Town of Haddam, Connecticut

2018 Annual Report

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

Permit Number GSM000119
New MS4 Permittee

MS4 General Permit
Town of Haddam 2018 Annual Report
New MS4 Permittee
Permit Number GSM 000119
January 01, 2018 - December 31, 2018

This report documents Town of Haddam's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 01, 2018 to December 31, 2018.

Liz Glidden, Town Planner was replaced by Bill Warner in late 2018.

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	Responsible Person and Department	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	Beginning	A Stormwater Management web page was developed on the town website at: https://www.haddam.org/public-works-department/pages/storm-management The page contains links to the CT Nonpoint Education for Municipal Officials (NEMO) website, the Center for Watershed Protection (CWP) website and the US EPA Site for Stormwater Best Management Practices website. The websites also have links to additional stormwater education resources.	Meeting	JoAnn Ricardelli , First Selectwoman Administrative Assistant,	July 01, 2019	April 06, 2017	Additional Public Education and Outreach resources will be posted on the website in the future.

1-2 Address education/ outreach for pollutants of concern*	To Be Developed	2017 - None 2018 - None	None	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2019	
1-3 Salmon River Watershed Partnership (SRWP) Activities	Ongoing	Pat Young, SRWP Coordinator represents the SRWP on statewide issues relating to water quality and non-point source pollution and related information in the 10 town watershed.	Public Education and Outreach on common stormwater topics	Pat Young, SRWP Coordinator	Ongoing	Ongoing

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

The SRWP was formed in 2007 and has been conducting public education and outreach activities since then. It is anticipated that the SRWP will continue to conduct public education and outreach activities in 2018.

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 Person and Department or Partner Org.
2017 - August 2018 - September SRWP Haddam Neck Fair Booth Display	Children and Parents, (approx. 200-300)	Impact of stormwater quality on macroinvertebrates Sign-up Sheet for water quality monitoring volunteers	Impervious Surface Coverage	Pat Young, SRWP Coordinator
2018 SRWP Annual Newsletter	100s	5 Easy Ways to Yardscape & Protect Water, Vegetated Watercourse	Fertilizers, Pesticides and Herbicides	Pat Young, SRWP Coordinator

Buffers, Roof Runoff Reuse, Lawn Care and Landscaping Diversity for Pollinators

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

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Responsible Person and Department	Due	Date completed or projected completion date	Additional details
2-1 Comply with public notice requirements for the Stormwater Management Plan	Completed	The Stormwater Management Plan was posted on the town website	Met	Lizz Milardo, First Selectwoman	April 03, 2017		https://www.haddam.org/public-works-department/pages/storm-management
2-2 Comply with Public Notice requirements for Annual Reports	To Be Completed	The Draft 2017 MS4 Annual Report will be posted on the town website.	Will Be Met	JoAnn Ricardelli, First Selectwoman Administrative Assistant,	Feb 15, 2018	February 27, 2018	https://www.haddam.org/public-works-department/pages/storm-management
2-2 Comply with Public Notice requirements for Annual Reports	To Be Completed	The Draft 2018 MS4 Annual Report will be posted on the town website.	Will Be Met	JoAnn Ricardelli, First Selectwoman Administrative Assistant,	Feb 15, 2019	March 06, 2019	https://www.haddam.org/public-works-department/pages/storm-management
2-3 Connecticut River Conservancy Source to Sea Connecticut River Cleanup	Completed	CT DEEP Adopt A Park Invasive Plant Cleanup/Litter Pickup at Haddam Meadows State Park	Attendance by Volunteers	Cheryl Czuba, Coordinator	Not Applicable	September 23, 2017	The cleanup will be held again in 2018
2-3 Connecticut River Conservancy Source to Sea Connecticut River Cleanup	Sept. 29, 2018	CT DEEP Adopt A Park Invasive Plant Cleanup/Litter Pickup at Haddam Meadows State Park	Attendance by Volunteers	Cheryl Czuba, Coordinator	Not Applicable	September 29, 2017	Will be held over two days in 2019

2-4 SRWP Field Monitoring and Volunteer Training	Ongoing	19 sites are monitored for temperature, pH, dissolved oxygen, conductivity, total dissolved solids and salinity.	Participation by 12 local citizens	Pat Young, SRWP Coordinator	Not Applicable	2017 June - August 2018 June - August

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

The SRWP was formed in 2007 and has been conducting public involvement/participation since then. It is anticipated that the SRWP will continue to conduct public involvement/participation activities in 2019.

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
2017 - Availability of the 2017 Stormwater Management Plan announced to public	Yes	03/06/17	https://www.haddam.org/public-works-department/pages/storm-management
2017 - Availability of the 2017 Annual Report announced to public	Yes	March 06, 2018	https://www.haddam.org/public-works-department/pages/storm-management
2018 - Availability of the 2018 Annual Report announced to public	Yes	March 08, 2019	https://www.haddam.org/public-works-department/pages/storm-management

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	Responsible Person and Department	Due	Date completed or projected completion date	Additional details
3-1 Develop written IDDE program	In progress	2017 - None 2018 - None The town will start the process of completing a written IDDE program using the CT IDDE program template subsequent to enactment of the IDDE Ordinance and Citation Hearing Procedure	Develop written plan of IDDE program	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2019	Anticipate completing after the IDDE Ordinance has been enacted.	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	In Progress	Approximately 440 MS4 stormwater outfalls were field located and mapped with a handheld GPS unit. A MS4 Stormwater Outfall GIS Layer was created as an ESRI map layer. Field Checking of MS4 Stormwater Outfall Mapping will be conducted in 2018.	MS4 Stormwater Outfall GIS Map	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2020	Anticipate completing by the deadline of July 1, 2019.	

3-3 Implement Illicit Discharge Citizen Reporting Program	To Be Developed	2017 - None 2018 - None	None	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017	Anticipate completing concurrently with the development of an IDDE Program.
3-4 Establish legal authority to prohibit illicit discharges	To Be Developed	An Illicit Discharge Detection and Elimination Ordinance and a Citation Hearing procedure will be forwarded to the Office of the First Selectman for Town Attorney review and comment prior to enactment at a Town Meeting	None	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2019	Anticipate completing by the deadline of July 1, 2019.
3-5 Develop record keeping system for IDDE tracking	To Be Developed	A Microsoft Excel spreadsheet will be developed for tracking illicit discharges	None	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017	Anticipate completing concurrently with the development of an IDDE Program.
3-6 Address IDDE in areas with pollutants of concern	To Be Developed	IDDE will first be addressed in the Village of Higganum and then be expanded to the Urbanized Area(UA)	None	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town Engineer	Not specified	

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

Enact IDDE Ordinance and IDDE Citation Hearing Procedure.

The written program will be posted to the Dept of Public works webpage and a link listed in each Annual Report will update the written IDDE program as needed throughout the permit term.

The DPW will maintain the master IDDE tracking spreadsheet and ensure all employees involved in 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
Scott Martinson, R.S., M.S., and Chief Sanitarian of the Connecticut River are Health District (CRAHD) reported there were no reports of illicit discharge in 2017	Not Applicable	None Required
Scott Martinson, R.S., M.S., and Chief Sanitarian of the Connecticut River are Health District (CRAHD) reported there were no reports of illicit discharge in 2018	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. There have been no SSOs in Haddam.

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)

Not 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.

To Be Developed

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
Scott Martinson, M.S., R.S. and Chief Sanitarian of the Connecticut River Area Health District (CRAHD) was contacted. While several subsurface wastewater disposal systems were repaired in 2017. None of the repairs were for illicit discharges.	None Required	Not Applicable
Scott Martinson, M.S., R.S. and Chief Sanitarian of the Connecticut River Area Health District (CRAHD) was contacted. While several subsurface wastewater disposal systems were repaired in 2017. None of the repairs were for illicit discharges.	None required	Not Applicable

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	440
Estimated or actual number of interconnections	TBD
Outfall mapping complete	90%
Interconnection mapping complete	0%
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	0%

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).

Department of Public Works employees will be provided a copy of the manual entitled *Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments,* dated October 2004prepared by the Center for Watershed Protection and Robert Pitt.

Department of Public Works employees will also be provided with a copy of the manual *entitled Illicit Discharge Detection and Elimination Manual, A Handbook for Municipaliti*es, dated January 2003, published 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	Responsible Person and Department	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	In Progress	None	The applicable sections of Minimum Control Measure No. 4 - Construction Site Runoff Control were provided to Liz Glidden, Town Planner in 2018 for incorporation into the land use regulations.	Liz Glidden, Town Planner	July 01, 2020		Representatives from Halloran & Sage LLP have indicated that a Regional Planning Agency is in the process of developing model land use regulations to meet the requirements of the 2017 MS4 General Stormwater Permit.
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	In Place	Continuing	Continued Implementation	Liz Glidden, Town Planner	July 01, 2017		
4-3 Review Site Development Plans for stormwater quality concerns	In Place	Continuing	Continued Implementation	Town Engineer/Nathan L. Jacobson & Associates, Inc.	July 01, 2017		
4-4 Conduct site inspections	In Place	Continuing	Continued Implementation	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017		

4-5 Implement procedure to allow public comment on site development	In Place	Continuing	Continued Implementation	Land Use Department	July 01, 2017
4-6 Implement procedure to notify developers about CT DEEP Construction Stormwater General Permit	In Place	No applicable land use applications were received by the land Use Department in 2017.	Continued Implementation	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017

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

Nathan L. Jacobson & Associates, Inc., Town Engineer, requires that developers integrate measures contained in the 2002 Connecticut Soil Erosion & Sediment Control Guidelines into land development project designs. Nathan L. Jacobson & associates, Inc. will recommend that the developer register for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities in land use application engineering review letters when applicable.

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

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Responsible Person and Department	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	Completed	None	The applicable sections of Minimum Control Measures No. 5 - Post-Construction Runoff Control were provided to Liz Glidden, Town Planner in 2018 for incorporation into the land use regulations.	Liz Glidden, Town Planner	July 01, 2022		Representatives from Halloran & Sage LLP have indicated that a Regional Planning Agency is in the process of developing model land use regulations to meet the requirements of the 2017 MS4 General Stormwater Permit.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	In Place	While not specifically in the current land use regulations, LID/runoff reduction measures are requested during land use application reviews by the Town Engineer	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2022	July 01, 2017	

5-3 Identify retention and detention ponds in priority areas	To Be Completed	None	None	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2020
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	To Be Completed	Continuing	None	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2020
5-5 DCIA mapping	Starting	Starting	DCIA reduction measures were implemented in a road reconstruction project	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2020
5-6 Address post-construction issues in areas with pollutants of concern	To Be Completed	To Be Developed	None	Nathan L. Jacobson & Associates, Inc., Town Engineer	Not specified

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

2017 - None
2018 - None
2019 - Inventory stormwater management facilities.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	9.09 Acres
DCIA disconnected (redevelopment plus retrofits)	2012 to 2016 - To Be Determined

	2017 - Bartman Road Reconstruction DCIA Disconnection - To Be Determined 2018 - 0.000 Acre Total - DCIA Disconnection - To Be Determined
Retrofits completed	1
DCIA disconnected	2012 to 2016 - To Be Determined 2017 - Bartman Road Reconstruction DCIA Disconnection - To Be Determined 2018 - 0.000 Acre Total - DCIA Disconnection - To Be Determined
Estimated cost of retrofits	2012 to 2016 - To Be Determined 2017 - TBD $0
Detention or retention ponds identified	0 this year / 0 total

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

Based on information contained in the Factsheet: *Town of Haddam Water Quality and Stormwater Summary,* prepared by the CT DEEP, 1,041.70 acres of the town has an impervious area exceeding 12% which is approximately 3.52% of the town. 389.09 acres have an impervious cover of ranging from 12% to 25%, 494.33 acres have an impervious cover ranging from 26% to 50%, 122.13 acres have an impervious cover ranging from 51% to 75% and 36.15 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 207.10 acres of buildings, 442.50 acres of roads and 474.09 acres of other impervious surfaces for a total impervious surface area of 1,123.69 acres. Of the total of 442.50 acres of road impervious surface area, 287.32 acres are Town roads and 155.18 aces are State roads and. The State roads constitute approximately 35.1 percent of the total road impervious area.

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	Responsible Person and Department	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	To Be Developed	None	Not Applicable	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2019		
6-2 Implement MS4 property and operations maintenance	To Be Developed	None	Not Applicable	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2018		
6-3 Implement coordination with interconnected MS4s	The town currently coordinates with the MS4 towns of Chester, Durham and the City of Middletown	Continuing	Met	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2017	July 01, 2017	
6-4 Develop/implement program to control other sources of pollutants to the MS4	To Be Developed	None	Educate the general public about sources of bacteria	Christopher Corsa, Assistant Director, Department of Public Works and Nathan L. Jacobson & Associates,	Not specified		

				Inc., Town Engineer	
6-5 Evaluate additional measures for discharges to impaired waters*	To Be Developed	None	Develop additional measures if needed	Christopher Corsa, Assistant Director, Department of Public Works and Nathan L. Jacobson & Associates, Inc., Town Engineer	Not specified
6-6 Track projects that disconnect DCIA	To Be Developed	Starting Reconstruction Projects that resulted in the disconnection of DCIA since 2012 will be determined in 2018.	The Bartman Road Reconstruction project resulted in disconnection of 0.449 acre of impervious surface disconnection. DCIA.	Nathan L. Jacobson & Associates, Inc., Town Engineer	July 01, 2017
6-7 Implement infrastructure repair/rehab program	Continuing	Park Road Reconstruction Project	Infrastructure repair projects consisted of paving of gravel roads and installation of a stormwater infiltration system.	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2021
6-8 Develop/implement plan to identify/prioritize retrofit projects	To Be Developed	Retrofit projects will be prioritized based on the following: High priorities will be given to outfalls which discharge directly to surface	Refer to 6.5 Below	Christopher Corsa, Assistant Director, Department of Public Works and	July 01, 2020

		waters, outfalls discharging in drainage basins where the impervious surface coverage exceeds 12 percent and outfalls in the Urbanized Area (UA)		Nathan L. Jacobson & Associates, Inc., Town Engineer	
6-9 Implement retrofit projects to disconnect 2% of DCIA	Started	The Bartman Road Reconstruction project resulted in disconnected DCIA.	Refer to 6.8 above	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2022
6-10 Develop/implement street sweeping program	The Town of Haddam currently has a road sweeping program in place whereby all town road are swept at least on time per year.	Continuing	Completed	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2018
6-11 Develop/implement catch basin cleaning program	The Town of Haddam currently has a program whereby catch basins, storm manholes, sedimentation tanks and hydrodynamic separators are vactored.	Continuing	Completed Starting in 2018, catch basin cleaning will focus on the watersheds with an impervious area of greater than 12% and the Urbanized Area (UA)	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2018

6-12 Develop/implement snow management practices	In Development	2017 - None 2018 - None	Consideration is being given to switching over to NaCl Salt treated with Ice B'Gone at the rate of 6-8 gallons per ton obtained from DRVN Enterprises Inc. in New London.	Christopher Corsa, Assistant Director, Department of Public Works	July 01, 2018

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

DPW Employees will be encouraged to attend applicable workshops offered by the CT Technology Transfer Center and/or the Connecticut Interlocal Risk Management Agency (CIRMA).

6.3 Pollution Prevention / Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	DPW Employees will be encouraged to attend applicable workshops offered by the CT Technology Transfer Center and/or Connecticut Interlocal Risk Management Agency (CIRMA) 2017 - None 2018 - None It is anticipated that DPW Employee Training will be conducted in 2019.
Street sweeping	
Lane miles swept	188.30 (94.15 Miles)
Volume (or mass) of material collected	2017 - 1,500± Cubic Yards 2018 - 1,400± to 1,600± Cubic Yards
Catch basin cleaning	
Total catch basins in priority areas	TBD
Total catch basins in MS4	1,800±
Catch basins inspected	2017 - 0

Catch basins cleaned	2018 - 900± 2017 - 0 2018 - 900±
Volume (or mass) of material removed from all catch basins	2017 - Not Determined 2018 - 500 Tons = 370± C.Y.
Volume removed from catch basins to impaired waters (if known)	2017 - Not Known. 2018 - Not Known
Snow management	
Type(s) of deicing material used	2 Parts Sand: 1 Part NaCl Salt
Total amount of each deicing material applied	Winter 2017 to 2018 - 6,000± Tons, 3,400± Tons Sand and 2,600± Tons Salt Winter 2018 to 2019 - 6,000± Tons, 3,400± Tons Sand and 2,600± Tons Salt
Type(s) of deicing equipment used	Nine large 40,000 GVW Snow Plow/Spreaders Three F-550 Snow Plow/Spreaders Spreaders are adjustable from 100 pounds per lane mile to 900 pounds per lane mile. Typically applied at 200-400 pounds per lane mile depending on the storm
Lane-miles treated	188.30 (94.15 Miles)
Snow disposal location	Roadside
Staff training provided on application methods & equipment	2017 - No DPW Employee Training 2018 - No DPW Employee Training
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	0 lbs or 0%
Reduction in turf area (since start of permit)	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 in 2017

6.4Catch basin cleaning program

Briefly describe the method used to optimize your catch basin inspection and cleaning schedule. [Complete this section for the 2017 Annual Report only]

It is estimated there are approximately 1,800 catch basins in town.
Catch basins located in sag vertical curves with curbs and approaching catch basins are cleaned first.
2017 - No catch basins were cleaned
2018 - 900± catch basins were cleaned.
Catch basins located in sag vertical curves with curbs and approaching catch basins are cleaned first.

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. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

2017 - Bartman Road Reconstruction
Prior to reconstruction no stormwater quality treatment measures were in place. A large majority of the road runoff was pretreated by a VortSentry HS48 Hydrodynamic Separator prior to discharge to a water quality swale to reduce sediment and pollutant loads from the majority of the road stormwater runoff prior to discharge to the watercourse and downgradient ponds. The impervious pavement area treated is 19,548 square feet or 0.449 acre. The DCIA reduction will be determined based on current DCIA reduction credits.
2018 - None

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

A road reconstruction projects is currently in the design phase. Stormwater retrofits will be incorporated into the designs whenever possible to reduce DCIA. Most road reconstruction projects are in rural locations so reduction of DCIA will most likely be accomplished by routing stormwater to upland discharge points to provide for overland flow and stormwater treatment before entering a wetland, watercourse or waterbody.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

DCIA will be reduced whenever possible during road reconstruction projects. Redevelopment projects will be designed to decrease proposed DCIA relative to existing conditions to the maximum extent practicable

Part II: Impaired waters investigation and monitoring [This section required beginning with 2019 Annual Report]

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:

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.

The Connecticut River is the only impaired water in the Town of Haddam and the impairment is due to bacteria.
2017 - No investigation or wet weather sampling was conducted
2018 - No investigation or wet weather sampling was conducted.
It is anticipated that all MS4 stormwater outfalls which discharge directly to the Connecticut River will be sampled in 2019.
Dry weather screening of all MS4 stormwater outfalls which discharge directly to the Connecticut River will be conducted in Fall 2019.

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?**
2017 - No Screening Conducted					
2018 - No Screening Conducted					

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

Not Applicable

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 1, 2021.

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

No monitoring was conducted in 2017.

Part III: Additional IDDE Program Data [This section required beginning with 2019 Annual Report]

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
4014-00-3-R1 53.16% Impervious	High Priority	1
4014-05-2-R4 14.14% Impervious	High Priority	2

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
No sampling was conducted in 2017.										

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
No sampling was conducted in 2017.									

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
No screening or sampling was conducted in 2017.					

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
No investigations were conducted in 2017				

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:	Print Name:
Lizz Milardo, First Selectman	Wade M. Thomas, CPMSM
Signature / Date:	Signature / Date:
April 2X, 2019	April 2X, 2019