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Municipality/Organization: Town of Medfield, MA

EPA NPDES Permit Number: MAR041131

MADEP Transmittal Number: X274165

Annual Report Number

& Reporting Period: No. 14: April 1, 2016 – March 31, 2017

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Maurice Goulet

Title: Department of Public Works

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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: 

Printed Name: Michael Sullivan

Title: Town Administrator

Date: April 7, 2017

Part II. Self-Assessment

The Town of Medfield is located in the Massachusetts North Coastal Watershed - primarily in the Charles River Sub-basin and secondarily in the Boston Harbor (Neponset River) Sub-basin. In general, the Town of Medfield's stormwater management activities for the fourteenth year of the General Permit (April 1, 2016 through March 31, 2017) were in conformance with the Notice of Intent (Massachusetts DEP form BRP WM 08A) and schedule submitted in July 2003. At the time, the Town developed a Stormwater Management Plan with program priorities for 2003-2008 including:

1. Achieving regulatory compliance, particularly EPA and DEP Phase II NPDES permit requirements;
2. Incorporating storm water protection measures into municipal activities;
3. Focusing activities on target pollution reduction (e.g. Section 303.d. waters and protecting the Town's water supply);
4. Ensuring that the Program is current and innovative; and
5. Providing Program administration.

The Water Quality Stewardship element of the program focused on the protection of the local water supply and addressing the State's Section 303.d waters located within the Town. To this end, staff continues to develop and improve the Program activities to reduce storm water pollution to the maximum extent practicable and eliminate prohibited non-storm water discharges, while facilitating understanding and involvement in storm water management by various Town departments. The Town of Medfield takes a broad approach to its overall water resource balancing and recognizes the interaction of its water withdrawal, sewer collection and recharge, and stormwater management, and the impacts these have on the Charles and Neponset River Watersheds. Program priorities focus on increasing efforts to reduce target pollutants (including compliance with newly developed Total Maximum Daily Loads) and replenishing local water bodies.

The Town is committed to working with local watershed associations to advance their goals and objectives. To this end, the Town of Medfield has been very active with information transfer. We have attended workshops sponsored by both the Charles River Watershed Association (CRWA) and the Neponset River Watershed Association (NRWA) and we remain an active member of the Neponset Stormwater Partnership. The Town of Medfield hosted and made a presentation to the group on August 13, 2015. Through these interactions we have become educated on the Massachusetts Stormwater Regulations, Sustainable Watershed Management Initiative and new Phase II General Permit renewal. Another high priority of staff will be to keep abreast of the latest technology and approaches to achieve storm water management (such as the sustainable design). Program activities also strive to encourage environmental stewardship and continue to build on partnerships with other agencies, neighboring towns, and the community for active participation in accomplishing the Program mission.

From 2003 through 2007, the Town focused its efforts to developing an extensive Geographic Information System (GIS) of the Town

and mapping its drainage utility. In Year Six (2008), the Town shifted its mapping efforts from the stormwater connectivity to mapping the wastewater system, since it collects flow and directs it to the Medfield Wastewater Treatment Plant located on West Street (along the Charles River). To date, the wastewater system mapping is about 100% complete and the drainage system mapping is also 98% complete. The Town has mapped all 167 of its outfall location in the Charles River Watershed and in the Neponset River Watershed).

In 2009 and 2010, the Town also continued to work on public outreach and participation. The Town's Conservation Commission continued its pond de-nitrification program at Vine Lake, Bakers Pond, Danielson Pond, Flynn's Pond and Tubitty Pond. The local Department of Public Works continued with its Sewer System Evaluation Survey activities, particularly expending \$53,000 to assess the impacts of infiltration/inflow (I/I) on the Charles River. The Town has also undertaken an extensive I/I program to reduce flows to the Medfield Wastewater Treatment Plant in 2008 and work through 2010 is 100% complete. The proposed I/I activities were reported to EPA and DEP on February 5, 2008 as part of the compliance requirements of NPDES Permit No. MA0100978 and are in accordance with the new NPDES permit issued to the Town in 2010. The work included the installation of two new stream gauges in the Charles River, completing extensive I/I repairs using a low interest loan of \$1,009,030 from the Massachusetts Clean Water State Revolving Fund (SRF) Program, expending \$23,000 on I/I repairs in 2010 and obtaining \$400,000 in SRF funds for upgrades to the local Wastewater Treatment Facility (WWTF) located on the Charles River. In 2011, the WWTP improvements were completed in order to improve the Town's wastewater management capabilities and over quality of its discharge to the Charles River.

In 2012, the Town of Medfield expended \$112,000 for the investigation of I/I in both the Charles River and Neponset River Watersheds, including camera investigation, smoke testing and sump pump inspections; expended \$288,000 on water quality related capital improvements at the Medfield Wastewater Treatment Plant, including design of a cover system to reduce algae at the secondary clarifiers; and appropriated \$50,000 to address the impending Phase II MS4 General Permit items, including the incorporation of new Total Maximum Daily Load (TMDL) requirements, watershed mapping, water budgeting and the development of a Watershed Protection Plan. Town representatives continued to attend workshops and public hearings for the draft General Permits to be issued in 2013. As a result of the system investigations, the Town repaired significant pipe cracks on Pine Street and is currently expending about \$164,000 for 4,200 linear feet of cured-in-place lining of sewer pipe impacted by excessive I/I.

In 2013, the Town continued with structural improvements to address its water quantity and quality demands, while planning for the future. The Town attended workshops and public hearings; continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters); completed structural I/I improvements at the Medfield Wastewater Treatment Plant, incorporated the new Total Maximum Daily Load (TMDL) requirements, GIS mapping, water budgeting, and pending regulations into a town-wide Watershed Protection Plan; expended \$5,000 to participate in a regional Community Innovation Challenge Grant with the Neponset River Watershed Association and Metropolitan Area Planning Council; and continued to maintain the Town's web-site and GIS Maps.

Since 2014, the Town of Medfield has been very active in the Neponset Stormwater Partnership and continued this effort in 2016 by completing the following:

1. Attended public hearings for the Phase II MS4 NPDES requirements and General Permits issued in April 2016, including with the Metrowest Partnership on May 24, 2016.
2. Expended \$5,000 to be an active participant of the 2016 Neponset Stormwater Partnership (NSP) that it being managed by the Neponset River Watershed Association and Metropolitan Area Planning Council. The NSP met quarterly and the 2016 NSP activities included:
 - a. Planning and Coordination
 - Modelling a Notice of Intent and developing an internal 5-year work plan
 - Developing a draft proposed scope of work for permit years 1-5 (to be completed by November 2017)
 - Updated the model Stormwater Management Plan (SWMP)
 - Hosting four steering committee meetings/ trainings
 - Completed outstanding “in-reach” meetings
 - Represented the NSP communities at meetings of the statewide stormwater coalition
 - b. Outreach
 - Met the pet waste dog license requirements by coordinating with town clerks and distributed at least one year’s worth of public materials
 - Planned for and conducted initial outreach for a year 1 “green collar” pet waste campaign
 - Reviewed and updated existing education/print materials, signage and the NSP website
 - c. Illicit Discharge Detection and Elimination (IDDE)

- Updated protocols in the model IDDE SWMP
 - Prepared new catchment delineations and/or refined existing catchment delineations for three additional communities (Medfield was completed on January 18, 2016)
 - Reviewed and updated catchment rankings as needed based on new guidance (Medfield was completed on January 18, 2016)
- d. Post Construction Bylaws
- Updated the model stormwater bylaw template to reflect final permit and develop model language for offsite provisions
- e. Stormwater Finance
- Applied the EPA's cost estimator tool to NSP communities, refined the tool as appropriate, and distributed the results along with analysis of impervious cover by parcel and potential stormwater fee rate structures.
3. Expended \$5,000 on maintaining the Town's GIS Maps.
 4. Continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters) and expended \$50,000 on additional video camera inspections of utilities in both watersheds;
 5. Conducted year-round (semi-annual equivalent) street sweeping and catch-basin cleanings;
 6. Expended \$6,500 on drainage infrastructure improvements (i.e. catch basin and manhole repairs);
 7. Continued to update the Town of Medfield Watershed Protection Plan, based on NRWA and MAPC recommendations; and
 8. Began the process of updating the Town's Stormwater Bylaws, also based on the NRWA recommendations and other local bylaws adopted in the CRWA.
 9. Investigated the use of Method Works or Trojan System upgrades for the ultraviolet system at the Wastewater Treatment Plant discharge to the Charles River.

Based on our understanding of the Massachusetts Sustainable Water Management Initiative regulations and the NPDES General

Permits that were issued in April 2016, the Town has developed a preliminary plan for filing their Notice of Intent and for complying with the requirements of communities in the Charles and Neponset Watersheds. This plan includes the following:

1. Update the connectivity component of the Medfield Drainage System Mapping in Renewal Year #1 (by April 30, 2018). Therefore, by April 30, 2018, both the drainage system and wastewater systems will have been 100% mapped onto the local Geographic Information System.
2. In year one, implementing additional SSES and WWTP on an as needed basis.
3. Investigating the impacts of the newly developed TMDLs by targeting 25% of the Charles River (i.e. Stop River) and Neponset River (i.e. Mine Brook at Jewells Pond) outfall pipes for wet chemistry testing in year two of the renewed permit. To date, we have located a total of 167 outfall pipes. Therefore, 21 of the priority outfalls within the Charles River watershed and 21 of the priority outfalls within the Neponset River watershed will be targeted for sampling during the second year of the renewal permit (by April 2019). Additional outfall pipes will be sampled at a rate of about 42 outfalls per year until 100% of the outfalls have been sampled by April 30, 2022.
4. Within four years of the effective date of the renewed permit, the Town of Medfield will develop a Charles River Watershed Control Plan for phosphorus and pathogens. The Charles River plan will build upon the existing NPDES requirements at the Medfield WWTP and will be implemented on an as needed basis within the same time frame. If elimination of a condition contributing to exceedance of water quality (WQ) standards cannot be feasibly eliminated within 30 to 60 days, an action plan shall be developed and implemented as soon as practical.
5. By the end of the second renewed permit year (April 30, 2019), submit information representing progress in the development of a Phosphorous Control Plan (PCP). Beginning in the first year of implementing the PCP, the Town shall estimate (in kg/year and percent) the reduction in phosphorous loading, if any, to the Charles River.
6. Within four years of the effective date of the renewed permit, the Town of Medfield will develop a Neponset River Watershed Control Plan for bacteria. The plan will be implemented on an as needed basis within the same time frame. If elimination of a condition contributing to exceedance of WQ standards cannot be feasibly eliminated within 30 to 60 days, an action plan shall be developed and implemented as soon as practical.
7. By the end of the second renewed permit year (April 30, 2019), submit information representing progress in the development of efforts to reduce observed bacteria and WQ exceedances in the Neponset River Watershed.
8. Public Education and Outreach – In accordance with Section 2.4.2 of the renewed permit, that Town shall distribute a minimum of two educational messages to residences, the business/commercial/institutional community, developers and contractors, and industrial community. The outreach program shall allow the public an opportunity to comment.
9. Build upon previous work and develop and inventory of known sanitary sewer flows (SSOs) within 60 days of the effective

date of the new permit.

10. Train employees on the new Illicit Discharge Detection and Elimination (IDDE) Program, including how to recognize discharges and SSOs.
11. Review the existing local regulations and consolidated regulations report to determine the feasibility of making green infrastructure practices allowable (by the third term of the new permit or April 30, 2020).
12. Estimate the number of acres of impervious area (IA) and directly connected IA by April 30, 2018.
13. By October 1, 2018 complete an inventory of MS4 owned property and their infrastructures that may be retrofitted with appropriate BMPs by April 30, 2020.
14. By April 30, 2019; develop a written Operations and Maintenance (O&M) Plan for municipal activities listed in Section 2.3.7 (a-c) of the new permit.
15. Develop a Sweeping Optimization Plan by April 30, 2018 that utilizes mapping and record keeping elements to track street and parking lot cleaning activities.
16. Where applicable and in accordance with the requirements of Section 2.4.7.2(b), develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for those MS4 properties not covered by a multi-sector general permit.
17. In each permit year evaluate opportunities to include green infrastructure practices in new development and redevelopment, and evaluate opportunities to reduce the amount of impervious cover.

The Town will also act upon their investigation of the Trojan System upgrades for the ultraviolet system at the Wastewater Treatment Plant discharge to the Charles River. The anticipated expenditure is about \$40,000.

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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
1 Revised	Partnership with local Watershed Associations	Con. Comm., DPW, BOH	Regular Meeting Attendance	Correspondence with the Charles River and Neponset River Watershed Associations.	Continued updating, seek alternative funding opportunities (such as grants and SRF monies).
2 Revised	Develop Brochures	DPW	Quarterly Mailings	Town funding was appropriated for water quality related mailings.	Address Part II, Item 8
3 Revised	WEB Site Public Service Postings	IT Dept., DPW	WEB Site Publication & Maintenance	Association information transfer and data publication of data, local WEB updates	Include in Part II, Item 8
Revised					

1a. Additions

20	Two (2) contacts to the four key target areas	Con. Comm., DPW, BOH	Eight (8) documents or contacts		Outline in Part II, Item 8
21	Update Sub catchment Maps and Prioritization	DPW	Electronic Mapping	Completed by Neponset Stormwater Partnership in January 2016	Complete updates as necessary by April 30, 2018

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
4	Water Quality Testing	DPW	2 Rounds of Water Quality Sampling of Priority Water Bodies	Completed outfall pipe mapping and an estimated 100% of the storm system connectivity, and WWTP NPDES testing. Mapping complete in January 2016.	Continue to stencil catch basins. Continued testing as related to the WWTP NPDES Permit.
Revised					Develop a plan and budget to implement Part II, Items 3 thru 7
5	Community Cleanup Days	DPW	Annually	Conducted in Spring 2016 via web posting and joined the <i>Great American Cleanup</i>	Scheduled for Spring 2017
Revised					
Revised					
Revised					

2a. Additions

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
6	Catch Basin/Outfall and Receiving Water Mapping	DPW	GIS Mapping	Completed outfall pipe mapping and an estimated 100% of the storm system connectivity in January 2016.	Continue to stencil catch basins. Wet weather field screening of outfalls after mapping.
Revised					Develop a plan and budget to implement Part II, Items 3 thru 7
4	Water Quality Testing	DPW	Testing of Priority Water Bodies	Continued testing affiliated with the WWTP NPDES permit.	Continued testing as related to the WWTP NPDES Permit.
Revised					Develop a plan and budget to implement Part II, Items 3 thru 7
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions and Action	Drafted new Stormwater Bylaws and IDEE Bylaws for presentation at the Spring 2017 Town Meeting. Also proposed Regulatory Authority language for a BOH public hearing	Revisit the consolidated regulations per Part II, Item 11. Present the new Stormwater Bylaws and IDEE Bylaws at the Spring 2017 Town Meeting. Also present the Regulatory Authority language at a BOH public hearing.
Revised					
8	Permit Enforcement	DPW, Planning Board, BOH, Con. Comm.	Local Construction Site Oversight and Enforcement	WWTP Upgrades Funding thru local funding, train employees on finding and addressing IDEE locations per Part II, Item 10	Continue WWTP O&M thru local funding, train employees on finding and addressing IDEE locations per Part II, Item 10
Revised					
9	Misconnection/Illegal Dumping and Correction	DPW, BOH	Connectivity Mapping, By law Enforcement/Fines	Ongoing I/I camera work and GIS training	I/I camera work and train employees on finding and addressing IDEE locations per Part II, Item 10
Revised					
21	I/I and SSES Activities	DPW	I/I Reduction	Implement WWTF Upgrades	Expend \$50,000 in additional I/I investigations and target repairs
Revised					

3a. Additions

22	Employee Training	DPW	Documentation of Training	Train employees on finding and addressing IDEE locations per Part II, Item 10	Continue to train employees on finding and addressing IDEE locations per Part II, Item 10
23	Manhole Repairs	DPW	Structural Repair	Expended approximately \$6,500 to repair manhole causing inflow	Continue to identify inflow repair as needed

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions to Bylaws as Necessary	Drafted new Stormwater Bylaws and IDEE Bylaws for presentation at the Spring 2017 Town Meeting. Also proposed Regulatory Authority language for a BOH public hearing	Implement Part II, Item 11. Present new Stormwater Bylaws and IDEE Bylaws at the Spring 2017 Town Meeting. Also present Regulatory Authority language at a BOH public hearing
Revised					
8	Permit Enforcement	DPW, Planning Board, BOH, Con. Comm.	Local Construction Site Oversight and Enforcement	Ongoing to comply with local bylaws, state and federal requirements	Ongoing to comply with local bylaws, state and federal requirements. Train employees on finding and addressing IDEE locations per Part II, Item 10
Revised					
10	Improved As-Built Review	DPW, Planning Board	Electronic As-Built Submittals on Town GIS System	Collected as-builts of I/I work and maintain Town GIS Maps.	Collect additional as-built drawings and maintain GIS Maps.
Revised					

4a. Additions

23	Assessment of Impervious Areas	DPW	GIS/CAD Calculation	Worked with NSP to complete in January 2016	Update the assessment of impervious areas of Town, per Part II, Item 12
24	Completed Subcatchment Map & Prioritization of risk	DPW	Geodatabase manipulations & GIS Mapping	Worked with NSP to complete in January 2016	Update the assessment of impervious areas of Town, per Part II, Item 12

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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions to Bylaws as Necessary	Drafted new Stormwater Bylaws and IDEE Bylaws for presentation at the Spring 2017 Town Meeting. Also proposed Regulatory Authority language for a BOH public hearing	Implement Part II, Item 11. Present new Stormwater Bylaws and IDEE Bylaws at the Spring 2017 Town Meeting. Also present Regulatory Authority language at a BOH public hearing
Revised					
8	Permit Enforcement	DPW, Planning Board, BOH, Con. Comm.	Local Construction Site Oversight and Enforcement	Ongoing to comply with local bylaws, state and federal requirements	Ongoing to comply with local bylaws, state and federal requirements
Revised					
Revised					

5a. Additions

24	Property Inventory	DPW, Planning Board, BOH, Con. Comm.	Inventory List		Implement Part II, Item 13
25	Operations and Maintenance (O&M) Plan	DPW, Planning Board, BOH, Con. Comm.	O&M Plan		Implement Part II, Item 14
26	Sweeping Optimization Plan (SOP)	DPW, Planning Board, BOH, Con. Comm.	SOP		Implement Part II, Item 15
27	Stormwater Pollution Prevention Plans (SWPPP)	DPW, Planning Board, BOH, Con. Comm.	SWPP		Implement Part II, Item 16

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 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
11 Revised	Improved Street Sweepings	DPW	Semi-annual Collections	Semi-annual Collections	Semi-annual Collections. Prepare Sweeping Optimization Plan per Part II, Item 15
12 Revised	Improved Catch Basin Cleanings	DPW	Semi-annual Collections	Semi-annual Collections	Semi-annual Collections in accordance with O&M Plan per Part II, Item 14
13 Revised	Household Hazardous Waste Days	DPW	Annual Collections	Annual Collection	Annual Collection
14 Revised	Drain Stenciling	DPW	Aquifer Protection Area	Conducting a seventh round of drain stenciling in 2016.	Conducting an eighth round of drain stenciling in 2017.
18 Revised	Employee Training	DPW	Seminar Attendance	Attended several workshops, including CRWA sustainable and urban design seminar, the Metrowest Stormwater Partnership (on 5/24/16) and NSP.	Identify appropriate training through local highway associations, CRWA and NRWA, and Metrowest Partnership.

6a. Additions

22	Employee Training	DPW	Seminar Attendance		Train employees on finding and addressing IDEE locations per Part II, Item 10
28	Wastewater Treatment Plant Improvements	DPW	Ultraviolet System	Investigate the use of Method Works or Trojan System upgrades	Implement the Trojan System upgrades for \$40,000

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 14 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
6 Revised	GIS Mapping	DPW	GIS Mapping of Priority Waters and Drainage Patterns	Completed outfall pipe mapping of the storm system connectivity in January 2016.	Continue to stencil catch basins and maintain GIS maps.
4 Revised	Water Quality Testing	DPW	Semi-Annual Water Quality Testing		Wet weather field screening of outfalls after mapping per Part II, Items 3 thru 7
15 Revised	Stormwater Modeling	DPW	Needs Assessment for Category 5 Water Bodies	Completed outfall pipe mapping and the storm system connectivity in January 2016.	Maintain storm water system mapping
16 Revised	Misc. Structural BMPs as Needed	DPW	i.e. Construction Improvements	Completed the installation of covers at the WWTP Secondary Clarifiers to control algae in 2014. Manhole repairs in 2015 and 2016.	To be determined.
17 Revised	Misc. Non-Structural BMPs as Needed	DPW	i.e. Bylaw Enforcement, Fees and Fines	Continued development of MS4 templates and Medfield specific Watershed Protection Plan	To be determined per Part II, Item 17
19	Pond Cleaning and De-Nitrification	DPW and Con. Comm.	Reduction of Invasive Species and Improved Water Quality	Chemical treatment of Vine Lake, Bakers Pond, Danielson Pond, Flynn’s Pond and Turbidity Pond.	Chemical treatment as necessary.

7a. Additions

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7b. WLA Assessment

In general, the Town of Medfield takes a broad approach to its overall water resource balancing and recognizes the interaction of its water withdrawal, sewer collection and recharge, and stormwater management, and the impacts these have on the Charles and Neponset River Watersheds. The Town's goals and objectives are to have the local DPW operations dovetail with overall watershed protection, as espoused in the Phase II General Rule and ever changing regulatory guidance, including the DEP's Sustainable Water Management Initiative (SWMI, November 2012) Program priorities focus on increasing efforts to reduce target pollutants (including compliance with newly developed Total Maximum Daily Loads) and replenishing local water bodies. As a result, the Town has positioned itself well for the new general permits.

To date, the Town has focused on GIS mapping of the drainage system and priority receiving waters (i.e. the Charles River). Outfall pipes and catch basins have been 100% mapped and the connectivity of the system has been 100% mapped. The Town's recent focus was on mapping its wastewater system that flows to the WWTP located on the Charles River and completion of the wastewater system mapping, identification (thru SSES) and repair of I/I sources, and continued treatment of selected ponds. The Town will continue to conduct water testing as required under its NPDES permit at the WWTP. Additional, structural BMPs of the wastewater collection system (i.e. slip lining) will be completed with the implementation of I/I activities that will improve the functionality of the local WWTP that discharges into the Charles River under an existing NPDES permit. In 2011/2012, the Town completed \$400,000 in upgrades to the local WWTP with SRF funding, and in 2012/2103 appropriated and addition \$400,000 for SSES investigation activities and structural BMPs.

In 2013, the Town continued with structural improvements to address its water quantity and quality demands, while planning for the future. The Town attended workshops and public hearings; continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters); completed structural I/I improvements at the Medfield Wastewater Treatment Plant, incorporated the new Total Maximum Daily Load (TMDL) requirements, GIS mapping, water budgeting, and pending regulations into a town-wide Watershed Protection Plan; expended \$5,000 to participate in a regional Community Innovation Challenge Grant with the Neponset River Watershed Association and Metropolitan Area Planning Council; and continued to maintain the Town's web-site and GIS Maps.

In 2014, the Town continued with structural improvements to address its water quantity and quality demands, while planning for the future. The Town:

1. Attended public hearings for the impending Phase II MS4 NPDES requirements and draft General Permits;
2. Continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters) and expending \$34,216 on structural I/I improvements;

3. Expended \$186,667 on water quality related capital improvements at the Medfield Wastewater Treatment Plant, including construction of a cover system to reduce algae at the secondary clarifiers;
4. Expended \$36,778 on incorporation of new Total Maximum Daily Load (TMDL) requirements, Geographic Information System (GIS) mapping, water budgeting, and pending regulations into a town-wide Watershed Protection Plan;
5. Expended \$5,000 to participate in a regional stormwater grant with the Neponset River Watershed Association and Metropolitan Area Planning Council; and
6. Expended \$5,000 on maintaining the Town's GIS Maps.

In 2015, the Town continued with its watershed protection planning, structural improvements to address water quality concerns and inspections to control stormwater quantities. More specifically, the Town:

1. Attended public hearings for the Phase II MS4 NPDES requirements and General Permits issued in April 2016.
2. Expended \$5,000 to be an active participant of the Neponset Stormwater Partnership (NSP) that it being managed by the Neponset River Watershed Association and Metropolitan Area Planning Council under a 2015 Community Innovation Challenge Grant. The NSP met quarterly and the 2015 activities included:
 - a. Tracking of the recently issued Phase II MS4 General Permit,
 - b. Updating a Public Outreach and Education Plan Template,
 - c. Updating the Stormwater Management Plan Template,
 - d. Updating the Illicit Discharge Detection and Elimination Plan Template,
 - e. Reviewing the Geographic Information System (GIS) geodatabase for the Town of Medfield,
 - f. Delineating the Town of Medfield's subwatershed catchment areas, and
 - g. Prioritizing the subwatershed catchment areas in terms of land use, water resource areas and potential stormwater concern, and relative risk from low to high.
3. Expended \$5,000 on maintaining the Town's GIS Maps.
4. Continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters) and expended \$50,000 on additional video camera inspections of utilities in both watersheds;
5. Conducted year-round (semi-annual equivalent) street sweeping and catch-basin cleanings;
6. Expended \$5,000 on manhole repairs;

7. Continued to update the Town of Medfield Watershed Protection Plan, based on NRWA and MAPC recommendations; and
8. Hosted the NRWA and MAPC at a public meeting of the Medfield Board of Selectmen in November 2015.

In 2016, the Town continued with its watershed protection planning, structural improvements to address water quality concerns and inspections to control stormwater quantities. More specifically, the Town:

1. Attended public hearings for the Phase II MS4 NPDES requirements and General Permits issued in April 2016, including with the Metrowest Partnership on May 24, 2016.
2. Expended \$5,000 to be an active participant of the 2016 Neponset Stormwater Partnership (NSP) that it being managed by the Neponset River Watershed Association and Metropolitan Area Planning Council. The NSP met quarterly and the 2016 NSP activities included:
 - a. Planning and Coordination
 - Modelling a Notice of Intent and developing an internal 5-year work plan
 - Developing a draft proposed scope of work for permit years 1-5 (to be completed by November 2017)
 - Updated the model Stormwater Management Plan (SWMP)
 - Hosting four steering committee meetings/ trainings
 - Completed outstanding “in-reach” meetings
 - Represented the NSP communities at meetings of the statewide stormwater coalition
 - b. Outreach
 - Met the pet waste dog license requirements by coordinating with town clerks and distributed at least one year’s worth of public materials
 - Planned for and conducted initial outreach for a year 1 “green collar” pet waste campaign
 - Reviewed and updated existing education/print materials, signage and the NSP website

- c. Illicit Discharge Detection and Elimination (IDDE)
 - Updated protocols in the model IDDE SWMP
 - Prepared new catchment delineations and/or refined existing catchment delineations for three additional communities (Medfield was completed on January 18, 2016)
 - Reviewed and updated catchment rankings as needed based on new guidance (Medfield was completed on January 18, 2016)
 - d. Post Construction Bylaws
 - Updated the model stormwater bylaw template to reflect final permit and develop model language for offsite provisions
 - e. Stormwater Finance
 - Applied the EPA's cost estimator tool to NSP communities, refined the tool as appropriate, and distributed the results along with analysis of impervious cover by parcel and potential stormwater fee rate structures.
3. Expended \$5,000 on maintaining the Town's GIS Maps.
 4. Continued monitoring of Infiltration/Inflow (I/I) in both the Charles River and Neponset River Watersheds (through nine sub-basin meters) and expended \$20,000 on additional video camera inspections of utilities in both watersheds;
 5. Conducted year-round (semi-annual equivalent) street sweeping and catch-basin cleanings;
 6. Expended \$6,500 on drainage infrastructure improvements (i.e. catch basin and manhole repairs);
 7. Continued to update the Town of Medfield Watershed Protection Plan, based on NRWA and MAPC recommendations; and
 8. Began the process of updating the Town's Stormwater Bylaws, also based on the NRWA recommendations and other local bylaws adopted in the CRWA.
 9. Investigated the use of Method Works or Trojan System upgrades for the ultraviolet system at the Wastewater Treatment Plant discharge to the Charles River.

The Town of Medfield understands that the 2016 Massachusetts Small MS4 General Permit was signed April 4, 2016 and will become effective July 1, 2017. The final permit reflects modifications to the 2014 draft small MS4 general permit released for comment on September 30, 2014 and will replace the 2003 small MS4 general permit for MS4 operators within the Commonwealth of Massachusetts. The proposed changes are reflected in the attached annual report. The Town of Medfield intends to submit their Notice of Intent within 90 days of the effective date of the new permit (by September 29, 2017). In order to comply with the new requirements, the Town will appropriate \$15,000 to \$20,000 per year for direct compliance with managing the new General Permit.

Part IV. Summary of Information Collected and Analyzed

As a result of the information collected to date, the Town will be focusing significant effort on complying with the newly issued Phase II MS4 General Permit. The Town has reviewed the local, state and federal bylaws relative to stormwater and aquifer protection, and appears to be adequately regulated and in conformance with the Massachusetts Stormwater Management Policy. In 2016, minor revisions were required for updating the local Stormwater Bylaws, implementing new IDEE bylaws and for clarifying authority to the local BOH. To this end, the Town has drafted new Stormwater Bylaws and IDEE Bylaws for presentation at the spring 2017 Town Meeting (April 24, 2017) and has proposed Regulatory Authority language for a BOH public hearing. This demonstrates that the local DPW has been working with other local regulators, the Town Administrator, the NRWA, the CRWA and MAPC.

Chemical de-nitrification of Vine Lake, Bakers Pond, Danielson Pond, Flynn's Pond and Tubitty Pond will serve to improve the overall water quality and sustainability of these water resources. The local Conservation Commission continues to appropriate funds to provide notification regarding the potential impacts of herbicide and pesticide use on water bodies and will initiate updates to the public through water bill mailings and postings on the local WEB site. The Town will also work on alternatives to promote volunteerism, such as their annual Spring Cleanup days along with the Great American Cleanup.

Through its GIS system maintenance, the Town continues the process of updating the maps of its utility systems and is generally in GIS maintenance mode. In recent years, the Town has shifted its water quality program to its WWTP and the NPDES discharge to the Charles River. In 2015 the Town installed new covers over their secondary clarifiers to control algae and in 2016, the Town assessed expending about \$40,000 on upgrading the existing WWTP ultraviolet system and work will be conducted this coming year. The Town anticipates more attention to the control of phosphorous as part of the new permit.

The Town continues to budget about \$20,000/annually to conduct video camera work of its aging sewer and drain pipe and will budget about \$30,000 in repair work (for a total of about \$50,000 per year in I/I). The work is conducted to minimize the amount of I/I that travels to the Medfield WWTP, and that is subsequently discharged to the Charles River, and to reduce the flow through the Town's drainage system. The FY2017 I/I work will commenced in April 2017 and will include old vitrified clay pipe and low lying pipe on Brook Street, Green Street, John's Avenue, Remsen Avenue, Pine Street, West Mill Street, Adam Street, Harding Street, Frairy Street,

and Mitchell Street.

Finally, under the new permit attention will shift back to the immediate outfall locations that are located in the Charles River Watershed and Neponset River Watershed with TMDL's (i.e. Charles River, Stop River and Mine Brook, respectively). In 2015, the Town worked with the MAPC to develop a watershed sub-catchment area map and each area has been prioritized from low to high risk, based on land uses and potential environmental impact. Outfall testing will be scheduled as part of the new permit implementation.