

**Municipality/Organization:** Town of Palmer

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**EPA NPDES Permit Number:** MA 041017

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**MassDEP Transmittal Number:** W-

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**Annual Report Number & Reporting Period:** Year 15  
April 1, 2017 – March 31, 2018

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**NPDES PII Small MS4 General Permit  
Annual Report  
(Due: May 1, 2018)**

**Part I. General Information**

Contact Person: Charles T. Blanchard

Title: Town Manager

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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:



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Printed Name:

CHARLES T. BLANCHARD

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Title:

TOWN MANAGER

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Date:

April 30, 2018

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

The Town of Palmer (Town) has completed the required self-assessment for Permit Year Fifteen and finds that our municipality is generally in compliance with the permit conditions.

Areas where the Town fell short of goal were generally in Pollution Prevention and Good Housekeeping in Municipal Operations. One of the key reasons this occurred is because the DPW is not using dedicated staff for these functions. Instead, existing staff performs these tasks when time allows. It is anticipated that we will continue to struggle as dedicated personnel does not exist for the components of the MS4 program. It will become even more challenging with the issuance of a NPDES Phase II MS4 General Permit.

The Town has many notable accomplishments and improvements for Permit Year 15.

- Approximately 80% of outfalls have been field located and mapped.
- Reviewed and approved five (5) stormwater permits
- Drainage improvements construction included: Burlingame Road, Smith Street, Peterson Street, Stewart Street & High Street
- The DPW continues to gather drainage infrastructure information including field data collection, GIS data compilation and mapping, asset condition assessments, and capital improvement recommendations.
- Hosted annual Household Hazardous Waste Collection Day and Town Wide Clean-up Event for residents.
- Held Earth Day activities and events
- Participated in the CRC Annual Source to Sea Clean-up on September 23, 2017. Supplies and T-shirts are supplied by CRWC.
- Street sweeping was completed on 100% of the roads.

In Year 15, 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 15 (which overlaps municipal fiscal years 2017 and 2018) was funded entirely by contributions of approximately \$4,000 from each of the 28 participating Towns, including Palmer. The following are some, but not all, of the work presently underway by the Coalition in Year 15 (*April 1, 2017 – March 31, 2018*):

### **Introduction**

The Central Massachusetts Regional Stormwater Coalition (CMRSWC) is an MS4 resource for all 30 member communities. CMRSWC has three standing sub-committees to allow members to focus efforts on specific issues important to the Coalition. These sub-committees are:

- Education Sub-Committee: responsible for developing and promoting outreach and educational materials required by the MS4 permit. The Education sub-committee is also responsible for planning and scheduling the Annual Meeting, educational workshops, and other forums for discussion of MS4 topics. The committee is CMRSWC's primary liaison to professional organizations and university partnerships.
- Technical Sub-Committee: responsible for managing Coalition's website and shared equipment resources; advising members on relevant technical issues including GIS system maintenance and upgrades.
- Legislative Sub-Committee: serves as the liaison to the Massachusetts Statewide Stormwater Collaborative; responsible for tracking MS4 related legislation and regulations and keeping the legislature and regulatory agencies informed of the concerns of member communities.

The CMRSWC Steering Committee held four meetings during this 12 month reporting cycle. The CMRSWC Annual Meeting was held on November 15, 2017 in Worcester. Members of CMRSWC also attended and actively participated in the Massachusetts Statewide Municipal Stormwater Coalition meetings.

### **MS4 Workshops and Technical Training (Minimum Control Measures 3, 4, 5, and 6)**

#### ***Best Management Practices Technical Tour***

On October 25, 2017, CMRSWC sponsored a technical tour and workshop for DPWs, Highway, and other staff in member communities responsible for the operations and maintenance of local roads, drainage, sidewalks, parking lots, and other public infrastructure. The tour was led by a team from Fuss & O'Neill and took attendees from 14 communities on a "road trip" to visit sites at Dennison Lubricants (Worcester), Tufts Veterinary School (North Grafton), and several Mass DCR sites. At each site, participants had the opportunity to learn about the BMPs in use at the site from a variety of staff from DCR and Mass DOT, as well as engineers and project owners. A lunch program offered additional opportunities to discuss stormwater management techniques. Handouts, presentation materials, and video footage of the tour are being offered to CMRSWC members through the website.

#### ***Videos and Templates (Minimum Control Measures 1, 3, 4, 5, 6)***

As a follow-up to the Best Management Practices Technical Tour, 12 new CMRSWC videos were produced that feature the various BMPs visited on the tour, presentations from the day, and additional detailed footage recorded at the BMP sites after the event.

#### ***Department of Conservation and Recreation Education and Outreach Materials (Minimum Control Measures 1 and 2)***

As part of the Stormwater BMP Technical Tour, Kelley Freda from the Department of Conservation and Resources presented participants with stormwater education and outreach materials available from DCR. She distributed a packet of various brochures targeting a diverse audience. These materials are available from the DCR website [www.mass.gov/dcr/watersupply](http://www.mass.gov/dcr/watersupply)

## **Worcester Polytechnic Institute Water Resource Outreach Center (Minimum Control Measures 1 and 2)**

Worcester Polytechnic Institute's (WPI) Massachusetts Water Resource Outreach Center (WROC) is dedicated to assisting Central and Eastern Massachusetts municipalities and watershed associations with their water resource needs through student project collaboration. CMRSWC has been working with the WPI-WROC and MassDEP on Interactive Qualifying Projects (IQPs) since 2012.

The CMRSWC and MassDEP sponsored a 2017 WPI-WROC project called "Stormwater Management Educational Materials for Central Massachusetts Municipalities." Municipalities are required to distribute educational materials on stormwater issues to comply with the MS4 permit; "the ultimate objective being to increase knowledge and change behavior of the public so that pollutants in stormwater are reduced." The project team used public surveys and questionnaires to assess the public's understanding of stormwater and stormwater runoff. The results showed that most people do not understand what stormwater is, how it gets into our waterbodies and the impacts it has on water quality and public health. Focusing on increasing awareness of the importance of protecting our water among our elementary school student population, the WPI students developed a stormwater toolkit featuring an activity book and stickers for children. The activity book includes opportunities for parents to participate and ask questions.

Building on the previous work for educational materials, the 2018 student team worked with stormwater experts at MassDEP, MA Department of Education representatives and school teachers from Shrewsbury and Holden to develop a 5<sup>th</sup> grade watershed curriculum that meets the new Massachusetts Next Generation science standards. Components of the curriculum include the water cycle, watersheds, stormwater runoff and other environmental features that demonstrate to children how runoff and contaminants affect water quality. The students will be presenting their findings on May 1, 2018 at 4:00 p.m. at the MassDEP Central Regional Office in Worcester.

More information is available at: <http://wp.wpi.edu/wroc/>

## **EnviroScape Nonpoint Source Pollution Model (Minimum Control Measures 1 and 2)**

**The CMRSWC owns two 3D EnviroScape® Watershed/Nonpoint Source models which are available for use by our members. These models provide a hands-on, interactive demonstration of the sources and effects of water pollution and ways to prevent pollution.** The CMRSWC sponsored a booth at the EcoTarium's Earth Day Celebration in April using the model to teach about stormwater education. Several member communities including Holden, Charlton, Framingham, Hopkinton, Lunenburg, Palmer, Shrewsbury, Auburn, & Dudley have used the EnviroScape model for presentations at Earth Day festivals, school programs, scouting events, and DPW open houses.

## **Member Needs Survey**

In March 2018, CMRSWC contracted with Fuss & O'Neill to develop a technical needs survey that measured the concerns of member communities with respect to compliance with the updated MS4 General Permit for Stormwater Discharges (which is currently stayed pending judicial review). The survey served as a follow-up to the first coalition member survey in the fall of 2016 and asked members to rank certain programs/tasks that CMRSWC could support to assist members in complying with the MS4 Permit. The survey also requested that respondents identify the CMRSWC tools, resources, and events that they made use of during 2017 or provide feedback on why they chose not to take advantage of such tools or events.

Coalition members ranked their needs as follows:

1. Maintain the CMRSWC Website with Available Tools and Templates
2. Provide Written IDDE Program Template and Training
3. Provide NOI/SWMP Template and Training

Coalition members ranked their compliance concerns as follows:

1. Preparation of NOI and SWMP
2. Performing Outfall Inspections
3. Performing Outfall Inventory Ranking
4. Meeting TMDL Requirements
5. Developing Written Catchment Investigation Procedures
6. Designing and Constructing BMP Retrofits
7. Designing and Maintaining SWPPPs
8. Identifying and Removing Illicit/Illegal Discharges
9. Developing a Written IDDE Program
10. Mapping the Storm Sewer System

## **Statewide Stormwater Coalition Grant Award**

CMRSWC announced at its January 8<sup>th</sup> Steering Committee Meeting a \$200,000 grant from the State to the Statewide Stormwater Coalition to develop and implement a statewide stormwater education and outreach campaign. The project will provide stormwater education materials to communities across the state, including CMRSWC member communities. The funds, issued through the Commonwealth's Fiscal Year 2018 "MS4 Municipal Assistance Grant Program," recognize the important work of stormwater coalitions and regionalized stormwater management. Materials will be made available in July 2018.

## **Conclusion**

Working as a group, CMRSWC collectively protects regional water resources while assisting communities with meeting requirements of the MS4 permit in an efficient and cost-effective manner. Member communities continue to benefit from the use of CMRSWC tools, resources, and events to continue to implement their MS4 program with local staff and resources.

### **Minimum Control Measure 1: Public Education and Outreach**

In Year 15, The Palmer Conservation Commission continued to utilize one of the Enviroscapes models (focused on non-point source pollution education <http://www.enviroscapes.com/nonpoint-source.html>) purchased by the Coalition in Year 10 and Year 14 with a grant from NEWEA. These Enviroscapes models is a public education tool that provides a hands-on, visual training 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 Conservation Agent ran demos with the Enviroscapes Model at the Three Rivers TRACK fair held on Saturday May 4, 2017 and at the Chicopee 4 Rivers Watershed Council Summit held on Saturday November 12, 2017. The Agent also developed a Stormwater Pollution 101 Poster to display at the events, which was also at the Palmer Public Library for Rivers Month (see Appendix A for additional information and newspaper articles on the events).

The Conservation Commission distributed a brochure that describes wetlands protection in Palmer (see Appendix A for a copy). The Conservation Commission also distributed a flyer that describes 10 tips for a healthy yard in Palmer. The flyer includes details regarding impacts of lawn chemicals, dog waste and other various common practices on waterways when conveyed by stormwater (see Appendix A for a copy). The Conservation Agent also wrote an Article for the Chicopee-4-Rivers watershed Council's quarterly newsletter about "What is Stormwater" (see Appendix A for a copy).

The Conservation Commission also create additional stormwater brochure targeting dog owners aimed at increasing the general awareness of stormwater related issues caused by improper disposal of pet waste. This brochure was created and is available at the Town Clerks office. A Goal for Year 16 is to mail a copy of the Brochure with all 2019 Dog Tag/License (See Appendix A for a copy).

Educational material promoting recycling was also disseminated to Palmer by the Board of Health during the Regional Hazardous Waste Day held on September 9, 2017 and by the Palmer DPW during the Annual Bulk Day held on September 30, 2017. These campaigns were promoted on the Town website and also appeared in The Journal Register newspaper (see Appendix A for a copy).

The Town also has a link on the website for the Central MA Stormwater Coalition educational website, [www.CentralMAStormwater.org](http://www.CentralMAStormwater.org), focused on providing information about the project to a number of audiences, including the general public, educators, and kids.

The following local citizen groups and organizations provide public education resources on stormwater quality issues or could provide

a public outreach avenue in developing stormwater awareness and developing partnerships with the public:

- Central MA Stormwater Coalition
- Connecticut River Watershed Council
- Chicopee 4 Rivers Watershed Association
- Lake Thompson Civic Association
- Palmer Trails Committee
- Belchertown Land Trust
- Opacum Land Trust

These groups continue to provide and/or have the capacity to provide public education resources on stormwater quality issues and continue to exist as support for future stormwater education programs in Palmer.

### **Minimum Control Measure 2: Public Participation**

Students in the Palmer public schools are encouraged to volunteer in environmental activities over the summer vacation, in addition to after-school activities. Some of these ongoing programs include:

- The Annual Source to Sea Cleanup of the Swift River in Bondsville Coordinated by the Conservation Commission
- Town wide Earth Day Cleanups
- Trail cleanup events coordinated by the Conservation Commission
- NAACC Culvert Assessments
- “It’s Clean” Bacteria Sampling

Boys and girls may be involved in the Scout programs from ages 5 to 17. Scouts are involved in various community service programs and are available to assist with implementation of the Town’s stormwater management program. A goal for Year 16 is to coordinate with the local Scout Troops to begin a Stormdrain Stenciling Campaign.

In Year 15, The Conservation Commission applied for a604B Water Quality grant to investigate water quality issues and identify any potential stormwater runoff issues in Forest Lake. The overall project purpose is to develop and implement a Watershed Protection Plan (“the Plan”) to protect Forest Lake. Forest Lake is designated as a Massachusetts Great Pond, and is a regional recreational boating and fishing resource. Proposed assessments will include surface water and sediment quality, watershed conditions and pollutant sources, and preliminary development of Low Impact Development (“LID”) Best Management Practices (“BMPs”) to mitigate existing pollutant sources, where feasible. In addition, the project and Plan will include a community outreach and education program targeted at waterfront property and will share results with residents and town officials toward implementation of better stormwater management practices.

In Year 15, the Conservation Commission has also been involved in numerous conservation area stewardship projects, collaborating with both private and public organizations, as well as individuals. Midura Conservation Area, Brown's Farm Conservation Area and the Swift River Green Belt have all had trail work completed and Dog waste station installed.

On April 22, 2017, the Department of DPW (DPW) sponsored an Earth Day trash collection. The DPW provided trash bags and Gloves to residents wishing to partake in the collection of roadside trash. A total of 300 small trash bags were given out to 16 participants who collected trash in various locations throughout the town. All trash was disposed of by the DPW (see Appendix A for additional information and newspaper advertisements).

On September 22 & 23, 2017 The Conservation Commission participated in the Connecticut River Conservancy 21st Annual Source to Sea Clean-up. The Source to Sea Cleanup is a yearly trash cleanup of the Connecticut River system all along the four-state watershed (NH, VT, MA, CT) – rivers & streams, shorelines, parks, boat launches, trails and more. This is the third year the Conservation Commission has hosted a clean-up site along the Swift River in Bondsville. (see Appendix A for additional information and newspaper advertisements).

The Conservation Commission also worked with the Palmer Board of Health to purchase several Dog Waste Stations to be installed in several parks through town. A total of twelve (12) waste stations were installed.

The Palmer Conservation Commission, in partnership with the Chicopee 4 Rivers Watershed Council (C4RWC) continued its Bacteria sampling (E.Coli) at three (3) select sites on June 21, 2017. This was our third year of sampling to inform watershed residents on the recreational health of the rivers in the basin. These Palmer sites include First Street on the Swift River, Bennett Street on the Ware River, and in Three Rivers, where the Swift and Ware converge. The areas were chosen where paddling "Blue Trails" are being planned. Results are posted on "Is it Clean", a site in partnership with CRWC/PVPC. Click on the Palmer balloons to see how our sites sampled (see Appendix A for additional information).

### **Minimum Control Measure 3: Illicit Discharge, Detection and Elimination**

In Year 15, 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. 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.

A preliminary storm sewer outfall map showing stormwater outfalls within the Phase II regulated area has been prepared. The preliminary outfall map was prepared from the town's Geographic Information System (GIS) data, which includes storm drainage layers, as well as an initial outfall inventory performed by DPW staff during March 2008.

In Year 15, DPW staff in conjunction with Tighe & Bond worked to update the Town's storm sewer outfall mapping to include

outfalls within the revised 'Urbanized Area' generated by the 2010 Census. Approximately 200 structures were inventoried within the revised Urbanized Area including approximately twenty-one (21 outfalls), their associated catch basins, and manholes.

A IDDE Ordinance was adopted by the Town of Palmer in Year 6 that specifically prohibits illicit discharges, regulatory mechanisms that address non-stormwater discharges are in place to meet this requirement.

The Conservation Commission also administers and enforces the revised Stormwater Management Standards that were incorporated into the Massachusetts Wetlands Protection Act. These standards specifically prohibit all non-stormwater discharges (with limited exceptions) to wetlands and watercourse or to stormwater management systems which discharge to wetlands and watercourses. Additionally, the Palmer Board of Health regulations also address non-stormwater discharges relative to protection of public health and the environment.

In Year 7 (May 2010), the Town of Palmer was designated a "Green Community" under the Massachusetts Department of Energy Resources program. The goals of the program include maximize energy efficiency in public buildings, including schools, city halls, and DPW and public safety buildings; generate clean energy from renewable sources; and manage rising energy costs. We were one of the first communities to achieve the Green Community programs 20% energy reduction goal, reducing our energy by 37% by year 5. Since our designation, the Town has received 4 Green Community grants:

1. \$169,103.00 to upgrade the Town Hall's heating and cooling system (phase 1 HVAC) with a new natural gas boiler and high efficiency chiller
2. \$224,190.00 to complete phase two of the HVAC system by upgrading all piping, ventilator units, thermostats and controls
3. \$211,584.00 to upgrade 6 town owned buildings with the following: weatherization upgrades at the Public Library, Department of Public Works (DPW) Garage, and all three schools (Converse Middle School, Old Mill Pond Elementary School and Palmer High School), exterior lighting retrofits at the Old Mill Pond Elementary School, the Palmer High School and the Waste Water Treatment Plant (WWTP), and a burner upgrade at the WWTP.
4. \$113,394.00 to purchase two Chevy Bolt electric vehicles and two dual head, level 2, ChargePoint electric vehicle charging stations. The Bolts were added to our municipal fleet and are predominately used by inspection service employees. The chargers, located at the town hall and public library, are used by workplace employees and the general public.

#### **Minimum Control Measure 4: Construction Site Stormwater Runoff Control**

The Palmer Conservation Commission held sixty-four (4) hearings under the Wetlands Protection Act; seven (7) of these were Requests for Determination, eleven (11) were Notices of Intent, two (2) for Abbreviated Notices for Resource Area Delineation and two (2) for amended Orders of Conditions. The Commission issued eleven (11) Emergency Certificates for the protection of public health and safety. The Town's Conservation Agent prepares very detailed set of Orders of Conditions under the Wetlands Protection Act that aim to prevent construction sites from discharging runoff from the limits of approved construction.

The Commission reviewed and commented on all septic system installation permits, site plan reviews, subdivision applications, ANR plans, and Chapter 61, 61A and 61B withdrawal requests that occurred in the Town in Year 15. In addition, the Commission also reviewed the applications for all forest cutting plans and the Yearly Operational Plan for the vegetation management for the Massachusetts Electric Company, New England Central Railroad Company, CSX Railroad Company and Massachusetts Central Railroad Company.

The Town of Palmer has adopted a Stormwater Ordinance that regulates construction and post- construction stormwater runoff for new development and redevelopment projects. The Ordinance provides a clear set of stormwater management goals, standards, and design criteria to minimize the adverse impacts of stormwater runoff from land development projects. The Ordinance also promotes LID and sustainable design practices. Copies of the existing Ordinance, associated regulations, and permit application materials were included with prior annual reports. In Year 8, the Town began the process of revising the Stormwater Management Regulations (a copy of the proposed amendments to the regulations was provided in the 2011 annual report). The Town will be reviewing the Town's Ordinance and regulations for compliance with the existing and new MS4 Permits in Year 16.

The Stormwater Ordinance addresses construction site runoff and erosion and sediment controls, including inspections and enforcement. Starting in July of 2008, the Planning Board was designated as the Stormwater Authority for the Town. Projects subject to the new Ordinance will be documented by the Planning Board (the Stormwater Authority) and by Reviewing Boards (Conservation Commission, DPW). There were five (5) stormwater permit applications in Year 15. The Department of DPW continued to also review the Stormwater Management applications for small/residential developments annually (see Appendix C for additional documentation).

In Year 15, the Conservation Commission also conducted numerous site visits to monitor ongoing projects throughout the year including subdivisions currently under construction, ANR lots and Stormwater site visits. In addition, the Commission has dealt with several outstanding enforcement issues and has been concentrating their efforts to bring these projects back into compliance (see Appendix E for additional documentation). The Commission reviewed the Environmental Notification Form for the Sherwood Lumber Industrial Rail Spur expansion and redevelopment project and is currently working with the project manager and the adjoining Swift River Green Belt to provide protection, passive recreational access, environmental education opportunities for this large undeveloped area. The Commission also was awarded a working with the to create a handicapped accessible trail around Lake Wallace. The Town's Conservation Agent will continue to perform on-site inspections of all projects that have Orders of Conditions during the construction phase. A site report with any violations found will be completed and filed in the Town records.

The Town's Conservation Agent will continue to keep track of all stormwater permits for projects that disturb over 5,000 square feet of land. Sites are continuously being reviewed for site runoff control. Periodic inspections are performed on all active sites. See attached for listing of stormwater permits issued in Permit Year 15.

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

As described in the previous section, a number of the new development and redevelopment projects that were constructed in Palmer

during the previous year included post-construction stormwater management controls to satisfy the performance standards in the Wetlands Protection Act and 401 Water Quality regulations and the Massachusetts Stormwater Handbook.

The Stormwater Ordinance addresses post-construction stormwater management and erosion and sediment controls, including inspections and enforcement. Projects subject to the Ordinance will be documented by the Conservation Agent and by Reviewing Boards. Site inspections are conducted by The Town's Conservation Agent on all project sites on a regular basis for assurance that BMP's are in compliance.

Specific information on the number of projects and the types of post-construction stormwater management measures was tracked by the Palmer Conservation Agent this year. The Conservation Agent has been developing a database of all industrial, commercial, and high-density residential sites that have on-site drainage that discharge directly into the public drain system since Year 14. It is a work in progress and the goal is to finalize the database by the end of Year 16 to begin annual inspections for compliance with Town's stormwater maintenance requirements. Additionally, the database will help identify which properties could potentially be modified or retrofitted with LID BMPs designed to reduce the frequency, volume, and pollutant loads of stormwater discharges

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

Stormwater training for DPW and other Town employees was conducted on October 28, 2017. The training was conducted in conjunction with annual training required by the EPA industrial stormwater permit program for the highway garage and wastewater treatment plant. The training included education on goals/objectives of the Phase II program, pollution prevention for DPW activities, waste management, and good housekeeping. Three (3) DPW staff attended this training in Milbury.

The Conservation Agent also attended several training this year focused on Stormwater Management including the newly offered MACC Fundamental Courses Unit 205: Effective Erosion & Sediment Controls & 206: Stormwater Management for Conservation Commissions. The Conservation Agent also completed an extensive training on July 13-14, 2017, offered by the National Stormwater Center, in which she received national certification as a Stormwater Inspector for Commercial, Industrial and MS4 Inspections. Certificates and records of attendance are included in Appendix E.

The Conservation Agent & Assistant DPW Director also began an extended training program for Funding Stormwater. The course is a series of 4 workshops sponsored by the EPA & the Concensus Building Institute to develop a model for a Stormwater Utility for the Town of Palmer. The training began March 6, 2018 and will continue through May 24, 2018. The Trainings cover stakeholder engagement and public outreach processes aimed at the development and adoption of adequate and sustainable stormwater program funding.

In Year 15, 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. 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.

All of the streets within the regulated area were swept at least once during the reporting year. A street sweeping log has been developed by the Town to record the names of the streets swept and the amount of street sweepings recovered. All of the roads in Palmer were swept by the Town using a Town-owned sweeper (2005 Elgin Pelican) and Hi-Way Safety Rental. Approximately 4,000 tons of material were recovered throughout the Town. A majority of the roads that were not swept by the Town are privately-owned or State-owned. The DPW continues to follow a program for managing and disposing of street sweepings consistent with the Massachusetts solid waste regulations and applicable DEP guidance.

Appendix G includes a cleaning report listing the streets where catch basins were cleaned in Year 15. This was the fourth year funds were appropriated for catch basin cleaning (attempting to get basins on a four year cleaning rotation). In 2017, 240 hours were spent cleaning approximately 640 Town basins at a cost to the community of approximately \$124,000 (not including disposal costs). The Town uses the Clam Truck and the Vector Truck to clean catch basins. Palmer DPW inspected a representative cross-section of the catch basins within the regulated area to confirm proper cleaning. Approximately 275 tons of catch basin spoils were collected in Year 15 and disposed of at the Town Compost Pit.

In Year 15, 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 SWPPP template covers many types of municipal properties. This includes highway department garages and DPW 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.

Salt is stored at the DPW maintenance garage inside a dedicated salt storage buildings, constructed in 1996. Approximately 2,800 tons of salt (35 tons of salt was pretreated) and 285 yards of sand were used in the winter of 2017-2018. Approximately 1,000 gallons of a liquid deicers was used in the winter of 2017-2018. The liquid deicer is composed of 50% Calcium Chloride and 50% Forestry By-products and is purchased locally from Safe Roads out of Franklin, MA.

DPW staff conducts weekly inspections of the waste oil collection area at the highway garage. Facility inspections, nine, related to the garage's Spill Prevention, Control, and Countermeasure (SPCC) plan were also completed in Year 15 (see Appendix I for inspection reports). Routine maintenance of the Town's fleet of equipment and vehicles is also performed at the highway garage.

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

**1. Public Education and Outreach**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)</b>	<b>Planned Activities – Permit Year 16</b>
1.1	Create Stormwater Program	DPW Planning Board Conservation Agent Board of Health Town Manager	Palmer will present to the public at public meeting Palmer’s Comprehensive Stormwater Management Program	Completed. 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.
1.2	Create Stormwater Program	Town Manager DPW	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	Ongoing. The Town of Palmer has joined an intermunicipal agreement with 31 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 31 other communities to improve the town’s stormwater programs.

1.3	Address Specific Groups	Town Manager DPW Conservation Agent	Distribute EPA and other relevant educational brochures to targeted audiences. Distribution points include Town Hall, Library and Transfer Station.  Conservation Agent will conduct grade appropriate presentations w/ Environscape	Ongoing. The Town has received EPA educational material on disk for easy printing and distribution.  Ongoing. Brochures regarding stormwater and sewers are available at the Palmer Town Building, Senior Center, Library and Recycling center.  Ongoing. Conservation Agent has begun conducting presentations w/ Environscape at Town events, as well as distributing brochures and flyers at events	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.
1.4	Target groups likely to impact stormwater.	Town Manager DPW Conservation Agent	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	Ongoing. The Town of Palmer has available the following brochures: General Construction and Site Supervision Stormwater Tips prepared by EPA, Living with Wetlands Brochure, 10 Tips for Environmental Friendly Yard, Proper Pest Waste Disposal, Rain Garden Pamphlet and a Stormwater Pollution Prevention Guide for Homeowners.  Ongoing. 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 will continue to make these and other material available.
1.5	Target potential high commercial polluters	Conservation Agent	Educate specific industries stormwater pollution they generated	Ongoing. The Conservation Agent has begun to make and mail industry specific educational flyers. This year a brochure was developed for General Construction and Site Supervision Stormwater Tips and was distributed to contractors during initial erosion control pre-activity inspections for all commercial and industrial developments	The Conservation Agent will continue to make and mail industry specific educational flyers

1.6	Identify alternative information sources	Town Manager	Palmer will post links to stormwater BPMs and other water quality education resources, including EPA and DEP on its website: <a href="http://www.townofpalmer.com">www.townofpalmer.com</a>	Ongoing. Palmer has identified an posted links to EPA and DEP stormwater regulations and other water quality education resources on its website: <a href="http://www.townofpalmer.com">www.townofpalmer.com</a>  Ongoing. 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.
1.7	Identify alternative information sources	Town Manager Conservation Agent	Palmer will also post links on its website to the Chicopee River Watershed Association @ <a href="http://www.chicopeeriver.org">www.chicopeeriver.org</a> ,	Ongoing. The Town of Palmer has posted links from the CMSWC and will continue to make this information available.	This effort will continue into 2018.
1.8	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	Ongoing. 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. Conservation Commission meetings are now televised as well to educate residents on important conservation efforts locally	The town continues to post announcements for public forums regarding stormwater on their website.
1.9	Develop, conduct and document educational programs	Town Manager Conservation Agent	The Conservation Agent serves as the liaison to the Chicopee River Watershed Council to disseminate information to the Town on programs and activities	Ongoing. The Palmer Conservation Commission has spearheaded the revitalization of Chicopee River Watershed Council. All watershed council meeting are held in Palmer and 3 of the steering committee members are Palmer Conservation Commissioners.  Ongoing. The Conservation Agent has organized local stream teams  Ongoing. The Conservation Agent has organized volunteers to conduct weekly water quality samplings of local rivers	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.
1.10	Town Website	DPW	Post stormwater information on Town website	Ongoing. General stormwater information remains available on the website	Work with IT to modify website to be more user friendly and ability to show graphics and brochures without links.

1. 11	Educational Stormwater display	Conservation Commission	Exhibit a stormwater Poster at Library	Ongoing. Poster was on display during the month of April 2017. The poster now permanently resides in the Conservation Commission office and travels with Enviroscape Model	Create a new & exciting display for next reporting year  Coordinate with Senior center on display availability and new ideas.
1.12	Promote Household Waste Recycling	DPW 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.	Ongoing. 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.  Ongoing. 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 2017 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.
1.13	Institute a program for pet waste management	DPW Board of Health Conservation Commission Town Clerk	Notable Reduction in measured fecal coliform from previous	Pet waste containers have been placed at twelve (12) public locations and pet waste brochure is available at the Town Clerks Office	Continue program with including the brochure with all 2019 dog tag license renewals. Also promote periodic public coverage on web page, newspaper and DPW newsletter.
1.14	Lakes & Pond Restoration	Conservation Agent DPW	Reduction in Invasive and Non-native species. Improved Water Quality Decreased Phosphorus Levels	Ongoing. Hydroraking of Lake Thompson. The Conservation Commission permitted as part of an Ecological Restoration Project the dredging of sections of Lake Thompson. The Lake was hydroraked in June of 2017 and DPW staff transported all dredged materials to the Compost Pit off Old Warren Road. The Hydroraking was aimed to improve water quality, remove invasive species and improved detention times and management team.	The Town has applied for a 604(b) grant to conduct watershed based assessments of all the ponds in the community.

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
2.1	Stormdrain & Catch Basin Stenciling	DPW	Solicit and have volunteers perform Stormdrain & CB Stenciling	No action was taken on this goal therefore YR15 goal will remain the same	The Conservation Commission will start a Storm Drain Stenciling Program in Year 16
2.2	School student involvement	Conservation Agent	Improve School student involvement	No action was taken on this goal therefore YR15 goal will remain the same	The Conservation Commission will start a summer internship/scholarship program this year for Palmer HS students focused on assessing culverts under the NAACC protocol.  The Conservation Agent will also begin working with the Schools to conduct Enviroscope Demonstrations in grades 4-8 beginning September 2018
2.3	Source 2 Sea clean-ups	Conservation Agent	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	Ongoing. The Hampden County Sheriff's Department provides manpower for riverbank cleanups several times a year. The Palmer DPW provides trucks for waste pickup.  Ongoing. The Conservation Agent coordinated Palmer's participation in CRWC Source to Sea Clean-up on September 22 & 23, 2017. Supplies and T-shirts are supplied by CRWC.	The Town continues to support and encourage local cleanups with local residents.  The Conservation Agent will continue to coordinated Palmer's participation in CRWC Annual Source to Sea Clean-up (held each September).
2.4	Earth Day clean-ups	DPW	Town will provide trucks and other material to support cleanup efforts and disposal of materials.	Ongoing. The Palmer DPW provides transportation for waste pickup during annual 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.
2.5	Hazardous Waste Collection Day	Board of Health	Hold Hazardous Waste Collection Day annually	Ongoing. The Board of Health continues to hold a household hazardous waste day annually.	Continue to work with the Board of Health in running the collection day.

2.6	Yard Waste Management	DPW	Extend hours for Local Landscaping Businesses	Ongoing. 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 Town of Palmer will continue to accept yard waste and materials from town cleanup efforts at the Burleigh Park composting site and at the town DPW yard.
2.7	Community Rain Barrell Program	Conservation Commission DPW	Participate in the Community Rain Barrel Program in coordination with the Great American Rain Barrel Company	No action was taken on this goal.	This is a new Program initialed by the Conservation Agent & DPW that will run during Year 16. Promotion of the event begins in April 2018
2.8	NAACC Culvert Assessments	Conservation Commission	Have a lead NAACC certified trainer on Staff and attempt to assess at least Ten (10) culverts annually	Ongoing. Fourteen (14) Culverts were assessed in Palmer this year under the NAACC assessment protocol.  Carrie Banks, DER held a formal training for NAACC Certification in Palmer in June. It was open to residents and several volunteers are working to become certified locally by shadowing the Conservation Agent	The Town of Palmer will continue to assess culverts in town under the NAACC protocols. Attention will be given to area prone to repeated localized flooding
2.9	Bacteria Sampling	Conservation Commission Chicopee 4 Rivers Watershed Council	Monitor at least Three(3) site annually for bacteria	Ongoing. This was our third year of sampling to inform watershed residents on the recreational health of the rivers in the basin. These Palmer sites include First Street on the Swift River, Bennett Street on the Ware River, and in Three Rivers, where the Swift and Ware converge.	The Town of Palmer will continue to participate in the annual "Is it Clean" sampling events in partnership with CRWC/PVPC.

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
3.1	Inventory and mapping of storm drain system	DPW	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.	<p>Ongoing. The Town of Palmer has joined an intermunicipal agreement with 31 other communities for regionalizing municipal stormwater management in central Massachusetts through collaborative education, data management and policy development.</p> <p>Completed. The official joint application began in permit year 11 and will continue develop into the next permit cycle.</p>	<p>The Town of Palmer along with the Conservation Agent will continue to seek funding opportunities to support its protection of local bodies of water.</p> <p>The Town will also be working with the Municipal Stormwater Management Collaborative to identify funds.</p>
3.2	Mapping and identification of outfalls and receiving waters.	DPW 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.	<p>Completed. 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.</p> <p>Completed. Palmer’s Wastewater Treatment Plant personnel maintain the outfall maps that have been completed</p>	<p>The Town will continue to monitor for unknown outfalls and maintain all known outfalls in the CSO area.</p> <p>Through the CIC Grant, the town has access to a GPS monitor and water testing instruments to track and test known outfalls.</p>

3.3	Identification/description of problem areas	DPW	Palmer will develop and implement an Illicit Discharge Detection and Elimination (IDDE) plan, contingent on Town Council approval of funding	<p>Completed. 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.</p> <p>Completed. 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.</p>	Quarterly inspections on all CSO outfalls and outfalls abandoned during or prior to the Town's CSO separation project will continue.
3.4	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.	Completed. 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.
3.5	Public information program regarding hazardous wastes and dumping	DPW Board of Health	Palmer will provide educational brochures to residents promoting proper disposal household hazardous wastes and conditions for regional collections	Ongoing. The Town maintains an active partnership with Wilbraham for disposal of household waste.	This partnership with Wilbraham will continue into the future.
3.6	Initiation of recycling programs	DPW 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.	Ongoing. 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.

3.7	Watershed assessments and studies	Conservation Agent	Palmer will identify opportunities for funding assistance from DEP's 604(b) and 319 grant programs to support watershed assessment and implementation activities.	<p>Ongoing. The Conservation Agent has submit a grant applications for the 604b grant program. The grant application will seek funding for the development of 9- element watershed based plans for Forest Lake.</p> <p>Funding will go toward increased sediment sampling, bathemetric surveys and water quality sampling.</p>	If Awarded the 604(b) grant, the Town will beginning conducting sediment sampling, bathemetric surveys and water quality sampling from Forest Lake in June 2018
3.8	Watershed assessments and studies	DPW 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.	Ongoing. 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.
3.9	Inventory commercial properties with drain system directly discharges to municipal drainage system	Conservation Agent	<p>Identify,create a database and map all of the commercial properties.</p> <p>Indentify which sites discharge directly into the municipal drainage system .</p>	<p>Ongoing. The Conservation Agent is in the process of developing this database</p> <p>Ongoing. Mapping has not occurred at this time due to time and financial constraints.</p>	<p>The Conservation Agentwill continue to develop this database.</p> <p>Seek additional fundingto continue and expand these efforts.</p>

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
4.1	Stormwater Management Policy	Conservation Agent	Review all incoming projects from the Conservation Commission Agent's point of view  Apply Con Com stormwater management policy(s).	Ongoing. Con Com Agent continues to review all project submissions and writes detail Order of Conditions to ensure compliance.	Continue having the Con Com Agent actively reviewing all in coming plans and projects.
4.2	Inspection & Enforcement	Conservation Agent	Conduct construction site inspections. Keep inspection records and violation reports. Follow stormwater by-law procedures for any violations	Ongoing. Conservation Agent has been trained & performs regular inspections on all active construction sites	Continue site inspections & writing site reports.  Maintain all records.  Track violations in a database  Review current procedures and evaluate whether any adjustments should be made
4.3	Ordinance: Storm water management regulations for construction sites 1 acre or larger	Planning Board Conservation Agent 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.	Completed. Storm Water Management Ordinance and regulations were passed during Permit Year 6.	Review the Stormwater Mamangemet Ordinance for compliance with Phase II

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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 15</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 16</b>
5.1	Inspection & Enforcement	Conservation Agent	Designate staff and perform inspections for each project	Ongoing. Designated staff performs regular inspections of all active construction sites	Continue site inspections and writing site inspection reports. Enlist other departments to assist in the inspections.
5.2	Inspection & Enforcement	Conservation Agent	Create database and perform inspections	Ongoing. Database has been created and inspections occur on a regular basis. All inspections are recorded in database.	Update database as needed. Perform inspections.
5.3	BMP Operation & Maintenance Procedures	Conservation Agent	Develop operation and maintenance procedures for submission on each project	Ongoing. Procedures continue to be required for all projects	Continue requiring O&M plans Evaluate Town requirements to the new MS4 permit requirements and change as necessary
5.4	Sampling to verify compliance with stormwater policies	Conservation Agent	Perform sampling on downstream watersheds of projects that have suspected negative impacts to the watershed.	Ongoing. The Conservation Agent has develop a sampling protocol and procedures for suspect violations.  Ongoing. The Conservation Agent has began the “Source Tracking” program on the Quaboag River to identify possible inputs of E.Coli	Develop sampling protocol and procedures for suspect violations using the new MS4 permit requirements
5.5	BMP Operation & Maintenance Procedures	DPW/ CON COM Agent	Develop operation and maintenance procedures for submission on each project	Ongoing. Procedures continue to be required for all projects	Continue requiring O&M plans Evaluate Town requirements to the new MS4 permit requirements and change as necessary
5.6	Sampling to verify compliance with stormwater policies	TBD	Perform sampling on downstream watersheds of projects that have suspected negative impacts to the watershed.	No action was taken on this goal set for this year due to the anticipated release of the new MS4 permit and it's requirements	Develop sampling protocol and procedures for suspect violations using the new MS4 permit requirements

5.7	Ordinance: Require post-construction runoff controls	Planning Board Conservation Agent 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.	Ongoing. 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.
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## 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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
6.1	Develop a municipal Operations and Maintenance Plan	DPW	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 15 and beyond.  Ongoing. 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 2017-2018 was 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.
6.2	Develop a municipal Operations and Maintenance Plan	DPW	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.  Ongoing. 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.  Ongoing. 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
6.3	Employee Training	DPW Conservation Agent	NPDES Phase II Preparation	The Conservation Agent & DPW director attended a training at PVPC on June 21, 2017 focused on preparing the NOI for MS4 Phase II	The Town will continue to send employees to relevant training seminars and forums.

6.4	Employee Training	DPW	Palmer will send a minimum of 3 DPW employees annually to training seminars sponsored by MassDOT, BayState Roads, and other relevant agencies or vendors.	<p>Ongoing. 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.</p> <p>Ongoing. (3) DPW staff attended an EPA sponsored NPDES training in Milbury on operations and maintenance of local roads, drainage, sidewalks, parking lots, and other public infrastructure.</p>	The Town will continue to send employees to relevant training seminars and forums.
6.5	Employee Training	Conservation Commission	Palmer will send the Conservation Agent and Conservation Commissioners annually to training seminars sponsored by MACC, MSMCP, MADEP and other relevant agencies or vendors.	<p>Ongoing. During the past year, Conservation Commission staff and members have participated in the following training sessions: MACC Unit 205 – Erosion &amp; Sediment Controls, MACC Unit 206 – Stormwater Management for Conservation Commissioners.</p> <p>The Conservation Agent received certification as a NPDES Commercial, Industrial &amp; Municipal Stormwater Inspector through the National Stormwater Center</p>	The Town will continue to send employees to relevant training seminars and forums.
6.6	Review storm drainage infrastructure needs	DPW	Palmer will incorporate storm drain infrastructure review in Palmer's Chapter 90 project utilization	<p>Ongoing. Palmer continues to identify opportunities for storm sewer infrastructure improvements in connection with Chapter 90 projects.</p> <p>Upgrades occurred on Burlingame Road, Smith Street, Peterson Street, Stewart Street &amp; High Street</p>	Palmer will continue to identify opportunities for storm sewer infrastructure improvements in connection with Chapter 90 projects.
6.7	Catch Basin Cleaning Program	DPW	Clean all catch basins at least once annually	50% cleaned annually. Program is not complying with north/south Route 20 demarcation due to State Control (Mass DOT) of highway.	To maintain Catch Basin Cleaning Program
6.8	Street Sweeping Program	DPW	Sweep all Town roads annually	Ongoing. Road sweeping done annually. Problem spots swept again Route 20 & around Lake Thompson.	To maintain Street and Sidewalk Sweeping Program

6.9	Review procedures for handling and storage of hazardous materials.	DPW	Minimize exposure of hazardous materials to stormwater.	Right to Know, Hazardous Waste Handling, Asbestos Management and SPCC training was conducted for most DPW employees.	Continue training programs.
6.10	Inventory, inspect and maintain town owned structural controls.	DPW	Volume of material being removed.	The Town continues to inspect all Town owned structural controls and clean when necessary.	Continue periodic inspection and cleaning.
6.11	Conduct training in spill prevention procedures and conduct annual deployment exercise.	DPW Fire Department	All spill response personnel are trained and have participated in at least one deployment exercise.	Spill response training video presentations are conducted annually.	Continue annual training and schedule deployment exercise. SPCC manuals are updated when a spill occurs. SPCC training was completed this year.
6.12	Evaluate public sites for retrofitting of LID techniques.	DPW Conservation Commission	Improved quality of runoff in watershed. Design and install one facility per year	No action was taken on this goal set for this year due to the anticipated release of the new MS4 permit and it's requirements	Continue to pursue LID applications at any substantially remodeled or renovated Town facility.  Town plans to incorporate Green Infrastructure and LID into the engineering of the proposed new DPW Building at Burleigh Park.

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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 15</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 16</b>
7.1	Monitor Mass. DEP web site for 303(d) list, draft TMDL's and final TMDL's.	Conservation Agent	The Town is aware of its requirements under the TMDL report and has established BMP's for meeting the WLA.	Ongoing, Mass.DEF has established a TMDL for pathogens. The Quaboag, Ware and Chicopee Rivers are impaired with a TMDL E.coli.	Promote organic and zero phosphorus fertilizers. The Town plans to work more closely, including annual reporting and monitoring of TMDL Rivers
7.2	TMDL for receiving Water Quaboag River	The Town	Under several BMP's address the issues. Continue to address issues under current BMP's.	Continue to address issues under current BMP's.	Begin testing the Quaboag River on an Annual basis as part of the Towns monitoring program
7.3	TMDL for receiving Water Ware River	The Town	Under several BMP's address the issues. Continue to address issues under current BMP's.	Continue to address issues under current BMP's.	Begin testing the Ware River on an Annual basis as part of the Towns monitoring program
7.4	TMDL for receiving Water Chicopee River	The Town	Under several BMP's address the issues. Continue to address issues under current BMP's.	Continue to address issues under current BMP's.	Begin testing the Chicopee River on an Annual basis as part of the Towns monitoring program
7.5	TMDL for receiving Water Forest Lake	The Town	Under several BMP's address the issues. Continue to address issues under current BMP's.	Continue to address issues under current BMP's.	Begin testing the Forest Lake on an Annual basis as part of the Towns monitoring program
7.6	Perform analytical testing for e-coli at various outfalls.	DPW Conservation Agent C4R Watershed Council	WLA are not being exceeded	The Conservation Commission conducted E. coli testing on the Quaboag, Swift and Ware River from June-September 2017  The Town did not perform any E. coli testing at outfalls as no dry weather flows were observed.	Begin annual out-fall screening for e-coli

7.7	Continue T.V. inspection of sanitary sewer system.	DPW WWTP	100% inspection of system by 2028, all leaks repaired	50 % of system now inspected or approximately 56 miles of sanitary sewer	Inspect 10% per year until completion.
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**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, 2017 through March 31, 2018)

**Programmatic**

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures **	(\$)	\$40,000
Total program expenditures since beginning of permit coverage	(\$)	\$220,000
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)	Yes 13 Streams/1 Team
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Yes
Shoreline cleaned since beginning of permit coverage	(mi.)	7
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				X
▪ Erosion & Sediment Control	X	X			X
▪ Post-Development Stormwater Management	X				X
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination	X				X
▪ Erosion & Sediment Control	X	X			X
▪ Post-Development Stormwater Management	X				X

## Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	60%
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 %)	0%
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	CSOs Only
Illicit discharges identified **	(#)	1
Illicit discharges identified (Since beginning of permit coverage)	(#)	3
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	(%)	65%

% of population on septic systems	(%)	35%
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### Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	9
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	100%
Site inspections completed **	(# or %)	57
Tickets/Stop work orders issued **	(# or %)	3
Fines collected **	(# and \$)	1; \$2500
Complaints/concerns received from public **	(#)	12

### Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	50%
Site inspections (for proper BMP installation & operation) completed **	(# or %)	100%
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	Yes
Low-impact development (LID) practices permitted and encouraged	(y/n)	Yes

### 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 **	(#)	640
Qty. of storm drain cleaned **	(%, LF or mi.)	As Needed
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	275 Tons
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Compost Pit

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$124,000
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	\$22/hr 80hr/month
• Disposal cost**	(\$)	0
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1: Steco
• Vacuum truck(s) owned/leased	(#)	1: Vactor
• Vacuum trucks specified in contracts	(y/n)	No -own
• % Structures cleaned with clam shells **	(%)	50%
• % Structures cleaned with vactor **	(%)	50%

(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)	4,000 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Compost Pit
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$19,200
• Hourly or lane mile contract rate **	(\$/hr. or In mi.)	\$21/hr for 2 Employees
• Disposal cost**	(\$)	0
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 %)	3348 lbs/year

▪ Herbicides	(lbs. or %)	N/A
▪ Pesticides	(lbs. or %)	N/A
Integrated Pest Management (IPM) Practices Implemented	(y/n)	No

	(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 <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	75%-80% 10%-15% 0% 0% 0% 0% 5%-10%
Pre-wetting techniques utilized **	(y/n or %)	Yes; 10%
Manual control spreaders used **	(y/n or %)	Yes; 90%
Zero-velocity spreaders used **	(y/n or %)	No
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	Increase; 50%
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	Reduction; 15%
% of salt/chemical pile(s) covered in storage shed(s)	(%)	100%
Storage shed(s) in design or under construction	(y/n or #)	Yes; 1
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	Yes

### Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	No
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	No
Treatment units induce infiltration within 500-feet of a wellhead protection area	# or y/n	Yes – 2 Systems

