

Municipality/Organization: Town of Upton, MA
EPA NPDES Permit Number: MAR041165
MassDEP Transmittal Number: X265897
Annual Report Number & Reporting Period: Year 12
April 1, 2014 – March 31, 2015

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2015)**

Part I. General Information

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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: Blythe C Robinson
Printed Name: Blythe C. Robinson
Title: Town Manager, Town of Upton
Date: April 29, 2015

Part II. Self-Assessment

In Year 12, the Town of Upton 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 an \$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 Upton.

Overview of the Coalition

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

The Coalition was officially formed in FY2012 with 13 members, expanding to 30 in FY2013 when Upton joined. 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). A representative from the Town of Uxbridge accepted this honor at a ceremony in Worcester, MA on April 1, 2015.



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)

Additional organizations and entities are mentioned elsewhere throughout this Annual Report, reflecting the wide network of knowledge and experience that the Coalition has tapped into.

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 fall 2014 stormwater-focused Interactive Qualifying Project (IQP) with four students at the Worcester Polytechnic Institute (WPI). The fall 2014 IQP was the fourth such project the Coalition has done in conjunction with MassDEP and WPI, but the first time that the Coalition and its consultants would play an active role in developing the scope of the IQP. Kickoff for this partnership began in September 2014 with a meeting at MassDEP's office in Worcester, MA.

The fall 2014 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 fall 2014 IQP 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 fall 2014 stormwater cost evaluation was done to complete a task first started by the spring 2014 IQP team. Upton is one of the communities that participated in the detailed review of municipal stormwater management programs that was started by the spring 2014 WPI IQP team. The spring 2014 WPI IQP team did inspection and mapping work in several Coalition towns, including Upton, MA, shown below, in April, under the supervision of the Town. Four WPI students performed mapping and inspection, focusing on Urbanized Area in Upton added per the 2010 Census and on catch basins that had not yet been mapped. The students also performed dry-weather inspections on outfalls. Data from these activities were entered directly into the online mapping and inspection system. The spring 2014 team realized that it was trying to accomplish too much, and revised its project scope to focus just on mapping and inspection; as such, costs were not considered comprehensive and were not formally published.



Figure 2: The Coalition's Spring 2014 WPI IQP Student Team Inspecting and Mapping Stormwater Infrastructure in Upton, MA

The comprehensive report prepared by the fall 2014 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%20B%20WPI%20Cost%20Analysis%20of%20the%202014%20MA%20MS4%20DraftPer.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.

With both IQP teams (spring and fall 2014), the goal was that the knowledge of *actual* expenditures on stormwater will serve as the foundation for ongoing discussions about how each community will fund future stormwater programs.

The Coalition appreciates the ongoing dedication of MassDEP to work with our members so closely and collaboratively.

United States Environmental Protection Agency

The Coalition continued collaboration with technical assistance staff in USEPA Region 1, with the goal of benefiting from knowledge and experience of the agency's staff and from its network.

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.

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.

Other Massachusetts Stormwater Coalitions

The Coalition continues to coordinate with "sister" groups with a similar stormwater focus that are also funded at least in part by CIC Grants. These include:

- The Merrimack Valley Stormwater Collaborative (coordinated by the Merrimack Valley Regional Planning Commission);
- The Neponset Valley Regional Stormwater Collaborative (coordinated by the Metropolitan Area Planning Council); and
- The Northern Middlesex Stormwater Collaborative (coordinated by the Northern Middlesex Council of Governments)

Administrators from each of these groups are invited to attend Coalition Steering Committee meetings. Further, the Coalition coordinated with each of these "sister" coalitions 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.

Members of the Coalition were invited to attend training sessions the Merrimack Valley Stormwater Coalition hosted in March and April 2015. We shared digital versions of the Coalition's stormwater inspection forms with both the Neponset Valley Regional Stormwater Collaborative and the Northern Middlesex Stormwater Collaborative, and the latter has also benefitted from the structure of the online mapping and inspection system we developed and implemented in Years 10 and 11.

New England Water Environment Association (NEWEA)

The Coalition was pleased to receive a \$2,000 competitive grant from the NEWEA Humanitarian Assistance & Grants Committee in September 2014. This grant was used to purchase a second Nonpoint Source hands-on educational EnviroScape model (www.enviroscares.com/nonpoint-source.html) for use by Coalition members (the first was purchased in Year 10 with funds from the first CIC Grant).

The photo below was taken at the Coalition's October 7, 2014 training workshop for CMRSWC communities, and shows Todd Girard (Conservation Agent in Charlton, MA) demonstrating to other members how the EnviroScape table can be used as an education tool for kids of all ages, as well as adults. This train-the-trainer format increases confidence of our members to do outreach on the topic of stormwater pollution prevention in their own communities.



Figure 3: CMRSWC Members Learn How to Demonstrate Stormwater Pollution Prevention Using the Coalition's Nonpoint Source EnviroScape model

With the purchase of this second model, the CMRSWC can make this popular resource more readily available across the substantial geographic spread of our 28 municipal members. The presence of a second unit also allows towns to easily demonstrate the impacts of stormwater pollution and ways to prevent it, showing the resulting differences in water quality when Best Management Practices (BMPs) are installed on one unit, but not on the other unit. One model is stored in Charlton, MA, and the other stored in Shrewsbury, MA to facilitate any member town having easy access to the tool.

The NEWEA grant award exceeded the Coalition's application, so remaining funds will be used to replenish the consumable materials used in the demonstration, including food coloring, baking soda, clay, and sponges.

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.

Tasks Included in this Annual Report

In the following sections, descriptions of the technical tasks and resources made possible by the CIC grant funding have been separated into sections that mirror the six Minimum Control Measures (MCM’s) in the 2003 Massachusetts Small MS4 Permit.

One of the more innovative tools developed by the Coalition- one that spans across multiple MCM’s- is the integrated online mapping and inspection database, hosted by PeopleGIS. The database is cloud-based, and can be accessed by all 28 member communities through a desktop or tablet computer. Below is a screen shot of the platform showing the extent of the 28 Coalition communities.

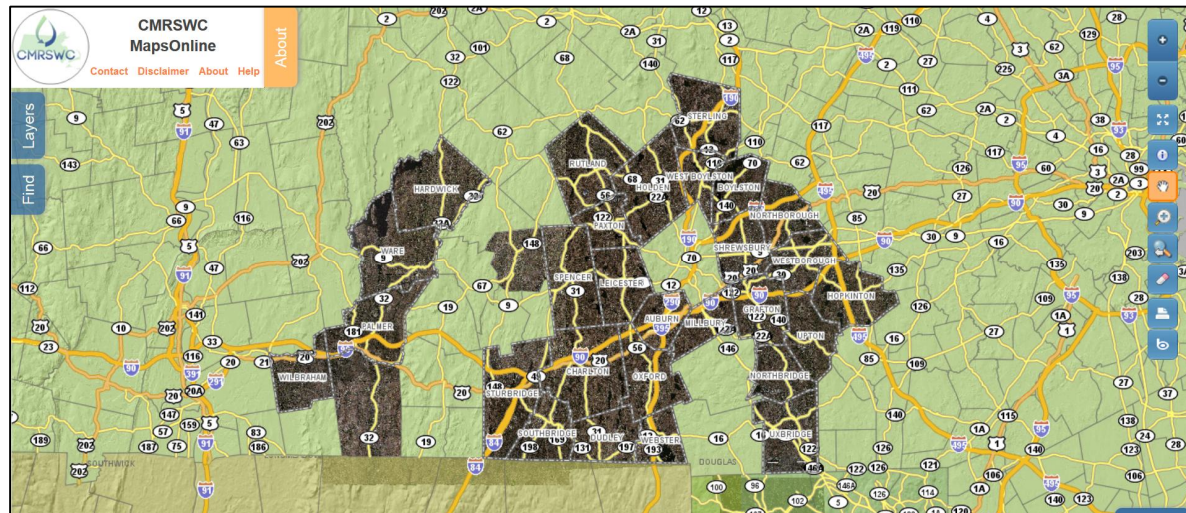


Figure 4: CMRSWC's Online Mapping and Inspection Platform

We were pleased to see the increased use in Year 12 by Coalition members of this resource, both in terms of inspections of existing infrastructure (such as outfalls) and mapping additional infrastructure, such as catch basins and pipe (a linear feature added in Year 11). Newer Coalition communities (those that joined in FY2013) continue to upload GIS shapefiles to the platform, managing their stormwater system infrastructure information in one location.

An investment in Year 12 intended to increase use of the online mapping and inspection platform was the purchase of new Samsung tablet devices for each community that are faster, allowing data to load more quickly than the ASUS tablets purchased in FY2012. We believe that the mapping and inspection tool will be used increasingly as town staff members become comfortable with the platform, realize how easy it is to use, and see how it facilitates compliance and documentation.

As noted in last year's report, this platform does not fit into just one of the MCM's. It aids communities with public education and outreach (MCM 1), as surveying is a highly-visible activity that will generate questions, and is an engaging demonstration to school groups. The integrated mapping and inspection database documents evidence of potential illicit discharges or the absence thereof (MCM 3), aids construction site stormwater control (MCM 4) by allowing for evaluation of how much sediment is contained in a sump, and makes good housekeeping (MCM 6) easier by collecting data on how often catch basins are cleaned. Other tasks and tools of the project connect to the integrated mapping and inspection database, which was designed to serve the needs of the Coalition communities well beyond the 2003 Massachusetts Small MS4 Permit. Each of the online forms is fluid- they will continue to be revised, as needed, to meet the goals of the Coalition members and future Massachusetts MS4 Permit requirements.

Minimum Control Measure 1: Public Education and Outreach

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 Draft Massachusetts Small Municipal Separate Storm Sewer (MS4) Permit that had been released in September 2014, and identify concerns to the group. Upton participated in both the October and November workshops, reviewed deliverables, and served other key roles as described in this Annual Report.

In March 2014, the Town ordered ten (10) 24" by 18" aluminum traffic signs using prismatic grade material to include the design shown below. Nearly all of Upton is located within the Blackstone River Watershed, and these signs are being placed around the community at scenic locations, such as parking areas near Pratt Pond and Mill Pond and the West River Reservoir. This represents a way to visually connect these resources with the need for good stormwater management.

An article was prepared (attached at the end of this report) for local publication, and to be posted on the Department's website, providing information to residents on the reason for placement of the signs.



Figure 5: Public Education Watershed Signs Installed by Upton in Year 12

On December 2, 2014, Jeff Thompson, then serving as Director of Upton's Department of Public Works, provided a summary to the Upton Board of Selectmen on the 2014 Draft MS4 Permit, with a focus on changes that would have the most substantial impact on Upton. This meeting was broadcast on the town's local cable access channel and served as outreach to the community, as a whole.

In January, Upton's Town Manager and members of the Board of Selectmen attended the MMA Annual Meeting, gathering information needed to inform residents about potential changes to be required of the Town's stormwater management program. In February, Upton provided a Letter of Support for comments on the 2014 Draft MS4 Permit that had been prepared by the Coalition, but also submitted its own, unique comments to the USEPA, suggesting alternatives to specific challenges the permit posed.

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 May 16, 2014, Robert McNeil from Millbury, MA and a consultant presented on the Coalition's work at the 5th Annual Water Resources Strategies Symposium, hosted by the Massachusetts Coalition for Water Resources Stewardship in Marlborough, MA, with a presentation entitled "*30 Towns Collaborating for Cost Savings, Efficiency in MS4 Compliance and Water Quality*".
- On August 7, 2014, the Coalition's outreach to other stormwater coalitions was demonstrated in a presentation entitled "*CMRSWC: Resources to Get the Most out of Your CIC Grant Funding*", given at the Community Innovation Challenge (CIC) Stormwater Symposium. We were invited by the Massachusetts Executive Office of Administration and Finance to present at this event, which it hosted in Worcester, MA.
- On September 19, 2014, John Woodsmall from Holden, MA gave a presentation called "*MA MS4 Permits: A Municipal Perspective – Implementing Stormwater Programs*" at the Environmental Business Council's Water Resource Management Program.
- On September 22, 2014, representatives from the Coalition (including Hopkinton, Shrewsbury, and a consultant) attended the Local Government Advisory Committee's "Protecting America's Waters" Workgroup, held in Worcester, MA, and commented on the record about the importance of encouraging appropriate long-term maintenance of stormwater Best Management Practices. The Coalition submitted formal comments to the USEPA on its Proposed Rule to clarify the definition of Waters of the United States (WOTUS) in the Clean Water Act.
- 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.

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.

In Year 12, Upton continued to have access to water quality monitoring kits from the World Water Monitoring Challenge program (www.worldwatermonitoringday.org). 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”. The kits are stored in Spencer and Shrewsbury for distribution to the Coalition members.

Upton continued to have access to the EnviroScape models focused on non-point source pollution education (<http://www.enviroscapec.com/nonpoint-source.html>). One model was purchased by the Coalition in Year 10 and the second was purchased in Year 12 with a grant from NEWEA. These tools are hands-on, visual trainers 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.

Minimum Control Measure 2: Public Involvement and Participation

In Year 12, Upton 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.

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

Upton benefitted from the Coalition’s partnership with MassDEP and WPI by performing stormwater outfall inspections in Year 12. 32 outfalls were inspected (see below for a screenshot).

Central MA Regional Stormwater Coalition

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Storm Water Outfalls Upton

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Storm Water Outfalls Upton (32 records found)

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	OF-5-Upton	intersection of Flore	47	UPTON	3 Meter GPS	Student	11/21/2013	Tow
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Figure 6: Screen Shot of Year 12 Outfall Inspection Records in Upton's PeopleGIS Platform

The Coalition provided training at a workshop on October 7, 2014 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. At this same workshop, training was provided 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. The October 2014 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. Many Coalition communities began this inter-community discussion in Year 12, with others planning it for Year 13. At its December 2, 2014 meeting, Upton’s Board of Selectmen indicated enthusiasm for coordinating this meeting in Year 13.

On May 23, 2014, the Town of Millbury hosted a demonstration by Environmental Canine Services (www.ecsk9s.com) and invited 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 7: Environmental Canine Services, LLC,
Performing a Demonstration of Innovative IDDE Approaches in Millbury, MA*

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.

In Year 12, Upton 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, Upton 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 Upton, on a schedule that follows the use of two Leica devices; this rotating schedule continued in Year 12 with Upton fully taking advantage of opportunities to use the Leica. 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.

Minimum Control Measure 4: Construction Site Stormwater Runoff Control

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.

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

In Year 12, Upton continued to have access to 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 and is consistent with Upton's Stormwater Bylaw.

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.

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

In Year 12, Upton continued to have access to 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, Upton continued to implement many of the 15 Standard Operating Procedures (SOP's) developed by the Coalition in Year 10 into routine maintenance activities. 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. Upton has most fully implemented the dry weather outfall inspection form, the catch basin cleaning form, and the drain manhole inspection form.

In Year 12, Upton continued to have 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 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, Upton continued to have 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 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 administering 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. Upton has fortunately not found many issues where such a Policy would be needed.

In Year 12, Upton continued to have access to 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.

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.

Coalition Activities in Year 13 (April 1, 2015 – March 31, 2016)

The following are some, but not all, of the work presently underway by the Coalition in Year 13:

- *Administration.* The long-term goal of the Coalition when it formed in FY2012 was to become self-sustaining. The Coalition’s Steering Committee has reached out to similar organizations around the country, and is presently evaluating three funding mechanisms. The Coalition’s leadership is committed to keeping the momentum developed in recent years, and sharing the resources for the improvement of water quality in New England. The Coalition plans to finalize its long-term plans in June 2015.
- *Funding.* The Coalition maintains a strong network of partners, and will continue to evaluate funding sources that become available, including competitive USEPA grants dedicated to MS4 communities as well as 319 and 604(b) grants appropriate for community-wide water quality projects.
- *One-on-One Consulting Time.* As noted previously, each of the 28 Coalition communities has been allocated one-on-one time with the group’s consultants. Each town has chosen the MCM or tasks that benefit it most strongly. This may include refresher training on water quality kits and meters, development of public outreach materials, review of stormwater enforcement tools, updates to IDDE Programs, or other related services. This focused effort lets each town optimize its investment in the Coalition.
- *Understanding Stormwater Program Costs.* In Year 13, the Coalition is expanding on the WPI IQP program to quantify the actual (albeit rough) cost of all 28 participants’ existing stormwater programs. The current costs will be scaled up to match the anticipated provisions of the future Massachusetts MS4 Permit and will serve as the foundation for ongoing discussions about how each community will fund future stormwater programs. This is the first time many of these towns will have performed a community-wide review of these costs, which tend to be managed within many departments. We will follow this with a focused workshop on mechanisms to develop sustainable stormwater program funding mechanisms.
- *Public Outreach and Education.* Coalition members will present at the 6th Annual Water Resources Strategies Symposium on May 12, 2015, hosted by the Massachusetts Coalition for Water Resources Stewardship, sharing information on stormwater program costs and ways to create regional efficiencies. The Coalition is purchasing copies of the “Water Blues, Green Solutions” documentary (<http://waterblues.org/about>) for each member town, on DVD. We are also considering re-allocating funding to the development of Coalition-specific outreach materials. Finally, the Coalition plans to increase its use of Twitter as a measurable outreach tool.

- *IDDE*. The Coalition is developing competitive pricing for its members that wish to use Environmental Canine Services to perform IDDE evaluations. The catchment delineation tool initially developed during the WPI IQP Fall 2013 project will be revised, modified, finalized, and distributed for use by Coalition towns. The Request for Proposals (RFP) developed in Year 10 (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) will be re-evaluated in Year 13 if a final Massachusetts MS4 Permit is issued.
- *Good Housekeeping*. The Coalition is coordinating an on-site demonstration of calibrating deicing equipment at a member community's highway facility. This active demonstration will provide a real-life example of the benchmarking process developed in Year 10 and encourage members to calibrate their own equipment, with a goal of reducing pounds of chloride per lane mile. The Coalition is in the initial phases of considering approaching MassDEP and USEPA with a proposal to develop a pilot project for beneficial reuse of catch basin cleaning materials, and/or developing such a pilot project through a grant.

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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
1	Develop & distribute brochures to residents.	Upton DPW	Distribution of brochures.	<i>Note: BMP #1 was revised in Permit Year 11 to reflect that outreach opportunities have expanded beyond stated “brochure” format.</i>	Review different brochures, provide additional information and continue distribution. Consider CMRSWC brochures and pamphlets for distribution.
Revised	Develop & distribute educational materials to residents.	Upton DPW	Distribution of information using multiple media formats.	Continued brochure distribution to residents. Brochures included as mail stuffers for water bills. Also available at Town Hall & Code Enforcement office. In Permit Year 12, the DPW began designing a Town-specific flyer about its Stormwater Management Program and one to be used as a bill stuffer for residential areas on spring yard maintenance. The latter addresses pet waste management, respecting Stormwater BMPs, good fertilizer application practices, and household hazardous waste management. The Upton DPW recognized public interest while completing mapping and inspection activities in Permit Year 12 and is developing an article for publication to highlight these activities.	In Permit Year 13, all new outreach and educational materials, including flyers and articles, will be placed on new DPW “Stormwater Information” section of the Town website. Materials will also be placed on Upton’s local cable access channel.
2	Develop & distribute brochures to businesses.	Upton DPW	Distribution of brochures.	Continued brochure distribution to businesses. Brochures included as mail stuffers for water bills. Also	Review different brochures, provide additional information and continue distribution. Consider CMRSWC

Revised				available at Town Hall & Code Enforcement office.	brochures and pamphlets for distribution. Brochures will be placed on new DPW “Stormwater Information” section of Town website.
3	Install watershed signage.	Upton DPW	Installation of watershed signs.	In Permit Year 11, the Town designed a sign that reads “Help Upton Keep the Blackstone River Watershed Clean”, and includes the Town seal and the CMRSWC logo. Ten were ordered in Year 12.	Ten watershed signs will be installed throughout Permit Year 13; more may be ordered based on the success of the initial ten signs.
Revised				These signs are being placed on well-traveled roadways so that they are visible to people entering Upton or when entering the Blackstone River Watershed from another watershed.	
4	Develop collection program for household hazardous waste.	Upton DPW / Board of Health	Conduct collection program.	One Household Hazardous Waste (HHW) Collection day event was hosted in Permit Year 12, on April 26, 2014.	A similar HHW Collection Day event, “Spring Cleanup”, will be held on May 2, 2015. Flyer attached.
Revised					
5	Develop school curricula & and distribute to schools.	Upton DPW / Board of Health	Implementation of curricula.	No program has been developed yet. In previous years, discussed several alternatives within school administration to include awareness/ education into existing curricula.	Focus on incorporating CMRSWC teaching materials, such as Enviroscape table and World Water Monitoring Day kits into curricula.
Revised					

1a. Additions
(None)

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)	Planned Activities
6	Public meeting to discuss Stormwater management plan.	Upton DPW/Board of Selectmen	Conduct a public meeting to discuss goals of the Stormwater management plan.	Upton’s Stormwater Committee was not active in Permit Year 12, since compliance with critical components of the MS4 Permit- ones that rely on public involvement and discussion- had been fully implemented in previous Permit Years.	The Stormwater Committee may convene in Permit Year 13 to host a multi-departmental refresher training workshop on illicit discharge detection and elimination, based on an approach developed by the CMRSWC. Coordinate with cable access personnel on televising pertinent material on local cable access.
Revised					
7	Public Hearing to discuss water quality data of beach.	Board of Health/Board of Selectmen	Conduct a public discussion of goals and results of water testing.	No public hearings were held in Permit Year 12 as this was not necessary: no pathogens were detected in weekly sampling of Pratt Pond.	Similar to above, utilize local cable access programming to notify public of water quality results. A public hearing will be conducted if pathogens in Pratt Pond are detected above allowed limits.
Revised		Board of Health/Upton DPW		Upton DPW continue to perform regular cleanups of waterfowl feces and litter at Pratt Pond.	Continue to perform regular cleanups at Pratt Pond.
8	Develop and implement composting program.	Board of Health	Implementation of composting program.	A composting program has not been implemented due to lack of a proper location.	Currently, the Town is not planning to implement a composting program.
Revised					
9	Coordinate & implement beach cleanup program.	Board of Health/Board of Selectmen	Conduct a beach clean-up.	The Upton DPW staff routinely performs regular cleanups of waterfowl feces and litter at this location. “Don’t feed waterfowl” signs have been installed at the beach.	Encourage and continue similar efforts annually, including coordination with local volunteer groups.
Revised		Board of Health/Upton DPW			Continue to perform regular cleanups at Pratt Pond.
10	Form citizen watch groups to identify polluters to waterways.	Board of Health / Board of Selectmen	Creation of watch group.	No public advertisement or meetings have been held. Community citizens are very vigilant about reporting	Generate to generate public interest by using additional media to explain and demonstrate the Town’s

Revised				pollution.	stormwater management responsibilities and activities.
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2a. Additions

(None)

3. Illicit Discharge Detection and Elimination

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)	Planned Activities
11	Develop Stormwater system map.	Upton DPW	Creation of system map.	Progress toward this goal was completed in previous Permit years but this task is ongoing, by its nature. In Permit Year 12, Upton DPW efforts focused on mapping in portions of the community now considered Urbanized Area per the 2010 Census and on mapping stormwater infrastructure beyond outfalls. Mapping and inspections completed in Year 12 fully utilized the CMRSWC online platform and equipment.	Continue to inspect outfalls and map new outfalls as they are constructed and that are in Urbanized Area. Mapping efforts will focus on catch basins, drain manholes, and pipe infrastructure, consistent with anticipated requirements in pending MA MS4 Permit. The stormwater system map will continue to be revised as necessary to reflect actual conditions.
Revised					
12	Identify illicit discharges.	Upton DPW	Create a list of illicit discharges.	Efforts to detect illicit discharges are ongoing. In Permit Year 12, outfall	Continue to investigate illicit discharges in Town through

Revised		Upton DPW/ Code Enforcement		inspection and catch basin mapping and inspection by the Upton DPW did not indicate the presence of any illicit discharges. In addition, foundation inspections of new buildings were performed by Code Enforcement staff to ensure there were no cross connections or other illicit connections. No illicit discharges were identified in Permit Year 12.	additional dry weather and wet weather monitoring and sampling on an as-needed basis. Use of the CMRSWC integrated mapping database, inspection forms, field water quality monitoring test kits will be used to help identify illicit discharges. The Upton DPW is currently evaluating closed-circuit television (CCTV) inspection hardware and software that can be used as a tool to document condition and assist in illicit discharge detection, when needed.
13	Commence with elimination of identified illicit discharges.	Upton DPW	Removal of all identified illicit discharges.	No illicit discharges were identified during Permit Year 12.	Continue monitoring discharges as funding allows. Follow up on discharges within schedule identified.
Revised					
14	Review & implement ordinances.	Board of Selectmen	Adoption of additional bylaws & regulations.	Prior to Permit Year 12, Final Regulations based on the SMB were put in place. These continue to be implemented.	Continue to implement activities regulated by the SMB.
Revised					
15	Develop employee training program to identify discharges.	Upton DPW	Implementation of training program.	In Permit Year 12, Upton DPW staff members received training at CMRSWC workshops. Topics	The Stormwater Committee may convene in Permit Year 13 to host a multi-departmental refresher

Revised				addressed included practical illicit discharge detection and elimination tools, and using the Coalition's water quality field kits and meters, among other things.	training workshop on illicit discharge detection and elimination, based on an approach developed by the CMRSWC. The Town will use CMRSWC tools including the IDDE Documentation and Communication program to update its IDDE program. The Town will use online mapping and inspection platform and field water quality monitoring and test kits as much as possible in Permit Year 13.
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3a. Additions

(None)

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)	Planned Activities
16	Develop procedures to inform public of upcoming projects.	Planning Board/ Conservation Commission/ Upton DPW	Advertise to the public of upcoming activities. Develop and implement review process.	The SMB includes review by the Conservation Commission of upcoming construction projects. Upcoming projects are placed on the meeting agenda allowing public notification. Meeting minutes also allow public viewing of upcoming projects and conservation commission decisions.	Continued review of projects as required by the SMB. Develop and consider further mediums for notifying public of upcoming projects.
Revised					
17	Develop & implement site plan review process for sites.	Planning Board/ Conservation Commission/ Upton DPW	Develop and implement review process.	The approved SMB includes a site plan review process. Reviews are completed in accordance with the SMB. The SMB continues to be	Continue to review site plans in accordance with the SMB, and consider any amendments to the SMB that may be necessary.

Revised				considered adequate to fully comply with permit requirements. In Permit Year 12, a four-lot subdivision was reviewed by the Conservation Agent. The determination was that the project was under Planning Board review, so neither a Notice of Intent nor a Stormwater Permit was required. No commercial site plans were reviewed in Year 12.	Continue to utilize Checklist for a Stormwater Management Operation & Maintenance Plan, Stormwater Management Plan Application, Construction Notification Form and Checklist, and the Erosion and Sediment Control Plan Application and Checklist.
18	Develop & implement erosion & sediment control ordinances.	Planning Board/ Conservation Commission	Develop and implement control ordinances.	The SMB addresses erosion and sedimentation, including an Erosion and Sediment Control Plan Application and Checklist, and a Construction Notification Form and Checklist for qualifying projects. The SMB continues to be considered adequate to fully comply with permit requirements. Site plans are being reviewed in accordance with the SMB. Fines are categorized in the SMB based on the severity of the violation.	Continue to review site plans in accordance with the SMB, and consider any amendments to the SMB that may be necessary. Continue to utilize Checklist for a Stormwater Management Operation & Maintenance Plan, Stormwater Management Plan Application, Construction Notification Form and Checklist, and the Erosion and Sediment Control Plan Application and Checklist.
Revised					
19	Develop construction inspection program.	Planning Board/ Conservation Commission	Implementation of inspection program.	The Town developed a successful construction inspection program in previous Permit Years and has continued to implement that program, which is adequate to comply with permit requirements.	Continue performing inspections of active construction projects.
Revised					Consider any necessary changes to the SMB inspection procedure based upon new state or federal regulations.
20	Implement construction inspection program with fines for violations.	Planning Board / Conservation Commission	Implementation of inspection program and fine schedule.	The SMB addresses enforcement of construction erosion and sediment controls. The SMB delineates a fine schedule based on the severity of the	Continue inspection program in accordance with the SMB and state regulations.

Revised				violation. The SMB continues to be considered adequate to fully comply with permit requirements. In Permit Year 12, the Conservation Commission regularly inspected the Crosswinds development and the JR Estates development. No violations were detected, no “stop work” orders were issued, and no fines were assessed.	Consider changes to inspection procedures based on new state or federal regulations.
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4a. Additions
(None)

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)	Planned Activities
21	Review existing nonstructural BMPs.	Planning Board/ Conservation Commission/ Upton DPW	Development and addition of any necessary amendments and/or bylaws.	Progress toward this goal was completed in previous Permit years, including development of Good Housekeeping Practices in the Stormwater Pollution Prevention Plan for the Upton DPW Garage.	Review existing non-structural BMPs as necessary and recommend improvements.
Revised				Street sweeping and catch basin cleaning are completed once a year.	
22	Review of existing structural BMPs.	Conservation Commission/ Planning Board/ Upton DPW	Development and addition of any necessary amendments and/or bylaws.	Prior to Permit Year 12, the SMB was approved which provides reasonable guidance for the regulation of development and post-development stormwater runoff for protecting local water resources from degradation. The SMB continues to be considered adequate to fully comply with permit requirements.	Review existing structural BMPs as necessary and recommend improvements.
Revised				The Conservation Commission is available to review any existing structural BMPs at the Upton DPW's request.	
23	Require O&M manuals for newly installed BMPs.	Conservation Commission/ Upton DPW	Catalogue and review of all new structural BMPs.	No new BMPs were installed in Permit Year 12.	As part of the SMB, operation and maintenance plan is required for qualifying projects and will be enforced going forward.
Revised					
24	Develop inspection program of newly installed BMPs.	Conservation Commission/ Upton DPW	Implement new BMP inspection program.	The Town has a successful inspection program for newly installed BMPs. However, no inspections were required in Permit Year 12 as no new BMPs were constructed.	Continue to enforce BMP Operations and Maintenance Plans that are submitted by applicants as part of meeting the SMB.
Revised					

25	Conduct inspections of BMPs within 1st year of operation.	Conservation Commission / Upton DPW	Conduct Inspections.	Upton DPW and Conservation Commission conducted inspections as necessary and as part of routine maintenance.	Maintenance of BMPs is a challenge that will continue to be addressed in future permit years. Rehabilitate BMPs that were noted as requiring maintenance when inspected.
Revised					

5a. Additions

(None)

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)	Planned Activities
26	Inspection of Town - owned sand/salt storage areas.	Upton DPW	Conduct inspections, make recommendations, and review procedures.	The Stormwater Pollution Prevention Plan and SPCC for the Upton DPW Garage, developed and implemented prior to Permit Year 12, continue to be reviewed regularly. Refresher training on the importance of SWPPPs was provided in Permit Year 12.	Continue inspection and good housekeeping efforts. Review existing stockpile locations and implement any appropriate improvements.
Revised					
27	Review snow removal & street sweeping procedures.	Upton DPW	Review procedures and make recommendations	Review of procedures continues. The Town uses subcontractors for	Continue catch basin cleaning, street sweeping, and sidewalk sweeping.

Revised				both catch basin cleaning and for street sweeping. Street sweeping and catch basins cleaning were conducted once a year.	Moving forward, the DPW plans to document how full catch basins are when they are cleaned (using CMRSWC online inspection system) and document structures that may require more than one cleaning per year. Town will use CMRSWC Salt/Sand Application Benchmarking Tool to review deicing operations. Town will use CMRSWC integrated mapping and inspection forms to conduct catch basin inspection and cleaning operations.
28	Develop & implement maintenance schedules – BMPs.	Upton DPW	Implement annual BMP maintenance program.	Upton DPW and Conservation Commission have been active in addressing private BMP neglect.	Maintenance of BMPs by Upton DPW and coordination with Conservation Commission are challenges that will be continue to be reviewed in Year 13.
Revised		Upton DPW/ Conservation Commission			
29	Develop & implement employee training program.	Upton DPW	Implement training program.	In Permit Year 12, numerous Upton DPW staff members received training at CMRSWC workshops. Topics addressed included calibrating deicing equipment, stormwater pollution prevention, practical illicit discharge detection and elimination tools, and using the Coalition’s water quality field kits and meters, among other things. DPW staff also attended a Baystate Roads course on calibrating deicing equipment.	Continue to increase employee awareness and aid in IDDE, catch basin inspection, chloride application reduction, and water quality monitoring using CMRSWC Tools. Implement additional CMRSWC tools in employee training programs.
Revised					
30	Review & Update Town’s recycling program.	Upton DPW/ Board of Health/ Board of Selectmen	Review existing program and make recommendations.	Curbside, single-stream recycling was introduced in previous Permit Years.	Continue existing program, reviewing as needed.

Revised					
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6a. Additions

(None)

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 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
	Not Applicable	Not Applicable	Not Applicable	The following Upton water bodies are considered impaired (per the <i>Final</i>	Evaluate any TMDLs developed for Upton impaired waters.

Revised				<i>Massachusetts Year 2012 Integrated List of Waters</i> (CWA Sections 303d and 305b): <u>Mill River</u>: Category 5- Requires a TMDL (Aquatic Plants, Non-Native Aquatic Plants, PCB in Fish Tissue) <u>West River</u>: Category 5- Requires a TMDL (Non-Native Aquatic Plants, low pH, Cadmium, Chloride, Copper, Lead, and Nutrient/ Eutrophication Biological Indicators) <u>Mill Pond</u>: Category 4C: no TMDL required (Non-Native Aquatic Plants) <u>Pratt Pond</u>: Category 4C: no TMDL required (Non-Native Aquatic Plants) <u>Taft Pond</u>: Category 4C: no TMDL required (Non-Native Aquatic Plants) However, final TMDLs have not been developed for any of these water bodies.	
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7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

N/A

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, 2014 through March 31, 2015)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures **	(\$)	\$15,000
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 %)	75%
Stormwater management committee established	(y/n)	Y
Stream teams established or supported	(# or y/n)	N
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 **	(#)	1
▪ community participation **	(# or %)	20%
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	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	(#)	106
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	40
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100
Outfalls inspected/screened **	(# or %)	32
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	106
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	30
% of population on septic systems	(%)	70

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	0
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	100%
Tickets/Stop work orders issued **	(# or %)	0
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	(%)	
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 **	(#)	770
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)	Landfill
Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	

• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	
• Disposal cost**	(\$)	12,000
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 vector **	(%)	

	(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)	Landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	\$10,000
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	
• % Roads swept with vacuum sweepers **	%	

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

Integrated Pest Management (IPM) Practices Implemented	(y/n)	
	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	85 - - - - - 15
Pre-wetting techniques utilized **	(y/n or %)	Y CaCl ₂
Manual control spreaders used **	(y/n or %)	
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/l _n mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/l _n mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
Storage shed(s) in design or under construction	(y/n or #)	
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	

Attachment- MCM 1: Public Education and Outreach

Help Upton Keep the Blackstone River Watershed Clean!

We hope that you've seen the new signs posted around Upton asking for your help to keep the Blackstone River Watershed clean. It may have surprised you to see the Blackstone River's name shown on the sign, since it's miles away. It's true, though: with the exception of the northernmost edge of Town, any drop of rain that lands in Upton is going to flow toward the Blackstone River. The challenge for the Blackstone River is that it receives stormwater from 28 other Massachusetts communities in addition to Upton- from Paxton to Plainville- and ten more in Rhode Island, and treated wastewater from several facilities, too. The watershed draining to the Blackstone River covers a whopping 640 square miles, 60% of which is here in Massachusetts!



With a watershed that large, how can an individual resident possibly do anything to keep it clean?

Well, we can start by not treating our stormwater systems like trash cans. Our drainage systems- which include pipe, ditches, catch basins, drain manholes, rain gardens, and more- are designed to move water safely away from roadways during storm events. Catch basins can remove some sand, salt, rocks, gravel and other debris present in that stormwater (as long as they're cleaned out regularly), and some structures can remove oil, metals, and some nutrients, like nitrogen and phosphorus. However, stormwater is NOT treated by a facility like the one that treats Upton's wastewater. When motor oil is dumped (or a bag of pet waste is flung) into a catch basin, those pollutants enter the surface water body. Grass clippings dumped into a ditch or stream don't become *habitat*- they *decompose*, removing dissolved oxygen from water and stressing fish and other aquatic life. Leaves and dirt swept from a sidewalk into a catch basin don't *disappear*- they enter a stream, if they don't clog the pipe first!

Thinking about connectivity of the drainage system to surface water can go a long way to reducing pollution.

Preventing water pollution can include some other simple changes in everyday behavior. Before deciding if fertilizer would improve your yard, test your soil with a kit commonly available at home improvement centers: it may be that your soil would not be improved by the addition of nitrogen, phosphorus, or potassium present in most fertilizers. If you chose to use fertilizer, follow the application instructions on the package, including the time of year to apply it. The "more is better" approach to lawn care has been proven ineffective: applying twice the recommended weight per square foot won't make the grass twice as green. When applied in excess, nitrogen and phosphorus run off lawns during rain and enter surface waters, where they create algae blooms and remove dissolved oxygen from the water. Don't apply fertilizer right before a large storm, and take care to prevent spreading it on your driveway, paved walk, or other impervious surfaces where it will run off with the rain. Removal of piles of pet waste from your lawn will prevent bacteria and more nutrients from washing into streams.

In the next few months, we'll share more information about how the Upton's Department of Public Works (DPW), Conservation Commission, and Planning Board are working together to protect our local water resources- part of helping keep the Blackstone River Watershed clean. This will involve a new page on the current DPW website, www.upton.ma.us/Pages/UptonMA_DPW/index, that's dedicated to sharing information on how our daily activities- like catch basin cleaning and street sweeping- help reduce stormwater pollution.

Until then, you can learn more by visiting the Central Massachusetts Regional Stormwater Coalition website- Upton is one of 30 members!- at www.CentralMAStormwater.org, or the Blackstone River Watershed Association page at www.thebrwa.org.



Upton's Annual Hazardous Waste Day



**SATURDAY – May 2nd
8:00 a.m to 12:00 Noon**

at the

Department of Public Works (DPW)

100 Pleasant Street, adjacent to Nipmuc Reg. High School

UPTON RESIDENTS ONLY. PROOF OF RESIDENCY WILL BE REQUIRED.

HAZARDOUS WASTE

Upton residents are allowed to bring up to 10 gallons or 10 lbs. of hazardous waste free of charge. **Anything over the 10 lbs. or 10 gallons will be charged per item.** Latex paint will not be accepted; it is not considered hazardous waste. For information on how to properly dispose of latex, contact the Board of Health office.

- **Acceptable Items:** Consolidated Paint (non-latex), flammable liquids/solvents, lab pack chemicals, pesticides, herbicides, consolidated waste oil, small cans resins/adhesives, flammable resins/adhesives, antifreeze, aerosols, lead acid batteries, NiCad or lithium batteries, and fluorescent bulbs.
- **Home use syringes can be brought to the event to be disposed of at no cost. The sharps must be in a puncture proof container.**
- **Non-Acceptable Items:** PCB's, mercury wastes, explosives, biological/medical waste, pressurized gas cylinders, commercially or industrially generated hazardous waste, radioactives, propane tanks (see metal items below for disposal) fire extinguishers, ammunition, and latex paint.



RECYCLE ITEMS – Cash only

- **Freon Items** - Refrigerators - \$10.00 each, Dehumidifiers and Air Conditioners - \$5.00 each
- **Other Appliances** – Washers, dryers and stoves - \$ 10.00 each, microwaves - \$5.00 each
- **Electronic Equipment** – Televisions (all sizes), Computer monitors - \$10.00 each. Computers, keyboards, cd players, VCR's etc. - free of charge
- **Tires** will be accepted at \$3.00 per car tire and \$8.00 per truck tire. No tires larger than 24" will be accepted
- **Propane tanks** – All tanks including 1 lb. - \$1.00 each (sorry – no tanks over 60 lbs.)
- **Styrofoam** - Clean Styrofoam; produce and meat trays, take out containers, hot cups, and packing blocks, will be accepted at no charge. All peanuts and bubble wrap must be bagged separately. No soft foam, colored insulation boards or foam sheets will be accepted.
- **Car Batteries** – No charge
- **Metal Items** – Most residential items \$5.00(cash only) for each item (e.g. push mower, gas grill (without propane tank), swing sets - disassembled and cut to 5' lengths, etc.). Items must not contain materials that burn (e.g. wood, cushions, padding, etc.). Items that can be cut must not be longer than 5'. Extra large items will cost more and smaller items may cost less at the discretion of the vendor.



BULK TRASH

Items too large to fit into your weekly trash bags will be accepted. Charges will depend on the size and weight of the item. Couch's, chairs, mattress's, box spring's, etc. - \$5.00 ea. Metal Items will not be accepted as bulk trash. They can be brought to the metal recycling area for a fee (see above)

Contact the Board of Health at 508-529-6813 or dtierman@santafema.org with questions.