Municipality/Organization:	**Town of Palmer**
EPA NPDES Permit Number:	MA 041017
MassDEP Transmittal Number:	**W- X265901**
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: Charles T. Blanchard

Printed Name: Charles T. Blanchard

Title: Town Manager

Date: April 29, 2015

Part II. Self-Assessment

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

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

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

The Coalition was honored as a recipient of the first Annual "Best Stormwater Idea in New England", also known as a STORMY Award (*see image below*). This honor was bestowed by the New England Stormwater Collaborative, a joint effort of the New England Water Environment Association (NEWEA), the New England Chapter of the American Public Works Association (APWA), and the New England Water Works Association (NEWWA). 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 stormwater-focused Interactive Qualifying Project (IQP) with four students at the Worcester Polytechnic Institute (WPI). Kickoff for this partnership began in September 2014 with a meeting at MassDEP's office in Worcester, MA. The IQP completed in fall 2014 was the fourth such project the Coalition has done in conjunction with MassDEP and WPI.

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

The comprehensive report prepared by the WPI IQP students was presented to their university sponsors in December 2014 and can be downloaded at: www.centralmastormwater.org/pages/ CRSC_documents/Attachment B_WPI Cost Analysis of the 2014 MA MS4 DraftPer.pdf. 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.

Earlier in Year 12, a different team of WPI IQP students did inspection and mapping work in several Coalition towns, including Upton, MA, shown below, under the supervision of the Towns and consultants. Data from these activities was entered directly into the online mapping and inspection system.

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

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.enviroscapes.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

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 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.

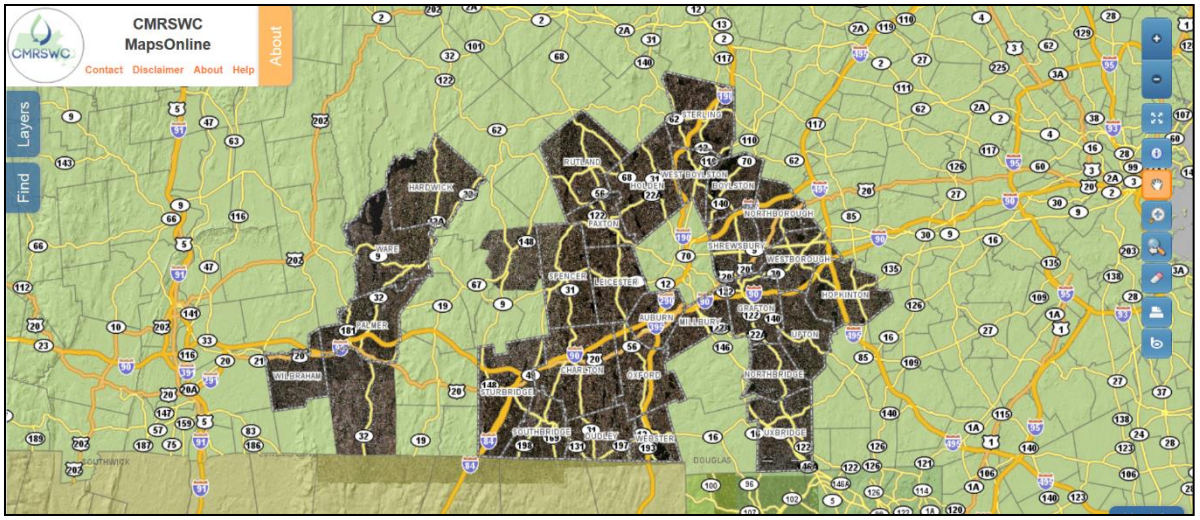

Figure 4: CMRSWC's Online Mapping and Inspection Platform

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 2014 Draft Massachusetts Small Municipal Separate Storm Sewer (MS4) Permit and identify concerns. Palmer participated in training workshops, reviewed deliverables, and served other key roles as described in this Annual Report.

An exciting tool for public education that was rolled out in Year 12 is the Coalition's Twitter account, @MAStormH2O. As of the date of this report, the

Coalition's account has 67 followers, including other stormwater coalitions around the country. Information tweeted (or retweeted) by the Coalition in Year 12 addressed such water quality topics and issues as:

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

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

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

- On 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, 2015, 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, 2015, 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 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, Palmer continued to utilize 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 12 to work with teachers in their local school department or district to do outreach to elementary and middle-school aged students. The kits continue to be stored in Spencer and Shrewsbury for distribution to the Coalition members.

Palmer continued to utilize the Enviroscape models focused on non-point source pollution education (http://www.enviroscapes.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, Palmer 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

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.

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 5: 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, Palmer 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, Palmer 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 Palmer, on a schedule that follows the use of two Leica devices; this rotating schedule continued in Year 12. The objective of this approach was that inspection and mapping activities completed with the Leica may result in a list of outfalls or structures for which screening-level monitoring should be completed. The Coalition provided refresher training on the water quality kits at the workshop on October 7, 2014. The Towns of Millbury and Oxford are hosting the two sets of water quality kits and meters, and have taken responsibility of replacing reagent packets as they become depleted.

In Year 12, the Coalition finalized a review of industrial facilities located in each member community, including facilities that applied for coverage under the USEPA's Multi-Sector General Permit (MSGP) program, and the compliance status of each. The objective of this activity was to connect data from the two permit programs, consistent with the anticipated 2014 Massachusetts MS4 Permit.

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, Palmer continued to use the Stormwater Best Management Practices (BMP) Toolbox, developed as a Draft in Year 10 and finalized in Year 11. This tool compiles the stormwater post-development tools currently permitted and encouraged for small development or redevelopment, specifically single-family homes and limited commercial renovations that have a small development footprint. The Stormwater BMP Toolbox provides technical data, design factors, and construction limitations with these BMPs in non-technical language.

The objective was to provide the average property owner with easy-to-understand information that encourages them to select low-impact stormwater management tools for their properties, construct them safely, and maintain them for long-term benefit. The BMPs in the Toolbox are consistent with the requirements of the current Small MS4 Permit, the Massachusetts Stormwater Handbook, and other current guidance documents. The Coalition provided training on this topic at a workshop on October 7, 2014.

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

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

In Year 12, Palmer continued to utilize the Stormwater Pollution Prevention Plan (SWPPP) template in the form of a word processing document. This document was developed in Year 10 and addresses elements common to all SWPPPs, including storage of materials, site inspection practices, water sampling, training, spill prevention and cleanup, Standard Operating Procedures for a number of activities, and other sections. The Coalition provided training on the SWPPP Template at a workshop on October 7, 2014. The SWPPP template covers many types of municipal properties. This includes highway department garages and public works yards- where salt is stored and vehicle maintenance or storage is completed- as well as parks, golf courses, and cemeteries, where fertilizers and pesticides may be applied and lawn mowing activities may result in small spills. The SWPPP template includes built-in instructions to make it as simple as possible for each community to develop a SWPPP for a property, simply by deleting text that doesn't apply.

In Year 12, Palmer continued to utilize the 15 Standard Operating Procedures (SOP's) developed by the Coalition in Year 10, and intended to provide guidance on activities required or encouraged by the 2003 Massachusetts Small MS4 Permit. The Coalition provided training on these SOP's at a workshop on October 7, 2014. These SOPs addressed such diverse activities or needs as outfall inspection (both dry weather and wet weather), catch basin cleaning, erosion and sedimentation control, oil/water separator maintenance, use and storage of pesticides and fertilizers, and many more. The group developed standard forms and methodologies for these procedures, many of which were incorporated into the Integrated Online Mapping and Inspection System, described in following paragraphs.

In Year 12, Palmer continued to utilize two presentations developed in Year 10 on pollution prevention in stormwater management, with content focused on educating employees of public works, engineering, conservation, planning, highway, and other similar municipal departments on the requirements of the 2003

Small MS4 Program. The Coalition provided training on how to use these presentations to educate a variety of staff members at a workshop on October 7, 2014. One presentation is focused on using the SWPPP Template and the responsibilities of municipal personnel to implement requirements of the SWPPP, and the second training presentation provides explanation and insight on the 15 SOP's described previously.

In Year 12, Palmer continued to utilize a Sump Pump Discharge Policy developed in Year 10 that provides a framework for the member communities to respond to needs to remove sump pumps from the sanitary sewer system without causing property damage or creating a hazardous condition for the public. The Coalition provided training on the Sump Pump Discharge Policy at a workshop on October 7, 2014. The Policy discusses considerations related to potential contamination and reduction in capacity of the storm drain system when sump pumps are permitted to connect to the drainage system, and lays out a situational approach to provide flexibility in administrating a policy. The Policy includes guidance for when such a connection should be considered, what information the municipality can request from a residential or commercial property to guide in its decision, and outlines the responsibilities of the property owner.

In Year 12, Palmer continued to utilize a Salt/Sand Benchmarking tool developed in Year 10 to guide member communities in calibrating deicing equipment. The Benchmarking tool calculates the present loading rate of chloride (per lane-mile) presently applied by its salt trucks and other municipal vehicles, regardless of the compound (e.g.: sodium chloride, green salt, calcium chloride) or form (e.g., solid or liquid, mixed with sand), and in evaluating alternative application methods and materials to current practices.

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 an 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	Create Stormwater Program	Public Works Planning Board Conservation Commission Board of Health Town Manager	Palmer will present to the public at public meeting Palmer's Comprehensive Stormwater Management Program	Palmer has developed two Stormwater Ordinances, which were presented public hearings on July 14, 2008 (Projects greater than one acre) and February 9, 2009 (Projects less than one acre).	Palmer will continue to evaluate its Stormwater Ordinances and adjust them to provide adequate protection of local bodies of water.
Revised					
2	Create Stormwater Program	Town Manager Public Works	Palmer will identify appropriate sources of funding assistance (SRF, 319 Grant Program, 604(b) Grant Program, Lakes & Ponds Grant Program) and apply for assistance in implementing portions of Palmer's Comprehensive Stormwater Management Program, including public education and outreach	The Town of Palmer has joined an intermunicipal agreement with 29 other communities for regionalizing municipal stormwater management in central Massachusetts through collaborative education, data management and policy development.	The Town of Palmer continues to be an active participant in the Central Massachusetts Stormwater Coalition and continues to work with the 29 other communities to improve the town's stormwater programs.
Revised					

3	Address Specific Groups	Town Manager Public Works Conservation Commission	Distribute EPA and other relevant educational brochures to targeted audiences. Distribution points include Town Hall, Library and Transfer Station, Conservation Commission will sponsor biodiversity days at Palmer High School	The Town has received EPA educational material on disk for easy printing and distribution. Brochures regarding stormwater and sewers are available at the Palmer Town Building, Senior Center, Library and Recycling center.	The Town will continue to offer current educational materials to the public on the protection of its water bodies that it receives from the CMSWC.
Revised					
4	Target groups likely to impact stormwater.	Town Manager Public Works	Brochures targeting specific audiences and activities will be available. These target groups include homeowner and lawn maintenance activities, disposal of household waste, and pet maintenance	The Town of Palmer has available the following brochures: Watch Your Waste prepared by MADEP, door hangers A Guide to Your Building's Recycling Program prepared by MADEP. Water Department posts Water Conservation Tips on the town website, including measures to reduce outdoor waste. Announcements of events concerning leaf disposal and composting are also posted on the town website and attached to this report. The Town's Highway Department also posts education links and announcements for lead disposal on their website.	The Town will continue to make these and other material available.
Revised					
5	Identify alternative information sources	Town Manager MIS Department	Palmer will post links to stormwater BPMs and other water quality education resources, including EPA and DEP on its website: www.townofpalmer.com	Palmer has identified an posted links to EPA and DEP stormwater regulations and other water quality education resources on its website: www.townofpalmer.com The Town's website includes links to local water departments and water quality reports.	Palmer will continue to locate new educational sources to post to its website as well as maintain the links to current resource materials.
Revised					

6	Identify alternative information sources	Town Manager MIS Department	Palmer will also post links on its website to the Chicopee River Watershed Association @ www.chicopeeriver.org,	The Town of Palmer has posted links from the CMSWC and will continue to make this information available.	This effort will continue into 2016.
Revised					

7	Utilize local public access channel	Town Manager	Public Meeting notice for the meeting to review Palmer's Comprehensive Stormwater management Program will be posted on Palmer's website	Public meeting notices were posted on the town website and the public meetings reviewing Palmer's Comprehensive Stormwater Management Program (held July 14, 2008 and February 9, 2009) aired on Palmer's local access channel.	The town continues to post announcements for public forums regarding stormwater on their website.
8	Develop, conduct and document educational programs	Town Manager Liaison	The Town of Palmer will appoint a liaison to the Chicopee River Watershed Council to disseminate information to the Town on programs and activities	The Town of Palmer has not received any contact from the Chicopee River Watershed Council	The Town of Palmer's Conservation Agent has been actively evaluating issues that pertain to the protection of the Chicopee River Watershed and will continue those efforts
9	Promote Household Waste Recycling	Public Works Board of Health	The Town of Palmer will work with the Town of Monson and the Town of Wilbraham and the Board of Health to continue to sponsor Regional Hazardous Waste Collection Days.	Palmer holds monthly Recycling Events the first Saturday of each month, published on the town website. Recycling announcements have been posted to the town's website, along with a typical month's calendar showing the monthly recycling event. The Town of Palmer maintains an ongoing partnership with the Town of Wilbraham for Hazardous Waste Collection. Every September there is a multi-community event for hazardous waste. Palmer participated in 2014 and plans to remain involved.	Palmer will continue to hold and advertise monthly Recycling Events as well as continue the multi-community partnership for Hazardous Waste Collection.

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
10	Storm drain stenciling	Public Works	Palmer will work with local lake and Scout groups to develop a stenciling program. Stenciling will target Palmer's subwatersheds.	Stenciling was completed during the original 5-year permit term; No additional activities took place this permit year.	The Town will continue to identify and support watershed protection activities involving local student and community groups.
Revised					
11	Community clean-ups	Public Works Conservation Commission	Town of Palmer will encourage local stream team cleanups with local residents and area Scout groups. Town will provide solicitation of sponsors and notice of events on local access channel and website	The Hampden County Sheriff's Department provides manpower for riverbank cleanups several times a year. The Palmer DPW provides trucks for waste pickup. Local Boy Scouts clean up the banks of at least one river or stream each year. Palmer Events Planning hosted a Pick-up Palmer Day in May.	The Town continues to support and encourage local cleanups with local residents.
Revised					
12	Community clean-ups	Public Works	Town will provide trucks and other material to support cleanup efforts and disposal of materials.	The Town of Palmer accepts yard waste and materials from town cleanup efforts at the Burleigh Park composting site and at the town DPW yard. The Palmer DPW provides transportation for waste pickup during school-based Earth Day cleanups.	The Palmer DPW supports residents in picking up garbage from streets, curbs, sidewalks and drainage areas along roadways, and will continue to support community cleanup efforts.
Revised					

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
13	Inventory and mapping of storm drain system	Public Works	Palmer will identify appropriate sources of funding assistance (SRF, 319 Grant Program, 604 (b) Grant, Lakes & Ponds Grant Program, Source Water Protection Grant Program, Recycling Grant Program) and apply for assistance in implementing portions of Palmer's Comprehensive Stormwater Management Program, including public education and outreach.	The Town of Palmer has joined an intermunicipal agreement with 29 other communities for regionalizing municipal stormwater management in central Massachusetts through collaborative education, data management and policy development. The official joint application began in permit year 11 and will continue develop into the next permit cycle.	The Town of Palmer along with the Conservation Commission will continue to seek funding opportunities to support its protection of local bodies of water. The Town will also be working with the Municipal Stormwater Management Collaborative to identify funds.
14	Mapping and identification of outfalls and receiving waters.	Public Works Board of Assessors	Palmer will develop and implement a plan to map all outfalls and receiving bodies of water, contingent on Town Council approval of funding.	All known outfalls within Palmer's CSO area were mapped during the original 5-year permit term and are inspected annually to make sure they are in proper working condition. Palmer's Wastewater Treatment Plant personnel maintain the outfall maps that have been completed	The Town will continue to monitor for unknown outfalls and maintain all known outfalls in the CSO area. Through the CIC Grant, the town has access to a GPS monitor and water testing instruments to track and test known outfalls.

15	Identification/description of problem areas	Public Works	Palmer will develop and implement an Illicit Discharge Detection and Elimination (IDDE) plan, contingent on Town Council approval of funding	Palmer developed an Illicit Connections and Discharges to the Municipal Storm Drain Ordinance, which was presented at a public hearing on July 14, 2008 and was passed by the Town Council on August 11, 2008. Palmer's Wastewater Treatment Plant personnel perform quarterly inspection of CSO outfalls and outfalls that were abandoned during or prior to the Town's CSO separation project. Suspended flows are immediately investigated for source identification and removal.	Quarterly inspections on all CSO outfalls and outfalls abandoned during or prior to the Town's CSO separation project will continue.
16	Enforcement procedures addressing illicit discharges	Planning Board Town Council Board of Health	Palmer will review whether local authority is appropriate and able to respond to potential illicit discharges. New ordinances, if necessary, will be proposed to Town Council.	The Town has local regulations prohibiting illicit discharges into the storm drain system	The Town will continue to enforce and critique its illicit discharge regulations.
17	Public information program regarding hazardous wastes and dumping	Public Works Board of Health	Palmer will provide educational brochures to residents promoting proper disposal household hazardous wastes and conditions for regional collections	The Town maintains an active partnership with Wilbraham for disposal of household waste.	This partnership with Wilbraham will continue into the future.
18	Initiation of recycling programs	Public Works Board of Health	Palmer will apply for funding assistance from DEP's Recycling Grant Program for assistance in public education and in the purchase of recycling materials.	The Town of Palmer utilized printed materials from MADEP to encourage recycling by Palmer residents and businesses.	The Town will continue to identify funding sources and opportunities to encourage recycling.

19	Watershed assessments and studies	Public Works Conservation Commissions Board of Health	Palmer will identify opportunities for funding assistance from DEP's 604(b) and 319 grant programs and the Department of Environmental Management's Lakes and Ponds Grant Program to support watershed assessment and implementation activities. Tasks can include design and installation of stormwater BPMs and public outreach including storm drain stenciling. Emphasis will be on assessments and remediation of stormwater related problems.	Palmer continues to identify funding opportunities to support its protection of local bodies of water.	There is potential that limited funding for a watershed assessment is forthcoming from a program initiated from the Pioneer Valley Planning Commission (PVPC).

20	Watershed assessments and studies	Public Works Palmer Water & Fire Districts	The Town of Palmer will encourage the Palmer Water Districts to apply for funding assistance fro DEP's Source Water Protection Program for grant assistance to develop wellhead protection plans and stormwater management plans within Zone II. These plans can include stormwater management programs. The proposed tasks will include a public education component.	Palmer implemented town-wide Storm Water Management Plans during Permit Year 6.	The Town of Palmer will continue to encourage the Water Districts to seek funding for individual Zone II Storm Water Management Plans.

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
21	Ordinance: Storm water management regulations for construction sites 1 acre or larger	Planning Board Conservation Commission Town Council Board of Health Zoning Board of Appeals	Palmer will review model ordinances developed by DEP in consultation with the Attorney General's Office.	Storm Water Management regulations were passed during Permit Year 6.	No additional action is planned for the BMP.
Revised					

5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
22	Ordinance: Require post-construction runoff controls	Planning Board Conservation Commission Town Council Board of Health Zoning Board of Appeals	Palmer will review model ordinances developed by DEP in consultation with the Attorney General's Office.	The Planning Board rules and regulations for all new developments require a stormwater management plan during and post construction	No additional action is planned for this BMP.
Revised					

6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities
23	Develop a municipal Operations and Maintenance Plan	Public Works	Using regulations from DEP and EPA, Palmer will develop and update an operations and maintenance plan to include proper disposal of street sweepings, catch basin cleanout, snow disposal, roadway deicing procedures, vehicle washing, and outside storage of materials.	A formal O&M plan is still being developed in Permit Year 11 and beyond. Street sweeping occurs from April to October each year. Palmer's DPW cut down the rate of salt and sand over the permit year during winter perception to limit the amount of material buildup during spring melt. The winter of 2014-2015 was, however very intensive as to road treatment and plowing needs.	The Town of Palmer's DPW and WWTP personnel will continue their efforts to finalize the O&M Plan.
Revised					
24	Develop a municipal Operations and Maintenance Plan	Public Works	Palmer will implement a formal inspection program, including maintenance logs and scheduling, for catch basin cleaning, repairs, and new installation.	A formal inspection is being developed as part of the formal O&M Plan. Palmer owns a vacuum truck, which is used by the DPW and WWTP personnel for catch basin cleaning on a daily basis. Structural conditions or suspended illicit discharges are noted for future maintenance or follow-up action respectively. Palmer's DPW performs manhole inspections on a regularly scheduled basis and records results per MIIA recommendations.	Palmer will continue its current inspection and cleaning routine while the O&M Plan is being developed
Revised					

25	Develop and implement training programs for municipal employees	Public Works	Palmer will send a minimum of 3 public works employees annually to training seminars sponsored by MassDOT, BayState Roads, and other relevant agencies or vendors.	During the past year, DPW employees have participated in the following training sessions: Flagmen training, hot mix asphalt inspection, dig-safe training and NEWEA specialty conferences.	The Town will continue to send employees to relevant training seminars and forums.
Revised					
26	Review storm drainage infrastructure needs	Public Works	Palmer will incorporate storm drain infrastructure review in Palmer's Chapter 90 project utilization	Palmer continues to identify opportunities for storm sewer infrastructure improvements in connection with Chapter 90 projects. The town has conducted a Sewer Replacement Project which included the installation of 36 new catch basins throughout town.	Palmer will continue to identify opportunities for storm sewer infrastructure improvements in connection with Chapter 90 projects.
Revised					

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) *<<if applicable>>*

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 11 (Reliance on non-municipal partners indicated, if any)	Planned Activities
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

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, 2010 through March 31, 2011)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures **	($)	None
Total program expenditures since beginning of permit coverage	($)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		General Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	70%
Stormwater management committee established	(y/n)	Yes (Regional)
Stream teams established or supported	(# or y/n)	No
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Yes
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	Regional
▪ material collected **	(tons or gal)	Not Tracked
School curricula implemented	(y/n)	No

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	(%)	40%
Estimated or actual number of outfalls	(#)	25
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	40%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	CSOs Only
Illicit discharges identified **	(#)	33
Illicit discharges identified (Since beginning of permit coverage)	(#)	
Illicit connections removed **	(#); and (est. gpd)	3 700 gpd
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	3 700 gpd
% of population on sewer	(%)	80%
% of population on septic systems	(%)	20%

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	0
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	0
Site inspections completed **	(# or %)	0
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 **	(#)	120
Qty. of storm drain cleaned **	(%, LF or mi.)	230 LF
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**	($)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	0
• Vacuum truck(s) owned/leased	(#)	1
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	0
• % Structures cleaned with vactor **	(%)	100%

	(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)	
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	($)	
• Hourly or lane mile contract rate **	($/hr. or ln mi.)	
• Disposal cost**	($)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	0
• Vacuum street sweepers specified in contracts	(y/n)	No
• % Roads swept with rotary brush sweepers **	%	100%
• % Roads swept with vacuum sweepers **	%	0%

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

▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized **	(y/n or %)	
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)	

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	

Month & Year___2014_____

Vehicle # ____V307_____

OPERATION CODES

1-Jet Rod	**7- Root Cutting**
2- Vactored	**8- Root Foam**
3- TV Inspect	**9- Hand Rod**
4- Visual Inspect	**10- Cleaned Basin**
5- GIS	**11- Repair**
6- Dye Test	**12- Other**

SITE DESCRIPTION

A-Catch Basin	**F- Pump Station**
B- Mainline	**G- POTW**
C- Manhole	**H- CSO's**
D- Inteceptor	**I- Drainage**
E- Syphon	**J- Other**

Date	Name(s)	Site Descp	P/M or Emer	Overtime Y/N	Operation Code	Start House #	Stop House #	Distance in Feet	Location	# CB CLEANED	Description of Work	
MAR/12/2014	JIM,RALPH	A	EMER	N	10	1028			1028 WILSON ST PALMER		1028 WILSON ST PALMER CLEAN CATCHBASIN BACK	WILP
APR/17/2014	RAY(HIGHWAY D	A	P/M	N	10	403	407		403 SPRINGFIELD ST THREE RIVER		CLEAN OUT 4 CATCHBASIN 403 TO 4017 SPRINGFIELD	SPRT
APR/17/2014	RAY(HIGHWAY D	A	P/M	N	10				THREE RIVER RD THREE RIVER		CLEAN FEW CATCH BASIN ON THREE RIVER RD THRE	THRT
APR/22/2014	MIKE,JIM	I	P/M	N	2				SOUTH ST THREE RIVER		CLEAN OUT DROP INLET SOUTH ST & KELLY ST THRE	SOUT
APR/22/2014	MIKE,JIM	A	P/M	N	10				SOUTH ST THREE RIVER		CLEAN OUT CATCHBASIN SOUTH ST THREE RIVER	SOUT
APR/23/2014	JIM,RALPH	A	P/M	N	10				HILL ST THORNDIKE		CLEAN 3 CATCHBASIN HILL ST THORNDIKE	HILT
APR/23/2014	JIM,RALPH	A	P/M	N	10				KELLY ST THREE RIVER		CLEAN 3 CATCHBASIN KELLY ST & HIGH ST THREE RI	KELT
APR/23/2014	JIM,RALPH	I	P/M	N	2,11				SYKES ST THREE RIVER		JET ROD CULVERT PIPE ON SYKES ST THREE SO HIG	SYKT
MAY/8/2014	JIM,RALPH	I	P/M	N	4				RONDO RD PALMER		CHECK OUT RONDO RD CULVERT PIPE CULVERT PIPI	RONP
MAY/8/2014	JIM,RALPH	I	P/M	N	12				RONDO RD PALMER		CULVERT PIPE RONDO RD WHISKEY HILL RD SIDE FU	RONP
MAY/13/2014	JIM,RALPH	A	P/M	N	10				CAULKINS RD THREE RIVER		CLEAN UP 3 CATCHBASIN ON CAULKIN RD THREE RIV	CAUT
MAY/21/2014	JIM,RALPH	A	P/M	N	10				SPRING ST BONDSVILLE		CLEAN 4 CATCHBASIN SPRING ST BONDSVILLE 3009 S	SPRB
MAY/21/2014	JIM,RALPH	A	P/M	N	10				MAIN ST BONDSVILLE		CLEAN CATCHBASIN MAIN ST & SPRING ST BONDSVIL	MAIB
MAY/21/2014	JIM,RALPH	A	P/M	N	4				HILLSIDE DRIVE BONDSVILLE		CHECKOUT CATCHBASIN IN RESIDENT YARD. IT WAS	HILB
MAY/28/2014	IIM,KEVIN,KENN	B,C	EMER	Y	1,2			200	EDGEWOOD ST THREE RIVER		EMERGENCY SEWER CALL EDGEWOOD ST THREE RI	EDGT
MAY/29/2014	M,(RAY HIGHWA	I	P/M	N	2	207			207 OLD WARREN RD PALMER		CLEAN OUT DRAIN PIPE 207 OLD WARREN RD PALME	OLDP
JUNE/2/2014	M,(RAY HIGHWA	A	P/M	N	10				MT DUMPLIN ST PALMER		CLEAN OUT 2 CATCHBASIN MT DUMPLIN ST & THORN	MTDP
JUNE/2/2014	M,(RAY HIGHWA	C,I	EMER	N	2				PLEASANT ST THORNDIKE		CLEAN OUT MANHOLE ON PLEASANT & CHURCH ST T	PLET
JUNE/4/2014	M,(RAY HIGHWA	A	P/M	N	10	60			60 RANDELL ST PALMER		CLEAN CATCHBASIN 60 RANDELL ST PALMER CLEAN	RANP
JUNE/4/2014	M,(RAY HIGHWA	A	P/M	N	10	19			19 RANDELL ST PALMER		CLEAN 2 CATCHBASIN 19 RANDELL ST ACROSS FROM	RANP

JUNE/4/2014	M,(RAY HIGHWA	A	P/M	N	10	1040			1040 PLEASANT ST PALMER		CLEAN 2 CATCHBASIN 1040 PLEASANT ST PALMER R	PLEP
JUNE/4/2014	M,(RAY HIGHWA	A	P/M	N	10	4016			4016 PLEASANT ST THORNDIKE		CLEAN CATCHBASIN 4016 PLEASANT ST THORNDIKE	PLET
JUNE/4/2014	M,(RAY HIGHWA	A	P/M	N	10	4041			4041 PLEASANT ST THORNDIKE		CLEAN CATCHBASIN 4041 PLEASANT ST THORNDIKE	PLET
JUNE/6/2014	M,(RAY HIGHWA	A	P/M	N	10				NORTH MAIN ST PALMER		CLEAN CATCHBASIN NORTH MAIN ST PALMER IN FRO	NORP
JUNE/6/2014	M,(RAY HIGHWA	A	P/M	N	10				NORTH MAIN ST PALMER		CLEAN CATCHBASIN NORTH MAIN ST IN FRONT OF PA	NORP
JUNE/6/2014	M,(RAY HIGHWA	A	P/M	N	10				NORTH MAIN ST PALMER		CLEAN 4 CATCHBASIN ON NORTH MAIN ST AND SHEA	NORP
JUNE12/2014	M,(RAY HIGHWA	A	P/M	N	10				PETERSON ST PALMER		CLEAN 2 CATCHBASIN AT BOTTOM OF HILL NEAR OLD	PETP
JUNE16/2014	M,(RAY HIGHWA	A	P/M	N	10				PETERSON ST PALMER		CLEAN 2 CATCHBASIN UP HILL LITTLE WAYS FROM BO	PETP
JUNE17/2014	M,(RAY HIGHWA	I	P/M	N	12				RONDO RD PALMER		CHECK OUT CULVERT PIPE. CLEAN OUT STICK BEST	RONP
JUNE19/2014	Y HIGHWAY),MIK	A	P/M	N	10	3034			3034 MAIN ST BONDSVILLE		3034 MAIN ST BONDSVILLE CLEAN CATCHBASIN TOP	MAIB
JUNE19/2014	Y HIGHWAY),MIK	A	P/M	N	10				MAIN ST BONDSVILLE		CLEAN CATCHBASIN MAIN ST NEAR GIN MILL	MAIB
JUNE19/2014	Y HIGHWAY),MIK	A	P/M	N	10				MAIN ST BONDSVILLE		CLEAN SMALL CATCHBASIN IN SIDE DRIVEWAY MAIN	MAIB
JUNE19/2014	Y HIGHWAY),MIK	I	P/M	N	2				SYKES ST THREE RIVER		CLEAN 2 DROP INLETS ON SYKES ST THREE RIVER NI	SYKT
JUNE/24/2014	JIM,MIKE	I	P/M	N	1				MAIN ST BONDSVILLE		CLEANOUT OUT CULVERT PIPE NEAR DAM BIG ROCK	MAIB
JUNE/24/2014	JIM,MIKE	I	P/M	N	1				RONDO RD PALMER		CLEAN OUT DIRT RONDO RD WARREN SIDE FULL OF	RONP
JUNE/26/2014	JIM,RALPH	I	P/M	N	12				MAIN ST BONDSVILLE		TRY GETTING ROCK OUT OF MANHOLE MAIN ST BONI	MAIB
JUNE/26/2014	JIM,RALPH	C,I	P/M	N	1,2				PLEASANT ST THORNDIKE		JET ROD PLEASANT & SUMMER ST DRAIN LINE BACK	PLET
JULY/16/2014	MIKE,JIM	A	P/M	N	10,11				HIGH ST THORNDIKE		CLEAN UP CATCHBASIN ON HIGH & SCHOOL ST SO HI	HIGT
JULY/18/2014	MIKE,JIM	A	P/M	N	10				HIGH ST THREE RIVER		CLEAN 3 CATCHBASIN HIGH ST THREE RIVER	THRT
JULY/18/2014	MIKE,JIM	A	P/M	N	10				KELLY ST THREE RIVER		CLEAN 1 CATCHBASIN KELLY ST THREE RIVER	KELT
JULY/21/2014	MIKE,JIM	A	P/M	N	10				THREE RIVER ROAD THREE RIVER		CLEAN 6 CATCHBASIN ON THREE RIVER ROAD THREE	THRT
JULY/22/2014	MIKE,JIM	A	P/M	N	10				SPRINGFIELD ST THREE RIVER		CLEAN 5 CATCHBASIN ON SPRINGFIELD ST THREE RI	SPRT
JULY/31/2014	KEVIN,RALPH,DE	A	P/M	N	4,6				SOUTH MAIN ST BONDSVILLE		DYE TEST CATCHBASIN AT OCONNELS IN BONDSVILL	SOUB
AUG/8/2014	JIM,KENNY,MIKE	A	EMER	Y	10				NORTH MAIN ST PALMER		EMERGENCY SEWER CALL CLEAN UP STREET FROM	NORP
AUG/15/2014	JIM,MIKE	I	P/M	N	12	3181			MAIN ST BONDSVILLE		CLEAN OUT COLVERT PIPE 3181 MAIN ST BONDSVILLI	MAIB
AUG/15/2014	JIM/MIKE	C,I	P/M	N	1			30	MAIN ST PALMER		JET ROD 30 FT IN MANHOLE BY STATION # 1 ON MAIN	MAIP

AUG/20/2015	JIM	A	P/M	N	10				WING HOSPITAL PALMER		WORK WITH MORRISON CONSTRUCTION AT WING HO	WINP
SEPT/9/2014	JIM,MIKE	A	P/M	N	10				HIGH ST THORNDIKE		CLEAN CATCHBASIN HIGH ST THORNDIKE BY STOP S	HIGT
SEPT/9/2014	JIM,MIKE	A	P/M	N	10				HIGH ST THORNDIKE		CLEAN DOUBLE CATCHBASIN HIGH ST THORNDIKE B	HIGT
SEPT/9/2014	JIM,MIKE	A	P/M	N	10				HIGH ST THORNDIKE		CLEAN DROP INLET HIGH ST THORNDIKE BY JUNCTIO	HIGT
SEPT/9/2014	JIM,MIKE	I	P/M	N	1				HIGH ST THORNDIKE		JET ROD 80 OF 93 FT BEHIND JUNCTION TO OPEN UP	HIGT
SEPT/9/2014	JIM,MIKE	I	P/M	N	2				HIGH ST THORNDIKE		VACTOR OUT MANHOLE COMING FROM BROOK CLEA	HIGT
SEPT/15/2014	JIM,MIKE	A	P/M	N	2,11				PARK ST PALMER		CLEAN CATCHBASIN PARK & SCHOOL ST SO HIGHWA	PARP
SEPT/24/2014	JIM,MIKE	A	P/M	N	10				MAIN ST BONDSVILLE		CLEAN CATCHBASIN MAIN & SPRING ST BONDSVILLE	MAIB
SEPT/24/2014	JIM,MIKE	A	P/M	N	10				STATE ST BONDSVILLE		CLEAN CATCHBASIN STATE & MAIN ST BONDSVILLE	STAB
OCT/3/2014	JIM,MIKE	A	P/M	N	10	239			239 FLYNT ST PALMER		CLEAN OUT 2 CATCHBASIN 239 FLYNT ST PALMER	FLYP
OCT/3/2014	JIM,MIKE	A	P/M	N	10	239			JIM ASH ROAD BONDSVILLE		CLEAN OUT CATCHBASIN & CLEAN ROAD ALONG CAT	JIMB
OCT/6/2014	JIM,MIKE	A,I	P/M	N	10,11				SPRING ST BONDSVILLE		VACTOR OUT CATCHBASIN SO HIGHWAY CAN REPAIF	SPRB
OCT/7/2014	JIM,MIKE	A,I	P/M	N	10,11	14			14 BEECH ST PALMER		14 BEECH ST PALMER CLEAN OUT CATCHBASIN FULL	BEEP
OCT/7/2014	JIM,MIKE	A,I	P/M	N	10,11	85			85 BEECH ST PALMER		85 BEECH ST PALMER CLEAN OUT DROP INLET WALL	BEEP
OCT/7/2014	JIM,MIKE	A	P/M	N	10				HIGH ST THREE RIVER		CLEAN OUT CATCHBASIN ON HIGH & KELLY ST THREE	HIGT
OCT/17/2014	JIM,RALPH	I	EMER	N	1				RONDO RD PALMER		PIPE WAS BLOCKED JET ROD 2 LOADS 1 BEFORE LUN	RONP
OCT/20/2014	JIM,RALPH	I	EMER	N	1				RONDO RD PALMER		RONDO RD PALMER JET ROD PIPE WHOLE LOAD. PLU	RONP
OCT/20/2014	JIM,RALPH	A	P/M	N	10				COMMERCIAL ST THORNDIKE		CLEAN OUT CATCHBASIN ON COMMERCIAL ST THORI	COMT
OCT/20/2014	JIM,RALPH	A	P/M	N	10				KELLY ST THREE RIVER		CLEAN OFF CATCHBASIN KELLY & HIGH ST THREE RIV	KELT
OCT/20/2014	JIM,RALPH	A	P/M	N	10				CAULKINS RD THREE RIVER		CLEAN 2 CATCHBASIN CAULKINS RD THREE RIVER	CAUT
OCT/20/2014	JIM,RALPH	A	P/M	N	10	120			120 STATE ST BONDSVILLE		CLEAN 2 CATCHBASIN ON 120 STATE ST BONDSVILLE	STAB
OCT/30/2014	JIM,MIKE	A	P/M	N	10				HOBB ST THORNDIKE		CLEAN 2 CATCHBASIN HOBB ST THORNDIKE	HOBT
OCT/30/2014	JIM,MIKE	A	P/M	N	10				HILL ST THORNDIKE		CLEAN 3 CATCHBASIN HILL ST THORNDIKE. CLEAN OU	HILT
OCT/30/2014	JIM,MIKE	A	P/M	N	10				BELANGER ST THREE RIVER		CLEAN 2 CATCHBASIN ON BELANGER ST THREE RIVE	BELT
NOV/12/2014	JIM,RALPH	A,I	P/M	N	10				THORNDIKE ST PALMER		CLEAN OUT CATCHBASIN (DROP INLET) THORNDIKE	THOP
NOV/20/2014	IM,RALPH,KEVIN	A	P/M	N	10				COMMERCIAL ST THORNDIKE		CLEAN CATCHBASIN COMMERCIAL ST	COMT

DEC/1/2014	JIM,MIKE	I	P/M	N	4				RONDO RD PALMER		CHECK OUT RONDO RD CULVERT PIPE CULVERT PIPI	RONP
NOV/20/2014	JIM,MIKE	A	P/M	N	10				COMMERCIAL ST THORNDIKE		CLEAN CATCHBASIN COMMERCIAL ST 5 TOTAL	COMT
NOV/20/2014	JIM,MIKE	A	P/M	N	10				HIGH ST THORNDIKE		CLEAN CATCHBASIN HIGH ST 4 TOTAL	HIGT
NOV/20/2014	JIM,MIKE	A	P/M	N	10				MAIN ST THORNDIKE		CLEAN CATCHBASIN MAIN ST 3 TOTAL	HIGT
DEC/3/2014	JIM,RALPH	A	P/M	N	10				MAIN ST THORNDIKE		CLEAN CATCHBASIN MAIN ST 2 TOTAL	MAIT
DEC/4/2014	JIM,RALPH	A	P/M	N	10				MAIN ST THORNDIKE		CLEAN CATCHBASIN MAIN ST 5 TOTAL	MAIT