Town of Old Lyme, Connecticut

2018 Annual Report

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

Permit Number GSM000032

MS4 General Permit
Town of Old Lyme 2018 Annual Report
Existing MS4 Permittee
Permit Number GSM 000032
January 01, 2018 - December 31, 2018

This report documents the Town of Old Lyme'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.

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	In Progress	2017 - None 2018 - None Before July 01, 2019 Clean Waters Starting in Your Home and Yard Fact Sheets, prepared by a collaborative effort between the Connecticut Sea Grant Extension Program and the University of Connecticut Cooperative Extension System NEMO Program will be made available to the public.	Will Be Met	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	July 01, 2018	July 01, 2019	

1-2 Address education/ outreach for pollutants of concern*	In Progress	2017 - None 2018 - None The following Clean Waters Starting in Your Home and Yard Fact Sheets discuss bacteria will be made available to the public: Fact Sheet 1 - What's the Big Deal About Water Quality Fact Sheet 3 - Caring for Your Septic System Fact Sheet 6 - Animal Waste and Water Quality.	Will Be Met	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	July 01, 2018	July 01, 2019	

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

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.

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	A hard copy of the Draft 2017 Stormwater Management Plan (SMP) was made available to the public for review and comment at the Town Library.	Complied with requirements	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	April 03, 2017	The 2017 SMP was available to the public on April 12, 2017.	No public comments were received by the Office of the First Selectwoman
2-2 Comply with public notice requirements for Annual Reports	Completed	The Draft 2017 MS4 Annual Report will be made available for public review and comment on the town website and at the Town Library.	Will comply with Requirements	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	February 15, 2018	February 15, 2018	The Annual Report will be revised if any pertinent public comments are received.
2-2	Completed	The Draft 2018 MS4 Annual Report will be made available for public review and comment on the town website and at the Town Library.	Will comply with Requirements	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	February 15, 2019	February 28, 2019	The Annual Report will be revised if any pertinent public comments are received.

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

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public to meet FOIA requirements	Yes	04/03/2017	A pdf of the 2017 SMP was posted on the town website and a pdf print copy was made available at the Phoebe Griffin Noyes Library.
Availability of 2017 Annual Report announced to public to meet FOIA requirements	Yes	02/15/2018	A pdf of the 2017 MS4 Annual Report was posted on the town website and a pdf print copy was made available at the Phoebe Griffin Noyes Library.
Availability of 2018 Annual Report announced to public to meet FOIA requirements	Yes	02/28/2019	A pdf of the 2018 MS4 Annual Report was posted on the town website and a pdf print copy was made available at the Phoebe Griffin Noyes Library

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	The Town of Old Lyme is in the process of completing a written IDDE program using the IDDE program template available from the CT DEEP.	Develop written plan of IDDE program	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2018	Anticipate completing by July 01, 2019.	An attempt was made to have the Ledge Light Health District be the central reporting agency for citizen illicit discharge complaint filings as seven of the eight member municipalities are MS4 municipalities.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	In Progress	MS4 stormwater outfall mapping was conducted in 2014 and 2015. The stormwater outfall mapping was compiled on a ESRI GIS layer. The GIS 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 MS4 stormwater outfalls.	Board of Selectmen and Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2019	Anticipate completing by the deadline of July 01, 2019.	

3-3 Implement Citizen Reporting Program	In Progress	A program to allow the general public to report suspected illicit discharges is in the process of being set up. It is anticipated that the Department of Public Works will accept citizen reporting of suspected illicit discharges.	A form will be developed in 2019	Bonnie Reemsnyder, First Selectwoman, Board of Selectmen	July 01, 2017	Anticipate completing by July 01, 2018.	An attempt was made to have the Ledge Light Health District be the central reporting agency for citizen illicit discharge complaint filings as seven of the eight member municipalities are MS4 municipalities. It was decided that the Department of Public Works would accept citizen reporting of suspected illicit discharges.
3-4 Establish legal authority to prohibit illicit discharges	In Place	An Illicit Discharge Detection and Elimination Ordinance was enacted at a Town Meeting on January 22, 2007	IDDE Ordinance Enactment	Board of Selectmen	July 01, 2018	January 22, 2007	
3-5 Develop record keeping system for IDDE tracking	To Be Developed	2017 - None 2018 - None	In Progress	Department of Public Works	July 01, 2017		An attempt was made to have the Ledge Light Health District be the central reporting agency for citizen illicit discharge complaint filings as seven of the eight member municipalities are MS4 municipalities.
3-6 Address IDDE in areas with pollutants of concern	To Be Devloped	2017 - None 2018 - None	In Progress		Not specified		

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

The written program will be posted to the Department of Public Works webpage and a link listed in next year's Annual Report; will update the written IDDE program as needed throughout the permit term.

Maintain master IDDE tracking spreadsheet and ensure all employees involved in IDDE program understand the 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
January 21, 2015	A suspected illicit discharge was identified during MS4 stormwater outfall mapping proximal to Oak Ridge Drive which is the outlet for the Oak Ridge Drive storm drainage system. The discharge consisted of what appeared to be a greywater (possible washing machine) discharge to the MS4	Individual catch basins will be inspected during dry weather conditions to isolate the possible source of the potential illicit discharge if the pipe discharge was connected directly to the catch basin during the home construction activities. If the method does not satisfactorily identify the pipe run to which the possible illicit discharge is connected optical brightener testing methods will be utilized.

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. The Town of Old Lyme has had no SSOs

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)
41.29983°N 72.25558°N Oak Ridge Drive	01/21/15	MS4 and wetlands	Estimated at tens of gallons per week	Likely Washing Machine Connection	Test for Optical Brightener	2019

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

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	312
Estimated or actual number of interconnections	2
Outfall mapping complete	95
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	20
Outfall assessment and priority ranking	10
Dry weather screening of all High and Low priority outfalls complete	0
Catchment investigations complete	10

Estimated percentage of MS4 catchment area investigated	40

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 Department of Public Works 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.

The Department of Public Works will be provided with a copy of the publication entitled *Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments, and Technical Appendices* Published October 2004 by the Center for Watershed Protection and Robert Pitt of the University of Alabama.

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	To be Initiated in 2018	2017 -The required elements of Minimum Control Measure No. 4 - Construction Site Runoff Control to be incorporated into the land use regulations were provided to the town. 2018 - None	2017 - None 2018 - None	Land Use Commission Members	July 01, 2019		It is anticipated that UConn CLEAR and/or a Regional Planning Agency will provide a Construction Site Runoff Control management template for use by all MS4 Towns.
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval	Ongoing	Thomas E. Metcalf, P.E., L.S., Town Engineer prepares land use review letters for most applications for the Inland Wetlands Commission, Planning Commission and Zoning Commission.	Interdepartmental Coordination	Land Use Commission Members	July 01, 2017	Ongoing	
4-3 Review site plans for stormwater quality concerns	Ongoing	Thomas E. Metcalf, P.E., L.S., Town Engineer encourages the use of LID and Stormwater BMPs practices as contained in the 2004 Connecticut Stormwater Quality Manual.	Compliance	Thomas E. Metcalf, P.E., L.S., Town Engineer	July 01, 2017	Ongoing	
4-4 Conduct site inspections	Ongoing	The town conducts construction site inspections for proper implementation and	Compliance with Approved Plans	Keith Rosenfeld, Inland Wetlands Enforcement	July 01, 2017	Ongoing	

		maintenance of soil erosion and sediment control measures.		Officer, Land Use Office			
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, Planning Commission, Zoning Commission during the Public Hearing Process when applicable.		Land Use Department and Land Use Commissions	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 General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Thomas E. Metcalf, P.E., L.S., Town Engineer has made developer's engineers aware of the need to register for the Construction Stormwater General Permit 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	Land Use Department Thomas E. Metcalf, P.E., L.S., Town Engineer/	July 01, 2017	Ongoing	

4.2 Describe any Construction Site Runoff Control activities planned for the next year, if 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	Under Development	2017 -The required elements of Minimum Control Measure No. 5 - Post-Construction Runoff Control to be incorporated into the land use regulations were provided to the town. 2018 - None	There has not been significant new development. In town. Whenever new development is proposed the Town Engineer encourages the utilization of LID measures.	Land Use Department, Land Use Commissions and Town Land Use Attorney	July 01, 2021		It is anticipated that UConn CLEAR and/or a Regional Planning Agency will provide a Post-construction Stormwater Management template for use by all MS4 Towns.
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Compliance	There has not been significant new development. In town. Whenever new development is proposed the Town Engineer encourages the utilization of LID measures.	Land Use Department Thomas E. Metcalf, P.E., L.S., Town Engineer	July 01, 2019	Continuing	

5-3 Identify retention and detention ponds in priority areas	To Be Developed	2017 - None 2018 - None 2019 - Retention Ponds, Detention Ponds and Hydrodynamic Separators will be inventoried. A GIS Map Layer will be created after the inventory.		Ed Adanti, Director, Department of Public Works, and Nathan L. Jacobson & Associates, Inc.	July 01, 2019		
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	To Be Developed	After the Retention Ponds, Detention Ponds and Hydrodynamic Separators have been inventoried a Long Term Operation and Maintenance Plan will be implemented.		Ed Adanti, Director, Department of Public Works, and Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2019		
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.	Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2020	2018 - Completed 2019 - Revised	The Baseline 2012 DCIA was determined to be 34.16 Acres.
5-6 Address post-construction issues in areas with pollutants of concern	To Be Developed	2017 - None 2018 - None	Stormwater outfalls discharging to waters identified as impaired in	Land Use Department Thomas E. Metcalf, P.E.,	Not specified		

			the 2016 Integrated Water Quality Report and in watersheds with a DCIA of greater than 11 percent will be subject to enhanced water quality treatment.	L.S., Town Engineer			

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

5.3 Post-Construction Stormwater Management reporting metrics.

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	34.16 Acres
DCIA disconnected (redevelopment plus retrofits)	2012 to 2016 - To Be Determined 2017 - 0 Acres 2018 - 0 Acres Total - To Be Determined
Retrofits completed	2017 - 0 2018 - 0
DCIA disconnected	2012 to 2016 - % To Be Determined 2017 - 0 % 2018 - 0 % Total - % To Be Determined
Estimated cost of retrofits	$0
Detention or retention ponds identified	2014 to 2015 - 5 Detention Basins, 9 Water Quality Basins and 2 Water Quality Units

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

Based on information contained in the Factsheet: *Town of Old Lyme Water Quality and Stormwater Summary,* prepared by the CT DEEP, 1,420.21 acres of the town has an impervious area exceeding 12% which is approximately 9.14% of the town. 372.89 acres have an impervious cover of ranging from 12% to 25%, 616.25 acres have an impervious cover ranging from 26% to 50%, 371.85 acres have an impervious cover ranging from 51% to 75% and 59.22 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 243.15 acres of buildings, 323.82 acres of roads and 455.04.28 acres of other impervious surfaces for a total impervious surface area of 1,022.01 acres. Of the 323.82 acres of road impervious area, 210.93 acres are town roads and 112.89 acres are state roads.

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	Ongoing	2017 - None 2018 - All snow plow/spreader drivers attended a Snow Plow Safety course provided by Connecticut Interlocal Risk Management Agency (CIRMA)	2017 - None 2018 - Developing	Ed Adanti, Director, Department of Public Works	July 01, 2017	2018	
6-2 Implement MS4 property and operations maintenance	Ongoing	The Town of Old Lyme and the Town of Lyme is committed to implement an organic based Integrated Pest Management Plan at the Town Woods Athletic Fields and School Grounds which was developed by Dr. Jerry Silbert of the Watershed Partnership.	Continuing	Ed Adanti, Director, Department of Public Works	July 01, 2018	Continuing	
6-3 Implement coordination with interconnected MS4s	Ongoing	The Town of Old Lyme continued to coordinate MS4 responsibilities with the Town of East Lyme and the Town of Lyme	Continuing	Ed Adanti, Director, Department of Public Works	July 01, 2017	July 1, 2017	
6-4 Develop/implement program to control other sources of pollutants to the MS4	To Be Developed			Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2017		

6-5 Evaluate additional measures for discharges to impaired waters*	To Be Developed	2017 - None 2018 - None		Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2017		
6-6 Track projects that disconnect DCIA	To Be Developed	2017 - None 2018 - None Will be implemented in 2019.		Nathan L. Jacobson & Associates, Inc., Town MS4 Consultant	July 01, 2017		
6-7 Implement infrastructure repair/rehab program	To Be Developed	2017 - None 2018 - None		Ed Adanti, Director, Department of Public Works	July 01, 2021		
6-8 Develop/implement plan to identify/prioritize retrofit projects	To Be Developed	2017 - None 2018 - None		Ed Adanti, Director, Department of Public Works	July 01, 2020		
6-9 Implement retrofit projects to disconnect 2% of DCIA	To Be Developed	2017 - None 2018 - None		Ed Adanti, Director, Department of Public Works and Nathan L. Jacobson & Associates, Inc.	July 01, 2022		
6-10 Develop/implement street sweeping program	Ongoing	The Town of Old Lyme currently implements a road sweeping program whereby all town roads are swept at one time per year.	Compliance	Ed Adanti, Director, Department of Public Works	July 01, 2017		
6-11 Develop/implement catch basin cleaning program	Ongoing	The Town of Old Lyme currently implements a catch basin cleaning program whereby all catch basins south of I-95 and north of I-	Substantial Compliance	Ed Adanti, Director, Department of Public Works	July 01, 2020		

		95 are cleaned in alternate years.					
6-12 Develop/implement snow management practices	Ongoing	See employee training.	Substantial Compliance	Ed Adanti, Director, Department of Public Works	July 01, 2018	2018	

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 - All snow plow/spreader drivers attended a Snow Plow Safety course provided by Connecticut Interlocal Risk Management Agency (CIRMA)
Street sweeping	
Lane miles swept	2017 - 119.04 2018 - 119.04
Volume (or mass) of material collected	2017 - Undetermined 2018 - 120± C.Y.
Catch basin cleaning	
Total catch basins in priority areas	TBD
Total catch basins in MS4	650±
Catch basins inspected	2017 - 100± Located North of I-95 on a monthly basis 2018 - 100± Located South of I-95 on a monthly basis
Catch basins cleaned	2017 - 300± Located South of I-95 2018 - 300± Located North of I-95
Volume (or mass) of material removed from all catch basins	2017 - Undetermined 2018 - 100± C.Y.

Volume removed from catch basins to impaired waters (if known)	2017 - Undetermined 2018 - Undetermined - will be estimated in 2019.
Snow management	
Type(s) of deicing material used	Deicing Mix Comprised of 3 Parts Sand to 1 Part Salt by Volume
Total amount of each deicing material applied	Winter 2017 to 2018 250± Tons NaCl and 400± Tons Sand Winter 2018 to 2019 150± to 200± Tons NaCl and 300± Tons Sand
Type(s) of deicing equipment used	5 Snow Plows/Spreaders with Manually Controlled Spreaders 4 Snow Plows/Spreaders with Ground Speed Controlled Spreaders Application rate 150-200 pounds per lane (curb) mile
Lane-miles treated	2017 - 119.04 2018 - 119.04
Snow disposal location	Road shoulders
Staff training provided on application methods & equipment	2017 - None 2018 - All snow plow/spreader drivers attended a Snow Plow Safety course provided by Connecticut Interlocal Risk Management Agency (CIRMA). Topics included Spreading Operations, New Anti-Icing Techniques and Cleanup and Recordkeeping.
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	2017 and ongoing - The Town of Old Lyme and the Town of Lyme is committed to implement an organic based Integrated Pest Management Plan at the Town Woods Athletic Fields and School Grounds which was developed by Dr. Jerry Silbert of the Watershed Partnership. 0 Pounds
Reduction in turf area (since start of permit)	2017 - 0 Acres 2018 - 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	2017 - $0 2018 - $0

6.4 Catch 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 that there are approximately 650 catch basins in the Town of Old Lyme. A DPW Employee witnesses all catch basin structure cleaning. Odd Years - 300± catch basins and storm manholes located south of I-95 were cleaned. 100± random catch basins on the north side of I-95 are inspected for sediment accumulation. Even Years - 300± catch basins and storm manholes located north of I-95 were cleaned. 100± random catch basins on the south side of I-95 are inspected for sediment accumulation. The catch basin cleanings are stockpiled at the DPW Facility on Machnik Drive.

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.]
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.

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.]
The 2012 Baseline DCIA was determined to be 34.16 acres The CT DEEP goal of 2% disconnection of the 2012 Baseline DCIA will mean the town will have to disconnect 0.683 acres 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. [Provide information if available in 2017 report. Section to be completed for the 2019 Annual Report.]

Part II: Impaired waters investigation and monitoring [This section required beginning with 2018 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: 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.

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?**

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 (Colonies/100 ml)**	**Name of Laboratory (if used)**	**Follow-up required?**
1 Commercial	12/06/04	Bacteria - E.coli	>60	Phoenix Environmental	No
1 Commercial	11/17/05	Bacteria - E.coli	210	Phoenix Environmental	No
1 Commercial	11/16/06	Bacteria - E. coli Total Coliform	20 >2,000	Phoenix Environmental	No
1 Commercial	01/11/08	Bacteria - E. coli	200	Phoenix Environmental	No
1 Commercial	03/19/08	Bacteria - E. coli Total Coliform	90 100	Phoenix Environmental	No
1 Commercial	08/16/10	Bacteria - E. coli	2,480	Phoenix Environmental	No
4 Industrial	12/06/04	Bacteria - E. coli	12	Phoenix Environmental	No
4 Industrial	11/17/05	Bacteria - E. coli	60	Phoenix Environmental	No
4 Industrial	11/16/06	Bacteria - E. coli Total Coliform	10 100	Phoenix Environmental	No
4 Industrial	01/11/08	Bacteria - E. coli	20	Phoenix Environmental	No
4 Industrial	03/19/08	Bacteria - E. coli Total Coliform	20 30	Phoenix Environmental	No
4 Industrial	08/16/10	Bacteria - E. coli	810	Phoenix Environmental	No

3 - R15	11/06/14	Bacteria - E-coli Total Coliform	150 >24,200	Phoenix Environmental	No
3 - R15	11/17/14	Bacteria - E-coli Total Coliform	460 >24,200	Phoenix Environmental	No
3 - R15	08/11/15	Bacteria - E-coli Total Coliform	1,670 >24,200	Phoenix Environmental	No
3 - R15	10/28/15	Bacteria - E-coli Total Coliform	10,460 >24,200	Phoenix Environmental	No
3 - R15	09/19/16	Bacteria - E-coli Total Coliform	14,100 >24,200	Phoenix Environmental	No
3 - R15	11/15/16	Bacteria - E-coli Total Coliform	1,780 >24,200	Phoenix Environmental	No
3 - R15	11/29/16	Bacteria - E-coli Total Coliform	1,310 >24,200	Phoenix Environmental	No
4 - R-20	11/06/14	Bacteria - E-coli Total Coliform	80 >24,200	Phoenix Environmental	No
4 - R-20	11/17/14	Bacteria - E-coli Total Coliform	1,850 >24,200	Phoenix Environmental	No
4 - R-20	08/11/15	Bacteria - E-coli Total Coliform	3,650 >24,200	Phoenix Environmental	No
4 - R-20	10/28/15	Bacteria - E-coli Total Coliform	130 >24,200	Phoenix Environmental	No
4 - R-20	09/19/16	Bacteria - E-coli Total Coliform	2,600 >24,200	Phoenix Environmental	No
4 - R-20	11/15/16	Bacteria - E-coli Total Coliform	107 >24,200	Phoenix Environmental	No
4 - R-20	11/29/16	Bacteria - E-coli Total Coliform	1,210 17,300	Phoenix Environmental	No
5 - RU-80	11/06/14	Bacteria - E-coli Total Coliform	680 >24,200	Phoenix Environmental	No
5 - RU-80	11/17/14	Bacteria - E-coli Total Coliform	2,480 >24,200	Phoenix Environmental	No
5 - RU-80	08/11/15	Bacteria - E-coli Total Coliform	1,150 >24,200	Phoenix Environmental	No
5 - RU-80	10/28/15	Bacteria - E-coli Total Coliform	2,760 >24,200	Phoenix Environmental	No
5 - RU-80	09/19/16	Bacteria - E-coli Total Coliform	>24,200 >24,200	Phoenix Environmental	No
5 - RU-80	11/15/16	Bacteria - E-coli Total Coliform	2,600 >24,200	Phoenix Environmental	No
5 - RU-80	11/29/16	Bacteria - E-coli Total Coliform	1,010 >24,200	Phoenix Environmental	No

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 1, 2020.

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

Part III: Additional IDDE Program Data [This section required beginning with 2018 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
CT-E1_024-SB	High Priority	1
CT-E1_026-SB	High Priority	2
CT-E1_023	High Priority	3
CT-E1_017	High Priority	4
CT-E3_008	High Priority	5
CT-E3_007	High Priority	6
CT-E1_028-SB	Low Priority	7

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

It was anticipated that dry weather screening would be conducted in Fall 2018. However due to unseasonably heavy precipitation and associated high groundwater conditions no dry weather screening was conducted. It is anticipated that dry weather screening will be conducted in Fall 2019.

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: Bonnie A. Reemsnyder, First Selectwoman	Print Name: Wade M. Thomas, CPMSM
Signature / Date: April 2X, 2019	Signature / Date: April 2X, 2019