



**NPDES Phase II Small MS4 General Permit  
Annual Report**

***Municipality/Organization:*** Town of Uxbridge  
***EPA NPDES Permit Number:*** MAR-04-1166  
***MaDEP Transmittal Number:*** W- 050211  
***Annual Report:*** No. 12  
***Number & Reporting Period:*** April 1, 2014 through March 31, 2015

**Part I. General Information**

***Contact Person:*** Benn Sherman, P.E. ***Title:*** Director of Public Works  
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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: Benn S. Sherman, P.E.  
Title: Director of Public Works  
Date: April 30, 2015

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

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

**Part II.B.1-6** Any Provisions of Part II.B.1-6 that have not been met are detailed in Part III below.

In Year 12, the Town of Uxbridge continued to be an active participant in the Central Massachusetts Regional Stormwater Coalition (the Coalition). The Coalition's work in Year 12 was funded by a \$80,000 fiscal year 2014 (FY2014) Community Innovation Challenge (CIC) grant from the Massachusetts Executive Office of Administration and Finance. This grant was supplemented by a contribution of approximately \$4,000 from each of the 28 participating Towns, including TOWN.

### *Overview of the Coalition*

The FY2014 Coalition included 28 towns: Auburn, Boylston, Charlton, Dudley, Grafton, Hardwick, Holden, Hopkinton, Leicester, Millbury, Monson, Northbridge, Northborough, Oxford, Palmer, Paxton, Rutland, Shrewsbury, Southbridge, Spencer, Sturbridge, Upton, Uxbridge, Ware, Webster, West Boylston, Westborough, and Wilbraham.

The Coalition was officially formed in FY2012 with 13 members, expanding to 30 in FY2013. Its FY2014 work expanded efforts initiated in previous years to comply with requirements anticipated in the new Massachusetts MS4 Permit when it becomes final, which is expected sometime in 2016 or 2017. The Coalition's FY2014 efforts were facilitated by the consulting firms of Tata & Howard, Inc., and Verdant Water, supported by vendor PeopleGIS. However, the Coalition members themselves continue to be responsible for putting the tools developed by the Coalition to use.

The Coalition was honored as a recipient of the first Annual "Best Stormwater Idea in New England", also known as a STORMY Award (*see image below*). This honor was bestowed by the New England Stormwater Collaborative, a joint effort of the New England Water Environment Association (NEWEA), the New England Chapter of the American Public Works Association (APWA), and the New England Water Works Association (NEWWA). Benn Sherman, Uxbridge Director of Public Works accepted this honor at a ceremony in Worcester, MA on April 1, 2015. In addition to accepting this honor, Mr. Sherman participated in a panel discussion at the New England Water Works annual conference. The panel discussed regional stormwater management approaches with respect to the stormwater coalition



*Figure 1: CMRSWC's "STORMY Award" for Collaborative Efforts in Stormwater Management*

### ***The Coalition's Partnerships in Central Massachusetts***

The Coalition continues to be actively engaged with many water quality agencies and organizations and is committed to sharing the knowledge it has developed for the benefit of other communities. These efforts are discussed in following sections as they relate to the following organizations:

- Massachusetts Department of Environmental Protection (MassDEP)
- United States Environmental Protection Agency (USEPA)
- Other Massachusetts Stormwater Coalitions
- New England Water Environment Association (NEWEA)
- Massachusetts Municipal Association (MMA)

#### *Massachusetts Department of Environmental Protection (MassDEP)*

The Coalition continued its partnership with the MassDEP in FY2014, formally including budget in its FY2014 CIC Grant Application to support and assist in development of the stormwater-focused Interactive Qualifying Project (IQP) with four students at the Worcester Polytechnic Institute (WPI). Kickoff for this partnership began in September 2014 with a meeting at MassDEP's office in Worcester, MA. The IQP completed in fall 2014 was the fourth such project the Coalition has done in conjunction with MassDEP and WPI.

This IQP included activities that will benefit all Coalition towns, especially Holden, Millbury, and Southbridge, all of which volunteered for an intensive evaluation. Representatives from these three towns worked with the WPI students to compile a detailed summary of the full cost of their stormwater programs. The cost evaluation was developed in conjunction with the Coalition's consultants, and included not just line items budgeted by public works (or highway) departments, but also staff labor, operations and maintenance tasks, waste disposal fees, reprographics and media, legal counsel, site plan reviews, construction and post-construction inspections, and other tasks. Some of these activities are core components of a town's stormwater program, but may be managed or budgeted by planning departments, conservation commissions, boards of health, code enforcement, or other entities and therefore not generally included in assessments.

The comprehensive report prepared by the WPI IQP students was presented to their university sponsors in December 2014 and can be downloaded at: [www.centralmastormwater.org/pages/CRSC\\_documents/Attachment B WPI Cost Analysis of the 2014 MA MS4 DraftPer.pdf](http://www.centralmastormwater.org/pages/CRSC_documents/Attachment_B_WPI_Cost_Analysis_of_the_2014_MA_MS4_DraftPer.pdf). The findings of this report were also presented by the students to the 495/MetroWest Partnership in spring 2015. The framework used by the WPI students for the cost evaluation features into the ongoing stormwater program cost task discussed under *Coalition Activities in Year 13* (located at the end of this narrative.)

In addition to the stormwater program cost component, the Fall 2014 WPI students performed water quality monitoring in Coalition Communities.

Many members of the Coalition attended the USEPA's October 2014 workshops on the 2014 Draft Massachusetts MS4 Permit, and several attended the formal public hearing on this draft permit on November 19, 2014 at the Leominster Public Library. At this public hearing, Coalition members spoke about the need for the final Permit to focus on provisions that maintain (and improve) water quality, not those that cause administrative burden without demonstrated benefits. Our comments at this hearing also requested USEPA's assistance in educating community leaders, such as selectmen and Town Administrators, about the increased need for multiple town departments and staff members to work together to comply with expanded provisions, such as illicit discharge detection and elimination (IDDE) and good housekeeping. The Coalition submitted formal comments on the 2014 Draft Massachusetts MS4 Permit, which can be found at [http://www.centralmastormwater.org/pages/CRSC\\_documents/MS4PermitComments](http://www.centralmastormwater.org/pages/CRSC_documents/MS4PermitComments).

The Coalition reached out to USEPA's Newton Tedder to suggest ways to present the drivers of expanded stormwater management to town leaders and decision makers at the "*Roofs, Roads, Runoffs and Regulations: New Standards for Treating Stormwater and Drinking Water*" session of the Massachusetts Municipal Association's Annual Conference in Boston on January 23, 2015. The approach resulted in an effective update to these leaders (who may be concerned about the scope and financial impacts of the proposed permit)- one that empowered them to serve as stormwater outreach resources in their own communities.

The Coalition continued to communicate with USEPA Region 1's Kyra Jacobs and Gina Snyder during Year 12. Ms. Jacobs is a connection to agency staff who work to protect water resources, and has been a positive advocate of the importance of stormwater management in accomplishing this goal. We will continue to engage with Ms. Jacobs as competitive grants for regional MS4 compliance work may become available from the agency in the near future. Ms. Snyder has served as an ongoing resource for the Coalition and its consultants about agency resources, most recently the approval of easy-to-use field kits for ammonia, which we purchased and distributed in Year 12. We appreciate the support of these agency staff.

*Massachusetts Municipal Association (MMA)*

Members of the Coalition have been active in the MMA for years, including Robin Craver, Town Administrator for Charlton, MA and an active Coalition leader, who serves on MMA's Policy Committee on Energy and the Environment. This Committee formulates policy related to stormwater, water quality, water supply, wetlands, coastal areas, and other related environmental issues and represents a way for the Coalition to learn from (and share) ideas around the Commonwealth.

In Year 12, the Coalition participated on the "*Underwater: Financing New Regulations*" session at MMA's Annual Conference in Boston on January 24, 2015, discussing how regionalization can be appropriate for stormwater management.

Finally, the Coalition coordinated with MMA during preparation of its comments on the 2014 Draft Massachusetts Small Municipal Separate Storm Sewer (MS4) Permit to ensure consistency in suggestions and revisions submitted to the US EPA.

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

**1. Public Education and Outreach**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Continuing Activities</b>
1.1	Classroom Education on Stormwater	Department of Public Works	Three grade levels participate, three sets of educational materials, two workshops for teachers.	Materials from the EPA, BRWA and DEP distributed to the public schools. Teachers currently teaching environmental sciences to three plus grade levels.	Review BMP and goals with the School Department. Revise and/or update program to reflect current school curriculum. Worked with Middle School Principal to develop opportunities to enhance classroom stormwater education. Examples of this include utilizing the Central Massachusetts Regional Stormwater Coalition (CMRSWC) Non-Point source Enviroscope model.
Revised					
1.2	Flyer and Brochure Distribution	Department of Public Works	Develop and distribute one flyer and two fact sheets, distribute in utility bills and Town buildings (eg. DPW, library, town hall).	A stormwater flyer is posted in DPW office entryway. Uxbridge continued as a member of the CMRSWC. The Coalition has developed a number of public information products for use by the member communities.	Continue to post a stormwater flyer in the DPW office and Town Hall. In anticipation of the new MS4 permit, evaluate materials and develop new materials which reflect the changing trends in stormwater management. Continue with our involvement with the CMRSWC. Further develop and promote stormwater awareness through the use of social media and the Town’s website.
Revised					

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
1.3	Using the Media	Department of Public Works	One article published local cable service announcement and press release each year.	Stormwater Management Guides for Homeowners, Small Farms, and Horse Owners are posted on the Town’s website for the Planning Department No stormwater messages were aired on the local cable service; however, the environmental hotline number continues to be aired on the local cable service. No articles or press releases were published in Permit Year 12. The CMRSWC has developed a number of public information products for use by the member communities.	Update and continue posting Stormwater Management articles on the Town’s website. Restart stormwater messages to be aired on the local cable service announcement. Publish one article and one press release during next program year. Continue with our involvement with the CMRSWC.
Revised					
1.4	Hazardous Waste Management	Department of Public Works	Track the amount of household hazardous waste collected during days.	Continued teaming with Town of Blackstone for collection of household hazardous materials in Blackstone. The facility is typically open three days per week and year round. Additionally, a metals recycling collections and leaf/brush disposal program was conducted 2-3 days per week from April through December. Local organizations in the Town of Uxbridge ran recycling fundraising programs for tv’s, appliances, and computers.	Continue to encourage teaming efforts with area Town’s to collect household hazardous materials. Uxbridge to continue to leaf/brush disposal and metal recycling program at the Compost Facility. Continue to promote local organizations to run recycling fundraising programs for tv’s, appliances, and computers.
Revised		Department of Public Works / Board of Health	Team with neighboring towns to hold monthly collection days.		

Year 12 activities included routine meetings of the Coalition’s Steering Committee, a day-long refresher training workshop (and FY2014 Kickoff Meeting) on October 7, 2014, and a workshop on November 12, 2014 to educate members about the 2014 Draft Massachusetts Small Municipal Separate Storm Sewer (MS4) Permit and identify concerns. Uxbridge participated in 1 training workshop through the Coalition, reviewed deliverables, and served other key roles as described in this Annual Report.

An exciting tool for public education that was rolled out in Year 12 is the Coalition’s Twitter account, @MAStormH2O. As of the date of this report, the Coalition’s account has 67 followers, including other stormwater coalitions around the country. Information tweeted (or retweeted) by the Coalition in Year 12 addressed such

water quality topics and issues as:

- Sustainable infrastructure resources
- APWA’s Public Works Week outreach activities
- Pet waste management
- Available webinars and training events
- Erosion control practices
- Green infrastructure
- Appropriate fertilizer application
- Environmentally-friendly best management practices for snow and ice control
- Drought and innovative water recycling/reclamation efforts
- Proposed changes to definition of Waters of the US
- USEPA’s “WaterSense” program
- The role of public education in developing successful stormwater funding programs.

Many of our member communities and regional agencies follow @MAStormH2O and retweet our information, greatly expanding the audience reached by the message. We anticipate using this tool in the future to quantify the size of the audience reached by each message, and evaluating the success of the message.

In Year 12, the Coalition expanded its efforts to educate the public and other communities about its work. This includes the following presentations and events, listed in chronological order:

- On January 24, 2015, the Coalition participated on a panel session entitled “*Underwater: Financing New Regulations*” at MMA’s Annual Meeting in Boston. This session focused on new and established financing tools to ensure compliance with these requirements through means such as property surcharges, stormwater utilities, low-interest loans, principal forgiveness and regional stormwater opportunities.
- On January 26, 2015, the Coalition presented its work in a session entitled “*MS4 Compliance: Common Threads (and opportunities) in New England Permits*” at NEWEA’s Annual Meeting in Boston, MA. This session, which was well-attended, highlighted the tools developed by the Coalition (and other groups) that can be used to provide cost-effective solutions to regional stormwater management challenges.

The Coalition continued to expand its educational website, [www.CentralMAStormwater.org](http://www.CentralMAStormwater.org), focused on providing information about the project to a number of audiences, including the general public, educators, and kids.

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
2.1	Storm Water Committee	Department of Public Works	Establish committee and meet quarterly.	The re-organization of the Stormwater Committee will be needed going forward. The Uxbridge DPW contracted with our consultant to assist in the evaluation of a new draft stormwater bylaw.	Continue to develop a suitable bylaw that can be brought forward to the Town for acceptance the Fall Town Meeting. Re-establish the stormwater committee to facilitate this process.
Revised					
2.2	Stream Cleanup and Monitoring	Department of Public Works	Create a document which outlines procedures for stream cleanup and monitoring.	Two events were conducted during this permit year. These events were done in conjunction with Earth Day and a local Riverways event.	Local groups will continue yearly cleanups
Revised			Yearly cleanups by local groups		
2.3	Stencil Storm Drains	Department of Public Works	Prioritize areas to be stenciled. Stencil 30 storm drains per year starting in year three.	No storm drains were stenciled in Permit Year 12..	Stormwater Committee to complete evaluation of stenciling program.
Revised					
2.4	Attitude Surveys	Department of Public Works	Two surveys completed, compiled and analyzed.	Uxbridge participated in a Coalition sponsored event to provide support and training with water quality test kits, inspections and system mapping. Served as a member of the of the Coalition’s Steering committee and attended a number of meetings.	Continue with our involvement with the CMRSWC. Coordinate and schedule workshop(s) to facilitate stormwater bylaw
Revised	Stormwater Workshops	Department of Public Works	Organize and hold one Stormwater Workshop per year.		
2.5	Community Hotline	Department of Public Works	Establish hotline, track number of calls and number of problems/incidents remedied.	Hotline continues to be active (508-278-8617) and advertised on local cable TV channel. The DPW only received general drainage calls throughout the year.	Continue to track number of calls and number of problems/incidents remedied.
Revised					

In Year 12, Uxbridge continued to utilize 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.

### 3. Illicit Discharge Detection and Elimination

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 12</b> (Reliance on non-municipal partners indicated, if any)	<b>Continuing Activities</b>
3.1	Illicit Discharge Bylaw or Regulation	Department of Public Works	Develop bylaw and present it to the Town meeting or adopt a regulation.	The Town adopted by reference the 2004 Illicit Discharge Detection and Elimination Guidance Manual with amendments.	Continue with the bylaw development and put forth another article for acceptance at a future Town Meeting. Begin additional compliance training for staff.
Revised					
3.2	Drainage System Inspections and Mapping	Department of Public Works	Locate drainage structures with GPS unit, update the GIS databases and system map, and inspect each structure.	Utilized the CMRSWC Leica equipment to add newly installed infrastructure to the existing base mapping.	The Town will continue the process to update the drainage system mapping as funding becomes available. The Town will also continue with the work completed and in development through the CMRSWC.
Revised					
3.3	Inspect and Sample Discharges in UAs	Department of Public Works	Inspect and sample discharges in Urban Areas if flow is present.	Utilized the CMRSWC Leica equipment to add newly installed infrastructure to the existing base mapping. Conducted some outfall and catch basin inspections.	The Town plans to begin implementing a program to inspect outfalls throughout the drainage system as funding becomes available. The Town will also continue with the work completed and in development through the CMRSWC.
Revised			Inspect discharges after mapping is complete and sample if flow is present.		

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
3.4	Illegal Dumping Education	Department of Public Works	Track the number of educational tools distributed, illegal dumps reported, penalties, rewards to citizens, and illegal dumps cleaned up.	Illegal dumping materials have been provided to schools in BMP's 1.1 and 1.2.  Six (14) calls were received through the main DPW number for an illegal dumping activities. These activities included items ranging from used tires to various household items.	Track the number of educational tools distributed, illegal dumps reported, penalties, rewards to citizens, and illegal dumps cleaned up.
Revised			Coordinate with non-municipal partner to include illegal dumping materials in the classroom education, flyers and brochures in BMP's 1.1 and 1.2. Track the number of educational tools distributed, illegal dumps reported, penalties, rewards to citizens, and illegal dumps cleaned up.		

In Year 12, On May 23, 2014, the Town of Millbury hosted a demonstration by Environmental Canine Services ([www.ecsk9s.com](http://www.ecsk9s.com)) and Uxbridge participated along with other Coalition members, MassDEP, and other communities to observe. ECS uses two highly-trained dogs (see photos below) to detect the presence of human sewage (both fecal bacteria and metabolic byproducts) very low levels in water at outfalls and catch basins, without interference from non-human sources of bacteria. This interesting approach represents an accurate, quick, and cost-effective screening tool for locating illicit discharges. Water quality samples were collected to evaluate the observations noted by the dogs. Inspections were documented in the Coalition's online mapping and inspection system, with forms that have been updated to allow our communities to use this innovative approach to IDDE.



Figure 2: Environmental Canine Services, LLC, Performing a Demonstration of Innovative IDDE Approaches in Millbury, MA

In Year 12, Uxbridge continued to utilize the 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. In Year 12, Uxbridge received a new tablet device. The Leica and tablets can be used to directly access the online mapping and inspection system: the Leica is the 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 28 Coalition communities on a schedule, with formal handoff between Towns documented.

In Year 12, the Coalition purchased new ammonia field kits (CHEMetrics K-1510 kits) and provided two kits to each member community. These were approved by USEPA in Year 11 for stormwater outfall monitoring and are easier to use than ammonia monitoring tools purchased in Year 10. In Year 11, the Coalition began the process of rotating two full sets of water quality kits and meters around the 28 Coalition communities, including Uxbridge, on a schedule that follows the use of two Leica devices; this rotating schedule continued in Year 12. 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 refresher training on the water quality kits at the workshop on October 7, 2014. The Towns of Millbury and Oxford are hosting the two sets of water quality kits and meters, and have taken responsibility of replacing reagent packets as they become depleted.

In Year 12, the Coalition finalized a review of industrial facilities located in each member community, 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 from the two permit programs, consistent with the anticipated 2014 Massachusetts MS4 Permit.

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
4.1	Soil and Erosion Control Bylaw or Regulation	Department of Public Works	Develop bylaw and present it to the Town meeting, or adopt a regulation.	The re-organization of the Stormwater Committee will be needed going forward. The Uxbridge DPW contracted with our consultant to assist in the evaluation of a new draft stormwater bylaw.	Continue to develop a suitable bylaw that can be brought forward to the Town for acceptance the Fall Town Meeting. Re-establish the stormwater committee to facilitate this process.
Revised					
4.2	Construction Inspections	Department of Public Works	DPW to inspect construction activities on a weekly basis. Report number of complaints from residents.	There were a minimum number of inspections for construction activities conducted by the DPW.	Continue to coordinate with the various boards and commissions on developing a program to inspect construction sites. The Town will continue to report number of complaints from residents.
Revised		DPW/Conservation Commission, Planning Board	Develop inspection form for documenting inspections.		

Construction activities- including erosion control, stormwater pollution prevention, and appropriate management of waste materials- are 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. The Coalition provided training on this topic at a workshop on October 7, 2014.

Several Coalition members have chosen to use some of their “one-on-one” time (currently underway; see *Coalition Activities in Year 13* at the end of this narrative) to expand their efforts on this MCM. Updates will be provided in future Annual Reports.

## 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 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
5.1	Bylaw or Regulation for Post Construction Runoff	Department of Public Works	Develop bylaw and present it to the Town meeting or adopt a regulation.	The re-organization of the Stormwater Committee will be needed going forward. The Uxbridge DPW contracted with our consultant to assist in the evaluation of a new draft stormwater bylaw.	Continue to develop a suitable bylaw that can be brought forward to the Town for acceptance the Fall Town Meeting. Re-establish the stormwater committee to facilitate this process.
Revised					
5.2	BMP Inspection and Maintenance	Department of Public Works	Inspect all Town maintained structural BMPs bi-annually, document the number of problems identified and remedied, review changes in water quality of effluent.	Performed a variety of inspections while utilizing the Leica GPS and mapping new infrastructure.	The Towns plans to continue to implement the inspection and maintenance program to inspect all Town maintained structural BMPs, document the number of problems identified and remedied, and review changes in water quality of effluent. The Town will also continue with the work completed and in development through the CMRSWC.
Revised					

In Year 12, Uxbridge continued to use the Stormwater Best Management Practices (BMP) Toolbox, developed as a Draft 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 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, and other current guidance documents. The Coalition provided training on this topic at a workshop on October 7, 2014.

Several Coalition members have chosen to use some of their “one-on-one” time (currently underway; see *Coalition Activities in Year 13* at the end of this narrative) to expand their efforts on this MCM. Updates will be provided in future Annual Reports.

## 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 12 (Reliance on non-municipal partners indicated, if any)	Continuing Activities
6.1	Predictive Catch Basin Program	Department of Public Works	Develop a standardized catch basin and storm drain inspection program, collect data, refine based on trends.	The Town cleaned over 200 catch basins. Continued mechanical issues with the in house catch basin cleaner, budget cuts, and a reduction in staff. The Highway Division repaired approximately 50 basins during the permit year.	The Town plans to continue cleaning and repairing catch basins as budgets and equipment operation allow.
Revised					
6.2	Street Cleaning	Department of Public Works	Sweep all streets once in years 1-2, twice in years 3-5, sweep all parking lots annually, in year five sweep lots twice.	We have experienced continued mechanical issues with the in house street sweepers combined with budget cutbacks during this period. The streets within the downtown area (10%) were swept on a number of occasions which coincided with special events. The remainder of the streets were swept at least once.	As funding becomes available, continue sweeping activities within the UAs twice and the remaining streets once per year. The Town continues to have issues with departmental equipment and has requested capital funding for the purchase of a new sweeper or investigate contract services to achieve compliance. At the present time, there are no available funds to be applied for this purpose.
Revised					
6.3	Investigate Town Owned BMPs for Retrofit Opportunities	Department of Public Works	Inspect all the BMPs annually.	The DPW continued development of a program to inspect Town maintained structural BMPs.	The Towns plans to continue to develop a program to inspect all Town maintained structural BMPs, document the number of problems identified and remedied, and review changes in water quality of effluent. BMP inspections will begin during the next annual cycle.
Revised					

In Year 12, Uxbridge continued to utilize the Stormwater Pollution Prevention Plan (SWPPP) template in the form of a word processing document. 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 Coalition provided training on the SWPPP Template at a workshop on October 7, 2014. 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 12, Uxbridge conducted a limited site assessment at the Highway Garage facility in anticipation of updating the SPCC plan.

In Year 12, Uxbridge continued to utilize the 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 a workshop on October 7, 2014. 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 12, Uxbridge continued to utilize 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 a variety of staff members at a workshop on October 7, 2014. 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 12, Uxbridge continued to utilize 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 a workshop on October 7, 2014. 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 12, Uxbridge continued to utilize a Salt/Sand Benchmarking tool developed in Year 10 to guide member communities in calibrating deicing equipment. 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.

#### **7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)**

Not Applicable. TMDL's have not been developed for any of the impaired water bodies in Uxbridge.

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

The Town has completed GIS based mapping for water, wastewater and stormwater systems constructed prior to 2006. This information has not been updated since that time. It is estimated that over 85% of the stormwater collection system is mapped. Existing data verification and addition of undocumented stormwater collection system components will be the focus going forward. Due to budget shortfalls, additional time will be needed to fully complete the mapping component. There is no other information or data that was collected during Permit Year 12 that is not included elsewhere in this report.

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

**Programmatic**

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	<b>No</b>
Annual program budget/expenditures **	(\$)	<b>Not Determined</b>
Total program expenditures since beginning of permit coverage	(\$)	<b>Not Determined</b>
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		<b>General Fund</b>

**Education, Involvement, and Training**

Estimated number of property owners reached by education program(s)	(# or %)	<b>50%</b>
Stormwater management committee established	(y/n)	<b>Yes</b>
Stream teams established or supported	(# or y/n)	<b>No</b>
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	<b>Yes</b>
Shoreline cleaned since beginning of permit coverage	(mi.)	<b>Unknown</b>
Household Hazardous Waste Collection Days *		
▪ days sponsored **	(#)	*
▪ community participation **	(# or %)	*
▪ material collected **	(tons or gal)	*
School curricula implemented	(y/n)	*

**\*Performed in conjunction with surrounding Towns.**

**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	(%)	<b>90%</b>
Estimated or actual number of outfalls	(#)	<b>200+</b>
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	<b>90%</b>
Mapping method(s)		
▪ Paper/Mylar	(%)	<b>10%</b>
▪ CADD	(%)	
▪ GIS	(%)	<b>90%</b>
Outfalls inspected/screened **	(# or %)	<b>0</b>
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	<b>0</b>
Illicit discharges identified **	(#)	<b>0</b>
Illicit discharges identified (Since beginning of permit coverage)	(#)	<b>0</b>
Illicit connections removed **	(#); and (est. gpd)	<b>None</b>
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	<b>35%</b>
% of population on septic systems	(%)	<b>65%</b>

## Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	<10
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	80%
Site inspections completed **	(# or %)	80%
Tickets/Stop work orders issued **	(# or %)	0
Fines collected **	(# and \$)	0
Complaints/concerns received from public **	(#)	5

## 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 **	(#)	200+
Qty. of storm drain cleaned **	(%, LF or mi.)	Not Determined
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	100 CY +/-
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	DPW Yard
Basin Cleaning Costs		
<ul style="list-style-type: none"> <li>Annual budget/expenditure (labor &amp; equipment)**</li> </ul>	(\$)	General budget
<ul style="list-style-type: none"> <li>Hourly or per basin contract rate **</li> </ul>	(\$/hr or \$ per basin)	
<ul style="list-style-type: none"> <li>Disposal cost**</li> </ul>	(\$)	
Cleaning Equipment		
<ul style="list-style-type: none"> <li>Clam shell truck(s) owned/leased</li> </ul>	(#)	1
<ul style="list-style-type: none"> <li>Vacuum truck(s) owned/leased</li> </ul>	(#)	0
<ul style="list-style-type: none"> <li>Vacuum trucks specified in contracts</li> </ul>	(y/n)	0
<ul style="list-style-type: none"> <li>% Structures cleaned with clam shells **</li> </ul>	(%)	100%
<ul style="list-style-type: none"> <li>% Structures cleaned with vactor **</li> </ul>	(%)	0%
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)	2+
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	1000 CY +/-
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	DPW Yard
Annual Sweeping Costs		Not Determined

	(Preferred Units)	Response
• Annual budget/expenditure (labor & equipment)**	(\$)	<b>General Budget</b>
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	<b>Not Determined</b>
• Disposal cost**	(\$)	<b>Not Determined</b>
<b>Sweeping Equipment</b>		
• Rotary brush street sweepers owned/leased	(#)	<b>1</b>
• Vacuum street sweepers owned/leased	(#)	<b>0</b>
• Vacuum street sweepers specified in contracts	(y/n)	<b>0</b>
• % Roads swept with rotary brush sweepers **	%	<b>100%</b>
• % Roads swept with vacuum sweepers **	%	<b>0%</b>

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

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 <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	<b>100% Morton Treated Salt for entire season</b>
Pre-wetting techniques utilized **	(y/n or %)	<b>No</b>
Manual control spreaders used **	(y/n or %)	<b>Yes</b>
Zero-velocity spreaders used **	(y/n or %)	<b>No</b>
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	<b>500#/ln mi</b>
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	<b>Phasing out Sand</b>
% of salt/chemical pile(s) covered in storage shed(s)	(%)	<b>95%</b>
Storage shed(s) in design or under construction	(y/n or #)	<b>No</b>
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	<b>No</b>

### 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	