materials and posters are also displayed at Big Truck Day.

In Permit Year 11, stormwater infrastructure repairs were conducted on Patriot Drive and RT 20. A storm drain was repaired on Patriot Drive and a DOT culvert was repaired on RT 20, near the police station.

The Town of Northborough is in the planning phases of several culvert repairs throughout town. The following repairs will be completed in the future as funding and resources are available:

- Otis Street Crossing – Smith Pond Outlet
- Church Street – Over Cold Harbor Brook
- Fisher Street – Over Cold Harbor Brook

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 11	Planned Activities
1a	Distribute/Post Nonpoint Source Pollution Posters	Engineering Department	Post in all schools and Town Buildings	Posters were created and posted in each of the municipal buildings (Town Hall, Library, Fire, Police and Senior Center).	Maintain posters as necessary.
1b	Air Stormwater Message on Local Cable Channel	Engineering Department	Post one message every month	Stormwater messages have aired on local cable channels throughout the year: - Part of a series of slideshows that plays daily - "After the Storm" video – played 12 times through May 11, 2014 - "Reigning in the Storm" – played 11 times through May 11, 2014	Stormwater messages will continue playing throughout the year: - The slide show will rotate with other slides about 3 times a week - Videos will play approximately 2 times per week
1c	Obtain and Distribute auto repair shop brochures	Engineering Department	Distribute to all impacted local businesses	Brochures were available on the Stormwater webpage, but not distributed due to budget constraints for printing and mailing.	Try to increase awareness to automobile repair shops through additional info posted on the Town website.
1d	Add Stormwater information to Town's website	Engineering Department and GIS Manager	Update information quarterly to address seasonal concerns	As discussed in "Notable Accomplishments," a new website has been created with links to stormwater information.	Continuously maintain stormwater links.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11	Planned Activities
1e	Stormwater flyer to community residents	Engineering Department and SuAsCo Watershed Community Council	Flyer distributed to 75% of residents and compiled and considered municipal and multi-watershed-wide "survey" results	A stormwater flyer is available.	The stormwater flyer may go to some residents in the future as part of other Town utility bill mailings but will not reach all residents due to the fact that not all residents are on Town sewer or water.
1f	Stormwater Lesson Plan for Fifth Grade Students	Engineering Department and SuAsCo Watershed Community Council	Develop and distribute lesson plan to implement at the Grade 5 level, and lesson plan is taught in one or more Grade 5 classrooms in the community	The stormwater lesson plan for Fifth Grade Students was created by the SuAsCo Watershed Community Council and delivered to the school administrator's office.	The stormwater lesson plan has been implemented in the school curriculum for the fifth and sixth grade.

1a. Additions

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11	Planned Activities
1g	Stormwater Flyer to Community Businesses	Engineering Department and SuAsCo Watershed Community Council	Flyer distributed to minimum of 50% of businesses in municipality, and stormwater logo displayed by one-half of businesses receiving the flyer	The stormwater flyer for community businesses was added to the stormwater webpage during Permit Year 11. The flyer was not distributed to businesses directly due to continued budget constraints.	Stormwater flyers will be delivered directly to businesses in the future if budget constraints allow.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11	Planned Activities
1h	Stormwater Media Campaign	Engineering Department and SuAsCo Watershed Community Council	Media Information packet delivered to the local media, and 4 press releases generated and issued to local media and major media outlets	As discussed in "Notable Accomplishments," media information has been added to the stormwater page which can be accessed through the Engineering, DPW and Planning Department websites.	Media information will be distributed as staff time allows in the future and additional links have been added to the Town website.
1i	Stormwater Video	Engineering Department and SuAsCo Watershed Community Council	Show stormwater video at a minimum of one public meeting, and air stormwater video at least once on local cable station	The stormwater video and power point presentation was completed by the SuAsCo Watershed Community Council and was delivered to the local cable access channel and aired as discussed in BMP 1B. The stormwater video "After the Storm" was also shown at the Conservation Commission meeting on April 14, 2014.	A link to the stormwater video "After the Storm" has been added to the Town website and will be shown during Conservation Commission public hearings during the permit year.

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities
Revised 2a	Stormwater Traveling Display	Engineering Department and SuAsCo Watershed Community Council	Stormwater display circulates around the community for a minimum of 3 months in permit year #1, and stormwater display is posted at a minimum of 3 different public locations in permit year #1, and stormwater display is also used in future permit years for posting in public places or at stormwater events	The stormwater display was again utilized during several town events with staff answering questions.	The stormwater display will continue to circulate between municipal buildings as time and staffing allows.
Revised 2b	Stormwater poster contest for Fifth Grade Students	Engineering Department and SuAsCo Watershed Community Council	Poster contest is held and entries are received, judged and displayed	The information for the stormwater poster contest was delivered to the school administrator's office but has not been implemented yet as there was a conflict with another poster contest during that time period.	The Engineering Department staff will contact the School Administration to attempt to have the poster contest inserted into the curriculum in the future.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11	Planned Activities
Revised 2c	Stormwater Photo Contest for High School Students	Engineering Department and SuAsCo Watershed Community Council Students	Photo Contest is held and entries are received, judged and displayed	The information for the stormwater photo contest was delivered to the School Administrator's office and may be included in the Photography Club's future plans.	The photography contest will be requested in the future.
Revised 2d	Implement Hazardous Materials Collection Day	Engineering Department	Collect materials from residents one day per year	The Town continues to hold one Household Hazardous Waste Collection event each year. Metal items and Styrofoam are now collected at the HHHW event. The Town also holds an additional event called "Take It or Leave It Day" where residents can swap items that they no longer use for items brought by other town residents. Residents can also bring other recyclables to this event. Both events are advertized in the paper, on cable and on the Town website.	Continue to hold HHHW Collection and "Take It or Leave It Day" events annually.

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11	Planned Activities
Revised 2e	Implement an Annual Volunteer Stream Clean-up Day	Engineering Department	Hold stream clean-up day once per year	The Town has held a spring Town cleanup event each year and fall stream cleanup each year. This Permit Year, the spring cleanup was held on April 26, 2014. The stream cleanup was held on September 22, 2013. This event is sometimes coordinated with the Town of Westborough and the Organization of the Assabet River (OAR) advertizes the cleanup on their website.	The Town will continue to support the Town cleanup each spring and stream cleanup each fall as the budget allows and volunteers are still available.

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10	Planned Activities
3a	Map Outfalls and Receiving Water	DPW Director, GIS Manager *Assistant DPW Director's position has been eliminated	Prepare draft map in 1st year and map 25% of outfalls each following year	Outfalls were mapped on paper plans and filed away for future use but staff time and budget constraints continue to prevent any further work on these maps to date. A meeting about the status of outfall mapping is scheduled for May 2014.	Staff time and or volunteers will be utilized in the future to complete the mapping. The goal is to continue field verifying the remaining outfalls as resources are available.
Revised					
3b	Review Existing Bylaws and Regulations	DPW, Engineering Department, Planning Department	Determine whether bylaws & regulations meet EPA requirements	In 2008, the Town prepared and approved an Illicit Discharge, Detection and Elimination bylaw in Article 30.	Completed.
Revised					
3c	Develop Illicit Discharge Detection & Elimination Plan	DPW, Engineering Department, Planning Department	Make recommendations for plan & begin implementation by the fourth permit year	An illicit discharge plan is being developed in accordance with the guidance manual developed by the New England Interstate Water Pollution Control Commission	Develop Illicit Discharge Detection & Elimination Plan
Revised					
3d	Develop/Modify General Illicit Discharge Bylaw	DPW, Engineering Department, Planning Department	Propose recommendations for developing a new bylaw or modifying the existing bylaw & make presentations for Town Meeting action	An illicit discharge bylaw was developed in year 4 and adopted at Town Meeting in year 5.	The bylaw was forwarded to the Attorney General's Office for review. Completed
Revised					

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 10	Planned Activities
4a	DPW, Engineering Department, Planning Department	Determine whether required EPA requirements are met	All existing bylaws and regulations were reviewed and found to be adequate with minor revisions by each Board or Committee. No Town meeting action is required.	This item has been completed.	DPW, Engineering Department, Planning Department
Revised					
4b	Develop/Modify Regulations, and Monitoring & Enforcement Measures	Department of Public Works, Engineering Department	Propose recommendations for modifying existing regulations & practices	All existing bylaws and regulations were reviewed and found to be adequate with minor revisions by each Board or Committee. No Town meeting action is required.	This item has been completed.
Revised					
4c	Present New Regulations for Town Meeting Action	DPW, Engineering Department, Planning Department	Make presentations for Town Meeting action	No Town meeting action is required.	Present New Regulations for Town Meeting Action
Revised					
4d	Review Existing Regulations, and Monitoring & Enforcement Procedures	DPW, Engineering Department, Planning Department	Determine whether required EPA requirements are 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 10	Planned Activities
5a	Review Existing Regulations, and Monitoring & Enforcement Measures	DPW, Engineering Department, Planning Department	Determine whether required EPA requirements are met	All existing bylaws and regulations were reviewed and found to be adequate with minor revisions by each Board or Committee. No Town meeting action is required.	This item has been completed.
Revised					
5b	Review/modify Regulations, and Monitoring & Enforcement Measures	DPW, Engineering Department, Planning Department	Propose recommendations for modifying existing regulations & practices	All existing bylaws and regulations were reviewed and found to be adequate with minor revisions by each Board or Committee. No Town meeting action will be required.	This item has been completed.
Revised					
5c	Present New Regulations for Town Meeting Action	Engineering Department, Planning Department	Make presentations for Town Meeting action	No Town meeting action is required.	This item has been completed.
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 10	Planned Activities
6a	Implement Street Sweeping Program	Department of Public Works	Sweep every street once per year	The DPW sweeps all streets within the town once per year with some streets being swept additionally as needed.	The Town did purchase a new street sweeper in FY2012 as a replacement of an aging piece of equipment and expanded the program. All public streets are now being swept annually.
Revised					
6b	Implement Catch Basin Cleaning Program	Department of Public Works	Clean & Inspect all catch basins within five year permit cycle	Approximately 60% of all catch basins have been cleaned to date due to budget constraints.	A clamshell truck was purchased and the catchbasin cleaning program continues.
Revised					
6c	Perform Site Visits to Examine Existing Practices at Facilities	Department of Public Works, Engineering Department	Target all applicable municipal facilities and visit each annually	Site visits are performed at each municipal facility annually.	Maintain annual site visits.
Revised					
6d	Train Municipal Employees at Each Facility	Department of Public Works, Engineering Department	Target all applicable municipal facilities and provide annual refreshers	Training is scheduled for Winter 2014.	Maintain annual refreshers.
Revised					
6e	Perform Follow-ups to Ensure Required Practices are Met	Department of Public Works, Engineering Department	Target all applicable municipal facilities and visit each annually	Follow-up visits are performed as necessary.	Maintain follow-up visits as necessary.
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 10 (Reliance on non-municipal partners indicated, if any)	Planned Activities
7a	Prioritize Stormwater System Mapping Along the Assabet River	DPW, GIS Manager	Map outfalls discharging to the Assabet River by the fourth permit year	All outfalls continue to be mapped on paper and the Town's GIS system.	Volunteers and/or staff will be utilized to locate all outfalls and prepare a map layer as part of our GIS system as time and budget allow. The goal is to continue field verifying the remaining outfalls as resources are available.
Revised					
7b	Perform Dry Weather Inspections of Outfalls Along the Assabet River	DPW, GIS Manager	Inspect outfalls discharging to the Assabet River during dry weather by the fifth permit year	Due to continued budget constraints outfalls are inspected as needed by the DPW.	Once all outfalls are located by GPS and shown on the Town's GIS system they will each be inspected annually as staff time and budget allow.
Revised					

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

	(Preferred Units)	**Response**
Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures	($)	~$20,000 (Engineering)
Total program expenditures since beginning of permit coverage	($)	~$121,000 (Engineering)
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		General Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	100%
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	1 (OAR)
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	Y
Shoreline cleaned since beginning of permit coverage	(mi.)	All
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	1
▪ 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					X
▪ Erosion & Sediment Control	X				
▪ Post-Development Stormwater Management	X				

Mapping and Illicit Discharges

	(Preferred Units)	**Response**
Outfall mapping complete	(%)	95%
Estimated or actual number of outfalls	(#)	300
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	95%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	0%
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	0%
Illicit discharges identified	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	0
Illicit connections removed	(#); and (est. gpd)	0
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	0
% of population on sewer	(%)	30%
% of population on septic systems	(%)	70%

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre)	(#)	3
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100%
Site inspections completed	(# or %)	100%
Tickets/Stop work orders issued	(# or %)	3
Fines collected	(# and $)	0
Complaints/concerns received from public	(#)	0

Post-Development Stormwater Management

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

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	1/yr
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	1/yr
Qty. of structures cleaned	(#)	400
Qty. of storm drain cleaned	(%, LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	1,758 Tons*
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.)	(location)	Landfill
*This total is from several years – material is being reclaimed from local farmers and disposed of at a landfill in Cranston, RI.		

Operations and Maintenance (con't.)

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)	($)	$15,000
• Hourly or per basin contract rate	($/hr or $ per basin)	$25
• Disposal cost	($)	$15,000
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	1
• Vacuum trucks specified in contracts	(y/n)	N
• % Structures cleaned with clam shells	(%)	100%
• % Structures cleaned with vactor	(%)	0%

	(Preferred Units)	**Response**
Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1/yr
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	1/yr
Qty. of sand/debris collected by sweeping	(lbs. or tons)	243 Tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)	($)	$11,000
• Hourly or lane mile contract rate	($/hr. or ln mi.)	
• Disposal cost	($)	$0
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	2
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	0
• % Roads swept with rotary brush sweepers	%	100%
• % Roads swept with vacuum sweepers	%	0

Operations and Maintenance (con't.)

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	NA
▪ Herbicides	(lbs. or %)	NA
▪ Pesticides	(lbs. or %)	NA
Integrated Pest Management (IPM) Practices Implemented	(y/n)	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	100%
Pre-wetting techniques utilized	(y/n or %)	0%
Manual control spreaders used	(y/n or %)	100%
Zero-velocity spreaders used	(y/n or %)	0%
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	30%
Estimated net reduction or increase in typical year sand application rate	(±lbs/ln mi. or %)	NA
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	Y
100% of salt/chemical pile(s) covered in storage shed(s) since May 2008	(y/n)	Y

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	0
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	NA
Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	

Attachment A
Central Massachusetts Regional Stormwater Coalition
Summary of Activities – Northborough MA

Minimum Control Measure 1: Public Education and Outreach

In Year 11, Northborough gained access a number of materials appropriate for public education and outreach, with materials on a variety of topics, which were compiled or developed by the Coalition in Year 10. The topics included illicit discharge detection and elimination, management of pet wastes, and appropriate use of fertilizer, among others. These materials are all available on the Coalition's website, www.CentralMAStormwater.org. The benefit of this delivery format is that the group members can print materials on demand. Northborough also has access to presentations on stormwater management, with content focused on educating the general public, elected officials, and volunteer groups.

Northborough has access to water quality monitoring kits from the World Water Monitoring Challenge program (www.worldwatermonitoringday.org), purchased by the Coalition in Year 10. These kits "build public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies". Several communities used this in Year 11 to work with teachers in their local school department or district to do outreach to elementary and middle-school aged students. The kits are being stored in Spencer and Shrewsbury for distribution to the Coalition members.

Northborough has access to an Enviroscape table focused on non-point source pollution education (http://www.enviroscapes.com/nonpoint-source.html), purchased by the Coalition in Year 10. This tool is a hands-on, visual trainer to demonstrate the importance of good housekeeping and low-impact development for pollution prevention, with the objective of maintaining water quality in our communities.

The Coalition continued to expand its educational website, www.CentralMAStormwater.org, focused on providing information about the project to a number of audiences, including the general public, educators, and kids. In Year 11, a members-only area was created within this website to share materials for communities to review.

Minimum Control Measure 2: Public Involvement and Participation

In Year 11, Northborough received access to several presentations on stormwater management, with content focused on educating elected officials and municipal department heads about the requirements of the 2003 Small MS4 Program, changes likely in the anticipated 2014 Massachusetts MS4 Permit, and the financial impact these potential changes may have on Massachusetts communities.

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

The Coalition provided training at two Year 11 workshops (September 17 and 26, 2013) on SOP 10, "Locating Illicit Discharges", intended to define the types of illicit discharges that may be observed in the Coalition communities and provide guidance on tools that can be used to identify each. SOP 10 includes an Illicit Discharge Incident Tracking Sheet.

The Coalition provided training in Year 11 at a workshop on November 20, 2013 on the Coalition's Illicit Discharge Detection and Elimination (IDDE) Documentation Packet, which specifies how illicit discharges are detected and what department or person is responsible for eliminating them. Identifying and removing illicit discharges, and ensuring that they are not reconnected, remains a substantial challenge to many MS4 communities. Without documentation of the entity responsible for this task for a variety of types of illicit discharge, communities may not satisfy the requirements of the 2003 Massachusetts Small MS4 Permit and may be unprepared

for increased IDDE compliance in the new Small MS4 Permit. This deliverable clarified USEPA's minimum IDDE requirements and incorporated appropriate existing IDDE Plans and materials by reference. More importantly, the task provides a framework for people in multiple departments to understand each person's responsibilities, encourage cooperation and communication toward a single objective, and provide templates for documenting observations, actions, and compliance. The November 2013 training workshop included a comprehensive review of many types of illicit discharges, and an interactive discussion with attendees about how several examples would presently be managed in their own community.

In Year 11, Northborough received access to two Leica surveying devices purchased by the Coalition in Year 10 that can be used to map new structures with very high accuracy, using connection to a military-grade Real Time Kinematic (RTK) satellite network. The Coalition also provided an ASUS tablet computer to each Expansion community in Year 11, including Northborough. Both of these tools can be used to directly access the online mapping and inspection system: the Leica will be most valuable for mapping outfalls, catch basins, pipe, drain manholes, BMPs, and other components of the MS4, while the tablet computers will be most valuable for ongoing inspection of the structures. These two activities serve as the foundation of IDDE. The Leica units rotate between the 30 Coalition communities on a schedule, with formal handoff between Towns documented.

In Year 11, Northborough was provided with a portable wireless device (MiFi), purchased by the Coalition, so that both Leica and tablet computers can be used in the field. The Coalition and its members provided training on the Leica device, the tablet computers, and the online mapping and inspection system during Year 11.

In Year 10, the Coalition purchased several water quality field kits and meters, most of which are focused on identifying illicit discharges and aligned with the field screening parameters expected to be listed in the pending Massachusetts Small MS4 permit. In Year 11, the Coalition began the process of rotating these water quality kits and meters around the 30 Coalition communities, including Northborough, on a schedule that follows the use of the Leica device. The objective of this approach was that inspection and mapping activities completed with the Leica may result in a list of outfalls or structures for which screening-level monitoring should be completed. The Coalition provided training on the use of these water quality kits at the workshop on November 20, 2013; this training was professionally recorded so that Towns can review it if and when they need a refresher.

The Coalition purchased additional water quality field kits in Year 11, based on materials provided by USEPA Region 1 Technical Assistance staff that summarized products recently approved by the agency for this use. The online inspection and mapping database enables any community to add screening-level or full analytical data to any inspection form, for any type of infrastructure, in the field. The online water quality monitoring forms are pre-populated with the specific water quality field kits and meters purchased and used by the Coalition.

In Year 11, the online mapping and inspection system was expanded for all 30 communities to include the ability to add pipe between structures, and gather data related to that pipe. Prior to Year 11, the system managed only point geometry, such as outfall, catch basin, drain manhole, and Best Management Practice infrastructure. All 30 Coalition communities will benefit from this new linear infrastructure feature, which is consistent with the requirements anticipated in the pending 2014 Massachusetts MS4 Permit based on what is included in the Draft 2013 New Hampshire MS4 Permit.

In Year 11, the Coalition revised the Request for Proposals (RFP) for a third-party firm to perform many of the field or inspection services defined in the 15 SOP's, including outfall inspection (dry weather and/or wet weather), water quality monitoring, catch basin inspection, and other related tasks. These services are all vital to the effort to identify illicit discharges in the Coalition communities. It was originally anticipated that the work of the RFP would be funded using FY2013 CIC monies. However, in Year 11, the Coalition Steering Committee voted to postpone putting the RFP out to bid, based on the fact that the new Massachusetts MS4 Permit has not yet been issued. This RFP will be re-evaluated in Year 12.

In Year 11, the Coalition performed a review of industrial facilities located in each of the 30 FY2013 communities, including facilities that applied for coverage under the USEPA's Multi-Sector General Permit (MSGP) program, and the compliance status of each. The objective of this activity was to connect data the two permit programs, consistent with requirements anticipated in the pending 2014 Massachusetts MS4 Permit.

Finally, the Coalition is currently planning a demonstration of Environmental Canine Services for May 2014 (in Year 12). This company uses highly-trained dogs to detect the presence of human sewage very low levels in water, and represents a quick and cost-effective screening tool for locating illicit discharges.

Minimum Control Measure 4: Construction Site Stormwater Runoff Control

In Year 11, Northborough received access to SOP 6, "Erosion and Sedimentation Control", developed in Year 10, which is intended to help communities minimize discharges from land disturbing activities. The SOP addresses design, planning, construction, and inspection tools and activities that can serve as BMPs. The SOP also outlines inspection requirements for a variety constructed BMPs that need to serve a long-term purpose for protecting surface waters from discharge of sediments.

Construction activities- including erosion control, stormwater pollution prevention, and appropriate management of waste materials- are also covered in the Stormwater Best Management Practices (BMP) Toolbox, development of which began in Year 10 and which was finalized in Year 11. The Stormwater BMP Toolbox was written to inform the general public about the importance of managing private construction projects responsibly.

Minimum Control Measure 5: Post-Construction Stormwater Management in New Development and Redevelopment

In Year 11, Northborough received access to the Stormwater Best Management Practices (BMP) Toolbox, developed in Year 10 and finalized in Year 11. This tool compiles the stormwater post-development tools currently permitted and encouraged for small development or redevelopment, specifically single-family homes and limited commercial renovations that have a small development footprint. The Stormwater BMP Toolbox provides technical data, design factors, and construction limitations with these BMPs in non-technical language. The Coalition provided training on the Stormwater BMP Toolbox at two Year 11 workshops (September 17 and 26, 2013).

The objective was to provide the average property owner with easy-to-understand information that encourages them to select low-impact stormwater management tools for their properties, construct them safely, and maintain them for long-term benefit. The BMPs in the Toolbox are consistent with the requirements of the current Small MS4 Permit, the Massachusetts Stormwater Handbook (February 2008), and other current guidance documents.

Minimum Control Measure 6: Pollution Prevention and Good Housekeeping in Municipal Operations

In Year 11, Northborough received access to the Stormwater Pollution Prevention Plan (SWPPP) template in the form of a word processing document. The Coalition provided training on the SWPPP Template at two Year 11 workshops (September 17 and 26, 2013). This document was developed in Year 10 and addresses elements common to all SWPPPs, including storage of materials, site inspection practices, water sampling, training, spill prevention and cleanup, Standard Operating Procedures for a number of activities, and other sections. The SWPPP template covers many types of municipal properties. This includes highway department garages and public works yards- where salt is stored and vehicle maintenance or storage is completed- as well as parks, golf courses, and cemeteries, where fertilizers and pesticides may be applied and lawn mowing activities may result in small spills. The SWPPP template includes built-in instructions to make it as simple as possible for each community

to develop a SWPPP for a property, simply by deleting text that doesn't apply.

In Year 11, Northborough received access to 15 Standard Operating Procedures (SOP's) developed by the Coalition in Year 10, and intended to provide guidance on activities required or encouraged by the 2003 Massachusetts Small MS4 Permit. The Coalition provided training on these SOP's at two Year 11 workshops (September 17 and 26, 2013). These SOPs addressed such diverse activities or needs as outfall inspection (both dry weather and wet weather), catch basin cleaning, erosion and sedimentation control, oil/water separator maintenance, use and storage of pesticides and fertilizers, and many more. The group developed standard forms and methodologies for these procedures, many of which were incorporated into the Integrated Online Mapping and Inspection System, described in following paragraphs.

In Year 11, Northborough received access to two presentations developed in Year 10 on pollution prevention in stormwater management, with content focused on educating employees of public works, engineering, conservation, planning, highway, and other similar municipal departments on the requirements of the 2003 Small MS4 Program. The Coalition provided training on how to use these presentations to educate staff at two Year 11 workshops (September 17 and 26, 2013). One presentation is focused on using the SWPPP Template and the responsibilities of municipal personnel to implement requirements of the SWPPP, and the second training presentation provides explanation and insight on the 15 SOP's described previously.

In Year 11, Northborough received access to a Sump Pump Discharge Policy developed in Year 10 that provides a framework for the member communities to respond to needs to remove sump pumps from the sanitary sewer system without causing property damage or creating a hazardous condition for the public. The Coalition provided training on the Sump Pump Discharge Policy at two Year 11 workshops (September 17 and 26, 2013). The Policy discusses considerations related to potential contamination and reduction in capacity of the storm drain system when sump pumps are permitted to connect to the drainage system, and lays out a situational approach to provide flexibility in administrating a policy. The Policy includes guidance for when such a connection should be considered, what information the municipality can request from a residential or commercial property to guide in its decision, and outlines the responsibilities of the property owner.

In Year 11, Northborough received access to a Salt/Sand Benchmarking tool developed in Year 10 to guide member communities in calibrating deicing equipment. The Coalition provided training on the calibration approaches and spreadsheets at two Year 11 workshops (September 17 and 26, 2013). The Benchmarking tool calculates the present loading rate of chloride (per lane-mile) presently applied by its salt trucks and other municipal vehicles, regardless of the compound (e.g.: sodium chloride, green salt, calcium chloride) or form (e.g., solid or liquid, mixed with sand), and in evaluating alternative application methods and materials to current practices. The Benchmarking tool deliverable guides communities through two different equipment calibration processes and suggests a target reduction rate that is coupled to and appropriate for the benchmarked loading rate. The objective of this task is to reduce the overall loading of chlorides to surface waters in the region while maintaining safe conditions on roadways.