Town of Bolton, Connecticut

2019 Annual Report

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Permit Number GSM000104

MS4 General Permit
Town of Bolton 2019 Annual Report
Existing MS4 Permittee
Permit Number GSM 000104
January 01, 2019 - December 31, 2019

This report documents the Town of Bolton's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 01, 2019 to December 31, 2019.

Sandra Pierog replaced Robert Morra as First Selectman in November 2017

Joshua S. Kelly replaced Joyce M. Stille as Administrative Officer in November 2019.

Part I: Summary of Minimum Control Measure Activities

1. Public Education and Outreach (Section 6 (a)(1) / page 19)

1.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement Public Education and Outreach	To be Developed in early 2018	2017 - None 2018 - None 2019 - None	Improving	Board of Selectmen/ Joyce M. Stille, Administrative Officer	July 01, 2018	Before July 01, 2018	
	Ongoing	2017 - The Salmon River Watershed Partnership Conducted Outreach & Monitoring Activities Related to Stormwater & Water Quality	Completed	Pat Young SRWP Watershed Coordinator	July 01, 2018	2017 Calendar Year	

	Developed in 2018	2018 - 2019 Seven NEMO Program Clean Waters Starting in Your Home and Yard Fact Sheets were made available to the public on the town website at: https://bolton.govoffice.com Fact Sheet 1 What's the Big Deal About Water Quality Fact Sheet 2 Managing Your Household Chemicals Fact Sheet 3 Caring for Your Septic System Fact Sheet 4 Integrated Pest Management and Biological Controls for the Homeowner Fact Sheet 5 Conservation Landscaping for Water Quality Fact Sheet 6 Animal Waste and Water Quality Fact Sheet 8 Lawn Care the Environmental Friendly Way	Completed	Joyce M. Stille, Administrative Officer	July 01, 2018	Before July 01, 2018	Hard copies of the NEMO fact Sheets were also made available to the public at the Town Library and Town senior Center for disbursement. The hard copies of the Fact Sheets are replenished as needed. Additional resources will be added in the future
1-2 Address Public Education and Outreach for Pollutants of Concern*	Developed in 2018	Link to UConn CLEAR Website Three NEMO Program Clean Waters Starting in Your Home and Yard Fact Sheets were made available to the public on the town website at: https://bolton.govoffice.com Fact Sheet 1 What's the Big Deal About Water Quality Fact Sheet 3		Joyce M. Stille, Administrative Officer	July 1, 2018	Before July 01, 2018	Additional resources will be added in the future

		Caring for Your Septic System Fact Sheet 6 Animal Waste and Water Quality					
	Ongoing	2018 - 2019 The Salmon River Watershed Partnership Conducted Outreach & Monitoring Activities Related to Stormwater & Water Quality	Completed	Pat Young SRWP Watershed Coordinator	July 01, 2018	2018 Calendar Year	

1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

It is anticipated that several more public education and outreach resources to educate the public will be added to the town website and that the Salmon River Watershed Partnership will continue outreach and monitoring activities related to stormwater and water quality.

1.3 Details of activities implemented to educate the community on stormwater

Program Element / Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
2017 Salmon River Watershed Partnership Annual Newsletter	10 Salmon River watershed towns (including Bolton)	Protecting water resources and preserving water quality.		Salmon River Watershed Partnership
2018 Salmon River Watershed Partnership Annual Newsletter	10 Salmon River watershed towns (including Bolton)	Protecting water resources and preserving water quality.		Salmon River Watershed Partnership
2019 Salmon River Watershed Partnership Annual Newsletter	10 Salmon River watershed towns (including Bolton)	Protecting water resources and preserving water quality.		Salmon River Watershed Partnership

2. Public Involvement/Participation (Section 6(a)(2) / page 21)

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
2-1 Comply with public notice requirements for the Stormwater Management Plan	Completed	A hard copy of the Draft 2017 Stormwater Management Plan (SMP) was made available to the public for review and comment on the town website at: http://bolton.govoffice.com/	Complied with requirements	Board of Selectmen/ Joyce M. Stille, Administrative Officer	April 03, 2017	April 20, 2017.	No public comments were received
2-2 Comply with public notice requirements for Annual Reports	Completed	The Draft 2017 MS4 Annual Report was made available for public review and comment on the town website at: http://bolton.govoffice.com/	Complied with Requirements	Board of Selectmen/ Joyce M. Stille, Administrative Officer	Feb 15, 2018	Feb. 15, 2018	No public comments were received
2-2 Comply with public notice requirements for Annual Reports	Completed	The Draft 2018 MS4 Annual Report was made available for public review and comment on the town website at: http://bolton.govoffice.com/	Complied with Requirements	Board of Selectmen/ Joyce M. Stille, Administrative Officer	Feb 15, 2019	Feb. 21, 2019	No public comments were received
2-2 Comply with public notice requirements for Annual Reports	Completed	The Draft 2019 MS4 Annual Report was made available for public review and comment on the town website at: http://bolton.govoffice.com/	Complied with Requirements	Board of Selectmen/ Joshua S. Kelly, Administrative Officer	Feb 15, 2020	Feb. 12, 2020	No public comments were received
2-3 SRWP Planners Workshop	Completed	May 2017- Salmon River Watershed Partnership Town Planners Workshop on land use and water quality preservation.		Pat Young SRWP Watershed Coordinator	Not Applicable	May 2017	

2.2 Describe any Public Involvement/Participation activities planned for the next year, if applicable.

The Salmon River Watershed Partnership will be conducting public outreach and participation activities in 2019.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the 2017 Stormwater Management Plan for public review and comment	Yes	03/28/2017	Town Website
Availability of 2017 MS4 Annual Report for public review and comment	Yes	02/15/2018	Town Website
Availability of 2018 MS4 Annual Report for public review and comment	Yes	02/21/2019	Town Website
Availability of 2019 MS4 Annual Report for public review and comment	Yes	02/12/2020	Town Website

3. Illicit Discharge Detection and Elimination (Section 6(*a*)(3) and Appendix B / page 22)

3.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-1 Develop written IDDE program	In Progress	A written IDDE program using the IDDE program template available from the CT DEEP is being developed.	Develop written plan of IDDE program	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2018	Anticipate completing by July 01, 2019.	The Highway Department will be the listed contact.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Completed	MS4 stormwater outfall mapping was conducted in August 2007. The stormwater outfall mapping was compiled on a ESRI GIS layer. The MS4 stormwater outfall mapping will be updated to include impaired waters as contained in the State of Connecticut, Department of Energy and Environmental Protection 2016 Integrated Water Quality Report. The stormwater outfalls in the impaired waters will be identified.	Development of an ESRI GIS map layer with Impaired Waters, Urbanized Areas and watersheds with impervious area greater than 11%.	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2019	Anticipate completing by the deadline of July 01, 2019.	
3-3 Implement citizen reporting program	Completed	A program to allow the general public to report suspected	Completed	Board of Selectmen/	July 01, 2017	January 01, 2019.	The town website lists the telephone number at Town Hall to report suspected illicit

		illicit discharges has been established.		Joyce M. Stille, Administrative Officer			discharges. The Administrative Officer will than notify the appropriate department for follow up.
3-4 Establish legal authority to prohibit illicit discharges	Completed	A Stormwater Ordinance was accepted by the Board of Selectmen on June 05, 2018 with an Effective Date of July 19, 2018.	IDDE Ordinance enacted	Board of Selectmen/ Joyce M. Stille, Administrative Officer	June 01, 2018	June 05, 2018	The IDDE Program will be developed in 2019
3-5 Develop record keeping system for IDDE tracking	To Be Developed			Board of Selectmen/ Joyce M. Stille, Administrative Officer	July 01, 2018		
3-6 Address IDDE in areas with pollutants of concern	To Be Developed			Board of Selectmen/ Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2018		

3.2 Describe any IDDE activities planned for the next year, if applicable.

The written IDDE Program will be posted on the town website and a link listed in each Annual Report. The town will update the written IDDE program as needed throughout the permit term.

The Highway Department will maintain the master IDDE tracking spreadsheet and ensure all employees involved in the IDDE program understand the illicit discharge logging process.

3.3 List of citizen reports of suspected illicit discharges received during this reporting period.

Date of Report	Location / suspected source	Response taken
2017 - No illicit discharges were reported to the Eastern Highlands Health District.	Not Applicable	None Required
2018 - No illicit discharges were reported to the Eastern Highlands Health District.	Not Applicable	None Required
2019 - No illicit discharges were reported to the Eastern Highlands Health District.	Not Applicable	None Required

3.4 Provide a record of illicit discharges occurring during the reporting period and SSOs occurring July 2012 through end of reporting period using the following table.

Location (Lat long/ street crossing /address and receiving water)	**Date and duration of occurrence**	**Discharge to MS4 or surface water**	**Estimated volume discharged**	**Known or suspected cause / Responsible party**	**Corrective measures planned and completed** (include dates)	**Sampling data** (if applicable)

3.5 Briefly describe the method used to track illicit discharge reports, responses to those reports, and who was responsible for tracking this information.

3.6 Provide a summary of actions taken to address septic failures using the table below.

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	130
Estimated or actual number of interconnections	2 Estimated
Outfall mapping complete	100%
Interconnection mapping complete	90%
System-wide mapping complete (detailed MS4 infrastructure)	40%
Outfall assessment and priority ranking	0%
Dry weather screening of all High and Low priority outfalls complete	0%
Catchment investigations complete	0%
Estimated percentage of MS4 catchment area investigated	90%

3.8 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often is it given (minimum once per year).

The Highway Department will be provided with a copy of the publication entitled *Illicit Discharge Detection and Elimination Manual, A Handbook for Municipalities*, Published January 2003 by the New England Interstate Water Pollution Control Commission.

4. Construction Site Runoff Control (Section 6(a)(4) / page 25)

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 General Permit	Ongoing	Not Applicable	Compliance	Land Use Department/ Patrice Carson, AICP, Director of Community Development	July 01, 2019	Ongoing	
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Ongoing	Nathan L. Jacobson & Associates, Inc., Town Engineer, prepares land use review letters for most applications for the Inland Wetlands Commission, Planning Commission and Zoning Commission.	Interdepartmental Coordination	Land Use Department/ Patrice Carson, AICP, Director of Community Development	July 01, 2017	Ongoing	
4-3 Review site plans for stormwater quality concerns	Ongoing	Nathan L. Jacobson & Associates, Inc., Town Engineer, encourages the use of LID BMPs as contained in the 2004 Connecticut Stormwater Quality Manual.	Compliance	Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2017	Ongoing	
4-4 Conduct site inspections	Ongoing	The town conducts construction site inspections for proper implementation and maintenance of soil erosion and sediment control measures.	Compliance with Approved Plans	Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2017	Ongoing	

4-5 Implement procedure to allow public comment on site development	Ongoing	The land use application process allows for public comment on land use applications which are submitted to the Inland Wetlands Agency and the Planning & Zoning Commission during the Public Hearing Process when applicable.		Land Use Department/ Patrice Carson, AICP, Director of Community Development	July 01, 2017	Ongoing	
4-6 Implement procedure to notify developers about the CT DEEP Construction Stormwater General Permit	Ongoing	Since the inception of the MS4 program Nathan L. Jacobson & Associates, Inc., Town Engineer, has made developer's engineers aware of the need to register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities in engineering review letters which are typically prepared as part of the land use application process.	Awareness of the need to register for the General permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities	Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2017	Ongoing	

4.2 Describe any Construction Site Runoff Control activities planned for the next year, if applicable.

5. Stormwater Management (Section 6(*a*)(5) / page 27)

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning	Under Development	The land use regulations will be revised to incorporate the requirements contained in Minimum Control Measure No. 5 - Post-Construction Runoff Control.	The requirements contained in Minimum Control Measure No. 5 - Post-Construction Runoff Control will be forwarded to the First Selectman.	Land Use Department/ Patrice Carson, AICP, Director of Community Development	July 01, 2021	Will be completed by July 01, 2021.	It is anticipated that the land use regulation text will be revised with a template from UConn CLEAR or a Regional Planning Agency.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Integrate LID/runoff reduction into all site development when appropriate.	Compliance	Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2019	July 01, 2017	
5-3 Identify retention and detention ponds in priority areas	Under Development	Retention Ponds, Detention Ponds and Hydrodynamic Separators will be inventoried. A GIS Map Layer will be created after the inventory. Part of the inventory process will be facility maintenance requirements.	Develop Detention Pond Inventory	Highway Department/ Lance Dimock, Supervisor and Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2019		

5-4 Implement long-term maintenance plan for stormwater basins and treatment structures		Inventory Retention Ponds, Detention Ponds and Hydrodynamic Separators Implement the Post-Construction Stormwater Management Facility Operation and Maintenance Plan Manual.		Highway Department/ Lance Dimock, Supervisor	July 01, 2019		A Post-Construction Stormwater Management Facility Operation and Maintenance Plan Manual with an Effective Date of July 01, 2019 was developed.
5-5 DCIA mapping	Completed	Completed the process of DCIA Mapping from base mapping prepared by UConn CLEAR.	The DCIA to MS4 stormwater outfalls discharging to waters identified as impaired in the 2016 Integrated Water Quality Report and in watersheds with a DCIA of greater than 11 percent will start in 2018.	Board of Selectmen/ Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2020	December 2018	
5-6 Address post-construction issues in areas with pollutants of concern			Stormwater outfalls discharging to waters identified as impaired in the 2016 Integrated Water Quality Report and in watersheds with a DCIA of greater than 11	Board of Selectmen/ Nathan L. Jacobson & Associates, Inc., Town Engineer	Not specified		The town MS4 stormwater outfalls to impaired waters are limited and the impairment may be due largely to the state MS4 stormwater outfalls.

			percent will be subject to enhanced water quality treatment.				

5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.

Procedures outlined in the Post-Construction Stormwater Management Facility Operation & Maintenance Plan Manual will be implemented in 2020.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	5.05 Acres
DCIA disconnected (redevelopment plus retrofits)	2012-2017 To Be Determined 2017 - 0 Acres 2018 - 0 Acres 2019 - 0 Acres
Retrofits completed	0
DCIA disconnected	2012 - 2017 To Be Determined 2017 - 0% 2018 - 0% 2019 - 0%
Estimated cost of retrofits	$0
Detention or retention ponds identified	Six to eight detention ponds were noted during 2017 outfall mapping field checking. All of the detention ponds will be compiled in a three-ring binder and an operations and maintenance plan will be developed for each detention basin.

5.4 Briefly describe the method to be used to determine baseline DCIA.

Based on information contained in the Factsheet: *Town of Bolton Water Quality and Stormwater Summary,* prepared by the CT DEEP, 675.70 acres of the town has an impervious area exceeding 12% which is approximately 7.16% of the town. 232.83 acres have an impervious cover of ranging from 12% to 25%, 344.14 acres have an impervious cover ranging from 26% to 50%, 77.24 acres have an impervious cover ranging from 51% to 75% and 21.49 acres have an impervious cover ranging from 76% to 100%.

Based on information contained in the MS4 mapping tab of Connecticut Environmental Conditions Online The impervious surface area consists of 129.50 acres of buildings, 209.78 acres of roads and 229.33 acres of other impervious surfaces for a total impervious surface area of 568.61 acres.

The DCIA Mapping was conducted in substantial accordance with the methodologies presented in the October 25, 2017 UConn CLEAR Webinar entitled *CT MS4 Mapping Details, Clarifications and Tools,* the October 19, 2018 UConn CLEAR Workshop entitled *CT MS4 Mapping Workshop* as well as information contained in the EPA reference entitled *Estimating Change in Impervious Area (IA) and Directly Connected Impervious Area (DCIA) for Massachusetts Small MS4 Permit utilizing Sutherland equations*.

The DCIA computations were prepared utilizing Connecticut Environmental Conditions Online MS4 base mapping prepared by UConn CLEAR.

Impaired waters were determined from the report entitled *2016 Integrated Water Quality Report*, dated April 2017, prepared by the State of Connecticut Department of Energy and Environmental protection.

The method to determine the 2012 baseline DCIA was to first compile the CT DEEP drainage basin characteristics in a Microsoft Excel spreadsheet. Information on the Connecticut Environmental Conditions Online MS4 Mapping was used to determine the impervious area breakdown as Buildings, Roads and Other. For CT DEEP drainage basins that fell in two or more municipalities the advanced mapping tab of Connecticut Environmental Conditions Online was used to delineate and determine the applicable town CT DEEP basin area. It was assumed that the entire drainage basin characteristics were directly proportional to the applicable town CT DEEP drainage basin area.

In that ConnDOT has a MS4 Stormwater Program which applies to state owned roads and facilities which the town has no control over, it was decided that the impervious state road area would be determined and deducted from the total impervious road area for each CT DEEP drainage basin as the impervious road areas associated with state highways and facilities constitutes a considerable portion of the total town impervious road area.

The ConnDOT state highway, parking lot and facility impervious road areas were then determined for each CT DEEP drainage basin.

The ConnDOT state highway, parking lot and facility impervious road areas were then deducted from the total town impervious road area to determine a town owned impervious road area for each CT DEEP drainage basin.

Subsequent to the above deduction, the total impervious area in acres and percentage was then recomputed for each CT DEEP drainage basin.

The DCIA formula for each of four development types was then utilized to compute the DCIA. The impervious area in acres was assigned to each of the four Sutherland equations which were modified for the northeastern United State. The Sutherland equation to be utilized was determined using the following methodology:

For impervious percentage less than 6%:

100% of the impervious area was assigned to the slight connectivity Sutherland Equation where $DCIA\% = 0.01*(IA\%)^{2.0}$

For an impervious area between 6% and 12 %:

50% of the area was assigned to the partial connectivity Sutherland Equation where $DCIA\% = 0.04*(IA\%)^{1.7}$
And
50% was assigned to the average connectivity Sutherland Equation where $DCIA\% = 0.10*(IA\%)^{1.5}$

For an impervious area between 12% and 18 %:

50% of the area was assigned to the average connectivity Sutherland Equation where $DCIA\% = 0.10*(IA\%)^{1.5}$
and
50% was assigned to the high connectivity Sutherland Equation where $DCIA\% = 0.40*(IA\%)^{1.2}$

For an impervious area of greater than 18 %:

100% of the area was assigned to the high connectivity Sutherland Equation where $DCIA\% = 0.40*(IA\%)^{1.2}$

The DCIA for each CT DEEP drainage basin was then summed to determine the entire town DCIA.

Subsequent to completion of 2012 Baseline DCIA computations, UConn CLEAR Mapping available on Connecticut Environmental Conditions Online (CT ECO) was revised to separate road impervious area into State Road Impervious Area (Acres) and Town Road Impervious Area (Acres).

The original 2012 Baseline DCIA computations were revised utilizing the UConn CLEAR State Road Impervious Area (Acres) and Town Road Impervious Area (Acres). No major 2012 Baseline DCIA computation discrepancies were noted.

Land use files will be reviewed to determine disconnection of DCIA since July 01, 2012 for utilization in reaching the CT DEEP goal of 2% disconnection of DCIA by June 30, 2022.

6. Pollution Prevention / Good Housekeeping (Section 6(*a*)(6) / page 31)

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	To be Developed	2017 - None 2018 - None	None	Highway Department / Lance Dimock, Supervisor and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017	July 01, 2017	
6-2 Implement MS4 property and operations maintenance	Ongoing	Ongoing	Continuing	Highway Department / Lance Dimock, Supervisor	July 01, 2018	July 01, 2017	
6-3 Implement coordination with interconnected MS4s	Ongoing	The Town of Bolton continued to coordinate MS4 responsibilities with the Towns of Vernon, Manchester, Glastonbury, Hebron, Andover and Coventry as well as Conn DOT.	Continuing	Highway Department/ Lance Dimock, Supervisor	July 01, 2017	July 01, 2017	
6-4 Develop/implement program to control other sources of pollutants to the MS4	To Be Developed			Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2017		
6-5 Evaluate additional measures for discharges to impaired waters*	To Be Developed			Town Engineer/ Joseph M. Dillon, P.E., Nathan L. Jacobson & Associates, Inc.	July 01, 2017		

6-6 Track projects that disconnect DCIA	To Be Developed			Board of Selectmen/ Nathan L. Jacobson & Associates, Inc., Town Engineer	Jul 1, 2017		
6-7 Implement infrastructure repair/rehab program	To Be Developed			Highway Department/ Lance Dimock, Supervisor and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2021		
6-8 Develop/implement plan to identify/prioritize retrofit projects	To Be Developed			Highway Department/ Lance Dimock, Supervisor and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2020		
6-9 Implement retrofit projects to disconnect 2% of DCIA	To Be Developed			Highway Department/ Lance Dimock, Supervisor	July 01, 2022		
6-10 Develop/implement street sweeping program	Ongoing	The Town of Bolton currently implements a road sweeping program whereby all town roads are swept one time per year.	Continuing	Highway Department/ Lance Dimock, Supervisor	July 01, 2017	July 01, 2017	
6-11 Develop/implement catch basin cleaning program	Ongoing	The Town of Bolton currently implements a catch basin cleaning program whereby all catch basins are cleaned in alternate years and catch basins with	Continuing	Highway Department/ Lance Dimock, Supervisor	July 01, 2020	July 01, 2017	

		high sediment loads or catch basins which discharge to sensitive waters are cleaned every year					
6-12 Develop/implement snow management practices	Ongoing	Continuing	Continuing	Highway Department/ Lance Dimock, Supervisor	July 01, 2018	July 01, 2017	

6.2 Describe any Pollution Prevention / Good Housekeeping activities planned for the next year, if applicable.

6.3 Pollution Prevention / Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	2017 - None 2018 - None 2019 - None Employee Training to be initiated in 2020.
Street sweeping	
Lane miles swept	2017 - 86.70 2018 - 86.70 2019 - 86.70
Volume (or mass) of material collected	2017 - Not Determined 2018 - Not Determined 2019 - 300± C.Y.
Catch basin cleaning	
Total catch basins in priority areas	To be determined in 2020
Total catch basins in MS4	800-850
Catch basins inspected	2017 - 800-850 2018 - 800-850

	2019 - 800-850
Catch basins cleaned	2017 - 400-450 2018 - 400-450 2019 - More than 500
Volume (or mass) of material removed from all catch basins	2017 - Not Determined 2018 - Not Determined 2019 - 200± C.Y.
Volume removed from catch basins to impaired waters (if known)	2017 - Not Determined 2018 - Not Determined 2019 - Not Determined
Snow management	
Type(s) of deicing material used	Deicing Mix 1 Part Sand to 1 Part NaCl Salt By Volume
Total amount of each deicing material applied	Winter 2016-2017 - 1,100± Tons Sand/800± Tons NaCl Winter 2017-2018 - 1,500± Tons Sand/1,100± Tons NaCl Winter 2018-2019 - 1,000± Tons Sand/750± Tons NaCl
Type(s) of deicing equipment used	Four Large Snow Plows/Spreaders. The spreaders are manually controlled at an estimated application rate of 200 pounds per lane (curb) mil
Lane-miles treated	86.70
Snow disposal location	Herrick Park parking lot when needed during exceptionally heavy snowfall events
Staff training provided on application methods & equipment	2017 - None 2018 - None 2019 - None
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	0 %
Reduction in turf area (since start of permit)	0 acres
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	$0

6.4 Catch Basin Cleaning Program

Briefly describe the method used to optimize your catch basin inspection and cleaning schedule.
It is estimated that there are approximately 800-850 catch basins in the Town of Bolton. 2017 - 400-450 catch basins were cleaned. 2018 - 400-450 catch basins were cleaned. 2019 - More than 500 catch basins were cleaned. Currently no optimization methods are implemented.

6.5 Retrofit program

Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project.
Storm Drainage Retrofit prioritization will be given to stormwater outfalls that are known to result in soil erosion and sedimentation. Prioritization will be given to the outfalls within the impaired water drainage basins with particular emphasis placed on stormwater outfalls which are located on fine grained glacial till soils. The retrofit program will be prioritized based on setback distance from watercourse and/or waterbodies.

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years.
The 2012 Baseline Directly Connected Impervious Area (DCIA) was determined to be 5.05 acres. The CT DEEP goal of a 2% DCIA disconnection by 2022 will require reduction of the 2012 Baseline DCIA by 0.101 acre. Land use files will be reviewed to determine disconnection of DCIA since July 01, 2012 for utilization in reaching the CT DEEP goal of 2% disconnection of DCIA by June 30, 2022.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years.
The stormwater retrofit program will be implemented whenever possible and funds allow.

Part II: Impaired waters investigation and monitoring

1. Impaired waters investigation and monitoring program

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. This data is available on the MS4 map viewer: http://s.uconn.edu/ctms4map.

Nitrogen/ Phosphorus ☐ Bacteria ☒ Mercury ☐ Other Pollutant of Concern ☐

1.2 Describe program status.

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.
It was anticipated that dry weather screening of MS4 stormwater outfalls that discharge directly to impaired waters would be conducted in the Fall of 2018. However, due to the unseasonably high rainfall and resulting high groundwater conditions no dry weather screening or sampling of observed flows was conducted. It was anticipated that dry weather screening and sampling of observed flow would be conducted in 2019. It was anticipated that dry weather screening of MS4 stormwater outfalls that discharge directly to impaired waters would be conducted in the Fall of 2019. However, due to the unseasonably high rainfall and resulting high groundwater conditions no dry weather screening or sampling of observed flows was conducted. It was anticipated that dry weather screening and sampling of observed flow would be conducted in 2020. The impaired water consists of a 3.22 mile segment of the Hop River in Bolton and Andover, of which approximately a 2.00 mile segment is located in Bolton. The Hop River flows under Connecticut Route 6 several times in the Town of Bolton. However, there the Hop River does not flow under or proximal to town roads. Consequently, there are not many potential MS4 stormwater outfalls discharging directly to the Hop River. Therefore, it would appear that the bacteria impairment of the Hop River may be due to natural causes or causes associated with Connecticut Route 6. It is anticipated that all MS4 stormwater outfalls that discharge directly to impaired waters will be dry weather screened and sampled (if flowing) and wet weather sampled in 2020.

2. Screening data for outfalls to impaired waterbodies (Section 6(i)(1) / page 41)

2.1 Screening data collected under 2017 permit

Complete the table below for any outfalls screened during the reporting period. Each Annual Report will add on to the previous year's screening data showing a cumulative list of outfall screening data.

Outfall ID	**Sample date**	**Parameter** (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	**Results**	**Name of Laboratory (if used)**	**Follow-up required?**

Dry weather screening was scheduled for the Fall of 2018 but the unseasonably high precipitation, and resulting high groundwater conditions, precluded dry weather screening. It is anticipated that dry weather screening will be conducted in 2019.

Dry weather screening was scheduled for the Fall of 2019 but the unseasonably high precipitation, and resulting high groundwater conditions, precluded dry weather screening. It is anticipated that dry weather screening will be conducted in 2020.

2.2 Credit for screening data collected under 2004 permit

If any outfalls to impaired waters were sampled under the 2004 MS4 permit, that data can count towards the monitoring requirements under the modified 2017 MS4 permit. Complete the table below to record sampling data for any outfalls to impaired waters under the 2004 MS4 permit.

Outfall	**Sample date**	**Parameter** (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	**Results**	**Name of Laboratory (if used)**	**Follow-up required?**
C-1	12/01/06	E. coli (colonies/100 ml) Total Coliform	50 >2,000	Phoenix Environmental	
C-1	08/21/07	E. coli (colonies/100 ml) Total Coliform	300 7,500	Phoenix Environmental	
C-1	09/11/07	E. coli (colonies/100 ml) Total Coliform	380 >2,000	Phoenix Environmental	
C-1	01/11/08	E. coli (colonies/100 ml) Total Coliform	<20 100	Phoenix Environmental	
C-1	06/04/08	E. coli (colonies/100 ml) Total Coliform	170 >2,000	Phoenix Environmental	
C-1	06/09/09	E. coli (colonies/100 ml) Total Coliform	2,250 >24,200	Phoenix Environmental	
C-1	05/12/10	E. coli (colonies/100 ml) Total Coliform	<10 1,530	Phoenix Environmental	

C-1	09/23/11	E. coli (colonies/100 ml) Total Coliform	310 >24,200	Phoenix Environmental	
C-1	10/19/12	E. coli (colonies/100 ml) Total Coliform	130 >24,200	Phoenix Environmental	
C-1	11/01/13	E. coli (colonies/100 ml) Total Coliform	1,790 >24,200	Phoenix Environmental	
C-1	10/16/14	E. coli (colonies/100 ml) Total Coliform	770 >24,200	Phoenix Environmental	
C-1	08/11/15	E. coli (colonies/100 ml) Total Coliform	80 >24,200	Phoenix Environmental	
C-1	11/15/16	E. coli (colonies/100 ml) Total Coliform	41 >24,200	Phoenix Environmental	

3. Follow-up investigations (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment

4. Prioritized outfall monitoring (Section 6(i)(1)(D) / page 43)

Once outfall screening has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 01, 2020.

Outfall	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)

Part III: Additional IDDE Program Data

1. Assessment and Priority Ranking of Catchments Data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

1. Catchment ID (DEEP Basin ID)	2. Category	3. Rank

2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

2.1 Dry weather screening and sampling data from outfalls and interconnections

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies.

Outfall / Interconnection ID	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken

Dry weather screening was scheduled for the Fall of 2018 but the unseasonably high precipitation, and resulting high groundwater conditions, precluded dry weather screening. It is anticipated that dry weather screening will be conducted in 2019.

Dry weather screening was scheduled for the Fall of 2019 but the unseasonably high precipitation, and resulting high groundwater conditions, precluded dry weather screening. It is anticipated that dry weather screening will be conducted in 2020.

2.2 Wet weather sample and inspection data

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor.

Outfall / Interconnection ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern

3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)

3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

Key Junction Manhole ID	Screening / Sample date	Visual / olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants

3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed

Part IV: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print Name: Joshua S. Kelly Signature: 	Print Name: Wade M. Thomas, CPMSM Signature: 
Date: April 1 , 2020	Date: April 01 , 2020