Municipality/Organization:	Town of Upton, MA
EPA NPDES Permit Number:	MAR041165
MassDEP Transmittal Number:	**X260854**
Annual Report Number & Reporting Period:	**Year 11** **April 1, 2013 – March 31, 2014**

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

Part I. General Information

Contact Person: Jeffrey F. Thompson, P.E. Title: Director of Public Works

Telephone #: (508) 529-3067 Email: jthompson@uptonma.gov

Mailing Address: 1 Main St Ste 13, Upton, MA 01568-1687

Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:

Printed Name: Blythe C. Robinson

Title: Town Manager, Town of Upton

Date: April 29, 2014

Part II. Self-Assessment

In Year 11, the Town of Upton became a member of the Central Massachusetts Regional Stormwater Coalition (the Coalition). The Coalition's work in Year 11 was funded by a $115,000 fiscal year 2013 (FY2013) Community Innovation Challenge (CIC) grant from the Massachusetts Executive Office of Administration and Finance. This grant was supplemented by a contribution of approximately $2,800 from each of the 30 Towns, including Upton.

Overview of the Coalition

The FY2013 Coalition communities included 13 communities that formed the Coalition during the previous year (Auburn, Charlton, Dudley, Holden, Leicester, Millbury, Oxford, Paxton, Shrewsbury, Spencer, Sturbridge, Webster, and West Boylston) plus 17 new "Expansion" Towns (including Boylston, Grafton, Hardwick, Hopkinton, Monson, Northbridge, Northborough, North Brookfield, Palmer, Rutland, Southbridge, Sterling, Uxbridge, Ware, Westborough, and Wilbraham in addition to Upton).

The FY2013 work included numerous technical tasks focused on compliance with the 2003 Massachusetts MS4 Permit, although much of the Coalition's work prepares the communities to comply with requirements anticipated in the pending 2014 Massachusetts MS4 Permit. The Coalition's FY2013 efforts were facilitated by the consulting firms of Tata & Howard, Inc., and Verdant Water, supported by vendor PeopleGIS. However, the Coalition members themselves are responsible for putting the tools developed by the Coalition to use.

The FY2013 effort included monthly meetings of the Coalition Steering Committee, several formal training workshops, and other presentations. Three (3) members of Upton's Department of Public Works (DPW) attended a September 17, 2013 training workshop in Grafton, which focused on getting "expansion" communities familiar with the tasks the Coalition had completed in FY2012. Two (2) Upton DPW members participated in a November 20, 2013 workshop in Holden, which provided training to all 30 communities on water quality monitoring (including how to use the Coalition's field kits and meters), communicating illicit discharge detection and elimination (IDDE) information and needs with other departments and officials in a community, using the data management tools within the online inspection and mapping platform, and more.

The Coalition's Partnerships in Central Massachusetts

The Coalition is 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.

The Coalition expanded its partnership with the Massachusetts Department of Environmental Protection (MassDEP) in FY2013, 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). The IQP underway in spring 2014

is the third such project the Coalition is doing in conjunction with MassDEP and WPI.

The IQP that was completed in fall 2013 developed two products that will be highly useful to Coalition communities:

1. A Compliance Checklist, evaluating the 2003 Massachusetts MS4 Permit and looking forward to the pending 2014 Massachusetts MS4 Permit (based on the Draft 2013 New Hampshire MS4 Permit). This serves as a tool for Coalition communities to identify their most critical priorities as in preparation of the new MS4 permit and fully compliments the Coalition's other tasks.

2. A Catchment Ranking tool, which processes user input including water quality screening data, land use and development, history of illicit discharges, and other criteria to suggest ranking into one of the four catchment categories defined in the Draft 2013 New Hampshire MS4 Permit.

In November 2013, Upton hosted both fall 2013 WPI IQP teams. One team focused on using one of the Coalition Leica devices to locate catch basins that had not yet been mapped, while the other team used the Coalition-provided tablet computer to inspect outfalls and catch basins.

Many Coalition communities, including Upton, are working again in spring 2014 with the WPI IQP project, benefiting from the students' mapping and inspection services. Four WPI students performed mapping and inspection in early April 2014, focusing on Urbanized Area added per the 2010 Census and on catch basins that had not yet been mapped. The students also performed dry-weather inspections on outfalls.

Upton is also one of the communities benefiting from a second task of the spring 2014 WPI IQP, which is performing a detailed review of municipal stormwater management programs. In this task, the students- with assistance from CMRSWC consultants and MassDEP- will quantify the actual cost of each Town's stormwater program. This knowledge will serve as the foundation for ongoing discussions about how each community will fund future stormwater programs.

Further documentation of the Coalition's dedication to stormwater management is evidenced by its coordinating with several other groups with a similar stormwater focus- some existing and some just developing- 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);

- The Northern Middlesex Stormwater Collaborative Expansion (coordinated by the Northern Middlesex Council of Governments);
- The Southeastern Massachusetts Regional Stormwater group (just forming, coordinated by the Southeast Regional Services Group); and
- The North Suburban Planning Council (also coordinated by the Metropolitan Area Planning Council).

The benefits of collaboration between these groups include:

1. Sharing the tools that the Coalition developed in FY2012 and FY2013 with other groups, honoring the goal of the CIC Grant Program that funded projects produce deliverables that can be shared regionally;
2. The ability to utilize organic, innovative projects being developed and implemented by those groups that focus on additional stormwater management or education opportunities that the Coalition had not specifically addressed; and
3. Reducing redundancy or scope overlap in projects funded by the CIC Grant Program.

In Year 11, the Coalition began to coordinate with the Massachusetts Coalition for Water Resources Stewardship, and will present on its work at its 5th Annual Water Resources Strategies Symposium, to be held on Friday, May 16, 2014.

Finally, the Coalition has initiated conversations 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. An example of this outreach to the agency is the March 26, 2014 presentation by USEPA Region 1's Josh Secunda, which the Coalition hosted at MassDEP's Central Office in Worcester. Mr. Secunda's presentation focused on the critical role of engaging community stakeholders in the evaluation and decision-making processes that are part of developing a sustainable stormwater funding program. Upton's Director of Public Works Jeffrey Thompson attended this presentation, as did representatives from many of the other stormwater groups listed previously. When the actual municipal stormwater program budgets quantified by the spring 2014 WPI IQP student project (including Upton's) are evaluated through the lens of Mr. Secunda's presentation, the Coalition believes the result will be a new motivation for many communities to review their current funding approach.

In March 2014, the Coalition met with representatives of USEPA Region 1, encouraging the agency to take an active role in sharing the materials produced by the Coalition (and similar groups) across the state, for the benefit of all MS4 communities. We are supported in this goal by the Massachusetts Municipal Association.

The Coalition intends to submit formal comments to USEPA when the 2014 Draft Massachusetts MS4 Permit is issued.

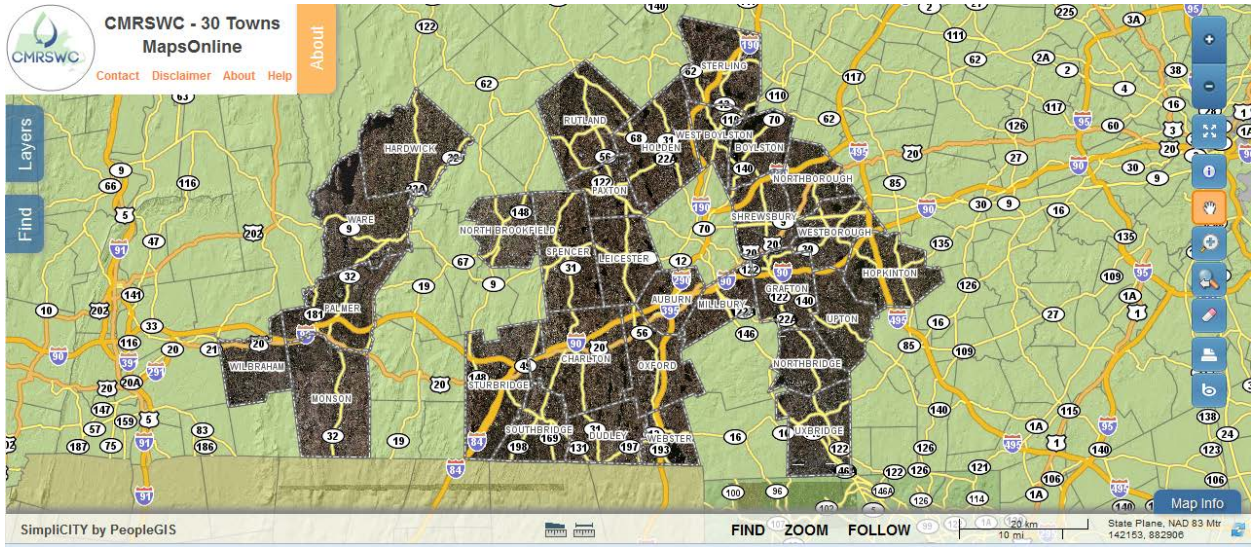
Representatives of the Coalition presented its work at the following other events in Year 11:

- "*Doing More With Less: The Benefits of Stormwater Regionalization Within Your Watershed"*, in Woonsocket, RI on September 30, 2013, at a workshop sponsored by MassDEP and Rhode Island's Department of Environmental Management;
- "*Managing Stormwater for Water Supply Protection*", in Worcester, MA on December 3, 2013, at a Drinking Water Source Protection seminar sponsored by USEPA Region 1.

The Coalition has already given additional presentations in Year 12 to other organizations, with more planned.

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 in Year 10 and expanded in Year 11- supports many MCM's and has been noted separately: an integrated online mapping and inspection database. The database is cloud-based, and can be accessed by all 30 member communities through a desktop or tablet computer. Below is a screen shot of the platform showing the extent of Coalition communities.



In Year 11, existing mapping completed by the 17 "Expansion" communities, including Upton, was converted to a project standard format and uploaded to the online platform, which already included data from the 13 FY2012 communities. All 30 communities can

see each other's infrastructure, but each maintains full control over their asset information and water quality data. This tool represents the essence of the Coalition project's message, which is that stormwater is regional- it doesn't stop at a community boundary.

All mapped infrastructure is connected to inspection reports that mirror hard-copy forms developed in Year 10 in the 15 Standard Operating Procedures discussed under MCM 1, below: for example, outfall and catch basin inspections. The developed integrated mapping and inspection system is so comprehensive and flexible that 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 would make 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 data 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- many were updated in Year 11 and will continue to be revised, as needed, to meet the goals of the Coalition members and the Massachusetts MS4 Permit requirements.

Minimum Control Measure 1: Public Education and Outreach

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

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

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

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

Minimum Control Measure 2: Public Involvement and Participation

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

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

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

The Coalition provided training in Year 11 at a workshop on November 20, 2013 on the Coalition's Illicit Discharge Detection and Elimination (IDDE) Documentation Packet, which specifies how illicit discharges are detected and what department or person is responsible for eliminating them. Identifying and removing illicit discharges, and ensuring that they are not reconnected, remains a substantial challenge to many MS4 communities. Without documentation of the entity responsible for this task for a variety of types of illicit discharge, communities may not satisfy the requirements of the 2003 Massachusetts Small MS4 Permit and may be unprepared for increased IDDE compliance in the new Small MS4 Permit. This deliverable clarified USEPA's minimum IDDE requirements and incorporated appropriate existing IDDE Plans and materials by reference. More importantly, the task provides a framework for people in multiple departments to understand each person's responsibilities, encourage cooperation and communication toward a single objective, and provide templates for documenting observations, actions, and compliance. The November 2013 training workshop included a comprehensive review of many types of illicit discharges, and an interactive discussion with attendees about how several examples would presently be managed in their own community.

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

structures. These two activities serve as the foundation of IDDE. The Leica units rotate between the 30 Coalition communities on a schedule, with formal handoff between Towns documented.

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

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

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

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

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

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

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

Minimum Control Measure 4: Construction Site Stormwater Runoff Control

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

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

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

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

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

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

In Year 11, Upton received access to the Stormwater Pollution Prevention Plan (SWPPP) template in the form of a word processing document. The Coalition provided training on the SWPPP Template at two Year 11 workshops (September 17 and 26, 2013); three Upton DPW staff members attended the September 17 workshop. This document was developed in Year 10 and addresses elements common to all SWPPPs, including storage of materials, site inspection practices, water sampling, training, spill prevention and cleanup, Standard Operating Procedures for a number of activities, and other sections. The SWPPP template covers many types of municipal properties. This includes highway department garages and public works yards- where salt is stored and vehicle maintenance or storage is completed- as well as parks, golf courses, and cemeteries, where fertilizers and pesticides may be applied and lawn mowing activities may result in small spills. The SWPPP template includes built-in instructions to make it as simple as possible for each community to develop a SWPPP for a property, simply by deleting text that doesn't apply.

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

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

In Year 11, Upton received access to a Sump Pump Discharge Policy developed in Year 10 that provides a framework for the member communities to respond to needs to remove sump pumps from the sanitary sewer system without causing property damage or creating a hazardous condition for the public. The Coalition provided training on the Sump Pump Discharge Policy at two Year 11 workshops (September 17 and 26, 2013); three Upton DPW staff members attended the September 17 workshop. The Policy discusses considerations related to potential contamination and reduction in capacity of the storm drain system when sump pumps are permitted to connect to the drainage system, and lays out a situational approach to provide flexibility in administrating a policy. The Policy

includes guidance for when such a connection should be considered, what information the municipality can request from a residential or commercial property to guide in its decision, and outlines the responsibilities of the property owner.

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

MISCELLANEOUS

The Sump Pump Discharge Policy and the Private Drainage Connection SOP (SOP 15) documents both include technical criteria for a member community to evaluate when considering granting approval to residential and/or commercial users to connect such private drainage into engineered storm drain systems within the MS4. However, this approach is not effective in areas where no engineered storm drain system exists. In Year 11, the Coalition finalized an approach to connect pieces of data managed by multiple departments within a community for the benefit of all departments. Specifically, the task merges knowledge of areas where high inflow (i.e., sump pumps and drainage connections) to the sanitary sewer has been identified but where no engineered storm drain system exists. This knowledge includes drainage Capital Improvement Plan (CIP) categories and fields to prioritize the extension of the engineered drain system, within the parameters of the Sump Pump Policy and the Private Drainage Standard Operating Procedure, to reduce inflow to the sanitary sewer while protecting surface water quality. In Year 11, the Coalition provided training on the Drainage Extension Approach at the November 20, 2013 training workshop, which two Upton DPW staff members attended.

Part III. Summary of Minimum Control Measures

1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities
1	Develop & distribute brochures to residents.	Upton DPW	Distribution of brochures.	*Note: BMP #1 was revised in Permit Year 11 to reflect that outreach opportunities have expanded beyond stated "brochure" format.* Continued brochure distribution to residents. Brochures included as mail stuffers for water bills. Also available at Town Hall & Code Enforcement office. In Permit Year 11, the DPW began designing a Town-specific flyer about its Stormwater Management Program. This flyer will be made available to attendees of the May 8, 2014 Town Meeting. The Upton DPW recognized public interest while completing mapping and inspection activities in Permit Year 11 and is developing an article for publication in May 2014 to highlight these activities.	Review different brochures, provide additional information and continue distribution. Consider CMRSWC brochures and pamphlets for distribution. The Upton DPW is currently developing a flyer for residential areas on spring yard maintenance, to address pet waste management, respecting Stormwater BMPs, good fertilizer application practices, and household hazardous waste management. In Permit Year 12, all new outreach and educational materials, including flyers and articles, will be placed on new DPW "Stormwater Information" section of Town website. Materials will also be placed on Upton's local cable access channel.
Revised	Develop & distribute educational materials to residents.	Upton DPW	Distribution of information using multiple media formats.		
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 available at Town Hall & Code Enforcement office.	Review different brochures, provide additional information and continue distribution. Consider CMRSWC brochures and pamphlets for distribution. Brochures will be placed on new DPW "Stormwater Information" section of Town website.
Revised					

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. These signs will be placed on well-traveled roadways so that they are visible to people entering Upton or when entering the Blackstone River Watershed from another watershed.	Ten watershed signs will be installed early in Permit Year 12; more may be ordered based on the success of the initial ten signs.
Revised					
4	Develop collection program for household hazardous waste.	Upton DPW / Board of Health	Conduct collection program.	Two Household Hazardous Waste (HHW) Collection day events were hosted in Permit Year 11, one event on April 20, 2013 in the spring and one on October 19, 2013 in the fall.	A similar HHW Collection Day event, "Spring Cleanup", will be held on April 26, 2014.
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 11 (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 11, 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 12 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 11 as this was not necessary: no pathogens were detected in weekly sampling of Pratt Pond. Upton DPW continue to perform regular cleanups of waterfowl feces and litter at 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. Continue to perform regular cleanups at Pratt Pond.
Revised		Board of Health/Upton DPW			
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. Continue to perform regular cleanups at Pratt Pond.
Revised		Board of Health/Upton DPW			

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 pollution.	Continue to generate public interest by using additional media to explain and demonstrate the Town's stormwater management responsibilities and activities.
Revised					

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 11 (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 11, 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. 29 new outfalls, 138 catch basins, and 44 drain manholes were mapped in Permit Year 11. Mapping and inspections completed in Year 11 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 11, 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, 37 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 11.	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 11.	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 11, 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 11, numerous Upton DPW staff members received training at CMRSWC workshops. Topics	The Stormwater Committee may convene in Permit Year 12 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 12.

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 11** (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 pubic 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 11, one proposed site plan was reviewed by the Planning Board in conjunction with the Conservation Commission. This site plan did not require a Stormwater Management Plan or Erosion Sedimentation Control Plan.	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. Consider any necessary changes to the SMB inspection procedure based upon new state or federal regulations.
Revised					
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 11, 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 regarding construction erosion and sediment controls.	Consider changes to inspection procedures based on new state or federal regulations.

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 11 (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. Street sweeping and catch basin cleaning are completed once a year.	Review existing non-structural BMPs as necessary and recommend improvements.
Revised					
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 11, 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. The Conservation Commission is available to review any existing structural BMPs at the Upton DPW's request.	Review existing structural BMPs as necessary and recommend improvements.
Revised					
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 11.	As part of the new 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 11 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 be addressed in Year 11. 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 11** (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 11, continue to be reviewed regularly. Refresher training on the importance of SWPPPs was provided in Permit Year 11.	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. Town contracts with vendor Lloyd	Continue catch basin cleaning, street sweeping, and sidewalk sweeping.

Revised				Truax for catch basin cleaning, and vendor Dan Amarillo for street sweeping. Street sweeping and catch basins cleaning were conducted once a year.	In Year 12, 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 12.
Revised		Upton DPW/ Conservation Commission			
29	Develop & implement employee training program.	Upton DPW	Implement training program.	In Permit Year 11, 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					

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 11** (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 *Final*	Evaluate any TMDLs developed for Upton impaired waters.

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

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

Part V. Program Outputs & Accomplishments (OPTIONAL)
(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2013 through March 31, 2014)

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 **	(#)	2
▪ 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	(#)	101
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	40
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100
Outfalls inspected/screened **	(# or %)	29
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	101
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 vactor **	(%)	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	1
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	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 5,900 gal CaCl2
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/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
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	