

Municipality/Organization: City of Dover

EPA NPDES Permit Number: NHR041037

NHDES Transmittal Number: _____

Annual Report Number & Reporting Period:

No. 15 April 1, 2017 – March 31, 2018

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: John Storer

Title: Community Services Director

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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: J. Michael Joyal

Title: City Manager

Date: 4/25/17

Part II. Self-Assessment

The City of Dover continued to implement the identified tasks in its Stormwater Phase II NPDES minimum control measures in year fifteen of the initial General Permit. The Best Management Practices that Dover has continued to implement include:

- Dover has completed mapping the stormwater system which was initiated prior to the NPDES permit. The City continuously updates the mapping as the system grows and as staff finds inconsistencies between maps and field inspections during catch basin cleaning. A Community Services staff member is assigned to accompany the catch basin cleaning contractor and record the conditions of each basin. The Asset Management department incorporated collected drainage data into our VueWorks digital work order system.
- The City held one Household Hazardous Waste Collection Day for Dover residents. This year 294 residents participated.
- Dover's recycling program includes weekly curbside pickup of recyclables as well the operation of a recycling center. The recycling center accepts many items including waste oil, white goods, tires, metal, C & D material, yard waste, computer monitors and other electronics, Freon containing appliances, used antifreeze and mercury containing items to reduce the waste stream and prevent the release of contaminants into the environment. The center also has a book exchange where residents can leave books for others to take. Dover's recycling rate is 66% of the waste stream, and is nationally recognized as a leader. The center accepts yard waste. The City also conducts an annual curbside leaf collection each fall for four weeks. Yard waste and leaf pick-up is taken to local companies for use in compost. Last year, 1,100 cubic yards of yard waste was collected, and 160 tons of that was from the curbside pick-up program.
- The City staff review 18 full subdivision and/or site plan applications before the Planning Board. Their review includes stormwater plans to insure the site meets all standards during construction and upon completion of the project. All projects are required to submit stormwater operation and maintenance plans to insure long-term performance of storm water infrastructure. The City Engineering inspection team continued its inspection of construction sites for temporary erosion control during construction and the implementation of permanent stabilization and run off control measures per approved design plans.
- The Engineering Department utilized the VUEWorks work order management software to keep track of all of the Stormwater Operation and Maintenance annual reports that were submitted throughout the year. The number of properties that submit annual reports continues to increase each year; however, there are still many who do not comply. The VueWorks work order tracking system has improved the city's ability to track annual inspections. The City Planning Board requires that all Operation and Maintenance obligations be recorded with the deed at the Strafford County Registry of Deeds in order to ensure future

property owners are aware of the process.

- The catch basin cleaning contractor cleaned 1310 basins during the 2017 summer season. This constitutes approximately ½ of all basins in the City.
- Dover Highway and Utilities crews addressed approximately 365 drainage related maintenance work orders with a total cost including parts, labor and equipment of approximately \$18,000.
- The City of Dover hosts and is an active participant in the N.H. Seacoast Stormwater Coalition. The N.H. Seacoast Stormwater Coalition has accomplished much in recent years to further the goal of improved stormwater quality. Issues such as Public awareness, training of staff, and other common needs of Coalition member communities have been worked on successfully in collaboration. The Coalition also provides a forum in which to share our individual program experiences both good and bad. This year, much of the discussion related to addressing each item outlined in the 2017 MS4 permit, and working towards a collaborative approach to meeting the requirements.
- No illicit connection were discovered during this annual reporting period. Dover has accomplished much work throughout the City over the years and records of the work were in numerous locations and formats. Surface illicit discharges, including runoff from spilt grease tanks near restaurants, were addressed as the city became aware of the concerns.
- The Planning Board has continued to hold private development to Dover's Subdivision and Site Review regulations that include strong stormwater requirements as required by the MS4 General Permit based on the Southeast Watershed Alliance model stormwater ordinances. The regulations require the use of Low Impact Development techniques to address stormwater runoff. The board requires projects that propose to disturb 20,000 square feet or more to submit plans to the Planning Board for review and approval.

New activities aimed to achieve improved stormwater program performance and water quality improvement include:

- City Staff participated in several tours of the Berry Brook Watershed, showcasing the stormwater management improvements in the watershed and discussing costs and labor associated with maintenance.
- Dover's Deputy Director of Community Services, attended and presented at several regional and national concurrences, along with Dr. Houle from the UNH Stormwater Center. The presentation educates other industry professionals about the lessons

learned and new approaches to stormwater management that resulted from the years of work done in the Berry Brook watershed.

- The Community Services Department once again had a popular booth at the Dover Apple Harvest Day event in October of 2017. The booth showcased water conservation and residential strategies for stormwater mitigation. The booth also promoted the curbside yard waste collection program and the importance of properly disposing of leaf and yard waste. Approximately 50,000 people attended Apple Harvest Day, many people stopped to visit the booth and over 100 people entered to win a Rain Barrel.
- City Staff actively participated in the Great Bay Pollution Tracking and Accounting Pilot Project (PTAPP).
- The City completed a three-year pilot program to convert fertilizers to all organic.
- Reconstructed the Keating and Birchwood neighborhood to include an overall reduction in impervious area as well as construction of 40 new catchbasins with deep sumps and hoods, along with a subsurface infiltration basin improve water quality and promote infiltration.
- Reconstructed Richardson Drive and Old Stage Road to include an overall reduction in impervious area as well as construction of 15 new catchbasins with deep sumps and hoods, along with four subsurface infiltration basins improve water quality and promote infiltration. This project also extended public sewer to approximately forty homes that were previously using septic systems.
- Replaced approximately 80 linear feet of a culverted stream that was causing erosion on the bank of the Bellamy River with a reconstructed delighted stream.
- Reconstructed the Wittier Street Bridge with a wider span to remove restriction and recreate natural bank of the Cochecho River.

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
A1	Establish Pollution Hotline	Bill Boulanger	Trained administrative personnel who receive calls	Although the hotline was not used, all sotrmwater complaints that came directly to the office were logged as service calls in the city's VueWorks work order system. Service calls are all addressed, weekly staff meetings are held to review progress of services calls.	Continue to log and address service calls
Revised		Community Services			
A2	Community Cleanup	John Storer	Held 14th annual clean-up	Dover Main Street clean up day	Hold 15th Dover Pride clean-up day
Revised		Community Services			
A3	Educational Video	Seacoast NH Stormwater Coalition	Show on local access	Presented on the Berry Brook efforts to reduce impervious through implementation of LID retrofits of City drainage system, and home owners rain gardens and rain barrels. The presentation to the City Council was broadcast on local television and is available for download at the City's Website.	Continue to present at local and regional events.
Revised	Tour of Berry Brook and public presentations.		Educate community about importance of Stormwater by showcasing work done at Berry Brook.		
A4	Publish Stormwater information	Community Services	Published articles and public response	Staff have a booth at the annual Apple Harvest Day. Staff distribute materials about proper yard waste disposal, proper septic management, importance of picking up pet waste, as well as information on how to build a rain barrel and other educational materials. Staff also take time with residents to discuss what the city does for stormwater maintenance.	Continue to use Apple Harvest Day as an opportunity to educate public.
Revised					
A5	Pet Waste and Storm Water	Community Services	Lower bacteria levels in un-named brook	Continued to educate the public about pet waste stormwater impacts and proper behavior.	Continue to educate the public about pet waste storm water impacts and proper behavior.
Revised					
A6	Assist School in SW education	Community Services and volunteers	Make presentations in classroom	The Deputy Director of Community Services visited third and fourth grade classes at the Horne Street School to discuss water resources and led a tour of the low impact development projects that have been created at the school. Attended the Earth Day celebration at the Garrison Elementary School to talk about water resources and protection.	Continue to work with elementary schools in the area. Work with Dover High School students to lead a public education program for stormwater.
Revised					

A7	Educational Kiosk	Community Services	Create and Install an educational kiosk outlining the environmental components of the Silver Street Reconstruction Project.	Kiosk design was created.	Install Kiosk.
A 8	Flood Elevation Art Installation	Community Services	Assist members of the Global Warming Steering Committee in creating an art installation in the vicinity of the Henry Law Park, that showcases existing flood elevations and projected future flood elevations. Project will also include educational pieces pertaining to stormwater	Staff assisted committee, however, the installation was not completed after loss of interest.	Continue to assist other committees such as the Waterfront Development Committee and Dover Main Street in their efforts to promote good and environmentally sound opportunities for education.
A9	Snow Removal/ Salt Usage	Community Services	Green SnoPro training	Staff continue to maintain Green SnowPro certifications.	Continue efforts to host events such as the Green SnoPro class.

1a. Additions

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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
B1	Storm Stencil	Community Services	Number completed 3 events	No stenciling in 2017	
Revised					
B2	Sample outfall and other structures	Community Services	Sampled	No Sampling in 2017	Implement focused sampling efforts based on new MS4 requirements.
Revised					
B3	Update Ordinances	Planning	Ordinance facilitate compliance of NPDES regulations	Continued to require developments in the city to conform to the regulations.	Continue to require developments in the city to conform to the regulations.
Revised					
B4	City of Dover	Community Services/ School	Meet cooperatively to establish city fertilization program consistent with NEIWPIC recommendations	Piloted a program to dedicate two locations to an “organic conversion” as a result of advocacy to reduce pesticides on public property. Fertilizers were applied in accordance with New Hampshire State Standards.	City will conduct soil tests at the start of the season to establish specific fertilizer goals. The city will use “least toxic” options and apply a “spot based” approach. The city plans to implement organic fertilizers at all locations provided they are also the “least toxic”
Revised					
B5	Pet Waste Pilot Project	Community Services	Lower bacteria in surface water	Same as A5	Same as A5
Revised					
B6	Berry Brook Watershed Assessment and Management Plan	City of Dover UNH NHDES	Improved habitat and water quality	Completed additional BMP’s to improve water quality in 2017 and held several tours to showcase the constructed BMP’s, report on the progress, and celebrate the success of the Berry Brook restoration.	Continue to implement additional stormwater structures reducing connected impervious cover in the Berry Brook watershed. Work with the UNH stormwater center to monitor the efficacy of the work in the watershed on the Brook.
Revised					
B7	Initiate committee to formulate Stormwater Management Plan	Community Services	Public supported Stormwater Management Plan	Continue to inform the Dover Utilities Committee of the ongoing Stormwater Management efforts in the city.	Set up a more formal review process with the Dover Utilities Commission to solicit involvement and input into the Stormwater Management Program,
B8	Add LID to zoning regulations	Planning	Better storm water management at development sites	In 2016 the city adopted recommendations from the SWA model regulations.	Require developments to meet the standards

B9	Initiate Climate Adaptation Plan	Planning	Plan and implement strategies to address climate change	Engage Steering Committee and the Regional Planning Commission. Finalize chapter and incorporate into the City's master plan.	The Planning Board adopted the 2018 Climate Adaption Chapter of the Dover Master Plan on 2/27/18. The Chapter includes 47 Action Items

2a. Additions

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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
C1	Stormwater System Mapping	Community Services	Have completed map of system and keep maintained	Continued collection of infrastructure condition for storm drain system. Update system map as system grows and is repaired.	Continue collection of infrastructure condition for storm drain system. Update system map as system grows and is repaired.
Revised					
C2	Establish Illicit Discharge Program	Community Services	Establish Program and Implement	Found no illicit discharges in this reporting year. Placed drainage connections for sump pumps and educated residence on allowable uses for sump pumps.	Continue to look for illicit connections and remediate.
Revised					
C3	Catch Basin Stenciling	Community Services	Same as B1	Same as B1	Same as B1
Revised					
C4	Update City Ordinance	Community Services and Planning	Same as B3 and B8	Same as B3 and B8	Same as B3 and B8
Revised					
C5	Secure Funding	Community Services	Find funding for programs	The City includes \$150,000 per year in the annual operating budget for general drainage improvements.	Continue to adequately fund the stormwater improvement program.
Revised					
C6	Participation in Seacoast Storm Water Coalition – development of NH IDDE Manual	Community Services	Distribution of published manual	Continued participation in Seacoast Stormwater Coalition. Reviewed existing IDDE Manual and discussed opportunities for improvements particularly with regard to new regulations.	Continue participation in Seacoast Stormwater Coalition. Improve IDDE Manual thorough a collaboration with other municipalities.
C7	Include Berry Brook watershed as priority area in IDDE plan	Community Services	Remove bacterial sources	Done	No further action

3a. Additions

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
D1	Review and Update Ordinances	Community Services and Planning	Have legal authority to enforce Phase II	Incorporate recommendations from SWA proposed storm water regulations that improve Dover's regulations in April/May of 2016	Continue to ensure development is occurring in a manner that is consistent with the regulations.
Revised					
D2	Develop Inspection Program	Community Services and Planning	Site inspections to ensure compliance of Phase II	Engineering inspector inspects all sites for erosion control regularly. All SWPPP reports are submitted to the inspector for review.	Continue inspection program.
Revised					
D3	Direct Contractors to Educations Materials	Community Services	Better compliance of BMP's	Engineering provides to developers and site contractors at pre-construction conference.	Continue to educate community. Require maintenance contractors on private properties to be Green SnowPro certified.
Revised					
D4	Provide City Staff Training	Community Services	Have educated workforce	Continued sending staff to educational opportunities regarding stormwater.	Continue sending staff to educational opportunities regarding storm water.
Revised		UNH SC			

4a. Additions

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 16
E1	Review and Update Ordinances	Community Services and Planning	Have City Ordinances that comply with Phase II requirements	Done	Same as B3 and B8
Revised					
E2	Develop and Implement O & M Plans for Private Sites	Community Services and Planning	Design and implement program which tracks maintenance	All approved site plans are required to include stormwater O & M plans. Property owners report annually to the City.	Continue to require O & M plans at new sites and track compliance. Require that projects record at the Registry of Deeds, a document outlining the ongoing O&M and reporting obligations.
Revised					
E3	Implement Inspection Program	Community Services	Insure BMP are constructed to plan	The Engineering Technician inspects all sites for proper installation of BMP prior to issuance of Certificate of Occupancy	Continue to inspect sites.
Revised					
E4	Review and Update BMP List	Community Services	Maintain BMP list	Challenge design engineers to prepare effective storm water system designs using appropriate BMP's utilize LID wherever possible.	Continue to review and update LID BMP practices.
Revised					
E5	Develop Pollutant reduction tracking	Community Services and Planning Dept. Inspection Services	Measure pollutant reduction achieved through implementation of BMPs	Participate in PTAPP group to develop tracking system for coastal NH watershed communities and begin implementation of tracking processes and system.	Continue to participate in PTAPP and volunteer use of VueWorks capabilities where appropriate.
Revised					

5a. Additions

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
F1	Create Storm Drain Inspection	Community Services	Have a record of system conditions	Continued to have staff inspect structure condition during cleaning. Set up the cb inspections into the existing work order system (VueWorks)	Have inspection forms digitally filed with tablets in the field.
Revised					
F2	Implement Inspection Program	Community Services	Collect data useful for prioritization of maintenance	Continued inspections while cleaning catch basins 1310 basins cleaned and inspected in 2016	Continue inspections while cleaning catch basins
Revised					
F3	Create Street Sweeping Plan	Community Services	Cleaner storm system	Continued street sweeping program.	Continue street sweeping program.
Revised					
F4	Implement Catch Basin Cleaning Program	Community Services	Clean every catch basin once every 4 years	Contracted catch basin cleaning. Completed cleaning of 1310 basins.	Proposed FY19 budget includes funding
Revised					
F5	Establishment of Stormwater Utility	Community Services	Reliable funding source for stormwater system	Continue to monitor the public reaction to increasing Stormwater budgets as MS4 requirements come online with anticipated permit.	None planned
Revised					
F6	Explore use of salt brine	Community Services	Reduce amount of salt and sand used	Established conditions in which salt brine is effective	Continue use of salt brine in appropriate winter conditions
F7	Provide DPW staff training for Pollution Prevention/good house keeping	Seacoast Storm Water Coalition	Improve staff understanding and performance of pollution prevention	Provided CS staff training installing LID stormwater treatment during construction of BMP's at Berry Brook and throughout the city	Staff install and learn about BMP's throughout the city

6a. Additions

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 12 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 15
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					
Revised					

7a. Additions

7b. WLA Assessment

Part IV. Summary of Information Collected and Analyzed

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	No
Annual program budget/expenditures	(\$)	\$900,000

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	60%
Stormwater management committee established	(y/n)	Yes
Stream teams established or supported	(# or y/n)	No
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	No
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	1
▪ community participation Dover, Madbury, Lee, and Rollinsford	(%)	294
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	Yes

Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted	Adopted
Regulatory Mechanism Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination	X			
▪ Erosion & Sediment Control	X			
▪ Post-Development Stormwater Management	X			
Accompanying Regulation Status (indicate with “X”)				
▪ Illicit Discharge Detection & Elimination	X			
▪ Erosion & Sediment Control	X			
▪ Post-Development Stormwater Management	X			

Mapping and Illicit Discharges

Outfall mapping complete	(%)	100
Estimated or actual number of outfalls	(#)	502
System-Wide mapping complete	(%)	100
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100
Outfalls inspected/screened	(# or %)	100%
Illicit discharges identified	(#)	0
Illicit connections removed	(#) (est. gpd)	0
% of population on sewer	(%)	75
% of population on septic systems	(%)	25

Construction

Number of construction starts (>1-acre)	(#)	±18
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	100.00%
Site inspections completed	(# or %)	100 %
Tickets/Stop work orders issued/Building Permits Withheld/Occupancy Permits Held	(# or %)	
Fines collected	(# and \$)	N/A
Complaints/concerns received from public	(#)	116

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	100.00%
Site inspections completed	(# or %)	100%
Estimated volume of stormwater recharged	(gpy)	

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	.5
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	.5
Total number of structures cleaned	(#)	1310
Storm drain cleaned	(LF or mi.)	?
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Landfill
Cost of screenings disposal	(\$)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	Once/Spring
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	2 min
Qty. of sand/debris collected by sweeping	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Reuse
Cost of sweepings disposal	(\$)	
Vacuum street sweepers purchased/leased	(#)	0
Vacuum street sweepers specified in contracts	(y/n)	

Reduction in application on public land of: (“N/A” = never used; “100%” = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	N/A

Anti-/De-Icing products and ratios	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized	(y/n)	Yes
Manual control spreaders used	(y/n)	Yes
Automatic or Zero-velocity spreaders used	(y/n)	Yes
Estimated net reduction in typical year salt application	(lbs. or %)	
Salt pile(s) covered in storage shed(s)	(y/n)	Yes
Storage shed(s) in design or under construction	(y/n)	1