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Municipality/Organization: Town of Hanover, MA

EPA NPDES Permit Number: MA041036

MA DEP Transmittal Number: W035898

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

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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: Victor J. Diniak

Title: Director of Public Works

Date:

4/28/17

Part II. Self-Assessment

In general, the Town of Hanover's stormwater management activities for the fourteenth year of the General Permit (April 2016 through March 2017) were in conformance with the Notice of Intent (Massachusetts DEP form BRP WM 08A) and schedule submitted in July 2003. The Town has 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 continues to focus 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. Program priorities focus on increased efforts to reduce target pollutants and restore local water bodies.

The Town continues its commitment to working with the North and South River Watershed Association (NSRWA) to advance their goals and objectives. Another high priority of staff is to keep abreast of the latest technology and approaches to achieve storm water management. Program activities 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. To these ends, the Town of Hanover has and continues to partner with the NSRWA as well as the Towns of Norwell, Pembroke, and Hanson to fund and jointly work on projects that impact the Third Herring Brook, the North River, and the Indian Head River. These projects include several SWMI grant projects to better understand the hydraulics of the Third Herring Brook watershed, repairs to the Factory Pond Dam, and the removal of an unnecessary culvert on the Iron Mine Brook where it empties into the North River. This culvert removal restored fish access to the upper waters of the Iron Mine Brook. In addition, the Town continues its long-time active support and partnership with the NSRWA and our neighboring communities on NSRWA's Greenscapes program which promotes smart landscaping techniques and public education. These landscaping techniques promote minimization of irrigation and fertilization, both of which negatively impact the rivers and streams in our community.

The Town routinely responds to drainage concerns of residents, clearing brush and leaves that impede the natural flow of stormwater. During these activities, Town staff assess potential pollution sources from residential properties and educate residents about their potential role in improving water quality through good housekeeping practices.

The activities during Permit Year Eleven focused on upgrading the Town's local ordinances. Toward that end, a complete review of the Towns Bylaws was conducted, and a new bylaw was drafted for the prevention of illicit discharges. This bylaw was presented at

Town Meeting in the Spring of 2013, and approved in May 2013.

The activities performed during Permit Year fourteen focused on the continued development of a Town-wide Geographic Information System, including the connectivity of the drainage system to (and verification of) structures that have been mapped as well as development of a web based platform for providing public access to the maps through the internet. The Town also continued with control measures that were initiated during the previous permit year, including improving local good housekeeping programs; and communicating the Town's Plan to local watershed associations.

Hanover is pleased to present the following summary describing the town's success at implementing the fourteenth year of the Town's Comprehensive Stormwater Program.

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 (if applicable)
1	Partnership with local Watershed Associations	Con. Comm., DPW, BOH	Regular Meeting Attendance	Town DPW Director and Conservation Commission Agent meet routinely with members of the NSRWA for stakeholder input on projects within the Town. The Town worked cooperatively with NSRWA to remove a culvert on the Iron Mine Brook near where it dumps into the North River, restoring fish access to the upper waters of the brook. Completion of second SWMI grant with Norwell and NSRWA studying the Third Herring Brook aquifer.	Continued support of NSRWA activities.
2	Develop Brochures	DPW	Quarterly Mailings	Educational outreach through Greenscapes Program. In addition, partner with NSRWA to develop materials to meet the enhanced educational requirements of the new stormwater permit.	Educational outreach through Greenscapes Program and other partnered activities with NSRWA.
3	WEB Site Public Service Postings	IT Dept., DPW	WEB Site Publication & Maintenance	Stormwater Page on the Hanover DPW website was updated. http://www.hanoverdpw.org/stormwater.shtml	Local WEB updates and maintenance.

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 (if applicable)
4	Water Quality Testing	DPW	2 Rounds of Water Quality Sampling of Priority Water Bodies	Obtain Town Meeting funding for stormwater work and began required testing under the new General Permit.	Continue required testing.
5	Community Cleanup Days	DPW	Annually	Conducted April 25 th thru April 29 th , 2016. Supported NSRWA cleanup events along the river banks	Scheduled for April 29 th thru May 5 th , 2017. Continued support of NSRWA stream bank cleaning events.

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 (if applicable)
6	Catch Basin/Outfall and Receiving Water Mapping	DPW	GIS Mapping	April 15, 2001 aerial photography serving as basis for mapping updates of local developments and drainage system connectivity.	Continued mapping updates of local developments and drainage system connectivity.
4	Water Quality Testing	DPW	Testing of Priority Water Bodies	Obtained funding for water quality testing of outfalls.	Perform water quality testing of outfalls.
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions and Action	BMP Completed.	BMP Completed.
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. The Permit was enforced by the Town during Permit Year 14 and there were no violations.	Ongoing to comply with local bylaws, state and federal requirements.
9	Misconnection/Illegal Dumping and Correction	DPW, BOH	Connectivity Mapping, Bylaw Enforcement and Fines	Continued local bylaw enforcement. The bylaw was enforced by the Town during Permit Year 14 and there were no violations.	Continue local bylaw enforcement

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 (if applicable)
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions to Bylaws as Necessary	BMP Completed.	BMP Completed.
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
10	Improved As-Built Review	DPW, Planning Board	Electronic As-Built Submittals on Town GIS System	Continued GIS mapping	Continue GIS mapping and develop protocol for submitting as-builts electronically

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 (if applicable)
7	Regulatory Review	DPW, Planning Board, BOH, Con. Comm.	Regulatory Revisions to Bylaws as Necessary	Decision made to implement regulations based on IDDE bylaw which was presented at Spring 2013 Town Meeting, and approved in May 2013.	Draft regulations.
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

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 (if applicable)
11	Improved Street Sweepings	DPW	Semi-annual Collections	Annual sweeping of all streets. As in past years, lack of sand from snow and ice operations reduces the need for semi-annual collections. The Town does monitor active construction sites and performs additional sweeping around these sites to reduce materials entering the catch basins. Similarly, the roads leading into Town are checked regularly and swept as needed to control silts. Purchased a new vacuum sweeper to increase efficiency of sweeping operation.	Semi-annual Collections
12	Improved Catch Basin Cleanings	DPW	Semi-annual Collections	Annual Collections. The lack of sand from snow and ice operations reduces the need for semi-annual collections.	Semi-annual Collections
13	Household Hazardous Waste Days	DPW	Annual Collections	Semi-annual collection April 30, 2016 and October 29, 2016. Additionally, the Town transfer station offers waste oil and anti-freeze collection to Town residents as well as access to HHW events in other South Shore Recycling Cooperative communities. Town also sponsored drug take back events to minimize pharmaceutical waste from entering the groundwater	Annual Collection
14	Drain Stenciling	DPW	Aquifer Protection Area	no action this permit year	Stencil drains in Aquifer Protection Area as needed

6a. Additions

18	Employee Training	DPW	Seminar Attendance	On January 19, 2017, Town employees attended a PCHA briefing on the draft EPA Stormwater General Permit.	Attend Good Housekeeping and SWMP Training Seminars Sponsored by Plymouth County Highway Association
19	Stream Maintenance	DPW	Annual Maintenance	During 2016, DPW partnered with Plymouth County Mosquito Control crews to remove blockages, brush and other obstructions from ditches and streams. DPW staff performed numerous routine removals of brush and debris from streams throughout town	Continued work with Mosquito Control Workers. Continued normal stream maintenance
13	Additional HHHW drop off locations/days	Department of Public Works	Number of drop off locations	Continued participation in the South Shore Recycling Cooperative, where 14 local communities open up their local HHHW collection days to members of the cooperative.	Continue to participate in the South Shore Recycling Cooperative.

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 (if applicable)
6	GIS Mapping	DPW	GIS Mapping of Priority Waters and Drainage Patterns	April 15, 2001 aerial photography serving as basis for Assessor Mapping updates and connectivity of drainage system mapping.	Continued development of GIS mapping
4	Water Quality Testing	DPW	Semi-Annual Water Quality Testing	Funded semi-annual water quality testing	Perform water quality testing
15	Stormwater Modeling	DPW	Needs Assessment for Category 5 Water Bodies	To be determined	To be determined
16	Misc. Structural BMPs as Needed	DPW	i.e. Construction Improvements	(scheduled for future permit years as appropriate)	To be determined

17	Misc. Non-Structural BMPs as Needed	DPW	i.e. Bylaw Enforcement, Fees and Fines	(scheduled for future permit years as appropriate)	To be determined
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7b. WLA Assessment

To date, the Town has focused on completing GIS mapping of the drainage system and receiving waters, as approved by the DEP, and water quality screening and testing from the outfall locations that have been mapped in the vicinity of the North River watershed area. The data findings confirm past conclusions that the North River and its tributaries (i.e. the Indian Head River) are impaired from excessive levels of Total Coliform and e-coli, and the impairment shall be addressed. To this end, in 2006 the Town of Hanover issued a local approval to conduct a Wastewater and Land Use Study in the southeast section of Town that lies within the North River watershed. This study has evolved over time into an effort to integrate wastewater pumping records and animal/barn licenses into the Town's GIS system to look for correlations between impaired receiving water quality and failing or repaired Title V systems and domestic animal populations. The work has been difficult with our existing GIS software as these records are not tied to a map and lot but rather to a street address. Geocoding work is ongoing. The Town is currently migrating parts of our GIS platform from ESRI to PeopleGIS which we believe will accelerate the geocoding work needed to fully utilize the wastewater records as PeopleGIS has strong street address functionality. Finally, the Town continues its work in planning for a wastewater district along the route 53 corridor. This work progressed significantly in permit year 13 to include identifying available private wastewater resources along the corridor, projecting future needs, and identifying sites for potential groundwater discharge.

Part IV. Summary of Information Collected and Analyzed

Permit Year 1 Activities and Information

During the previous Permit Year, the Town reviewed the local, state and federal bylaws relative to stormwater and aquifer protection, and determined that they appeared to be adequately regulated and in conformance with the Massachusetts Stormwater Management Policy. Minor revisions may be required for informing local project proponents of the Phase II one-acre NPDES requirement.

Permit Year 2 Activities and Information

During Permit Year 2, outfall mapping and water quality screening/testing continued in the North River drainage basin. Assessor mapping was performed to determine the public/private impacts to its storm drainage system.

The Town continued to provide updates to the public through water bill mailings and postings on the local website, and continued to work with local watershed associations on possible funding sources and ways in which to promote volunteerism. The Town has taken part in employee training seminars sponsored by the Plymouth County Highway Association and continued to improve its good housekeeping programs.

Permit Year 3 Activities and Information

During Permit Year 3, outfall mapping and water quality screening/testing continued in the North River drainage basin. Assessor mapping was updated and the Town focused on the connectivity of its drainage system.

The Town continued to provide updates to the public through water bill mailings and postings on the local website, and continued to work with local watershed associations on possible funding sources and ways in which to promote volunteerism. The Town has taken part in employee training seminars sponsored by the Plymouth County Highway Association and will continue to improve its good housekeeping programs.

Permit Year 4 Activities and Information

During Permit Year 4, the Town obtained funding for a Wastewater and Land Use Study in the southeast section of Town where, previous outfall mapping and water quality screening/testing indicated that the North River drainage basin is impaired. Assessor maps continued to be updated and the connectivity of the drainage system was further mapped.

The Town continued to provide updates to the public through water bill mailings and postings on the local website, and continued to work with local watershed associations on possible funding sources and ways in which to promote volunteerism. In addition, Town employees have taken part in employee training seminars sponsored by the Plymouth County Highway Association and the Town continues to improve its good housekeeping programs.

Permit Years 5 and 6 Activities and Information

During Permit Years 5 and 6, Assessor maps continued to be updated and the connectivity of the drainage system was further mapped.

The Town continued to provide updates to the public through water bill mailings and postings on the local website, and continued to work with local watershed associations on possible funding sources and ways in which to promote volunteerism. In addition, Town employees have taken part in employee training seminars sponsored by the Plymouth County Highway Association and the Town continues to improve its good housekeeping programs.

Permit Years 7 - 14 Activities and Information

During Permit Years 7 through 14, the Town obtained local approval to conduct a Wastewater and Land Use Study in the southeast section of Town that lies within the North River watershed.

The Town continued to provide updates to the public through water bill mailings and postings on the local website, and continued to work with local watershed associations on possible funding sources and ways in which to promote volunteerism. In addition, Town employees have taken part in employee training seminars sponsored by the Plymouth County Highway Association, DEP and the EPA and the Town continues to improve its good housekeeping programs.

Note that the Town has completely eliminated the use of sand in its snow and ice operations and in addition has modified its snow and ice control measures to reduce salt application by 40-50%, further reducing pollution loads. This activity has occurred over a number of years, starting with around permit year 3 and continuing to date with incremental improvements every year. This reduction in pollutants is the direct result of the application of new technologies and careful program management that were stressed in programs sponsored by Baystate Roads and the Plymouth County Highway Association. In addition, the Town, like many communities, is slowly migrating to snow and ice control practices which rely more on mechanical means of snow removal (plowing) and less reliance on deicing chemicals.

During Permit Year 10 the Town continued its review of local, state and federal bylaws relative to stormwater and aquifer protection, and determined that a new IDDE bylaw was required to be drafted. It was drafted/reviewed by the Town Departments and was presented at Town Meeting in Spring 2013.

During Permit Year 11, the Town approved the Illicit Discharge Detection and Elimination Bylaw in May 2013.

During Permit Year 12, the Town completed the IDDE Regulatory Review and Construction Site Stormwater Runoff Control regulatory review. The Town also completed work on a SWMI grant to identify, evaluate, and map potential locations to construct infiltration BMPs and constructed a demonstration project BMP to treat and infiltrate stormwater from the school administration parking lot and roof into the ground.

During Permit Year 13, the Town worked cooperatively with the Town of Hanson to complete repairs to the Factory Pond Dam which the two towns jointly own. The repairs brought the dam up to the current State Dam Safety standards and reduced the likelihood that the dam would fail during a high flow event. Failure would have released contaminated sediments from the bottom of Factory Pond into the Indian Head River which would have significantly impaired the quality of both the Indian Head and North Rivers. The Town of Hanover also began the transition to a new web-based GIS platform in preparation for work anticipated by the new general Stormwater Permit. This new platform (PeopleGIS) will allow for better cooperation and data sharing between Town departments and our business partners who are involved in our stormwater efforts. In addition, we believe this new platform will allow us to enhance our efforts to share information in an accessible and useful format with the NSRWA, our neighboring communities, and most importantly the general public, allowing for better opportunities for public engagement. Finally, communication work through our partnership with the NSRWA began the process of educating animal owners of the impact of improperly disposed animal waste on the rivers and streams.

During Permit Year 14, the Town worked cooperatively with the NSRWA to remove a culvert on the Iron Mine Brook where it feeds into the North River. NSRWA designed and permitted the project with the assistance of various Town departments. The Town removed the culvert and restored the stream bed and banks, thereby connecting the North River to the upstream waters of the Iron Mine Brook. The Town also continued its work to implement PeopleGIS and performed additional mapping of the drainage system in anticipation of new Stormwater General Permit requirements. In addition, the Town funded and performed inspections of the Curtis

Crossing Dam and Forge Pond Dam to begin the process of bringing these structures into full compliance with State dam safety regulations, thereby reducing the likelihood that catastrophic failure of the one or both of the structures will further impair the Indian Head and North Rivers. Additional work on these structures is planned for permit years 15 and 16.