



Town of Granby, Connecticut

2019 Annual Report

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

Permit Number GSM000029

MS4 General Permit
Town of Granby 2019 Annual Report
Existing MS4 Permittee
Permit Number GSM 000029
January 01, 2019 - December 31, 2019

This report documents the Town of Granby'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.

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	Completed	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 were made available to the public on the town website at: https://www.granby-ct.gov/public-works/pages/stormwater-management The following Fact Sheets are available:	Make NEMO Fact Sheets available to the general public	Department of Public Works/ Kirk A. Severance, Director of Public Works	July 01, 2018	December 01, 2017	

		<p>Fact Sheet 2, <i>Managing Your Household Chemicals</i></p> <p>Fact Sheet 3, <i>Caring for Your Septic System</i></p> <p>Fact Sheet 4 <i>Integrated Pest Management and Biological Controls for the Homeowner</i></p> <p>Fact Sheet 5, <i>Conservation Landscaping for Water Quality</i></p> <p>Fact Sheet 6, <i>Animal Waste and Water Quality</i></p> <p>Fact Sheet 8, <i>Lawn Care the Environmentally Friendly Way</i></p> <p>Consideration may be given to provision of 9 NEMO Technical Papers to land use commission members.</p>				
1-2 Address education/ outreach for pollutants of concern*	In Progress	<p>The following Clean Waters Starting in Your Home and Yard Fact Sheets discuss bacteria were available to the public on the town website at: https://www.granby-ct.gov/public-works/pages/stormwater-management:</p> <p>Fact Sheet 3, <i>Caring for Your Septic System</i></p> <p>Fact Sheet 6, <i>Animal Waste and Water Quality</i></p>	Department of Public Works/ Kirk A. Severance, Director	July 1, 2018	December 01, 2017	

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

Additional Fact Sheets and stormwater quality educational materials will be made available to the public on the town website and/or at town public gathering places.

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	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: https://www.granby-ct.gov/public-works/pages/stormwater-management	Complied with requirements	Department of Public Works / Kirk A. Severance, Director	April 03, 2017	The 2017 SMP was available to the public on April 12, 2017.	No public comments were received.
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 at: https://www.granby-ct.gov/public-works/pages/stormwater-management	A Draft copy was provided for public review and comment in March 2018	Department of Public Works / Kirk A. Severance, Director	February 15, 2018	March 2018	The Annual Report will be revised if any pertinent public comments are received.
	Completed	The Draft 2018 MS4 Annual Report will be made available for public review and comment on the town website at: https://www.granby-ct.gov/public-works/pages/stormwater-management	A Draft copy will be provided for public review and comment in February 2019	Department of Public Works / Kirk A. Severance, Director	February 15, 2019	February 2019	The Annual Report will be revised if any pertinent public comments are received.
	Will be completed	The Draft 2019 MS4 Annual Report will be made available for public review and comment on the town website at:	A Draft copy will be provided for public review and comment	Department of Public Works / Kirk A. Severance, Director	February 15, 2020	February 18, 2020	The Annual Report will be revised if any pertinent public comments are received.

		https://www.granby-ct.gov/public-works/pages/stormwater-management	in February 2020				
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2.2 Describe any Public Involvement/Participation activities planned for the next year, if applicable.

Community outreach activities will consist of providing GIS mapping of impaired waterbodies in the town and presenting the GIS maps at public meetings.

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	Town Website
Availability of the 2017 MS4 Annual Report announced to public to meet FOIA requirements	Yes	March 2018	Town Website
Availability of the 2018 MS4 Annual Report announced to public to meet FOIA requirements	Yes	February 2019	Town Website
Availability of the 2019 MS4 Annual Report announced to public to meet FOIA requirements	Yes	February 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	Completed	The Town of Granby has developed a written IDDE program that includes an Illicit Discharge Reporting Form for use by the general public to report suspected illicit discharges and a investigation protocol for town officials to respond to reported illicit discharges. The IDDE program was presented to the DPW staff in December 2017.	Written IDDE Program	Department of Public Works/ATC Group Services LLC	July 01, 2018	The IDDE Program was implemented in November 2017.	The Department of Public Works is the central reporting agency for citizen illicit discharge complaint filings.
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	In Progress	MS4 stormwater outfall mapping was conducted by the Department of Public Works in 2005-2006 and 2009. 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	Development of an ESRI GIS map layer with MS4 stormwater outfalls.	Department of Public Works/ ATC Group Services LLC Subconsultant Nathan L. Jacobson & Associates, Inc.	July 01, 2019	Prior to July 01, 2019	All catch-basins and outfalls added as layer in town GIS mapping.

		Energy and Environmental Protection 2018 Integrated Water Quality Report. The stormwater outfalls in the impaired waters will be identified.					
3-3 Implement Citizen Reporting Program	In Progress	A program to allow the general public to report suspected illicit discharges was established. The form can be viewed on the town website at: https://www.granby-ct.gov/public-works/files/idde-reporting-form		Board of Selectmen, Town Manager/ ATC Group Services LLC	July 01, 2017	November 2018.	Illicit discharge reporting form available at the DPW or online on the DPW website at https://www.granby-ct.gov/public-works/files/idde-information-public .
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 November 21, 2016 and can be viewed on the town website at: https://www.granby-ct.gov/public-works/files/idde-reporting-form	IDDE Ordinance Enactment	Board of Selectmen/Town Manager	July 01, 2018	November 21, 2016	Enacted at a Town Meeting
3-5 Develop record keeping system for IDDE tracking	In Place	The Department of Public Works has developed a record keeping system as a Microsoft Excel spreadsheet for illicit discharge tracking	Develop Microsoft Excel spreadsheet	Department of Public Works and ATC Group Services LLC	July 01, 2017	November 2017	The Department of Public Works is the lead contact for the program.
3-6 Address IDDE in areas with pollutants of concern		Dry weather screening will be conducted during seasonal low groundwater conditions at outfall which discharge to			Not specified	Dry weather screening was anticipated to have been conducted in the Fall of 2018, however, high Fall	Additional dry weather screening to occur in 2020.

		bacteria impaired waters				rainfall and associated high groundwater conditions would not have made outfall dry weather screening productive,	

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

Additional dry-weather screening of priority outfalls to be completed in 2020 to identify any potential illicit discharges.

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

Date of Report	Location / suspected source	Response taken
2017 - None Reported	Not Applicable	Not Applicable
2018 - None Reported	Not Applicable	Not Applicable
2019 - None Reported	Not Applicable	Not Applicable

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 Granby 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)

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

See above.

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
Further evaluation of information received to determine potential problem areas.	Town coordinated with the Farmington Valley Health District in early 2019 regarding addresses in Town where septic system repairs were completed. Evaluation of repairs will be made to determine if certain sections of Town have patterns of septic repairs and potential priority areas. Evaluation will be considered in the selection of the 6 priority outfalls by July 1, 2020.	TBD

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	188
Estimated or actual number of interconnections	In Evaluation
Outfall mapping complete	100%
Interconnection mapping complete	0%
System-wide mapping complete (detailed MS4 infrastructure)	90%
Outfall assessment and priority ranking	To be Initiated
Dry weather screening of all High and Low priority outfalls complete	100% to be inspected a second time in Spring 2020

Catchment investigations complete	6
Estimated percentage of MS4 catchment area investigated	20%

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. Annual training is provided to all DPW and applicable town staff. Training was completed most recently on November 26, 2019.

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	To be Initiated in 2018	The required elements of Minimum Control Measure No. 4 - Construction Site Runoff Control will be incorporated into the land use regulations were provided to the town.	In Process	Community Development Department Director/ Abigail Kenyon, AICP and Land Use Commission Members	July 01, 2019		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	Ongoing	Kevin W. Clark, P.E., L.S., Town Engineer prepares land use review letters for most applications to the Inland Wetlands Commission, Planning Commission and Zoning Commission.	Interdepartmental Coordination	Land Use Commission Members	July 01, 2017	Ongoing	Ongoing review of construction and building permits in areas of concern by Engineering and P&Z staff.
4-3 Review site plans for stormwater quality concerns	Ongoing	Kevin W. Clark, P.E., L.S., Town Engineer encourages the use of LID and	Compliance	Town Engineer/ Kevin W. Clark, P.E., L.S.	July 01, 2017	Ongoing	

		Stormwater BMPs practices as contained in the 2004 Connecticut Stormwater Quality Manual.					
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	Community Development Department Director/ Abigail Kenyon, AICP and Town Engineer/Kevin W. Clark, P.E., L.S.	July 01, 2017	Ongoing	Ongoing BMPs inspections by Engineering and P&Z staff during active construction projects with a focus on projects with higher potentials of stormwater runoff.
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.		Community Development Department Director/ Abigail Kenyon, AICP and Land Use Commission Members	July 01, 2017	Ongoing	
4-6 Implement procedure to notify developers about the CT DEEP General Permit for the Discharge of Stormwater and Dewatering wastewaters from Construction Activities (Construction Stormwater General Permit)	Ongoing	Since the inception of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Town Engineer, Kevin W. Clark, P.E., L.S., has made developer's engineers aware of the need to register for the Construction Stormwater General Permit in engineering review letters which	Awareness of the need to register for the General permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities	Community Development Department Director/Abigail Kenyon, AICP and Town Engineer/Kevin W. Clark, P.E., L.S.	July 01, 2017	Ongoing	

		are typically prepared as part of the land use application process.					

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

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5. Post-construction 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 Minimum Control Measure No. 5 into the applicable land use regulations	The proposed revisions are being reviewed	Community Development Department Director/ Abigail Kenyon, AICP and Land Use Commission Members	July 01, 2021		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	Continuing	Compliance	Community Development Department Director/Abigail Kenyon, AICP, Town Engineer/Kevin W. Clark, P.E., L.S. and Land Use Commission Members	July 01, 2019	July 01, 2019	Current town building and P&Z regulations generally meet the requirements 5-2.
5-3 Identify retention and detention ponds in priority areas	Under Development	Retention Ponds, Detention Ponds and Hydrodynamic	Moving to Compliance	Department of Public Works/	July 01, 2019	July 01, 2019	GIS layer of retention ponds to be included in 2020.

		Separators were inventoried. Retention ponds owned by the Town were inspected by town Engineering staff and documented in 2019.		ATC Group Services LLC, Town Engineer/Kevin W. Clark, P.E., L.S. and Subconsultant Nathan L. Jacobson & Associates, Inc.			
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Under Development	Long Term Operation and Maintenance Plans internal policy developed for the Town. The Long-Term O&M Plans include regular inspections and documentation of all town-owned retention basins on an as-needed basis, with a minimum full inspection once every 5 years.	A Post-Construction Stormwater Management Facility Operation & Maintenance Plan Manual with and Effective Date of July 01, 2019 was prepared. It is anticipated that the inspection of town facilities will begin in 2020.	Department of Public Works/ Kirk A. Severance, Director and Town Engineer/Kevin W. Clark, P.E., L.S.	July 01, 2019	July 01, 2019	
5-5 DCIA mapping	Completed	The development of Baseline 2012 DCIA condition was completed in 2018 from base mapping prepared by UConn CLEAR.	The DCIA to MS4 stormwater outfalls discharging to Impaired Waters in the 2018 Integrated Water Quality Report and in watersheds with a DCIA of greater than	ATC Group Services LLC Subconsultant Nathan L. Jacobson & Associates, Inc.	July 01, 2020	January 2019	Compilation of projects that have increased or decreased the DCIA since 2012 will start in 2020.

			11 percent will start in 2020.				
5-6 Address post-construction issues in areas with pollutants of concern	To Be Developed	None	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 be subject to enhanced water quality treatment.	Community Development Department Director/Abigail Kenyon, AICP and Town Engineer, Kevin W. Clark, P.E., L.S.	Not specified		Ongoing review of construction and building permits in areas of concern by Engineering and P&Z staff.

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)	21.19 Acres
DCIA disconnected (redevelopment plus retrofits)	0 acres this year/0 acres total

Retrofits completed	None
DCIA disconnected	0% this year / Total Acreage Since 2012 To Be Determined
Estimated cost of retrofits	Not Applicable
Detention or retention ponds identified	5 this year /5 total

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

Based on information contained in the Factsheet: *Town of Granby 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 *2018 Integrated Water Quality Report*, dated August 01, 2019, 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 for each town or towns.

In that the 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. The ConnDOT impervious road areas were then determined for each CT DEEP drainage basin. The ConnDOT impervious road areas were then deducted from the total impervious road area to determine a town owned impervious road area for each CT DEEP drainage basin. 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 $DCIA\% = 0.01 \cdot (IA\%)^{2.0}$

For an impervious area between 6% and 12 %:

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

For an impervious area between 12% and 18 %:

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

For an impervious area of greater than 18 %:

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

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 to include the UConn CLEAR State Road Impervious Area (Acres) and Town Road Impervious Area (Acres). No major 2012 Baseline DCIA computation discrepancies were noted.

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	Started	A Street Sweepings & Catch Basin Cleanings Management Plan was developed.	Moving to Compliance	Department of Public Works and ATC Group Services LLC	July 01, 2017	December 11, 2017	A Street Sweepings & Catch Basin Cleanings Management Plan Training Session was developed by ATC Group Services LLC. The Training Session was held annually in 2017, 2018 and 2019 and was attended by employees of the Department of Public Works. The Street Sweepings & Catch Basin Cleanings Management Plan is kept at the DPW Facility for use and reference.
6-2 Implement MS4 property and operations maintenance	Under Development	Development of an online tracking system for maintenance and retrofit activities associated with MS4 infrastructure.	Moving to Compliance	Department of Public Works/ Kirk A. Severance, Director	July 01, 2018	Fall 2017	The DPW is updating the invoice and work tracking system to better document ongoing MS4 infrastructure maintenance and retrofits.
6-3 Implement coordination with interconnected MS4s	Not Applicable	None	Not Applicable	Department of Public Works/ Kirk A. Severance, Director	July 01, 2017	Not Applicable	

6-4 Develop/implement program to control other sources of pollutants to the MS4	To Be Developed and Implemented in 2018	Meetings with DPW, P&Z, Engineering and outside consultation for interdepartmental coordination	Moving to Compliance	Department of Public Works and ATC Group Services LLC	July 01, 2017	July 01, 2018	Continued meetings with DPW, P&Z, Engineering and outside consultation for additional pollutant reductions.
6-5 Evaluate additional measures for discharges to impaired waters*	To Be Implemented in 2018	Meetings with DPW, P&Z, Engineering and outside consultation for interdepartmental coordination	Moving to Compliance	Department of Public Works and ATC Group Services LLC	July 01, 2017		Continued meetings with DPW, P&Z, Engineering and outside consultation for additional pollutant reductions.
6-6 Track projects that disconnect DCIA	Initiated	None	Moving to Compliance	Department of Public Works/ Kirk A. Severance, Director	July 01, 2017		Ongoing review of projects where a disconnect has occurred since 2012.
6-7 Implement infrastructure repair/rehab program	Initiated	Ongoing	Moving to Compliance	Department of Public Works/ Kirk A. Severance, Director	July 01, 2021		Ongoing inspections and maintenance of stormwater infrastructure throughout town.
6-8 Develop/implement plan to identify/prioritize retrofit projects	To Be Implemented	Initiated	Moving to Compliance	Department of Public Works/ Kirk A. Severance, Director	July 01, 2020		Track previous – past 5 years. Begin to track additional retrofits/redevelopments as they are completed
6-9 Implement retrofit projects to disconnect 2% of DCIA	To Be Implemented	None	Moving to Compliance	Department of Public Works/ Kirk A. Severance, Director	July 01, 2022		
6-10 Develop/implement street sweeping program	Ongoing	The Town of Granby currently implements a road sweeping program.	Continuing	Department of Public Works/ Kirk A. Severance, Director	July 01, 2017		The road sweeping program was developed to address known areas of high sediment accumulation.
6-11 Develop/implement catch basin cleaning program	Ongoing	The Town of Granby implements a catch basin cleaning program whereby	Continuing	Department of Public Works/ Kirk A.	July 01, 2020		The catch basin cleaning program was developed to address

		vactoring of catch basins is subcontracted.		Severance, Director			known areas of high sediment accumulation.
6-12 Develop/implement snow management practices	Ongoing	Alternate road deicing mixtures are currently being utilized and will be modified as cost-effective emerging technologies become available.	Continuing	Department of Public Works and ATC Group Services LLC	Jul 1, 2018		DPW staff are aware of risks associated with snow distribution and potential effects of runoff.

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 - December 19, 2017 2018 - December 21, 2018 2019 - November 26, 2019
Street sweeping	
Lane miles swept	2017 - 100± out of 184.68 2018 - 0 2019 - 116.2 miles
Volume (or mass) of material collected	2017 - 450± Cubic Yards 2018 - 0 Cubic Yards 2019 - 400± Cubic Yards
Catch basin cleaning	
Total catch basins in priority areas	Not Known
Total catch basins in MS4	1,340±
Catch basins inspected	2017 - 480± 2018 - 700± 2019 - 500±
Catch basins cleaned	2017 - 480± Catch Basins were Vactored

	2018 - 0 Catch Basins were Vactored 2019 - 0± Catch Basins were Vactored
Volume (or mass) of material removed from all catch basins	2017 - 180± Cubic Yards 2018 - 0 Cubic Yards 2019 - 0 Cubic Yards
Volume removed from catch basins to impaired waters (if known)	2017 - Volume or Mass Undetermined 2018 - Volume or Mass Undetermined 2019 - Volume or Mass Undetermined The Volume or Mass removed will be determined in 2020
Snow management	
Type(s) of deicing material used	Deicing Mix Comprised of 1 Part Sand to 4 Parts NaCl Salt with a Deicing Additive Deicing Additive - Beet Heet® or Safe Melt® 40/60 5 Gallons of Deicing Additive per Ton of Salt
Total amount of each deicing material applied	2017 400 Tons of Sand 1,500 Tons NaCl Salt 3,000 Gallons Deicing Additive 2018 400 Tons of Sand 1,500 Tons NaCl Salt 3,000 Gallons Deicing Additive 2019 200 Tons of Sand 1,500 Tons NaCl Salt 3,500 Gallons Deicing Additive
Type(s) of deicing equipment used	One 10-Wheeler Plow/Spreaders Seven 6- Wheeler Plows/Spreaders One Mason Plows/Spreader Most have Ground Speed Controlled Spreaders Application Rate 400 Pounds per Lane Mile (Min.)
Lane-miles treated	184.68
Snow disposal location	DPW Facility
Staff training provided on application methods & equipment	Annually
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	Not Applicable
Reduction in turf area (since start of permit)	Not Applicable
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	

Cost of mitigation actions/retrofits	Not Applicable

6.4 Catch Basin Cleaning Program

Briefly describe the method used to optimize your catch basin inspection and cleaning schedule.

There are approximately 1,340 catch basins in the Town of Granby.

2017 - Approximately 480 catch basins were cleaned in 2017 by a subcontracted catch basin cleaning company. The catch basin cleanings are screened and recycled at the former town landfill site in conformance with CT DEEP regulatory guidance.

2018 - No catch basins were vactored. The sump depth (sump bottom to lowest pipe invert out) and accumulated sediment/debris depth was measured for more than 700 catch basins

2019 - No catch basins were vactored. The sump depth (sump bottom to lowest pipe invert out) and accumulated sediment/debris depth was measured for more than 500 catch basins. Catch basins to be cleaned in early 2020 where applicable.

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 MS4 stormwater outfalls located within 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.

The 2012 Baseline Directly Connected Impervious Area was determined to be 21.19 acres as reported above in Section 5.3 using the DCIA computation methodology as described in Section 5.4.

The CT DEEP goal of 2% disconnection of DCIA from July 01, 2012 to June 30, 2022 may be difficult given the rural character of much of the town. Using the 2012 Baseline DCIA of 21.19 acres, a goal of 0.42 acre of DCIA reduction is the goal by July 01, 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 annual CT DEEP goal of 1% disconnection of DCIA beyond June 30, 2022 may be difficult given the rural character of much of the town and the general lack of redevelopment.

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.

2018 - Wet weather sampling of outfalls directly discharging to the impaired waters was conducted as follows:

Wet weather samples were obtained from nine outfalls (13, 14, 15, 73, 74, 102, 103, 104 and 105) on September 10, 2018.

Wet weather samples were obtained from sixteen outfalls (13, 14, 15, 44, 73, 74, 86, 102, 103, 104, 105, 109, 152, 153, 154 and 155) on December 28, 2018. Nine of the samples were resampling of the September 10, 2018 sampling.

One wet weather sample was also obtained from Salmon Brook proximal to outfalls 103 and 104 on December 28, 2018.

The wet weather sampling locations are highlighted on a pdf following the text.

2019 - No Dry Weather Screening or Wet Weather Sampling of outfalls to impaired waters was conducted. In August 2019, the Water Quality Report indicated that one of the two impaired water bodies in the Town of Granby was no longer impaired. Additional evaluation of the priority areas in the Town and focus of dry and wet weather screening/sampling is being evaluated in early 2020.

Dry weather inspections were completed at all outfalls that discharge to impaired waterbodies in 2018. Additional follow-up dry weather inspections will be completed at each of those outfalls in the spring of 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 MPN/100ML	Name of Laboratory (if used)	Follow-up required?
OF-13	09/10/18	Bacteria	E. Coli 20 Total >24,200	Phoenix Environmental Laboratories, Inc. (Phoenix)	
OF-14	09/10/18	Bacteria	E. Coli >24,200 Total >24,200	Phoenix	
OF-15	09/10/18	Bacteria	E. Coli 269 Total >24,200	Phoenix Environmental	
OF-73	09/10/18	Bacteria	E. Coli 6,870 Total >24,200	Phoenix Environmental	
OF-74	09/10/18	Bacteria	E. Coli 13,000 Total >24,200	Phoenix Environmental	
OF-102	09/10/18	Bacteria	E. Coli 9,210 Total >24,200	Phoenix Environmental	
OF-103	09/10/18	Bacteria	E. Coli 12,000 Total >24,200	Phoenix Environmental	
OF-104	09/10/18	Bacteria	E. Coli 4,880 Total >24,200	Phoenix Environmental	
OF-105	09/10/18	Bacteria	E. Coli 9,210 Total >24,200	Phoenix Environmental	
OF-13	12/28/18	Bacteria	E. Coli 4,110 Total 7,270	Phoenix Environmental	
OF-14	12/28/18	Bacteria	E. Coli >24,200 Total >24,200	Phoenix Environmental	
OF-15	12/28/18	Bacteria	E. Coli <10 Total 8,660	Phoenix Environmental	
OF-44	12/28/18	Bacteria	E. Coli 10 Total 2,910	Phoenix Environmental	
OF-73	12/28/18	Bacteria	E. Coli 256 Total 9,210	Phoenix Environmental	
OF-74	12/28/18	Bacteria	E. Coli <10 Total 17,300	Phoenix Environmental	
OF-86	12/28/18	Bacteria	E. Coli <10 Total 1,620	Phoenix Environmental	
OF-102	12/28/18	Bacteria	E. Coli 41 Total 1,790	Phoenix Environmental	

OF-103	12/28/18	Bacteria	E. Coli 120 Total 5,480	Phoenix Environmental	
OF-104	12/28/18	Bacteria	E. Coli 10 Total 14,100	Phoenix Environmental	
OF-105	12/28/18	Bacteria	E. Coli <10 Total >2,610	Phoenix Environmental	
OF-109	12/28/18	Bacteria	E. Coli 433 Total 17,300	Phoenix Environmental	
OF-152	12/28/18	Bacteria	E. Coli <10 Total 1,840	Phoenix Environmental	
OF-153	12/28/18	Bacteria	E. Coli <10 Total 8,160	Phoenix Environmental	
OF-154	12/28/18	Bacteria	E. Coli 20 Total 305	Phoenix Environmental	
OF-155	12/28/18	Bacteria	E. Coli 20 Total 11,200	Phoenix Environmental	
OF-103/104 Stream	12/28/18	Bacteria	E. Coli 216 Total 4,350	Phoenix Environmental	

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?
I-1	11/21/04	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	09/15/05	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	09/14/06	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	10/19/07	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	09/26/08	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	11/14/09	Bacteria	E. coli TBR/ 100mls	Phoenix Environmental	No
I-1	08/01/13	Bacteria	E. coli 200/ 100mls	Phoenix Environmental	No
I-1	08/13/14	Bacteria	E. coli 700/ 100mls	Phoenix Environmental	No
I-1	09/27/16	Bacteria	E. coli 52/ 100mls	Phoenix Environmental	No

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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
13	Wet Weather Resample	Dry Weather Screening
14	Wet Weather Resample	Dry Weather Screening
15	Wet Weather Resample	Dry Weather Screening
73	Wet Weather Resample	Dry Weather Screening
74	Wet Weather Resample	Dry Weather Screening
102	Wet Weather Resample	Dry Weather Screening
103	Wet Weather Resample	Dry Weather Screening
104	Wet Weather Resample	Dry Weather Screening
105	Wet Weather Resample	Dry Weather Screening

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
4320-00_01 Salmon Brook	High Priority	1
4319-00_01b Salmon Brook, West Branch	High Priority	2 The Salmon River, West Branch was delisted based on information contained in Appendix B-5 of the CT DEEP 2018 Integrated Water Quality Report, dated August 01, 2019.

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 ID	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of Concern	If required, follow-up actions taken
74	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
102	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
189	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
13	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
14	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
15	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
153	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
154	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	
86	8/23/18	NA	NA	NA	NA	NA	NA	NA	Bacteria	

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 ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
74	12/28/18	NA	NA	NA	NA	E. coli	NA	NA	Bacteria
102	12/28/18	NA	NA	NA	NA	E. coli	NA	NA	Bacteria
13	9/10/18	NA	NA	NA	NA	E. coli	NA	NA	Bacteria

[illegible]

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 than 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 than 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

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.

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants

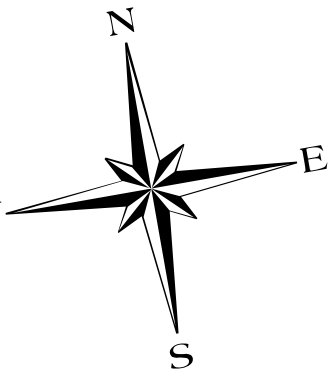
3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

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:	Print Name:
John D. Ward, Town Manager	Wade M. Thomas, CPMSM
Signature / Date:	Signature / Date:
April XX , 2020	April XX , 2020

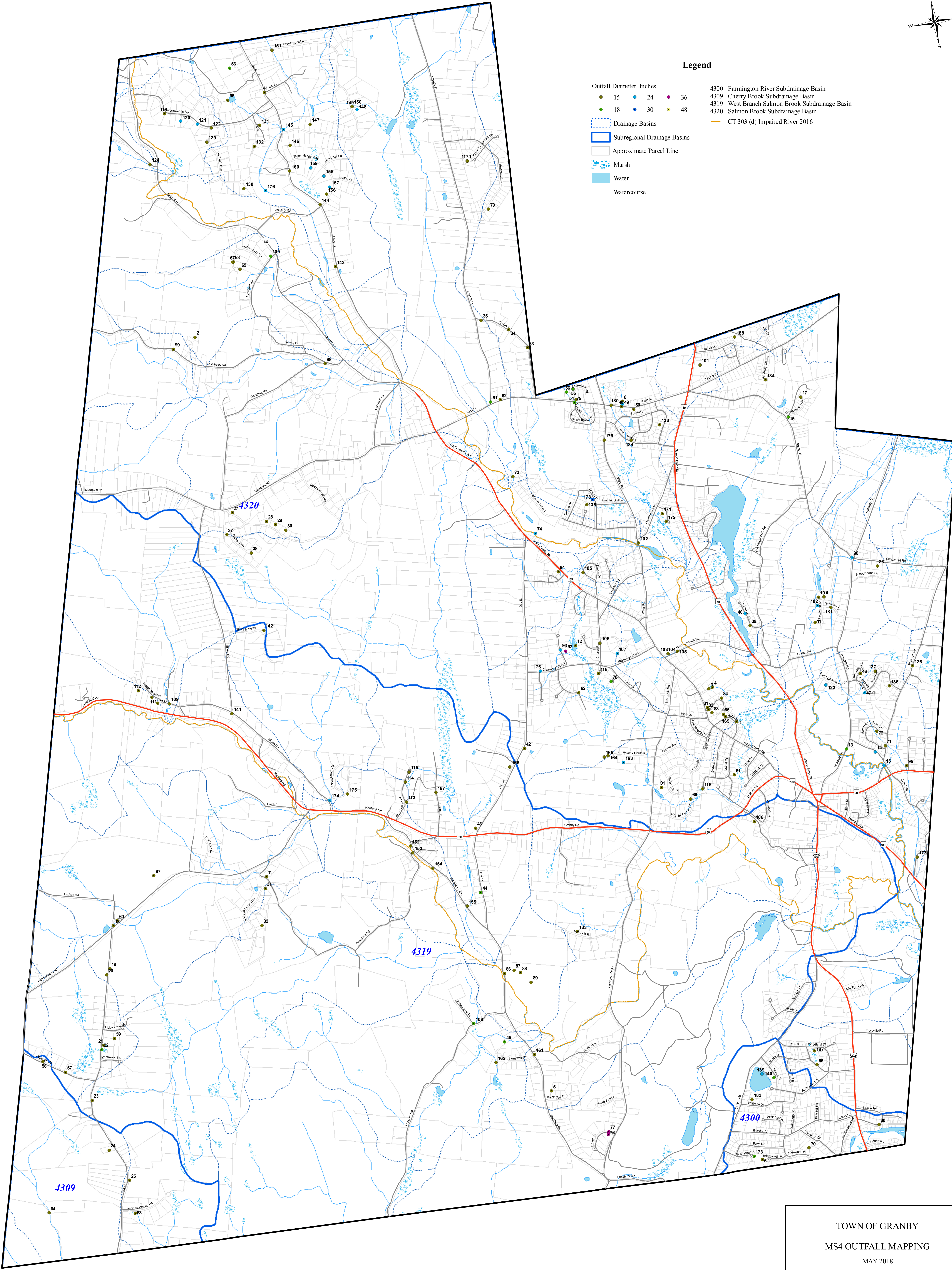


Legend

- Outfall Diameter, Inches

 - 15
 - 18
 - 24
 - 30
 - 36
 - 48
- Drainage Basins

 - Subregional Drainage Basins
 - Approximate Parcel Line
 - Marsh
 - Water
 - Watercourse
- 4300 Farmington River Subdrainage Basin
 - 4309 Cherry Brook Subdrainage Basin
 - 4319 West Branch Salmon Brook Subdrainage Basin
 - 4320 Salmon Brook Subdrainage Basin
 - CT 303 (d) Impaired River 2016



TOWN OF GRANBY
MS4 OUTFALL MAPPING
MAY 2018

